Mazib Fashions

Mizmizi, Siddhirganj, Narayanganj

(23.683981, 90.514230)

9 September 2024

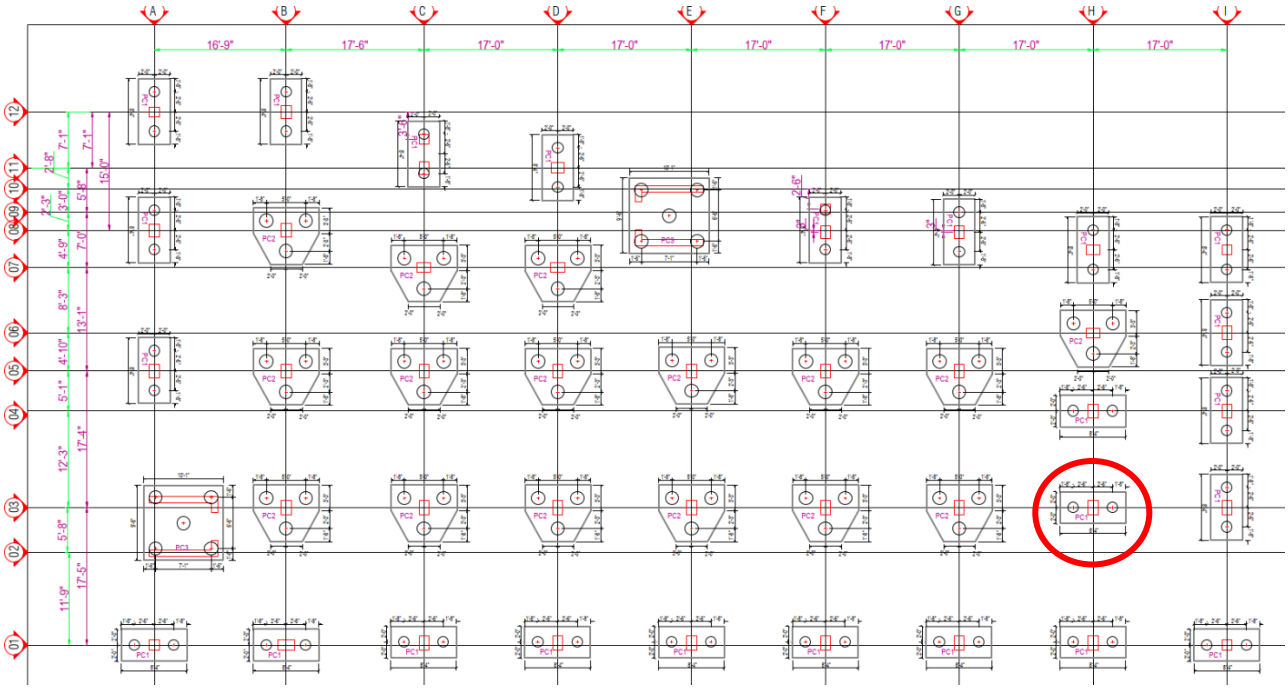
1. Building Information

I. **Main Building:** This is a partial seven-story (G+5+partial storey) where the building is the reinforced concrete (RC) up to six storied and the partial storey at roof is steel shed.

II. **Warehouse & Utility Building:** This is a partially three-storied (G+3) combination of reinforced concrete and steel structure with a steel roof shed.

2. Observations

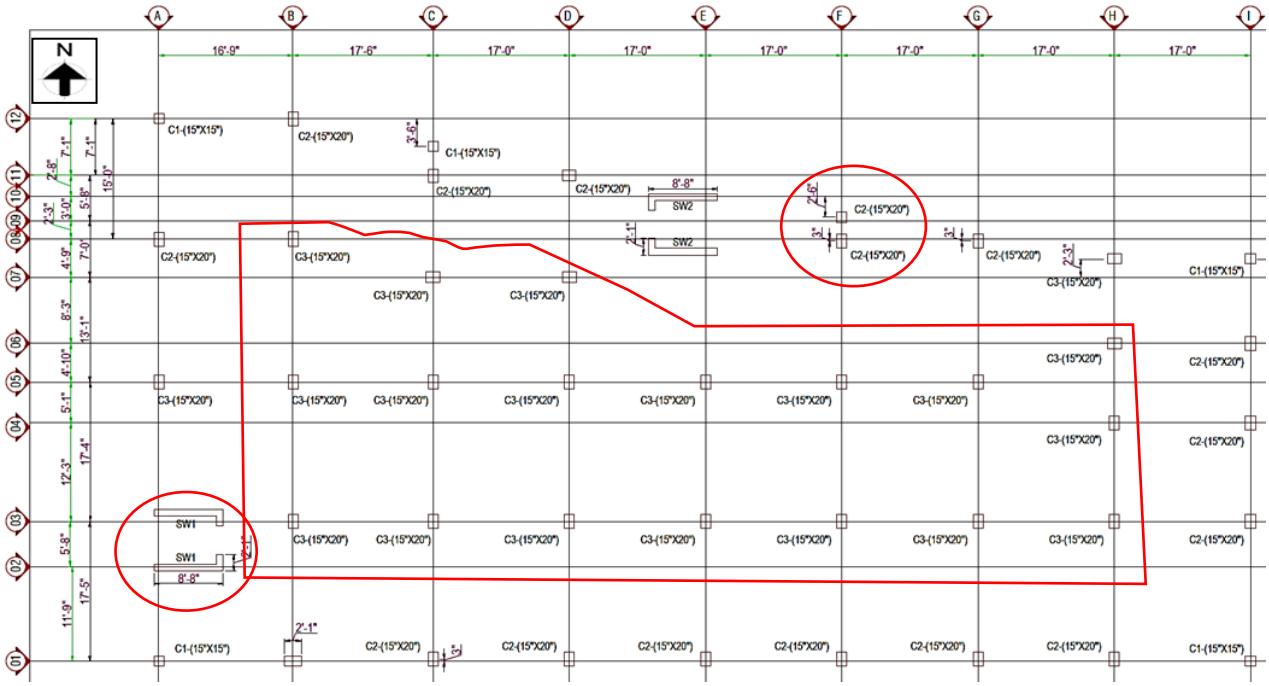
Observation-1: Stress in foundation exceeds normal design limit (Main Building).



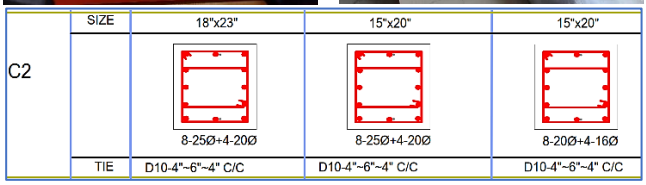
Foundation layout marking the stressed location

Description: Cursory calculation indicates that the marked foundation appears to be stressed above normal design limits based on 3 kPa typical floor live load with calculated concrete core strength (29.3 MPa) and re-bar strength (415 MPa). The building engineer is required to carry out Detail Engineering Assessment (DEA) to review the design, loads and column & foundation stress based on in-situ material strength and soil-bearing capacity.

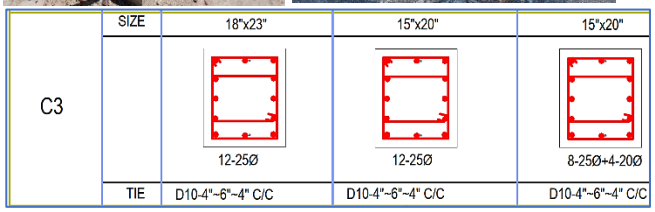
Observation-2: Lack of information and discrepancies in the provided drawing (Main Building).



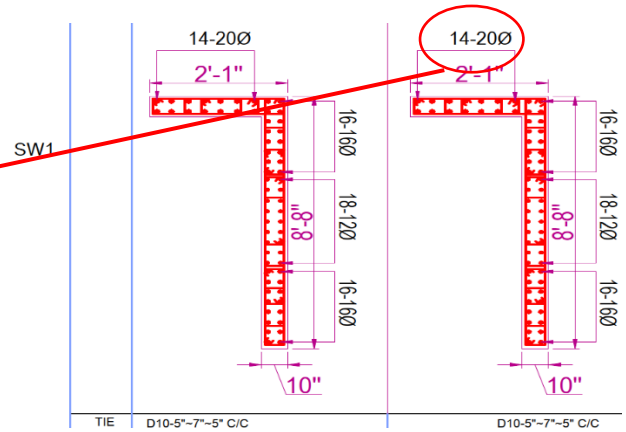
Column layout marking the discrepancies



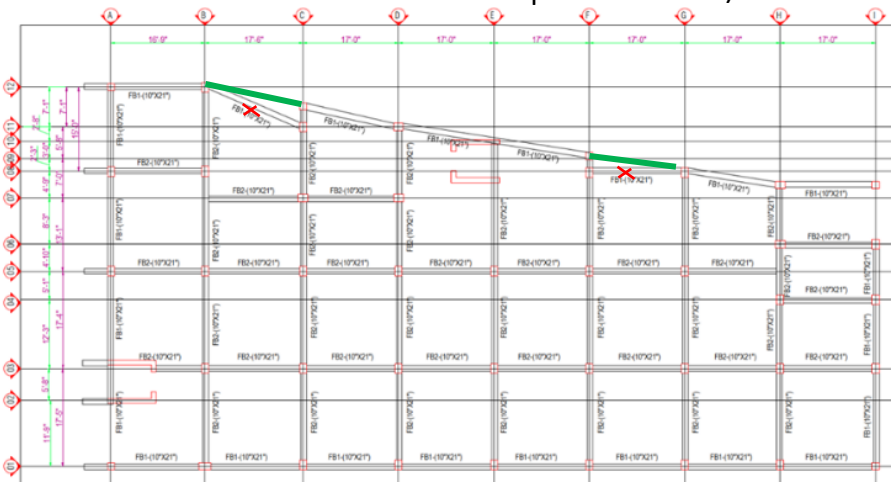
Column C2 size observed 250X375 instead of 375X500 and re-bar profile found by scanning 3/3 (8 no's) instead of 3/5 (12 no's)



Column C3 (375X500) re-bar profile found by 12Ø20 instead of 8Ø25+4Ø20



Shear wall re-bar profile found 8Ø20 instead of 14Ø20

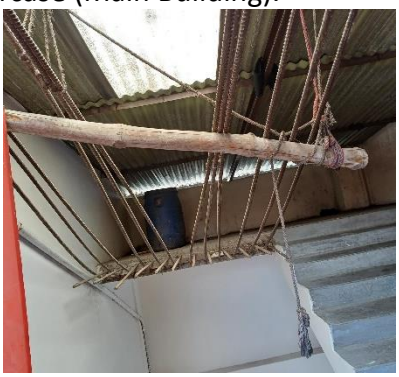


Beam alignment mismatching: The marked beams were found in place of green-marked

No drawing was provided for the roof shed

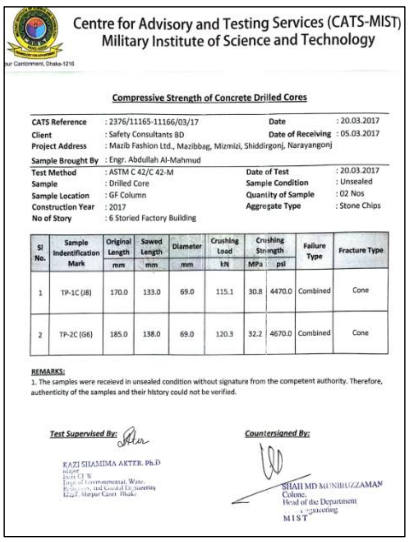
Description: During the inspection, discrepancies were observed between the provided drawing and on-site conditions. RC column size & re-bar profile, beam alignment, and shear wall re-bar profile mismatches were observed. Also, no information was available for the roof shed. The building engineer is required to survey the whole structure and update the drawing reflecting actual on-site condition.

Observation-3: Lack of lateral stability system in the roof shed and staircase (Main Building).



Description: During the inspection, the roof shed was observed with the portal framing system along the East-West direction but no lateral load transfer and resisting media (i.e. compression strut) was observed in the North-South direction. As well as inadequate member size was observed in the staircase. The building engineer is required to assess the stability of the roof shed and staircase and provide the remedial drawing.

Observation-4: Core layout missing (Main Building).



Centre for Advisory and Testing Services (CATS-MIST)
Military Institute of Science and Technology

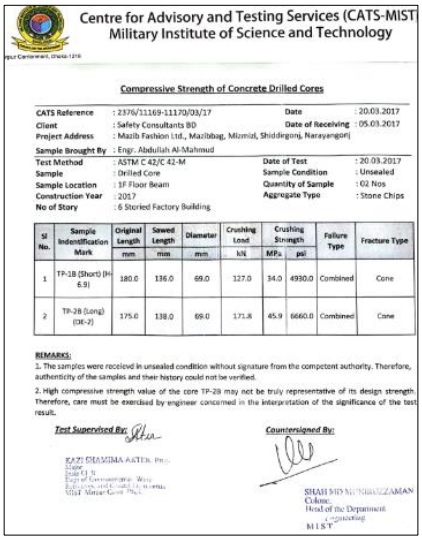
Compressive Strength of Concrete Drilled Cores

CATS Reference : 2376/11165-11166/03/17 Date : 20.03.2017
Client : Safety Consultants BD Date of Receiving : 05.03.2017
Project Address : Mazib Fashion Ltd., Mazibbag, Mizmizi, Shiddirgonj, Narayangonj
Sample Brought By : Engr. Abdullah Al-Mahmud
Test Method : ASTM C 42/C 42-M Date of Test : 20.03.2017
Sample : Drilled Core Sample Condition : Unsealed
Sample Location : GF Column Quantity of Sample : 02 Nos
Construction Year : 2017 Aggregate Type : Stone Chips
No of Story : 6 Storied Factory Building

Sl No.	Sample Indentification Mark	Original Length	Sawed Length	Diameter	Crushing Load	Crushing Strength		Failure Type	Fracture Type
		mm	mm	mm	kN	MPa	psi		
1	TP-1C (J8)	170.0	133.0	69.0	115.1	30.8	4470.0	Combined	Cone
2	TP-2C (G6)	185.0	138.0	69.0	120.3	32.2	4670.0	Combined	Cone

REMARKS:
1. The samples were received in unsealed condition without signature from the competent authority. Therefore, authenticity of the samples and their history could not be verified.

Test Supervised By: KAZI SHAMIMA AKTER, Ph.D
Countersigned By: SHAH MD MUNIRUZZAMAN, Colonel, Head of the Department, Engineering, MIST



Centre for Advisory and Testing Services (CATS-MIST)
Military Institute of Science and Technology

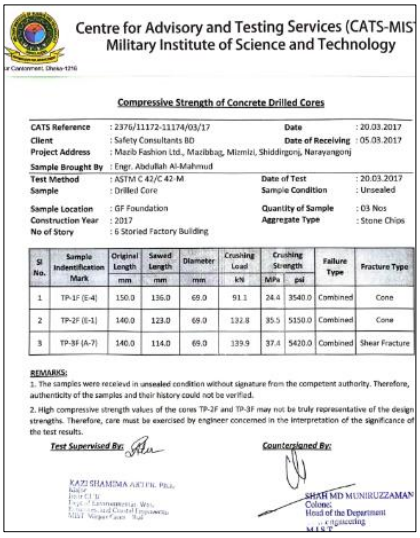
Compressive Strength of Concrete Drilled Cores

CATS Reference : 2376/11169-11170/03/17 Date : 20.03.2017
Client : Safety Consultants BD Date of Receiving : 05.03.2017
Project Address : Mazib Fashion Ltd., Mazibbag, Mizmizi, Shiddirgonj, Narayangonj
Sample Brought By : Engr. Abdullah Al-Mahmud
Test Method : ASTM C 42/C 42-M Date of Test : 20.03.2017
Sample : Drilled Core Sample Condition : Unsealed
Sample Location : 1F Floor Beam Quantity of Sample : 02 Nos
Construction Year : 2017 Aggregate Type : Stone Chips
No of Story : 6 Storied Factory Building

Sl No.	Sample Indentification Mark	Original Length	Sawed Length	Diameter	Crushing Load	Crushing Strength		Failure Type	Fracture Type
		mm	mm	mm	kN	MPa	psi		
1	TP-1B (Short) (H-6.9)	180.0	136.0	69.0	127.0	34.0	4930.0	Combined	Cone
2	TP-2B (Long) (DE-2)	175.0	138.0	69.0	171.8	45.9	6660.0	Combined	Cone

REMARKS:
1. The samples were received in unsealed condition without signature from the competent authority. Therefore, authenticity of the samples and their history could not be verified.
2. High compressive strength value of the core TP-2B may not be truly representative of its design strength. Therefore, care must be exercised by engineer concerned in the interpretation of the significance of the test result.

Test Supervised By: KAZI SHAMIMA AKTER, Ph.D
Countersigned By: SHAH MD MUNIRUZZAMAN, Colonel, Head of the Department, Engineering, MIST



Centre for Advisory and Testing Services (CATS-MIST)
Military Institute of Science and Technology

Compressive Strength of Concrete Drilled Cores

CATS Reference : 2376/11172-11174/03/17 Date : 20.03.2017
Client : Safety Consultants BD Date of Receiving : 05.03.2017
Project Address : Mazib Fashion Ltd., Mazibbag, Mizmizi, Shiddirgonj, Narayangonj
Sample Brought By : Engr. Abdullah Al-Mahmud
Test Method : ASTM C 42/C 42-M Date of Test : 20.03.2017
Sample : Drilled Core Sample Condition : Unsealed
Sample Location : GF Foundation Quantity of Sample : 03 Nos
Construction Year : 2017 Aggregate Type : Stone Chips
No of Story : 6 Storied Factory Building

Sl No.	Sample Indentification Mark	Original Length	Sawed Length	Diameter	Crushing Load	Crushing Strength		Failure Type	Fracture Type
		mm	mm	mm	kN	MPa	psi		
1	TP-1F (E-4)	150.0	136.0	69.0	91.1	24.4	3540.0	Combined	Cone
2	TP-2F (E-1)	140.0	123.0	69.0	132.8	35.5	5150.0	Combined	Cone
3	TP-3F (A-7)	140.0	114.0	69.0	139.9	37.4	5420.0	Combined	Shear Fracture

REMARKS:
1. The samples were received in unsealed condition without signature from the competent authority. Therefore, authenticity of the samples and their history could not be verified.
2. High compressive strength values of the cores TP-2F and TP-3F may not be truly representative of the design strengths. Therefore, care must be exercised by engineer concerned in the interpretation of the significance of the test results.

Test Supervised By: KAZI SHAMIMA AKTER, Ph.D
Countersigned By: SHAH MD MUNIRUZZAMAN, Colonel, Head of the Department, Engineering, MIST

Observation-5: Dampness, exposed re-bar and lack of waterproofing on the roof (Main Building).

Dampness

Exposed Re-bar

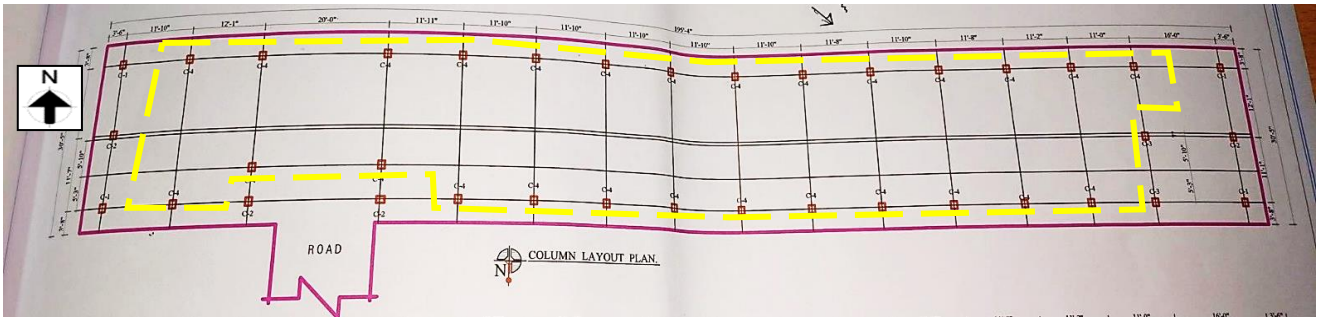
No waterproofing layer on the roof (MCAC on Roof)

Description: During the inspection, dampness was observed in several areas of the building. An exposed re-bar was found on the roof, making it vulnerable to corrosion. Additionally, no waterproofing layer was detected on the roof. The factory is required to address the dampness, apply the anticorrosive coating to the exposed re-bar, and construct a waterproofing layer on the roof.

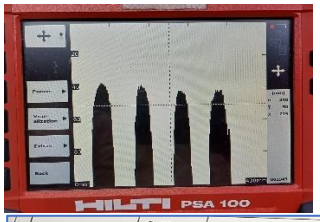
Observation-6: Possible vertical extension (Main Building).

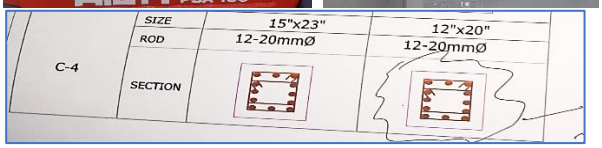
Description: The factory has taken RAJUK (Local Authority) approval for the 8-storied (G+7) Main Building dated 4 December 2014. Also, projected reinforcement is left at the current roof which indicates possible future vertical extension. The building engineer is required to prepare a Detailed Engineering Assessment (DEA) report before conducting any vertical extension.

Observation-7: Incomplete and inconsistent information in the provided drawing (Warehouse & Utility Building).

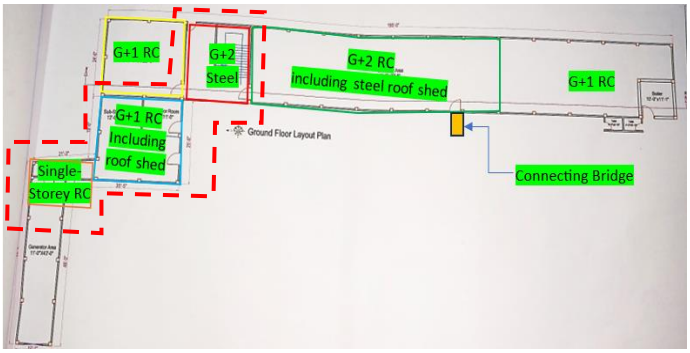


Column layout- yellow marking of all C4 columns' size & re-bar mismatch





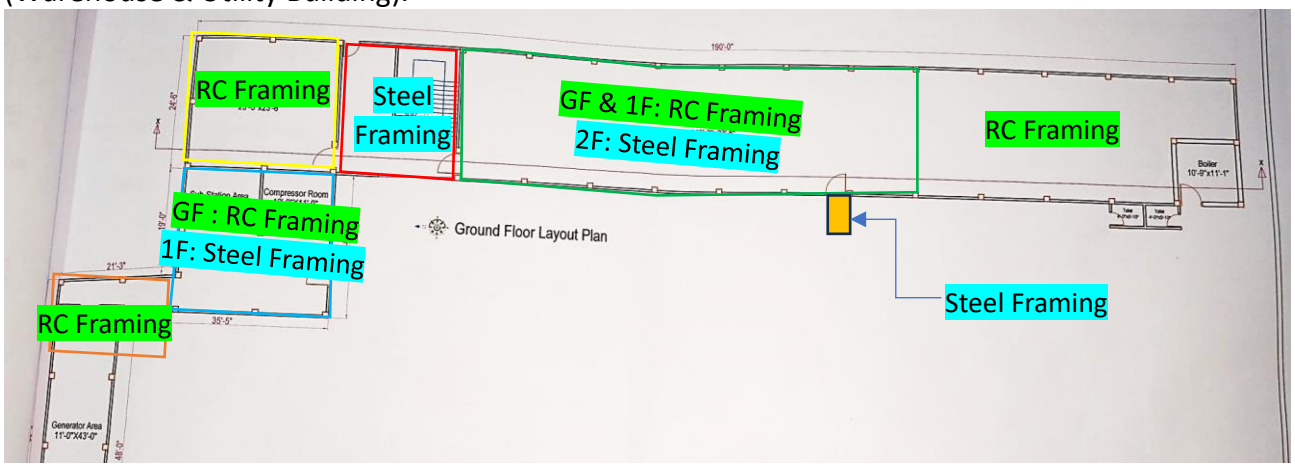
Column C4 size observed 300X375 instead of 300X500 and re-bar profile found by scanning 3/4 (10 no's) instead of 3/5 (12 no's)



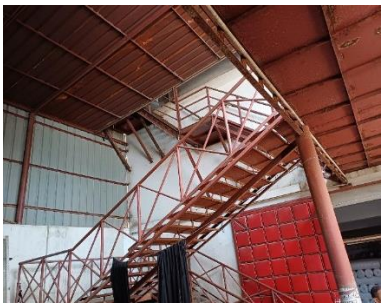
No drawing was provided for steel part and marked locations

Description: During the inspection, discrepancies were observed between the provided drawing and on-site conditions. RC column size and re-bar profile mismatches were observed. Also, no information was available for the steel part and above marked areas of the structure. The building engineer is required to survey the whole structure and update the drawing reflecting actual on-site condition.

Observation-8: Different structural framing systems and lack of engineering assessment documents (Warehouse & Utility Building).



Building Plan



Steel Roof Shed (G+2 RC including steel roof shed)

RC Beam-Column framing

Description: The building consists of both RC & steel framing systems where the shape of both framing is horizontally irregular. The irregular shape induces torsion in the structure. Also, the structural integrity of the structure is questionable. The building engineer is required to check the framing system & structural integrity of the structure and prepare an EA report addressing the above-mentioned issues.

Observation-9: Lack of lateral stability system in the roof sheds (Warehouse & Utility Building).

Description: During the inspection, the roof sheds were observed with the truss system and c-channel supported on the RC column. However, no lateral load transfer and resisting media (i.e. compression strut) were observed in the perpendicular direction. As well as inadequate member size was observed in the staircase. The building engineer is required to assess the stability of the roof shed and staircase and provide the remedial drawing.

Observation-10: Corrosion on the exposed re-bar (Warehouse & Utility Building).

Description: During the inspection, corroded exposed rebar was found on the roof. The factory must remove the corrosion and apply an anti-corrosive coating to the exposed rebar.

3. Action Plan:

Item No.	Observation	Action Plan	Timeline
1.	Stress in the foundation exceeds the normal design limit (Main Building)	The building engineer is required to carry out Detail Engineering Assessment (DEA) to review the design, loads and column & foundation stress based on in-situ material strength and soil-bearing capacity.	within 6 weeks
2.		Implement remediation work if required.	within 6 months
3.	Lack of information and discrepancies in the provided drawing (Main Building)	The building engineer is required to survey the whole structure and update the drawing reflecting actual on-site condition.	within 6 weeks
4.	Lack of lateral stability system in the roof shed and staircase (Main Building)	The building engineer is required to assess the stability of the roof shed and staircase and provide the remedial drawing.	within 6 weeks
5.	Core layout missing (Main Building)	The building engineer is required to prepare the core layout	within 6 weeks
6.	Dampness, exposed re-bar and lack of waterproofing on the roof (Main Building)	The factory is required to address the dampness, apply the anticorrosive coating to the exposed re-bar, and construct a waterproofing layer on the roof.	within 6 months
7.	Possible vertical extension (Main Building)	The building engineer is required to prepare a Detailed Engineering Assessment (DEA) report prior to conducting any vertical extension.	within 6 months
8.	Incomplete and inconsistent information in the provided drawing (Warehouse & Utility Building)	The building engineer is required to survey the whole structure and update the drawing reflecting actual on-site condition.	within 6 weeks
9.	Different structural framing systems and lack of engineering assessment documents (Warehouse & Utility Building)	The building engineer is required to check the framing system & structural integrity of the structure and prepare an EA report addressing the above-mentioned issues.	within 6 weeks
10.		Implement remediation work if required.	within 6 months
11.	Lack of lateral stability system in the roof sheds (Warehouse & Utility Building)	The building engineer is required to assess the stability of the roof shed and staircase and provide the remedial drawing.	within 6 weeks
12.	Corrosion on the exposed re-bar (Warehouse & Utility Building)	The factory must remove the corrosion and apply an anti-corrosive coating to the exposed rebar.	within 6 weeks