

Liberty Knitwear Co. Ltd. (9501)

Ramarbagh, Kutubpur, Fatullah, Narayangani, Bangladesh

(23.647079N, 90.487564E)

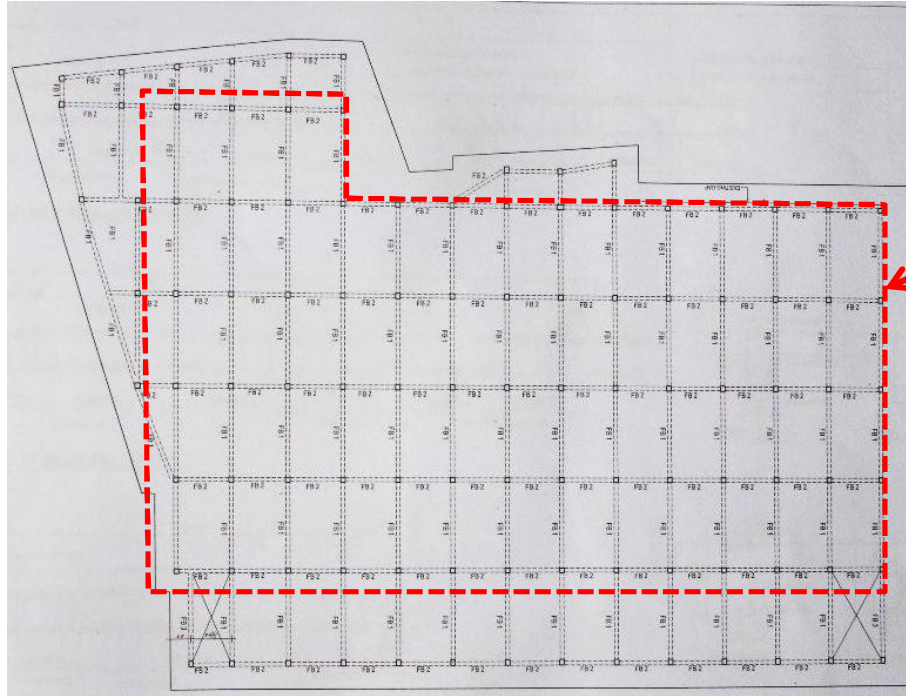
27.MARCH.2014



Identified Priority 1 Concerns

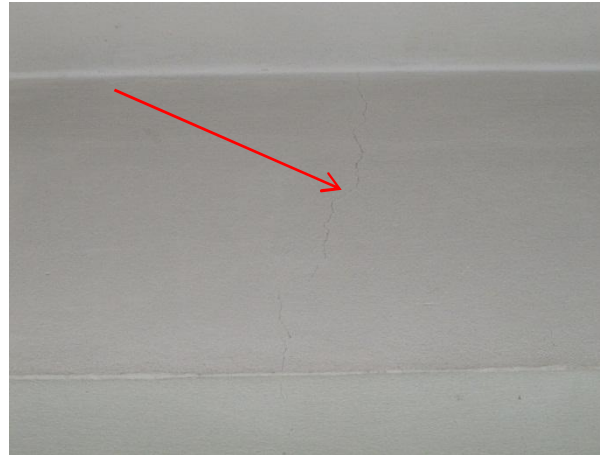
Cracks in beam - capacity check is required

Building 1



1st Priority 1 Concern

The cause of cracks occurred on long span beam as shown on 4th floor plan seems to be from uncontrolled heavy load.



Cracks appeared along slab soffit and beam, capacity check is required prior to repairing.

Uncontrolled Heavy Storage Loading

Building 1



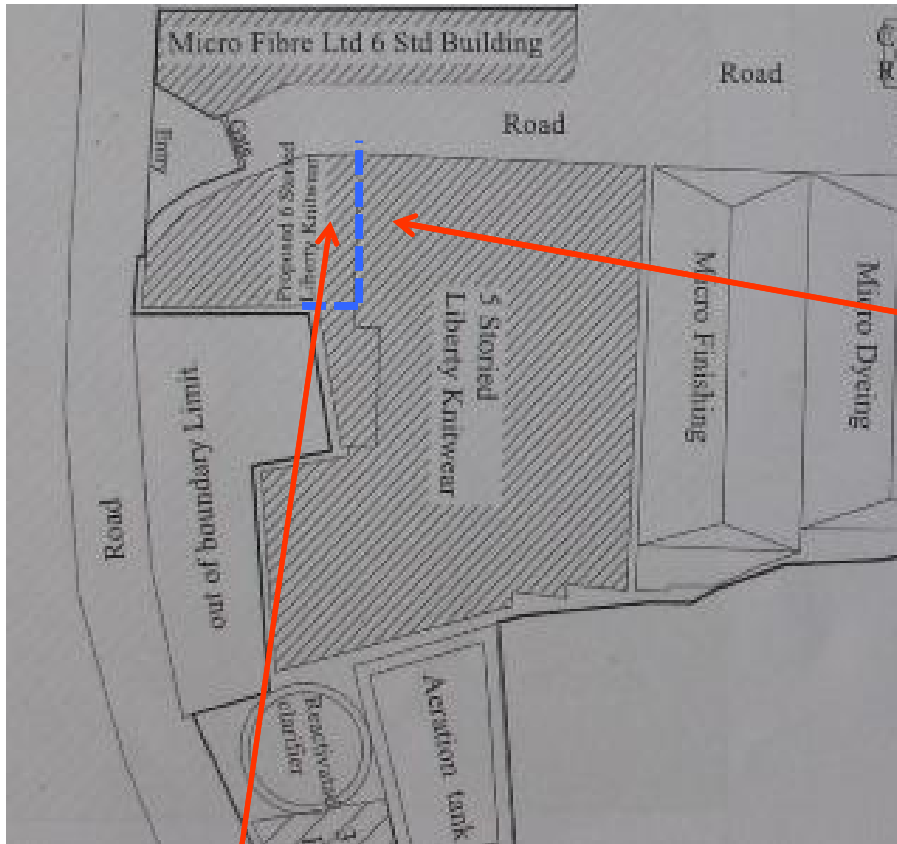
2nd Priority 1 Concern



Uncontrolled heavy storage on 4th floor. Reduce stacking height of storage to ensure total load does not exceed 3.0kPa.

No movement joint properly established
to separate Building 1 and Building 2

3rd Priority 1 Concern



----- Movement joint to be established properly



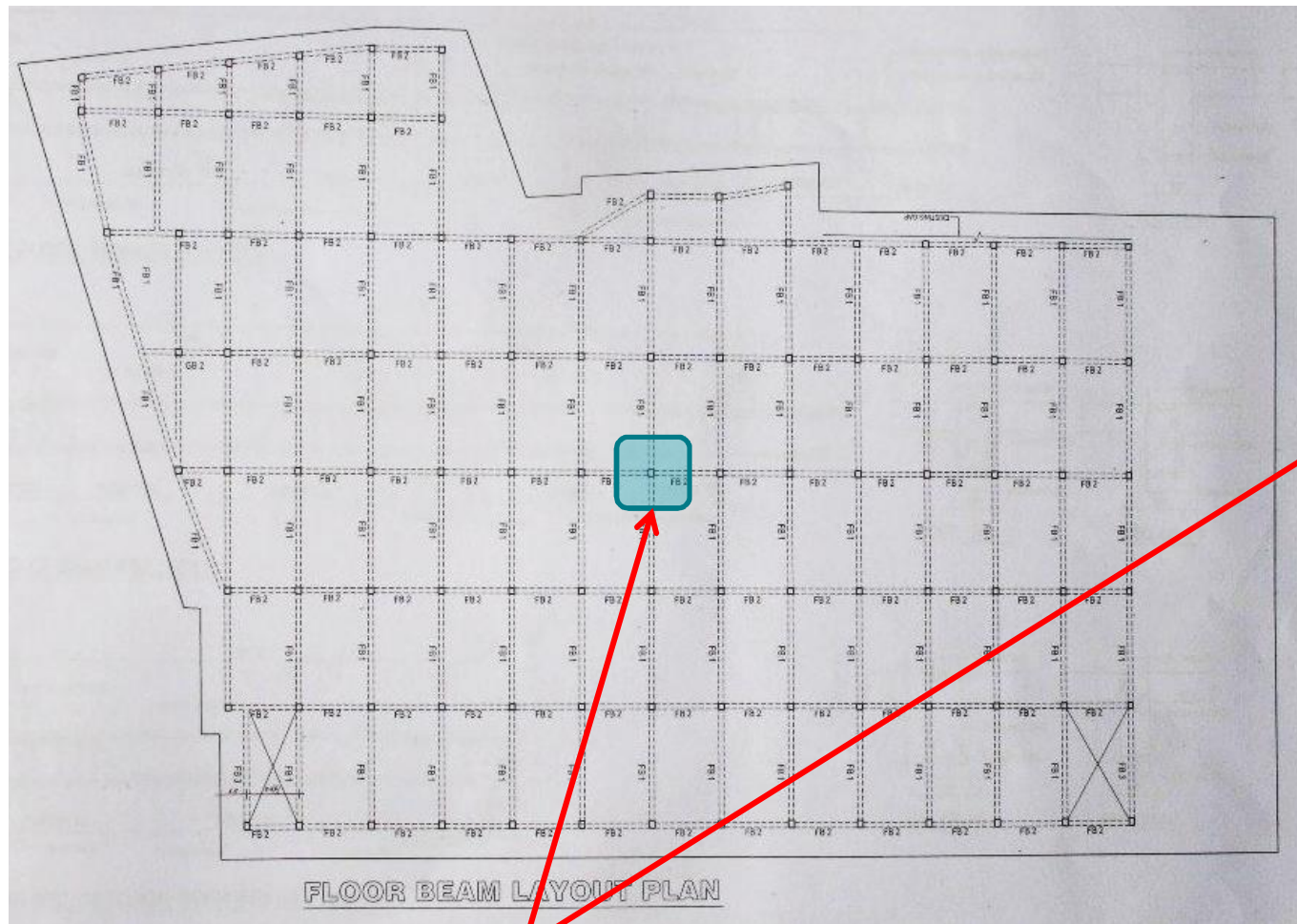
No movement joint established properly to separate building 1 and 2. Building assessment including column and foundation capacity checks are required.

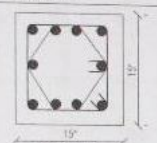
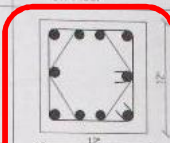
Identified Priority 2 Concerns

Key Column Check for Load Run-down

Key Steel Column Check for Building 1:

1st Priority 2 Concern



COLUMN SCHEDULE		
Column Marks	Below FGL	Gr. Floor
C-1		

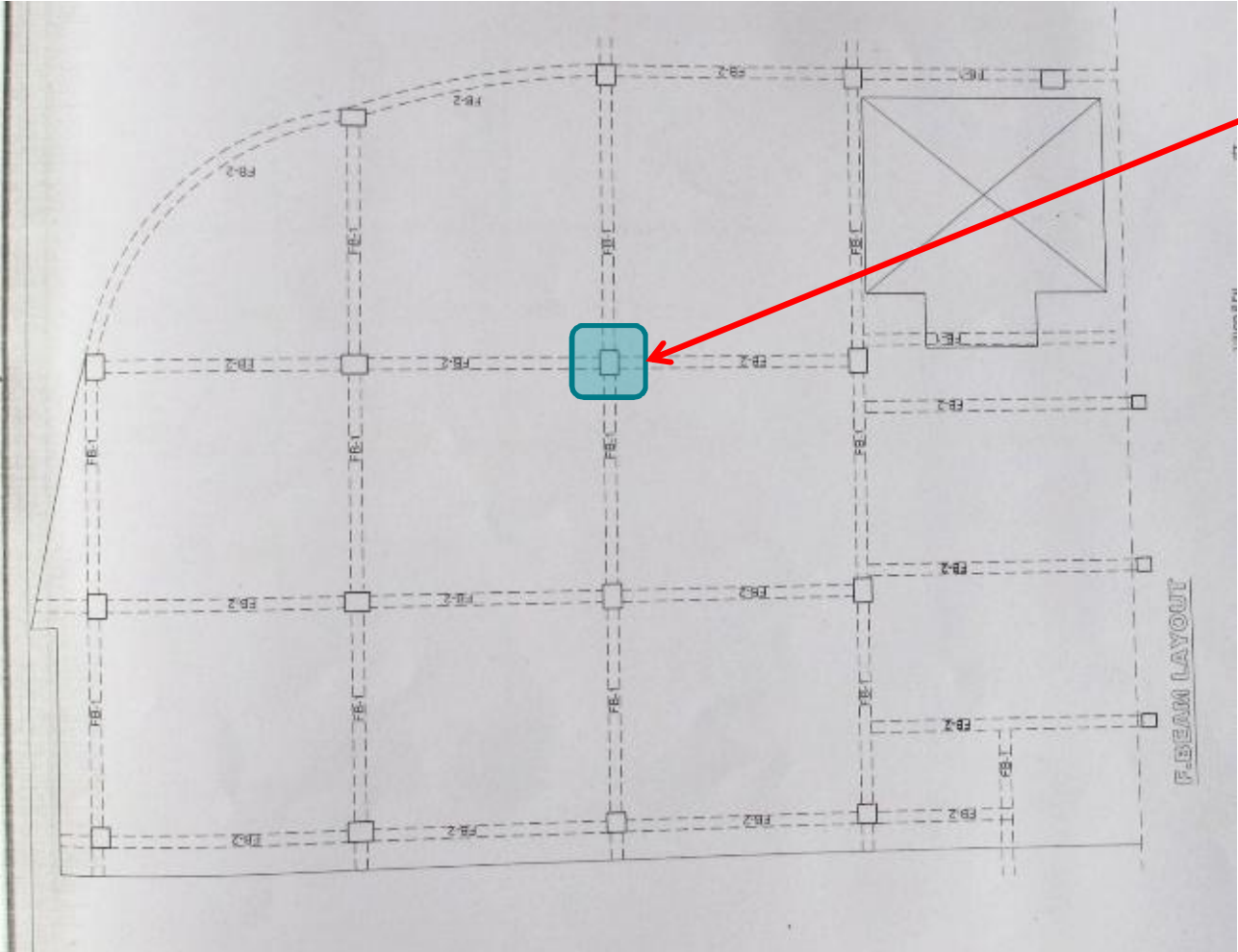
Load rundown at the key concrete column; it is found that the column stress is within the range of FoS between 1.50 and 1.86 which is a '**YELLOW**' rating.

Internal Column Stress

Key Column Stress Check for Building 2:

1st Priority 2 Concern

Load rundown at the key concrete column; it is found that the column stress has FoS greater than 1.86 which is a 'GREEN' rating.



B A R S C H E D		
Column With Main		
SL. NO	BELOW GL / PL.	G. FLOOR
C-1	22" X 22" 4-22Ø+8-20Ø	20" X 20" 4-22Ø+8-20Ø

Internal Column Stress

Overall Stability System



Concerns on the stability system for lateral loading and seismic loading. Façade brickwork with little capacity; lack of moment capacity in connection between columns and beams.

A further Detail Engineering Assessment is required to assess whether such a system can resist lateral loads from wind & earthquakes



Priority Actions

Problems Observed Summary

ITEM 1: (Priority 1) Cracks in beams (building 1, 4th floor) capacity checks are required.

ITEM 2: (Priority 1) Uncontrolled Heavy Storage Loading.

ITEM 3: (Priority 1) No movement joint established properly to separate Building 1 and Building 2.

ITEM 4: (Priority 2) Stability system and foundations to be assessed in more detail.

Item 1 and actions

Cracks in beams (building 1, 4th floor) capacity checks are required.

Priority 1 (Immediate – Now)

- Request the detail engineering assessment of factory to be carried out and a suitable method of repair is to be established.
- Simply plastering over is not allowed.

Priority 2 (within 6 – weeks)

- Continue to implement load plan and a Detailed Engineering Assessment to be completed

Priority 3 (within 6-months)

- Continue to implement load plan and the Detail Engineering Assessment's results.

Item 2 and actions

Uncontrolled heavy storage loading on 4th floor.

Priority 1 (Immediate – Now)

- Reduce stacking height of fabric rolls to ensure total load does not exceed 3.0kPa.

Priority 2 (within 6 – weeks)

- Adopt some sort of signage/staff guidance to ensure that the maximum weight of storage is not exceeded.
- Produce an allowable loading plan for each level.

Priority 3 (within 6-months)

- Maintain standards of quality control to ensure that storage procedures are correctly followed so that overloading problems do not arise in the future.
- Implement and manage loading plan.

Item 3 and actions

No movement joint established properly to separate building 1 and building 2.

Priority 1 (Immediate – Now)

- None.

Priority 2 (within 6 – weeks)

- Construct a freely moveable and unrestricted movement joint between the two buildings at each level.

Priority 3 (within 6-months)

- None required.

Item 4 and actions

Stability system / moment frame capacity.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- A Detail Engineering Assessment to be carried out, in particular stability and foundation aspects to be investigated in detail.

Priority 3 (within 6-months)

- Implement any structural changes or repair works deemed necessary by the aforementioned assessment.