Esquire Knit Composite Ltd

Plot # B-34, BSCIC 1/A, Kanchpur, Sonargaon, Narayangonj.
(23.699169, 90.528957)

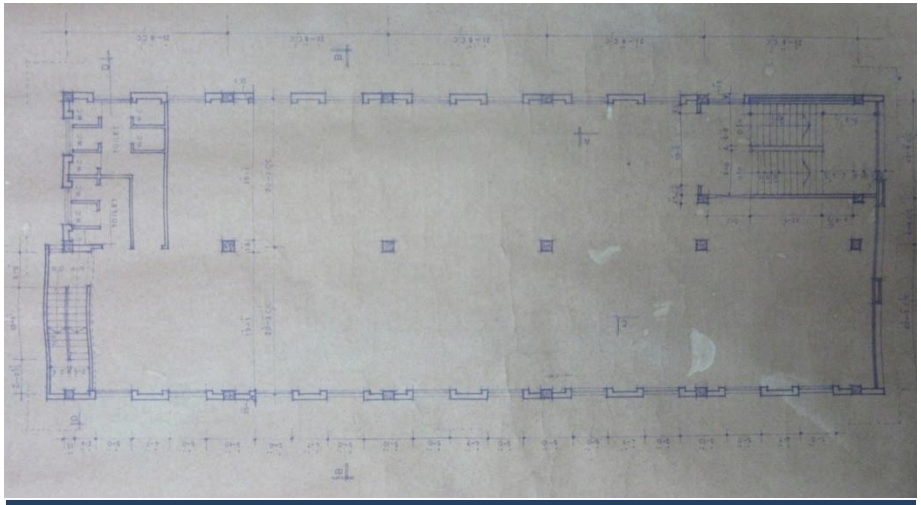
25th February 2015

ACCORD on Fire and Building Safety in Bangladesh

ARUP

Observations

Columns appear to be stressed in excess of normal design limits



Typical Floor Plan

Tested Ground Floor Column – Brick Chips

Preliminary calculations indicate that working stress is at a level that warrants review for all columns.

A Detail Engineering Assessment of the building should also be carried out immediately in order to ascertain the adequacy all columns (see attached Scope).

High Column Stresses

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Locally heavy floor loading in some storage areas

- Areas of high loading up to 3kPa
- Floor load management system is missing,
- Loading Plans are missing.

Heavy floor loading in some storage areas

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Priority Actions

Problems Observed

ITEM 1: Columns appear to be stressed in excess of normal design limits
ITEM 2: Locally heavy floor loading in some storage areas

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Columns appear to be stressed in excess of normal design limits.	Factory Engineer to review design, loads and columns stresses in all columns.	**Immediate - Now**
2	Columns appear to be stressed in excess of normal design limits.	Verify insitu concrete stresses by taking 100mm diameter cores from a minimum of 4 columns. Verify grade of steel reinforcement used.	**Immediate - Now**
3	Columns appear to be stressed in excess of normal design limits.	A Detail Engineering Assessment of Factory to be commenced, see attached Scope.	**Immediate - Now**
4	Columns appear to be stressed in excess of normal design limits.	Detail Engineering Assessment to be completed.	**6-weeks**
5	Columns appear to be stressed in excess of normal design limits.	Make structural alterations as advised by Engineer.	**6-weeks**
6	Columns appear to be stressed in excess of normal design limits.	Update as-built drawings to reflect the actual structure	**6-weeks**
7	Columns appear to be stressed 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.	**6-weeks**
8	Columns appear to be stressed in excess of normal design limits.	Continue to implement load management plan (See Item 2)	**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. T his 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
9	Locally heavy floor loading in some storage areas	Factory Engineer to investigate if the applied loading can be safely carried by the slabs, beams and by the columns.	**6-weeks**
10	Locally heavy floor loading in some storage areas	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity. (Refer to Item 1)	**6-weeks**
11	Locally heavy floor loading in some storage areas	Continue to implement load management plan	**6-months**