

Famkam Printing Ltd.

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(24.170329, 90.414968)

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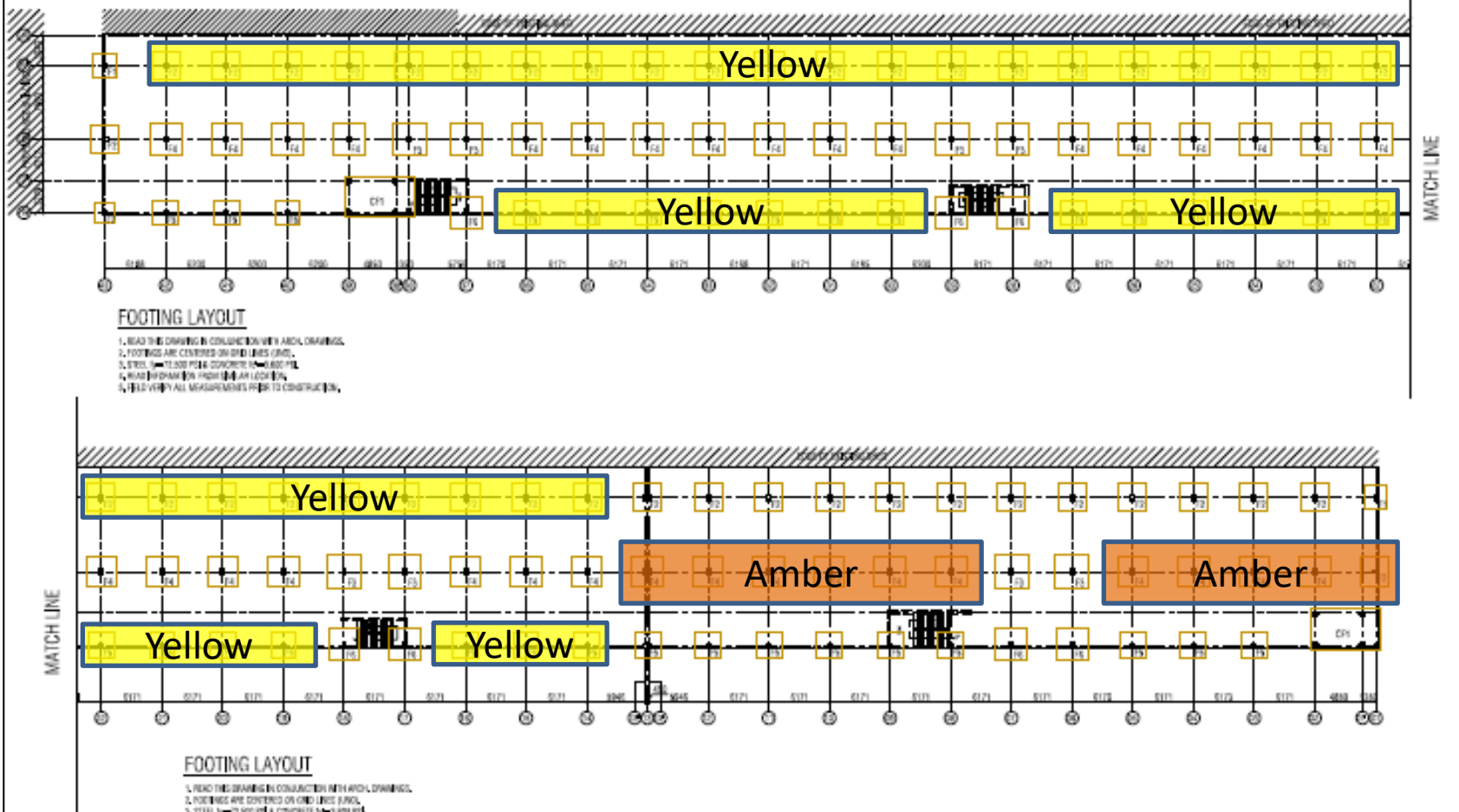


Building Information

Famkam Printing Building (G+2)

Observations

High stress level in foundation that require immediate review



Foundation Layout

Cursory calculation indicates as below:

- 1) Stress in foundation exceeds normal design limit for the yellow marked location.
- 2) High stress level in foundation that require immediate review for the amber marked location.

FOOTING SCHEDULE :

TYPE	SIZE (L1XL2)	T	T1	A	D	REINFORCEMENT
F1	2400 x 2400	500	375	350	per section	16 mmØ @ 125 C/C(Bothway)
F2	2850 x 2850	625	450	450	per section	16 mmØ @ 100 C/C(Bothway)
F3	3375 x 3375	750	600	500	per section	16 mmØ @ 100 C/C(Bothway)
F4	3150 x 3150	700	550	475	per section	16 mmØ @ 100 C/C(Bothway)
F5	2575 x 2575	600	425	400	per section	16 mmØ @ 125 C/C(Bothway)
F6	3200 x 3200	700	550	475	per section	16 mmØ @ 100 C/C(Bothway)
F7	2150 x 2150	500	350	325	per section	16 mmØ @ 125 C/C(Bothway)
CF1	7125 x 4200	600			per section	TOP-16 mmØ @ 150 C/C(Bothway) BOTTOM-20 mmØ @ 150 C/C(Bothway)

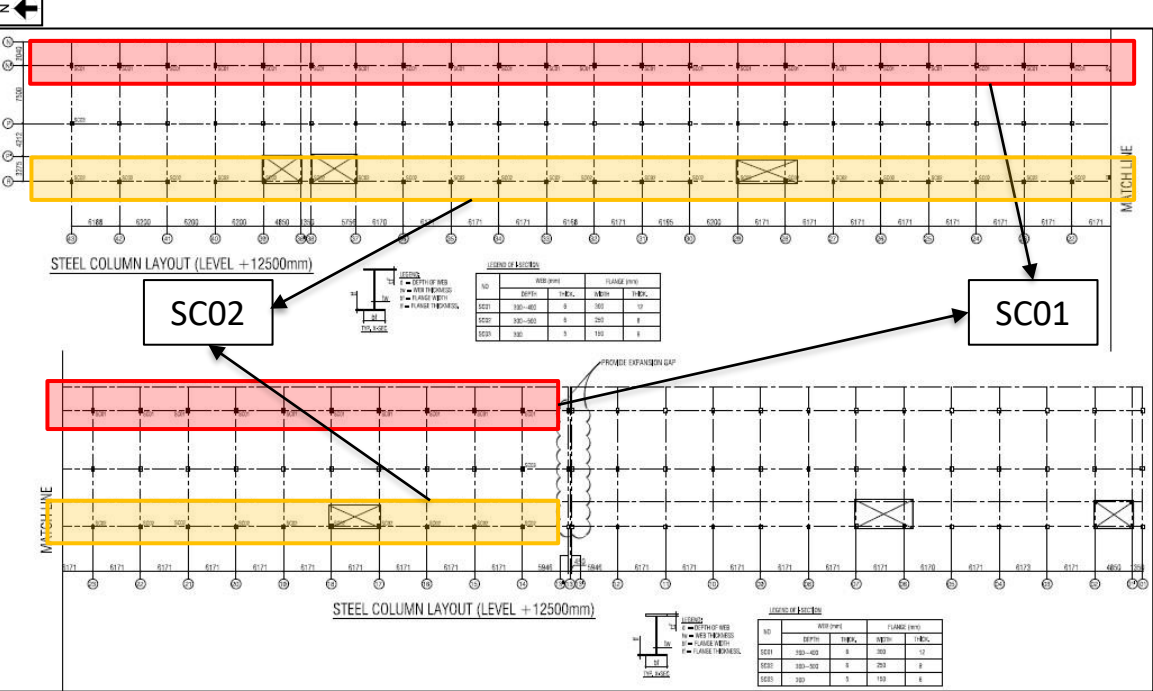
Stressed footing in schedule



Typical Floor loading

Cursory calculation indicates that High stress level in foundation at highlighted area (amber marked) of previous slide that required immediate design review. Considering 3 kPa live load on typical floor (As per provided load plan) & 1.5 kPa live load on roof these footings have been found high stressed against the soil bearing capacity available from Geotechnical investigation report. Building engineer is immediately required to carryout Detail Engineering Assessment (DEA) for the highlighted areas and submit to RSC for review.

Discrepancies in as-built drawing



Column Layout



Steel roof portal frame

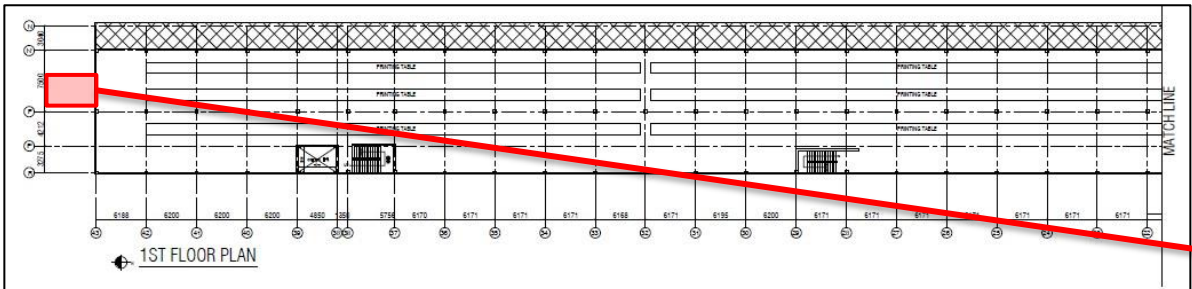
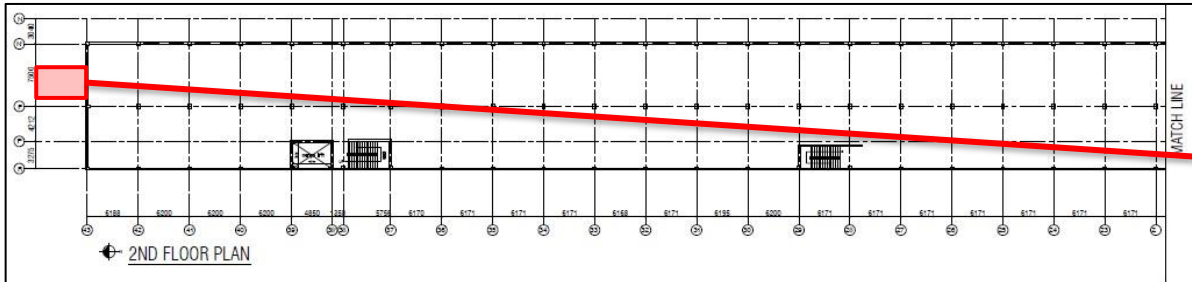
NO	WEB (mm)		FLANGE (mm)	
	DEPTH	THICK.	WIDTH	THICK.
SC01	300~400	6	300	12
SC02	300~500	6	250	8
SC03	300	5	150	6

Column Schedule



Size measured – Flange width: 250mm & Flange Thickness: 8mm

In as-built drawing, for the SC01 column; flange size 300 mm and flange thickness 12mm has been shown. During inspection, flange width was found 250mm and flange thickness was found 8mm. Building engineer is required to update the as-built drawing with the accurate on-site condition.



Floor Layout



The connecting bridge was found connected with RC beam of the Famkam printing building.



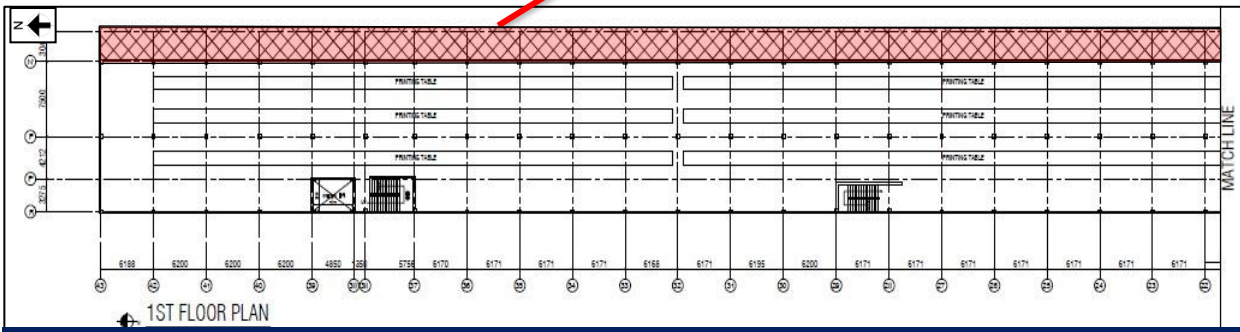
Undocumented steel connecting bridge was found. Building engineer is required to update the as-built drawing with the accurate on-site condition.

9 Observation: Famkam Printing Building

Famkam
Dyeing Shed



The extended cantilever



1st floor layout – Cantilever portion.

The connection of the cantilever portion with the dyeing shed wall is not clear. Factory engineer is required to verify the type of connection between printing building & Dyeing shed.

Lack of lateral stability



Portal steel roof shed - Lateral load transfer media missing at roof level

Lateral load transfer media (compression strut) along the ridge and eave is missing. Roof cable bracing was found without compression strut. Building engineer to check the lateral load path and review the stability of the structure accordingly.

Trolley impact on Column



RC Column was found damaged due to the impact with trolley. Factory engineer is required to investigate the damage and suggest a remedial action as well as provide suggestion to prevent such damages in future. Factory is required to follow the suggestion of the engineer for remedial actions.

Dampness on brick wall & Beam



Due to water absorption, dampness was found on brick wall & RC beam. Building engineer is required to take necessary measures to prevent dampness in brick wall & RC beam.

Lack of water proofing on roof slab

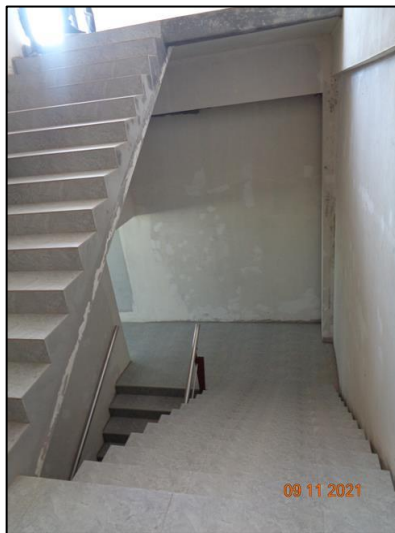


Lack of water proofing on roof slab

The roof of the building is made of MCAC aggregate but no protective sealing is provided. Provide a protective coating on the structural elements constructed with MCAC exposed to rainfall or other sources of water. Factory is required to provide protective coating with 2% slope on the exposed surface to prevent the accumulation of water.

Lack of edge protection

Observation: Famkam Printing Building



Missing railing at stair



Parapet wall missing at roof

During inspection, Edge protection (Parapet wall/Railing) was not observed on roof and stair. Factory is required to provide edge protection to avoid falling hazard.

20 Observation: Famkam Printing Building

Connection gap and bolt missing at several location

Observation: Famkam Printing Building (Roof shed)



Connection gap was found in rafter-rafter & rafter-column connection



Bolt missing in Beam-column connection at ground floor

Connection gaps and missing bolts observed at column rafter joint at several location. Factory engineer is required to identify the locations and carry out suitable remedial works.

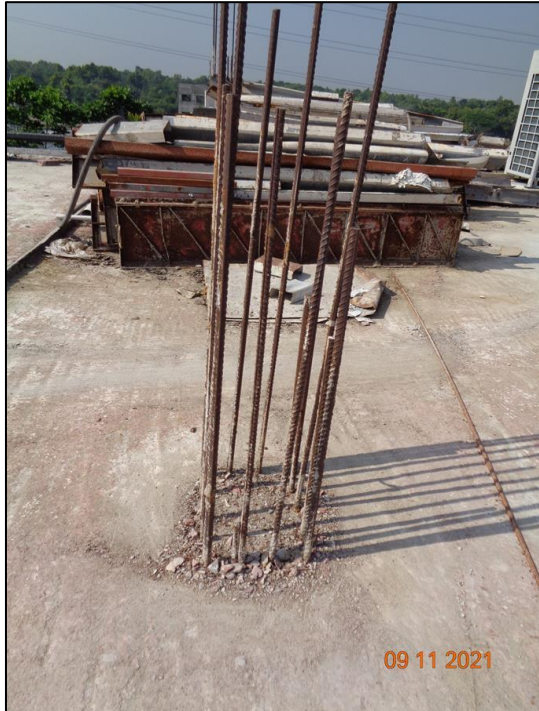
Possibility of future vertical extension



The building permission layout is for three storied only and construction of the building was found up-to the permit drawing. But There is also extended column re-bar at roof floor. So, there is a possibility of future vertical extension. But factory authority verbally informed that they do not have planning for vertical extension for this time being.

Building engineer is required to perform Detail Engineering Assessment (DEA) for the structure prior to commencement of further extension work.

Exposed rebar at roof level



Exposed rebar at roof

Exposed reinforcement was found at roof which is susceptible to corrosion that may be the cause of deterioration for concrete. Building engineer is required to take necessary measures to prevent the

Problems Observed

Famkam Printing Building:

Item 01: High stress level in foundation that require immediate review

Item 02: Discrepancies in as-built drawing

Item 03: Lack of lateral stability of roof shed

Item 04: Trolley impact on Column

Item 05: Dampness on brick wall & Beam

Item 06: Lack of water proofing on roof slab

Item 07: Lack of edge protection

Item 08: Connection gap and bolt missing at several location of roof shed

Item 09: Possibility of future vertical extension

Item 10: Exposed rebar at roof level

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	High stress level in foundation that require immediate review	Building Engineer to review design, loads and foundation stresses.	Immediate-Now
02	High stress level in foundation that require immediate review	A Detail Engineering Assessment of Factory to be commenced.	Immediate-Now
03	High stress level in foundation that require immediate review	Produce and actively manage a loading plan for all floor plates within the factory considering floor capacity and foundation capacity.	6-weeks
04	High stress level in foundation that require immediate review	Detail Engineering Assessment to be completed.	6-weeks
05	High stress level in foundation that require immediate review	Continue to implement load plan.	6-months
06	Discrepancies in as-built drawing	Building engineer to update the design document including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
07	Discrepancies in as-built drawing	Implement remediation if required.	6-months
08	Lack of lateral stability of roof shed	Building Engineer is required to confirm the lateral load path & verify the lateral stability of the steel shed.	6-weeks
09	Lack of lateral stability of roof shed	Implement the remediation if required.	6-months
10	Trolley impact on Column	Factory engineer is required to investigate the damage and suggest a remedial action as well as provide suggestion to prevent such damages in future.	6-weeks
11	Trolley impact on Column	Carry out remedial works as per recommendation.	6-months
12	Dampness on brick wall & Beam	Building engineer is required to investigate the damp area to verify if any damaged occurred due to the presence of the moisture and repair accordingly.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Lack of water proofing on roof slab	Apply water proofing at the roof top and improve the drainage system.	6-weeks
14	Lack of edge protection	Factory is required to provide edge protection on roof and stair to avoid falling hazard.	6-weeks
15	Connection gap and bolt missing at several location of roof shed	Identify the locations and carryout suitable repair works where necessary.	6-weeks
16	Possibility of future vertical extension	Prior to vertical extension, Building engineer is required to produce Detailed Engineering Assessment(DEA) of the structure according to BNBC and submit to RSC for review.	6-weeks
17	Possibility of future vertical extension	Carry out recommendation as outcome of the DEA.	6-months
18	Exposed rebar at roof level	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	6-weeks