

MOUCHAK KNIT COMPOSITE LTD. (New Building)

Mouchak, Kaliakoir, Gazipur
(24.0231N, 90.2889E)
12 April 2022

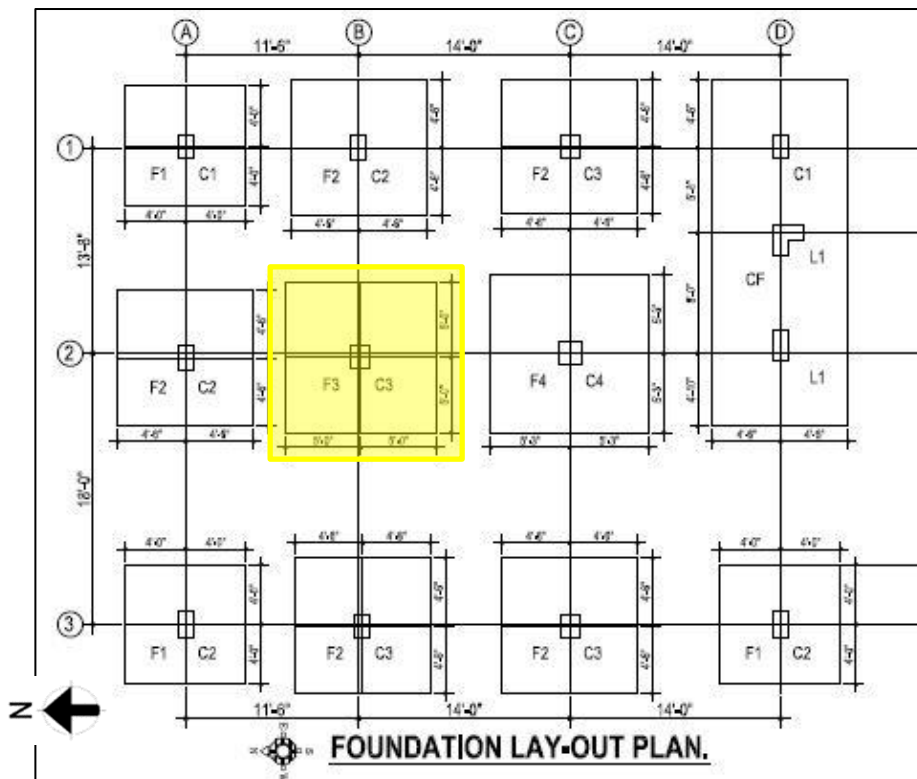


Buildings Information

1. New Building: Six storied RC building with a partial basement.

Observations

**Stress in column and foundation exceeds
normal design limit**



Stressed column/foundation in layout



Fourth floor live load

Cursory calculation indicates that stress in column and foundation exceeds normal design limit at marked locations considering the floor live load as per prepared live load plan (3 kPa for typical floor, 5 kPa for stair and 1.5 kPa for roof), minimum concrete strength based on aggregate type and allowable soil bearing capacity 13.45 Ton/m² (132 kPa). Building engineer is required to review the design, loads, column and foundation stresses for the area identified above. Verify in-situ concrete strength by taking 4-100 mm diameter core from column (lower tier of the building).

5.1.6 Material:

Steel and Concrete:

Column, Beam & Slab:

$$f'_c = 3500 \text{ psi}$$

Beam & Slab:

$$f'_c = 3500 \text{ psi}$$

For tensile strength of reinforcing rebar

Yield Strength, $f_y = 500 \text{ Mpa (72500psi)}$

N.B. - In all R.C, Stone and Stone chip is used as coarse aggregate reinforcement deformed bar.

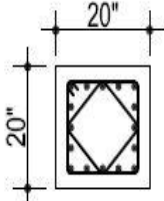
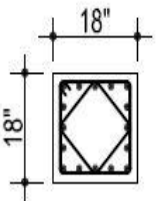
Strength of concrete and rebar considered in Engineering Assessment report was 3500 psi (24.13 MPa) and 500 MPa. Stone chips mentioned as aggregate.

Strength of concrete and rebar considered in Engineering Assessment test report as 24.13 MPa and 500 MPa without any test report. Also, aggregate type mentioned as stone chips in Engineering Assessment but physically found as brick chips in columns.

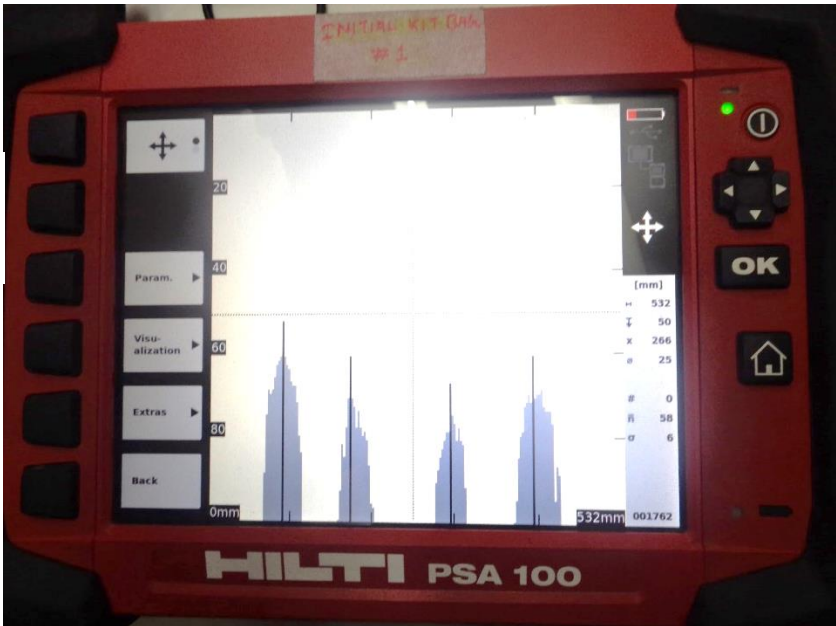


Brick chips found as aggregate in columns

Discrepancy and missing information in as-built drawing

COLUMN SIZE	BELOW GB PADESTRAL COLUMN	ABOVE GB & 1ST FLOOR
C4-18"X18"	 16-20 mm Ø 10 mm Ø @ 5"c/c 10 mm Ø @ 10"c/c	 16-20 mm Ø 10 mm Ø @ 5"c/c 10 mm Ø @ 10"c/c

5 rebar shown for each side above 1st floor for C-4 Column



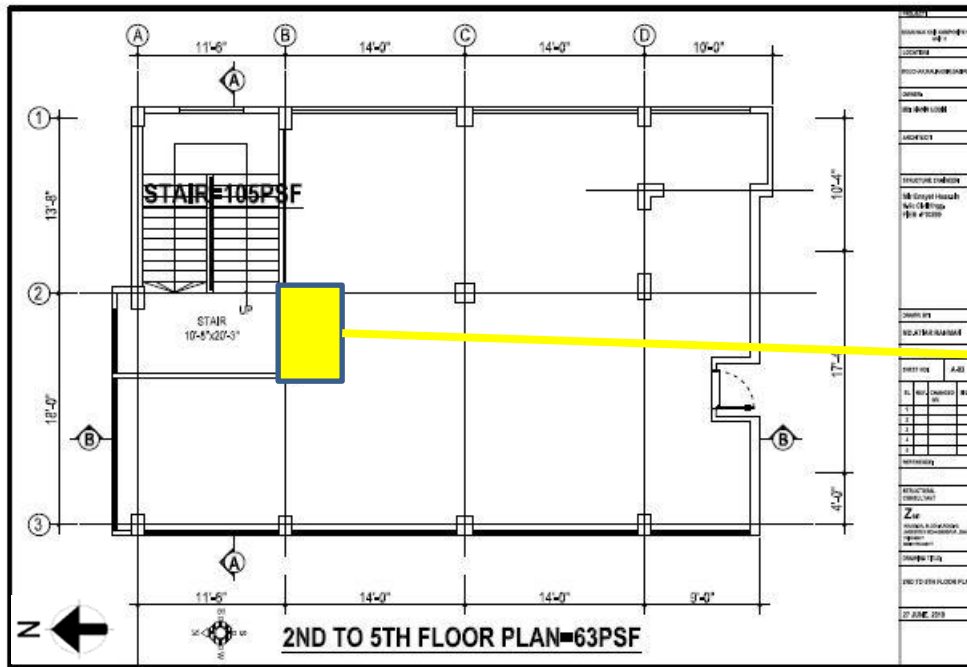
Ferro scan report shows 4 rebar at each side of column C-4 at 3rd floor

5 rebar shown for each side above 1st floor for column C-4 but Ferro scan shows 4 rebar at each side of column C-4 at 3rd floor (12 rebar counted instead of 16). Building engineer is required to resurvey the whole structure and update as-built drawing accordingly.



Two plastic water tank (2000 litre each on stair slab)

Plan of stair top level was not shown in drawing. Two plastic water tank (2000 litre each on stair slab). Building engineer is required to survey the whole structure and update as-built drawing accordingly.



Extra wall with slab for fire door found on each floor but not shown in drawing.

Extra wall with slab for fire door found on each floor but not shown in drawing.

Extra walls with slab for fire door were not shown in drawing. Building engineer is required to survey the whole structure and update as-built drawing accordingly.

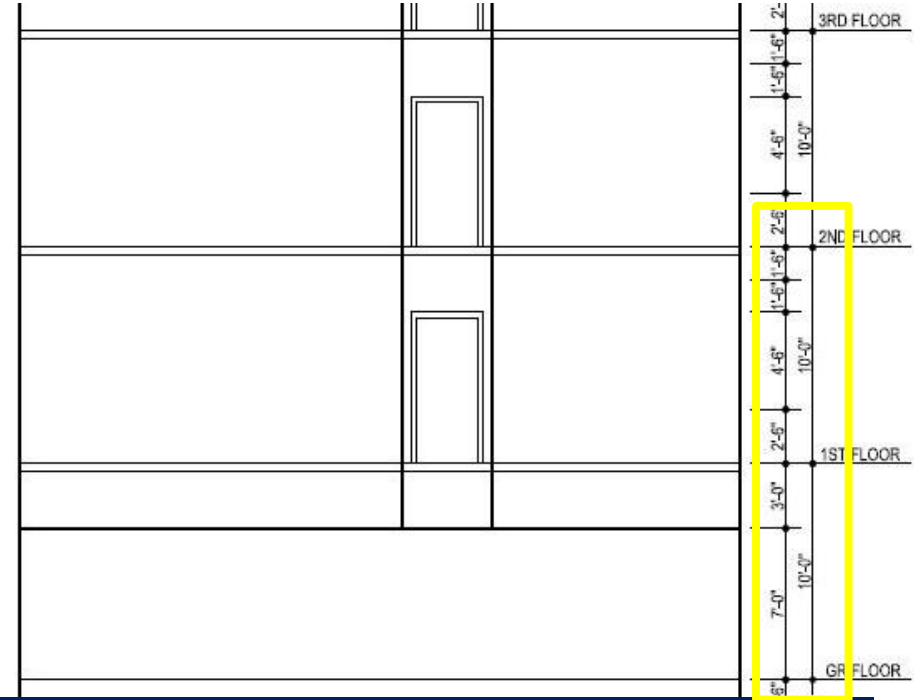


Basement plan not shown in drawing

Plan of basement level was not shown in drawing. Building engineer is required to survey the whole structure and update as-built drawing accordingly.



Ground floor height measured 3.48 m



Ground floor height shown as 3.04 m

Ground and 1st floor height (floor to ceiling) was measured as 3.48m but shown in drawing as 3.04m. Building engineer is required to resurvey the whole structure and update as-built drawing accordingly.

Problems Observed

New Building:

Item-1: Stress in column and foundation exceeds normal design limit

Item-2: Discrepancy and missing information in as-built drawing

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Stress in column and foundation exceeds normal design limit (New Building)	Building engineer is required to review the design, load, column and foundation stresses of the area identified above.	6-weeks
02	Stress in column and foundation exceeds normal design limit (New Building)	Verify in-situ concrete strength by taking 4-100 mm diameter core from column (lower tier of the building).	6-weeks
03	Stress in column and foundation exceeds normal design limit (New Building)	Verify the grade of rebar.	6-weeks
04	Stress in column and foundation exceeds normal design limit (New Building)	Produce and actively manage a loading plan for all floor plates within the factory considering floor, column and foundation capacity.	6-months
05	Stress in column and foundation exceeds normal design limit (New Building)	Carryout remedial works where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Stress in column and foundation exceeds normal design limit (New Building)	Continue to implement loading plan.	6-months
07	Discrepancy and missing information in as-built drawing (New Building)	Building engineer is required to update the as-built drawing.	6-weeks