

Dip Knitwear Ltd.

Hamid Plaza-2, Degarchala Road, National University,
Gazipur Sadar-1704, Gazipur, Dhaka, Bangladesh.

(23.963147E,90.383166N)

15 May 2014

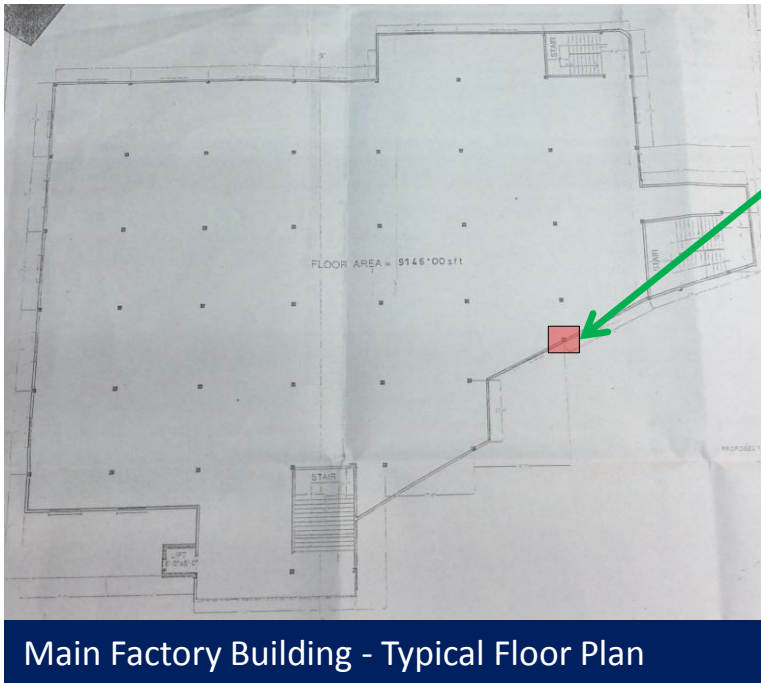


Observations

Observations

**Column Indicated on Structural Drawings
Not Provided Introducing a 3.0m Cantilever**

Observations



Column indicated on structural drawings not provided introducing a 3.0m Cantilever.



Observations

Cursory Calculations indicate cantilever beams to be stressed in excess of design limits

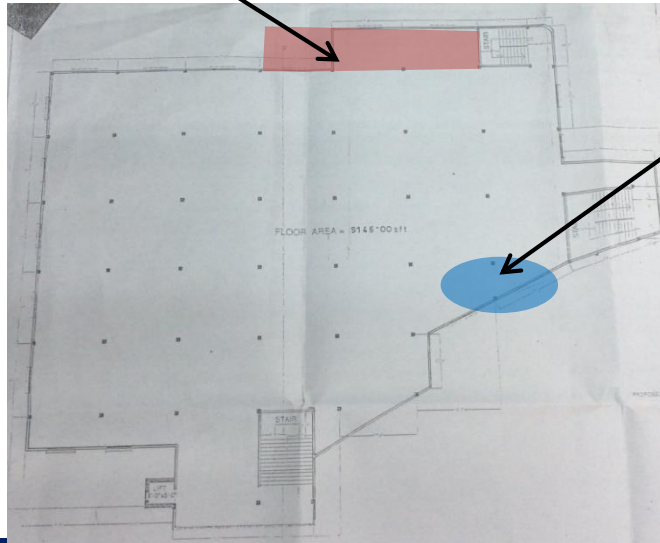
Observations



Toilet Build-up and Brick Partitions on Cantilever



Cantilever

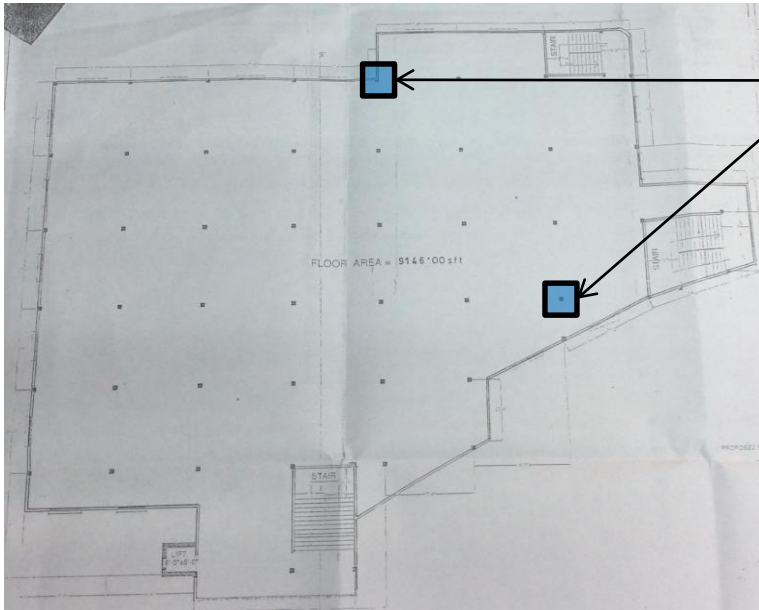


Main Factory Building - Typical Floor Plan

Observations

Cursory Calculations indicate columns to be stressed in excess of design loads for the proposed 5 Storey Building

Observations



Main Factory Building - Typical Floor Plan

Testing Conformed Brick Aggregate in ground floor columns. Cursory calculations indicate column stress is in excess of design limits.

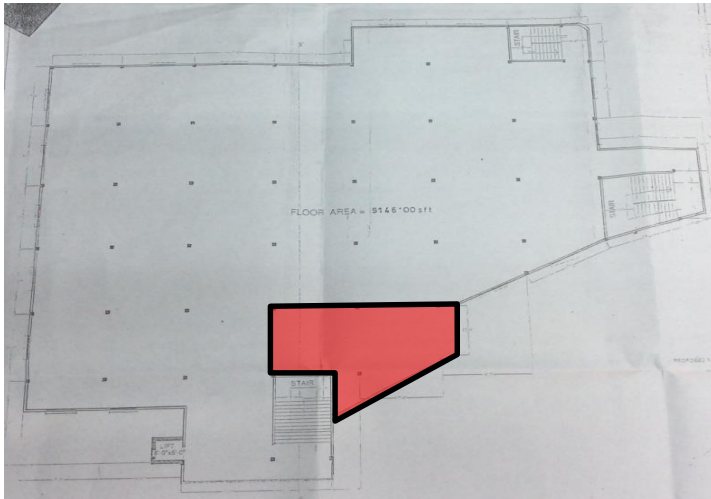


Brick Aggregate

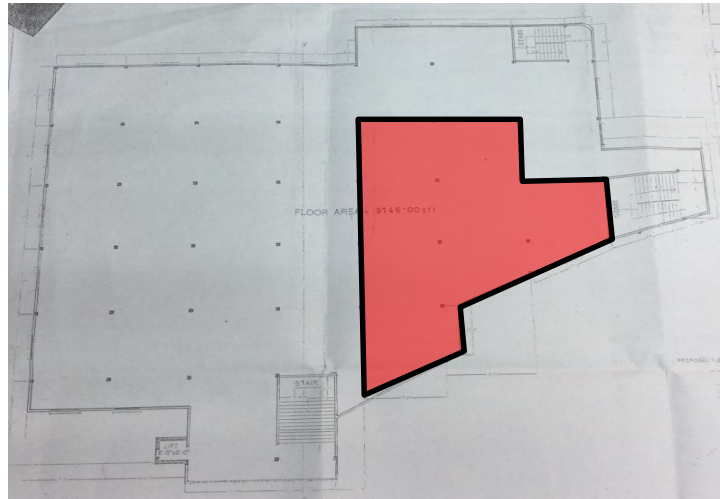
Observations

Localised areas of high loading

Observations



Main Factory Building – 1st Floor Plan



Main Factory Building – 3rd Floor Plan



High loading area on 1st floor

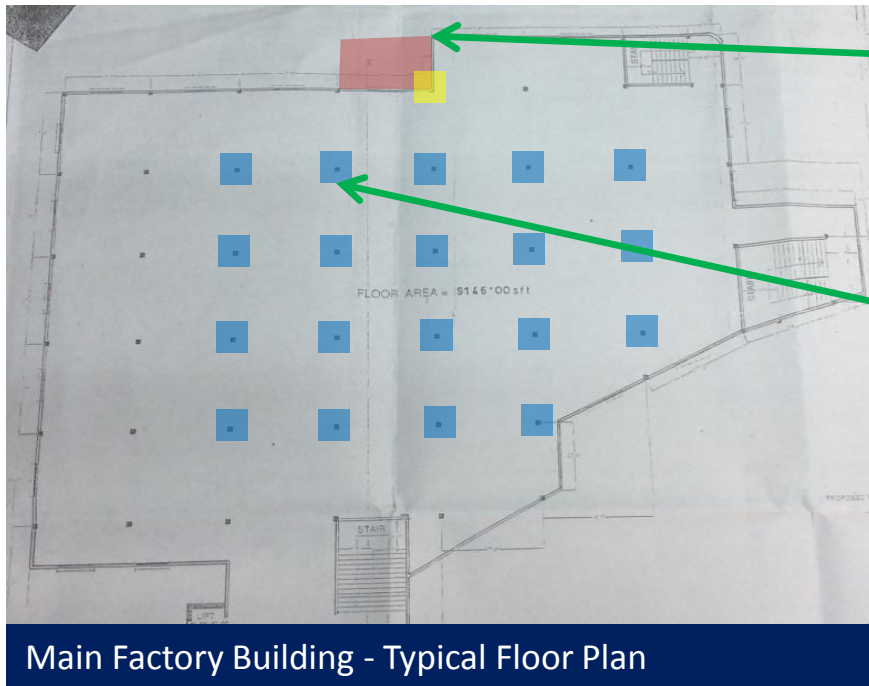


High loading area on 3rd floor

Observations

Inconsistencies noted between drawing & as built construction

Observations



Increased floor area on every floor

Column size on the drawing 500mm x 500mm
Observed column size 3rd and 4th floor - 510mm x 515mm (Without Plaster)
Ground to 2nd floor – 450mm x 450mm (Without Plaster)

Drawing column size 400mm x 400mm. As built column at ground floor 510mm x 515mm

Priority Actions

Problems Observed

- ITEM 1:** Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever
- ITEM 2:** Calculations indicate cantilever beams to be stressed in excess of design limits
- ITEM 3:** Calculations indicate columns to be stressed in excess of design loads for the proposed 5 Storey Building
- ITEM 4:** Localised areas of high loading
- ITEM 5:** Inconsistencies noted between drawing & as built construction

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	A Detail Engineering Assessment (D.E.A.) of Factory to be commenced, see attached Scope	Immediate - Now
2	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	Factory Engineer to review design, loads and cantilever stresses in area identified above.	Immediate - Now
3	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	Verify insitu concrete strength either by 100mm diameter cores or existing cylinder strength data for cantilever identified above.	Immediate - Now
4	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	All loading in excess of 1kN/m ² on cantilever to be removed immediately.	Immediate - Now
5	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	Detail Engineering Assessment to be completed	6-weeks
6	Column Indicated on Structural Drawings Not Provided Introducing a 3.0m Cantilever	Continue to implement load management plan (See Item 4)	6-months

Detail Engineering Assessment

This Schedule develops a minimum level of information, Analysis and testing expected as part of a Detail Engineering Assessment.

The Building(s) have been visually assessed and it is deemed necessary that a detailed engineering assessment be carried out by a competent Engineering Team employed by the factory Owner.

This Request should be read in conjunction with the BUET developed Tripartite Guideline document for Assessment of Structural Integrity of Existing RMG Factory Buildings in Bangladesh (Tripartite Document), the latest version of this document should be referenced. This document also gives guidance on required competency of Engineering Team.

We expect that the following will be carried out:

1. Development of Full Engineering As-Built Drawings showing Structure, loading, elements, dimensions , levels, foundations and framing on Plan, Section and Elevational drawings .
2. The Engineering team are to carry out supporting calculations with a model based design check to assess the safety and serviceability of the building against loading as set out in BNBC-2006. Lower rate provisions can be applied in accordance with the Tripartite Guidelines following international engineering practice, justification for these lower rate provisions must be made.
3. A geotechnical report describing ground conditions and commenting on foundation systems used/proposed.
4. A report on Engineering tests carried out to justify material strengths and reinforcement content in all key elements studied.
5. Detailed load plans shall be prepared for each level showing current and potential future loading with all key equipment items shown with associated loads.
6. The Engineering team will prepare an assessment report that covers the following:
 - As-Built drawings including
 - Plans at each level calling up and dimensioning all structural components
 - Cross sectional drawings showing structural beams, slabs, floor to floor heights, roof build-ups and Basic design information of the structure
 - Highlight any variation between As-built compared to the designed structure
 - Results of testing for strength and materials
 - Results of geotechnical assessment and testing/investigation
 - Details of loading, inputs and results of computer modelling
 - Commentary on adequacy/inadequacy of elements of the structure
 - Schedule of any required retrofitting required for safety or performance of Structure

Any proposals for Retrofitting to follow guidance developed in the Tripartite Document.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	Preliminary calculations indicate cantilever beams to be stressed in excess of normal design limits	A Detail Engineering Assessment (D.E.A.) of Factory to be commenced, see attached Scope	Immediate - Now
8	Preliminary calculations indicate cantilever beams to be stressed in excess of normal design limits	Factory Engineer to review design, loads and cantilever stresses in areas identified above.	Immediate - Now
9	Preliminary calculations indicate cantilever beams to be stressed in excess of normal design limits	Verify insitu concrete stresses either by 100mm diameter cores or existing cylinder strength data for cantilevers identified above	Immediate - Now
10	Preliminary calculations indicate cantilever beams to be stressed in excess of normal design limits	Detailed Engineering Assessment to be completed	6-weeks
11	Preliminary calculations indicate cantilever beams to be stressed in excess of normal design limits	Continue to implement load management plan (See Item 4)	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
12	Cursory Calculations indicate column stresses in excess of normal design limits	A Detail Engineering Assessment (D.E.A.) of Factory to be commenced, see attached Scope	Immediate - Now
13	Cursory Calculations indicate column stresses in excess of normal design limits	Factory Engineer to review design, loads and columns stresses in area identified above.	Immediate - Now
14	Cursory Calculations indicate column stresses in excess of normal design limits	Verify insitu concrete stresses either by 100mm diameter cores or existing cylinder strength data for cores from 4 columns.	Immediate - Now
15	Cursory Calculations indicate column stresses in excess of normal design limits	Detailed Engineering Assessment to be completed	6-weeks
16	Cursory Calculations indicate column stresses in excess of normal design limits	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. This should include a safe level to which any water tanks can be filled.	6-weeks
17	Cursory Calculations indicate column stresses in excess of normal design limits	Continue to implement load management plan (See Item 4)	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
18	Localised areas of high loading	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. This should include a safe level to which any water tanks can be filled.	6-weeks
19	Localised areas of high loading	Continue to implement load management plan	6-months
20	Inconsistencies noted between drawings and as built construction	Building Engineer to survey as constructed building and update drawings as required.	6-weeks