

Cutting Edge Industries Ltd. (Extension)

1612, South Salna, Salna Bazar, Gazipur Sadar, Gazipur -1702

(24.032945, 90.390547)

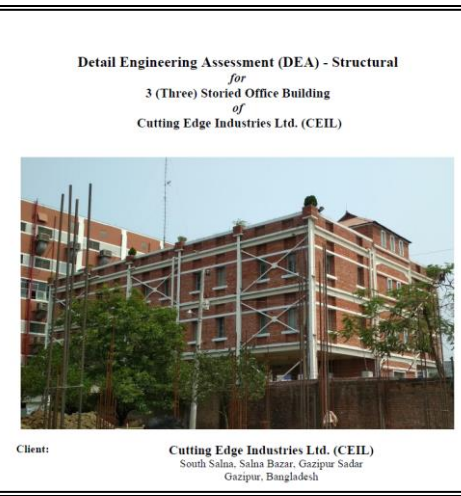
19 September 2024



1. Building Information

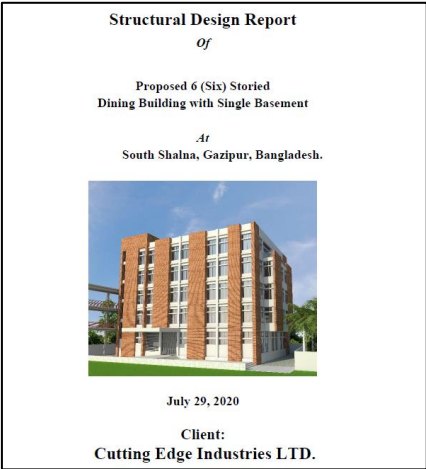
1. Three storied Office Building
2. Five storied Dining Building with one basement.
3. Three storied Link bridge.

2. Observation

Observation 1: Prepared DEA needs to be revised (Building-03 (Office Building)).	
 Detail Engineering Assessment (DEA) - Structural for 3 (Three) Storied Office Building of Cutting Edge Industries Ltd. (CEIL) Client: Cutting Edge Industries Ltd. (CEIL) South Salmia, Salmia Bazar, Gazipur Sadar Gazipur, Bangladesh	5.4.4 Load Combinations National Tripartite Plan of Action on Fire and Structural Safety and Structural Integrity specifies the following combinations for Ready-Made Garments (RMG) factory building. For RCC Building: RMG-1: 1.2D + 1.6L RMG-2: 1.05D + 1.25L + 1.0E (or W) When the two basic load cases are combined accordingly considering the direction of lateral www.ddmbd.org 31
Description: A DEA report was available onsite where NTPA Load combination has been considered. Construction of this structure was completed in Nov 2014 and permit layout drawing was dated 26 August 2013. The building engineer is required to update the DEA report considering load combination as per BNBC 2006.	

Observation 2: Lack of structural connection (Building-03 (Office Building)).	
 <u>Steel truss roofing system</u>	 <u>Truss angle rested on masonry wall</u>
Description: During inspection no structural connection was observed between steel roof truss of staircase and supporting masonry wall. Factory engineers are required to check the connection adequacy for uplift forces as part of DEA.	

Observation 3: Possibility of vehicle impact on columns of Building-03 (Office Building) & Building-05 (Link Bridge)	
	
<u>Exposed steel columns (Building-03)</u>	<u>Exposed RC columns (Building-05)</u>
Description: Steel columns at ground floor are prone to possible vehicle impact. Factory is required to provide barriers for all exposed column at ground floor to prevent from possible vehicle impact.	

Observation 4: Prepared design report needs to be reviewed against lateral loading (Building-04 (Dining Building)).	
	
Description: A Design report was available onsite where design material strength was considered. However, the design report needs to be reviewed against lateral loading. The building engineer is required to submit the design documents to RSC for review.	

Observation 5: Missing information in a structural drawing of Building-04 (Dining Building).



Description: In the structural drawing, no structural details of rooftop staircase truss roofing were available. The building engineer is required to survey the structure and update the as-built drawing as per BNBC 2006.

Observation 6: Column susceptible to trolley impact load on Building-04 (Dining Building).



Description: Columns are susceptible to impact loading from trolley. Signs of damage in columns were observed. Factory is required to provide guard for all exposed column and wall at ground floor to prevent from possible trolley impact.

Observation 7: Lack of material test report for Building-05 (Link Bridge).

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

BRTC No: 1102-04941/19-20/CE; Dt: 12/1/2020
 Sent by: Engr. Md. Nurul Alam, Deputy Manager (CM), Cutting Edge Industries Ltd (Washing Plant)
 Ref. No: MEMCEL/Diring Building/Materials Test/Cylinder/50; Dt: 12/1/2020
 Project: Construction of 6 stored Diring Building with single basement of Cutting Edge Industries Ltd (Diring Building), MBM Group, 1612 South Saha, Gacpur Sagar, Gacpur-1702
 Sample: Cylinder (No representative tested); Not Mentioned; Aggregate Type: Stone chips
 Location: Existing Casting, P2/3 stored Link Bridge
 Test: Compressive Strength (ASTM C39)
 Date of Test: 15/1/2020

Sl. No.	Date of Casting as per the letter	Specimen Designation	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength	Mode of Failure
1	5/1/2019		12.16	65,907	5,387	4428 psi	Combined *
2	per day test		12.67	64,870	5,088	44.3 MPa	Combined *
3			12.42	70,434	5,630	39 MPa	Combined *

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

Countersigned by: 
 Dr. Md. Abdul Jalil
 Professor
 Department of Civil Engineering
 BUET, Dhaka-1000, Bangladesh

Test Performed by: 
 Bayezid Baten
 Lecturer
 Department of Civil Engineering
 BUET, Dhaka-1000, Bangladesh

Important Note: 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/containers 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.

2.4 Material strength to be used:

Reinforced Concrete:

	Concrete Strength, f'_c	Rebar Strength, f_y	Mix Ratio
Foundation	3500 psi	72 000 psi	1:1.25:2.5
Beams	3500 psi	72 000 psi	1:1.5:3
Column	3500 psi	72 000 psi	1:1.25:2.5
Slab	3500 psi	72 000 psi	1:1.5:3

Description: During the inspection, concrete cylinder test report-5 set (2 set from foundation, 1 set from column, 1 set from slab and 1 set from shear wall) were available. In the design report, f'_c was considered 24.14 MPa and f_y was considered 495 MPa without any justification. The building engineer is required to verify the frequency of testing requirements as per BNBC (Part VI, Chapter 5.12) and take the necessary concrete core if required. Update the analysis & design report based on in-situ material strength.

Action Plan

Item No.	Observation	Action Plan	Timeline
1.	Prepared DEA needs to be revised (Building-03 (Office Building)).	The building engineer is required to update the Detail Engineering Assessment (DEA) as per BNBC 2006.	within 6 weeks
2.		Implement remediation work if required.	within 6 months
3.	Lack of structural connection (Building-03 (Office Building)).	Factory engineers are required to check the connection adequacy for uplift forces as part of DEA.	within 6 weeks
4.		Implement remediation work if required.	within 6 months
5.	The prepared design report needed to be reviewed against lateral loading (Building-04 (Dining Building)).	The building engineer is required to update the design report as per BNBC 2006.	within 6 weeks
6.		Implement remediation work if required.	within 6 months
7.	Missing information in as-built structural drawing (Building-04 (Dining Building)).	The building engineer is required to survey the structure and update the as-built drawing.	within 6 weeks
8.	Possibility of vehicle impact on columns of Building-04 (Dining Building).	Provide barriers for all exposed column at ground floor to avoid possible vehicle impact.	within 6 months
9.	Column susceptible to trolley impact load (Building-04 (Dining Building)).	Factory is required to provide guard for all exposed columns and wall at ground floor to prevent from possible trolley impact.	within 6 months
10.	Lack of material test report. (Building-05 (Link Bridge)).	Verify in-situ concrete strength either by 100 mm diameter cores or existing credible cylinder test reports for the extension part.	within 6 weeks
11.		The building engineer is required to revise the design report based on the in-situ material strength of all phases, the actual framing system, and proper design parameters. Submit the revised design documents to RSC for review.	within 6 weeks
12.		Carry out the suggested remedial if works.	within 6 months
13.	Possibility of vehicle impact on columns in Building-05 (Link Bridge).	Factory is required to provide barriers for all exposed column at ground floor to avoid possible vehicle impact.	within 6 months