Tarasima Apparels Limited (Extension)

Vill: Golora, P/O:Kaitta, Saturia,Manikganj

(23.905917, 90.052222)

1 April 2024

RSC RMG SUSTAINABILITY COUNCIL

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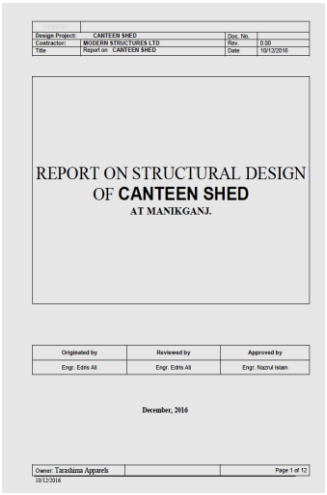
1. Building Information:

Building-G:	Single-storied steel shed.
Building-H:	Two-storied (G+1) RC building.
Building-J:	Three-storied (G+2) RC building.
Building-K:	Single-storied steel shed.
Thermo Oil Heater Room:	Single-storied RC building.

2. Observations:

Observation 1: Lack of information in design documents. (Building-G)



REPORT ON STRUCTURAL DESIGN
OF **CANTEEN SHED**
AT MANIKGANJ.

December, 2016

Description: A design report was available for the Building G. The adequacy of steel member connection and serviceability check was not incorporated in the design report.

The building engineer is required to incorporate an adequacy check of steel member connections and a serviceability check in the design report and submit it to the RSC for review.

Observation 2: Inconsistencies in design report. (Building-J)

Centre for Advisory and Testing Services (CATS-MIST)
Military Institute of Science and Technology

Compressive Strength of Concrete Cylinders

Material used:

Concrete: 1:1.5:3 Concrete with Stone chip. fc = 3500 psi

Steel: 60 grade steel. fy = 60000 psi

5.12.2 Frequency of Testing

5.12.2.1 Samples for strength tests of each class of concrete placed each day shall be taken not less than once a day, nor less than once for each 60 m^3 of concrete, nor less than once for each 250 m^2 surface area for slabs or walls.

5.12.2.2 On a given project, if the total volume of concrete is such that frequency of testing required by Sec 5.12.2.1 above would provide less than three strength tests for a given class of concrete, tests shall be made from at least three randomly selected batches or from each batch if three or fewer batches are used.

5.12.2.3 When the total quantity of a given class of concrete is less than 20 m^3, strength tests are not required when evidence of satisfactory strength is submitted to and approved by the Engineer.

5.12.2.4 A strength test shall be the average of the strengths of at least two 150 mm by 300 mm cylinders or at least three 100 mm by 200 mm cylinders made from the same sample of concrete and tested at 28 days or at test age designated for determination of f_c'.

Description: The number of concrete cylinder test reports didn't meet BNBC's frequency of testing requirement (section 5.12.2). The building engineer is required to verify in-situ concrete strength to confirm the design strength of 3500 psi.

Seismic load:

Proper structural design of any building structure must include loads due to earthquake shaking. Although there has been no major incident of earthquake hazard in the recent past of Bangladesh, earthquakes are common in this area. Scientific geological study of the earth crust below Bangladesh shows that Bangladesh does fall in moderate to high seismic risk zone. Statistical evidence from past major and minor earthquake incidents shows that a major earthquake is overdue in the recent times of geological scale. Therefore, it is necessary to prepare against any possible earthquake hazard. It should be kept in mind that the objective of earthquake resistance building design is not to make a strong building, which can resist aby damage due to earthquake. Instead, earthquake resistant design aims at minimizing the possible damage and casualty to an acceptable level.

Regarding the earthquake resistant structural design, it is essential that the specific design code is followed. For the analysis and design checking of this building, Equivalent Static Force Method of BNBC 92006) has followed. The main considerations for calculation of earthquake load are given below.

Zone: 2

Zone coefficient, Z: 0.15

Structural importance factor, I = 1.25

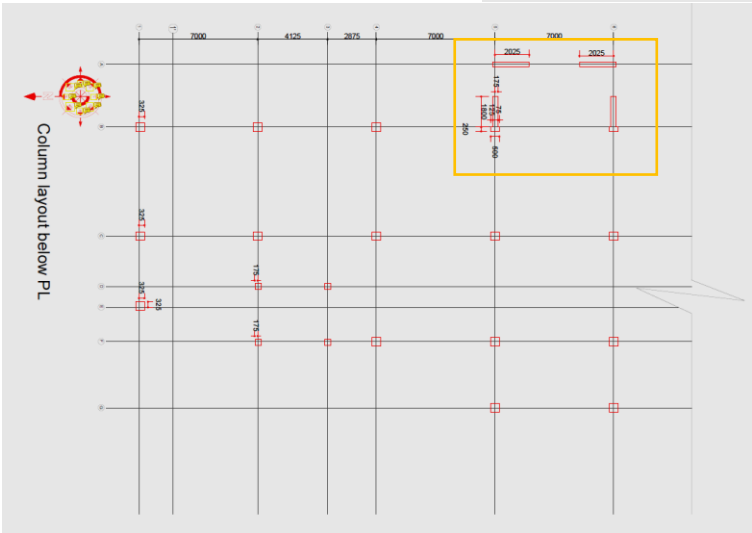
Response modification coefficient, R = 8

C_t=0.073, h_n=20 m

C= 1.25*S/$T^{(2/3)}$, S = 1.5, T = $C_t(h_n)^{(3/4)}$ = 0.69

Basic shear, V = ZICW/R

Description: Response modification co-efficient, R-value considered as 8 for IMRF, but no calculation/justification is provided for the consideration.

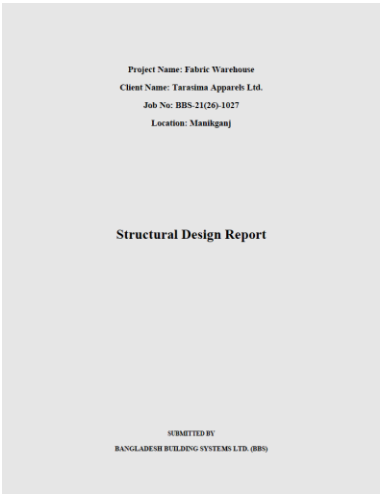


Description: The adequacy of the RC wall at the south stair cores was not incorporated in the provided design report. The building engineer is required to incorporate all types of adequacies checks in the design report and submit to the RSC for review.

Observation 3: Corrosion on exposed rebar. (Building-J)

Description: Corrosion was observed on the exposed rebar. The building engineer is required to remove rust and apply anti-corrosive paint on exposed rebars.

Observation 4: Lack of information in design documents. (Building-K)


Project Name: Fabric Warehouse
Client Name: Tarasima Apparels Ltd.
Job No: BBS-21(26)-1027
Location: Manikganj

Structural Design Report

SUBMITTED BY
BANGLADESH BUILDING SYSTEMS LTD. (BBS)

Description: A design report was available for Building K. However, the report did not incorporate the adequacy of steel member connections.

The building engineer is required to incorporate an adequacy check of steel member connections into the design report and submit it to the RSC for review.

3. Action Plan:

Observation	Action Plan	Timeline
Lack of information in design documents. (Building-G)	Building engineer is required to incorporate an adequacy check of steel member connections and a serviceability check in the design report and submit it to the RSC for review.	within 6 weeks
	Carry out the suggested remedial works.	within 6 months
Inconsistencies in design report. (Building-J)	Verify in-situ concrete strength either by 100 mm diameter cores or existing credible cylinder test reports.	within 6 weeks
	The building engineer is required to address the inconsistencies in the design report and submit revised design documents to RSC to complete the review. Incorporate all types of adequacies checks in the design report.	within 6 weeks
	Carry out suggested remedial works if required.	within 6 months
Corrosion on exposed rebar. (Building-J)	The building engineer is required to remove rust and apply anti-corrosive paint on exposed rebars.	within 6 weeks
Lack of information in design documents. (Building-K)	Building engineer is required to incorporate an adequacy check of steel member connections into the design report and submit it to the RSC for review.	within 6 weeks
	Carry out the suggested remedial works.	within 6 months