

Best Wool Sweaters Ltd. (New Building)

Jarun, Konabari, Gazipur
(24.000421N, 90.323217E)
26 September 2023



Building Information

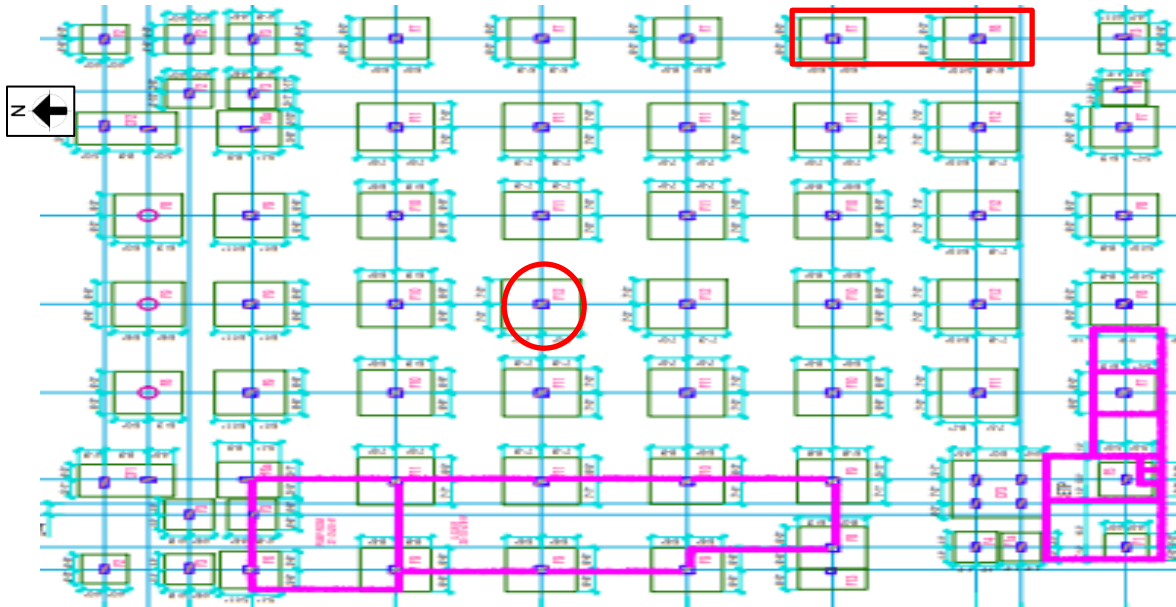
Production Building-2: This structure is a seven-storied (B+G+6) reinforced concrete (RC) building with a basement.

Utility building-2: This building is a currently three-storied (G+2) and proposed five storied (G+4) reinforced concrete (RC) building.

Security building-2: This building is a single storied reinforced concrete (RC) structure. Building is being used for security office.

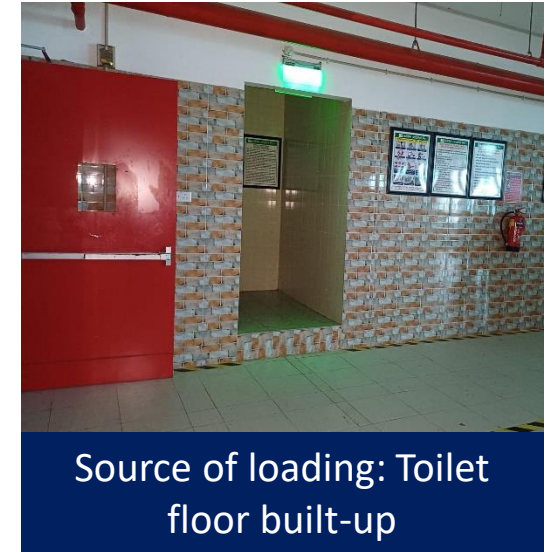
Observations

Stress in foundation exceed normal design limit



Column layout plan

Cursory calculation indicates that the marked footing are overstressed based on live load (4kPa for typical floor, 6 kPa for storage area, 2 kPa for toilet, & 5 kPa for stair), dead load (including observed toilet built-up and wall load) and 156 kPa for foundation capacity. The source of loadings are storage floor and toilet built-up. Building engineer is required to carry out Detail Engineering Assessment (DEA) to review the design, loads and foundation stress based on material strength, and minimum floor live loads.



Source of loading: Toilet floor built-up

9.0 CALCULATED ALLOWABLE BEARING CAPACITY
The bearing capacity of shallow and deep foundation has been calculated in accordance with article 8.0 of the report. The calculated bearing capacity of soil is described in the following section.

9.1 Allowable Bearing Capacity of Foundation

The bearing capacities of the foundation may be determined from the field testing parameters. The bearing capacity of foundation has been calculated using the empirical relations as discussed in section 8.0. The evaluated values are shown in the following Table 9.1 and 9.2.

Table 9.1A The evaluated allowable bearing capacity of shallow foundation (F.S. = 2.50)
(Considering width of square footing = 3m)

Depth (m)	Allowable Bearing Capacity of Square Footing (kPa)			
	BH-01	BH-02	BH-03	BH-04
1.5	142	125	190	160
3.0	156	156	215	215

Table 9.1B The evaluated allowable bearing capacity of shallow foundation (F.S. = 2.50)
(Considering width of square footing = 3m)

Depth (m)	Allowable Bearing Capacity of Square Footing (kPa)			
	BH-05	BH-06	BH-07	BH-08
1.5	160	190	-	160
3.0	215	273	215	215

Lowest Foundation Capacity (156 kPa)

Lack of design document



Production building-2

As per BNBC (part-6), every building or structures designed shall have its design documents in accordance with the provision of section 1.9.1. During inspection, no design report and load plan were found on-site. Building engineer is required to prepare a set of design documents (including load plan as per BNBC and design report based on material strength & software-based analysis) for the structure following BNBC (part-6, section 1.9.1).

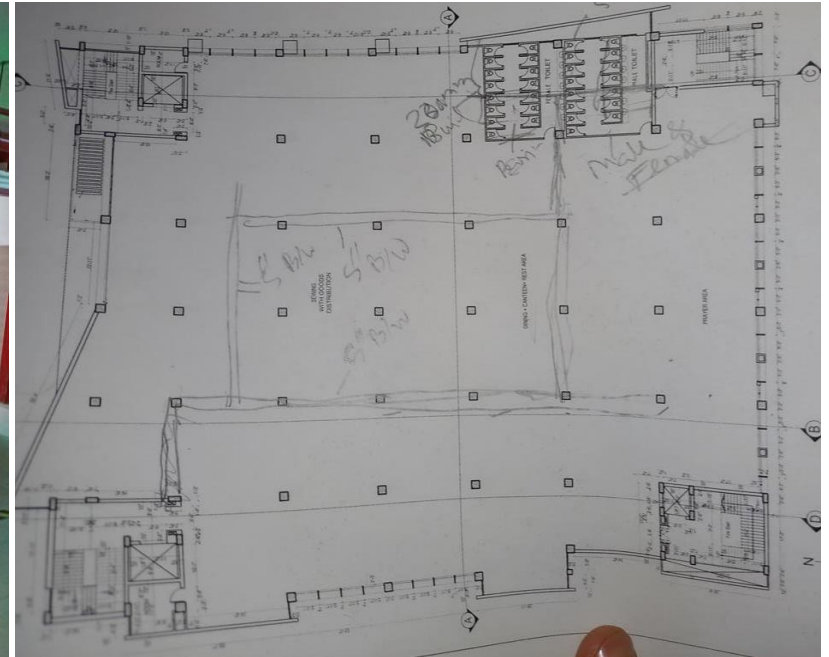
Water Ponding on roof



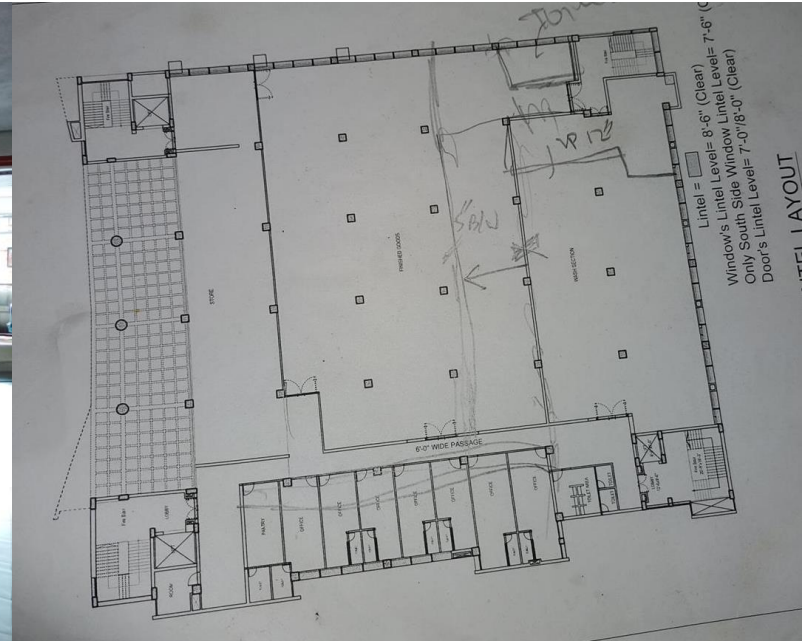
Water ponding on roof

During inspection, water ponding was observed on the roof of production building-2. Building engineer is required to improve the drainage system maintaining proper slope.

Discrepancy in as built drawing



Mismatch in wall and toilet layout in 6th floor



Mismatch in wall layout and floor built-up

During inspection, mismatch was observed regarding brick wall layout, toilet layout and floor built up layout. Building engineer is required to update the as-built drawing as per site condition and consider the load from wall and floor built-up in design and design report.

Possible vehicle impact



Column unprotected from possible vehicle impact.

During inspection, columns were found unprotected for possible vehicle impact. Building engineer is required to provide appropriate protection to column for vehicle impact.

Lack of design document



Utility building-2

As per BNBC (part-6), every building or structures designed shall have its design documents in accordance with the provision of section 1.9.1. During inspection, no design report and load plan were found on-site. Building engineer is required to prepare a set of design documents (including load plan as per BNBC and design report based on material strength & software-based analysis) for the structure following BNBC (part-6, section 1.9.1).

Exposed rebar and falling hazard



Exposed rebar and falling hazard in stair

During inspection, exposed rebar and falling hazard was observed in stair. Building engineer is required to provide anti-corrosive paint on exposed rebar and barrier to stair edge.

Water Ponding on roof



Water ponding on roof

During inspection, water ponding was observed on the roof of utility building-2. Building engineer is required to improve the drainage system on roof maintaining proper slope.

Lack of as built drawing



Security building-2

As-built drawing was not available for security building-2. Building engineer is required to produce as-built drawing for the structure.

Problems Observed

Production building-2:

Item 01: Stress in foundation exceed normal design limit.

Item 02: Lack of design documents.

Item 03: Water ponding on roof slab.

Item 04: Discrepancy in as built drawing.

Item 05: Possible vehicle impact.

Utility building-2 :

Item 06: Lack of design documents.

Item 07: Exposed rebar and safety hazard.

Item 08: Water ponding on roof.

Security building-2:

Item 09: Lack of as built drawing.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Stress in foundation exceed normal design limit (Production Building-2).	The building engineer is required to review the design, loads and foundation stress.	6-weeks
02	Stress in foundation exceed normal design limit (Production Building-2).	Carry out remedial works if required.	6-month
03	Lack of design document (Production Building-2).	Building engineer is required to prepare a set of design documents (including load plan as per BNBC and design report based on material strength & software-based analysis) for the structure following BNBC (part-6, section 1.9.1)	6-weeks
04	Lack of design document (Production Building-2).	Carry out remedial works if required.	6-month
05	Water ponding on roof (Production Building-2).	Building engineer is required to improve the drainage system maintaining proper slope.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Discrepancy in as built drawing (Production Building-2).	Building engineer is required to update the as-built drawing as per site condition and consider the load from wall and floor built-up in design and design report.	6-weeks
07	Possible vehicle impact (Production Building-2).	Building engineer is required to provide appropriate protection to column for vehicle impact.	6-weeks
08	Lack of design document (Utility Building-2).	Building engineer is required to prepare a set of design documents (including load plan as per BNBC and design report based on material strength & software-based analysis) for the structure following BNBC (part-6, section 1.9.1).	6-weeks
09	Lack of design document (Utility Building-2).	Carry out remedial works if required.	6-month

Item No.	Observation	Recommended Action Plan	Recommended Timeline
10	Exposed rebar and falling hazard (Utility Building-2).	Building engineer is required to provide anti-corrosive paint on exposed rebar and barrier to stair edge.	6-weeks
11	Water ponding on roof (Utility Building-2).	Building engineer is required to improve the drainage system on roof maintaining proper slope.	6-weeks
12	Lack of as-built drawings (Security Building-2).	Building engineer is required to produce as-built drawing for the structure.	6-weeks

Survey Limitations and Assumptions

This report is for the private and confidential use of RSC for whom it was prepared together with their professional advisors as appropriate. It should not be reproduced in whole or in part or relied upon by third parties for any use without the express written permission of RSC.

This report can be used in discussion with the supplier or factory owner as a means to rectify or address any observations made. The report is not comprehensive and is limited to what could be observed during a visual inspection of the building.

This Report is not intended to be treated as a generalised inspection and does not cover the deterioration of structural members through dampness, fungal or insect attack, nor does it deal with problems and defects of a non-structural nature. Other non structural aspects of the building such as fire safety have not been assessed in this survey.

Except as otherwise noted, drains and other services were not viewed or tested during our inspection and are therefore similarly excluded from this Report. We have not inspected any parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

External inspection of the façade walls has generally been carried out from ground level only by visual sighting. No opening up works were carried out (except as noted) and we rely on the Architects and Engineers drawings provided to us for our views on concealed parts of the structure and in particular foundations. Strengths of materials and components are untested and we recommend that the factory owners Building Engineer carries out in situ testing over and above those suggested to satisfy themselves with the material strengths and component details.

Recommendations, where given, are for the purpose of providing indicative advice only, are not exhaustive, relate solely to identifying key and obvious structural defects as identified in this presentation, and do not take the form of or constitute a specification for works. We take no responsibility for the works as constructed. This report does not interfere with the factory owners Building Engineers responsibility for the structural performance of this building, The Building Engineer remains fully responsible for the structural adequacy of the building.

This report does not comment in detail on the future seismic performance of the building and only highlights the fact that the building may experience significant damage or collapse in a seismic event along with many others in the Dhaka region.

The observations in this report are based on the Engineering Judgement of the lead surveyor/engineer at the time of the survey. We assume in making these observations that no covering up of faults defects, filling or plastering over cracking or significant repair work has been carried out by the building owner. Any future alteration or additional work by the building owner will void this report.