Glamour Dresses Limited

Fukutia, Kalampur road, Dhamrai, Dhaka-1350
(23.927519, 90.182966)
17th February 2021

RSC RMG SUSTAINABILITY COUNCIL

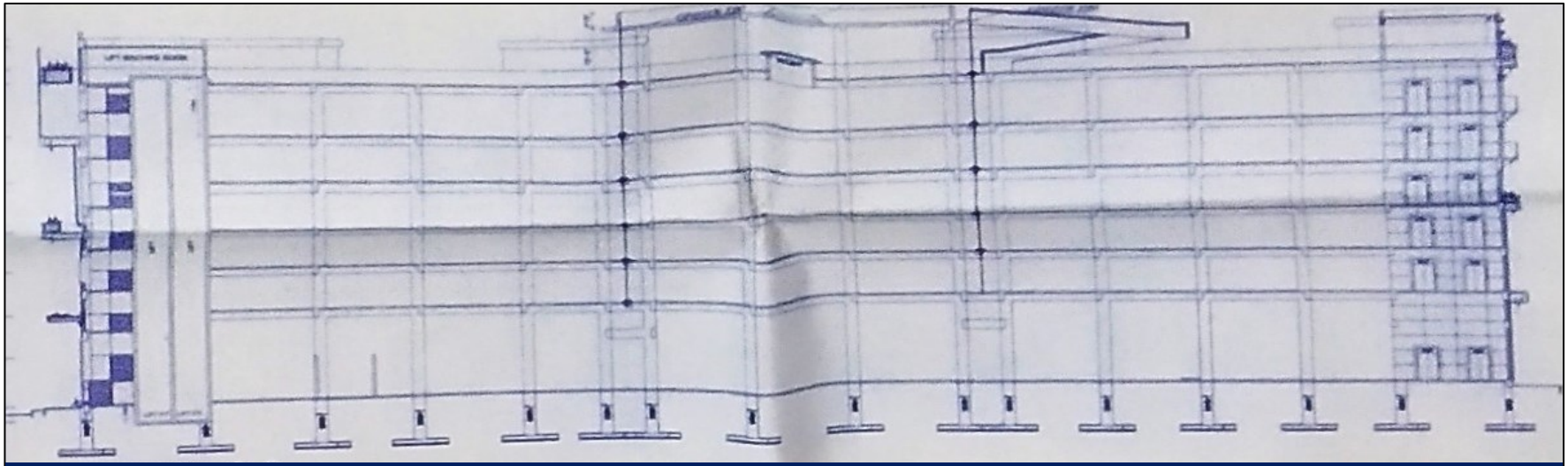
Buildings Information

1. Production Building (G+Mz+1) (Proposed six storied)
2. Utility Building (G+2)
3. Childcare & Medical (single storied)
4. Boiler Room (single storied)

Observations

Future Vertical Extension

Observation: Production Building

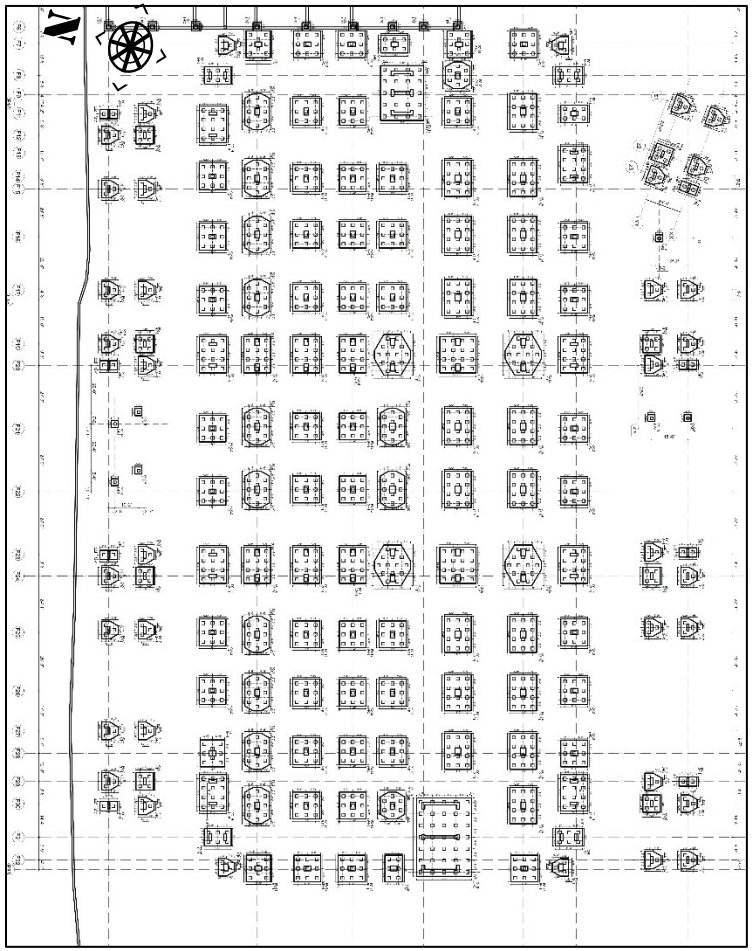


Permit layout from LGED for 6 storied building

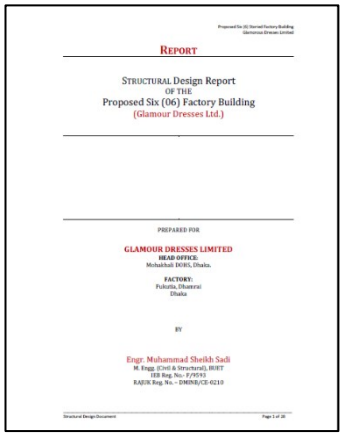
Exposed rebar on roof top

The building permit layout is for six storied structure. The building can be extended vertically in future. Design report of the structure was done for six storied structure. Till the date of this inspection, building was constructed up-to two stories. Prior to vertical extension above six stories, factory engineer is required to produce Detailed Engineering Assessment (DEA) for the further vertical extension of the structure according to BNBC and submit to RSC for review.

Observation: Production Building



Pile layout of Utility Building



REPORT

STRUCTURAL Design Report
OF THE
Proposed Six (06) Factory Building
(Glamour Dresses Ltd.)

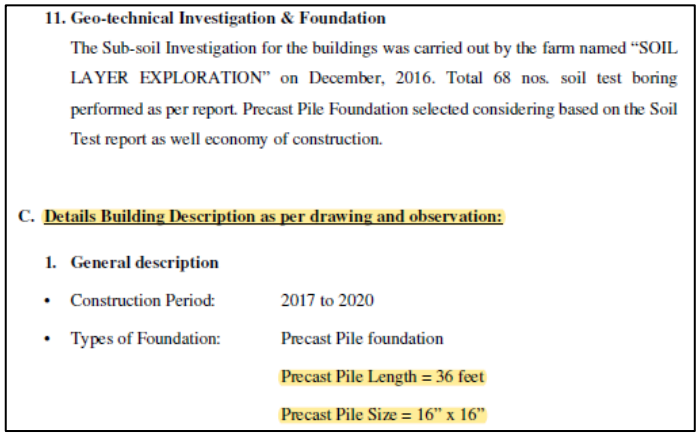
PREPARED FOR

GLAMOUR DRESSES LIMITED
HEAD OFFICE:
Mohakhali DOHS, Dhaka.

FACTORY:
Fulbaria, Dhamrai
Dhaka

BY

Engr. Muhammad Sheikh Sadi
M. Engg. (Civil & Structural), BUET
IEB Reg. No.: F/9593
RAJUK Reg. No. – DMNB/CE-0210



11. Geo-technical Investigation & Foundation

The Sub-soil Investigation for the buildings was carried out by the farm named "SOIL LAYER EXPLORATION" on December, 2016. Total 68 nos. soil test boring performed as per report. Precast Pile Foundation selected considering based on the Soil Test report as well economy of construction.

C. Details Building Description as per drawing and observation:

1. General description

- Construction Period: 2017 to 2020
- Types of Foundation: Precast Pile foundation

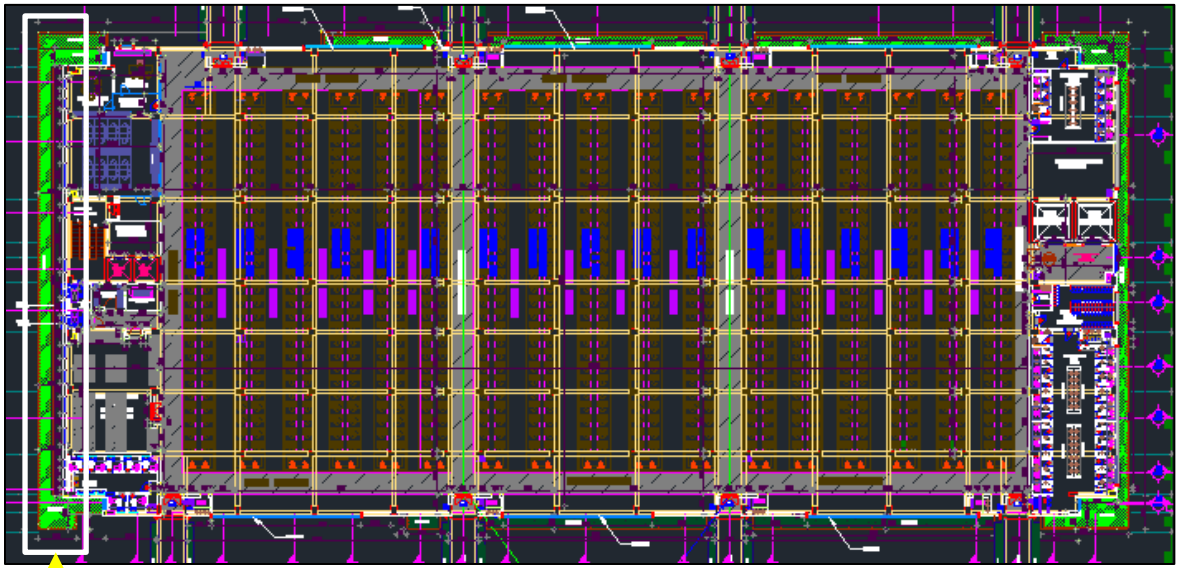
Precast Pile Length = 36 feet

Precast Pile Size = 16" x 16"

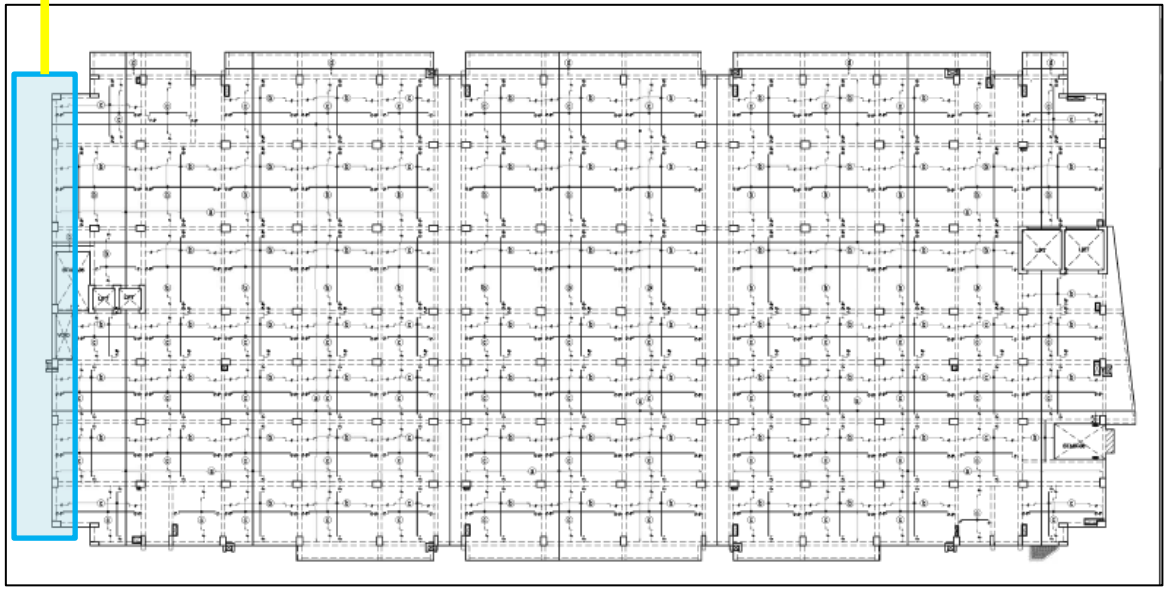
Design report prepared for six storied building. Pre-cast pile has been used as foundation with pile size 400 X 400 mm (16 X 16 inches) and pile length 11 m (36 feet).

The building has been designed for six storied. Till date of inspection, construction of the building was completed up to two stories with a mezzanine on the ground floor. Adequacy check of the foundation has not been provided in the design report for the Production Building. Factory Engineer is required to incorporate the adequacy check for the structure in the DEA.

Observation: Production Building



Cantilever slab has been shown in architectural drawing

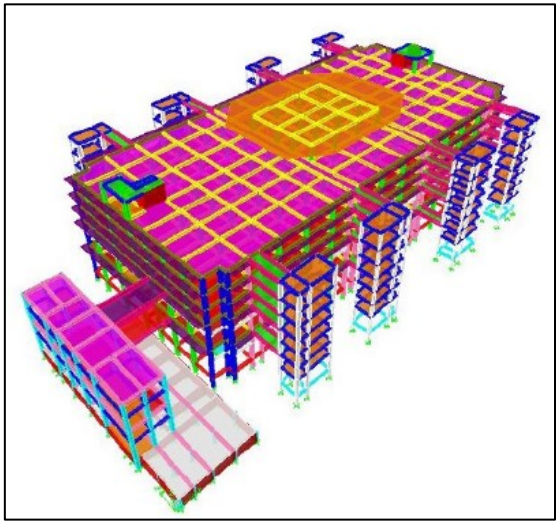


No information of cantilever slab shown in structural drawing

In architectural drawing, 3.05 m (10 feet) cantilever slab has been shown with garden facilities at 3rd floor, 5th floor and roof floor. In design report loading has been considered 9.6 kPa (200 psf) for garden area. In structural drawing, no details of the cantilever slab has been provided. Also, the adequacy check of the cantilever slab has not been incorporated in design report.

Factory engineer is required to check the adequacy of 3.05 m cantilever slab and incorporate the information in structural drawing and Detailed Engineering Assessment (DEA) in case of vertical extension.

Observation : Production Building



10. Software and Computer Program

ETABS 9.6.0 has been utilized for the analysis and design of the structure. Moreover spreadsheets written in MS Excel have been used for analysis and design of the structural elements.

ETABS V9.6 has been utilized to design and analysis of the structure. But the FEA model was unavailable.
Factory engineer is required to update the necessary information and provide the FEA model.

Live Load will be considering as per BNBC Table 6.2.3

a) Live Load Table (Proposed Six Storied Factory Building)

Sl. No.	Floor	Description	Additional Dead Load (psf)	Live Load (psf)
1	GF	Loading Unloading Bay	Load on Grade	Load on Grade
		washing		
		Staircase		
2	GF Mezza.	RMG + office	60	150
		Staircase	50	100
		Garden	60	200
3	1ST Floor	RMG	60	150
		Staircase + Bridge	50	100
		Peripheral Garden	60	200
4	2ND Floor	RMG	60	100
		Staircase + Bridge	50	100
		Peripheral Garden	60	200
5	3RD Floor	RMG	60	100
		Staircase + Bridge	50	100
		Peripheral Garden	60	200
6	4TH Floor	RMG	60	100
		Staircase + Bridge	50	100
		Peripheral Garden	60	200
7	5TH Floor	RMG	60	100
		Staircase + Bridge	50	100
		Peripheral Garden	60	200
8	Roof	Play Area	100	400
		Rooms, Staircase	50	100
		Garden	100	400
9	Helipad	To land Helicopter	60	80

Live load table of design report

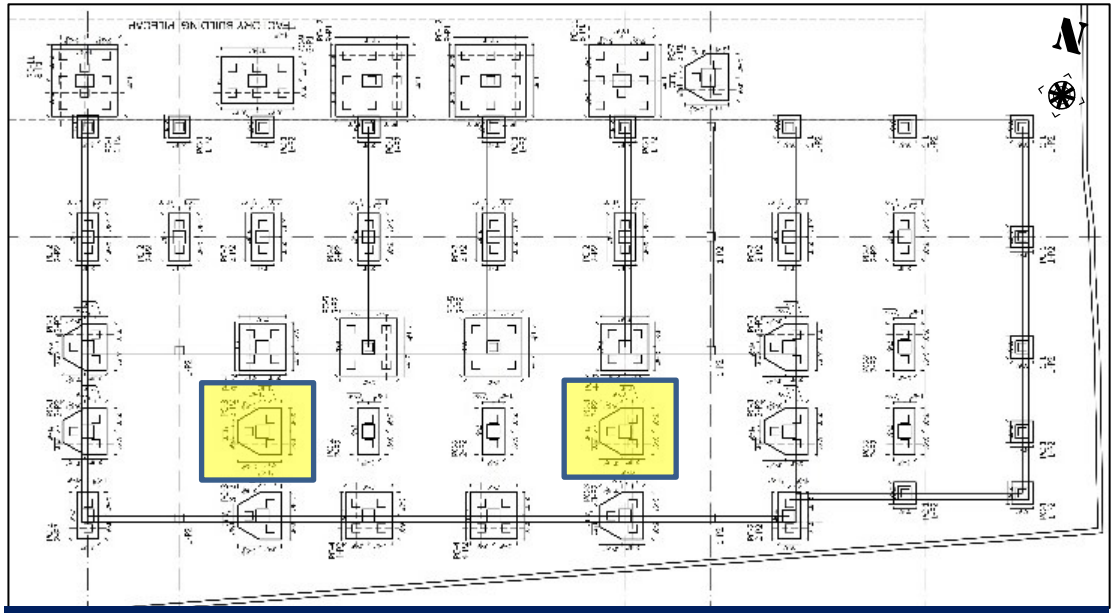
A live load table has been shown in drawing providing the live load consideration for different occupancies. But the live load plan was found only from 1st to 2nd floor (Existing roof). The live load was not available for the upper floors.
Factory engineer is required to prepare proposed live load plan for all the floor plates.

As per BNBC every building or structure 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. Now factory engineer is required to update the design documents in compliance with section 1.9.1 (part-6, BNBC) and submit RSC for further review.

Observation : Production Building

Stress in foundation exceeds normal design limit

Observations: Utility Building



Pile layout plan

11. Geo-technical Investigation & Foundation

The Sub-soil Investigation for the buildings was carried out by the farm named "SOIL LAYER EXPLORATION" on December, 2016. Total 68 nos. soil test boring performed as per report. Precast Pile Foundation selected considering based on the Soil Test report as well economy of construction.

C. Details Building Description as per drawing and observation:

1. General description

- Construction Period: 2017 to 2020
- Types of Foundation: Precast Pile foundation

Precast Pile Length = 36 feet

Precast Pile Size = 16" x 16"

Pre-cast pile has been used as foundation with pile size 400 X 400 mm (16 X 16 inches) and pile length 11 m (36 feet).

Cursory calculation indicates that the stress in foundations of the highlighted area exceeds normal design limit considering live load 12 kPa (250 psf) on ground floor, 7.2 kPa (150) at mezzanine and 4.8 kPa (100 psf) at 1st floor, 2nd & roof floor (As per provided load plan). These footings found stressed in excess of normal design limit against the soil bearing capacity available from Geotechnical investigation report. Building engineer is required to carryout foundation adequacy check to justify the load carrying capacity.

Also, Adequacy check of the foundation has not been provided in the design report for the Utility Building. Factory Engineer is required to incorporate the adequacy check for foundation of the structure in the Engineering Assessment (EA) report.

Observations: Utility Building

Problems Observed

Production Building:

Item-01: Future Vertical Extension.

Utility Building:

Item-02: Stress in foundation exceeds normal design limit.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Future Vertical Extension. (Production Building)	Prior to vertical extension, factory engineer is required to produce Detailed Engineering Assessment (DEA) of the structure according to BNBC and submit to RSC for review.	6-weeks
02	Future Vertical Extension. (Production Building)	Building engineer is required to provide adequacy check for the foundation and the cantilever slab.	6-weeks
03	Future Vertical Extension. (Production Building)	Factory engineer is required to prepare and implement proposed live load plan for all the floor plates.	6-weeks
04	Future Vertical Extension. (Production Building)	Carry out recommendation as outcome of the DEA.	6-months
05	Stress in foundation exceeds normal design limit (Utility Building)	Building engineer is required to carryout foundation adequacy check to justify the load carrying capacity.	6-weeks
06	Stress in foundation exceeds normal design limit (Utility Building)	Implement any remediation work if required.	6-months