FAKIR KNITWEARS LTD. (Extension - 2)

KAYEMPUR, FATULLAH, NARAYANGANJ

(23.63924, 90.50011)

22 December 2024

Structural Inspection Report

RMG SUSTAINABILITY COUNCIL

Level 5, Shanta Forum, 187, 188/B,
Bir Uttam Mir Shawkat Sarak, Tejgaon,
Dhaka- 1208, Bangladesh
PABX : +880 2 41081863-6
www.rsc-bd.org

1. Building Information:

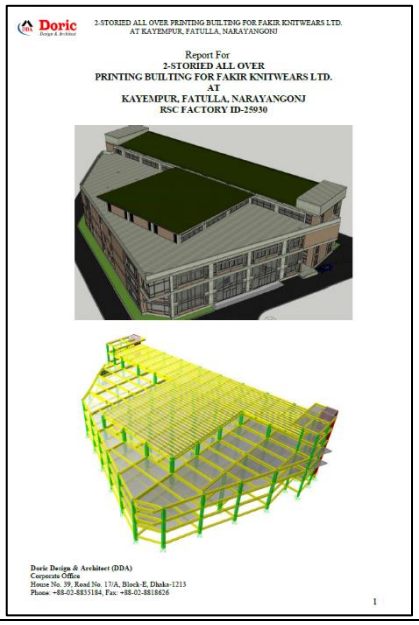
Building-12 (All Over Printing Building): Partially 3 storied (G+M+2) RC building with a mezzanine and a steel roof.

Building-13 (New Printing Building): 5 (G+4) storied RC building

Shed-21 (New Boiler Shed): Single storied shed

2. Observations:

Observation 01: Inconsistency in the design report [Building-12 (All Over Printing Building)]


Doric
2-STORIED ALL OVER PRINTING BUILTING FOR FAKIR KNITWEARS LTD.
AT KAYEMPUR, FATULLA, NARAYANGONJ

Report For
2-STORIED ALL OVER
PRINTING BUILTING FOR FAKIR KNITWEARS LTD.
AT
KAYEMPUR, FATULLA, NARAYANGONJ
RSC FACTORY ID-25930

Doric Design & Architect (DDA)
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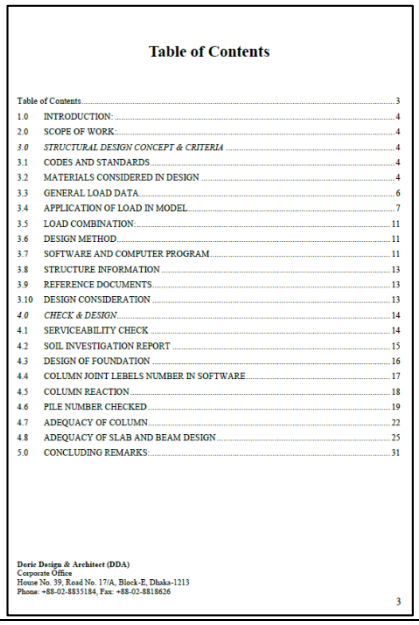
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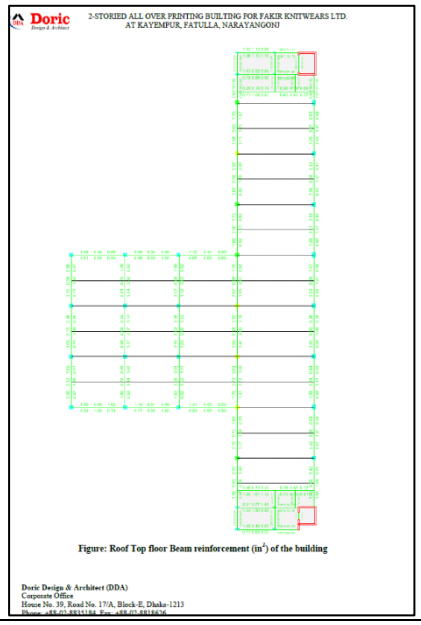
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Figure: Roof Top floor Beam reinforcement (in^2) of the building

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Description: The prepared design report did not include steel connection design and member adequacy checks. Irregularity checks were missing in the report. Moreover, the steel pipe material test report was not available during the inspection. The building engineer is required to verify in-situ steel material strength and include all necessary checks in the design report in compliance with BNBC (part-6, section 1.9.1) requirements. Submit the revised design documents to the RSC for detailed review against lateral forces.

Observation 02: Lack of as-built drawings for the loading-unloading sheds [Building-12 (All Over Printing Building)]

Description: Loading-unloading sheds were not shown in the drawings. The building engineer is required to survey the structure and prepare as-built drawings with connection details.

Observation 03: Cracks in ground floor brick wall. [Building-12 (All Over Printing Building)]

Description: Cracks were found in the ground floor brick wall. The building engineer is required to identify the reason for the crack and repair it with a suitable method.

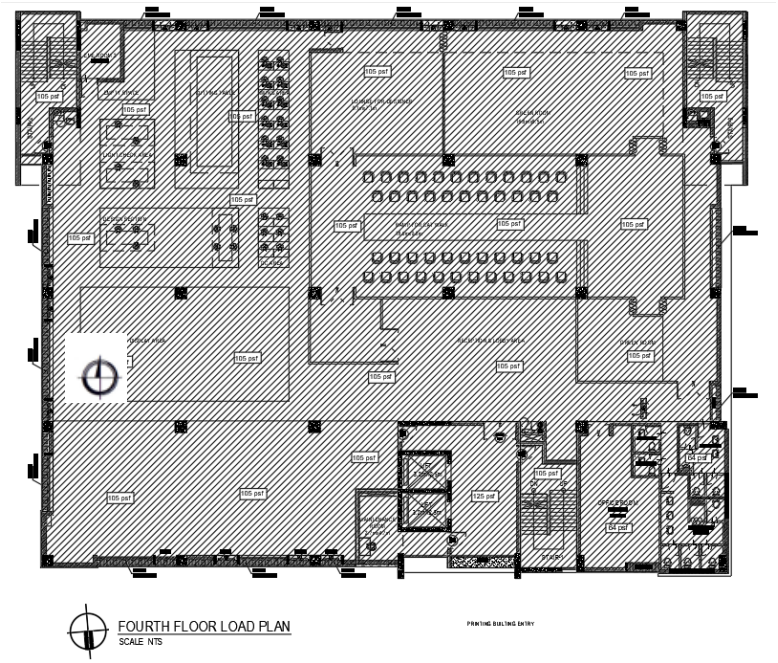
Observation 04: Falling hazard in the lift machine platform. [Building-12 (All Over Printing Building)]

Description: Lack of railing/barrier was observed in the elevated lift machine platform. The building engineer is required to provide railing/barrier to prevent the falling hazard.

Observation 05: Lack of anchorage/bracing for non-structural elements including storage racks. [Building-12 (All Over Printing Building)]

Description: Lack of anchorage/bracing was observed for film/storage racks. Provide anchorage/bracing to the storage racks.

Observation-06: Inconsistencies in as-built drawing. (Building-13 (New Printing Building))

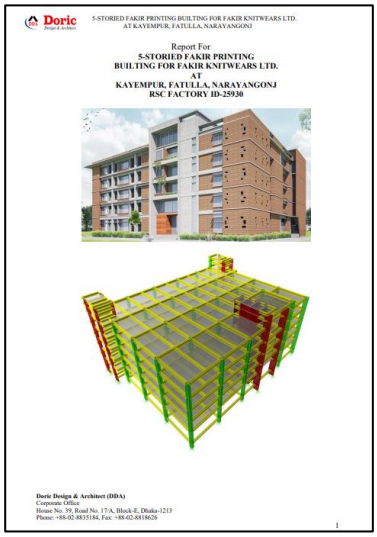


4th floor load plan-Studio (105 psf)

4th floor load plan-Studio (125 psf)

Description: During the inspection, store (125 psf) was found on the 4th floor but in the load plan it was mentioned as studio (105 psf). The building engineer is required to update the as-built drawing according to site conditions, revise the load plan as per BNBC requirements and check the design accordingly.

Observation-07: Inconsistencies in design report. (Building-13 (New Printing Building))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3.3.5 Earthquake load:

The calculation of Earthquake load conforms the Sub-clause 2.5, Chapter 2, and part 6 of BNBC.

The following equation has been used to calculate sustained wind pressure of the structure.

V = ZIC/R*(W) [BNBC, 2.5.1, 2.5.2, 2.5.3, page – 6-53, 6-54]

Zone-2 was considered for Earthquake load calculation.

Following are the basic parameters assumed for Earthquake loads on buildings and UBC-94 has been considered equivalent to BNBC.

Zone 2: Z=0.15, R = 8 (IMRF)	(Ref. BNBC)
Structure Importance Coefficient:	1.0

3.2 MATERIALS CONSIDERED IN DESIGN

Material strength considered

Compressive Strength of Concrete fc' = 4500 psi (Col^{m}, SW), 4000Psi (Beam & Slab),
Reinforcement: Deformed bar yield strength = 72,500 psi.

4.3 DESIGN OF FOUNDATION

Deep Foundation (Pile)

The foundation of the industrial building is on pile foundation. The column reaction and number of pile and detail has been shown on the following table; Pile Length = 70'-00", Pile Dia = 20"

Pile capacity (From report, BH-01) =100 ton (F.S = 2.5)

We consider Min^{m} Capacity 100 ton=220 kip

Description: During the inspection, a design report was found on site for this structure where Intermediate moment resisting frame (IMRF) is considered but no details calculation was provided to justify IMRF, concrete strength calculations (as per BNBC) for cylinder test report was not provided, pile capacity considered 100 ton for the foundation which was not found in soil test report, and serviceability check not found also. The building engineer is required to revise the design report as per BNBC requirements and check the design accordingly.

Observation-08: Lack of anchorage of non-structural elements. (Building-13 (New Printing Building))

Description: During the inspection, storage rack was not found anchored/braced. The building engineer is required to anchor/brace all the non-structural elements.

Observation-09: Lateral bracing removed from tall chimney. (Shed-21 (New Boiler Shed)

Description: Due to construction work the lateral bracing of the chimney of the New Boiler Shed has been removed. The building engineer is required to re-install the bracing to make the chimney stable.

3. Action Plan

SL	Observation	Action Plan	Timeline
1.	Inconsistency in the design report [Building-12 (All Over Printing Building)]	The building engineer is required to verify in-situ steel material strength and include all necessary checks in the design report in compliance with BNBC (part-6, section 1.9.1) requirements. Submit the revised design documents to the RSC for detailed review against lateral forces.	within 6 weeks
2.		Carry out suggested remedial works if required.	within 6 months
3.	Lack of as-built drawings for the loading-unloading sheds [Building-12 (All Over Printing Building)]	The building engineer is required to survey the structure and prepare as-built drawings with connection details.	within 6 weeks
4.	Cracks in ground floor brick wall. [Building-12 (All Over Printing Building)]	The building engineer is required to identify the reason for the crack and repair it with a suitable method.	within 6 weeks
5.	Falling hazard in the lift machine platform. [Building-12 (All Over Printing Building)]	The building engineer is required to provide railing/barrier to prevent the falling hazard.	within 6 weeks
6.	Lack of anchorage/bracing for non-structural elements including storage racks. [Building-12 (All Over Printing Building)]	Provide anchorage/bracing to the film/storage racks.	within 6 months
7.	Inconsistencies in as-built drawing. (Building-13 (New Printing Building))	The building engineer is required to update the as-built drawing according to the as-built condition, revise the load plan as per BNBC requirements.	within 6 weeks
8.	Inconsistencies in design report. (Building-13 (New Printing Building))	The building engineer is required to revise the design report as per as-built drawing, floor load plan, in-situ concrete strength following BNBC requirements and submit to the RSC for review.	within 6 weeks
9.		Carry out suggested remedial works if required.	within 6 months
10.	Lack of anchorage of non-structural elements. (Building-13 (New Printing Building))	The building engineer is required to anchor/brace all the non-structural elements.	within 6 months
11.	Lateral bracing removed from tall chimney. (Shed-21 (New Boiler Shed)	The building engineer is required to re-install the bracing to make the chimney stable.	within 6 weeks