



Euro Arte Apparels Ltd.

Plot - 346, Kabirpur, Ashulia, Savar
(24.009166N, 90.247896E)

28th November 2017

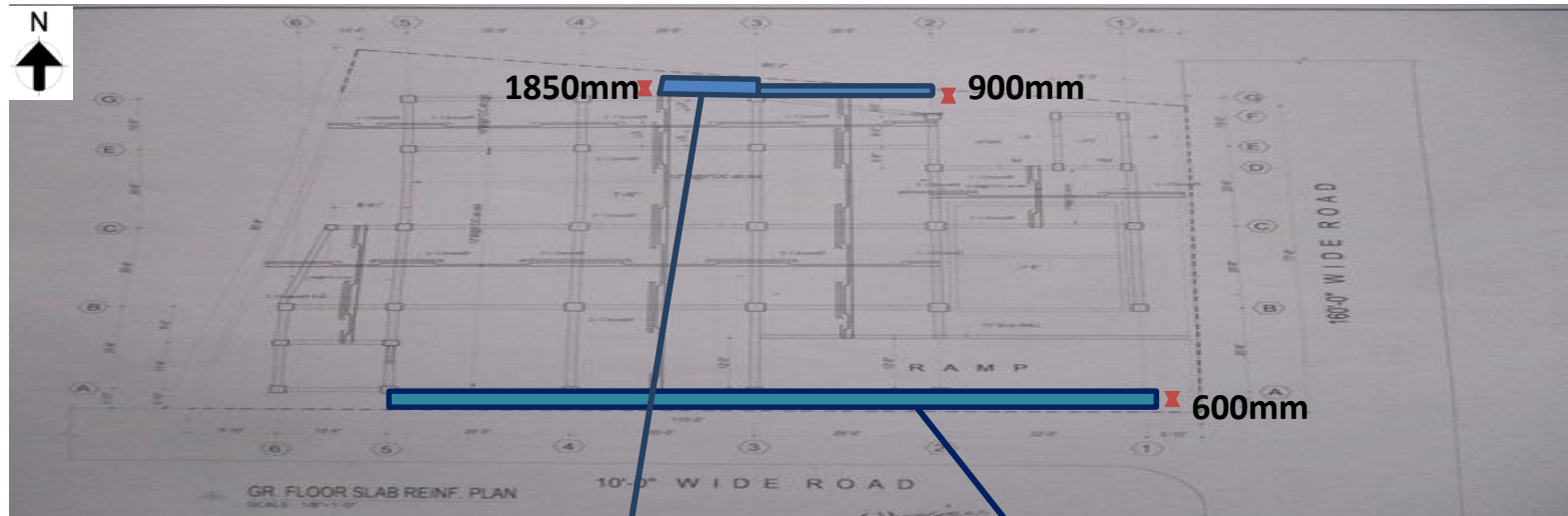




Observations



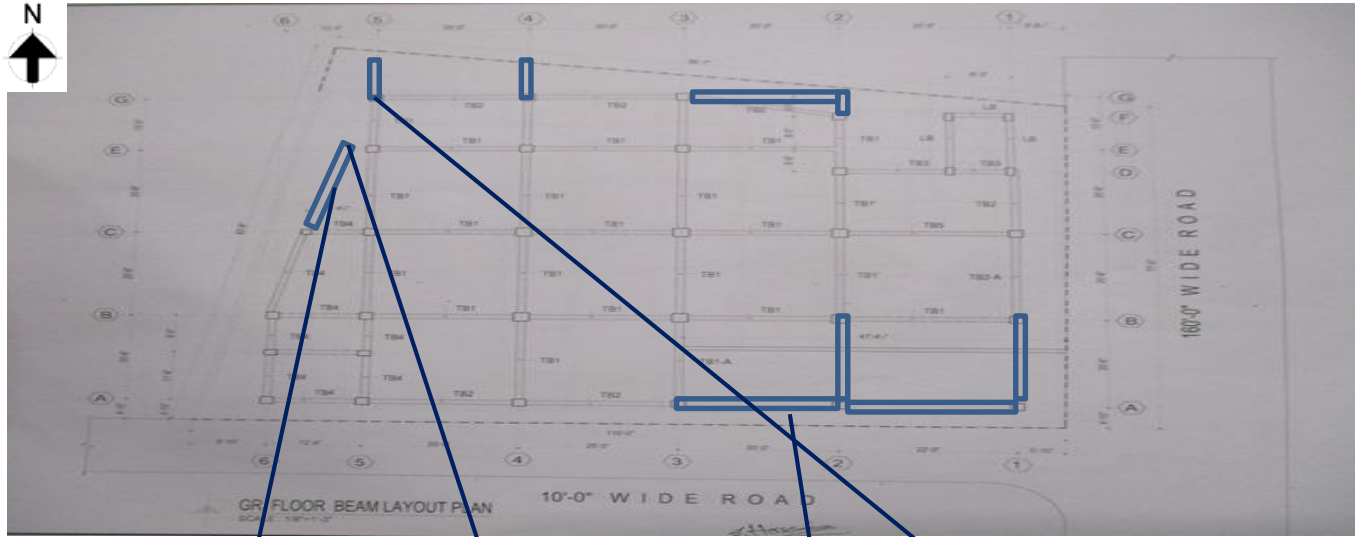
Discrepancies between provided drawing and on site condition



Ground Floor Slab Layout



1850mm and 900mm wide cantilever on north side and 600mm wide cantilever on south side found which was not mentioned in drawing



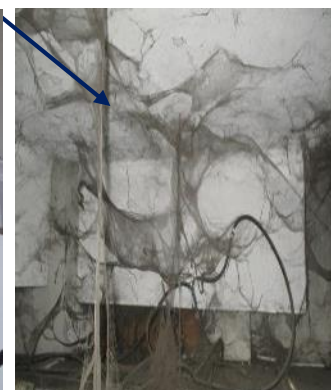
Provided Beam Layout



Beam Size measured 300mm (w) x 350mm (d/s)



Beam Size measured 300mm (w) x 400mm (d/s)



Beam Size measured 250mm (w) x 400mm (d/s)

Marked beams were found in every floor which were not mentioned in as built drawing. Factory is required to revise As – Built drawings reflecting the on site condition.



Corrosion observed on roof top exposed rebar

Observation



Exposed Rebar on roof top tends to corrosion

Exposed rebar was observed on roof top which tends to corrosion. Some corroded rebar was observed. Factory is required to take necessary steps to avoid corrosion.

Observation



Water clogging on roof

Observation



No proper water proofing or drainage system was observed. Besides, Water clogging was observed on some portion on roof. Factory is required to provide water proofing membrane and improve the drainage system on roof.

Observation



Dampness and Vegetation on several areas of building



Vegetation was observed on west side facade wall



Dampness was observed on South West corner of basement wall

Dampness was found on several area on brick wall. Factory is required to identified the reason and repair with appropriate method



Issue highlighted in ILO report



Preliminary assessment of structural safety report done by BUET on behalf of ILO.

During the visit, some spot measurements were taken with the help of "Laser distance meter" and "Total station" to get an idea about the proportion of the structure member/structure. Grid spacing in the column in the column is horizontal direction is 14'-4" and 17'-10" and same in vertical direction is 14'-0" and 14'-0" respectively. The column columns are (including plaster) 24" x 24" with reinforcement: 20-g20 and corner columns are (including plaster) 24" x 24" with reinforcement: 16-g16 at the ground floor level. (Note: 16-g16, 16-g16 and 16-g16 at other floors).

REPORT OF DISTRESS HISTORY

Distress not reported.

OBSERVATIONS ON DISTRESS AND OTHERS

- The structural drawing is available. Actual construction conforms to available drawing.
- Major signs of distress were not found in the main structural elements of the building.
- The building is constructed up to 5 stories. However, approval is for 10 stories.
- Fabric of safety of the columns are found reasonable.
- Aspiration is located outside of the building.

LOAD PLAN

The factory owner has been instructed to prepare and submit a load plan for vetting. Once it is submitted to the factory owner, it will be duly noted.

CONCLUDING REMARKS

- Signs of distress were not found in the main structural elements of the building.
- The plastic water tanks on roof are of significant size. Design review of the supporting structural elements under the plastic tanks is necessary.
- On the basis of the visit and observation (Column and beam size, span, physical condition of the structural elements, present loading condition and review of drawings) the use of the building may continued.
- Owner/owner of the building should be vigilant about development of any distress, particularly in primary structural elements such as columns, beams and slabs. If cracks appear, propagate and widen, stop work and remedial measures may become necessary.
- There should be no vertical extension or horizontal extension of the building without performing Detail Engineering Assessment (DEA).
- There should not be any kind of structural modification or vertical extension of the building.
- Visual load plan must be displayed.

ACTIONS AND TIMELINE

- The building has been found to be reasonably safe. Use of the building may continue.
- The plastic water tanks on roof are of significant size. Design review of the supporting structural elements under the plastic tanks is necessary.

DISCLAIMER

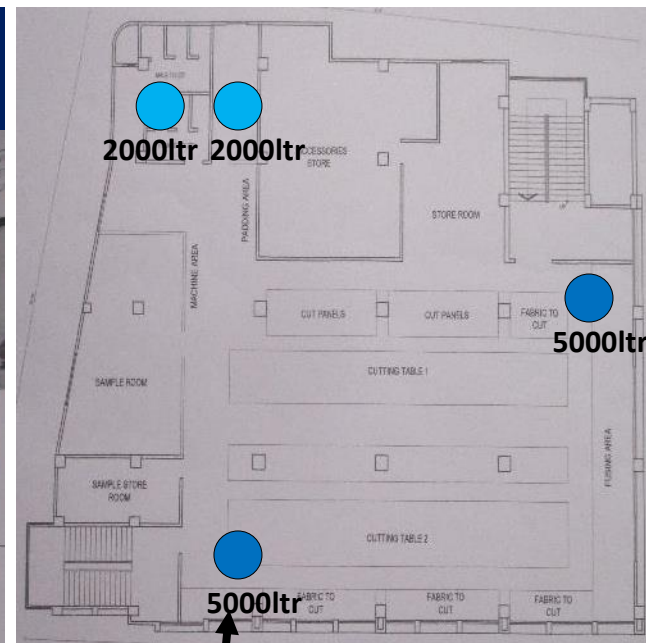
The above statements are made from visual observations of the exposed parts of the superstructure and not measurements of elements of the existing members, who do not bear responsibility for any decision taken on the structural behavior of the structure caused by uncertainties of performance or extension.

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Page 2 of 2



Water tank location on roof top



5000 litre water tank

According to the preliminary assessment report, supporting structure for the roof top water tank needs to be reviewed. Moreover, Any kind of vertical or horizontal extension is restricted without performing Detail Engineering Assessment. Factory is required to submit the assessment report for the supporting structure of the water tank.

8. DISCUSSION AND COMMENTS:

The following recommendations are suggested for the construction of the proposed 9(Nine)- storied Industrial building at Kafirpur, Ashulia, Dhaka :-

The following conclusions may be drawn regarding the sub-soil formation of the project:

1. The layers of soil, upto the depth of the investigation, have been found regular in between the Boreholes; Four (4) numbers of boring were executed at site. Subsoil was explored up to 45'-0" ft depth.
2. The top formation of soil, extending to a varying depth of 0'-0" to 18'/22'-0" usually bears plastic nature consisting of clay soil. The subsequent layers of soil, upto (18'-0" /22'-0" to 45'-0") the depth of the investigation, are non-cohesive by nature. The non-cohesive soil comprises medium to dense fine sand with sandy silt, sand-silt mix.
3. The top formation of the soil extending roughly to the depth of 0'-0" to 18'-0" /22'-0" usually has the consistency that varies stiff to very stiff clay.
4. From field exploration data, BUET Lab test results, SPT values and net allowable bearing capacity calculation of soil, it is seen that acceptable bearing capacity of spread Shallow footing for the proposed building is available at 8'-0" ft depth.
5. In view of the above discussion and observation supported with exploration data, lab test results and bearing capacity calculation with N-value co-relations, it is here by recommended to provide individual spread footing at 8'-0" ft below the existing ground level considering for the proposed building.

Advise to provide Isolated column footing of suitable dimension at 7'-6" depth from the existing ground level; the shallow foundations particularly for buildings upto 9-storied may be provided after improving the foundation base. This may be done in the following way:

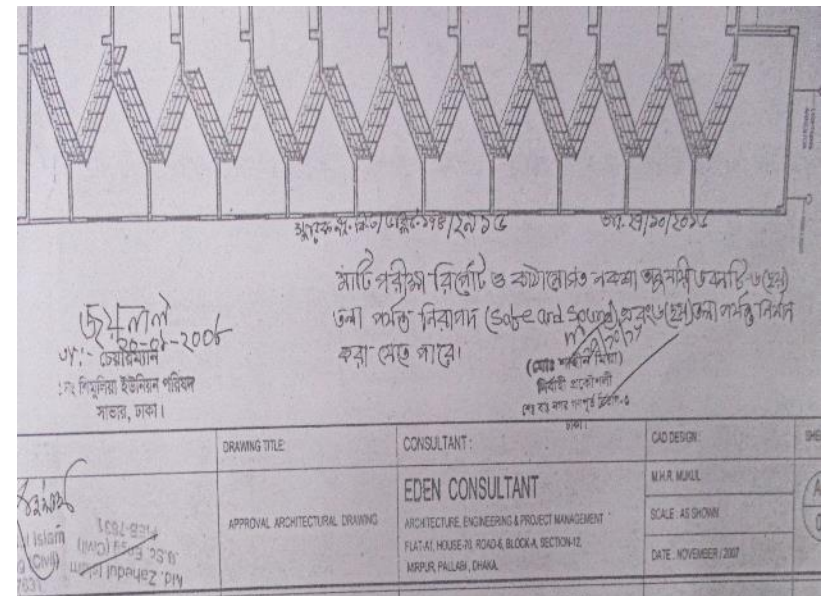
The existing soil should be excavated to a depth of 7'-6" measured from the EGL. The excavated base should then be back filled with sand (F.M. around 2.5) through compaction preferably with 0'-6" at a time and up to a height of 7'-6" measured from the EGL. Addition of Brickbats during the process is expected to increase the degree of compaction in a more satisfactory way. The bearing capacity of the Isolated Column footing foundation over the improved base shall be considered net bearing capacity 5.00 to 5.50 KSF (F.S. = 3.0).

Note: EGL=Existing Ground Level, 1 Ton = 2000 lbs.

6. It is noted here that the Design Engineer will take the appropriate decision about the type, depth and extent of foundation considering economy and safety of the proposed structure based on geological condition of the site and physical properties of the underlying subsoil stratum as furnished in this report.

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Structural Design Engineer
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Engr. Shahidul Karim



The existing 6-stories building is declared safe by 'Public Works Department" (PWD) based on the soil test report

If any future extension may take place a significant increase of stresses in column and foundation . Details Engineering Assessment is required to be completed before construction of any additional floors above 6-storey.

As per soil test report, after improving the foundation base factory can extent up to 9-storied.



Problems Observed:

Production building

Item 1: Discrepancies between provided drawing and on site condition

Item 2: Corrosion on roof top exposed reinforcement

Item 3: Water clogging on roof

Item 4: Dampness on wall

Item 5: Issue highlighted in ILO report



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Discrepancies between provided drawing and on site condition	Building Engineer is required to prepare as –built drawings reflecting the actual site condition.	6-weeks
2	Corrosion on roof top exposed reinforcement	Building engineer to check the reinforcement for corrosion and take proper remedial action.	6-weeks
3	Water clogging on roof	Factory is required to provide the water proofing membrane or install the adequate drainage system to prevent water clogging.	6-weeks
4	Dampness and Vegetation on several areas of building	Building engineer to investigate the reasons and provide necessary repair method.	6-weeks
5	Dampness and Vegetation on several areas of building	Take necessary steps for removing the vegetation.	6-weeks
6	Dampness and Vegetation on several areas of building	Implement the repair works suggested by the building engineer.	6-months
7	Issue highlighted in ILO report	Complete review of Engineering Assessment for the water tank supporting structure with Accord.	6-weeks
8	Issue highlighted in ILO report	Complete remedial works arise from engineering assessment after review by Accord(If any).	6-months
9	Issue highlighted in ILO report	In case of any extensions or modifications of the existing building, carryout Detail Engineering Assessment in compliance with the BNBC provision.	6-months