

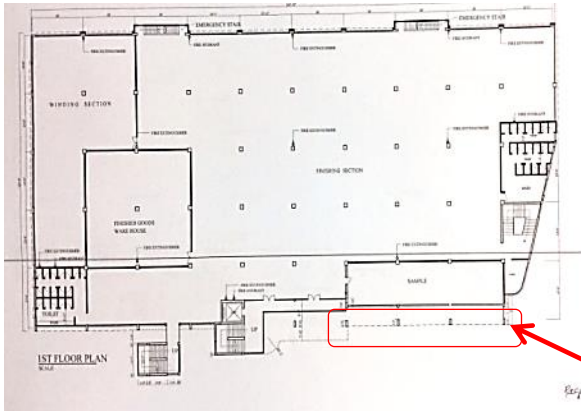
Dynasty Sweaters (BD) Ltd Dynasty Knit Fashion Ltd

Aukpara, Ashulia, Savar, Dhaka
(23.878640, 90.297237)
16th March 2014



Observations

Slender columns at front of building

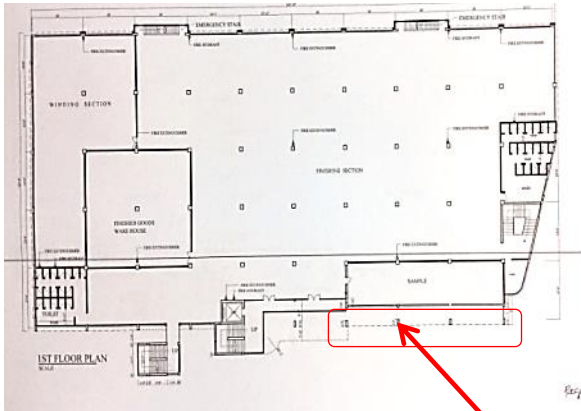


Engineering drawing showed column as 300mm wide.

Removal of render suggests as built column of 255mm wide.

Slender Columns

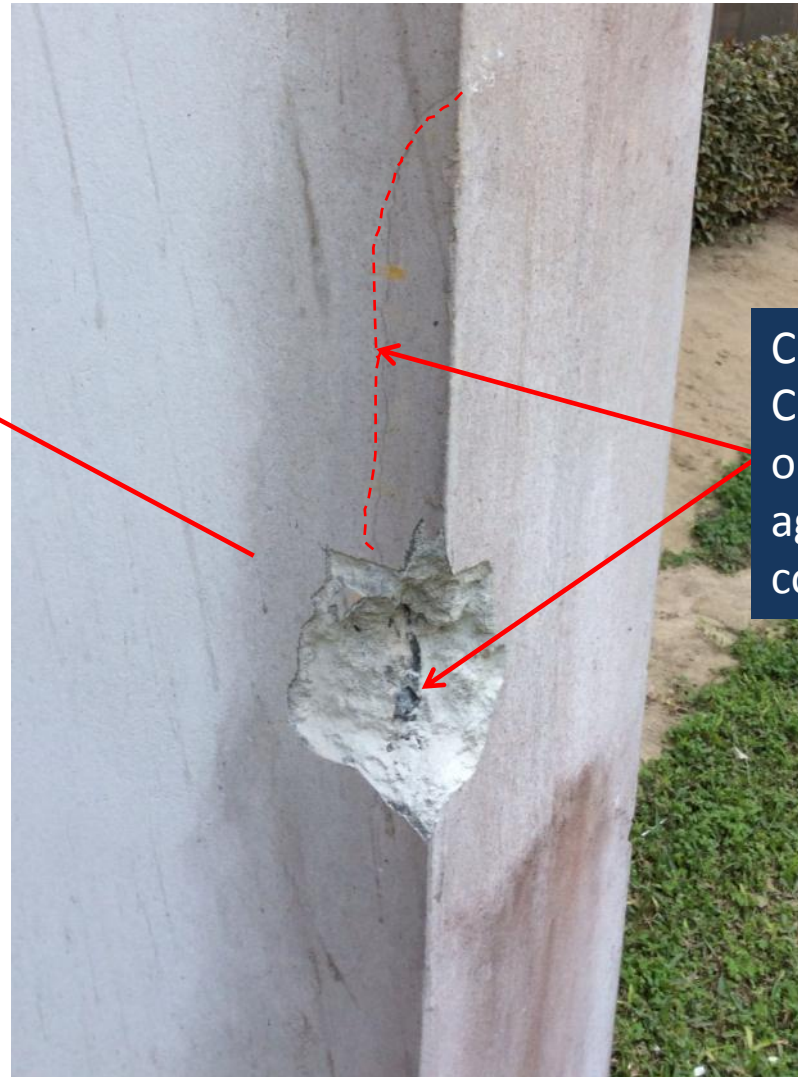
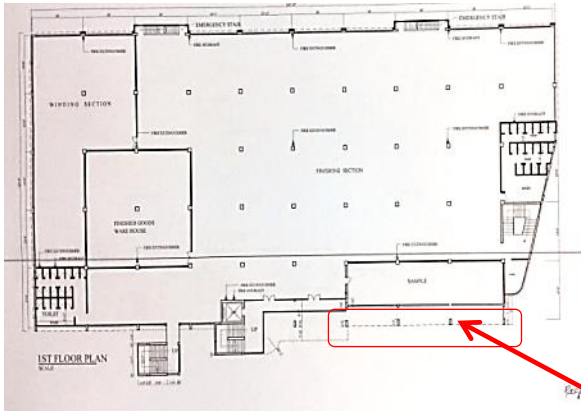
4 (Ground Floor, Grid F1 to J1)



Edge column:
Apparent lack of verticality

Slender Columns

5 (Ground Floor, Grid F1 to J1)

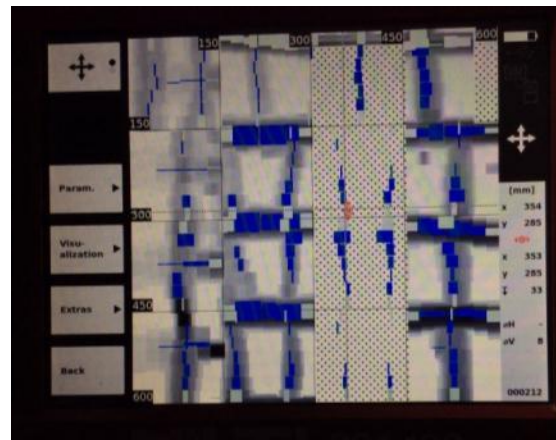


Crack in render.
Closer inspection
observed large
aggregate and poor
concrete.

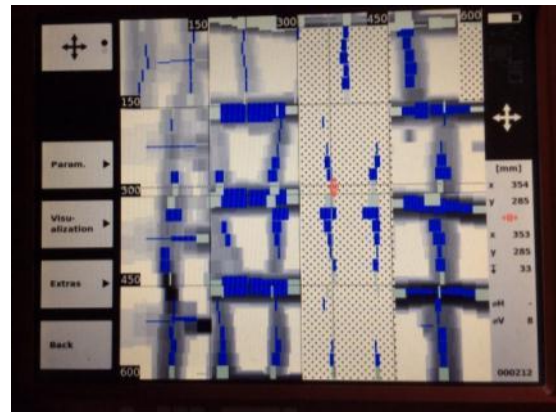
Slender Columns

6 (Ground Floor, Grid F1 to J1)

Column stresses



Ferroskans indicate 6 bars in each face, i.e 22 in total



C12	24"x24"	22"x22"		12-32 ϕ +10-25 ϕ	4-32 ϕ +16-25 ϕ	20-25 ϕ
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Column stresses

Columns are highly stressed. Engineering drawings show stone aggregate and a high % of reinforcement.

Stone aggregate was confirmed during visit.

No cylinder strength results from construction were available to verify the concrete strength.

The high density of reinforcement could not be conclusively confirmed by the ferroskaner.



Column stresses

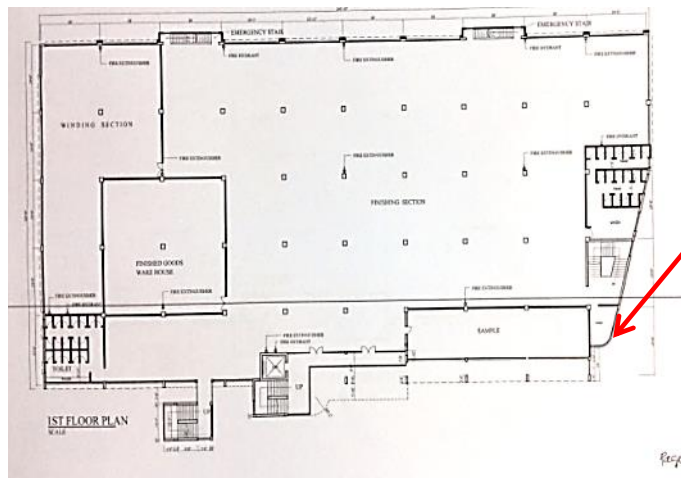
Columns are highly stressed. Engineering drawings show stone aggregate and a high % of reinforcement.

Stone aggregate was confirmed during visit.

No cylinder strength results from construction were available to verify the concrete strength.

The high density of reinforcement could not be conclusively confirmed by the ferros scanner.

**Corner column not shown on engineering drawing. Connection to slab and foundation size unknown
(Ground Floor, Grid J'1)**



Corner Column (Grid J'1) is not shown in the drawings

Column was not shown on engineering drawings.

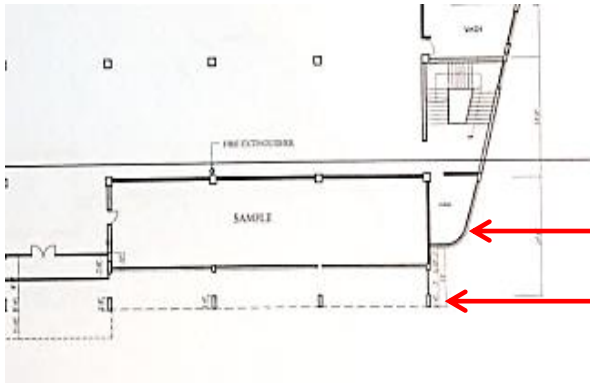
Connection to upper beam/slab and foundation unknown.

Cracking in the brick walls supported by the slab was consistent with cantilevering deflections and therefore the effectiveness of the column is unclear.

Column is also in loading bay so is at risk of vehicle impact.



**Lack of protection of vehicle impact
to corner column
(Ground Floor, Grid J1 and J'1)**



Risk of accidental damage due to vehicle impact.

Edge protection in form of a side barriere required



Hairline Cracks in Concrete Beams

Hairline Cracks in beams to be investigated



Priority Actions

Problems Observed

1. Slender columns at front of building, narrower than engineering drawings.
2. Column stresses in internal columns.
3. Corner column not shown on engineering drawing, connection to slab and foundation size unknown
4. Lack of protection of vehicle impact to corner column.
5. Hairline Cracks in Concrete Beams

Item 1 and actions

Slender columns at front of building. Removing render showed column to be narrower than shown on Engineering drawing. Column does not appear vertical.



Priority 1

(Immediate - Now)

- None required

Priority 2

(within 6-weeks)

- Building Engineer to investigate extent of large stone in column cover zone. Remove render/ concrete in location of crack and repair as advised by Engineer.
- Confirm actual column dimensions by removal of render locally on all faces.
- Measure verticality of all columns double storey columns.
- Building Engineer to commence checking design of all double storey height columns taking account of verticality, actual dimensions, reinforcement and loads.

Priority 3

(within 6-months)

- Building Engineer to have completed check

Item 2 and actions

C12 Columns are highly stressed. Engineering drawings show stone aggregate and a high % of reinforcement. % reinforcement and concrete strength could not be conclusively confirmed during visit.

C10	24"x24"	22"x22"		12-32 +8-25	4- +1
C11	24"x24"	22"x22"		12-32 +8-25	4- +1
C12	24"x24"	22"x22"		12-32 +10-25	4- +1
C13	14" DIA	12" DIA		6-25	

Priority 1

(Immediate - Now)

- None required

Priority 2

(within 6-weeks)

- None required

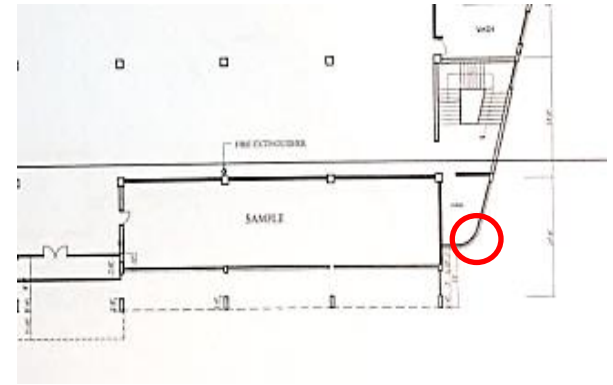
Priority 3

(within 6-months)

- **Create controlled loading plans for all floors**, designating where storage can be placed and can not be placed.
- **Provide calculations showing the structural adequacy of all columns**, taking into account the loading plans and all built structure including additions beyond the original design. Provide concrete strength tests.

Item 3 and actions

Corner column not shown on Engineering drawing.
Connection to slab and foundation size unknown



Priority 1

(Immediate - Now)

- None required

Priority 2

(within 6-weeks)

- None required

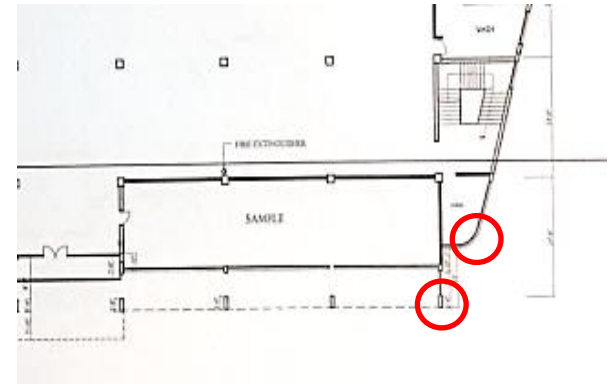
Priority 3

(within 6-months)

- Building engineer to produce as-built information for column confirming connection to slab over and foundation detail.

Item 4 and actions

Lack of protection to corner columns against vehicle Impact - (Ground Floor, Grid J1 and J'1)



Priority 1

(Immediate - Now)

- None required

Priority 2

(within 6-weeks)

- None required

Priority 3

(within 6-months)

- Provide protection to columns against impact from vehicles.

Item 5 and actions

Vertical hairline cracks are noted in the side faces of most deep beams. Crack to be investigated to see if it penetrates beam or if it only effects the render.



Priority 1

(Immediate - Now)

- None required

Priority 2

(within 6-weeks)

- None required

Priority 3

(within 6-months)

- Render to be removed locally to a number of cracks (say 10 locations) to check if cracking penetrates concrete beam.
- If crack penetrates beam the building engineer is to provide evidence that the reinforcement bars in the side faces as shown on the drawings was actually installed.