

KNIT Concern Ltd. (9499)

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07.APRIL.2014

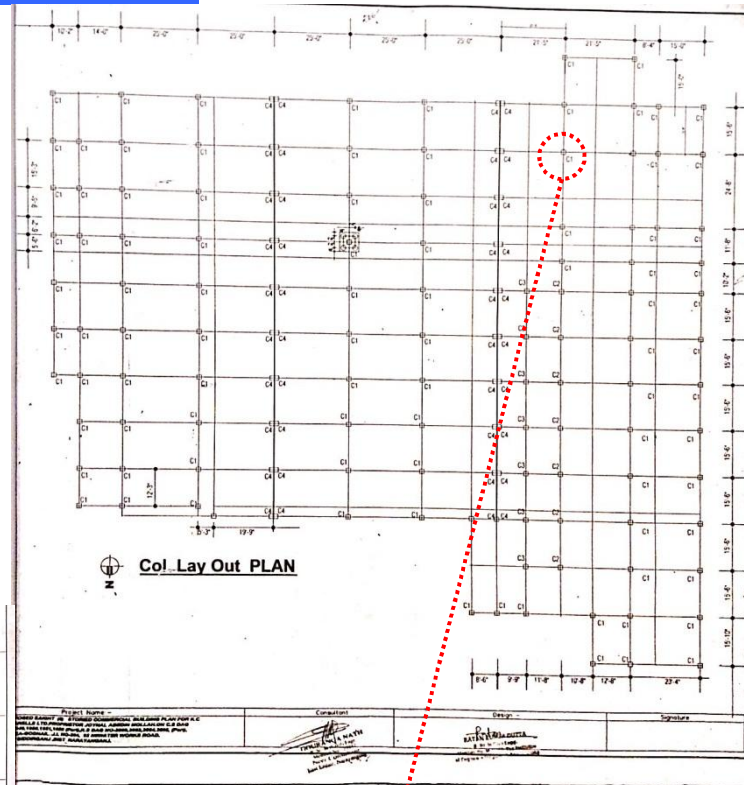


Identified Priority 2 Concerns

1st Priority 2 Concern

C1	20"X20"	16~22mm 20"X20"	16~22mm 20"X20"
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NO	Col Size	G.L TO P.L Col Size	P.L TO 2nd Col Size	3rd to 5th Col Size	7th Col Size	RING
C1	20"X20"	16~22mm 20"X20"	16~22mm 20"X20"	16~22mm 18"X18"	16~20mm 18"X18"	8mm@C/C
C2	20"X20"	12~22mm 20"X20"	12~22mm 20"X20"	12~22mm 18"X18"	12~20mm	8mm@C/C
C3	15"X15"	10~20mm 15"X15"	10~20mm 15"X15"	10~20mm 13"X13"	16~12mm 13"X13"	8mm@C/C
C4	12"X20"	12~20mm 12"X20"	12~20mm 12"X20"	10~20mm 10"X18"	10~20mm 10"X18"	8mm@C/C
C5	10"X20"	10~20mm	10~20mm	10~16mm	10~16mm	8mm@C/C
GRADE BEAM		8~22mm (75° Grade)				8mm@5~6"C/C



Column to be checked

Based on the load rundown analysis with the agreed minimum design live load assignment, the column in the clouded area seems significantly inadequate to carry the dead and live loads, giving a firm AMBER warning. The building was constructed before 2005, with brick aggregate.

2nd Priority 2 Concern

An additional construction over the stair location at roof level transfers its gravity loads directly to the roof slab system without any strengthening. The original building was not designed for these loads



The columns of new building are supported by existing flat slabs without any apparent strengthening.

3rd Priority 2 Concern



The visible cracks at movement joint locations. These cracks will increase the chance of water penetration resulting in failure of the perimeter wall.



Identified Priority 3 Concerns

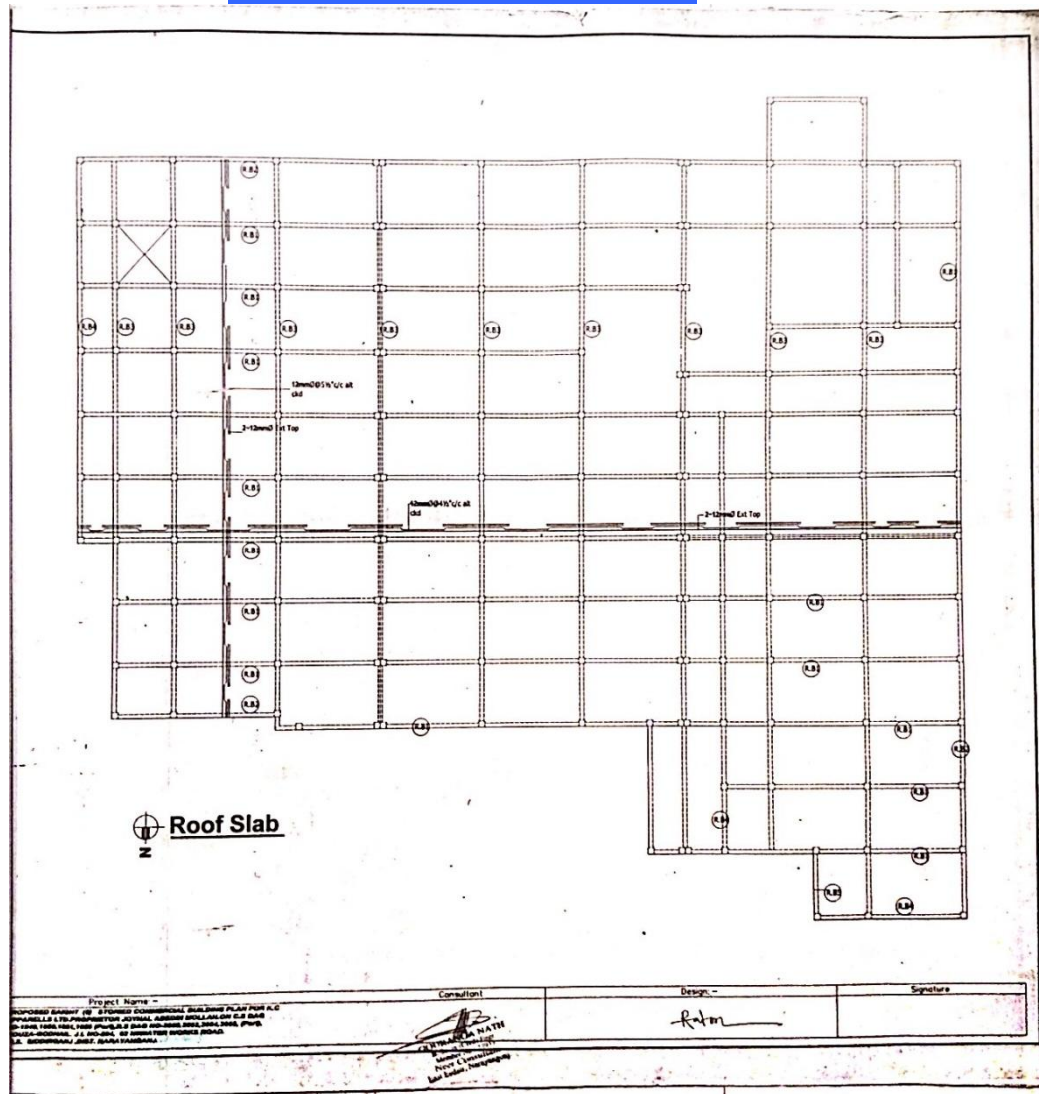
1st Priority 3 Concern



The structural design show the perimeter beams on all sides of the building. However, the as-built structure does not have these beams.

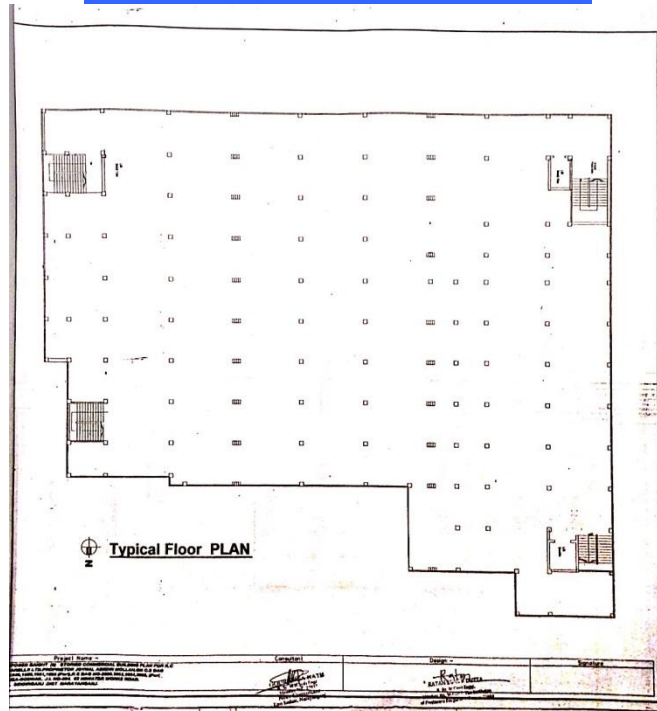
No perimeter beams

2nd Priority 3 Concern



The 1st floor and the roof level floor totally differ from the structural design drawings. The floors were designed as beam & slab systems. However, flat slabs have been used instead.

3th Priority 3 Concern



No cantilever from the original design

The slab cantilevers from level 2 to the roof level were not as designed. No record of these extensions is made on any drawings

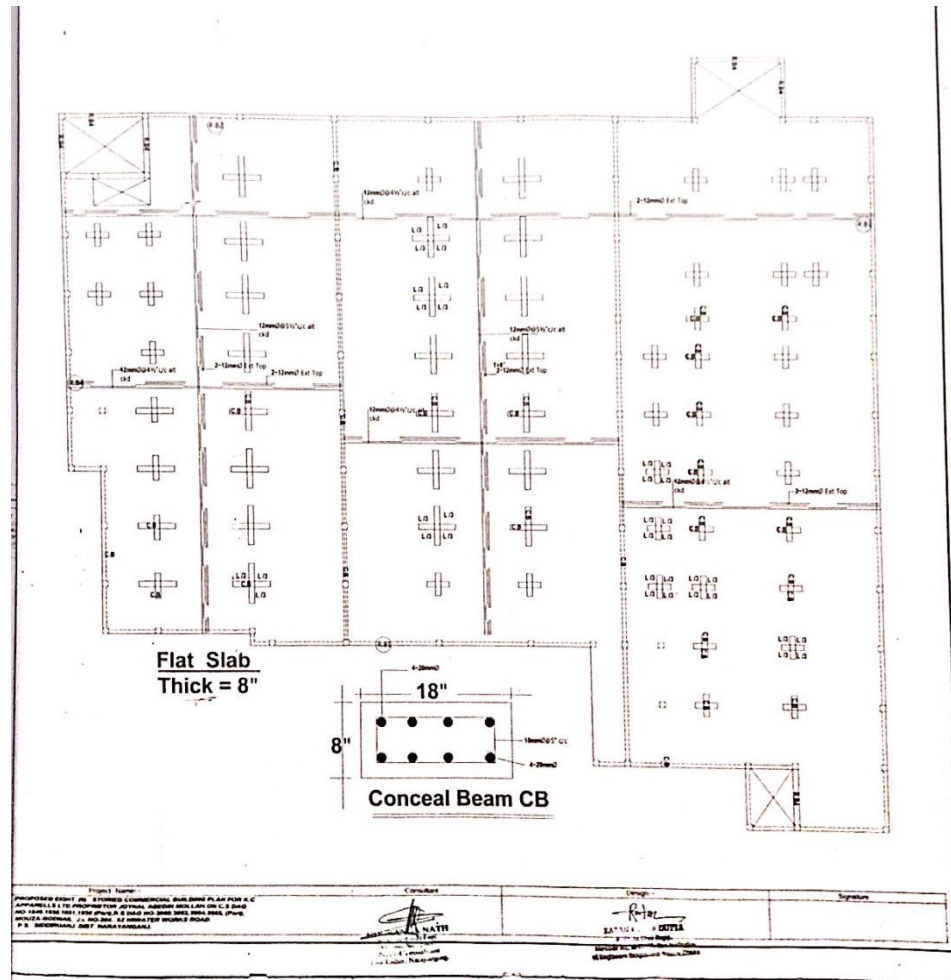


4th Priority 3 Concern

The set of structural drawings is not consistent with the as-built structure. It is necessary to check a full structural analysis of the building to establish the validity of the site conditions.

The structural drawings must be revised in order to reflect the actual site conditions.

Overall Stability System



We suggest that these items be investigated as part of a Detailed Engineering Assessment.

Priority Actions

Problems Observed Summary

ITEM 1: (1st Priority 2) One column mentioned above has been found to possess insufficient loading capacity.

ITEM 2: (2nd Priority 2) The additional point loads on the slab due to the construction of new building at the roof top stair location

ITEM 3: (3rd Priority 2) Visible cracks at movement joint

ITEM 4: (1st Priority 3) Lack of perimeter beams on all sides of the slabs

ITEM 5: (2nd Priority 3) Inconsistencies between the structural design and the as-built structure

ITEM 6: (3rd Priority 3) No design for the slab cantilevers

ITEM 7: (4th Priority 3) No lateral load resistance system

Item 1 and actions

There is one column has been found to possess insufficient loading capacity.

Priority 1 (Immediate – Now)

- Reduce the loads on all levels at the mentioned column location.
- Building engineer to review the design of the highlighted column.

Priority 2 (within 6 – weeks)

- Cores should be taken to verify the actual in-situ concrete strength, to allow a review the design.

Priority 3 (within 6-months)

- None required

Item 2 and actions

The construction of new building on top the stair location is uncontrolled. Furthermore, the additional loads caused by the new building transfer directly to the flat slab system that was not designed to support them.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- This problem is subjected to review by building engineer to check the design of the existing structure.

Priority 3 (within 6-months)

- Consider demolishing the new building to relieve load.

Item 3 and actions

The visible cracks at the movement joint should be repaired any suitably sealed to stop the water penetration leading to the failure of perimeter wall.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- None required

Priority 3 (within 6-months)

- Consider removing existing screed, applying a new waterproofing membrane and reapplying the screed

Item 4,5,6 and actions

There are some inconsistencies between as-built structure and structural design.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- Carry out full building survey using both intrusive and non-intrusive techniques.
- Carry out concrete strength test of structural elements to determine concrete strength.
- Building Engineer to fully check loading capacity of all components modified on site without any structural approval to establish whether or not the as-built components are able to sustain the loading.

Priority 3 (within 6-months)

- Based on the building survey, develop full structural records, and also propose strengthening works or repair works if the as-built structure appears to be insufficient in any way.

Item 7 and actions

There are no perimeter beams on all sides of slabs and there is a lack of a lateral stability system.

Priority 1 (Immediate – Now)

- None required

Priority 2 (within 6 – weeks)

- Lack of perimeter beam needs to be investigated structurally to check long term deflections or any effects on the slab.
- Building engineer to check and provide the solution for lateral resisting requirements of the structure.

Priority 3 (within 6-months)

- As per the results of structural analysis, the building needs to be revised to accord with BNBC building codes with regard to lateral stability.