

Glory Textile & Apparels Ltd.

Kharuail, Ward No.7, Bhaluka Municipal Area, Bhaluka
(24.3947 N, 90.3886 E)

11 April 2022



Building information:

Dyeing Building: The structure is a three storied (G+M+2) reinforced concrete (RC) building with three mezzanine floor.

Garments Building: The structure is six storied (G+5) reinforced concrete (RC) building.

Utility Building: The structure is two storied (G+1) reinforced concrete (RC) building.

ETP Building: The structure is two storied (G+1) reinforced concrete (RC) building.

Store Building: The structure is currently three storied (G+2). The 3rd floor and 4th floor is under construction.

There are three ancillary structures & two temporary non-engineered shed in the premises those are WTP, RMS room, Security shed, Jute store shed & By-cycle shed.

Observations

Design report not available

Observation: Dyeing Building, Utility Building



Dyeing Building



Utility Building

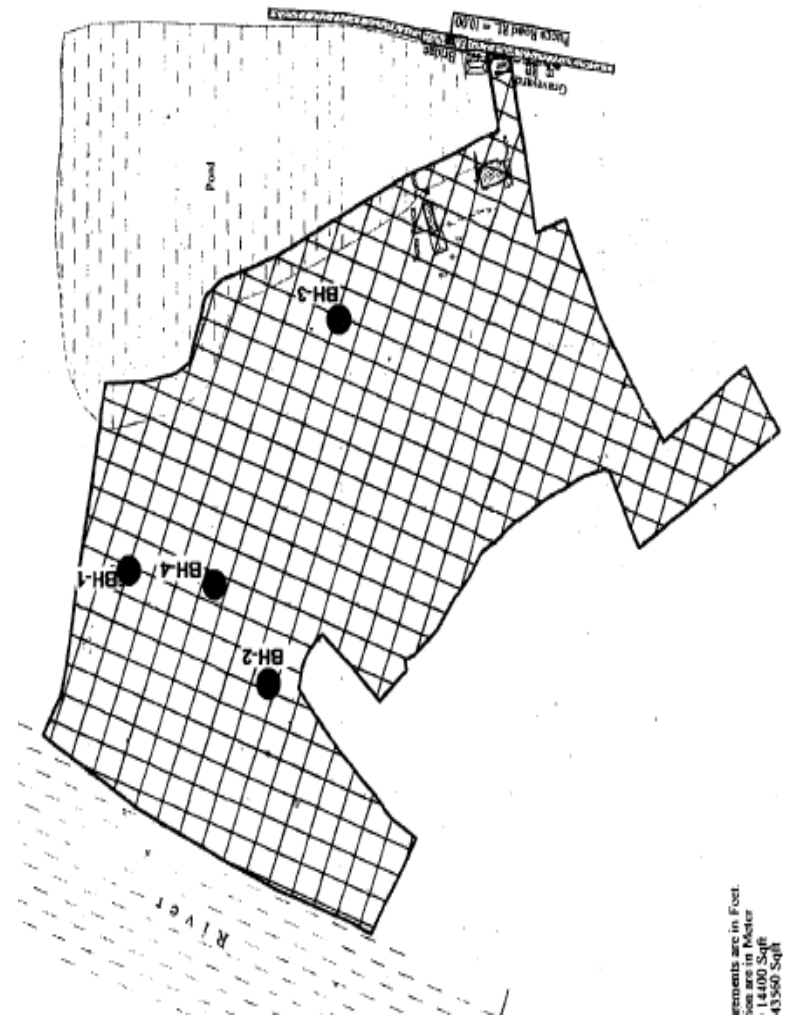
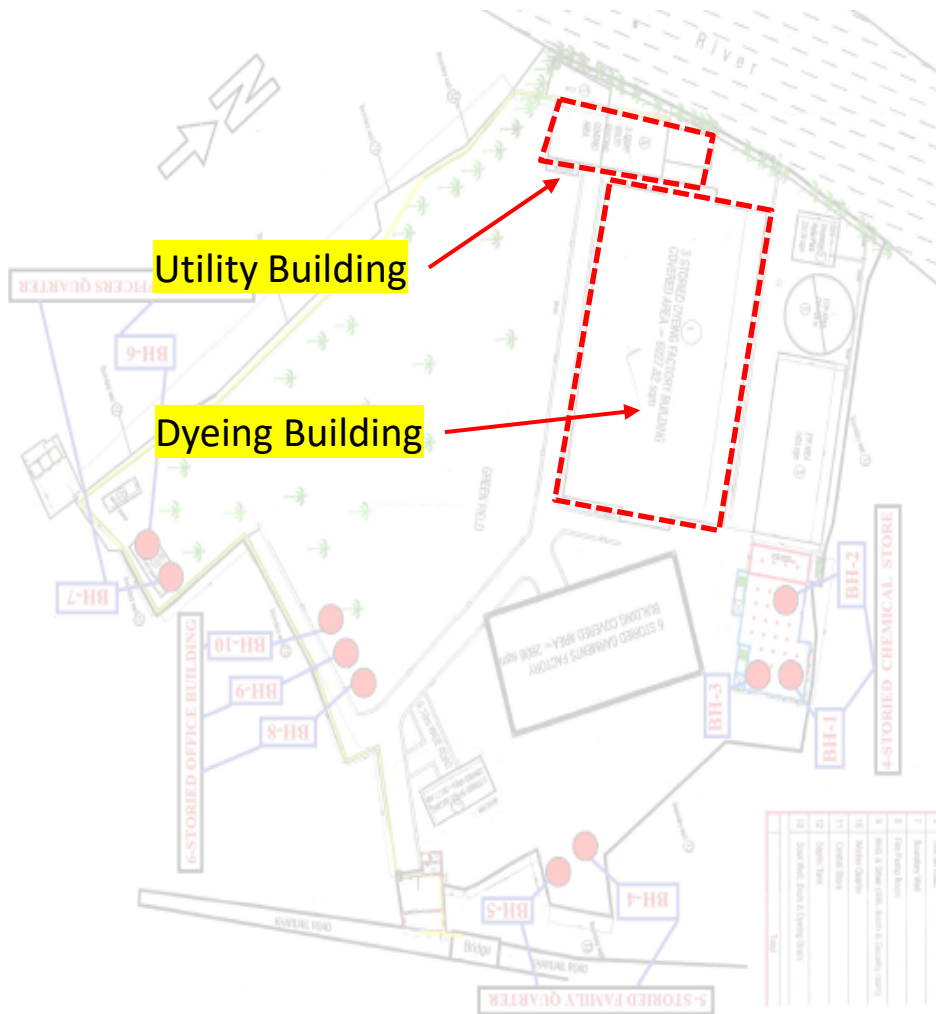
As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. The design document shall include a design report, and a set of structural drawings, which shall be prepared in compliance with section 1.9.1.1 and section 1.9.1.2 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.

Observation: Dyeing Building, Utility Building

Inconsistency in soil test report

Observation: Dyeing Building, Utility Building



Dimensions are in Feet
 Dimensions are in Meter
 1:14,000 Sqft
 43560 Sqft

No bore hole location cover the area of dyeing building & utility building in the soil test reports.

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

Observation: Dyeing Building, Utility building

Falling hazard & construction debris on the roof



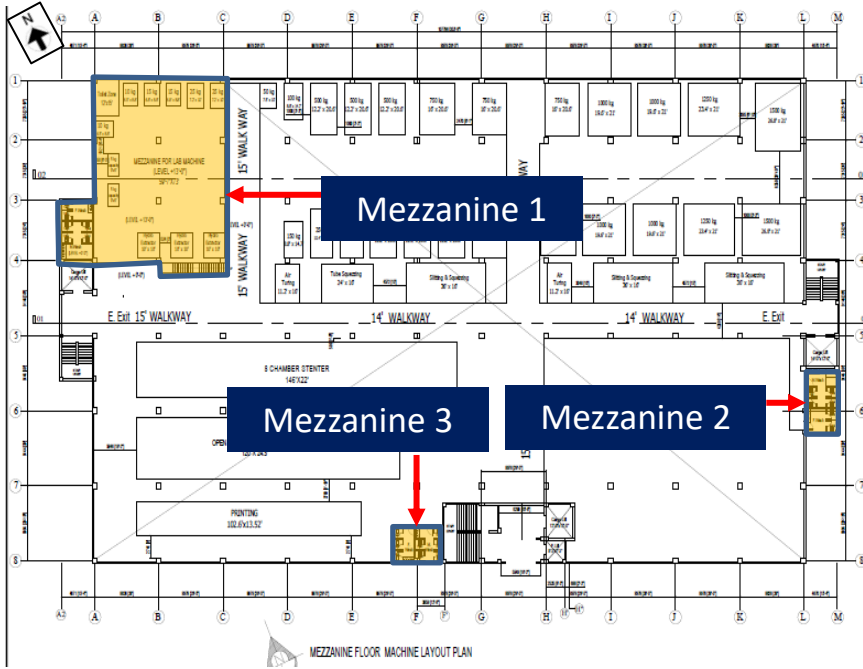
Falling hazard at roof



Construction debris on roof

The factory is required to provide protection barrier at roof edges.
Also, remove the construction debris from the roof.

Lack of structural details



Mezzanine floor layout



Water tank at roof

Structural details of OHWT & mezzanine floors of M-2 & M-3 are not shown in the structural drawings. The building engineer is required to survey the structure and produce accurate structural details.

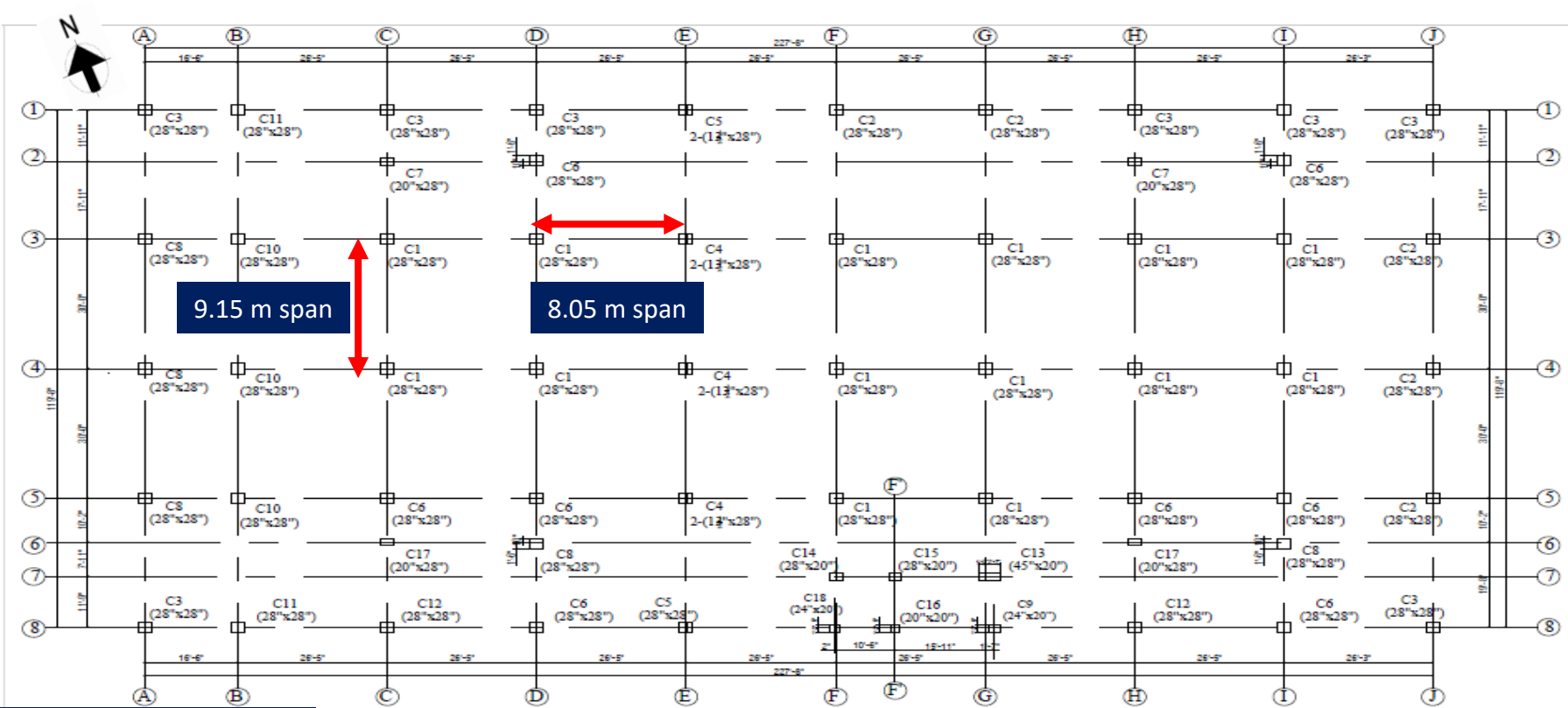
Stagnant water on the roof



Stagnant water observed on the roof and roof top slab

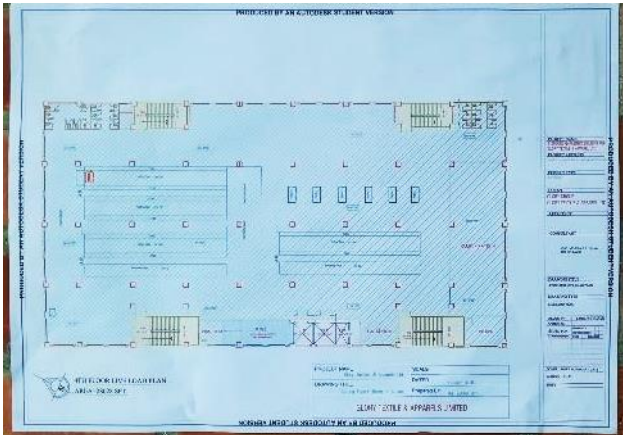
Develop proper drainage system on the roof with adequate slope.

Columns are stressed above normal design limit



Column layout plan

The cursory calculation indicates that columns are stressed above the normal design limit considering the prepared live load plan of 5 kPa and the concrete strength from the available cylinder test data. Building engineer is required to review design, load & column stress.



Live load plan of 5 kPa

15 **Observation: Garments Building**

Lateral stability system of the building



Flat plate system with edge beam at 5th floor



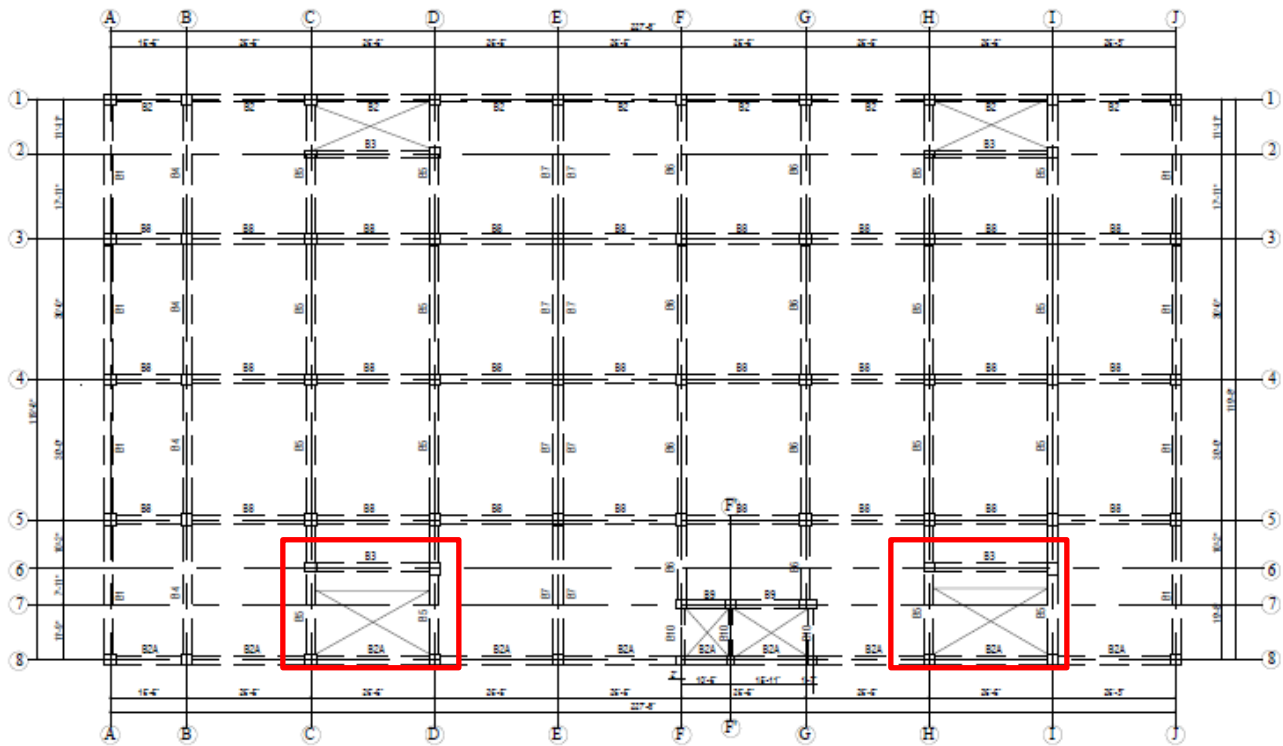
Beam column framing system Ground floor to 3rd floor



Flat plate system with and without edge beam at 4th floor

There are different structural system acting together to provide lateral stability of the building. Due to difference of stiffness in same structure, the lateral stability system need to be verified by further design check.

Inconsistency in beam layout of staircase



BEAMLAYOUT PLAN

Typical beam layout plan



Beam layout of the staircases are not matched with the site condition. Building engineer is required to update the drawings as per site condition.

Dampness throughout the building



Dampness observed throughout the building. Building engineer is required to check the reason and extent of the dampness and suggest suitable repair method.

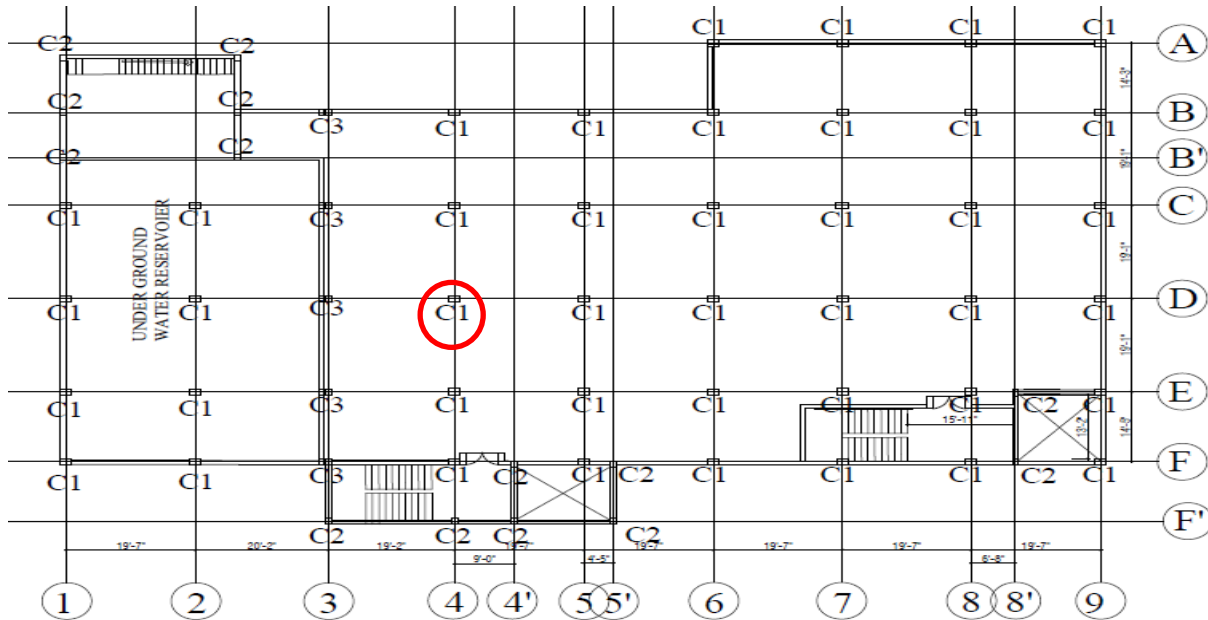
Loose concrete around the expansion joint



Loose concrete observed around the expansion joint which may cause falling hazard. Building engineer is required to remove the loose concrete and fill the expansion joint by compressible fireproof materials.

Columns are stressed above normal design limit

Observations: Store Building



Column Layout Plan

Cursory calculation indicates that columns are stressed above normal design limit considering minimum storage live load 6 kPa and minimum concrete strength (16.3MPa) based on aggregate type. Building engineer is required to review design, load & column stresses of the building.



Floor Loading

Exposed rebar at roof



Corroded exposed rebar at roof

Building engineer is required to remove the corrosion from the rebar and provide suitable coating to protect it from further corrosion.

Undocumented chiller & telecom mast at roof



Telecom mast at roof



Chiller at roof

Undocumented chiller & mobile tower has been found on roof . The building engineer is required to survey the structure and incorporate undocumented part into the as-built drawings.

Falling hazard at roof



Falling hazard at roof (single storied portion)

Building engineer is required to provide protection barrier at roof edges.

Problems Observed

Dyeing Building, Utility building :

Item 01: Design report not available.

Item 02: Inconsistency in soil test report.

Dyeing Building:

Item 03: Falling hazard & construction debris on the roof

Item 04: Lack of structural details.

Item 05: Stagnant water on the roof.

Garments Building:

Item 06: Columns are stressed above normal design limit.

Item 07: Lateral stability system of the building.

Item 08: Inconsistency in beam layout of staircase.

Item 09: Dampness throughout the building.

Item 10: Loose concrete around the expansion joint.

Store Building:

Item 11: Columns are stressed above normal design limit.

Utility Building:

Item 12: Exposed rebar at roof.

Item 13: Undocumented chiller & telecom mast at roof.

Item 14: Falling hazard at roof.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Design report not available. (Dyeing Building & Utility Building)	Prepare a set of design documents including Engineering Assessment (EA) report as per BNBC (part-6, section 1.9.1).	6-weeks
02	Design report not available. (Dyeing Building & Utility Building)	The building engineer to review the design of all structural members as a part of Engineering Assessment.	6-weeks
03	Design report not available. (Dyeing Building & Utility Building)	Carry out remedial works where required.	6-months
04	Inconsistency in soil test report. (Dyeing Building & Utility Building)	Conduct geotechnical investigation to close vicinity of the structure & determine actual soil bearing capacity.	6-weeks
05	Inconsistency in soil test report. (Dyeing Building & Utility Building)	Check the foundation adequacy based on actual soil bearing capacity and suggest any remedial actions if required.	6-weeks
06	Inconsistency in soil test report. (Dyeing Building & Utility Building)	Carry out remedial works where required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
07	Falling hazard & construction debris on the roof. (Dyeing Building)	The factory is required to provide protection barrier at roof edges.	6-weeks
08	Falling hazard & construction debris on the roof. (Dyeing Building)	Remove the construction debris from the roof.	6-weeks
09	Lack of structural details. (Dyeing Building)	The building engineer is required to survey the structural components and produce accurate structural details.	6-weeks
10	Stagnant water on the roof. (Dyeing Building)	Develop proper drainage system on the roof with adequate slope.	6-weeks
11	Columns are stressed above normal design limit. (Garments Building)	Building engineer to review design, loads and columns stresses.	6-weeks
12	Columns are stressed above normal design limit. (Garments Building)	Building Engineer to prepare design documents including Engineering Assessment (EA) report as per BNBC (part 6; Article 1.9.1).	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Columns are stressed above normal design limit. (Garments Building)	Produce and actively manage a loading plan for all floor plates within the factory considering floor capacity and column capacity.	6-weeks
14	Columns are stressed above normal design limit. (Garments Building)	Carry out any remedial works where necessary.	6-months
15	Columns are stressed above normal design limit. (Garments Building)	Continue to implement the load plan.	6-months
16	Lateral stability system of the building. (Garments Building)	As part of EA, the building engineer is required to verify the design of lateral stability system of the structure.	6-weeks
17	Lateral stability system of the building. (Garments Building)	Suggest necessary remedial actions.	6-weeks
18	Lateral stability system of the building. (Garments Building)	Carry out suggested remedial works.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
19	Inconsistency in beam layout of staircase. (Garments Building)	Building engineer is required to update the drawings as per site condition.	6-weeks
20	Dampness throughout the building. (Garments Building)	Building engineer is required to check the reason and extent of the dampness and suggest suitable repair method.	6-weeks
21	Dampness throughout the building. (Garments Building)	Carryout suitable repair works.	6-months
22	Loose concrete around the expansion joint. (Garments Building)	Building engineer is required to remove the loose concrete and fill the expansion joint by compressible fireproof materials.	6-weeks
23	Columns are stressed above normal design limit. (Store Building)	Building engineer to review design, loads and columns stresses.	6-weeks
24	Columns are stressed above normal design limit. (Store Building)	Verify in situ concrete stresses either by existing cylinder strength data or [100mm dia. cores from 4 columns].	6-weeks
25	Columns are stressed above normal design limit. (Store Building)	Carry out Engineering Assessment (EA) report as per BNBC (part 6; Article 1.9.1.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
26	Columns are stressed above normal design limit. (Store Building)	Produce and actively manage a loading plan for all floor plates within the factory considering floor capacity and column capacity.	6-weeks
27	Columns are stressed above normal design limit. (Store Building)	Carry out any remedial works where necessary.	6-months
28	Columns are stressed above normal design limit. (Store Building)	Continue to implement the load plan.	6-months
29	Exposed rebar at roof. (Utility Building)	Building engineer is required to remove the corrosion from the rebar and provide suitable coating to protect it from further corrosion.	6-weeks
30	Undocumented chiller & telecom mast at roof. (Utility Building)	The building engineer is required to survey the structure and incorporate undocumented part into the as-built drawings.	6-weeks
31	Falling hazard at roof. (Utility Building)	Building engineer is required to provide protection barrier at roof edges.	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.