

Integra Apparel (Bangladesh) Co., Ltd.(11376)

Plot#742, Dhour, Nayanagar, Nisshatnagar Turag, Dhaka, Bangladesh

(23.886811N, 90.376510E)

16.MARCH.2014

ACCORD
on Fire and Building Safety in Bangladesh



Site Observations

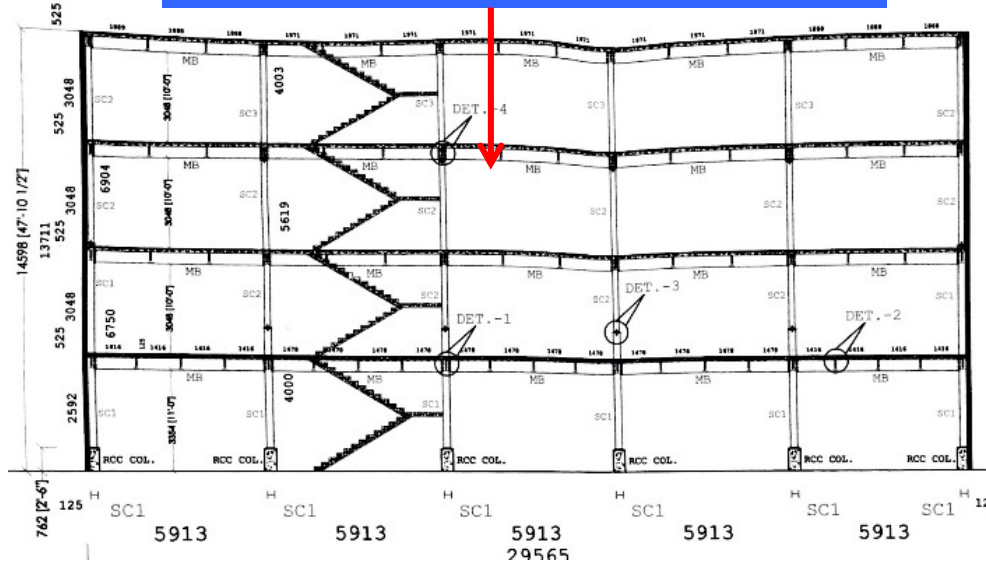
Adequacy of column and foundation capacities are required to be investigated and confirmed.

⑥

Proposed 4 Storey Structural Drawing

①

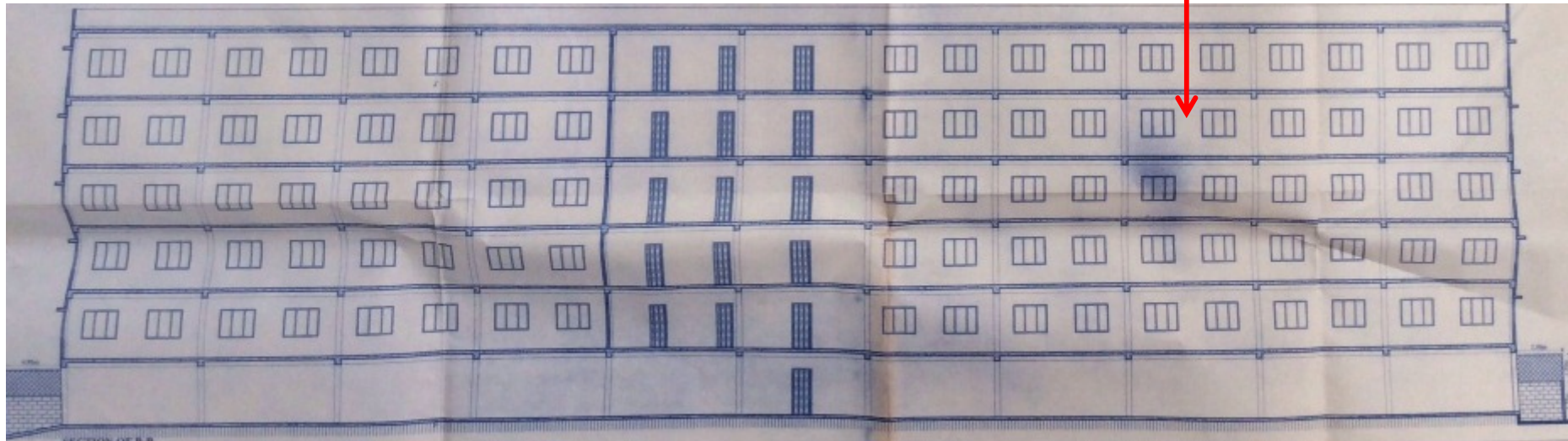
Priority 1 Concern



Load rundown based on the 4 storey structural drawings - at a key steel column, it is found that the steel column has a FOS between 1.25 and 1.50 which gives an AMBER rating.

Load rundown based on the 6 storey architectural drawings - at a key steel column, it is found that the steel column has a FOS lower than 1.00 which is RED rating.

Proposed 6 Storey Architectural drawing



NOTE: The structural drawings don't match with the architectural drawings. The adequacy of the columns and foundations must be investigated and confirmed.

Building Extents

Fire proofing material for steel structure is required.



Priority 2 Concern



Fire proofing material for structural steel element is recommended.



Capacity check for fire escape steel staircase

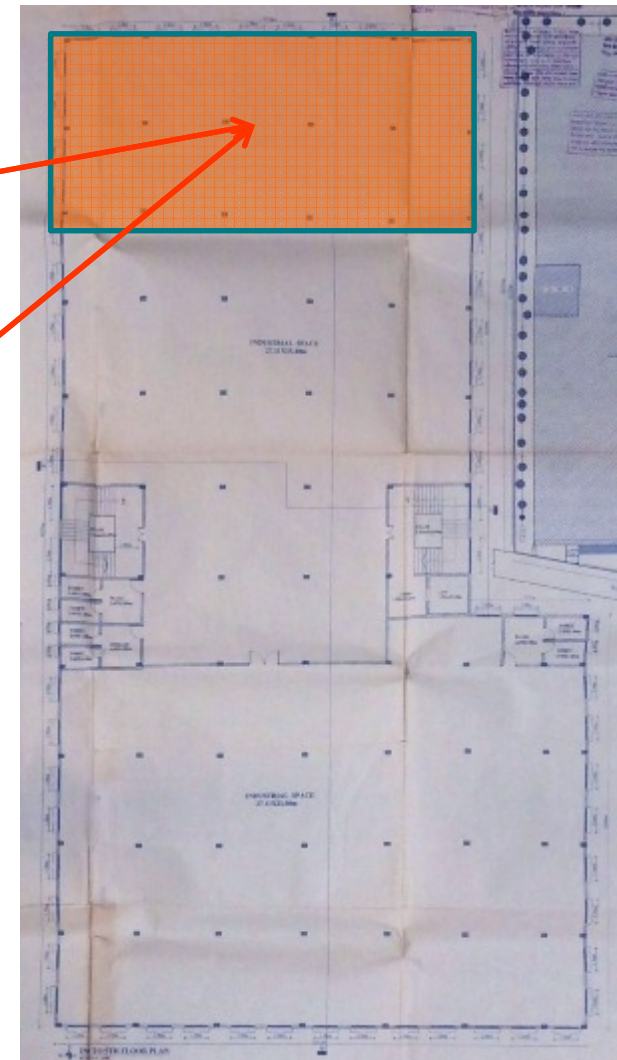
Priority 2 Concern



Capacity check for fire escape steel staircase is required due to no drawings being provided.

Uncontrolled Heavy Storage Loading

Priority 2 Concern



Uncontrolled heavy storage on ground floor.

Overall Stability System



Further detail engineering assessment is required whether such system can resist the lateral load from wind & earthquake

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.

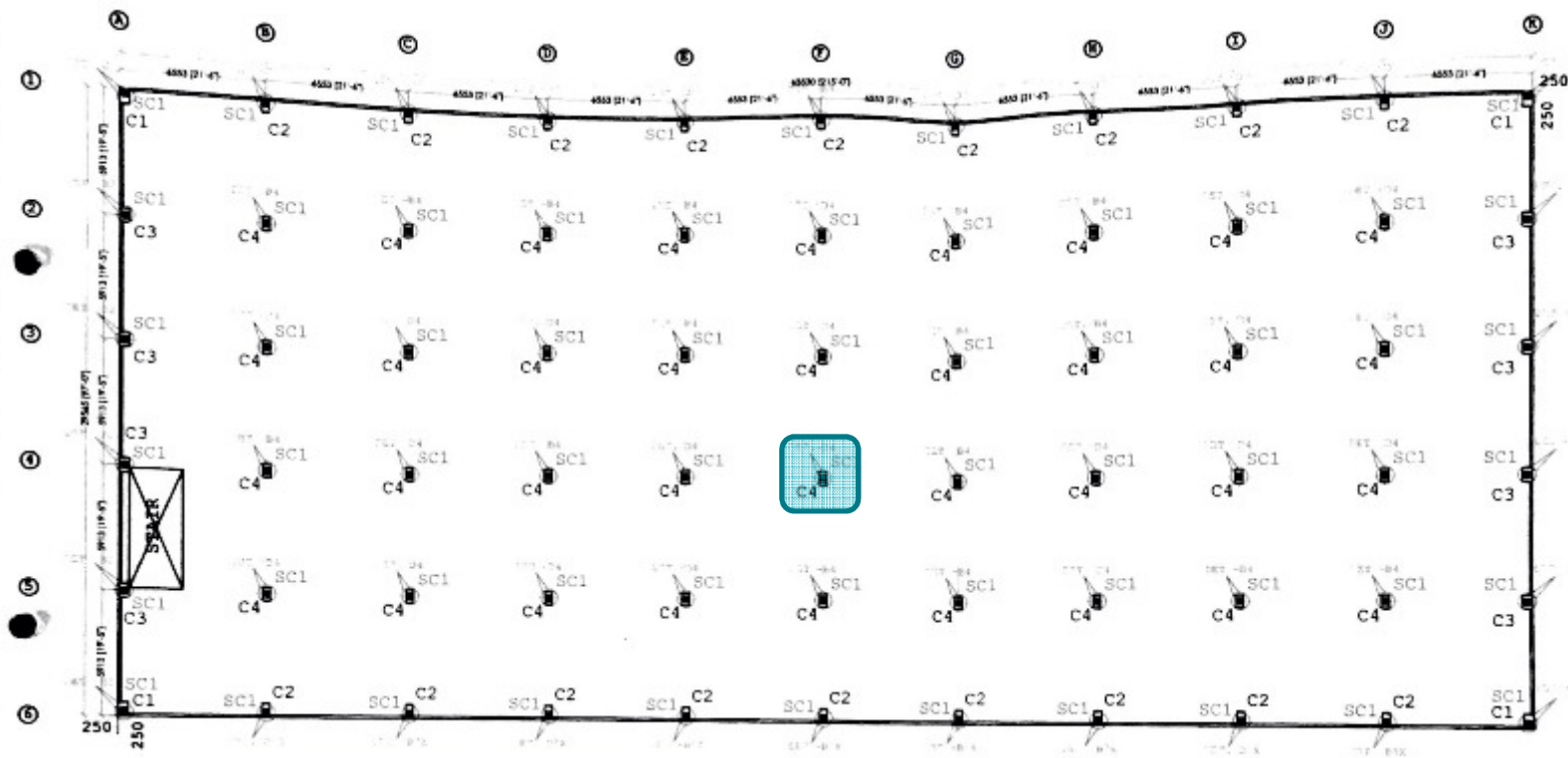


Water Ingress



There is no evidence of water ingress on the 2nd floor, however, it should be considered as an on-going action to apply waterproofing measures during construction, while the 4th floor acts as a roof level.

Key Column Stress Check :



Load rundown based on the 4 storey structural drawings - a key steel column, it is found that the steel column is within the range of FOS equal to between 1.25 and 1.50 which is AMBER rating.

Load rundown based on the 6 storey architectural drawings - a key steel column, it is found that the steel column is within the range of FOS lower than 1.00 which is RED rating.

Internal Column Stress

Priority Actions

Problems Observed Summary

ITEM 1: (Priority 1) Adequacy of columns and foundations.

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

ITEM 3: (Priority 2) Fire proofing material for all structural steel elements.

ITEM 4: (Priority 2) Capacity check for fire escape steel staircase and restroom.

ITEM 5: (Priority 2) Stability System and Foundations.

Item 1 and actions

Adequacy of column and foundation

Priority 1 (Immediate – Now)

- A Detailed Engineering Assessment of factory to be carried out and in particular column capacity and foundation aspects to be investigated in detail.

Priority 2 (within 6 – weeks)

- Continue to implement loading plan. Detail engineering assessment to be completed.
- Do not construct any further structural construction without a thorough structural design and full building approval.

Priority 3 (within 6-months)

- None required

Item 2 and actions

Uncontrolled Heavy Storage Loading on ground floor

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- Reduce stacking height of fabric rolls to ensure total load does not exceed 3.0kPa
- Adopt some sort of signage/staff guidance or a loading Plan to ensure that the maximum weight of storage is not exceeded.

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.

Item 3 and actions

Fire proof for steel structure.

Priority 1 (Immediate – Now)

- None required.

Priority 2 (within 6 – weeks)

- Fire proofing material for structural steel element is recommended as it is normal good building practice.

Priority 3 (within 6-months)

- Maintain standards of quality control.

Item 4 and actions

Stability and capacity check for fire steel staircase especially connection joint and restroom

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- A Detailed Engineering Assessment to be carried out in particular the steel column capacities and the connection capacities.

Priority 3 (within 6-months)

- Continue to implement loading plan. Detailed Engineering Assessment is to be completed.

Item 5 and actions

Stability System / Moment Frame Capacity

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- Detail engineering assessment to be carried out in particular stability and foundation aspects to be investigated in detail.

Priority 3 (within 6-months)

- None required