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Date: 13.NOVEMBER.2014

Searock Apparels Ltd

Plot No. 98, National University, Choydana, Gazipur
(WGS 1984: 23.957122N, 90.381394E)

12.NOVEMBER.2014

Structural Inspection Report

Observations & Actions

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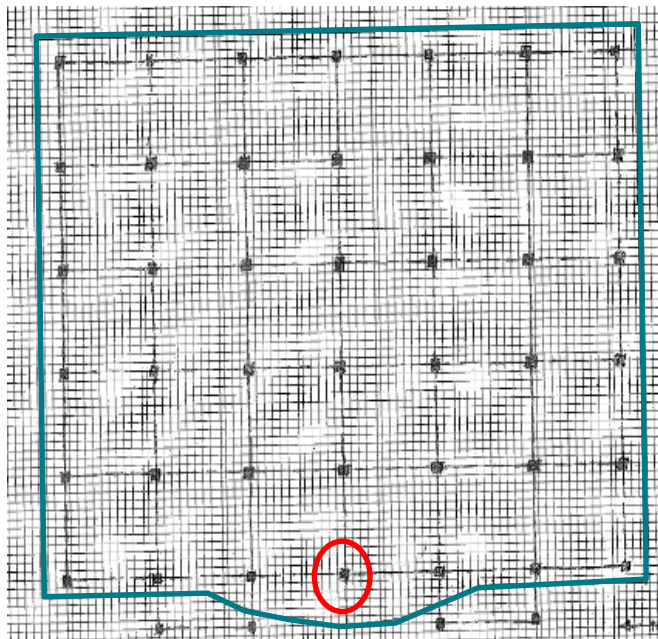
Reviewed by: Md. Abdul Momin

Approved by: Mohammed Safiq uddin



Observations

Columns appears to be stressed



Column suspected to be stressed

Large 3.1 m cantilever is constructed on west side of the building from 1st to 5th floor, which is supported by beams and it's used for temporary store, office and prayer hall etc.

Columns appears to be stressed





4, 2000 lt water tank on roof



Uncontrolled storage



Uncontrolled stacking of fabric roll

Columns appears to be stressed

Loaded cantilever slab



1.25 m long cantilevers on east are loaded with heavy denim and fabric rolls. Those cantilevers are used as temporary storage for cutting section.

Loaded cantilever slab



Build up on 4th floor

- 16 cm build up on floor slab
- 10 cm build up on floor slab

16 cm Build up on north east corner and 10 cm build up on east side are observed on 4th floor cantilevers and main slab. Which increase the stress on edge and corner columns.

Loaded cantilever slab

Cracks in several Beams and Slabs

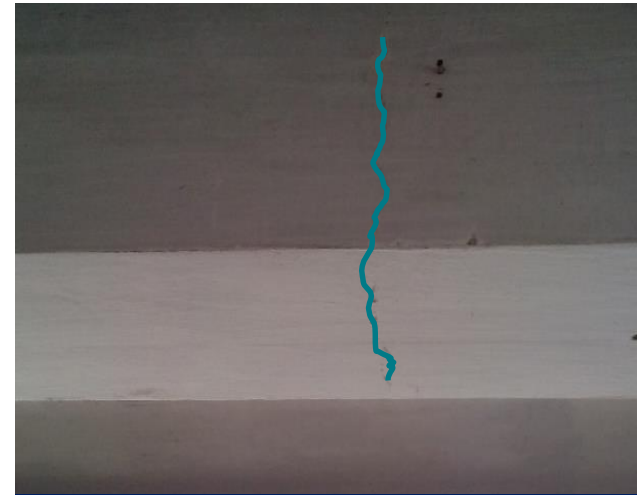


Cracks on Beams of 5th floor roof slab

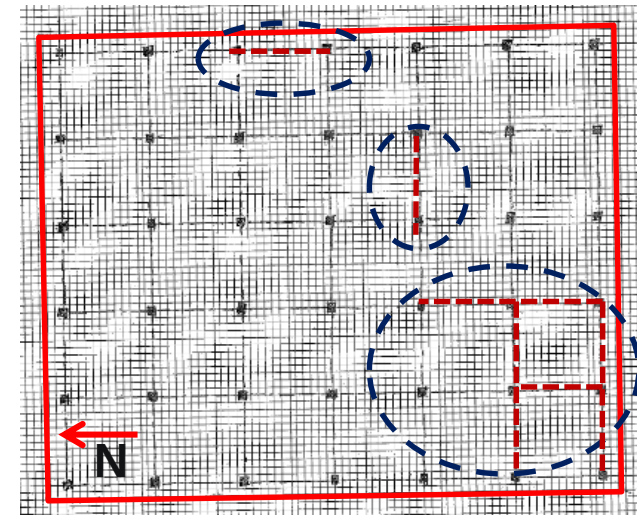


Cracks on Beams of 5th floor roof slab

Several Cracks are observed on various slabs and beams of 5th and 6th floor. Which is Suspected as flexural cracks.



Cracks on Beams of 5th floor roof slab



Cracked Beams of 5th floor

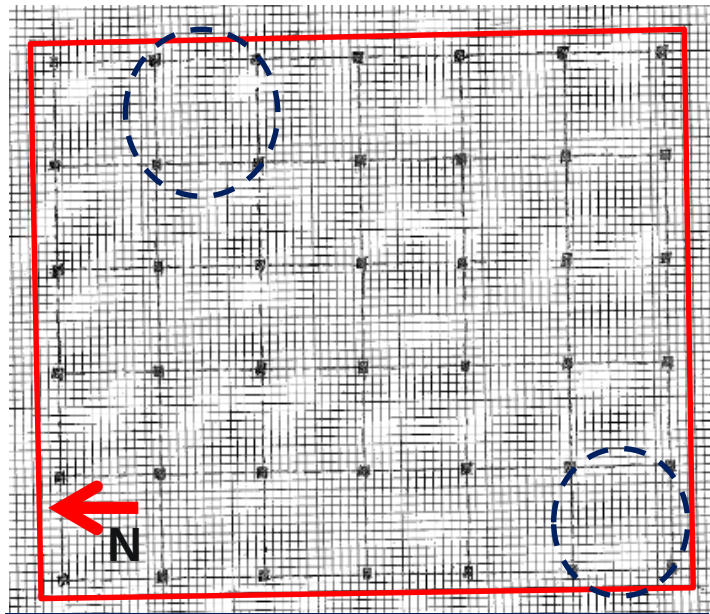
Cracks in several Beams and Slabs



Cracks on 6th floor roof slab



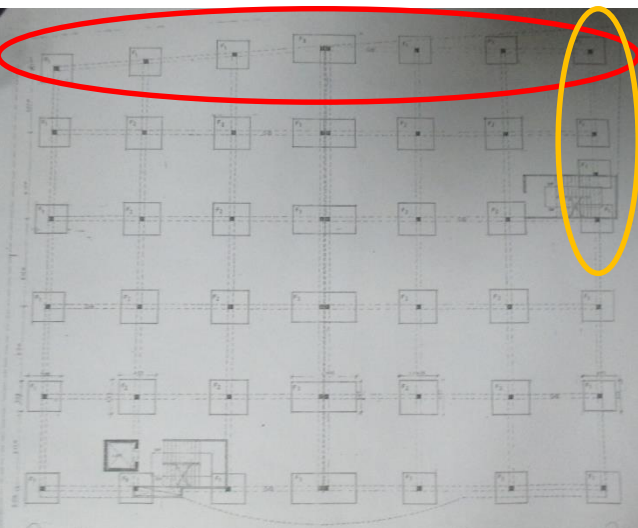
Cracks on 5th floor roof slab



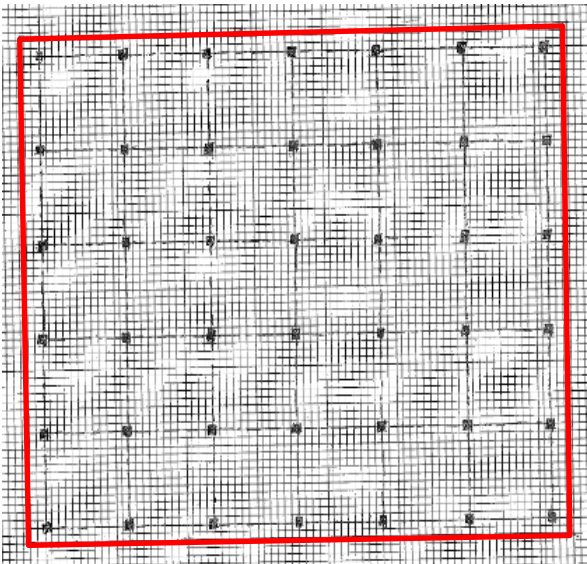
Crack appears on 5th floor roof slab on east side and 6th floor roof slab on south west corner of factory building.

Cracks in several Beams and Slabs

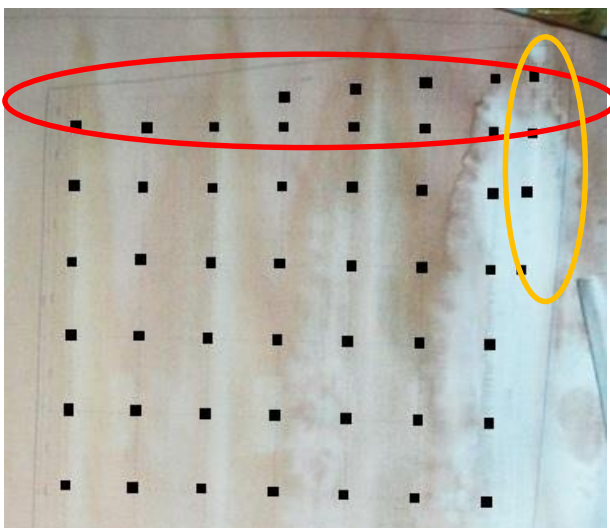
Inconsistencies between Record Information and existing structure



Foundation Layout from structural drawing



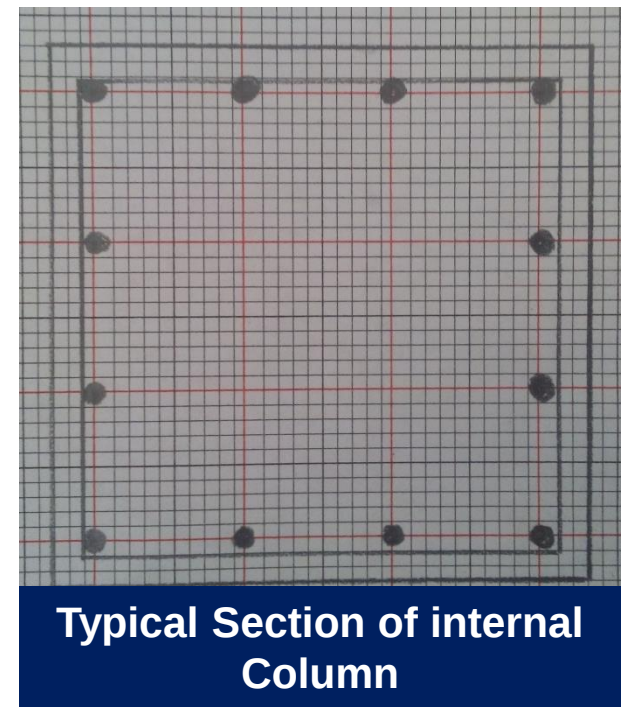
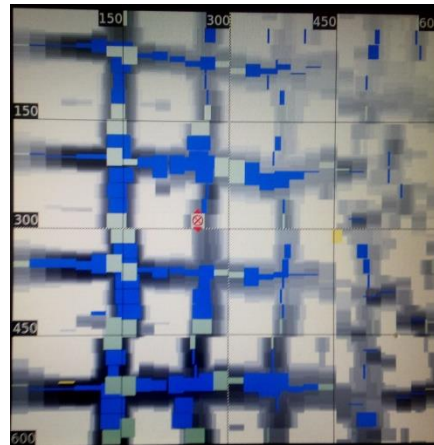
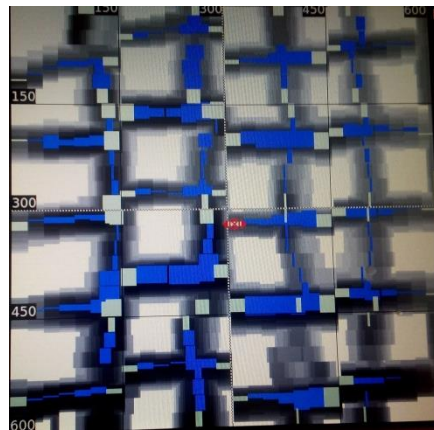
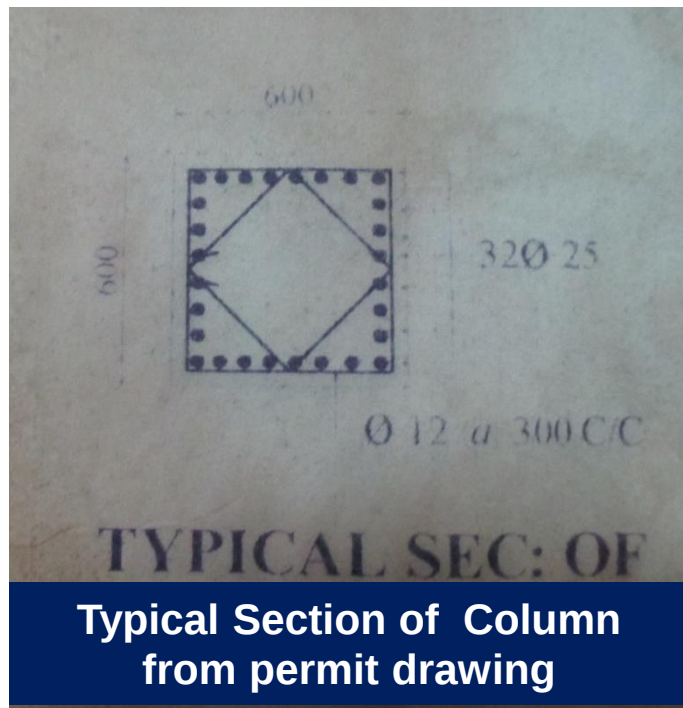
Actual Column Layout



Column Layout from permit drawing

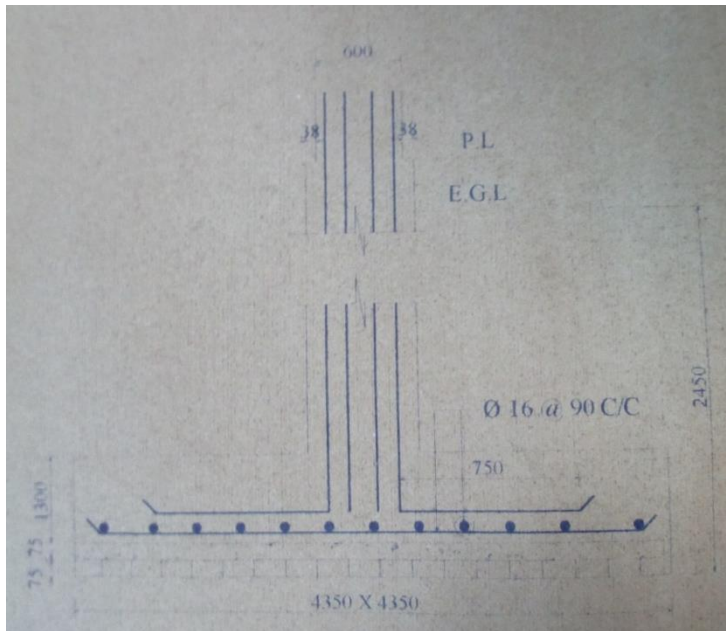
Foundation layout from structural drawing and Column layout from permit drawing are not matched with each other. Even actual column layout is different from both of them.

Inconsistencies between Record Information and existing structure



Permit Drawing and structural drawing shows that internal column is 600X 600mm with 32, 25mm bar. From Ferro Scan and exposed column at top Floor found that internal columns are 600x600mm with 12, 25mm bar and Edge and corner columns are 550x500mm with 4, 20mm + 8, 25mm bar.

**Inconsistencies between Record
Information and existing
structure**



Typical footing section from permit drawing

07.3 The field exploration data, SPT values and the net allowable bearing capacity of soil for square footing represent that the underlying subsoil stratum from 12ft depth to the final depth of exploration is stable and suitable for placing of shallow foundation for construction of the proposed structure.

07.4 Therefore, shallow foundation preferably isolated column footing may be placed at shallow depth for the proposed structure as commented below.

07.5 In view of the above discussion and observation supported with exploration data and the laboratory test results the following suggestion has been furnished for founding the proposed 8- storied Industrial Building in the explored area.

- **Advise to provide, isolated column footing of suitable dimension at 12ft depth below the existing ground level.**
- Finally, it is noted here that the design engineer will take the appropriate decision about the type, depth and extent of foundation considering the 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.

THE NATIONAL SOIL ENGINEERS
DHAKA

M. C. Rana
MANAGING DIRECTOR

Recommendation of Soil Report

Soil Test Report Recommend that Isolated column footing at 12 ft depth below existing ground level. From Structural Drawing recommend isolated Column Footing at 8 ft depth below existing ground level.

Inconsistencies between Record Information and existing structure

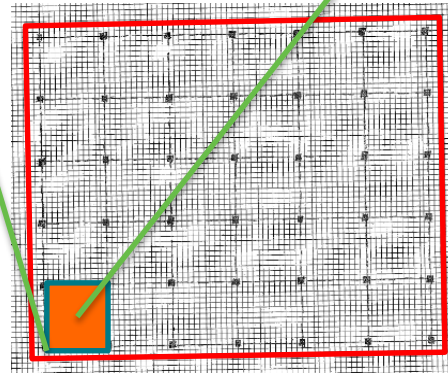
Water Ingress at Roof Level



No waterproofing membrane was visible on the roof of the main factory building. This means that any cracks in the surface finishes on the roof will allow water to seep into the concrete slab beneath the finishes, and cause corrosion of the reinforcing steel.

Water Ingress at Roof Level

**Weird light weight steel roof under concrete roof on
north west corner**



A weird simple steel shade under concrete slab is observed on north west corner at ground floor which is used as canteen and the supports are anchored with column.

Weird light weight steel roof under concrete roof on north west corner

Priority Actions

Problems Observed Summary

ITEM 1: Columns appear to be stressed

ITEM 2: Loaded cantilever slab

ITEM 3: Cracks in several Beams and Slabs

ITEM 4: Inconsistencies between Record Information and existing structure

ITEM 5: Water Ingress at Roof Level

ITEM 6: Weird light weight steel structure under concrete roof on north west corner

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Columns appear to be stressed	Factory Engineer to review design, loads and columns stresses in all columns.	6 – weeks
2	Columns appear to be stressed	Verify in situ concrete strength by 100mm diameter cores.	6 – weeks
3	Columns appear to be stressed	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6 – weeks
4	Columns appear to be stressed	Implement actions arising from Engineering Assessment.	6 – Month
5	Loaded cantilever slab	Building Engineer to Assess or check the structural design of cantilever slab and supporting columns of factory building.	6 – weeks
6	Loaded cantilever slab	Implement actions arising from Engineering Assessment.	6 – Month

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Cracks in several Beams and Slabs	Building engineer to check all cracks either their structural or not. If it is structural then repair all cracks. Only plaster is not acceptable.	6 – weeks
8	Inconsistencies between Record Information and existing structure	The building engineer to survey the actual conditions and produce the As-build drawings as early as possible.	6 – weeks
9	Inconsistencies between Record Information and existing structure	Check the foundation system. Building Engineer to provide evidence of as constructed foundation type by digging trial pit.	6 – weeks
10	Water Ingress at Roof Level.	Provide a proper water proofing layer or Membrane on the roof floor.	6 – weeks
11	Water Ingress at Roof Level.	Provide water proofing paint or layer on extended reinforcement. If no extension is necessary or planed then cut them all.	6 – weeks
12	Weird light weight steel roof under concrete roof on north west corner.	Building engineer to define why this steel roof was provided ? and remove that, if it's not necessary.	6 – Month