

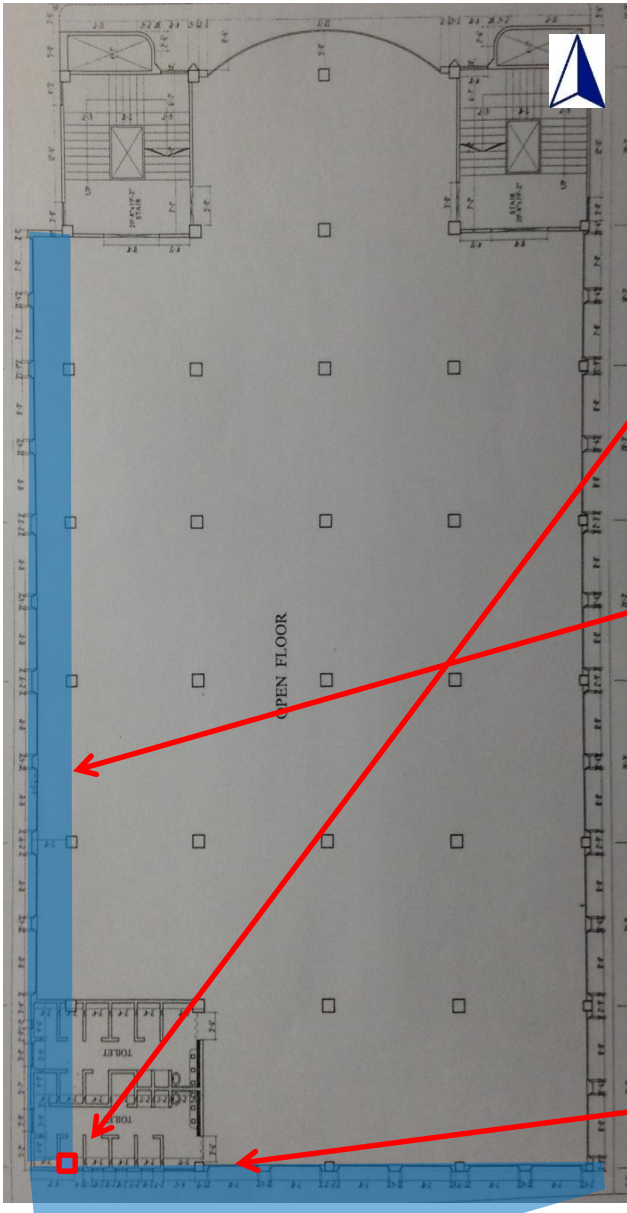
Hannan Fashions Ltd Ext.-1

868, Kalmishor, Shahid Siddique Road, Board Bazar, Gazipur-1704
(Coordinates: 23.942686N, 90.385297E)
Survey Date: 25th March 2015



Observations

**Moderate to highly stressed
column in toilet area**



**Moderately Stressed Column.
Supported area: Toilets, Cantilever**



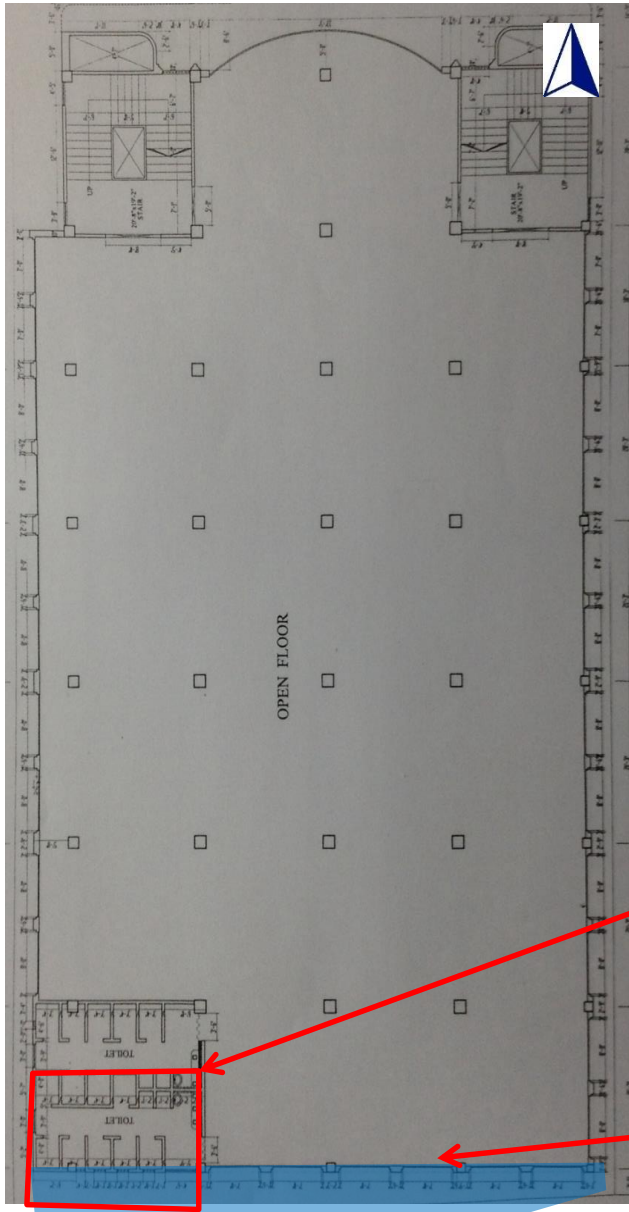
Cantilevers



Conflicting advice provided in two separate building assessment reports regarding allowable floor live load

1. Verification of the strength of steel reinforcing to be obtained for the building constructed before 2005
2. Review of the reports (by the report authors) to be undertaken to confirm the allowable floor live load following confirmation of material assumptions
3. All columns but particularly corner column under loads from toilets to be given careful consideration.

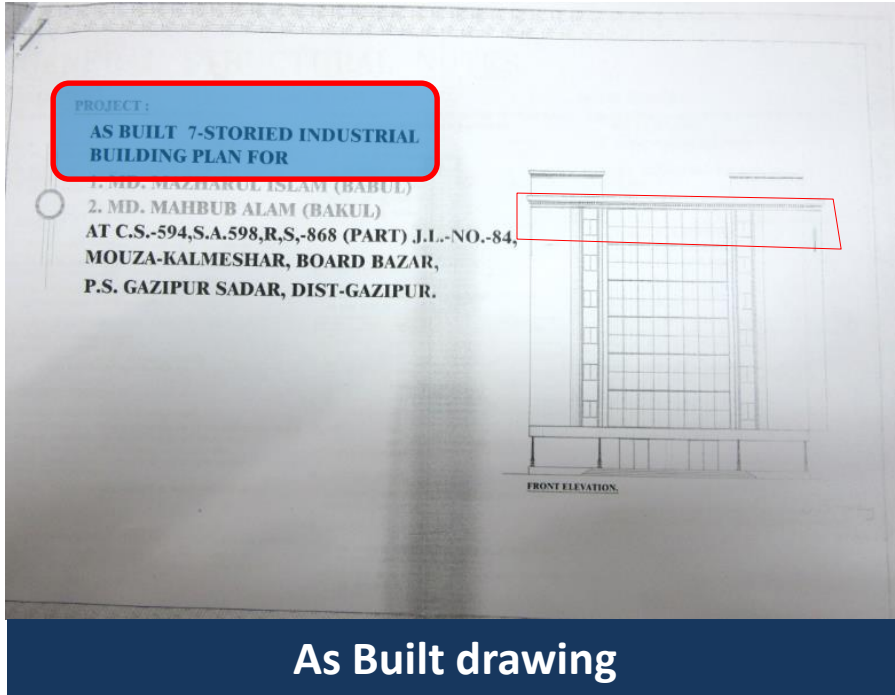
Discrepancies In As-Built Drawings



Toilets layout doesn't match (typical size shown but varies)

Cantilever is not shown in the drawings

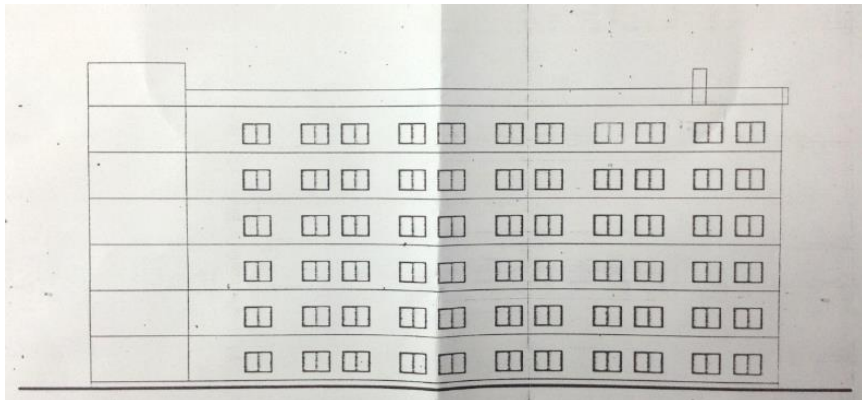
Observations



As Built drawing

As Built Drawing and permit drawings doesn't match

- As built drawing indicates 7 storey.
- Permit drawing shows 6 storey.
- Actual construction 6 storey plus dining halls at roof.



Permit Drawing

Observations

Priority Actions

Problems Observed

ITEM 1: Moderate to highly stressed columns in the toilet area at the corner of the building

ITEM 2 : Discrepancies in the allowable live load advised in two separate studies of the building

ITEM 3: Discrepancies in the as constructed drawings

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Factory Engineer to review design, loads and columns stresses in all columns.	Immediate - Now
2	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Verify insitu concrete stresses either by taking 100mm dia. cores from a min. 4 columns at ground floor or by using existing cylinder strength data for ground floor columns.	Immediate - Now
3	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Verify the reinforcing steel grade used and no of column bars.	Immediate - Now
4	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	A Detail Engineering Assessment of Factory to be commenced, see attached Scope	Immediate - Now

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
5	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Detail Engineering Assessment to be completed	6-weeks
6	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Carry out any alterations as advised by the Factory Engineer.	6-weeks
7	Moderate to highly stressed columns in the toilet area at the corner of the building, moderate stress to other factory columns	Continue to implement any measures as advised by Factory Engineer.	6-months
8	Discrepancies in the live load advised to the owner in two separate studies of the building	Factory engineer to review reports and assess the correct allowable live load to be used for the building using verifiable material properties and correct geometry	6-weeks
9	Discrepancies in the live load advised to the owner in two separate studies of the building	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-weeks
10	Discrepancies in the live load advised to the owner in two separate studies of the building	Continue to implement the loading plan.	6-months
11	Discrepancies in the as constructed drawings	As part of the Detail Engineering Assessment (see Item 1), as-built drawings to be corrected to reflect the actual construction	6-weeks