

Multifabs Ltd (New Building)

Nayapara, Kashimpur, Gazipur.

(23.988927, 90.320451)

01st December 2020

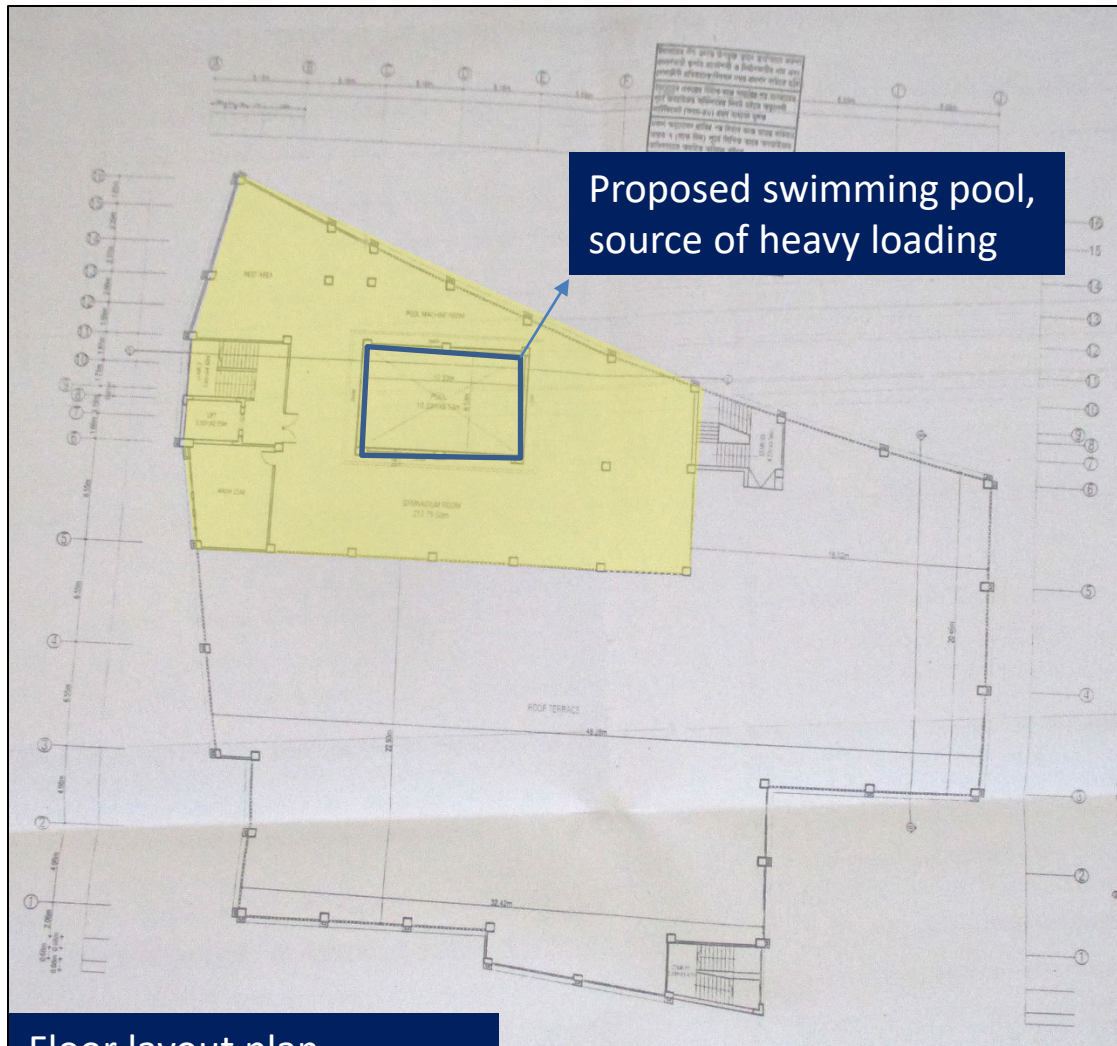


Buildings Information

1. New Building (G+7)

Observations

**Column to be stressed above normal design limit
considering full construction**



Cursory calculation indicates that the marked columns are stressed above normal design limit considering prepared live load plan and equivalent concrete strength from concrete core test value. Factory engineer is required to review design, load & column stress in the area identified above.

Date: 12/09/2020

LOAD BEARING CERTIFICATE

This is to certify that the structural design of existing 7 storied store building with a roof top swimming pool for Multifabs Ltd at Gabindabari, Kashimpur, Gazipur, has been structurally checked by the undersigned. All foundation, all columns, All RC walls and floor beams and slab have been found adequate for the existing 7 storied store building with a roof top swimming pool against all combinations of load namely dead load, live load 100 psf at 3 nos floors and 63 psf for 4 nos floors where seismic load as zone-2 and wind load 215km/hr as per BNBC 2006.

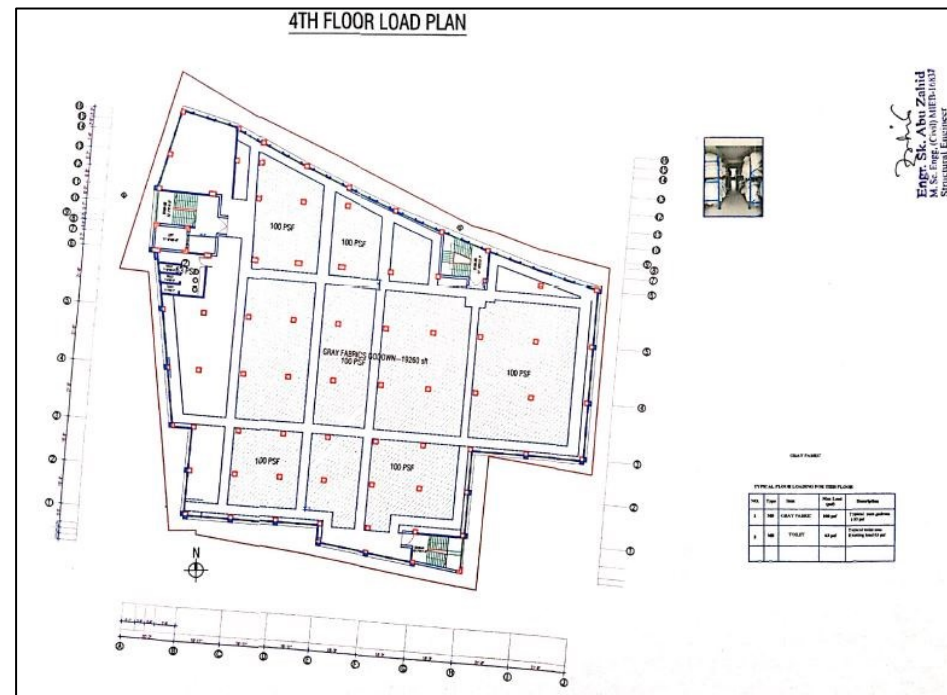
Concrete strength f_c was found 3500 psi and rebar strength was found 72500 psi and soil bearing capacity was found 1.75 Tsf as per available test report.

Yours Faithfully

08/09/2020

Md. Sultan Mahmud
 E.Sc. ChE Engineer (FIET)
 F.I.B-12108 DINNERGE-0202
 Contact: 01717864537

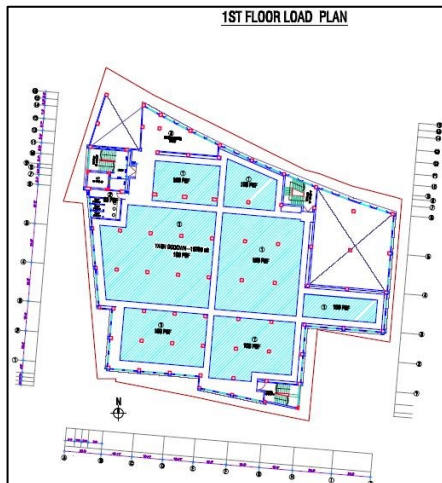
Md. Sultan Mahmud
FIEB-12108, DMINB/CE-0262
Director and Structural Engineer
Art and Technology Ltd.



4th floor load plan

Load bearing certificate do not match with the prepared load plan. Also, equivalent concrete strength do not match with core test values and load bearing certificates.

Engineering Assessment (EA) requires to be prepared



Load plan for 1st to 4th floor. - Floor loading has been shown (100 psf) 4.79 kPa.



Load plan for 5th Floor loading has been shown 3 kPa.

INDUSTRIAL, STORAGE & HAZARDOUS (Occupancy - G, H & J)	Workshop, factory, warehouse	1 Light workroom without storage	3.0	2.7
		2 Machinery hall & circulation area	4.0	4.5
		3 Factory, workshop etc.	5.0	4.5
		4 Manufacturing : light	6.0	4.5
		heavy	12.0	9.0 ^(S)
		ice	15.0	9.0 ^(S)
		5 Printing plant :		
		Press room	7.0	11.0 ^(S)
		Composing and linotype room	5.0	9.0 ^(S)
		Paper storage room	12.0	9.0 ^(S)
		6 Motor room, fan room etc. including the weight of machinery	7.5	4.5
		7 Cold storage, grain storage	15.0	9.0 ^(S)
		8 Storage warehouses : light	6.0	4.5
		heavy	12.0	9.0
		9 Foundries	20.0	12.0

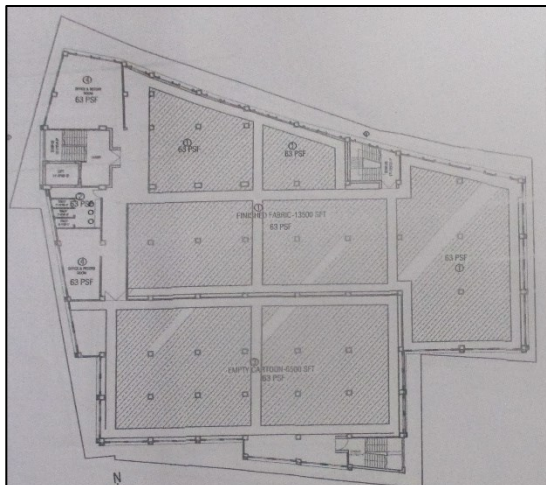
Live load Table- BNBC 2006

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. During the inspection, the design report was not found. Now, the factory engineer is required to prepare Engineering Assessment (EA) for the structure.

As per BNBC, 6 kPa is required to consider as floor loading for the light storage facilities. During inspection, load plan was found posted considering (100 psf) 4.79 kPa from 1st to 4th floor and 3kpa for 5th floor.



Floor loading at 5th floor.



5th floor load plan- Load capacity 3kpa



Yarn storage at 5th floor.

The loading capacity of the 5th floor has been shown 3kpa in loading plan. During inspection, loading was found more than 3 kPa. Floor loading is not being maintain as per posted load plan. Factory engineer is required to develop a load monitoring system and maintain accordingly.

Column susceptible to vehicle impact

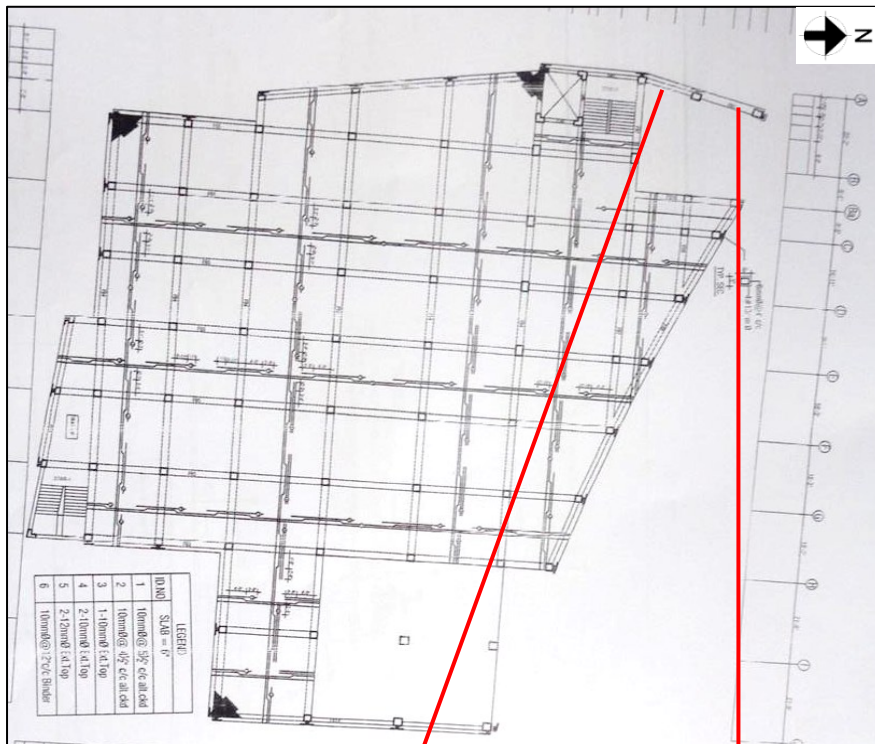


Column susceptible to vehicle impact



Some of the columns were found adjacent of driveway of parking & loading unloading platform. These column are susceptible to vehicle impact. The factory engineer is required to take necessary measures to prevent the vehicle impact by providing the barrier around the columns.

Partial damaged Beam



1st floor Beam Layout plan

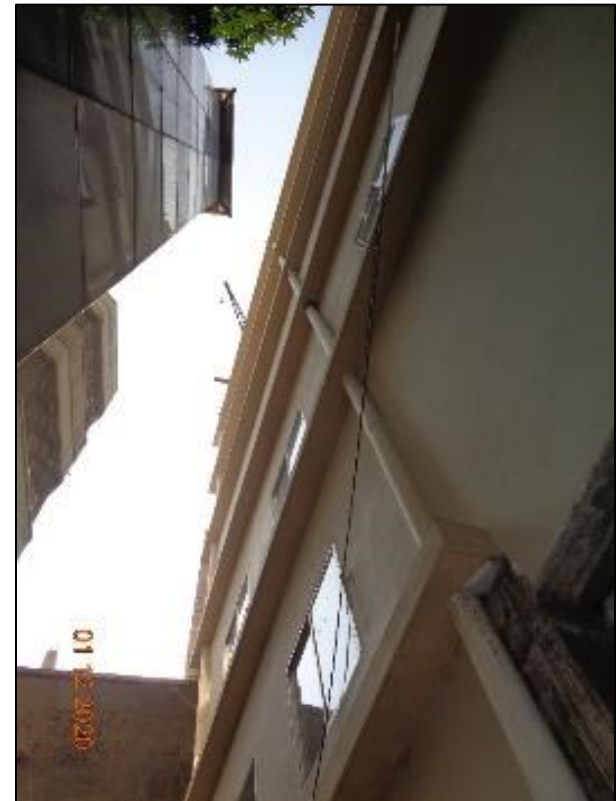
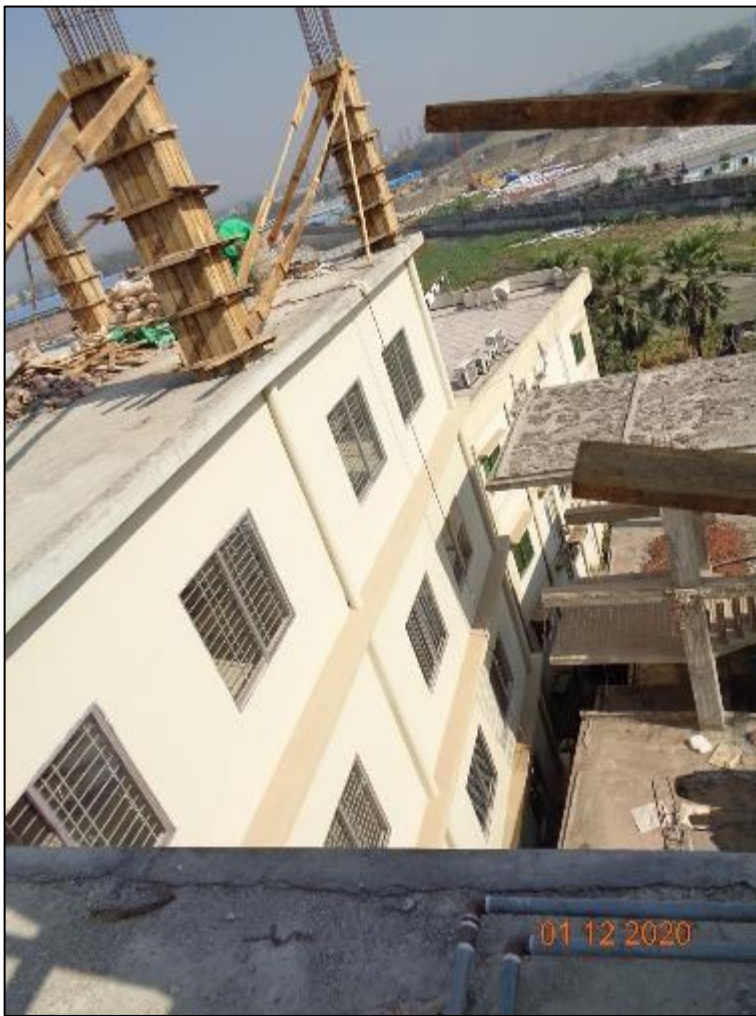


Partial damaged beam

Beams adjacent of driveway of loading unloading platform were found partial damaged due to vehicle impact. The factory engineer is required to investigate the extent of the damage and take necessary measures to repair the damage. Also, the factory engineer is required to take necessary action to prevent the vehicle impact in the beams.

Observation

Lack of construction safety measures



Necessary safety measures were not observed at the construction site. No barrier was provided at east side to mitigate the falling hazard. The factory engineer is required to take necessary measures to provide and install construction safety barrier.

Observation

Priority Actions

Problems Observed

New Building

Item 1: Column to be stressed above normal design limit considering full construction.

Item 2: Engineering Assessment (EA) requires to be prepared.

Item 3: Column susceptible to vehicle impact.

Item 4: Partial damaged Beam.

Item 5: Lack of construction safety measures.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Column to be stressed above normal design limit considering full construction.	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
02	Column to be stressed above normal design limit considering full construction.	Produce and actively manage a loading plan for all floor plates within the factory, considering floor, column and foundation capacity.	6-weeks
03	Column to be stressed above normal design limit considering full construction.	Complete implementation of any remedial works deemed necessary by the Engineering Assessment (EA).	6-months
04	Column to be stressed above normal design limit considering full construction.	Continue to implement loading plan.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Engineering Assessment (EA) requires to be prepared.	Factory engineer to prepare the Engineering Assessment (EA) including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks
06	Engineering Assessment (EA) requires to be prepared.	Produce and actively manage a loading plan for all floor plates within the factory, considering floor, column and foundation capacity.	6-weeks
07	Engineering Assessment (EA) requires to be prepared.	Continue to implement loading plan.	6-months
08	Column susceptible to vehicle impact.	The factory engineer is required to take necessary measures to prevent the vehicle impact by providing barrier around the column.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
09	Partial damaged Beam.	The factory engineer is required to investigate the extent of the damage and take necessary measures to repair the damage	6-weeks
10	Partial damaged Beam.	The factory engineer is required to take necessary action to prevent the vehicle impact in the beams.	6-weeks
11	Lack of construction safety measures.	The factory engineer is required to take necessary measures to provide and install construction safety barrier as per standard.	6-weeks