

Nafisa Apparels Ltd.

Plot No: A-9/10/11, BSCIC I/A, Kalurghat, Chandgaon, Chittagong, Bangladesh

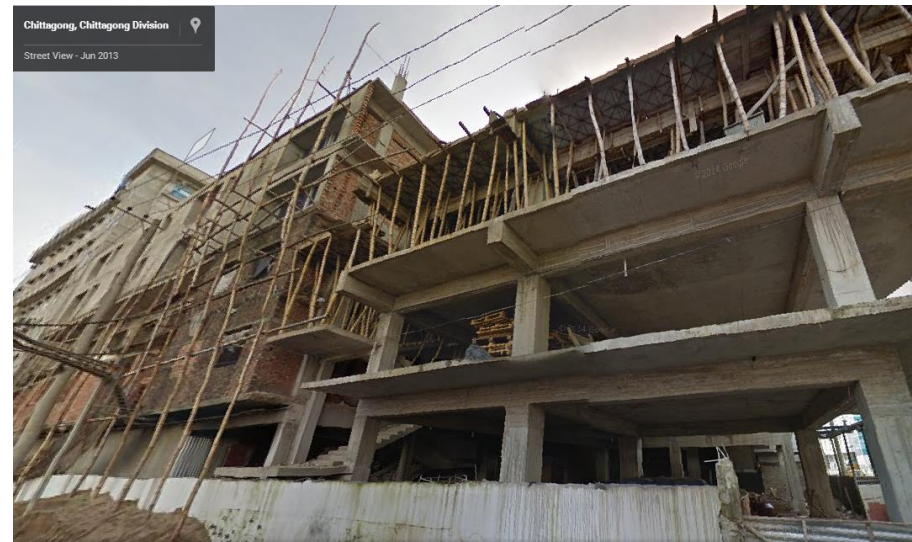
(22.382567N, 91.864811E)

7th March 2015



Building Observations

Highly-stressed columns (Original building)



Typical Toilet Build-up

- Building during construction phase (Ref. Google Maps – photo c. 2013)
- Additional floor has been added to older part of building behind (previously 5 storey). The soils report from 2004 also refers to a 5 storey building.

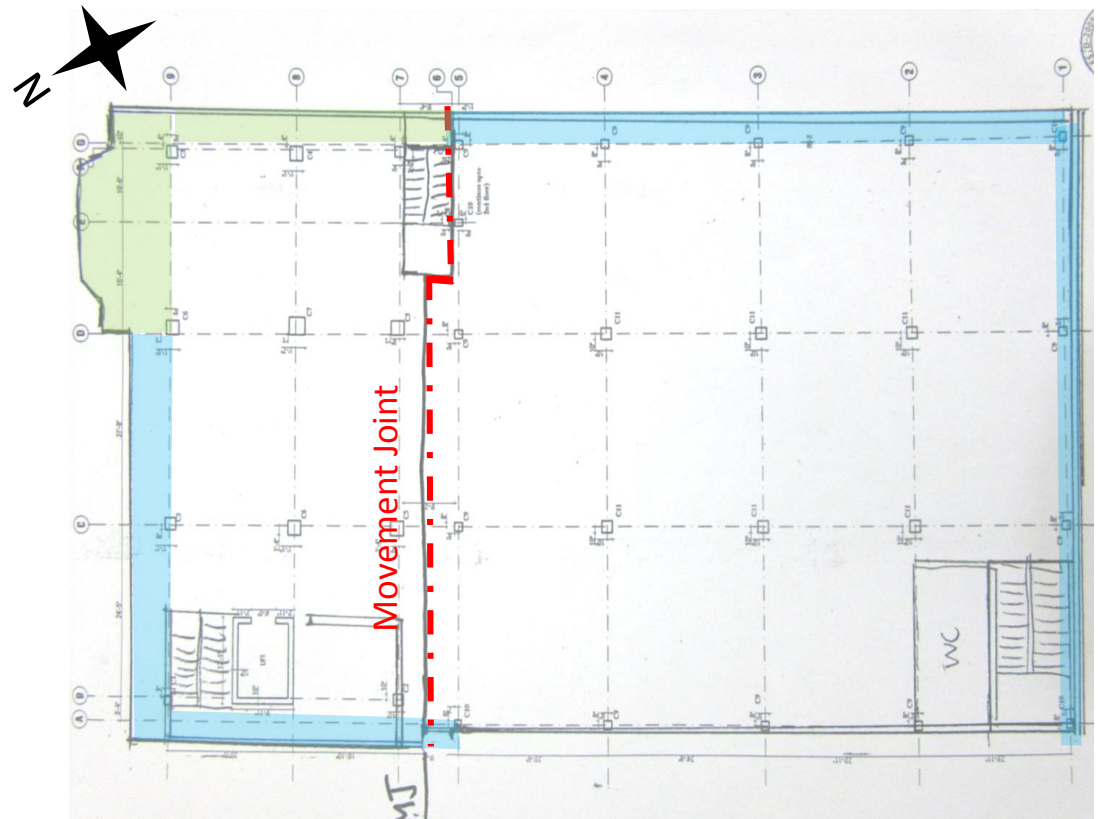
Columns at ground floor level appear to be stressed in excess of normal design limits



No beams in 1st floor cantilever (Extension)



Typical internal beam/column support system



Construction photo of front cantilever (Google)



No Cantilever beam at any level



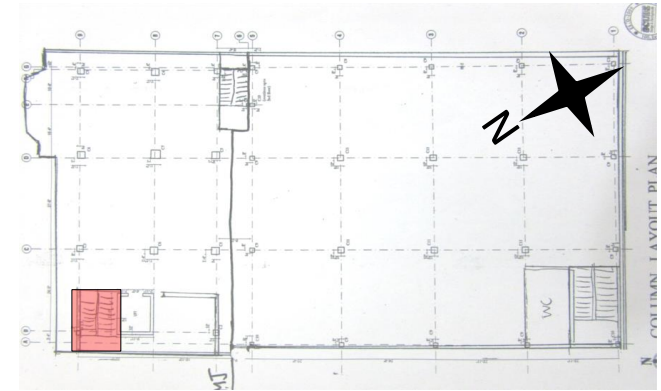
No Cantilever beam at 1st floor level, all other floors have cantilever beams.

Structural System

Non-engineered roof structure



- Non-engineered roof structure without bracing system.
- Roof structures susceptible to uplift in high winds.
- Factory Engineer to assess tying connection to brick walls.



Roof above stair core at front of building

Priority Actions

Problems Observed

1. Highly-stressed columns (Original building)
2. No beams in 1st floor cantilever (Extension)
3. Non-engineered steel roof structure (Extension)

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Highly-stressed columns (Original building)	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
2	Highly-stressed columns (Original building)	Verify in-situ concrete strength by 100mm dia. cores from min. 4 no. ground floor columns in this area.	6-weeks
3	Highly-stressed columns (Original building)	Factory engineer to confirm number and diameter of bars in the columns at ground floor, as the reinforcement drawings did not always match the scanned reinforcement or the structural drawing.	6-weeks
4	Highly-stressed columns (Original building)	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-months
5	No beams in 1st floor cantilever (Extension)	Factory engineer to carry out design check of cantilever slab at 1st floor level.	6-months
6	No beams in 1st floor cantilever (Extension)	Any strengthening works arising from design check to be implemented.	6-months
7	Non-engineered steel roof structure (Extension)	Factory Engineer to perform design check for lightweight steel roofs, including lateral stability and uplift in high winds.	6-months
8	Non-engineered steel roof structure (Extension)	Carry out any works arising from design check.	6-months