Famkam Fashion Ltd.

Shirir Chala, Bagher Bazer, Gagipur Shadar, Gazipur
(24.172084, 90.416793)
28th July 2022 & 03rd August 2022

RSC | RMG SUSTAINABILITY COUNCIL

Executive Summary

Famkam Fashion Building: three-storied (G+2+M).

Admin Building: two storied (G+1).

Medical Building: two storied (G+1).

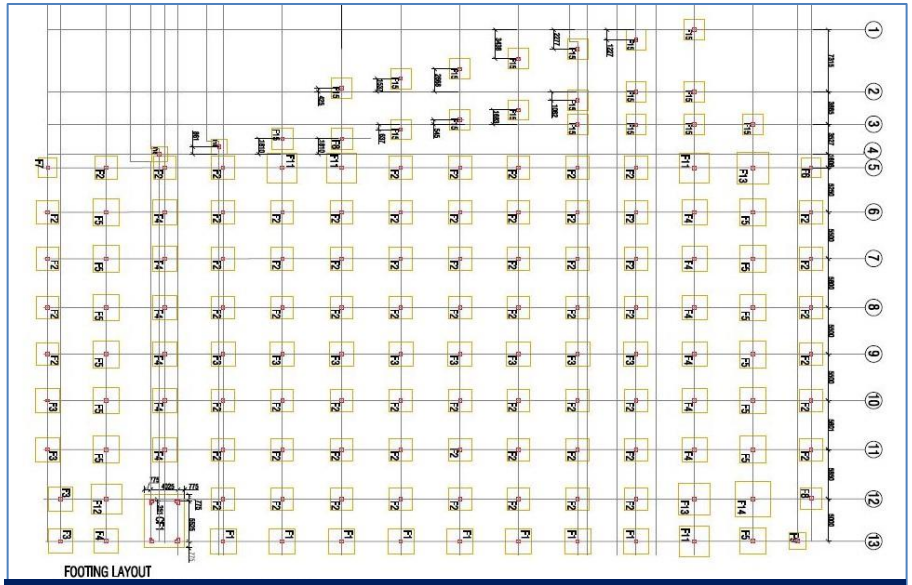
RMS Building: single-storied building.

Fire Pump Building: single-storied.

Observations

Footing stressed above normal design limits

Observation: Famkam Fashion Building



Foundation Layout

FOOTING SCHEDULE :

TYPE	SIZE (L1XL2)	T	T1	A
F1	10'-3" x 10'-3"	27"	20"	18"
F2	9'-0" x 9'-0"	22"	15"	16"
F3	9'-6" x 9'-6"	24"	18"	16"
F4	9'-9" x 9'-9"	24"	18"	16"
F5	10'-6" x 10'-6"	27"	20"	18"
F6	7'-9" x 7'-9"	20"	15"	14"
F7	7'-6" x 7'-6"	18"	14"	12"

Foundation Schedule

Floor Loading

5.4.5 Foundation Performance Check:

Allowable bearing capacity is 2.5 ksf. The value calculates by linear interpolation at a 7′-0″ depth.

Bearing Capacity check:

Before retrofitting:

FOUNDATION PERFORMANCE CHECK (BEARING)		
Allowable Bearing capacity of soil (F.S=3) =	2.500	ksf
Ultimate Bearing Capacity of soil=	7.500	ksf

Page 70

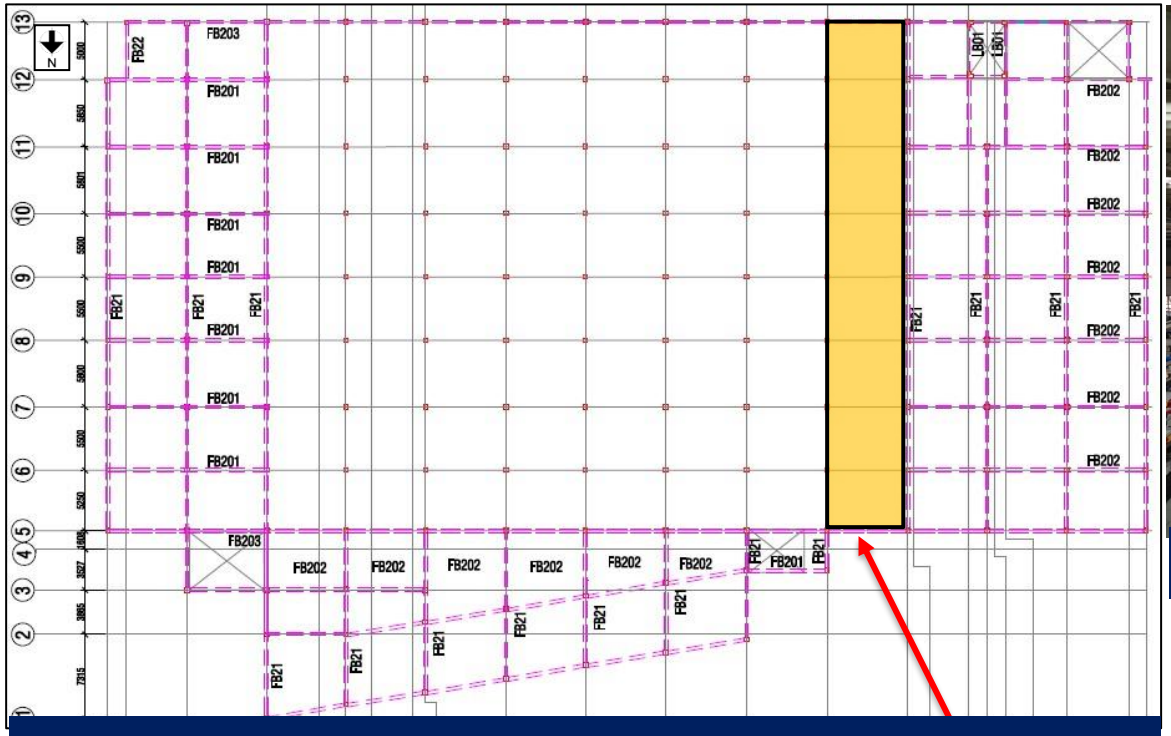
In DEA report, allowable bearing capacity has been considered 2.5 ksf with FoS- 3 at 7 ft. But no reference calculation has been provided.

The cursory calculation indicates that footings are stressed above the normal design limit considering 3 kPa floor live load and average allowable bearing capacity of 1.3 ksf (F.S- 3). The building engineer is required to review design, load, and footing stress and suggest proper recommendations accordingly.

Observation: Famkam Fashion Building

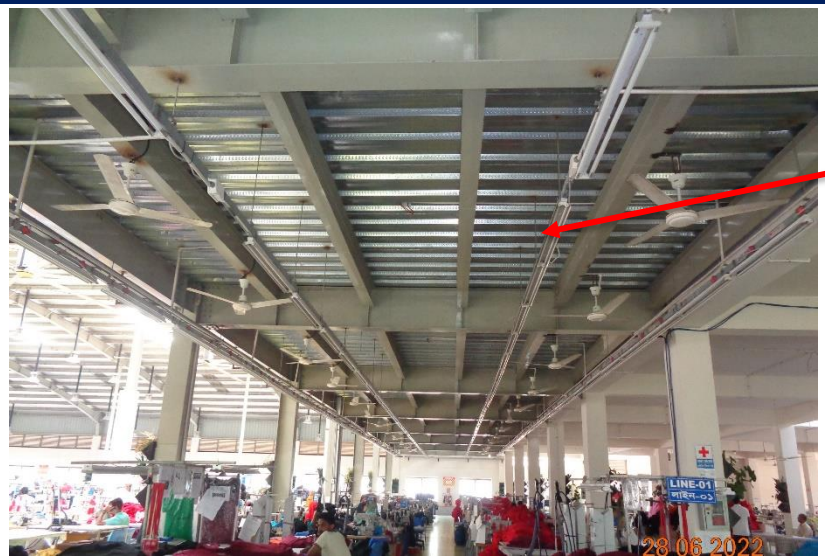
Lack of information in as-built drawing

Observation: Famkam Fashion Building



Un documented mezzanine

Mezzanine proposed for office



Mezzanine on 2nd floor

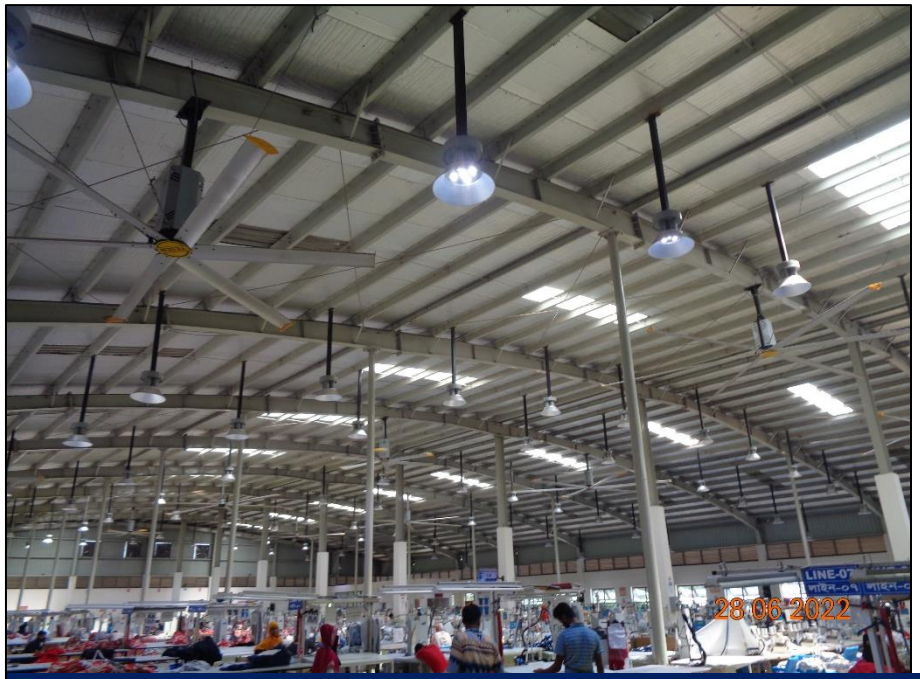
A mezzanine floor was found on 2nd floor. The mezzanine is a steel beam-column frame structure with deck slab. But in the as-built drawing, no information has been provided for the mezzanine.

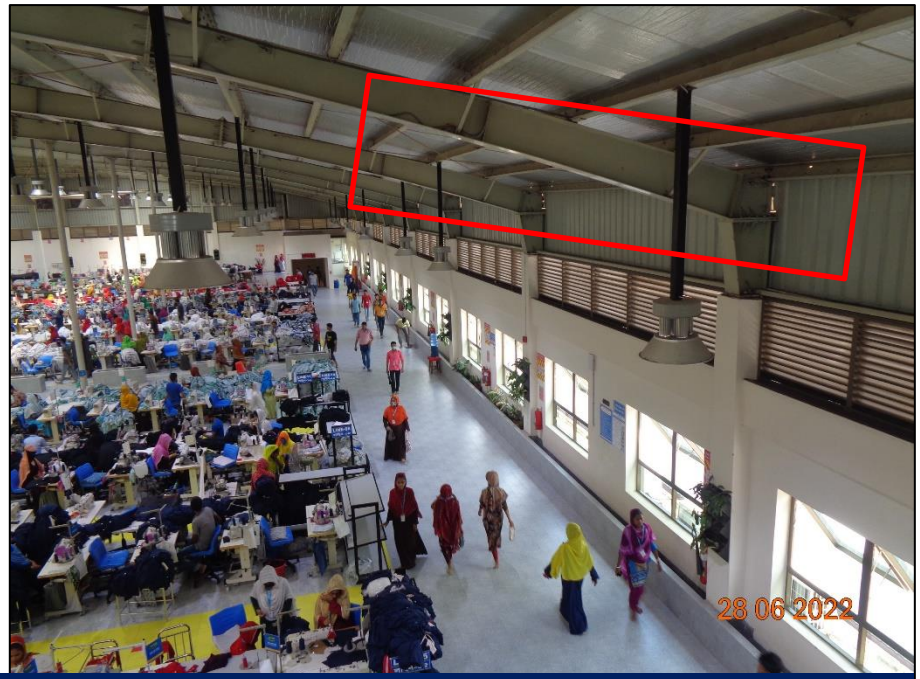
The Building engineer is required to survey the whole structure and update the as-built drawing as well as design document as per site condition.

Observation: Famkam Fashion Building

Lack of lateral stability of roof shed

Observations: Famkam Fashion Building





Steel roof shed - Lateral load transfer media missing at roof level

Lateral load transfer media (compression strut) along the ridge and eave is missing. The building engineer to check the lateral load path and review the stability of the structure accordingly.

Observations: Famkam Fashion Building (Roof Shed)

Trolly impact on Column

RC Column was found damaged due to the trolly impact. The building engineer is required to investigate the damage and suggest remedial action as well as provide suggestions to prevent such damages in the future. The factory is required to implement the suggested actions.

Observation: Famkam Fashion Building

Dampness on brick wall & Column

Observation: Famkam Fashion Building

Dampness in RC Column

Dampness in Brick wall

Due to water absorption, dampness was found in the brick wall & RC Column.
The building engineer is required to take necessary measures to prevent dampness in the brick wall & RC beam.

Observation: Famkam Fashion Building

Lack of water proofing on roof slab

Observation: Famkam Fashion Building

Lack of water proofing on roof slab

The roof of the building is made of MCAC but no protective coating is provided to prevent water ingress into the slab. Also, signage of water ponding was found. The factory is required to provide a protective coating with 2% slope on the exposed surface to prevent the accumulation of water.

Observation: Famkam Fashion Building

Connection gap at several locations

Observation: Famkam Fashion Building (Roof shed)

Connection gap was found in rafter-column and RC column-Steel column connection

Connection gaps were observed at joints of several locations. The building engineer is required to identify the locations and carry out suitable remedial works.

Observation: Famkam Fashion Building (Roof shed)

Exposed rebar at roof level

Observation: Famkam Fashion Building

Exposed rebar at roof

Exposed reinforcement was found on the roof which is susceptive to corrosion that may cause deterioration of concrete. The building engineer is required to take necessary measures to prevent corrosion in the exposed rebar.

Observation: Famkam Fashion Building

Non-structural elements not anchored or braced

Observation: Famkam Fashion Building

Rack on floor level

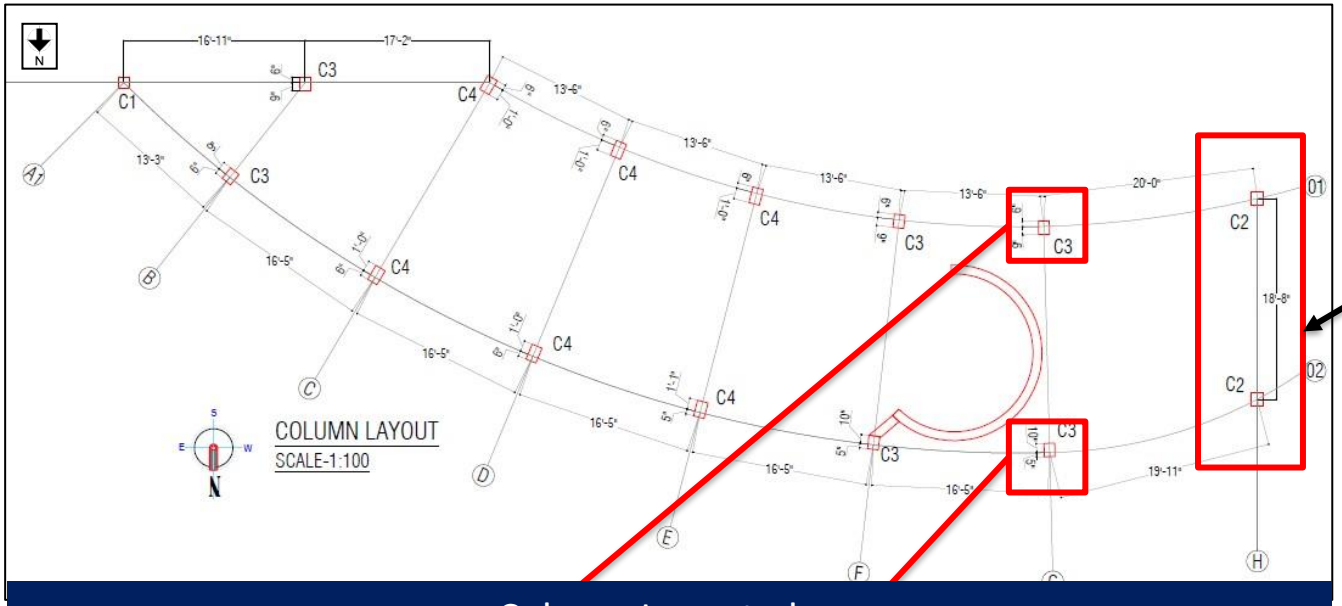
Racks on different floors are not adequately anchored or braced to resist lateral (earthquake) forces.

Adequately anchor and brace all non-structural elements to resist earthquake forces.

Observation: Famkam Fashion Building

Discrepancy in as-built drawing & design documents

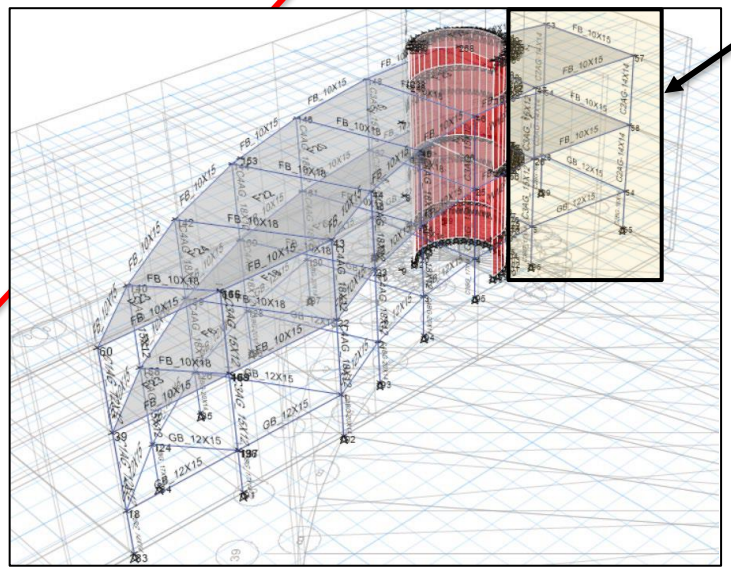
Observation: Admin Building



Column Layout plan

The marked two columns has not constructed yet

The marked portion has not been constructed. But the design documents prepared considering the extended part.



The building geometry does not match the as-built drawing. Additional column & grid has been shown in the drawing which has not been constructed yet.

The building engineer is required to survey the whole structure and update the as-built drawing as well as design document as per site conditions.

Observation: Admin Building

Lack of edge protection

Observation: Admin Building

Parapet wall missing at roof

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

Observation: Admin Building

Exposed rebar at roof level

Observation: Admin Building

Exposed rebar at roof

Exposed reinforcement was found on the roof which is susceptive to corrosion that may cause deterioration of concrete. The building engineer is required to take necessary measures to prevent the corrosion on exposed rebar.

Observation: Admin Building

Non-structural elements not anchored or braced

Observation: Admin Building

Plastic water tank at roof

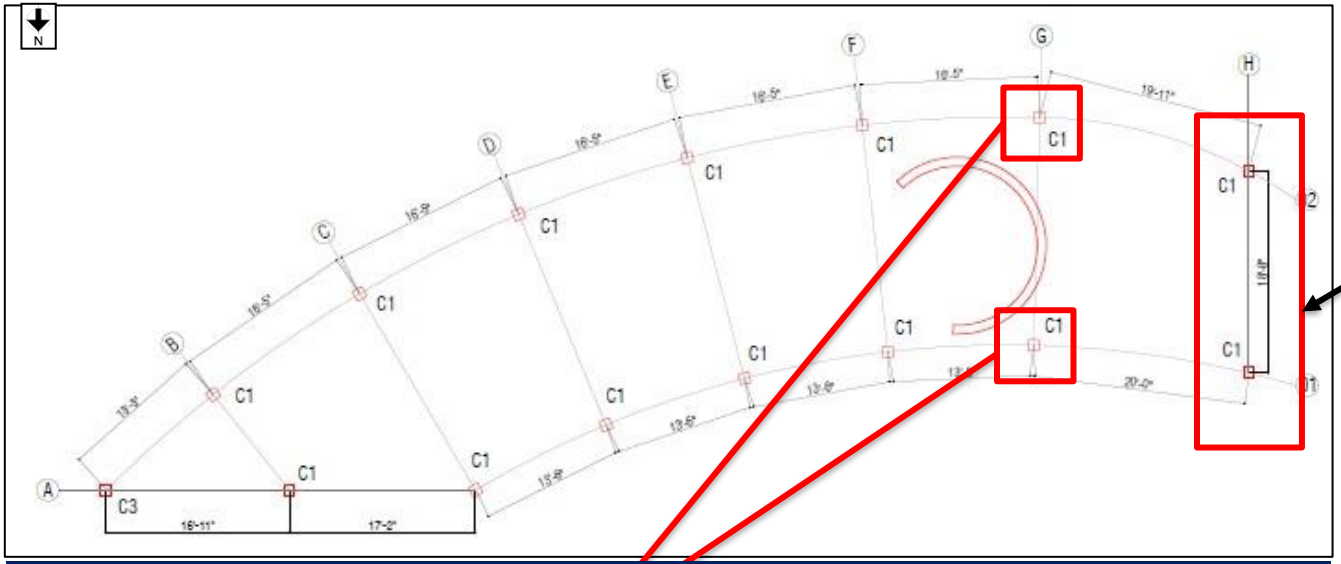
Plastic water tank at roof is not adequately anchored or braced to resist lateral (earthquake) forces.

Adequately anchor and brace all non-structural elements to resist earthquake forces. If the tanks cannot be structurally accommodated, that should be removed.

Observation: Admin Building

Discrepancy in as-built drawing & design documents

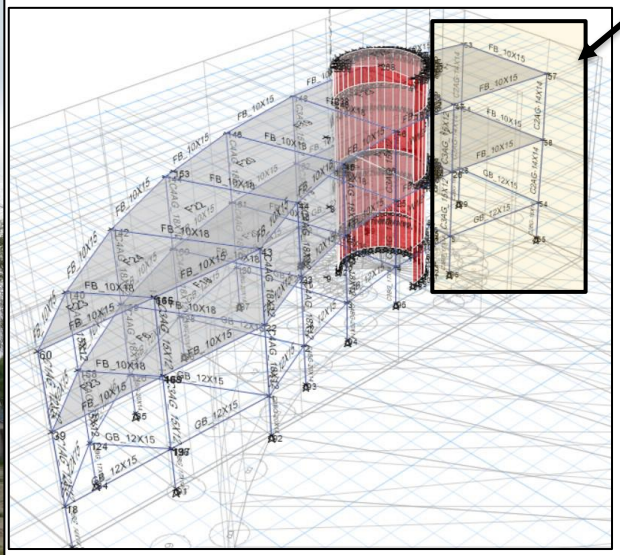
Observation: Medical Building



Column Layout plan

The marked two columns has not been constructed

The marked portion has not been constructed. But the design documents prepared considering the extended part



The building geometry does not match the as-built drawing. Additional column & grid has been shown in the drawing which has not been constructed yet.

The building engineer is required to survey the whole structure and update the as-built drawing as well as design document as per site conditions.

Observation: Medical Building

Lack of edge protection

Observation: Medical Building

Parapet wall missing at roof

Edge protection (Parapet wall/Railing) was not observed on the roof and stairs. The factory is required to provide edge protection to avoid the falling hazard.

Observation: Medical Building

Exposed rebar at roof level

Observation: Medical Building

Exposed rebar at roof

Exposed reinforcement was found on the roof which is susceptive to corrosion that may the cause deterioration of concrete. The building engineer is required to take necessary measures to prevent the corrosion on exposed rebar.

Observation: Medical Building

Design report needs to be prepared

Observations: RMS Building

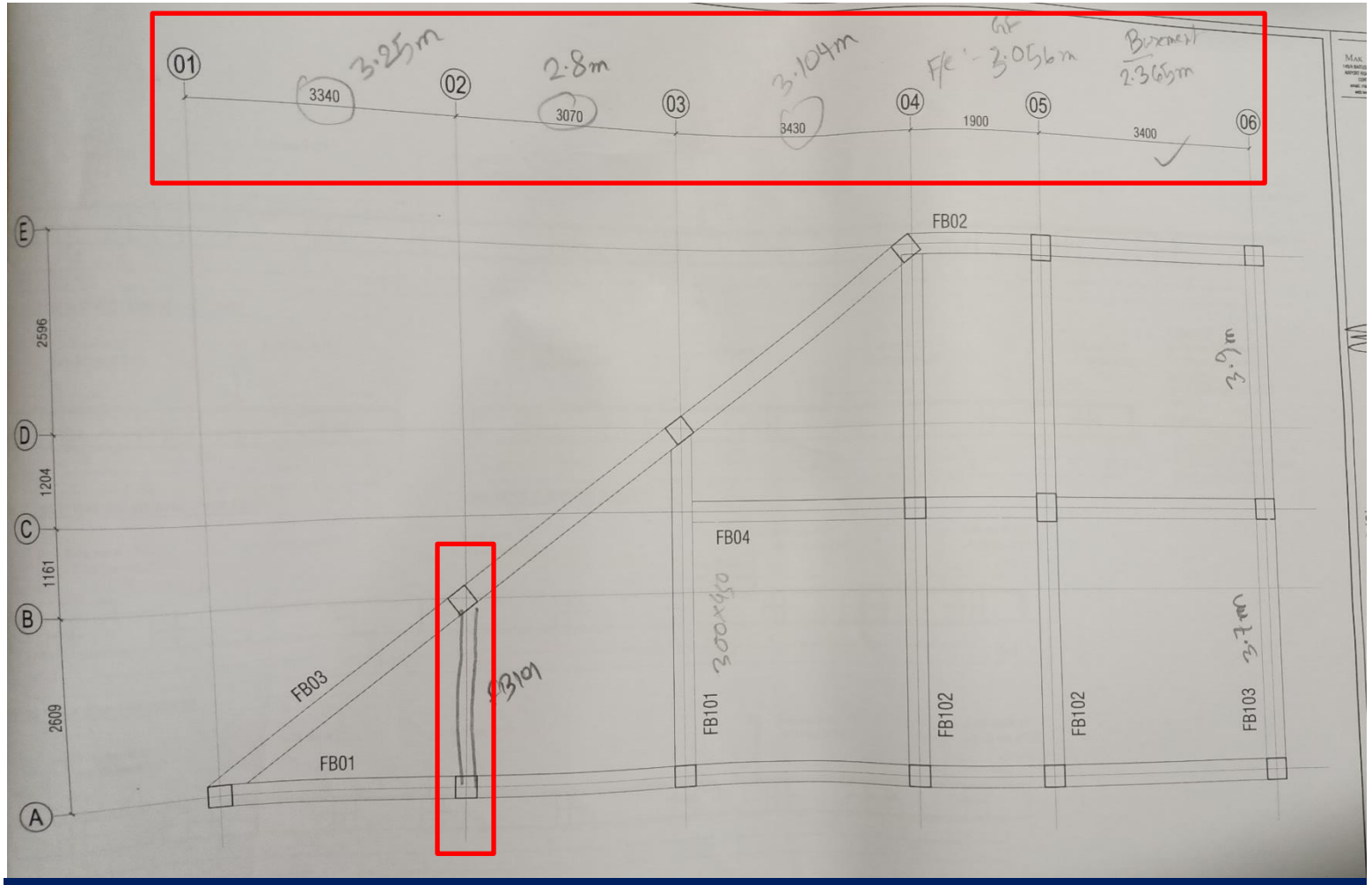
RMS Building

The RMS building do not have any design document except architectural & structural drawing.
As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC. The building engineer is required to prepare the design documents including the design report based on the software-based analysis and in compliance with section 1.9.1 (part-6, BNBC).

Observations: RMS Building

Prepared as-built drawings and design report need to be revised

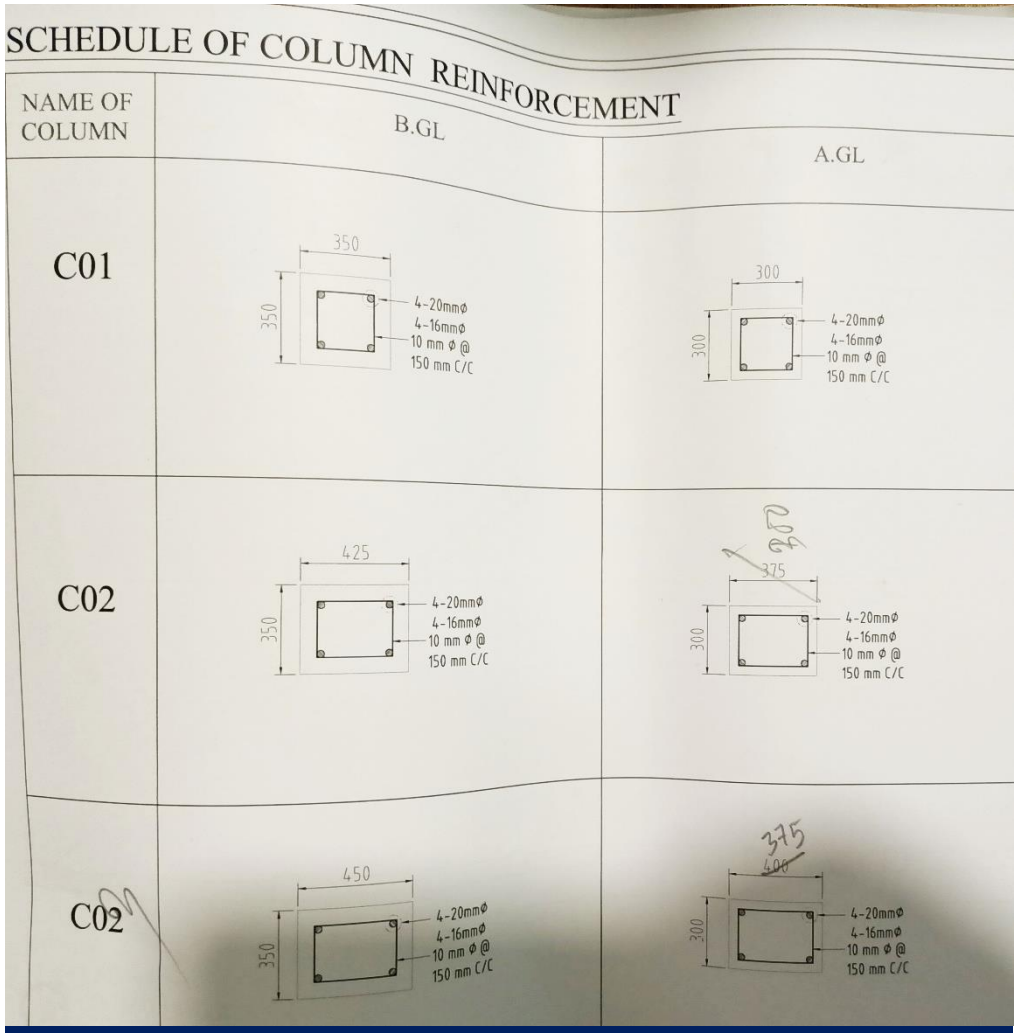
Observations: Fire Pump Building



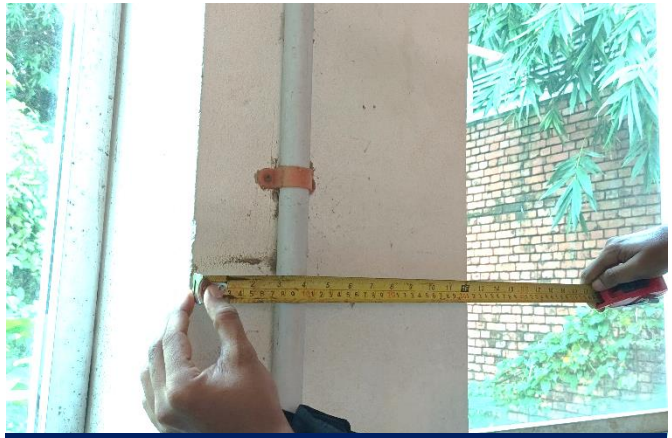
Beam Layout

Grid dimensions are not matched with the as-built condition. Also, a floor beam (red marked) is not shown in the drawing.

Observations: Fire Pump Building



Beam Layout



C-02 column
300 mm instead of 375 mm

C-03 column
375 mm instead of 400 mm

The size of C-02 and C-03 columns were found 300 mm & 375 mm instead of 375 mm & 400 mm respectively. The building engineer is required to revise the as-built documentation including the design report and submit it to RSC for review.

Observations: Fire Pump Building

Priority Actions

Problems Observed

Famkam Fashion Building:

Item 01: Footing stressed above normal design limits.
Item 02: Lack of information in as-built drawing.
Item 03: Lack of lateral stability of roof shed.
Item 04: Trolly impact on Column.
Item 05: Dampness on brick wall & Column
Item 06: Lack of water proofing on roof slab
Item 07: Connection gap at several locations
Item 08: Exposed rebar at roof level
Item 09: Non-structural elements not anchored or braced

Admin Building:

Item 10: Discrepancy in as-built drawing & design documents
Item 11: Lack of edge protection
Item 12: Exposed rebar at roof level
Item 13: Non-structural elements not anchored or braced

Medical Building:

Item 14: Discrepancy in as-built drawing & design documents
Item 15: Lack of edge protection
Item 16: Exposed rebar at roof level

RMS Building:

Item 17: Design report needs to be prepared

Fire Pump Building:

Item 18: Prepared as-built drawings and design report need to be revised

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Footing stressed above normal design limits. (Fashion Building)	As part of Detail Engineering Assessment (DEA) Building engineer is required to review design, load & footing stress.	6-weeks
02	Footing stressed above normal design limits. (Fashion Building)	Produce and actively manage a set of floor loading plan within the factory building considering foundation, column and floor capacity.	6-weeks
03	Footing stressed above normal design limits. (Fashion Building)	Carry out remedial works as per DEA recommendations.	6-months
04	Footing stressed above normal design limits. (Fashion Building)	Implement floor load plan.	6-months
05	Lack of information in as-built drawing (Fashion Building)	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
06	Lack of information in as-built drawing (Fashion Building)	Implement remediation if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
07	Lack of lateral stability of roof shed (Fashion Building)	Building Engineer is required to confirm the lateral load path & verify the lateral stability of the steel shed.	6-weeks
08	Lack of lateral stability of roof shed (Fashion Building)	Implement the remediation if required.	6-months
09	Trolly impact on Column (Fashion Building)	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
10	Trolly impact on Column (Fashion Building)	Carry out remedial works as per recommendation	6-months
11	Dampness on brick wall & Column (Fashion Building)	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
12	Lack of water proofing on roof slab (Fashion Building)	Apply water proofing at the roof top and improve the drainage system.	6-weeks
13	Connection gap at several locations (Fashion Building)	Identify the locations and carryout suitable repair works where necessary.	6-weeks
14	Exposed rebar at roof level (Fashion Building)	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	6-weeks
15	Non-structural elements not anchored or braced (Fashion Building)	Adequately anchor and brace all non-structural elements to resist earthquake forces.	6-weeks
16	Discrepancy in as-built drawing & design documents (Admin Building)	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
17	Discrepancy in as-built drawing & design documents (Admin Building)	Implement remediation if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
18	Lack of edge protection (Admin Building)	Factory is required to provide edge protection on roof and stair to avoid falling hazard.	6-weeks
19	Exposed rebar at roof level (Admin Building)	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	6-weeks
20	Non-structural elements not anchored or braced (Admin Building)	Adequately anchor and brace all non-structural elements to resist earthquake forces.	6-weeks
21	Discrepancy in as-built drawing & design documents (Medical Building)	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
22	Discrepancy in as-built drawing & design documents (Medical Building)	Implement remediation if required.	6-months
23	Lack of edge protection (Medical Building)	Factory is required to provide edge protection on roof and stair to avoid falling hazard.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
24	Exposed rebar at roof level (Medical Building)	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	6-weeks
25	Design report needs to be prepared (RMS Building)	Building engineer to prepare 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
26	Design report needs to be prepared (RMS Building)	Complete any remedial works arising from design report after reviewed by the RSC.	6-months
27	Prepared as-built drawings and design report need to be revised (Fire Pump Building)	Building engineer to revise 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
28	Prepared as-built drawings and design report need to be revised (Fire Pump Building)	Complete any remedial works arising from design report after reviewed by the RSC	6-months