

Karooni Fashions Ltd.

Ratanpur, Shafipur, Kaliakoir, Gazipur

(24.040657N, 90.277078E)

5 October 2021



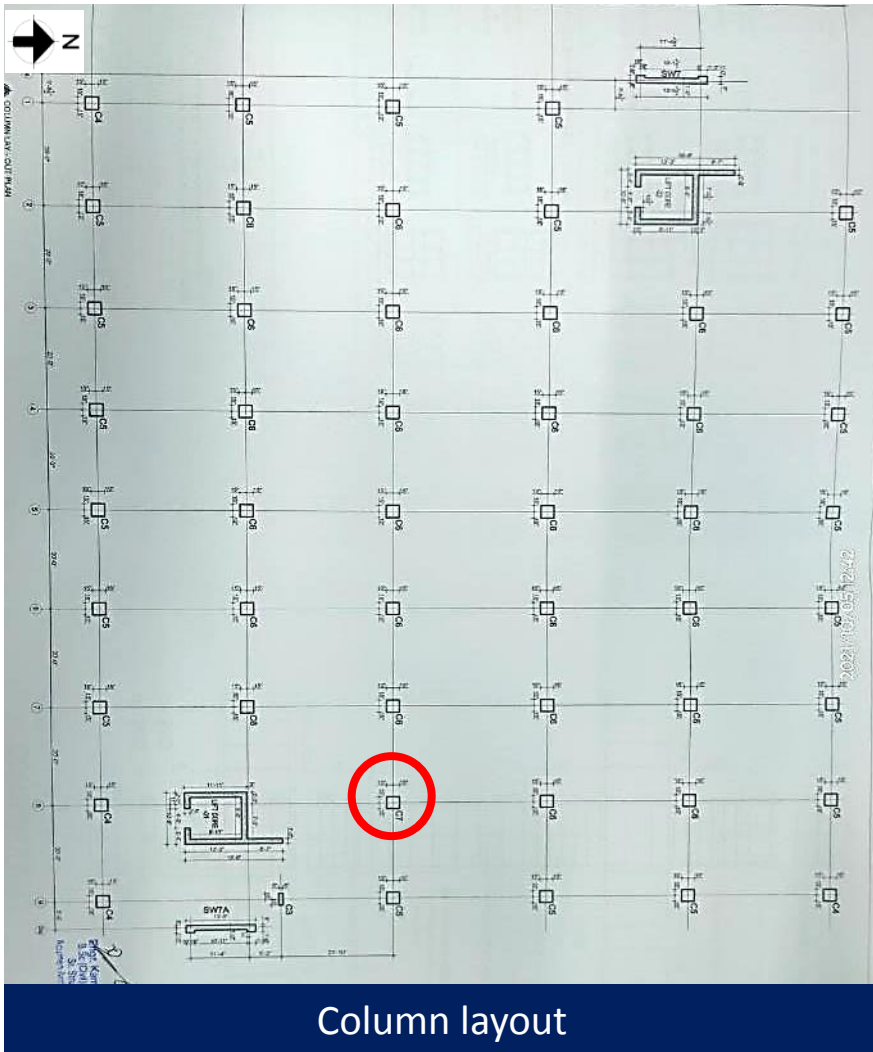
Buildings Information

1. KFL Building(B+G+7)

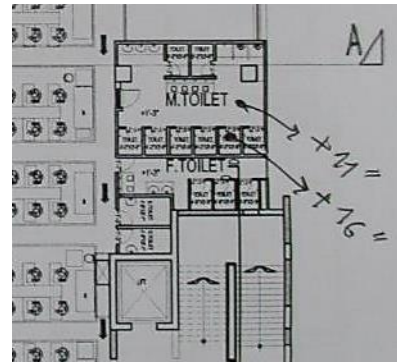
Observations

Column stresses above normal design limit

Observation: KFL Building



Column layout



Toilet Block



Additional imposed 400 mm floor built up



6 kPa loading on 7th floor

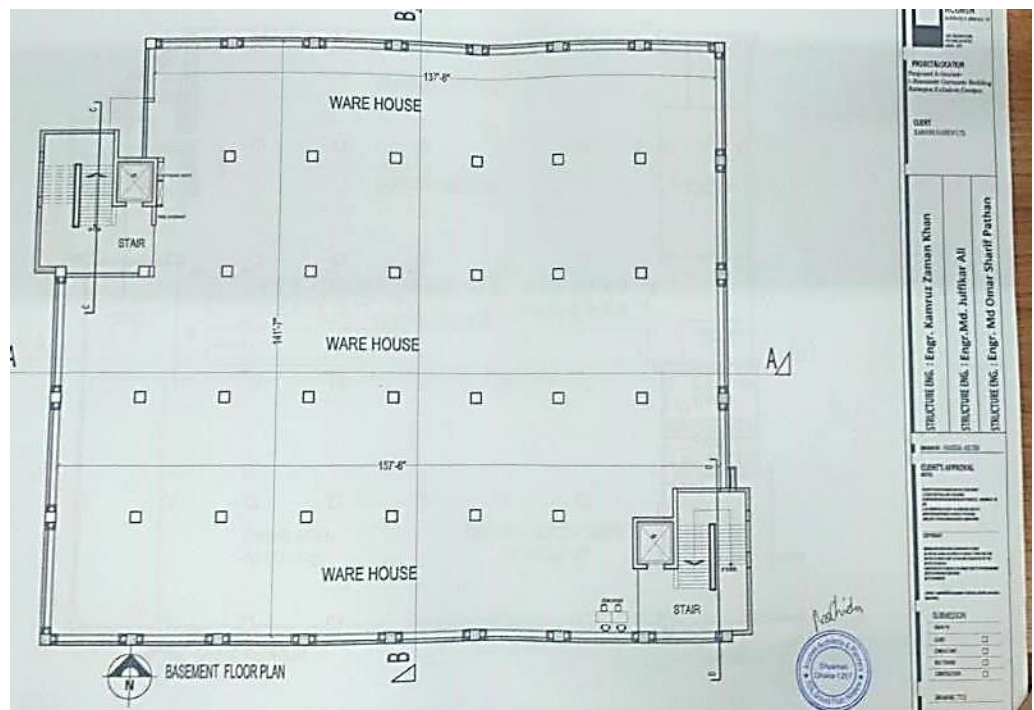
Cursory calculation indicate that column stress exceeds the normal design limit considering minimum concrete strength (16.3 MPa) and prepared floor live load plan (3 kPa on typical floors and 6 kPa on storage areas). The building engineer is required to verify the in-situ concrete strength, review the column stress.

Lack of design documents



KFL building

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 of part-6, BNBC. However, design report was not available during inspection. The building engineer is required to prepare a design report in compliance with BNBC.



Drawings

7 **Observation: KFL Building**

Inconsistency in material test report (soil and concrete)



CONCRETE LABORATORY

BRTC No. : 1101-94484 /19-20/CE; Dt: 29/8/2019
 Sent by : Karroni Fashions Ltd.
 Ref. No. : Letter; Dt: 27/8/2019
 Project : Karroni Fashions Ltd.
 Sample : Cylinder [Mix proportion(as quoted): Not Mentioned, Aggregate Type: Stone chips]
 Location : Not Mentioned
 Test : Compressive Strength [ASTM C39]
 Date of Test : 3/9/2019

TEST REPORT

Sl. No.	Date of Casting as per the Letter	Specimen Designation/ Frog Mark	Specimen Area (sq. in)	Maximum Load (lb)	Crushing Strength (psi)	Average Crushing Strength	Mode of Failure
1	28/7/2019	1	12.67	81,432	6,427	6298 psi	Combined *
2	(37 days test)	2	12.67	79,201	6,251	(43.4 MPa)	Combined *
3		3	12.42	76,969	6,197	(442 kg/cm ²)	Combined *

Note: Samples were received in unsealed condition. * Combined = Mortar and Aggregate failure.

Countersigned by:

Majid

Dr. Md. Abdl Jalil
 Professor
 Department of Civil Engineering
 BUET, Dhaka-1000, Bangladesh



Authenticity of this page is verifiable from <http://verify.ce.buet.ac.bd> with the QR Code or IA

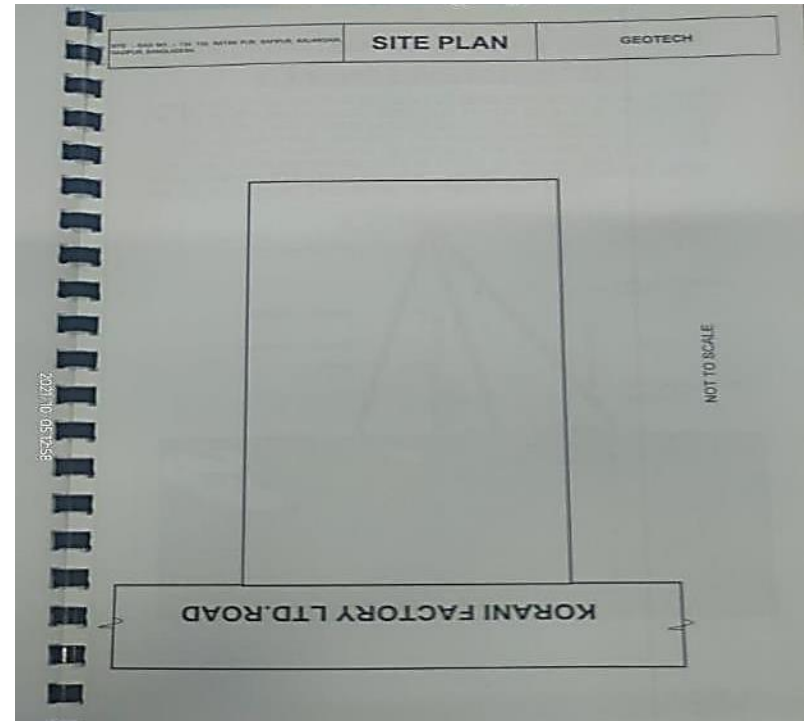
Test Performed by:

Pravat K Saha
 12.9.19

Dr. Pravat Kumar Saha
 Assistant Professor
 Department of Civil Engineering
 BUET, Dhaka-1000, Bangladesh



Important Notes: Samples as supplied to us have been tested in our laboratory. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are sent in a secure and sealed cover/package/container under signature of the competent authority. In order to avoid fraudulent fabrication of test results, it is recommended that all test reports are collected by duly authorized person, and not by the Contractor/Supplier.



Location of the building & bore hole locations are missing in the soil test report.

Conduct geotechnical investigation to close vicinity of the structure, determine actual soil bearing capacity and check the foundation adequacy. Maintain proper records of testing [Soil & concrete].

Discrepancies between drawings with as-built condition & lack of details in drawings



OHWT on the roof

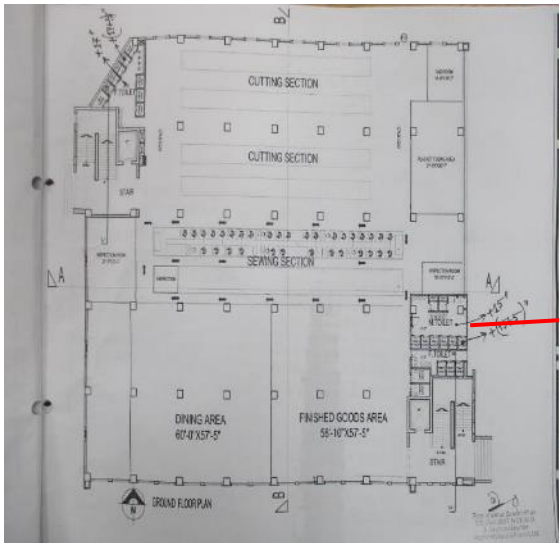


Retaining wall on the basement floor



RC parapet on the roof

Structural details of OHWT & parapet wall on the roof and retaining wall on the basement floor are not shown in the structural drawings. The building engineer is required to survey the structural components and produce accurate structural details.

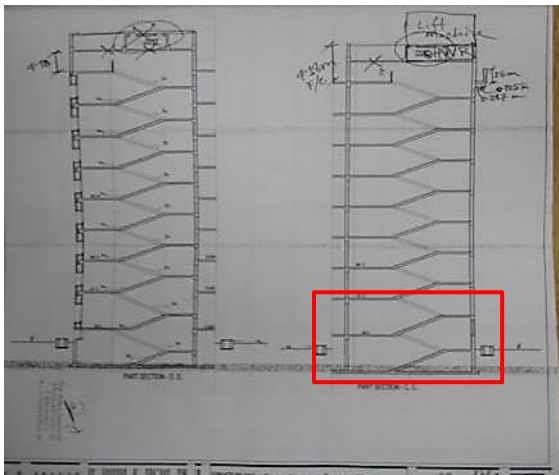


Floor layout plan (floor rise 375 mm all floor)

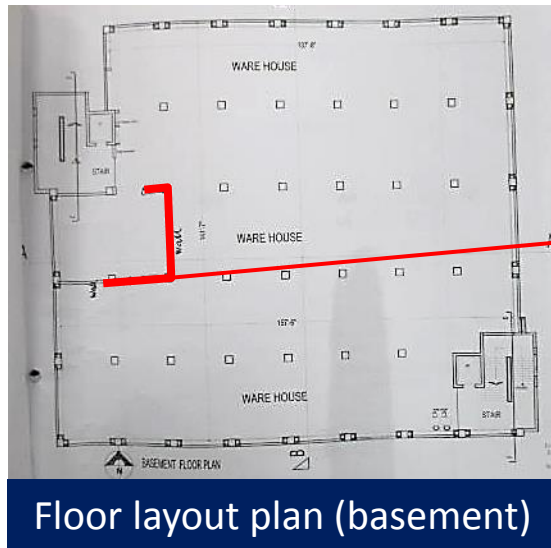


Approx. 450 mm floor rise on ground to 3rd floor and 200 mm on other floors

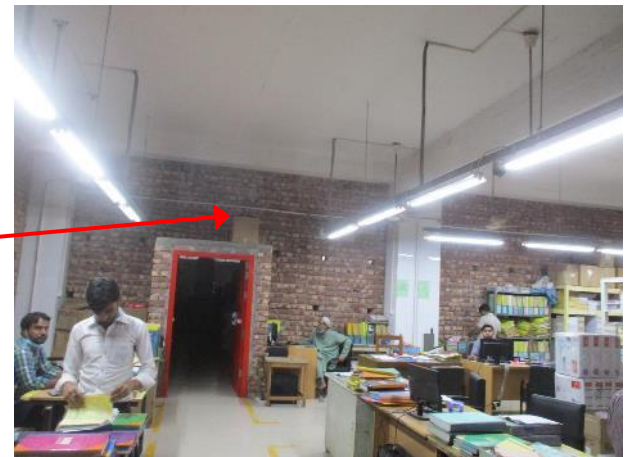
Floor rise, floor height, brick wall layout does not match with as-built conditions. The building engineer is required to survey the structure and produce accurate as-built drawings.



13'-8" floor height at basement & GF instead of 14'

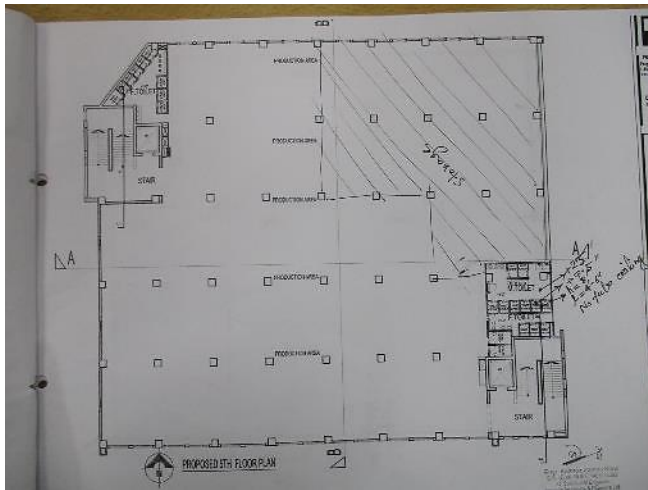


Floor layout plan (basement)



Brick walls on basement floor not shown in drawing

Floor load management

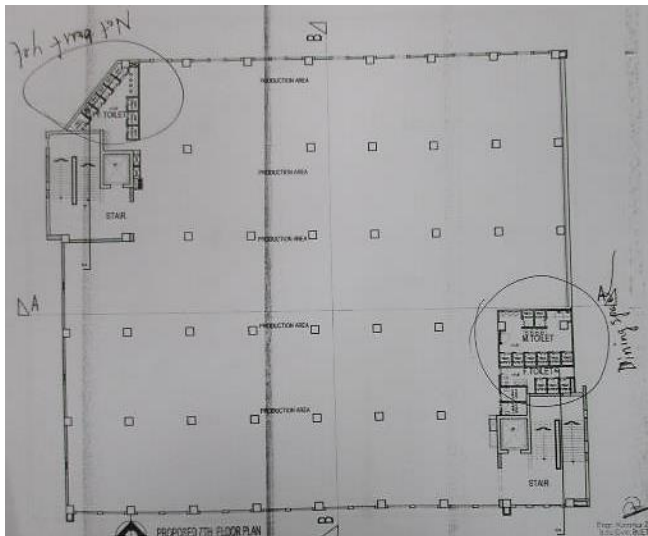


5th floor plan (production)



Storage on the 5th floor

On the 5th and 7th floor storage was observed on production area. The building engineer is required to check the occupancies and update the floor live loading plan for all floors based on BNBC requirements and manage the floor loading accordingly.



7th floor plan (production)



Storage on the 7th floor



Dining on the 7th floor

Slab opening for duct



Slab opening has been observed at the edge of shear wall

The building engineer is required to check the slab capacity, diaphragm connections, deflection of the floor slabs and suggest proper actions accordingly.

Stagnant water on the roof



Stagnant water observed on roof

Develop proper drainage system on the roof with adequate slope or apply water proofing layer on the roof to resist water ingress into the slab.

Rebar corrosion & construction debris on the roof



Expose rebar has not been covered properly & construction debris found on the roof

The factory is required to remove the corrosion from the rebar and cover the exposed rebars.
Also, remove the construction debris from the roof.

Free standing parapet wall

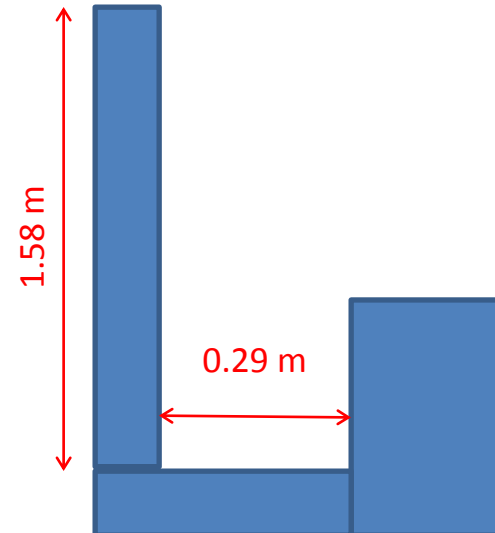


Roof parapet wall missing on the eastern side



Free standing wall observed on the beam bottom cantilever slab.

The RC parapet wall is resting on the beam bottom cantilever slab. The factory is required to provide parapet wall to the eastern part of the roof. The building engineer is required to check the lateral stability of the parapet walls and check the capacity of below cantilever slabs.



Priority Actions

Problems Observed

Building-1 (KFL Building):

Item 01: Column Stresses exceeds normal design limit.

Item 02: Lack of design documents

Item 03: Inconsistency in material test report (soil and concrete)

Item 04: Discrepancies between drawings with as-built condition & lack of details in drawings

Item 05: Floor load plan management

Item 06: Slab opening for duct

Item 07: Stagnant water on the roof

Item 08: Rebar corrosion & construction debris on the roof

Item 09: Free standing parapet wall

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Column Stresses exceeds normal design limit.	Building engineer to review design, loads and columns stresses in area identified above.	6-weeks
02	Column Stresses exceeds normal design limit.	Verify in-situ concrete strength by taking minimum 4 no of concrete cores [100mm diameter] from lower tier of the building.	6-weeks
03	Column Stresses exceeds normal design limit.	Produce and actively manage a loading plan for all floor plates within the factory considering floor, column & foundation capacity.	6-weeks
04	Column Stresses exceeds normal design limit.	Carry out remedial actions if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Column Stresses exceeds normal design limit.	Implement floor loading plan.	6-months
06	Lack of design documents.	Prepare a set of design documents including Engineering Assessment (EA) report as per BNBC (part-6, section 1.9.1).	6-weeks
07	Lack of design documents.	Carry out remedial actions suggested in Engineering Assessment.	6-months
08	Inconsistency in material test report (soil and concrete)	Conduct geotechnical investigation to close vicinity of the structure, determine actual soil bearing capacity and check the foundation adequacy.	6-weeks
09	Inconsistency in material test report (soil and concrete)	Maintain proper records of testing [Soil & concrete].	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
10	Inconsistency in material test report (soil and concrete)	Implement remedial works if required.	6-months
11	Discrepancies between drawings with as-built condition & lack of details in drawings.	The building engineer is required to survey the structure and produce accurate as-built drawings.	6-weeks
12	Floor live load plan do not comply with BNBC.	The building engineer is required to check the occupancies and update the floor live loading plan for the building based on BNBC loading requirements and capacity of building floor, column & foundations.	6-weeks
13	Floor live load plan do not comply with BNBC.	Implement the floor loading plan (by posting in each floor level, providing signage and maintaining loadings)	6-months
14	Slab opening for duct.	The building engineer is required to check the slab capacity, diaphragm connections and deflection of the floor slabs.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Slab opening for duct.	Implement the remedial actions suggested by the engineer.	6-months
16	Stagnant water on the roof.	Develop proper drainage system on the roof with adequate slope or apply water proofing layer on the roof to resist water ingress into the slab.	6-months
17	Rebar corrosion & construction debris on the roof.	Remove the corrosion and cover the exposed rebars.	6-weeks
18	Rebar corrosion & construction debris on the roof.	Remove the construction debris from the roof.	6-weeks
19	Free standing parapet wall.	Provide parapet wall to the eastern part of the roof.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
20	Free standing parapet wall.	The building engineer is required to check the lateral stability of the parapet walls and check the capacity of below cantilever slabs.	6-weeks
21	Free standing parapet wall.	Carry out remedial works if required	6-months