

Fakir Fashion Ltd

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26 October 2013



Building 1

Building Observations

Cracking in beams and slabs



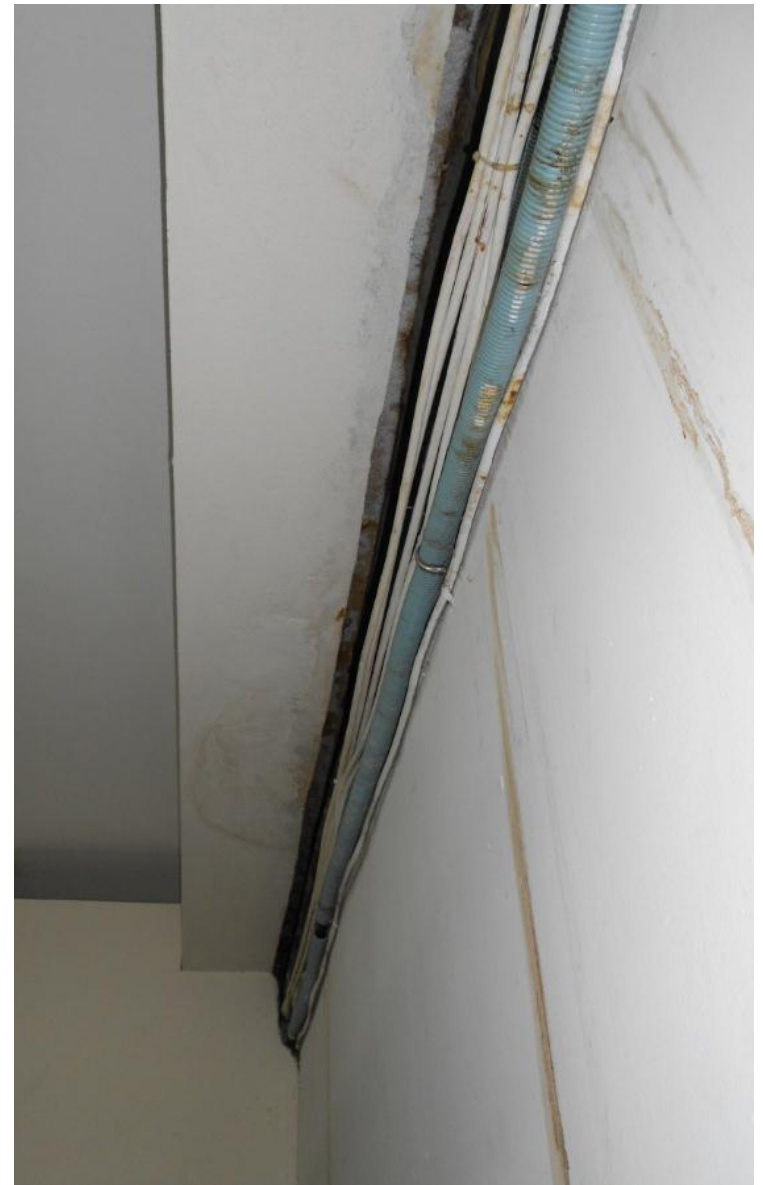
Repaired cracking in beams and slab

Engineer is to perform/provide calculations to prove slab and beam are satisfactory for factory loading, and permanent build up load, and (if required) :

- Reduce loads by vacating floors
- Reinforce structural elements
- Produce loading plans

Cracking in beams

**Water causing damage and corrosion (generally
at movement joint)**



Water causing damage and possible corrosion

Non-Structural Observation Handrail on roof slab

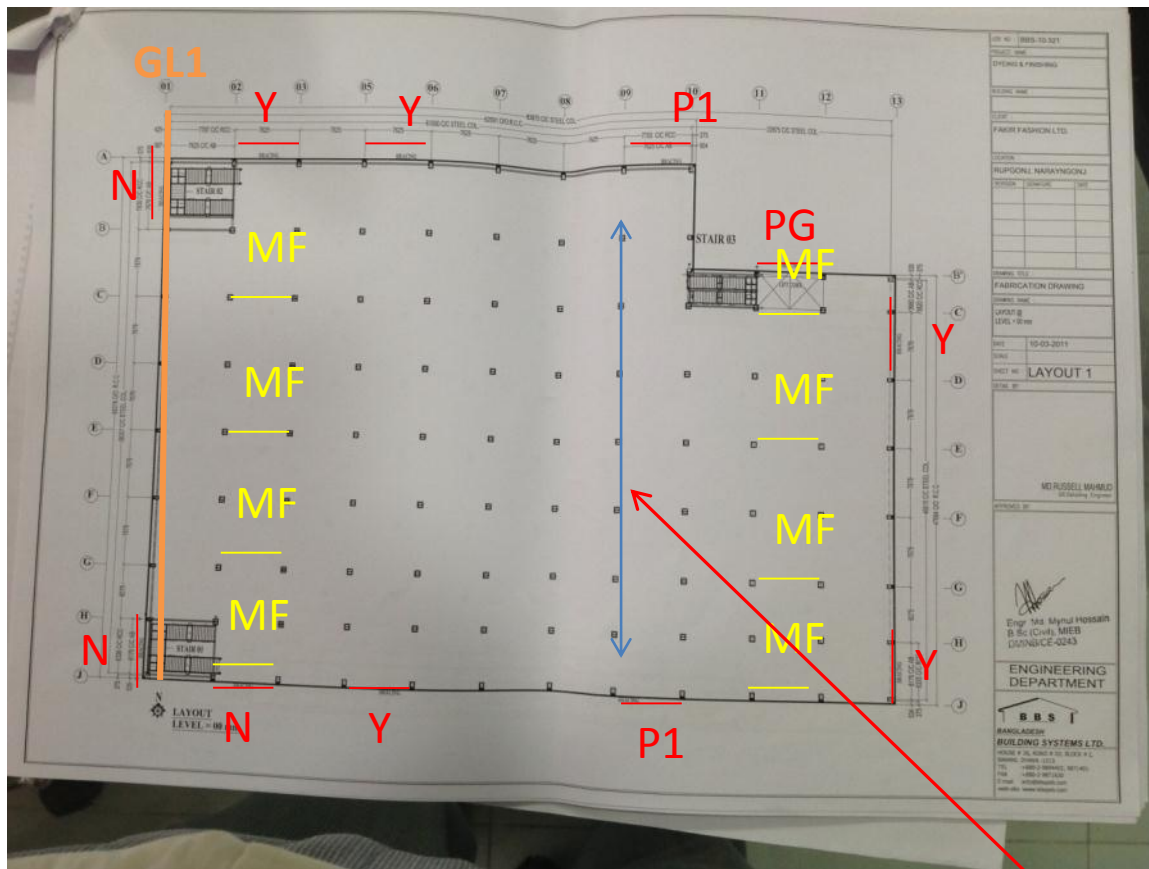


Handrail on roof slab

Building 2

Building Observations

Lateral Stability



Y = X bracing on Ground and First floors

PG = X bracing only present on Ground Floor

P1 = X bracing only present on 1st Floor

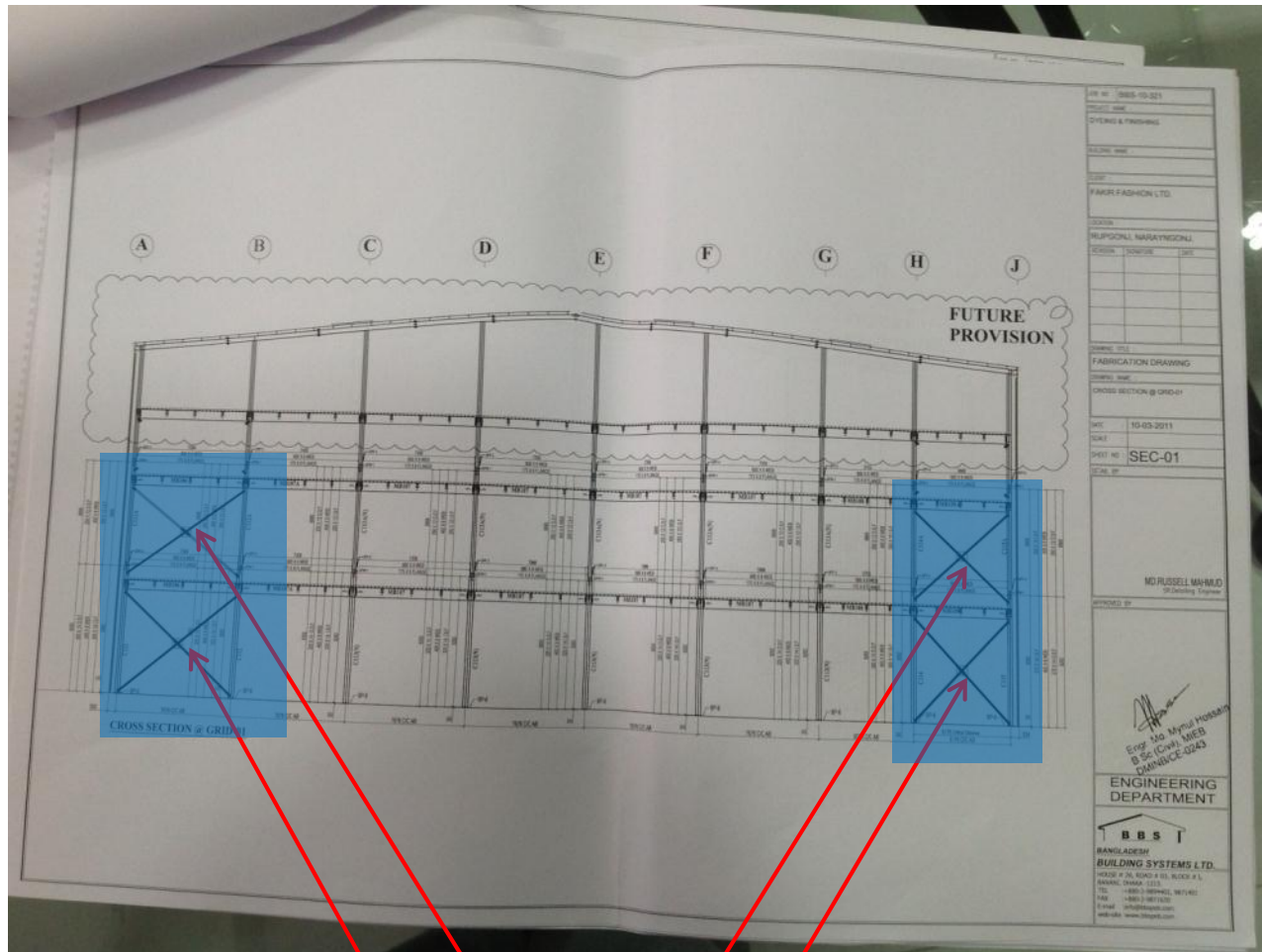
N = X bracing not present on either floor

MF = additional “moment frames” in bays both floors

Building only 2 of 4 stories and hence all bracing may not be required at this stage however lack of X bracing along Gridline 1 (GL1) needs to be justified.

Lateral stability in this direction to be justified

Lateral Stability



The bracing shown on grid line 1 is not present in building. Note also no bracing shown to future provision (levels).

Lateral Stability



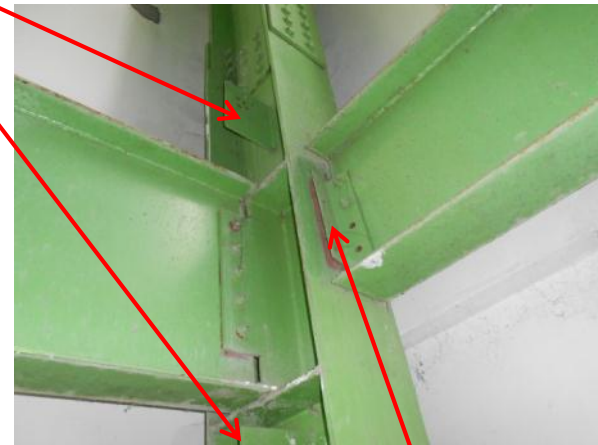
General floor beam arrangement



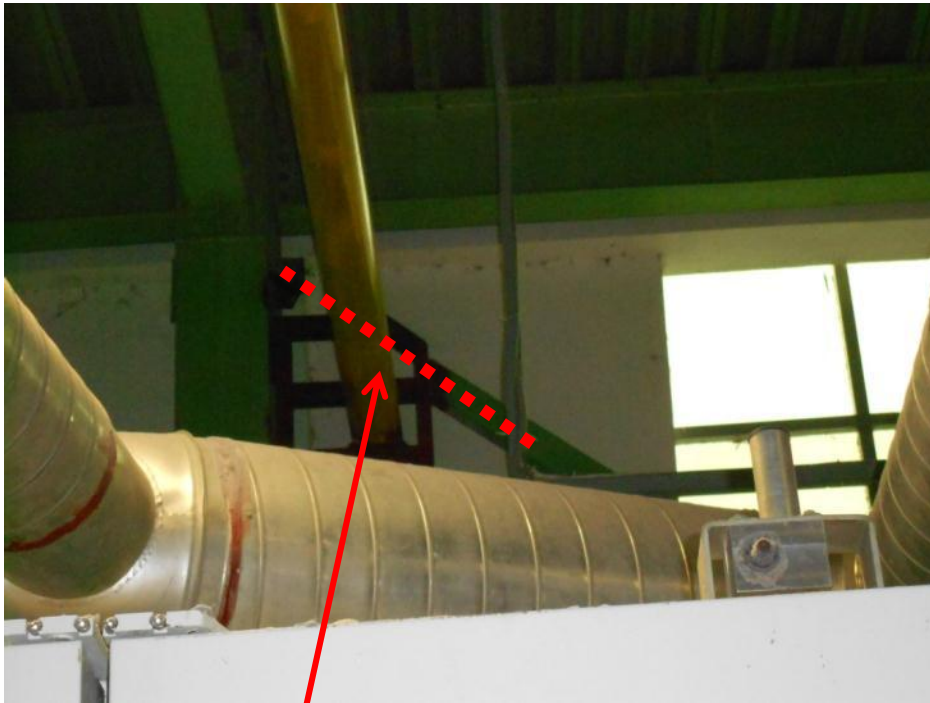
Missing X bracing along GL1 – cleat plates present



**Additional moment frames (MF)
– purpose and capacity unknown**



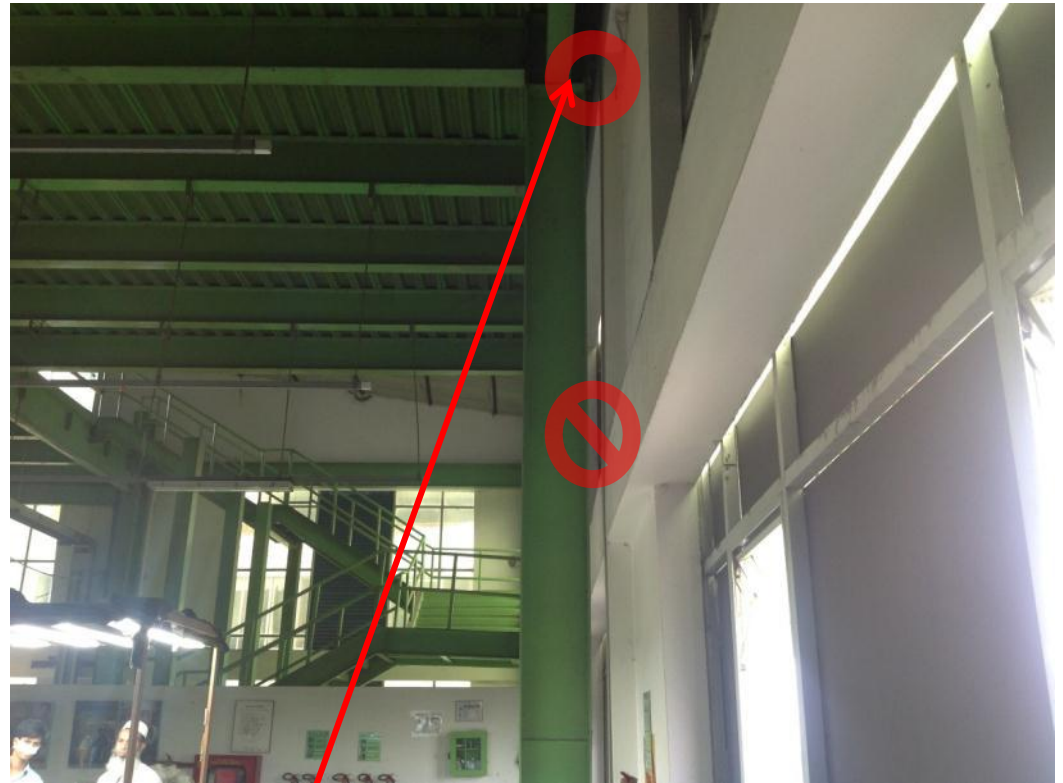
**Missing bolts to angle cleat –
stair GL 1/A**



Bracing at Gridline J / 9-10 Level 1 has been cut and re-welded to pipe support steelwork. Bracing is the principal element and must be continuous. Rectify bracing and modify pipe support.

Modified X bracing

Façade connection to Structure



External façade (RC beam and column with glazing infill) appears to be connected to the steel frame at floor levels only (ie Ground, First and Second (current roof). No structural drawing of façade provided. Concern with connection of façade to steel structure subject to lateral load.

Façade connected at floor levels – not connected at intermediate façade beam level however no structural drawings of façade available to confirm structural arrangement for façade

Façade connection to structure

Steelwork Durability



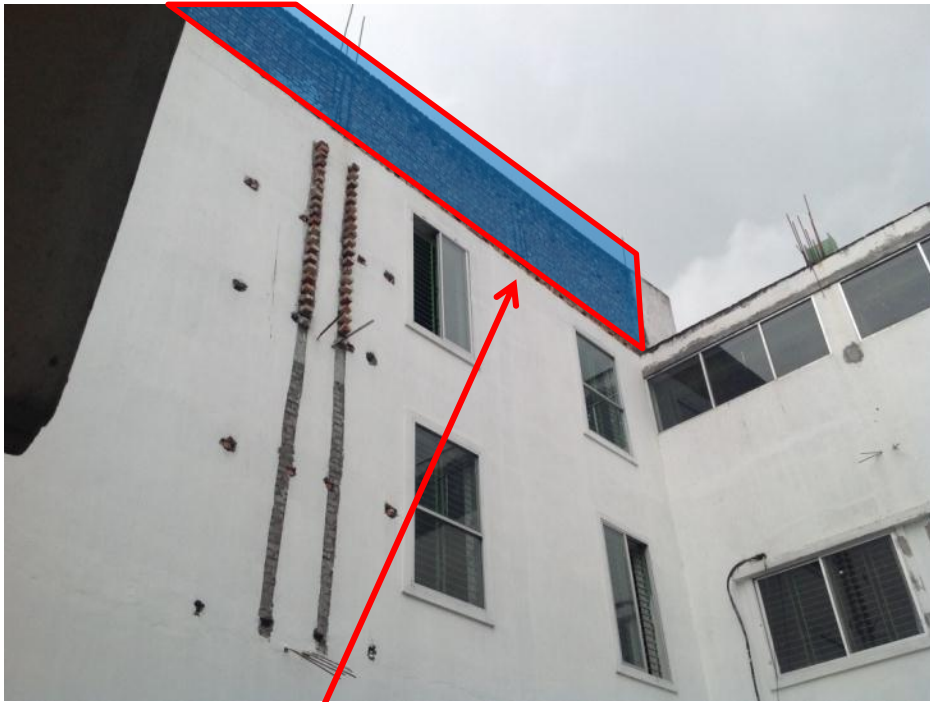
No falls on Level 2 (current roof) leads to water ponding. No evidence of water penetration to below however durability of steelwork at floor level is a concern for future expansion upwards.

Exposed steel work durability

Small 2000 l water tanks on roof



Brick infill stability



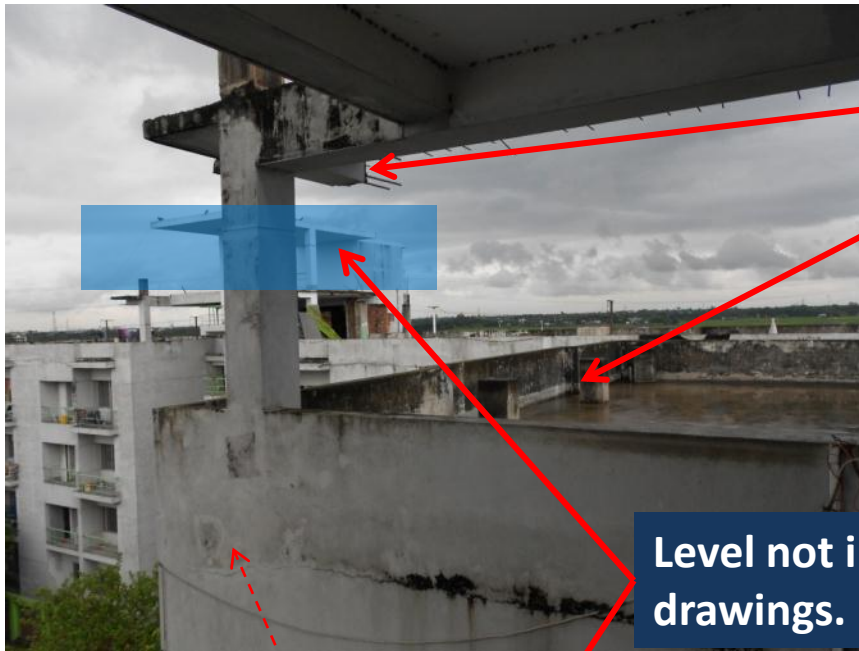
Brick infill at top of stair (3no.) to side of access to roof appears to be poorly restrained. Structural engineer to review stability.

Brick infill stability

Building 4

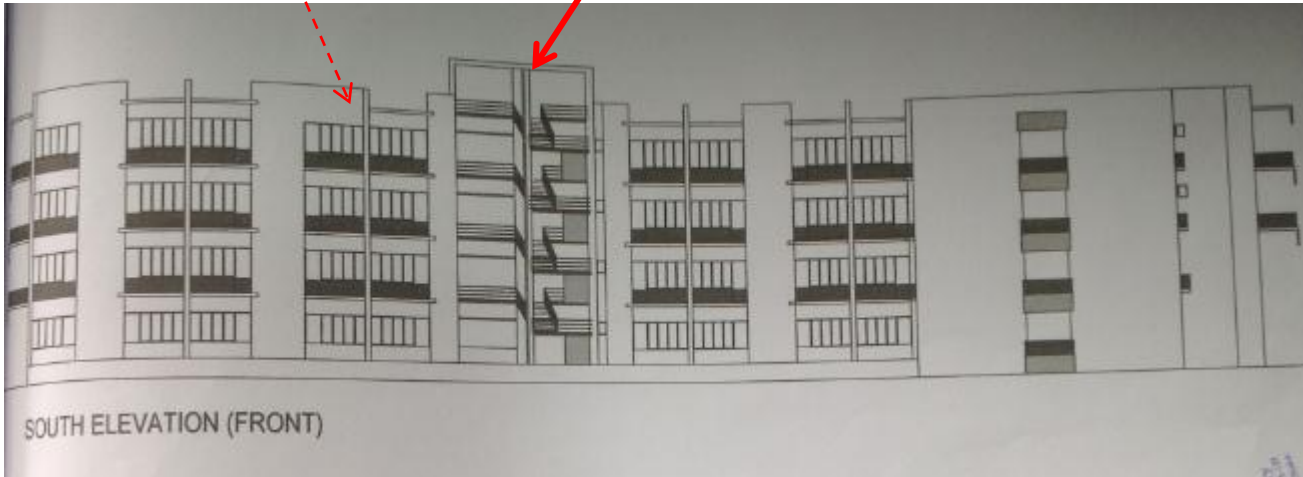
Building Observations

Additional Structure



Evidence of possible 5th floor preparation (Permit allows 4 stories)

Level not indicated on permit drawings.



Additional Structure

Parapet and Water Damage



Cracking at junction between parapet and slab – construction and stability to be confirmed by structural engineer

Parapet stability

Uncontrolled water – durability of structure – control water and pipe away

Water damage



Parapet and Water Damage

Dining hall - under construction

Building Observation

Lateral Stability of Steel frame



**Confirm lateral stability
of steel frame structure
and install stability
members before
installing roof and
cladding**



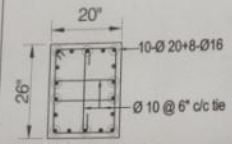
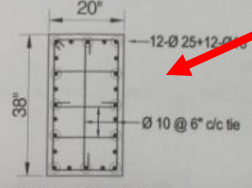
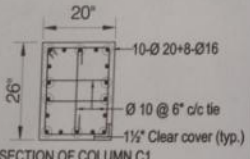
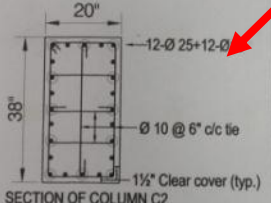
Steel frame stability

All buildings

Building Observations

Revise as-built drawings

Example Building 1: 7 storey main building (Discrepancies found in other buildings)

NAME OF COLUMN	C-1	C-2
1ST FLOOR TO ROOF FLOOR	 SECTION OF COLUMN C1	 SECTION OF COLUMN C2
EGL TO 1ST FLOOR TOP	 SECTION OF COLUMN C1	 SECTION OF COLUMN C2

Column size incorrect

Column size correct, but strengthening not indicated

C2 Column site measured:
Ground – 1st: 520mm x 960mm (strengthened)
2nd - Roof: 320mm x 750mm

As-built design drawings do not match the conditions found on site:

- Column sizes are different
- Strengthening of columns is not indicated

Revise as-built drawings



Ongoing modification works



**Ongoing works
(new bathrooms)**



250 – 350mm new build-up at new bathroom.

Engineer is to perform/provide calculations to prove slab, beam and column sizes are satisfactory for factory loading, temporary construction loading, permanent build up load for modified condition, and (if required) :

- Reduce loads by vacating floors
- Reinforce structural elements
- Produce loading plans

Ongoing modification works

Load management



Storage generally found to be well managed

Uncontrolled loading (isolated occurrence)

Engineer is to perform/provide calculations to prove slab, beam and column sizes are satisfactory for factory loading, and permanent build up load and (if required) :

- Reduce loads by vacating floors
- Reinforce structural elements
- Produce loading plans

Load management

Priority Actions

Problems Observed

All buildings

1. Verify concrete strength.
2. As-built Drawings are not matching the site conditions
3. Loading from ongoing modification works
4. Load management – (Loading plans required)

Building 1

5. Cracking in beams and slabs
6. Water causing damage and risk of corrosion
7. Handrails on roof missing next to stairs (non structural)

Problems Observed (continued)

Building 2 – Steel framed building

- 8. Missing bracing compared to drawings
- 9. Modified bracing to be rectified (pipe support frame)
- 10. Missing bolts in connection
- 11. Stability and connection of façade to steel frame
- 12. Water ponding on roof (steel durability for future extension)

Building 4 – RC framed dormitory

- 13. Extra level above stair cores – engineer to confirm stability
- 14. Stability of parapet at roof level
- 15. Water damage to external walls

Future Dining Hall – Steel frame under construction

- 16. Lateral Stability

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	All buildings:Verify concrete strengths in all columns.	Factory Engineer to review design, loads and columns stresses in area identified above.	6-weeks
2	All buildings:Verify concrete strengths in all columns.	Verify insitu concrete stresses either by cores or existing cylinder strength data for all columns.	6-weeks
3	All buildings:Verify concrete strengths in all columns.	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-months
4	All buildings:As-built Drawings are not matching the site conditions	Revise as-build drawings to match conditions on site. Also indicate strengthening (indicate prior state and strengthened additions)	6-months
5	All buildings>Loading from ongoing modification works	Provide calculations showing the adequacy of all structural elements taking into account the loading plans and as-built structure. Provide concrete strength tests.	6-months
6	All buildings:Load management – (Loading plans required)	Create controlled loading plans for all floors designating where storage can be placed and can not be placed	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Building-1:Loading from ongoing modification works	Provide calculations showing the adequacy of all structural elements taking into account the loading plans and as-built structure. Provide concrete strength tests.	6-months
8	Building-1:Water causing damage and corrosion	Engineer to inspect water damaged structure and propose a suitable repair. Water proofing detail over Movement joint to be installed	6-months
9	Building-1:Install handrails on roof (non-structural)	Install handrails on roof, where it is currently missing next to stair	6-months
10	Building-2:Missing bracing compared to drawings and modified bracing to be rectified (pipe support frame)	Install X bracing where it is indicated on drawings unless engineer can justify reduced bracing for current building configuration and rectify X bracing where it has been modified	6-months
11	Building-2:Missing bolts in connection	Replace missing bolts	6-months
12	Building-2:Stability and connection of façade to steel frame	Structural engineer to verify that façade structure is sufficient and that connection of façade to steel structure is robust and sufficient (produce drawings for façade RC frame and connection)	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Building-2:Water ponding on roof (steel durability for future extension)	Review steelwork durability particularly if and when the building is extended upwards. Water ponding also may affect durability of the concrete slab in the longer term.	6-months
14	Building-4:Extra level above stair cores – engineer to confirm stability	Engineer to review additional structure for loads to core (expected to be adequate) and lateral stability (again expected to be adequate).	6-months
15	Building-4:Stability of parapet at roof level	Engineer to review construction of parapet, connection to structural slab and stability for lateral.	6-months
16	Building-4:Water damage to external walls	Control water to prevent it running down building face to improve durability of structure.	6-months
17	Check on Lateral Stability of steel frame	Clarify lateral stability of steel frame and install required stability members prior to installation of roof and cladding.	6-months