

Essential Clothing Ltd. (Nagchala Campus)

Nagchala, Sakashor, Maddha Para, Kaliakoir, Gazipur

(24.07463,90.31691)

23 April 2026

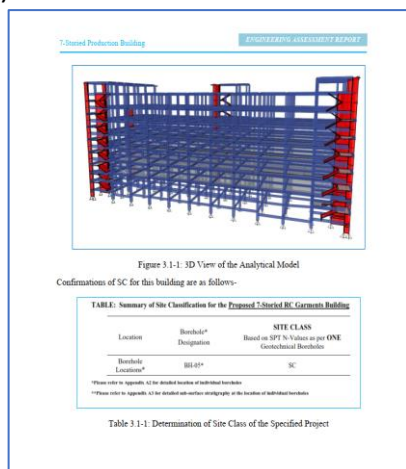


1. Building Information

- 1. PRODUCTION BUILDING:** 7-storied (G+6) RC building.
- 2. DINING BUILDING:** 4-storied (B+G+3) RC building with partial basement.
- 3. UTILITY BUILDING:** Two-storied (G+1) RC building.
- 4. GATE HOUSE & SECURITY BUILDING:** Single-storied RC building.
- 5. ESSENTIAL MART BUILDING:** Single-storied RC Building.
- 6. DAYCARE & MEDICAL BUILDING:** Single-storied RC Building.
- 7. SHOWER BUILDING:** Single-storied RC Building.
- 8. BICYCLE PARKING SHED:** Single-storied shed.
- 9. MOTORCYCLE PARKING SHED:** Single-storied shed.
- 10. CAR PARKING SHED WITH STP:** Single-storied shed with underground sewage treatment plant.
- 11. PERSONAL LOCKER SHED:** Single-storied Shed.
- 12. BIN CENTER:** Single-storied RC structure.
- 13. WASTAGE STORE:** Single-storied RC structure.
- 14. LPG Room:** Single-storied RC structure with an underground sludge sedimentation tank.

2. Observation

Observation-01: Assessment report needs to be reviewed against lateral forces. (Production Building)



Description: A design report has been prepared for the seven-storied Production Building. The prepared design report needs to be reviewed against lateral forces. The building engineer is required to submit the design report to the RSC for detailed review.

Observation-02: Inadequate number of concrete cylinder test reports (Production Building).

7-Storey Production Building

ENGINEERING ASSESSMENT REPORT

2 STRENGTH OF MATERIALS

2.1 CONSIDERATION OF MATERIALS STRENGTH

For the EA, concrete strength is a critical input. Stone chips are used in this structure. Design concrete strength of 4000psi is verified as per the test report. For the limitation of seismic zone yield strength of rebar was decided to consider 60ksi for the Main rebar and 72.5 ksi for the Transverse rebar the design of structural members of this building The steel member strength found according to plate test reports (test at BUET lab) 36 ksi steel. For summary-

- (i) Concrete Strength for isolated footing is 4,000 psi.
- (ii) Concrete Strength for columns and Shear wall is 4,500 psi.
- (iii) Concrete Strength for beams and Slab is 4,000 psi.
- (iv) Yield strength of rebar is 60,000 psi. (Main Rebar)
- (v) Young's modulus of concrete, (stone chips) $E_c = 57,000\sqrt{f'_c}$

TEST REPORT

Sl. No.	Date of Casting as per the letter	Specimen Designation/ Frog Mark	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength	Mode of Failure
1	18/11/2022	PB Columns	12.67	62,869	5,116	4970 psi	Combined *
2	(39 days test)	PB Columns	12.67	62,207	4,732	(34.3 MPa)	Combined *
3		PB Columns	12.66	59,383	4,974	(34.9 MPa)	Combined *

Note: Samples were received in unsealed condition. * Combined = Mortar and Aggregate Failure.

Figure 2.1-1: Sample Cylinder test data for column

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

Mobile: 01816557864, PABX: 55167228-57 Ext. 7226

http://buet.ac.bd/buet/home

CONCRETE LABORATORY

BRTC No. : 1102-63054 /21-22/CE; Dt: 31/5/2022

Sent by : সাইফুল ইসলাম খান, এসসেনসিয়াল ক্লোথিং লি., বাগচালা, সাকাশর, মহাপাড়া, কলিকাতার, গাজীপুর

Ref. No. : Your Letter, Dt: 30/5/2022

Project : এসসেনসিয়াল ক্লোথিং লি. এর নির্মাণ

Sample : Cylinder (Mix proportion as quoted; Not Mentioned, Aggregate Type: Stone chips)

Location : Production Building G.F. Column

Test : Compressive Strength [ASTM C39]

Date of Test : 2/6/2022

TEST REPORT

Sl. No.	Date of Casting as per the letter	Specimen Designation/ Frog Mark	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength	Mode of Failure
1	30/3/2022	Production Building G.F. Column	12.67	67,899	5,343		Combined *
2	(84 days test)	Production Building G.F. Column	12.42	77,359	6,229		Combined *
3		Production Building G.F. Column	12.42	101,845	8,200		Combined *

Note: Samples were received in unsealed condition. * Combined = Mortar and Aggregate Failure.

Countersigned by: Dr. A. B. M. Badruzzaman, Professor, Department of Civil Engineering, BUET, Dhaka-1000, Bangladesh

Test Performed by: Dr. Provat Kumar Saha, Assistant Professor, Department of Civil Engineering, BUET, Dhaka-1000, Bangladesh

06/06/2022

Important Notes: Samples as supplied to us have been tested in our laboratory. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are sent in a secure and sealed cover/pack/container under signature of the competent authority. In order to avoid fraudulent fabrication of test results, it is recommended that all test reports are collected by duly authorized person, and not by the Contractor/Supplier.

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BUETCE 0339 LB 7

Description: At the time of inspection, some concrete cylinder test reports were available, where only one test report was available from the ground floor column without having average value. Which does not meet the requirement of the frequency of the testing as per BNBC. The building engineer is required to take a 4-100 mm diameter concrete core from the ground floor column to verify the in-situ concrete strength and revise the design documents accordingly. Otherwise, provide adequate cylinder test report as per BNBC requirement (Part-VI; Section 5.12).

Observation-03: Possible falling hazard at loading unloading platform. (Production Building)



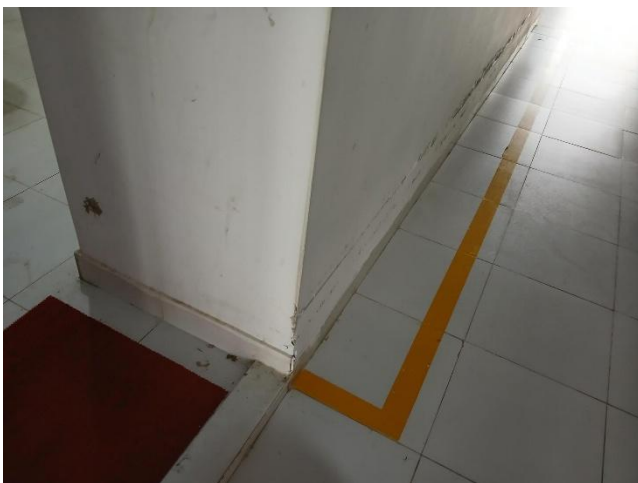
Description: No barrier was found at elevated platform of loading unloading zone. Building engineer is required to provide barrier/railing to the elevated platform to mitigate the falling hazard.

Observation-04: Lack of anchorage of nonstructural elements. (Production Building)



Description: Storage racks were found unanchored and unbraced. Building engineers are required to anchor/brace all nonstructural elements including storage racks within the factory to resist possible falling hazard.

Observation-05: Trolley impact on columns. (Production Building)



Description: Sign of trolley impacts were found on column surface in several locations. The building engineer is required to provide column guard to protect from impact.

Observation-06: Dampness on walls. (Production Building)



Description: Dampness was observed in brick walls near toilet zone. Building engineer is required to repair the damp area with suitable method.

Observation-07: The prepared assessment report needs to be reviewed against lateral loading (Dining Building)

**Engineering Assessment Report of
4-Storeyed Dining Building of
Essential Clothing Limited**

Location: Nagchala, Sakashor, Maddha Para, Kaliakoir, Gazipur
Submission Date: December, 2025



Submitted by-



STHAPONA CONSULTANTS

4-STORIED DINING BUILDING

ENGINEERING ASSESSMENT REPORT

2 STRENGTH OF MATERIALS

2.1 CONSIDERATION OF MATERIALS STRENGTH

To design a structure one of the key inputs is concrete strength. Variation in concrete strength results in the size of structural members. This also results in variation in the serviceability of the building as the stiffness of structural members depends on the strength of the concrete. The considered compressive strength of concrete is 4500 psi for this building Column. For the limitation of seismic zone yield strength of rebar was decided to consider 60 ksi for main reinforcement and 60 ksi for transverse reinforcement for the design of structural members of this building. For summary-

- (i) The concrete Strength for MAT is 4000 psi.
- (ii) The concrete Strength for columns is 4500 psi.
- (iii) The concrete Strength for grade beams is 4000 psi.
- (iv) The concrete Strength for floor beams is 4000 psi.

All the above material strength has been incorporated into the FEM of the building.

3 ANALYSIS FOR STRUCTURAL ADEQUACY

3.1 STRUCTURAL SYSTEM

The building is a three-storied RCC structure. According to BNBC-2020, the building is situated in seismic zone III ($Z=0.15$). The site class of the building is SC. The seismic design category of the building is SDC-D. The structural detailing of the RCC frames of this building has to maintain the detailing criteria of SMRF because the structural system of this building is classified as Special Moment Resisting Frame (SMRF). The General 3D view of the building has been presented in Figure 3.1-1.

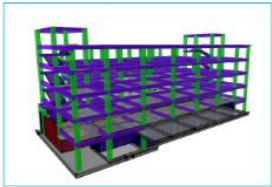
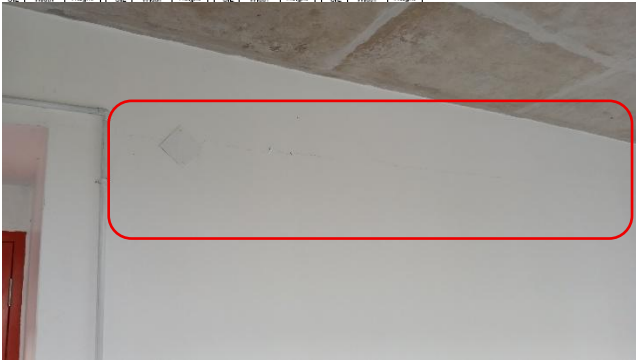
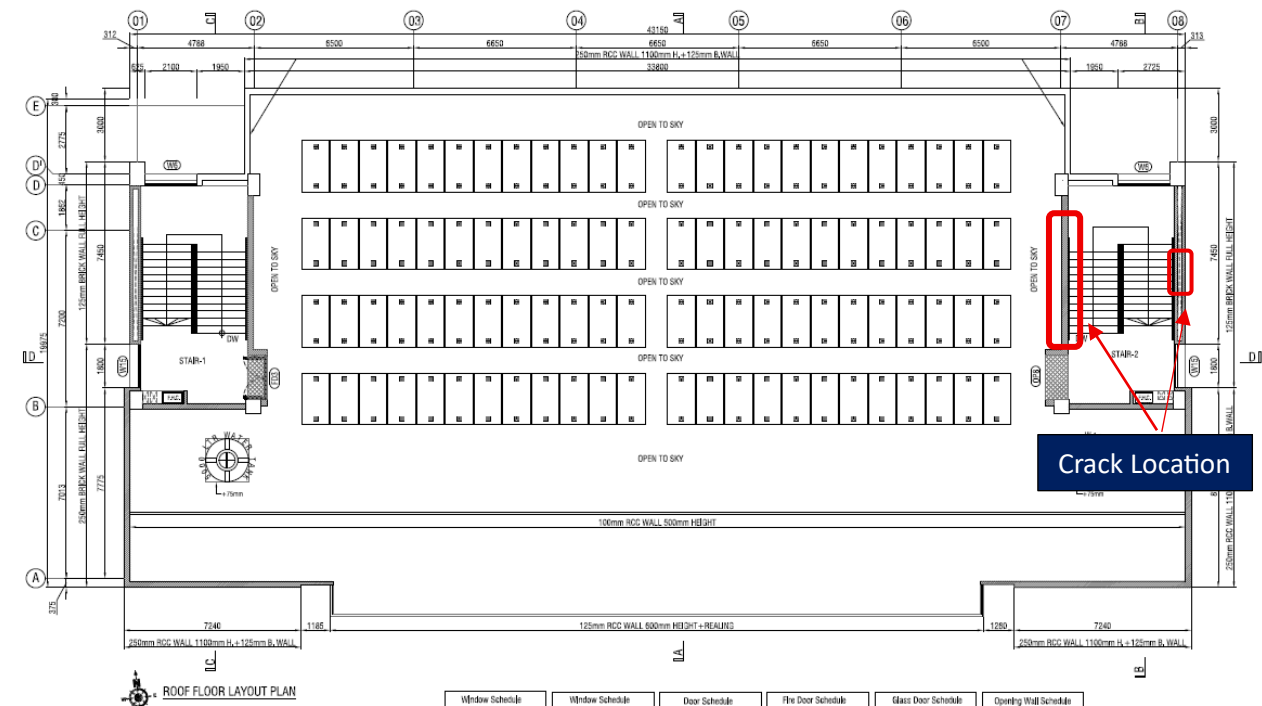


Figure 3.1-1: 3D View of the Analytical Model

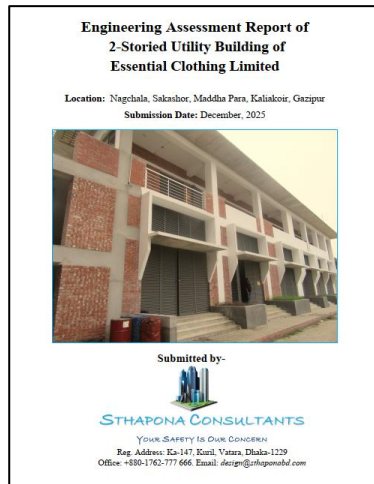
Description: The building engineer has prepared the design report for the dining building. however, the factory is required to submit the complete design documents to RSC for detailed review.

Observation-08: Crack on beam and brick wall joint (Dining Building)



Description: Cracks were observed on the beam and the brick wall joint and brick wall at stair roof. The building engineer is required to investigate the reason for the crack and repair it with a suitable method.

Observation-09: Lack of information in the Engineering Assessment (EA) (Utility Building).



Description: During the inspection, the Engineering Assessment (EA) report was found on-site as per BNBC 2020, and the following observations were noted:

- The structural system is reported as a Dual System (Intermediate moment resisting frame (IMRF) with special concrete shear wall). However, no joint shear (beam-column joint) checks have been provided. Calculation provided for confinement, but not supported by the picture or scan report.
- P-delta check is not provided.
- Factor of safety (FoS) check for the foundation was not provided.

The building engineer is required to address all the inconsistencies in the revised EA report as per 1.9.1 BNBC and submit to RSC.

Observation-10: Inadequate number of concrete cylinder test reports (Utility Building).

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)							
DEPARTMENT OF CIVIL ENGINEERING							
CONCRETE LABORATORY							
BRTC No. : 1103-74903CE (25-26) Dt: 28/02/2026							
Sent by : Mr. Md. Rezaul Karim, Assistant Engineer, RSC							
Ref. No. : Letter: Dt: 24/2/2026							
Project : Essential Clothing Limited							
Sample : Concrete Cylinder (Aggregate type: Stone chips, Mix proportion (as quoted): Not mentioned)							
Location : Utility Building 1st Floor Column							
Test : Compressive Strength Test of Concrete Cylinder (ASTM C39/C39M - 21)							
Date of Test : 1/3/2026							
TEST REPORT							
SL. No.	Date of Casting as per the letter	Specimen Designation/ Prop Mark	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength (psi)	Type of Fracture* (Mode of Failure)
1	9/4/2022	Utility Building 1st Floor Column	12.42	102,687	8,269	8648 psi	Type 1 (Combined **)
2	17/4/22 days test	Utility Building 1st Floor Column	12.54	110,553	8,816	(58.8 MPa)	Type 3 (Combined **)
3		Utility Building 1st Floor Column	12.67	111,001	8,832	(607 kg/cm ²)	Type 1 (Combined **)
Note: Samples were received in unsound condition. ** Combined = Mortar and Aggregate Failure.							
*Type of Fracture (as per ASTM C39/C39M - 21):							
Type 1: Ideal formed cone; Type 4: Diagonal cracks; Type 2: Ideal formed cone with vertical crack; Type 5: Side fracture at top or bottom; Type 3: Columnar vertical cracks; Type 6: Side fracture at top or bottom but end of cylinder is pushed out.							
Countersigned by: Prof. Dr. Bashir Ahmad, Test in Charge, Department of Civil Engineering, BUET, Dhaka-1000, Bangladesh.							
Test Performed by: Mr. Saikat Saha, Assistant Professor, Department of Civil Engineering, BUET, Dhaka-1000, Bangladesh.							

Description: At the time of inspection, some concrete cylinder test reports were available, but no test report was available from the ground floor column. The building engineer is required to take a 4-100 mm diameter concrete core from the ground floor column to verify the in-situ concrete strength.

Observation-11: Falling hazard at roof level (Utility Building).



Description: No parapet/railing is provided at the roof level. Provide edge protection to avoid falling hazards.

Observation-12: Cracks on façade walls. (Shower Building)



Description: Cracks were observed in façade walls. The factory has repaired some areas but still cracks were found in few areas. Building engineer is required to repair the cracks with suitable methods.

Observation-13: Lack of information in the Engineering Assessment (EA) (Car Parking Shed with STP).

**Design Report on
Car Parking Shed with STP of
Essential Clothing Limited**

Location: Nagchala, Sakashor, Maddha Para, Kaliakoir, Gazipur

Submission Date: December, 2025



Submitted by:



STHAPONA CONSULTANTS

YOUR SAFETY IS OUR CONCERN

Reg. Address: Ka-147, Kuril, Vatara, Dhaka-1229

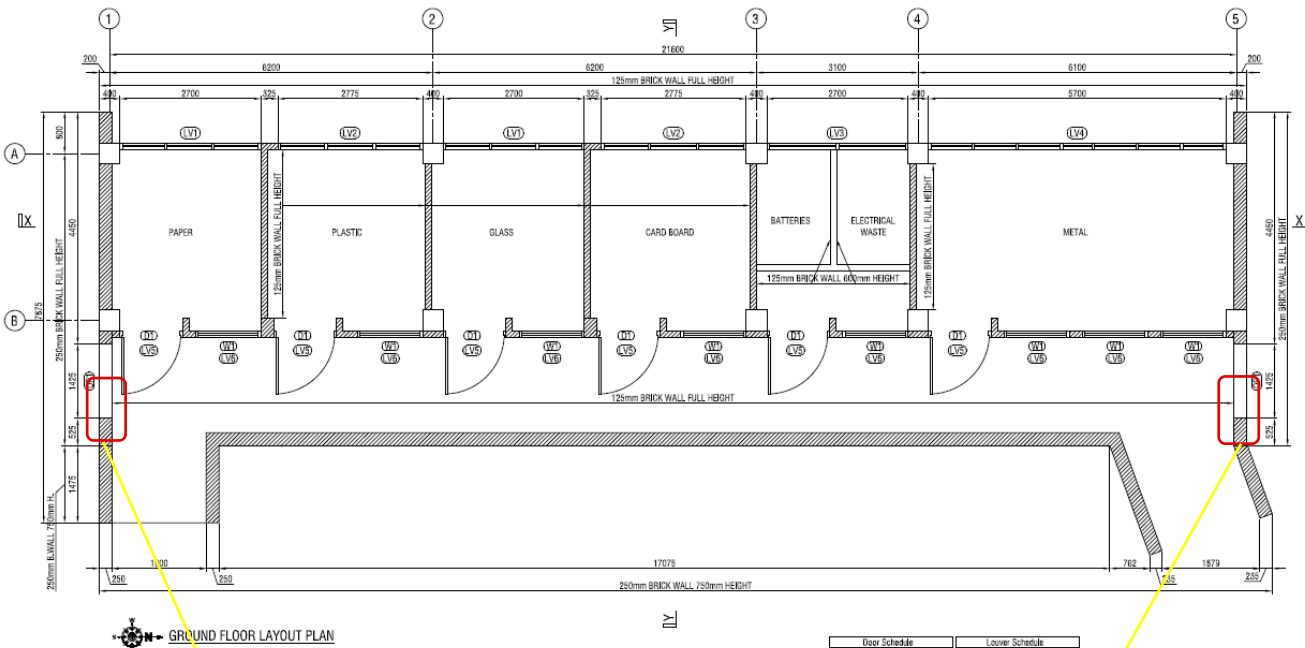
Office: +880-1762-777 666. Email: design@sthaponabd.com

Description: During the inspection, the Engineering Assessment (EA) report was found on-site as per BNBC 2020, and the following observations were noted:

- Factor of safety (FoS) check for the single footing was not provided.

The building engineer is required to address all the inconsistencies in the revised EA report as per 1.9.1 BNBC and submit to RSC.

Observation-14: Crack on brick wall (Bin Center)



Description: Cracks were observed on the brick wall. The building engineer is required to investigate the reason for the crack and repair it with a suitable method.



3. Action Plan

Item No	Observation	Action Plan	Timeline
1.	Assessment report needs to be reviewed against lateral forces. (Production Building)	The building engineer is required to submit the design report to the RSC for detailed review.	within 6 weeks
2.		Carry out remedial work if required.	within 6 months
3.		Continuing to implement the load plan	within 6 months
4.	Inadequate number of concrete cylinder test reports (Production Building).	The building engineer is required to take a 4-100 mm diameter concrete core from the ground floor column to verify the in-situ concrete strength.	within 6 weeks
5.	Possible falling hazard at the loading and unloading platform. (Production Building)	The building engineer is required to provide a suitable barrier/railing to the elevated platform to mitigate the falling hazard.	within 6 weeks
6.	Lack of anchorage of nonstructural elements. (Production Building)	The building engineer is required to anchor/brace all nonstructural elements, including storage racks within the factory to resist possible falling hazard.	within 6 weeks
7.	Trolley impact on columns. (Production Building)	The building engineer is required to provide column guard to protect from impact.	within 6 weeks
8.	Dampness on walls. (Production Building)	Building engineer is required to repair the damp area with suitable method.	within 6 weeks
9.	Prepared design report needs to be reviewed against lateral loading (Dining Building)	The factory is required to submit the complete design documents to RSC for detailed review.	within 6 weeks
10.		Carry out suggested remedial works if required.	within 6 months
11.	Crack on beam and brick wall joint (Dining Building)	The building engineer is required to investigate the reason for the crack and repair it with a suitable method.	within 6 weeks
12.	Lack of information in the Engineering Assessment (EA) (Utility Building).	The building engineer is required to address all the inconsistencies in the revised EA report as per 1.9.1 BNBC and submit the revised EA to RSC.	within 6 weeks
13.		Carry out suggested remedial works if required.	within 6 months
14.	Inadequate number of concrete cylinder test reports (Utility Building).	The building engineer is required to take a 4-100 mm diameter concrete core from the ground floor column to verify the in-situ concrete strength.	within 6 weeks
15.	Falling hazard at roof level (Utility Building).	Provide edge protection to avoid falling hazards.	within 6 weeks

16.	Cracks on façade walls. (Shower Building)	The building engineer is required to repair the cracks with suitable methods.	within 6 weeks
17.	Lack of information in the Engineering Assessment (EA) (Car Parking Shed with STP).	The building engineer is required to address all the inconsistencies in the revised EA report as per 1.9.1 BNBC and submit the revised EA to RSC.	within 6 weeks
18.		Carry out suggested remedial works if required.	within 6 months
19.	Crack on the brick wall (Bin Center)	The building engineer is required to investigate the reason for the crack and repair it with a suitable method.	within 6 weeks