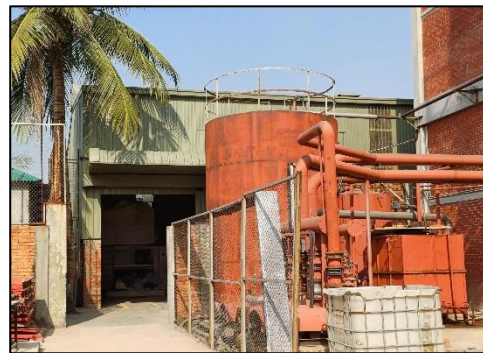


Meghna Knit Composite Ltd (Extension)

Gilarchala, Sreepur, Gazipur
(24.186253N, 90.425741E)

28 November 2023



1. Building Information

Dyeing Building-2: Two-storied (G+1) Steel building.

Store Building: Two-storied (G+1) RCC building.

Utility Building: Two-storied (G+1) RCC building.

New LK Dryer Shed: Single-storied Steel shed.

ETP: RCC retaining wall structure with a single-storied lab facility.

Workers Dining Shed: Single-storied Steel shed.

RMS room: Single-storied RCC building.

Loading Unloading Shed: Single-storied Steel shed.

Security room: single-storied RCC building.

Maintenance room: Single-storied RCC building.

Salt Soda Godown: Single storied shed.

2. Observations

Observation-1: Lack of lateral Stability. (Dyeing Building-2).



Description: Load transfer media is not provided along the long direction for the 1st floor shed. Therefore, the lateral stability system of the shed is apparently incomplete. Building engineer is required to check the lateral stability of the structure.

Observation-2: Lack of information in as-built drawings. (Dyeing Building-2).



Description: All sectional details and connection details were not available in the provided as-built drawings. Moreover, no drawing details were found for the external steel stair. The building engineer is required to survey the full structure and produce a full set of as-built drawings.

Observation-3: Corrosion in steel member. (Dyeing Building-2).



Description: Corrosion in steel member was observed in the several locations. The building engineer is required to suggest proper remedial measures accordingly.

Observation-4: Non-structural elements not anchored or braced. (Dyeing Building-2)



Description: Some racks on floors 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.

Observation-5: Column susceptible to trolley impact. (Dyeing Building-2).



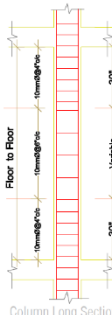
Description: Columns on the ground floor are prone to trolley impact. The factory is required to provide barriers for all exposed columns on the ground floor to avoid possible trolley impact on the column.

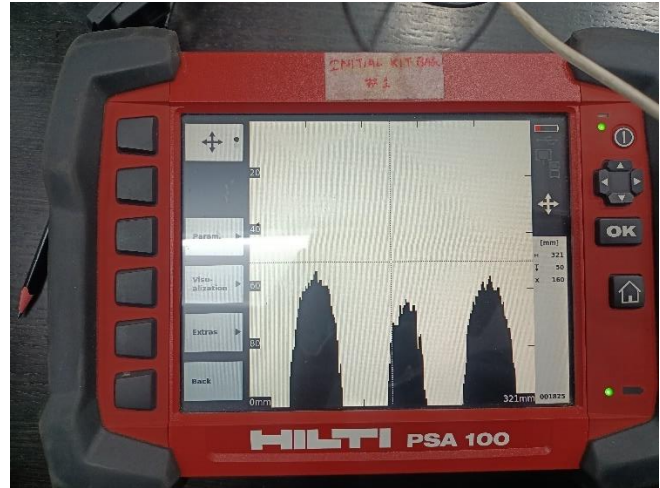
Observation-6: Bolts missing and loose nuts. (Dyeing Building-2).



Description: Missing bolts and loose nuts were found in the column-rafter joint. Building engineer is required to install the missing bolts and tighten the loose nut where necessary.

Observation-7: Mismatches in as-built drawings. (Store Building).

COLUMN MARK	C01	C02	C03	REMARKS
BELOW GROUND FLOOR LEVEL	8-200 18"x18"	4-200 + 6-160 18"x18"	4-200 + 12-160 20"x20"	Note:- 1. 4-200 + 8-160 means - 4nos 200 at four corners & others are 160 bar. 2. Use 100 Bar as tie, tie spacing see detailing manual.  Column Long Section
GROUND FLOOR LEVEL	8-200 18"x18"	4-200 + 6-160 18"x18"	4-200 + 12-160 18"x18"	
1ST FLOOR LEVEL	4-200 + 4-160 18"x18"	4-200 + 4-160 18"x18"	4-200 + 8-160 18"x18"	



Description: Amount of rebar in C-3 Type column at first floor was found 10 nos instead of 12 nos. Building engineer is required to update the as-built drawings as per on site condition and submit to RSC.

Observation-8: Design report needs to be revised. (Store Building).

2-STORIED STORE BUILDING, MEGHNA KNIT COMPOSITE LTD DESIGN REPORT

EXECUTIVE SUMMARY

The Store building of Meghna Knit Composite Ltd. is a 2-storied RCC building located at Masterbari, Sreepur, Gazipur.

The authority of Meghna Knit Composite Ltd. has engaged Composite Consultant for preparation of Design Report along with checking architectural and structural drawings of the building.

For Engineering Assessment one of the key inputs is the concrete strength. We have used the concrete compressive strength **3800 Psi** for Columns, **3500 psi** for Foundation, Slab & Beams. Stone Chips is considered as coarse aggregate. Rebar yield strength is considered as **72,500 Psi**.

Considering BNBC referred loads & load combinations, we have analysed the structure & found that all the Footings adequate in bearing capacity. And all the footings are adequate for punching shear capacity. All the RCC columns are adequate. All the grade beams are adequate. All the floor beams are adequate. All the floor slabs are adequate. The structure is adequate for serviceability requirements.

The building can continue its operation by maintaining the load layout plan.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)
DEPARTMENT OF CIVIL ENGINEERING
CONCRETE LABORATORY

BTTC No: 110116291 PB-17ICE; Dt: 28/7/2016

Sent by: Mr. Nur Islam
Ref. No: Letter, Dt: 26/7/2016
Project: Meghna Knit Composite Ltd Store Building, Sreepur Master Bari, Sreepur District
Sample: Cylinder (90 gram/min or correct) Test Method: Aggregate Type: Stone chip
Location: 1st floor roof slab (Grid 1 to Grid 6)
Test: Compressive Strength (ASTM C39)
Date of Test: 28/7/2016

TEST REPORT

Sl. No.	Date of Casting as per the Letter	Specimen Designation	Specimen Area	Specimen Length	Crushing Strength	Average Crushing Strength	Mode of Failure
1	27/09/16	---	12.42	56.375	4538	4380 psi	Combined *
2	08-Nov-16	---	12.55	51.700	4126	(31.1 MPa)	Combined *
3	---	---	12.67	55.916	4413	(307 kg/cm ²)	Combined *

Note: Samples were received in unsound condition. * Combined = Mortar and Aggregate failure.

Countersigned by: 
Dr. Abu Siddique
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed by: 
Mr. Shahinur Bose
Lecturer
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Report Note: Samples as supplied to us have been tested in our laboratory. BUET does not take any responsibility as to the representation character of the samples supplied to us, unless it is recommended that samples are split in a secure and master compression zone and approval of the concerned authority. In order to avoid misinterpretation of test results, it is recommended that all test reports are submitted to the concerned authority and only by the concerned engineer.

Description: In the provided design report concrete compression strength is considered 3800 psi for the column & 3500 foundations. The factory has provided only three-cylinder test reports for slab & and footings in this regard, which does not meet the frequency of testing of BNBC. The building engineer is required to revise the concrete strength in the design report by performing core test.

Observation-09: Non-structural elements not anchored or braced. (Store Building).



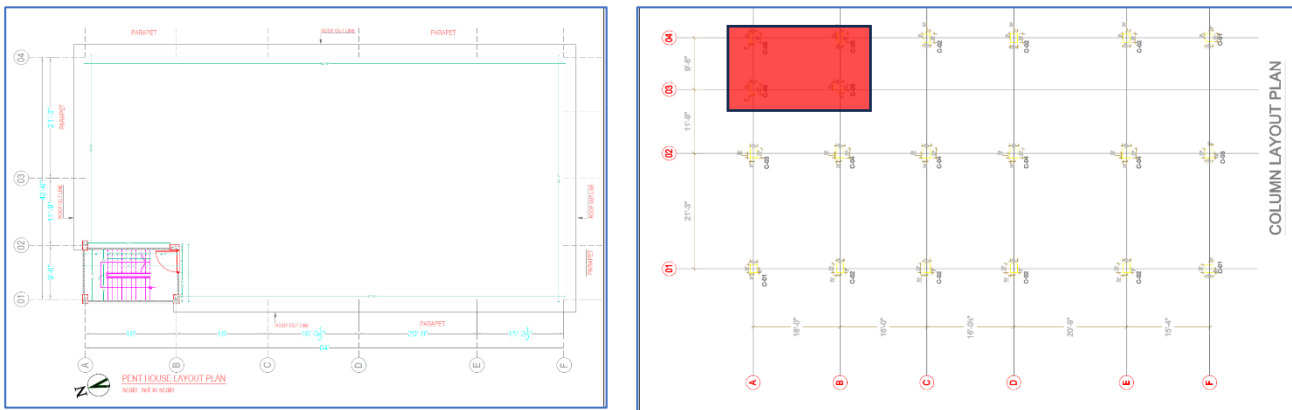
Description: Some racks on floors are not anchored or braced to resist lateral (earthquake) forces. The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.

Observation-10: Trolley impact risk on the column and improper column guards. (Store Building).



Description: Columns on the ground floor are prone to trolley impact. And few column guards are found inactive. The factory is required to provide proper barriers for all exposed columns on the ground floor to avoid possible trolley impact on the column.

Observation-11: Mismatches in as-built drawings. (Utility Building).



Description: Floor and column layout in structural drawings does not match with the as-built condition. Building engineer is required to survey the full structure and revise the as-built drawing as per the on-site condition.

Observation-12: Design report needs to be revised. (Utility Building).

2-STORIED UTILITY BUILDING, MEGHNA KMIT COMPOSITE LTD. DESIGN REPORT

EXECUTIVE SUMMARY

The Utility Building of Meghna Kmit Composite Ltd. is a 2-storied RCC building located at Masterbari, Sreepur, Gazipur.

The authority of Meghna Kmit Composite Ltd. has engaged Composite Consultant for preparation of Design Report along with checking architectural and structural drawings of the building.

For Engineering Assessment one of the key inputs is the concrete strength. We have used the concrete compressive strength 3,300 Psi for Columns, Foundation, Slab & Beams. Stone Chips is considered as coarse aggregate. Rebar yield strength is considered as 72,500 Psi.

Considering BNBC referred loads & load combinations, we have analysed the structure & found that all the footings are adequate in bearing capacity. And all the footings are adequate for punching shear capacity. All the RCC columns are adequate. All the grade beams are adequate. All the floor beams are adequate. All the floor slabs are adequate. The structure is adequate for serviceability requirements.

The building can continue its operation by maintaining the load layout plan.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)
DEPARTMENT OF CIVIL ENGINEERING
Concrete Laboratory

BUET No. : 1100-04054/15-16/CE; Dt: 14/10/2015
Start By : JSC Building Projects Ltd.
Ref. No. : 16/05/PL/BUET/16/15; Dt: 14/10/2015
Project : Sublime Green Tea Ltd. (or Gato Master Bar, Nour, Gazipur)
Sample : Cylinder (300mm dia x 600mm height) Not Monitored, Aggregate Type: Stone chips
Location : Utility Building, Farming
Test : Compressive Strength (ASTM C39)
Date of Test : 15/10/2015

S. No.	Date of Casting as per the Label	Specimen Designation	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength	Mode of Failure
1	14/10/2015	Business Deal	12.18	55,213	4,581	4580 psi	Compressed
2	15/10/2015	Business Deal	11.34	60,837	5,364	(34.2 MPa)	Compressed
3	Business Deal	Business Deal	12.18	55,305	4,518	(30.9 kg/cm ²)	Compressed

Notes: Samples were received in sealed condition. * Compressed = Mortar and Aggregate failure.

Countersigned by:
Dr. Abu Siddique
Professor
Department of Civil Engineering
BUET, Chittagong-4300, Bangladesh

Test Performed by:
Ehsanur Rahman Buchana
Lecturer
Department of Civil Engineering
BUET, Chittagong-4300, Bangladesh

Important Notice: Samples as required for us have been tested in our laboratory. BUET does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are kept for a period and tested under the supervision of the competent authority. In order to avoid fraudulent violation of test results, it is recommended that all test reports are submitted to the concerned person, approved by the Competent Authority.

Page 6 of 6

Description: In the provided design report concrete compression strength is considered 3300 psi for the column, and foundation. The factory has provided only three-cylinder test reports for slab & and footings in this regard, which does not meet the frequency of testing of BNBC. The building engineer is required to revise the concrete strength in the design report by performing a core test.

Observation 13: Mismatches in as-built drawings. (New LK Dryer Shed).



Description: Column schedule and all sectional details were not available in the provided as-built drawings. The building engineer is required to survey the full structure and produce a full set of as-built drawings.

Observation-14: Incomplete lateral stability system. (New LK Dryer Shed).



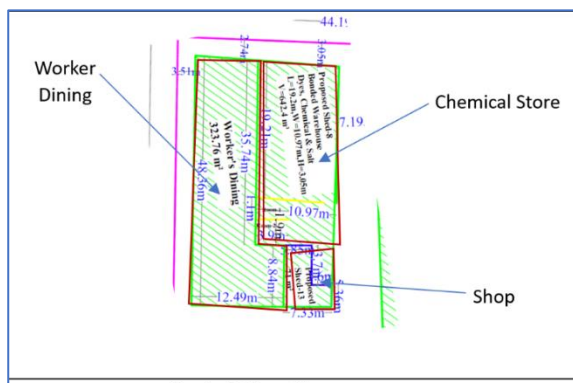
Description: Though compression struts were shown in the design report, no compression strut was found on-site along the long direction. Only cable bracings were found onsite. So, lateral stability in the long direction is incomplete. The building engineer is required to check the stability system of the existing structure.

Observation-15: Lack of drawings for ETP Lab Room. (ETP).



Description: As-built drawings were not available for the ETP Lab Room. The building engineer is required to survey the full structure and produce a full set of as-built drawings.

Observation-16: Lack of drawings details. (Worker Dining).



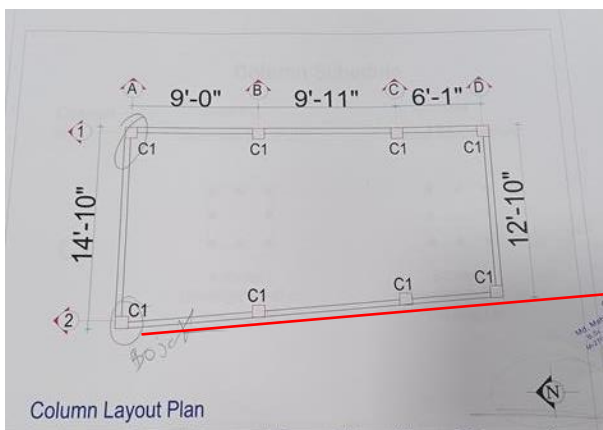
Description: As-built drawings were not available for the Worker Dining. The building engineer is required to survey the full structure and produce a full set of as-built drawings.

Observation 17: Lack of lateral stability and connection adequacy. (Worker Dining).



Description: Lateral load transfer media was not available along the long direction. Also, some connection was found to be apparently inadequate. The building engineer is required to check the lateral stability and connection adequacy of the shed.

Observation-18: Discrepancies in as-built drawings. (RMS Room).



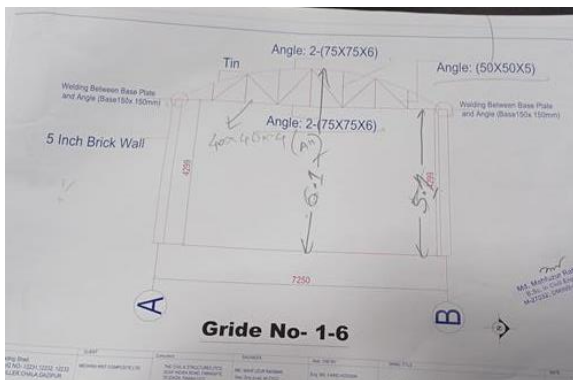
Description: Beam layouts did not match with as-built condition. Also, brick pier was found instead of RC column. Building engineer is required to update the as-built drawings as per on site condition and submit to RSC.

Observation-19: Cracks under beam soffit. (RMS Room).



Description: Crack found under beam soffit at North side of cooling tower. Building engineer is required to investigate the extent of crack and repair with a suitable method.

Observation-20: Discrepancies in as-built drawings. (Loading & Unloading Shed).



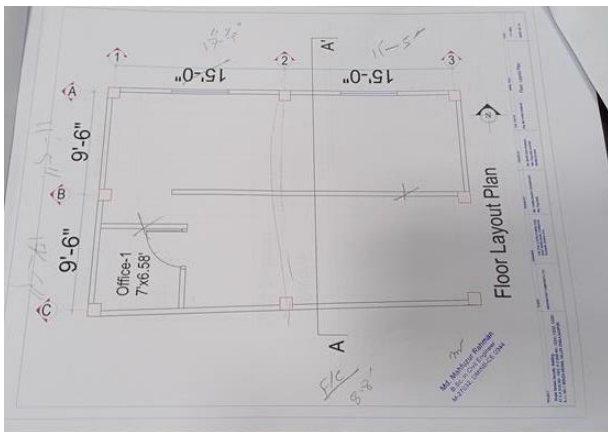
Description: Truss angle sizes were found 40x40x4 mm instead of 2-75x75x6 mm. Also, undocumented canopy was found at front. Building engineer is required to update the as-built drawings as per on site condition and submit to RSC.

Observation-21: lack of lateral stability. (Loading & Unloading Shed).



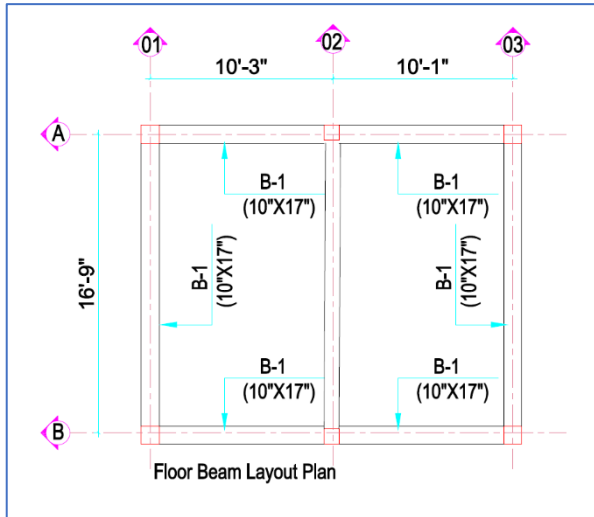
Description: Lateral load transfer media was not available along the long direction. The building engineer is required to check the lateral stability and connection adequacy of the shed.

Observation-22: Lack of as-built drawings. (Security Building).



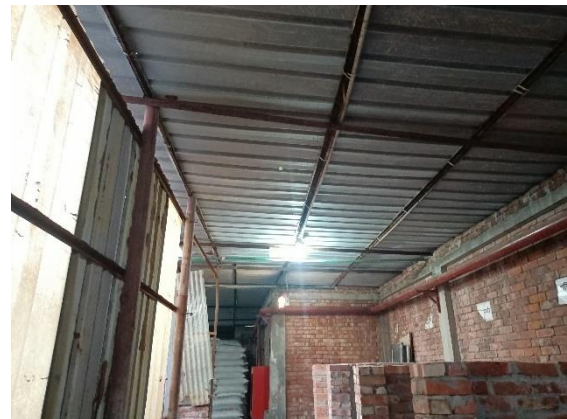
Description: As-built drawings were not found for the Security Building. A set of drawings were available on site which was totally different from as-built condition. Building engineer is required to survey the full structure and prepare full set of as-built drawings as per on site condition and submit to RSC.

Observation-23: Discrepancies in as-built drawings. (Maintenance Room).



Description: Number of rebar in columns and beam layout did not match fully with as-built condition. Building engineer is required to update the as-built drawings as per on site condition and submit to RSC.

Observation-24: Lack of as-built drawings. (Salt Soda Godown).



Description: As-built drawings were not found for the Salt Soda Godown. Building engineer is required to survey the full structure and prepare full set of as-built drawings as per on site condition and submit to RSC.

Observation-25: Apparently inadequate connection. (Salt Soda Godown).



Description: Lack of lateral stability system (strut and bracing), apparent inadequate members and non-engineered connection was observed. The building engineer is required to check the member, connection & stability system of the structure and suggest proper alternatives accordingly.

3. Action Plan

Observation	Action Plan	Timeline
Lack of lateral Stability. (Dyeing Building-2).	Building engineer is required to check the lateral stability of the structure as per of Engineering Assessment (EA).	within 6 weeks
Lack of lateral Stability. (Dyeing Building-2).	Carry out remediation work where required.	within 6 months
Lack of information in as-built drawings (Dyeing Building-2).	The building engineer is required to survey the structure and prepare a full set of as-built drawings.	within 6 weeks
Corrosion in steel member. (Dyeing Building-2).	Building engineer to remove the corrosion and apply suitable corrosion resistance coating.	within 6 weeks
Non-structural elements not anchored or braced. (Dyeing Building-2)	Building engineer is required to check the lateral stability of the structure as per of Engineering Assessment (EA).	within 6 weeks
Columns susceptible to trolley impact. (Dyeing Building-2).	The building engineer is required to provide barriers for all exposed columns on the ground floor to avoid possible trolley impact on the columns.	within 6 weeks
Bolts missing and loose nuts. (Dyeing Building-2).	Building engineer is required to install the missing bolts and tighten the loose nut where necessary.	within 6 weeks
Mismatches in as-built drawings. (Store Building).	Building engineer is required to update the as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks
The design report needs to be revised. (Store Building).	Building engineer to update the design documents based on verifying in-situ concrete strength in compliance with BNBC-2006.	within 6 weeks
The design report needs to be revised. (Store Building).	Building engineer is required to verify in-situ material strength by taking 100 mm diameter core from lower tier column (min. 4 nos) and revise the design report accordingly.	within 6 weeks
The design report needs to be revised. (Store Building).	Implement remediation work if required.	within 6 months
Non-structural elements not anchored or braced. (Store Building).	Building engineer is required to check the lateral stability of the structure.	within 6 weeks
Trolley impact risk on the column and improper column guards. (Store Building).	The building engineer is required to provide proper barriers for all exposed columns at the ground floor to avoid possible trolley impact on the column.	within 6 weeks

Mismatches in as-built drawings. (Utility Building).	Building engineer is required to survey the full structure and revise the as-built drawing as per on-site conditions.	within 6 weeks
Design report needs to be revised. (Utility Building).	Building engineer to update the design documents based on verifying in-situ concrete strength in compliance with BNBC-2006.	within 6 weeks
Design report needs to be revised. (Utility Building).	Building engineer is required to verify in-situ material strength by taking 100 mm diameter core from lower tier column (min. 4 nos) and revise the design report accordingly.	within 6 weeks
Design report needs to be revised. (Utility Building).	Implement remediation work if required.	within 6 months
Mismatches in as-built drawings. (New LK Dryer Shed).	The building engineer is required to survey the full structure and produce a full set of as-built drawings.	within 6 weeks
Incomplete lateral stability system. (New LK Dryer Shed).	The building engineer is required to check the stability system of the existing structure.	within 6 weeks
Incomplete lateral stability system. (New LK Dryer Shed).	Implement remediation work if required.	within 6 months
Lack of drawings for ETP Lab Room. (ETP).	The building engineer is required to survey the full structure and produce a full set of as-built drawings.	within 6 weeks
Lack of drawing details. (Worker Dining).	The building engineer is required to survey the full structure and produce a full set of as-built drawings.	within 6 weeks
Lack of lateral stability and connection adequacy. (Worker Dining).	The building engineer is required to check the lateral stability and connection adequacy of the shed.	within 6 weeks
Lack of lateral stability and connection adequacy. (Worker Dining).	Implement remediation work if required.	within 6 months
Discrepancies in as-built drawings. (RMS Room).	Building engineer is required to update the as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks
Cracks under beam soffit. (RMS Room).	Building engineer is required to investigate the extent of the crack and repair it with a suitable method.	within 6 weeks
Discrepancies in as-built drawings. (Loading & Unloading Shed).	Building engineer is required to update the as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks

lack of lateral stability. (Loading & Unloading Shed).	The building engineer is required to check the lateral stability and connection adequacy of the shed.	within 6 weeks
lack of lateral stability. (Loading & Unloading Shed).	Implement remediation work if required.	within 6 months
Lack of as-built drawings. (Security Building).	Building engineer is required to survey the full structure prepare a full set of as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks
Discrepancies in as-built drawings. (Maintenance Room).	Building engineer is required to update the as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks
Lack of as-built drawings. (Salt Soda Godown).	Building engineer is required to survey the full structure prepare a full set of as-built drawings as per on-site conditions and submit to RSC.	within 6 weeks
Apparently inadequate connection. (Salt Soda Godown).	The building engineer is required to check the members, connection & stability system of the structure and suggest proper alternatives accordingly.	within 6 weeks
Apparently inadequate connection. (Salt Soda Godown).	Implement remediation work if required.	within 6 months