

Vertex Innovative Apparels Ltd. (10524)

H.B. Intimates (11786)

Forkan Tower, 360/A, Bitak Bazar, Sagorika, Pahartoli Thana, Chittagong

15.MARCH.2014



Identified Priority 1 Concerns

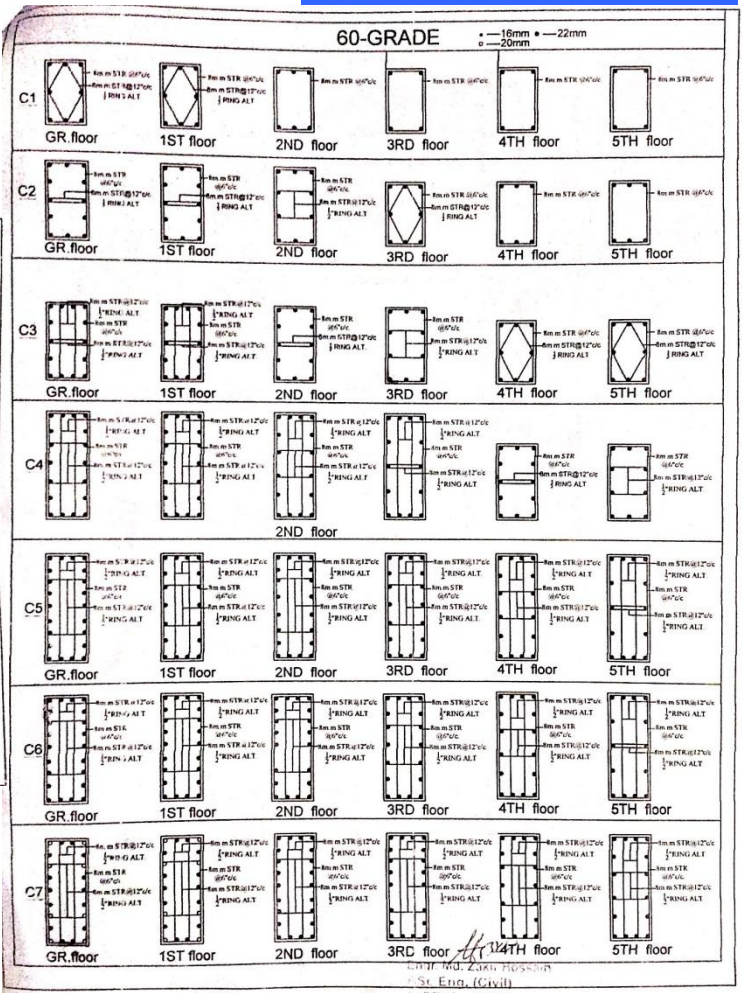
Low Column Safety Factors

Priority 1 Concern

COLUMN SCHEDULE.

| N0 | SIZE | REINFORCEMENT (60 GRADE) | | | | | |
|----|---------|--------------------------|----------------------|-----------|-----------|-----------|-----------|
| | | GR. FLOOR | 1ST.FLOOR | 2ND.FLOOR | 3RD.FLOOR | 4TH.FLOOR | 5TH.FLOOR |
| C1 | 12"X12" | 8-16mm | 8-16mm | 6-16mm | 4-16mm | 4-16mm | 4-16mm |
| C2 | 12"X15" | 12- 16 mm | 12- 16 mm | 10- 16 mm | 8-16mm | 6-16mm | 6-16mm |
| C3 | 12"X15" | 14- 16 mm | 14- 16 mm | 12- 16 mm | 10-16mm | 8-16mm | 8-16mm |
| C4 | 12"X20" | 18- 16 mm | 18- 16 mm | 16- 16 mm | 14- 16 mm | 12- 16 mm | 10- 16 mm |
| C5 | 12"X24" | 22- 16 mm | 22- 16 mm | 20- 16 mm | 18- 16 mm | 16- 16 mm | 14- 16 mm |
| C6 | 12"X30" | 22- 16 mm | 22- 16 mm | 20- 16 mm | 18- 16 mm | 16- 16 mm | 14- 16 mm |
| C7 | 12"X30" | 8-20 m.m+ 14-16mm | 8-20 m.m+ 14-16mm | 22- 16 mm | 20- 16 mm | 18- 16 mm | 16- 16 mm |

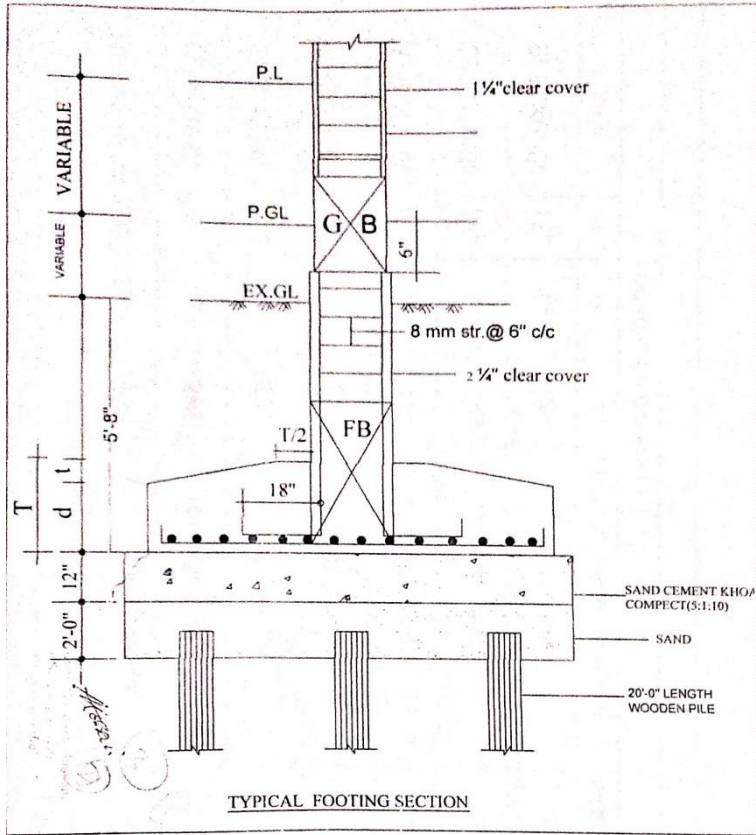
Column load run-downs indicate lower than desirable column safety factors.



Low Column Safety Factors

Identified Priority 2 Concerns

Soil Capacity/Footing Design & Incomplete Structural Drawings



Foundations are built in a manner other than that recommended by the geotechnical report. General foundation capacity checks were performed. Based upon Geotechnical findings, the soil bearing capacity does not appear adequate to support the foundation shown on the structural drawings.

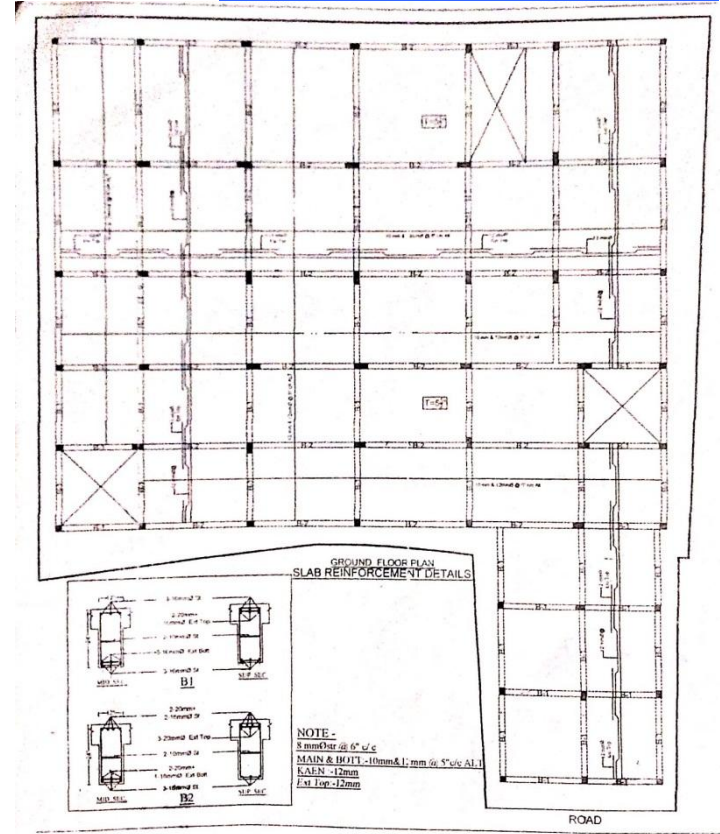
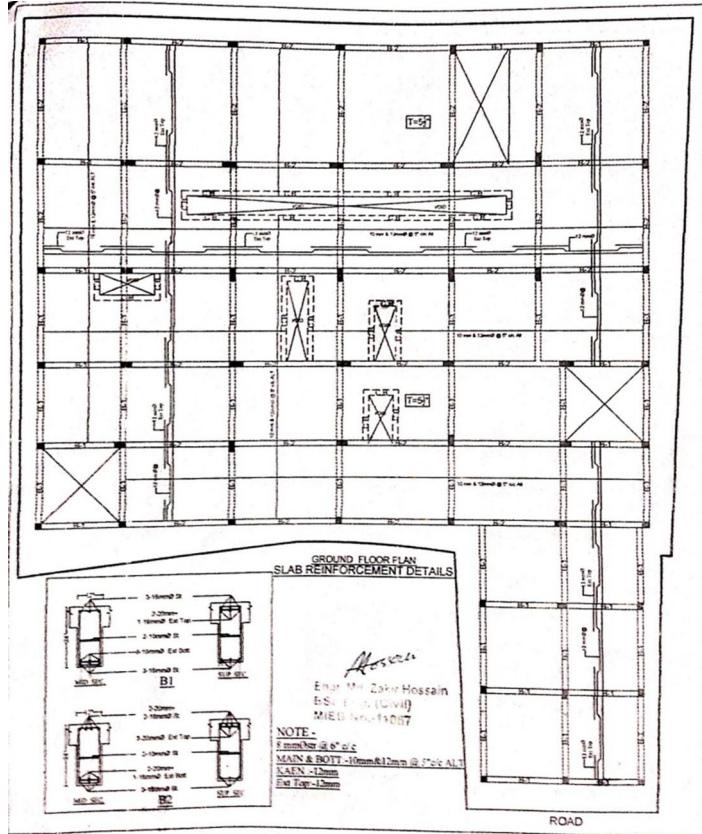
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Allowable bearing capacity of sub-soil, Skin friction & End bearing capacity of piles (allowable) at different depths using Standard Penetration Test (SPT) values & Laboratory test results.

| Borehole No. | Depth Ft. | SPT (Corrected) | Unit wt. gm/cm ³ | Angle of internal friction φ (Cohesion kg/cm ²) | Allowable Bearing capacity, F.S.=2.0 Square footing kg/cm ² | Allowable pile parameters of 18" dia pile (f _s = 3.0) | |
|--------------|-----------|-----------------|-----------------------------|---|--|--|---|
| | | | | | | Skin friction kg/cm ² | End bearing capacity kg/cm ² |
| #1 | 5' | 6 | 1.72 | 11(0.09) | 0.65 | 0.05 | - |
| | 10' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 15' | 7 | 1.74 | 12(0.10) | 0.75 | 0.06 | - |
| | 20' | 14 | 1.88 | 13(0.03) | 1.55 | 0.11 | - |
| | 25' | 2 | 1.64 | 10(0.03) | 0.20 | 0.02 | - |
| | 30' | 2 | 1.64 | 10(0.03) | 0.20 | 0.02 | - |
| | 35' | 2 | 1.64 | 10(0.03) | 0.20 | 0.02 | - |
| | 40' | 9 | 1.78 | 13(0.13) | 1.00 | 0.07 | - |
| | 45' | 29 | 2.18 | 14(0.09) | 3.20 | 0.25 | 18.98 |
| | 50' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 55' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 60' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 65' | 4 | 1.68 | 11(0.08) | 0.45 | 0.03 | - |
| | 70' | 5 | 25.00 | 11(0.08) | 0.55 | 0.04 | - |
| | 75' | 4 | 1.68 | 11(0.08) | 0.45 | 0.03 | - |
| | 80' | 4 | 25.00 | 11(0.08) | 0.45 | 0.03 | - |
| #2 | 5' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 10' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 15' | 5 | 1.70 | 11(0.08) | 0.55 | 0.04 | - |
| | 20' | 7 | 1.74 | 12(0.10) | 0.75 | 0.06 | - |
| | 25' | 2 | 1.64 | 10(0.03) | 0.20 | 0.02 | - |
| | 30' | 2 | 1.64 | 10(0.03) | 0.20 | 0.02 | - |
| | 35' | 3 | 1.66 | 10(0.04) | 0.35 | 0.02 | - |
| | 40' | 16 | 1.92 | 21(0.00) | 1.75 | 0.13 | 10.64 |
| | 45' | 13 | 1.86 | 18(0.03) | 1.45 | 0.10 | 10.86 |
| | 50' | 4 | 1.68 | 11(0.08) | 0.45 | 0.03 | - |
| | 55' | 5 | 2.60 | 11(0.08) | 0.55 | 0.04 | - |
| | 60' | 4 | 2.60 | 11(0.08) | 0.45 | 0.03 | - |
| 65' | 4 | 2.60 | 11(0.08) | 0.45 | 0.03 | - | |
| 70' | 5 | 2.60 | 11(0.08) | 0.55 | 0.04 | - | |

D.A. CONST. & SOILTEST LAB.

Soil Capacity/Footing Design



Structural drawings are incomplete. Typical slab reinforcing and roof slab reinforcing plans are missing. Two differing ground floor slab plans are presented. Plans are generally of very poor quality.

Incomplete Structural Drawings

Identified Priority 3 Concerns

(None)

Priority Actions

Problems Observed Summary

ITEM 1: (Priority 1) Column load run-downs indicate a low column safety factor for the completed building. It is notable that the building is currently under construction at the 5th floor slab level.

ITEM 2: (Priority 2) It was noted that the foundations shown on structural drawings do not match the recommendations made by the Geotechnical report. After examination of Geotechnical findings and various foundation checks based upon the foundations indicated by the structural drawings. It is doubtful that the soil bearing capacity is adequate to support the loads applied to the footings presented. Notably, bamboo piles were used beneath pad footings. However, they commence approximately 2 feet beneath the underside of footing and only extend to a depth of 28'-8" below grade where soil is of very poor capacity.

ITEM 3: (Priority 2) Structural drawings were found to be inconsistent and of low quality. It is questionable how the full structure has been built while lacking clear concise structural drawings. As an example, there is no typical floor slab reinforcing plan provided. However, the structure is currently under construction at the 5th storey level.

Item 1 and Actions

Column working stress will be higher than acceptable upon building completion and is still of concern at the current extent of construction.

Priority 1 (Immediate – Now)

- Do not continue construction past the 5th floor slab level. It is recommended that the 5th floor slab be used as the roof level.

Priority 2 (within 6 weeks)

- Factory engineer to review design, loads and column stresses.

Priority 3 (within 6 months)

- Produce and actively manage a loading plan for all floor plates giving consideration to slab and column capacity.

Item 2 and Actions

Foundation design is questionable given existing soil properties.

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 weeks)

- A Detailed Engineering Assessment to be conducted in order to determine the adequacy of the as-built foundation for existing soil properties

Priority 3 (within 6 months)

- Carry out any remedial measures recommended by above mentioned detailed engineering assessment.

Item 3 and Actions

Structural drawings are inconsistent and non-uniform. Critical building elements have been constructed without proper plans.

Priority 1 (Immediate – Now)

- None

Priority 2 (within 6 weeks)

- A Detailed Engineering Assessment to be carried out in order to adequately formulate structural plans and assess the suitability of as-built structural elements

Priority 3 (within 6 months)

- Address findings and recommendations of the above mentioned detailed engineering assessment