M.I.T Apparel
(Extension new 5 storied building)

Pathantuly, Godnail, Siddirganj, Narayanganj.

(23.640598, 90.512066)

9th June 2021

RSC RMG SUSTAINABILITY COUNCIL

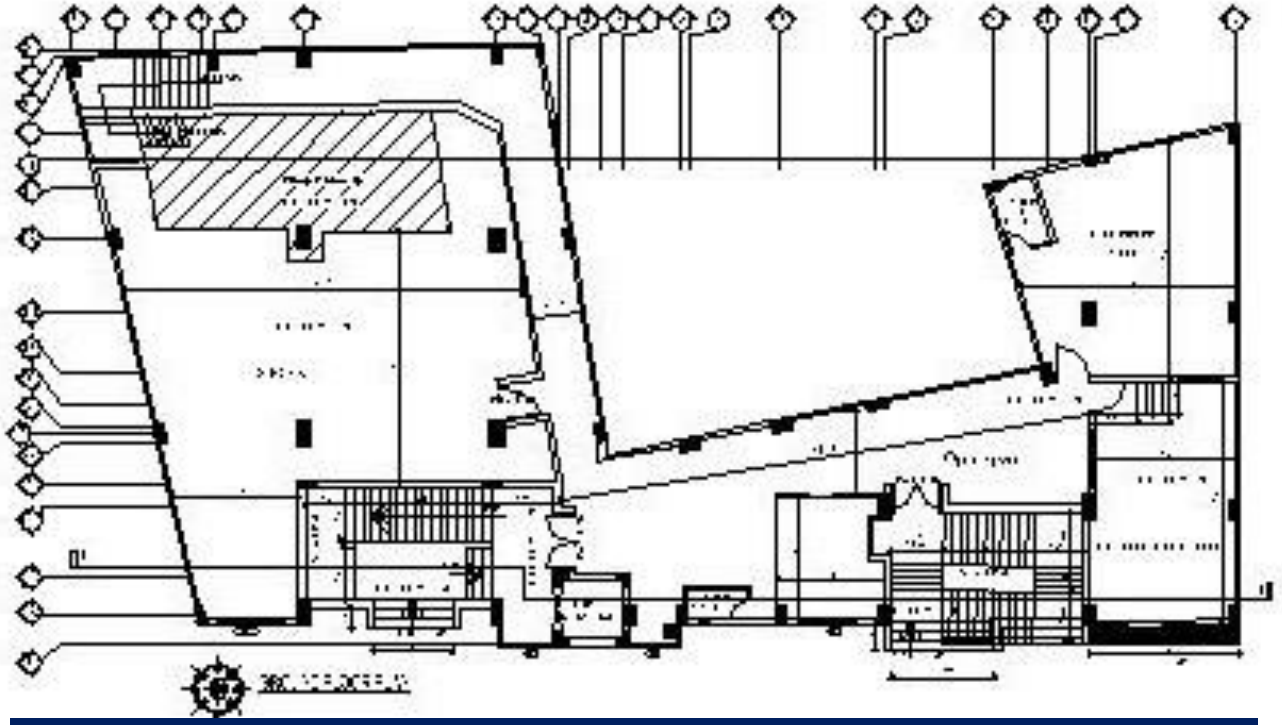
Building information:

1. **Extension new 5 storied building** (five storied (G+4) reinforced concrete structure)

Observations

Tortional effect on the building

Observations



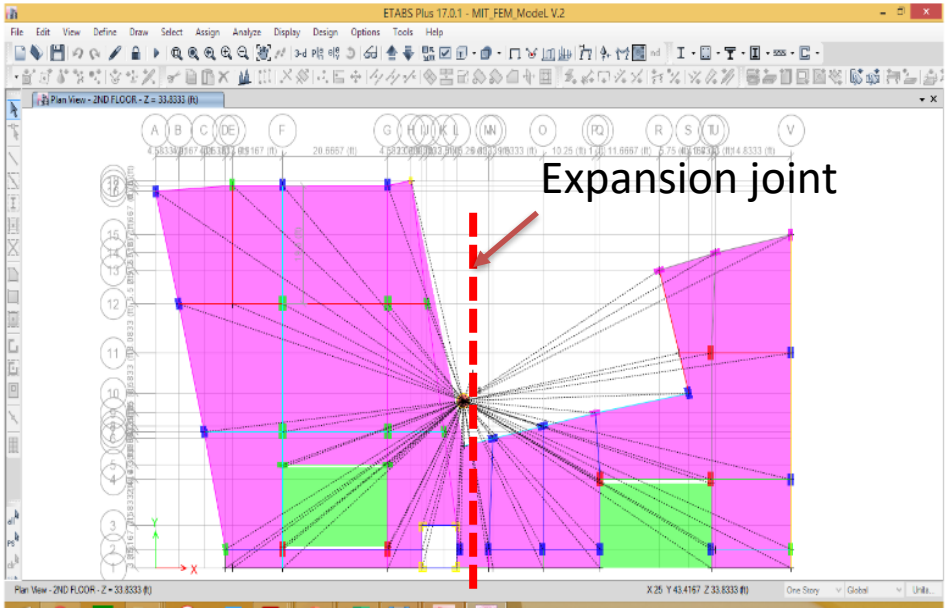
Floor layout plan

The building is geometrically irregular shaped. Due to lateral forces the building might affected for torsional irregularity. Building engineer is required to check the torsional effect of the building due to lateral forces. Also design report is required to prepare in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.

Observations

Expansion joint consideration in analysis

Observations



ETABS output

Expansion Joint (1st & 2nd floor only)

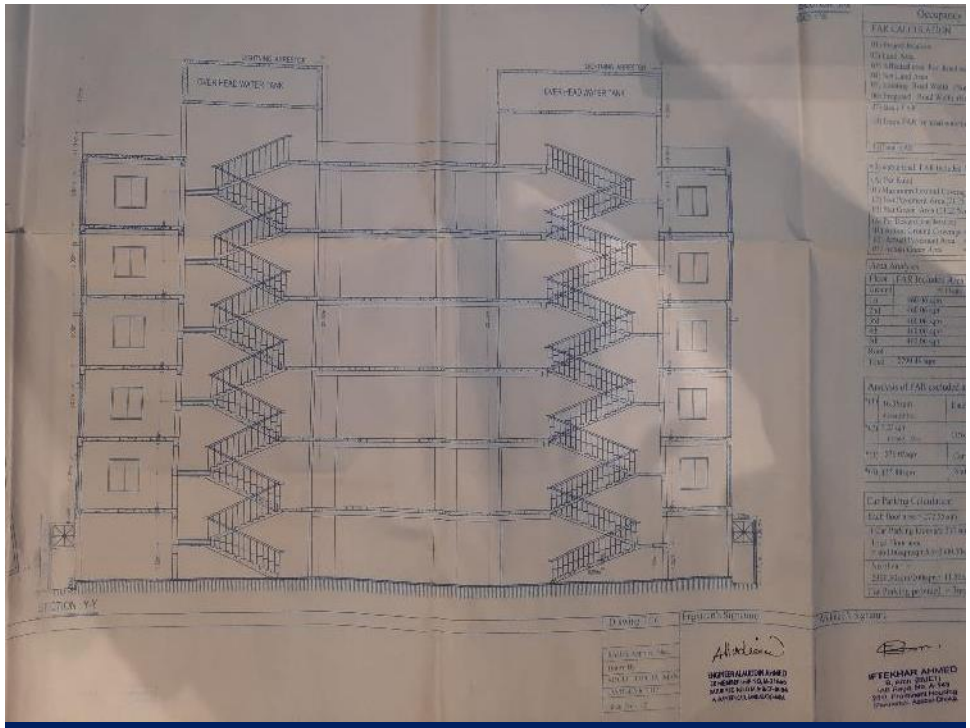
Expansion Joint exist on 1st & 2nd floor but in software-based analysis expansion joint is not considered. Single diaphragm is assigned for distribution of lateral forces.

Observations

Possibility of future extension

Observations

Factory has a plane to extend the building vertically up to 6-Storied. Column capacity has been checked for existing condition also design report prepared for the existing condition.



6-Storied permit drawing from the local authority

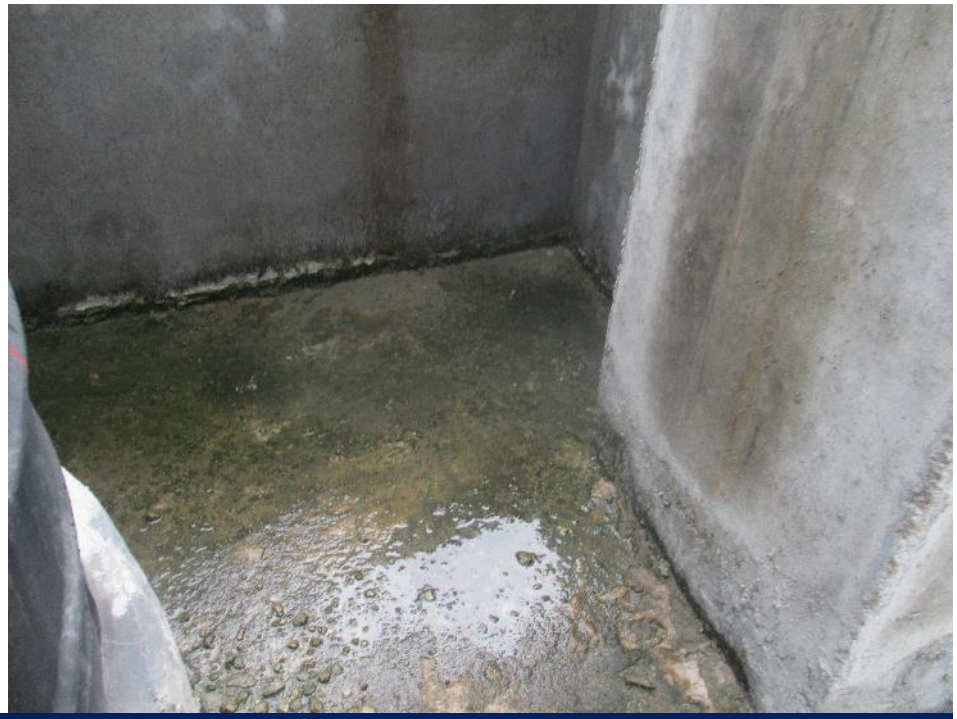
Exposed rebar indicated further construction

Any extensions or modifications of the existing building, the factory is required to carryout Detail Engineering Assessment by a structural Engineer and in full compliance with the BNBC provision.

Observations

Improper roof drainage system

Observations

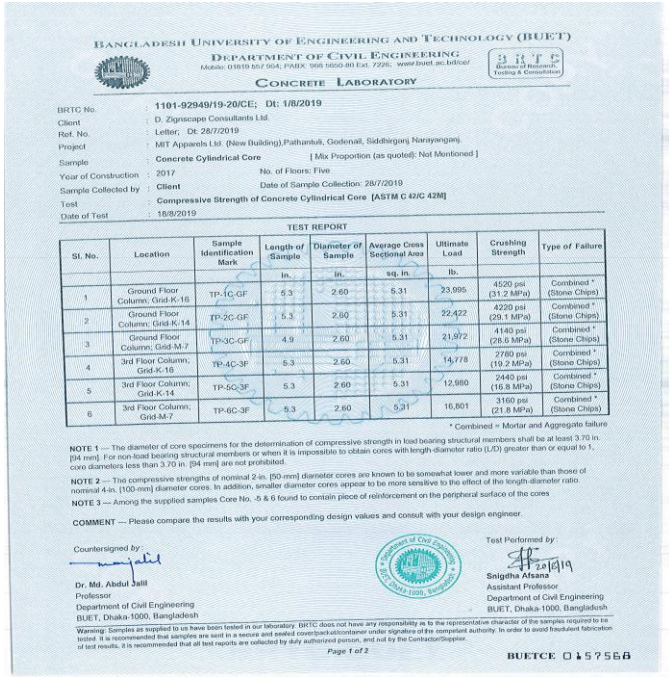


Standing water and algae observed at roof. Building engineer is required to improve the roof drainage system.

Observations

Tests carried out

Stone Chips



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

BRTC No. : 1101-92949/19-20/CE; Dt: 1/8/2019
Client : D. Zigniscape Consultants Ltd.
Ref. No. : Letter; Dt: 28/7/2019
Project : MIT Apparels Ltd. (New Building),Pathantuli, Godenail, Siddhirganj Narayanganj.
Sample : Concrete Cylindrical Core [Mix Proportion (as quoted): Not Mentioned]
Year of Construction : 2017 No. of Floors: Five
Sample Collected by : Client Date of Sample Collection: 28/7/2019
Test : Compressive Strength of Concrete Cylindrical Core [ASTM C 42/C 42M]
Date of Test : 18/8/2019

TEST REPORT

Sl. No.	Location	Sample Identification Mark	Length of Sample	Diameter of Sample	Average Cross Sectional Area	Ultimate Load	Crushing Strength	Type of Failure
			in.	in.	sq. in.	lb.		
1	Ground Floor Column; Grid-K-16	TP-1C-GF	5.3	2.60	5.31	23,995	4520 psi (31.2 MPa)	Combined * (Stone Chips)
2	Ground Floor Column; Grid-K-14	TP-2C-GF	5.3	2.60	5.31	22,422	4220 psi (29.1 MPa)	Combined * (Stone Chips)
3	Ground Floor Column; Grid-M-7	TP-3C-GF	4.9	2.60	5.31	21,972	4140 psi (28.6 MPa)	Combined * (Stone Chips)
4	3rd Floor Column; Grid-K-16	TP-4C-3F	5.3	2.60	5.31	14,778	2780 psi (19.2 MPa)	Combined * (Stone Chips)
5	3rd Floor Column; Grid-K-14	TP-5C-3F	5.3	2.60	5.31	12,980	2440 psi (16.8 MPa)	Combined * (Stone Chips)
6	3rd Floor Column; Grid-M-7	TP-6C-3F	5.3	2.60	5.31	16,801	3160 psi (21.8 MPa)	Combined * (Stone Chips)

* Combined = Mortar and Aggregate failure

NOTE 1 — The diameter of core specimens for the determination of compressive strength in load bearing structural members shall be at least 3.70 in. [94 mm]. For non-load bearing structural members or when it is impossible to obtain cores with length-diameter ratio (L/D) greater than or equal to 1, core diameters less than 3.70 in. [94 mm] are not prohibited.

NOTE 2 — The compressive strengths of nominal 2-in. [50-mm] diameter cores are known to be somewhat lower and more variable than those of nominal 4-in. [100-mm] diameter cores. In addition, smaller diameter cores appear to be more sensitive to the effect of the length-diameter ratio.

NOTE 3 — Among the supplied samples Core No. -5 & 6 found to contain piece of reinforcement on the peripheral surface of the cores

COMMENT — Please compare the results with your corresponding design values and consult with your design engineer.

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

Test Performed by :
20/8/19
Snigdha Afsana
Assistant Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Warning: 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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Core test report

Ferro Scanning

Tests Carried Out

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Problems Observed

01: Tortional irregularity of the building.

02: Expansion joint consideration in analysis.

03: Possibility of future extension.

04: Improper roof drainage system.

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Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Torsional irregularity of the building.	Building engineer is required to check the torsional effect of the building due to lateral forces.	6-weeks
02	Torsional irregularity of the building.	Building Engineer to prepare design report as per BNBC (part 6; Article 1.9.1) by reviewing design, loads, capacity of structural members & serviceability issues.	6-weeks
03	Torsional irregularity of the building.	Carry out any remedial works if required.	6-months
04	Expansion joint consideration in analysis.	Expansion joint is required to consider in software-based analysis model and revise the design report accordingly.	6-weeks
05	Possibility of future extension.	Any extensions or modifications of the existing building, the factory is required to carryout Detail Engineering Assessment by a structural Engineer and in full compliance with the BNBC provision.	6-months
06	Possibility of future extension.	Carry out remedial works from outcome of Detail Engineering Assessment where necessary before further construction.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
07	Improper roof drainage system.	Building engineer is required to improve the roof drainage system.	6-weeks