

FARIHA KNIT TEX LTD.

(Extension Buildings)

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(23.619862N, 90.482921E)
8th & 30th November 2021



Building Information

1. Shed-3 (AOP/Dyeing Shed): (G+M)
2. Shed-5 (Chemical Store & Lab): (G+1)
3. Shed-6 (Knitting & Gray Fabrics): (G+1)
4. Shed-7 (Dyeing and Finishing): (G+1)
5. Shed-8 (Store): (G+1)
6. Shed-9 (Washing): (G+M+2)

Observations

Discrepancy in the drawings



Expansion of mezzanine floor

Expansion of mezzanine floor was observed in the ground floor level. Also, the layout of mezzanine and size of column and beam did not match with provided drawings (mention the mismatches). Building engineer to survey the structure and prepare accurate as-built drawings.

Undocumented horizontal expansion

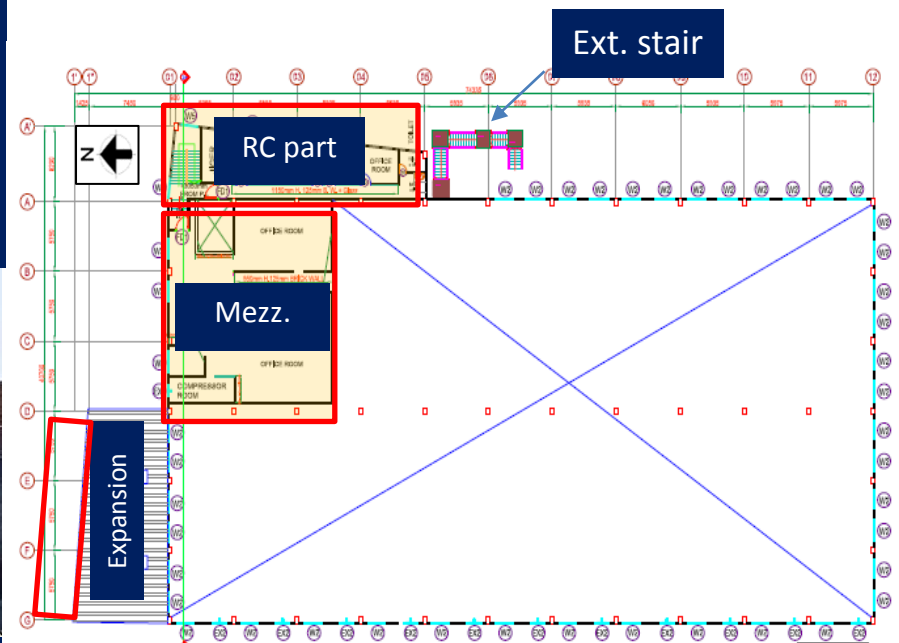
Undocumented horizontal expansion was observed on north side of the shed. Building engineer is required to survey the structure and prepare as-built drawings and check the adequacy of the structural members for the vertical & lateral forces.



North Elevation



Undocumented expansion



Floor layout plan



Roof frame of expansion part

Deflection of roof top RC slab



Slab deflection



125 mm thick RC slab

The stair roof slab have about 5m span and 125 mm thickness. Deflection was observed at the mid span of the slab. Also, hairline crack on the slab soffit was observed. The slab have no periphery beams. The building engineer to check the adequacy of the slab and suggest necessary support to control the deflection.



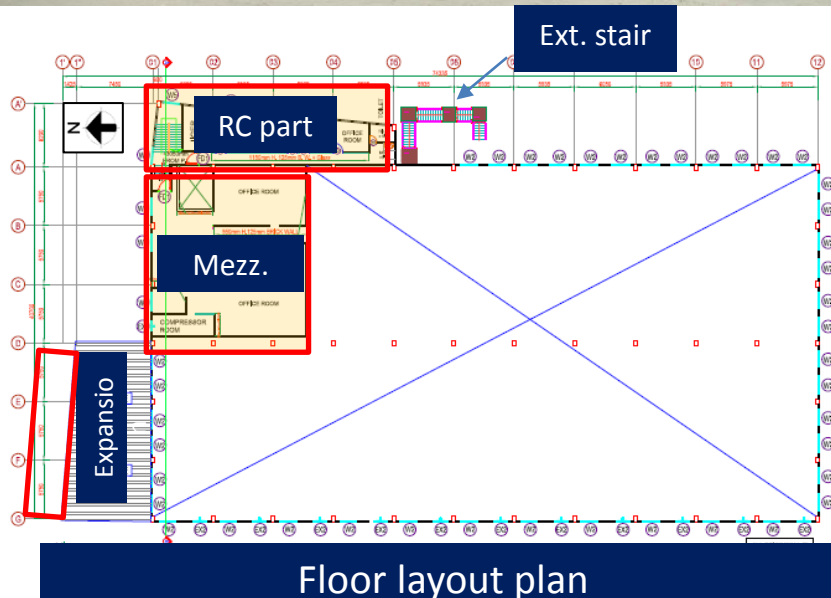
Hairline crack on the slab soffit

Lack of design report



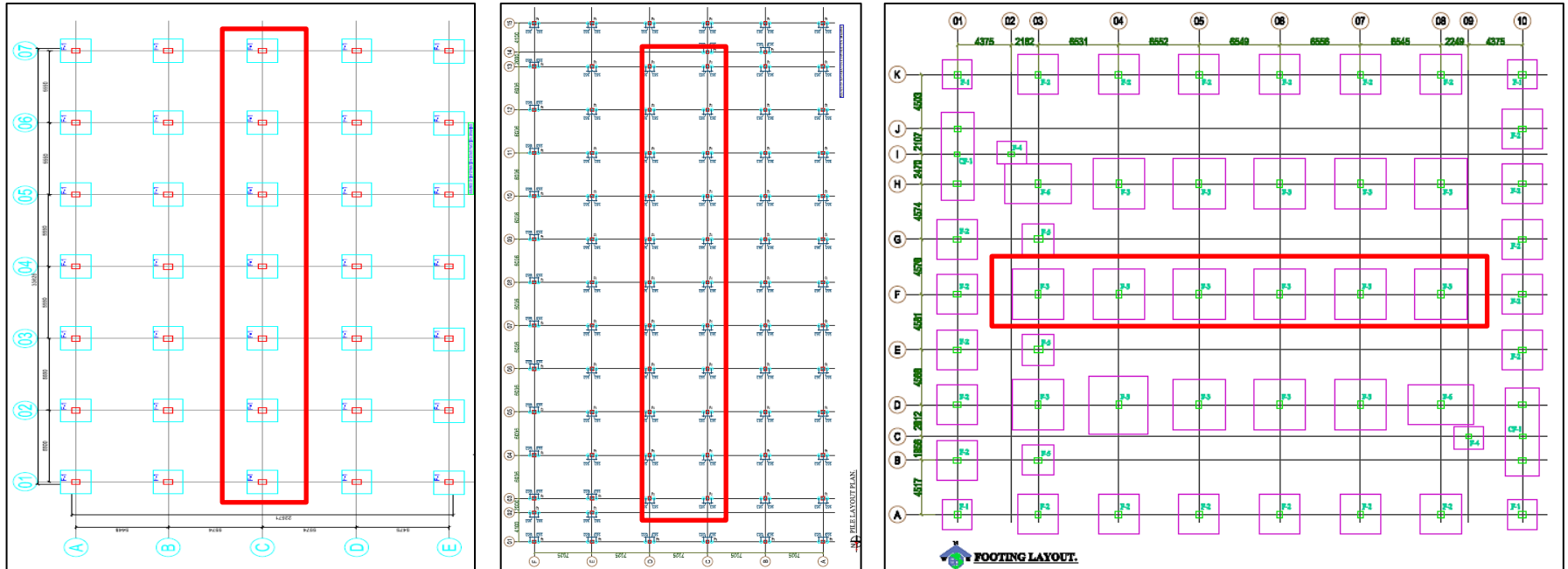
Shed-3

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. At the time of inspection, no design report was available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).



Main shed, RC part and steel mezzanine floor are sharing common RC columns. Also, the expansion areas are structurally connected with main shed. Some RC columns, almost all the steel columns and rafters have been retrofitted by the factory. Mezzanine floor steel column has no foundation details. All the parts should be included in the analysis and design report.

Foundation stress exceeds the normal design limit



Foundation layout plan Shed- 5, 7 & 9

Cursory calculation indicates that the foundation stress exceeds normal design limit marginally for central column of shed- 5, 7 & 9 considering prepared live load plan and bearing capacity of foundation as per soil test report. The building engineer to calculate the actual FoS of foundations based on in-situ material strength and allowable live load limit.

Discrepancies between drawings and as-built condition.



Missing bracing at different place



Mismatch in C-Channel bracing size



Mismatch in wall layout at 1F
(Fire door wall)



New toilet beside south side stair &
shifting wall at storage

The building engineer is required to survey the structural components and produce accurate structural drawings.

Lack of lateral stability



Absence of lateral load transfer media (compression strut) on roof

The factory engineer is required to check the stability of the structural system and provide the appropriate load transfer media.

Discrepancies and lack of details in drawings



Miss match in column at 1st floor (SC-3A found 390x200x7 instead of 400x230x8)



Miss match in beam (Web of SB1 found 310mm instead on 320mm & No extra plate was found in RMB1)



Missing bracing in stair



Lift core



Steel stair at 1st floor

Structural details of Lift core & steel stair for lift machine room are not shown in the structural drawings. Some discrepancies have been found between drawings & existing condition. The building engineer is required to survey the structural components and produce accurate structural details & incorporate mismatches in as built drawings.

Lack of lateral stability



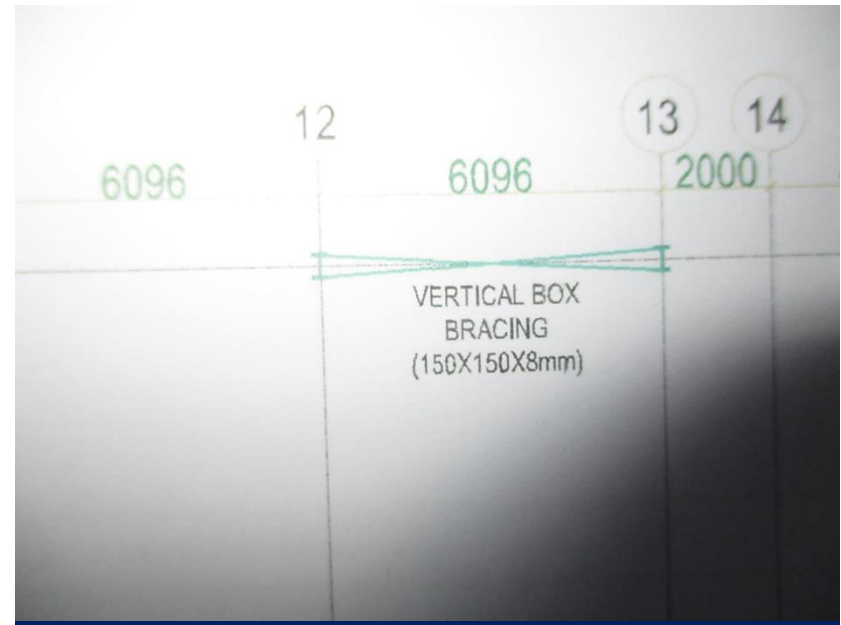
Absence of lateral load transfer media (compression strut) on roof

The building engineer is required to check the stability of the structural system and provide the appropriate load transfer media.

Discrepancy in the drawings



Vertical angle bracing on-site



Vertical box bracing in drawing

SCHEDULE OF STEEL BEAM

NAME	D (mm)	TW (mm)	BF (mm)	TF (mm)
MB-1	775	6	225	12
MB-2	445	5	200	6
RMB-2	445	5	200	10
MB-3	445	5	200	6
SB-1	440	5	125	6

RMB-2 beam in the schedule



Beam MB-2 found on-site instead of RMB-2

Vertical angle bracing was observed on 1st floor instead of box bracing. RMB-2 beam was shown in the schedule and layout but did not found on-site. Building engineer to survey the structure and prepare accurate as-built drawings.

Lack of lateral stability



Absence of lateral load transfer media (compression strut) on roof

The factory engineer is required to check the stability of the structural system and provide the appropriate load transfer media.

Apparently non-engineered steel stair



Steel stair from 1st floor to lift machine room



Steel stair connected with lift
core brick wall

Building engineer is required to check
the connections, stability system and
structural adequacy of the steel stair.

Discrepancies between drawings and as-built condition

2021/11/30 15:34 SC-7 SC-7

SCHEDULE OF COLUMN

NAME	D (mm)	TW (mm)	BF (mm)	TF (mm)
SC-1	450	8	300	18
SC-2	450	8	300	18
SC-3	450	8	300	18
SC-4	450	8	300	18
SC-5	450	8	300	18
SC-6	300	8	150	12
SC-7	425-625	8	200	10
SC-8	400	8	200	10

OWNER SIGN : DESIGN BY :



Mismatch in column (Flange thickness of column SC-1,2,3,4 found 10mm instead of 16mm, SC-1 at 1st floor found 600x400x10 (F) mm instead of 450x300x16 (F) & SC-2 at 1st floor found 425x200x10 (F) instead of 450x300x18 (F))



Mismatch in beam (Flange thickness of MB-1 found 12 instead of 16 & width of rafter at grid A-P found 150 although the rafter instead of 175 in middle part)

Some mismatches have been found between drawings & existing condition. The building engineer is required to survey the structural components and produce accurate structural details & incorporate mismatches in as built drawings.

Lack of lateral stability



Apparently lack of lateral load resisting system observed in shed 8. Portal frame in the short direction but no compression strut and bracing observed in the long direction. Building engineer is required to check the lateral stability of the shed.

The factory engineer is required to check the stability of the structural system and provide the appropriate load transfer media.

Lack of lateral stability



Absence of lateral load transfer media (compression strut) on roof

The factory engineer is required to check the stability of the structural system and provide the appropriate load transfer media.

Apparently non-engineered steel stair



Steel stair from 1st floor to lift machine room



Steel stair connected with lift core and adjacent steel building

Building engineer is required to check the connections, stability system and structural adequacy of the steel stair.

Loose cable bracings & bolt missing



Loose cable bracing

Loose cable bracing and bolt missing in several locations were observed. The factory is required check the structure to identify the loose bracings and tighten those properly. And install the missing bolts where required.



Bolt missing

Corrosion in steel member



Loose cable bracing



Bolt missing

Corrosion in steel member in several locations were observed. The factory is required to identify the locations, remove corrosion and apply corrosion resistance coating to the members.

Problems Observed

Shed-3:

Item 01: Discrepancy in the drawings

Item 02: Undocumented horizontal expansion

Item 03: Deflection of roof top RC slab

Item 04: Lack of design report

Shed-5:

Item 05: Foundation stress exceeds the normal design limit

Item 06: Discrepancies between drawings and as-built condition.

Item 07: Lack of lateral stability.

Shed-6:

Item 08: Discrepancies and lack of details in drawings.

Item 09: Lack of lateral stability.

Shed-7:

Item 10: Discrepancy in the drawings

Item 11: Lack of lateral stability

Item 12: Apparently non-engineered steel stair

Item 13: Foundation stress exceeds the normal design limit

Problems Observed

Shed-8:

Item 14: Discrepancies between drawings and as-built condition.

Item 15: Lack of lateral stability.

Shed-9:

Item 16: Foundation stress exceeds the normal design limit

Item 17: Lack of lateral stability

Item 18: Apparently non-engineered steel stair

Item 19: Loose cable bracings & bolt missing

Item 20: Corrosion in steel member

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Discrepancy in the drawings: Shed-3	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
02	Undocumented horizontal expansion: Shed-3	Building engineer is required to survey the structure and prepare as-built drawings.	6-weeks
03	Undocumented horizontal expansion: Shed-3	Check the adequacy of the structural members for the vertical & lateral forces.	6-weeks
04	Undocumented horizontal expansion: Shed-3	Carry out remedial work if required.	6-months
05	Deflection of roof top RC slab: Shed-3	The building engineer to check the adequacy of the slab and suggest necessary remedial actions to control the deflection.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Deflection of roof top RC slab: Shed-3	Carry out remedial works suggested by the engineer.	6-months
07	Lack of design report: Shed-3	The building engineer is required to prepare design report in compliance with section 1.9.1.1 (part-6, BNBC).	6-weeks
08	Lack of design report: Shed-3	Implement the recommendation of design report.	6-months
09	Foundation stress exceeds the normal design limit: Shed-5	The building engineer to calculate the actual FoS of foundations based on in-situ material strength and allowable live load limit.	6-weeks
10	Foundation stress exceeds the normal design limit: Shed-5	Suggest remedial actions.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Foundation stress exceeds the normal design limit: Shed-5	Carry out remedial works where required.	6-months
12	Discrepancies between drawings and as-built condition: Shed-5	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
13	Lack of lateral stability: Shed-5	As part of Engineering Assessment (EA), the building engineer is required to check the stability of the structure and suggest necessary remedial actions.	6-weeks
14	Lack of lateral stability: Shed-5	Carry out remedial works as the EA.	6-months
15	Discrepancies between drawings and as-built condition: Shed-6	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Lack of lateral stability: Shed-6	As part of Engineering Assessment (EA), the building engineer is required to check the stability of the structure and suggest necessary remedial actions.	6-weeks
17	Lack of lateral stability: Shed-6	Carry out remedial works as the EA.	6-months
18	Discrepancy in the drawings: Shed-7	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
19	Lack of lateral stability: Shed-7	As part of Engineering Assessment (EA), the building engineer is required to check the stability of the structure and suggest necessary remedial actions.	6-weeks
20	Lack of lateral stability: Shed-7	Carry out remedial works as the EA.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
21	Apparently non-engineered steel stair: Shed-7	The building engineer is required to check the connections, stability system and structural adequacy of the steel stair.	6-weeks
22	Apparently non-engineered steel stair: Shed-7	Carry out remedial works where required.	6-months
23	Foundation stress exceeds the normal design limit: Shed-7	The building engineer to calculate the actual FoS of foundations based on in-situ material strength and allowable live load limit.	6-weeks
24	Foundation stress exceeds the normal design limit: Shed-7	Suggest remedial actions.	6-weeks
25	Foundation stress exceeds the normal design limit: Shed-7	Carry out remedial works where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
26	Discrepancy in the drawings: Shed-8	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
27	Lack of lateral stability: Shed-8	As part of Engineering Assessment (EA), the building engineer is required to check the stability of the structure and suggest necessary remedial actions.	6-weeks
28	Lack of lateral stability: Shed-8	Carry out remedial works as the EA.	6-months
29	Foundation stress exceeds the normal design limit: Shed-9	The building engineer to calculate the actual FoS of foundations based on in-situ material strength and allowable live load limit.	6-weeks
30	Foundation stress exceeds the normal design limit: Shed-9	Suggest remedial actions.	6-weeks
31	Foundation stress exceeds the normal design limit: Shed-9	Carry out remedial works where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
32	Lack of lateral stability: Shed-9	As part of Engineering Assessment (EA), the building engineer is required to check the stability of the structure and suggest necessary remedial actions.	6-weeks
33	Lack of lateral stability: Shed-9	Carry out remedial works as the EA.	6-months
34	Apparently non-engineered steel stair: Shed-9	The building engineer is required to check the connections, stability system and structural adequacy of the steel stair.	6-weeks
35	Apparently non-engineered steel stair: Shed-9	Carry out remedial works where required.	6-months
36	Loose cable bracings & bolt missing: Shed-9	The factory is required check the structure to identify the loose bracings and tighten those properly.	6-weeks
37	Loose cable bracings & bolt missing: Shed-9	Install the missing bolts where required.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
38	Corrosion in the steel member: Shed-9	The factory is required to identify the locations, remove corrosion and apply corrosion resistance coating to the steel members.	6-weeks