

Ananta Jeans Wear Ltd. (Extension)

277/2, (Old 134) kabi Jashim Uddin Road, Pagar, Tongi, Gazipur.

(23.8972559240, 90.431362578)

12 March 2023



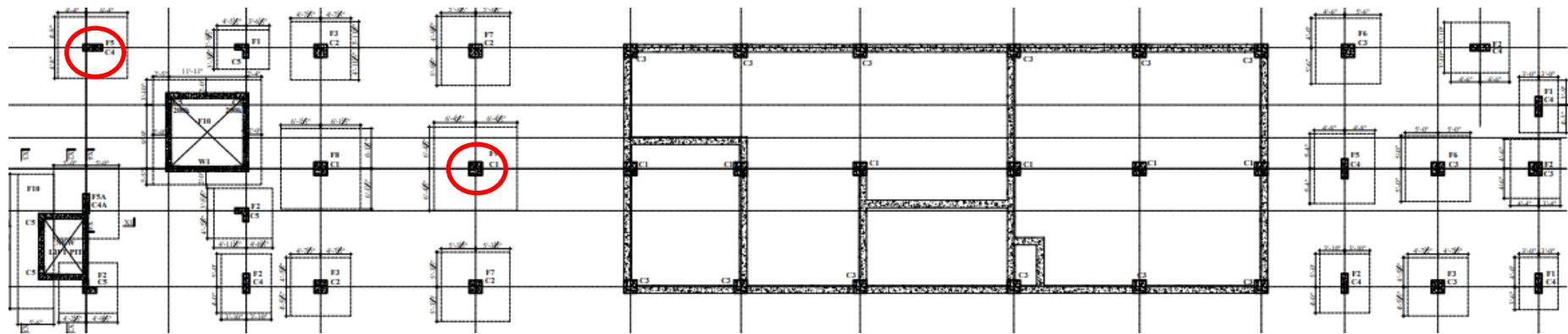
Building Information

1. Block-A is a six storied (G+M+5) reinforced concrete (RC) building.

Observations

Isolated footings are stressed above normal design limit

Observations: Block A



Isolated foundation layout plan

The cursory calculation indicates that footings are stressed above the normal design limit considering the average soil bearing capacity 1.53 kg/cm² (FS 2.5) recommended in the geotechnical investigation reports. Building engineer is required to review the foundation stresses of the area identified above.

SHALLOW FOUNDATION AS ISOLATED COLUMN FOOTING:

The average bearing capacities (F.S=2.50) of Isolated Column Footing may be considered as follows:

- To be considered **1.80kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-01.**
- To be considered **1.50kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-02.**
- To be considered **1.50kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-03.**
- To be considered **1.50kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-04.**
- To be considered **1.50kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-05.**
- To be considered **1.35kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-06.**
- To be considered **1.50kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-07.**
- To be considered **1.65kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-08.**
- To be considered **1.35kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-09.**
- To be considered **1.65kg/cm²** (F.S=2.50) at a depth of **8.0ft or 2.45m** measured from EGL. Particularly at and only around for **BH-10.**

Allowable bearing capacity mentioned in soil test report.

Observations: Block A

Inconsistences in design report and documents

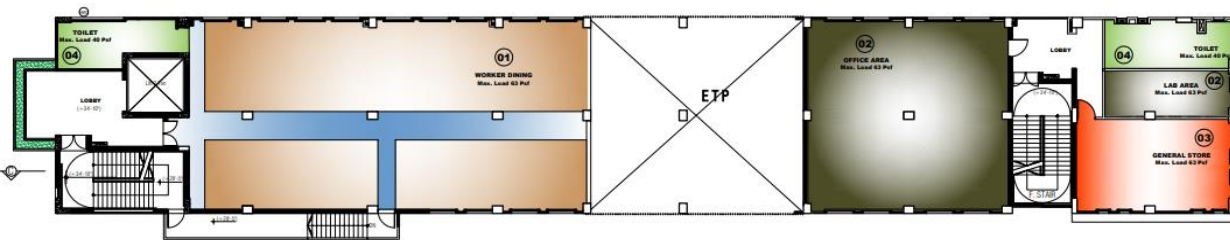
3.2 MATERIALS CONSIDERED IN DESIGN

Material strength considered

Concrete: Compressive Strength of Concrete for all structures $f_c' = 4000$ psi

Reinforcement: Deformed bar with minimum yield strength = 60,000 psi for all structure.

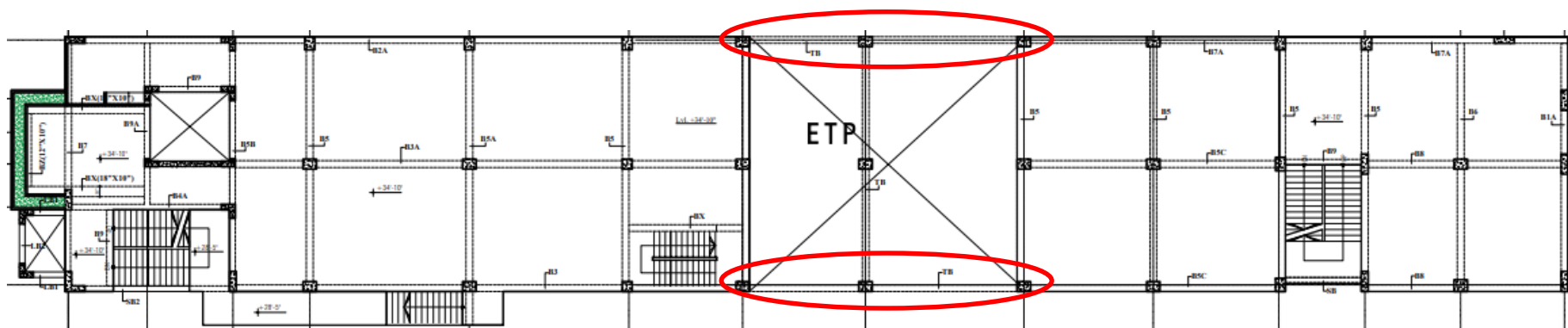
Concrete compressive strength f_c' considered 4000 psi (27.5 MPa) in the design. Adequate number of concrete cylinder test report was not available onsite as per BNBC. However, the building engineer is required to verify in-situ concrete strength by taking core from lower tier columns.



Loading not mentioned in load plan for Staircase, Lobby area and Assembly area. Building engineer is required to produce load plan incorporating all the areas as per BNBC live load requirements.

Zone	Type	Item	Max. Pdl	Description
1	L.S.	Worker Dining	63	280 Persons & 22 Tables @ 1500x80 - 4000 lbs
2	L.S.	Office Area	63	Typical Office Furniture
3	L.S.	Equipment Area	125	4 New Brewer Machine @ 2500x4 - 10000 lbs
4	Light	Tablet	40	Max. user 10 person @ 130x10 - 1300 lbs at a time

Discrepancies in the as-built drawing



Beam Layout of 2nd floor level (At level +34'-10")



Onsite beam condition of 2nd floor level (At level +34'-10")

During inspection, 4 number of tie beams were found missing at level 34'-10" (10.62 m), which is marked in the beam layout. Building engineer is required to survey the full structure and produce an accurate as-built drawing and review the design accordingly.

Implement floor load plan



Load management program was not implemented. The building engineer is required to implement the floor load management program by posting live load plan, providing signage & load restriction height marking on storage areas and record keeping of the load.

Tests carried out



Stone chips aggregate on column



Rebar confirmed on-site by Ferro scan

Priority Actions

Problems Observed

Item 1: Isolated footings are stressed above normal design limit.

Item 2: Inconsistency in design report.

Item 3: Discrepancies in design report.

Item 4: Implement floor load plan.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Isolated footings are stressed above normal design limit.	Carry out Detail Engineering Assessment (DEA) to check the foundation stresses of the area identified above and suggest proper remedial actions accordingly.	6-weeks
02	Isolated footings are stressed above normal design limit.	Carryout remedial works where required.	6-months
03	Inconsistences in design report.	Building engineer is required to verify in-situ concrete strength by taking cores from lower tier columns.	6-weeks
04	Inconsistences in design report.	Building engineer is required to produce load plan for all areas of the building following BNBC live load requirements.	6-weeks
05	Inconsistences in design report.	Building engineer is required to prepare design report as per BNBC 1.9.1 requirements.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Inconsistences in design report.	Carry out remedial works where required.	6-months
07	Inconsistences in design report.	Implement floor loading plan.	6-months
08	Discrepancies in as-built drawings.	Building engineer is required to survey the full structure and produce accurate as-built drawings.	6-weeks
09	Discrepancies in as-built drawings.	Revise the design as per accurate as-built drawings.	6-weeks
10	Discrepancies in as-built drawings.	Carryout remedial works where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Implement floor load plan.	The building engineer is required to implement the floor load management program by posting live load plan, providing signage & load restriction height marking on storage areas and record keeping of the live load.	6-weeks