



Maxcom International (BD) Ltd. (New Building)

37 Hemayatpur, Savar, Dhaka-1340
(23.793695, 90.266931)

25th August 2019



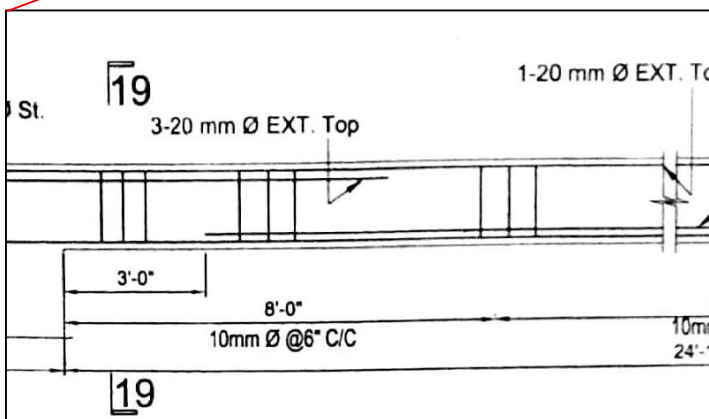
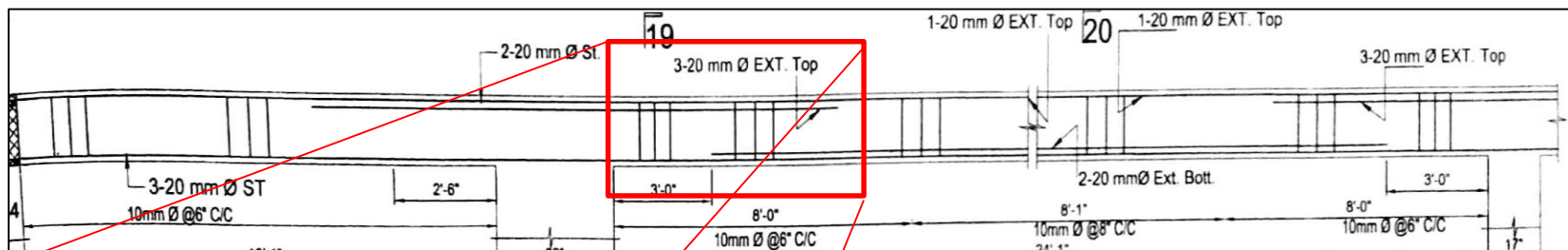


Observations



Prepared DEA report required to be reviewed

Observations : New Building



Reinforcement details

3.3 Seismic Load

Seismic loading parameters were considered as per BNBC 2006 which is summarized in Table 3-3.

Table 3-3: Seismic Load Parameters

Earthquake Zone	2
Zone coefficient	$Z = 0.15$
Soil Factor	$S = 1.5$
Importance Factor	$I = 1.0$
Numerical coefficient (for F.D.S unit)	$C_t = 0.03$
Response Modification coefficient	$R = 8$

R=8 considered

The reinforcement details in provided structural drawing indicate that the building frame system is OMRF for which the response modification factor, R would be 5.0. But R= 8.0 is used in the DEA report without any clarifications.

Observations : New Building

3. CONCRETE:

- a) **TYPE - I** : COMPRESSIVE STRENGTH MINIMUM $f_c = 4000$ psi (27.58 Mpa) IN 1:1.5:3 USING ADMIXTURE FOR FOUNDATION, R.C.C COLUMN USING STONE CHIPS AS C.A.
- b) **TYPE - II** : COMPRESSIVE STRENGTH MINIMUM $f_c = 3500$ psi (24.13 Mpa) IN 1:1.5:3 FOR GRADE BEAM, BEAM, STAIR, SLAB USING STONE CHIPS AS C.A.
- c) **MINIMUM CYLINDER STRENGTH** : BASED ON CYLINDER TEST OF DIAMETER, D = 6 inch (152.4 mm) & HEIGHT, H = 12 inch (304.8 mm) FOR TYPE -I, II
- I) 28 DAYS STRENGTH = 3500/3000/ 2500 psi (24.13 Mpa / 20.68 Mpa/ 17.20 Mpa)
- II) 7 DAYS STRENGTH = 2500/2100/ 1750 psi (17.20 Mpa / 14.5 Mpa/ 12.10 Mpa)
- d) **CURING OF R.C.C WORK** :
- I) CURING TIME MINIMUM 14 DAYS
- II) METHOD OF CURING :
- * HORIZONTAL SURFACE - BY PONDING OF WATER.
 - * OTHER SURFACES - BY WRAPPING MOIST JUTE FABRIC AND SPRINKLING WATER BY HOSE PIPE FREQUENTLY

Concrete strength specs

Design concrete strength for the column is considered 4000 psi but some concrete cylinder test results indicate compressive strength below 4000 psi.

The factory engineer to revise the material strength, design parameters and adequacy of the members.

BAHANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)
DEPARTMENT OF CIVIL ENGINEERING
 Mobile: 01819 557 964; PABX: 966 5650-80 Ext. 7226; www.buet.ac.bd/coe/

CONCRETE LABORATORY

BRTC No. : 110159399 /16-17/CE; Dt: 21/4/2018
 Sent by : Maxcom International (BD) Ltd.
 Ref. No. : MGB/CONST/TEST/04/2018; Dt: 21/4/2018
 Project : Maxcom Green Building
 Sample : **Cylinder** [Mix proportion(as quoted): 1:0.5:5; Aggregate Type: Stone chips]
 Location : 6th Floor Column
 Test : **Compressive Strength [ASTM C39]**
 Date of Test : 23/4/2018

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	9/4/2018	-	12.18	43,599	3,580	3600 psi	Combined *
2	(14 days test)	-	12.18	45,389	3,727	(24.8 MPa)	Combined *
3		-	12.18	42,704	3,506	(253 kg/cm ²)	Combined *

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

Column concrete strength below design strength in cylinder test report

Observations : New Building



Insufficient drainage system on roof

Observations : New Building



Sign of water Clogging was observed on roof. Also, proper drainage system was not installed.



Sign of water clogging



Improper roof drainage system



Priority Actions



Problems Observed

New Building:

Item-01: Prepared DEA report required to be reviewed

Item-02: Insufficient drainage system on existing roof.



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Prepared DEA report required to be reviewed	Revise the DEA report and complete the review with ACCORD.	6-weeks
2	Prepared DEA report required to be reviewed	Complete remedial works arising from design report after being reviewed by ACCORD.	6-months
3	Prepared DEA report required to be reviewed	Continue to implement load plan.	6-months
4	Insufficient drainage system on roof	Factory is required to improve the water drainage system by providing necessary slope to avoid water clogging.	6-weeks