

Sams Attire Ltd

Bhuiyan Tower, Plot No. 10, Jamgora, Ashulia Road, Savar, Dhaka
(23.93670N, 90.28447E)

11 March 2014



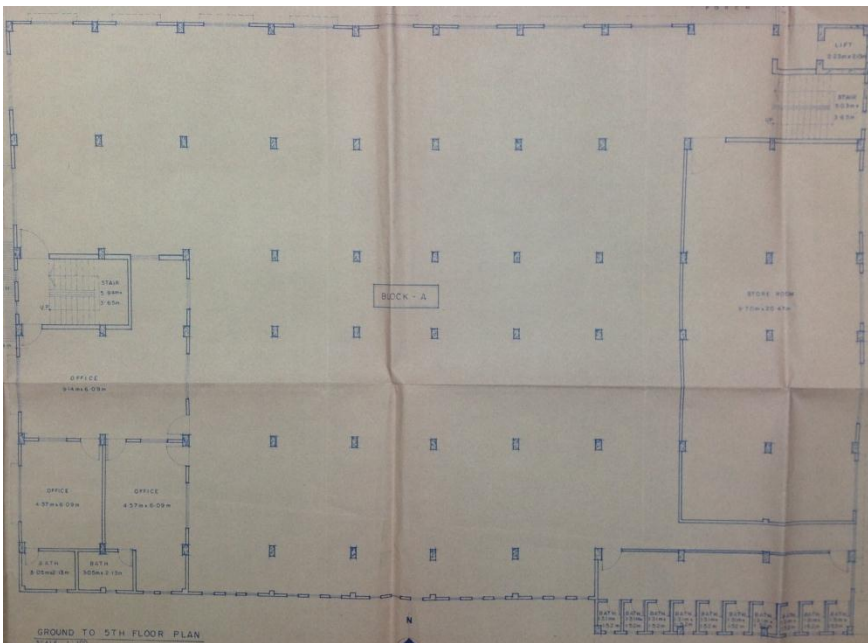
Observations

**Columns appear to be stressed in excess of
normal design limits**

Cursory calculations indicate column working stress is in excess of normal design limits.

Building Engineer is to perform detailed calculations including a Detail Engineering Assessment (See attached scope) and concrete tests to prove column size and (if required):

- Reduce loads by vacating floors
- Reinforce columns



Typical column layout



Tested Ground Floor Column – Brick Chips

Column Strength

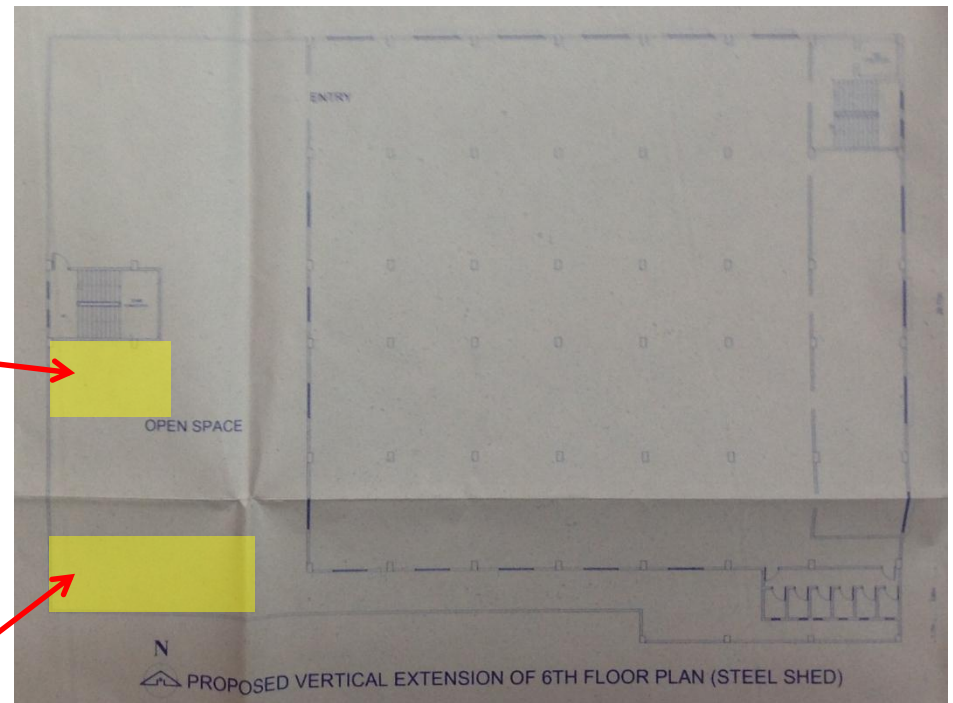
Structural adequacy of concrete roof slab and columns to support antenna house and water tanks



Roof Antenna House



Plastic Water Tanks

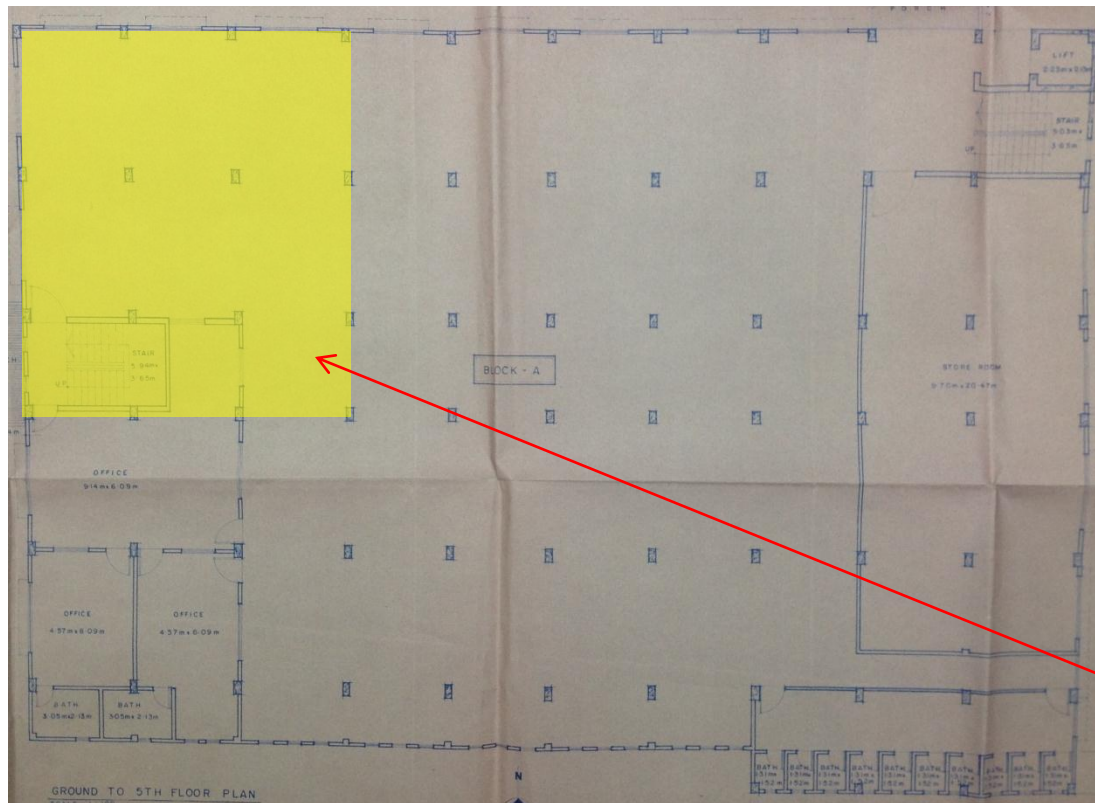


Roof Plan

Building Engineer to check that concrete roof slab and columns have been designed to accommodate loads from Antenna house and water tanks.

High Loading on Roof

Management of storage loads



Floor Plan – Export Carton Area/Accessories Store

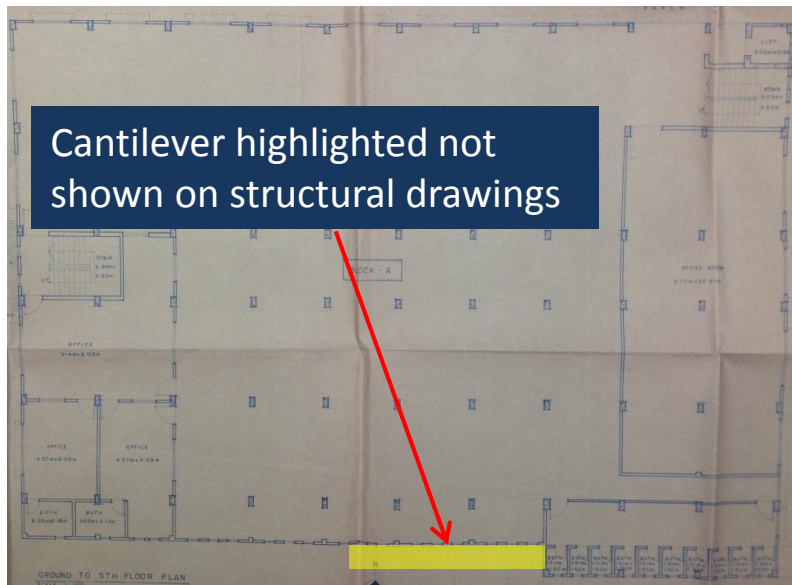
Building Engineer to prepare controlled loading plans for all floors which will designate where storage can be placed and to what height.



Export Carton Area/Accessories Store

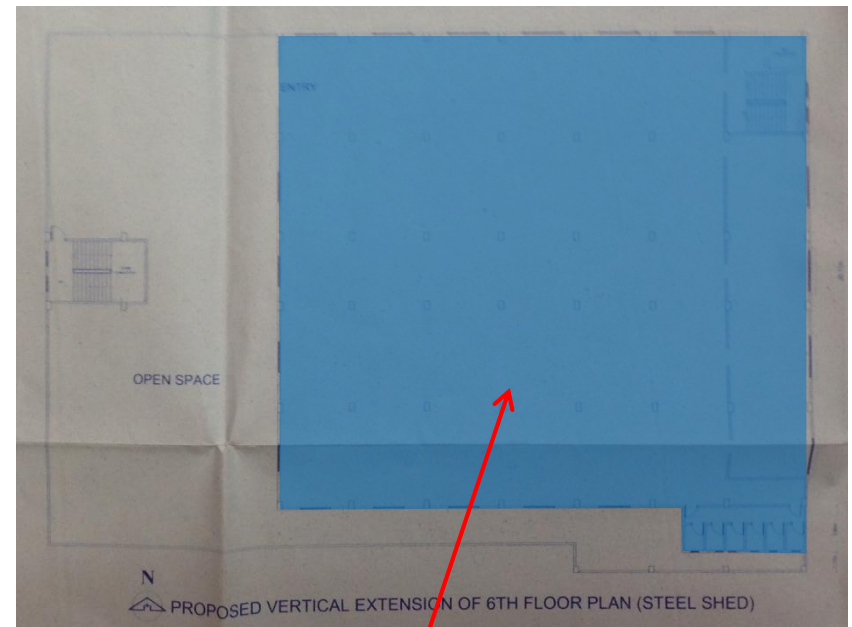
Management of Storage Loads

**Structural drawings not consistent with the
as-constructed arrangement of the factory**



Cantilever highlighted not shown on structural drawings

Typical floor plan



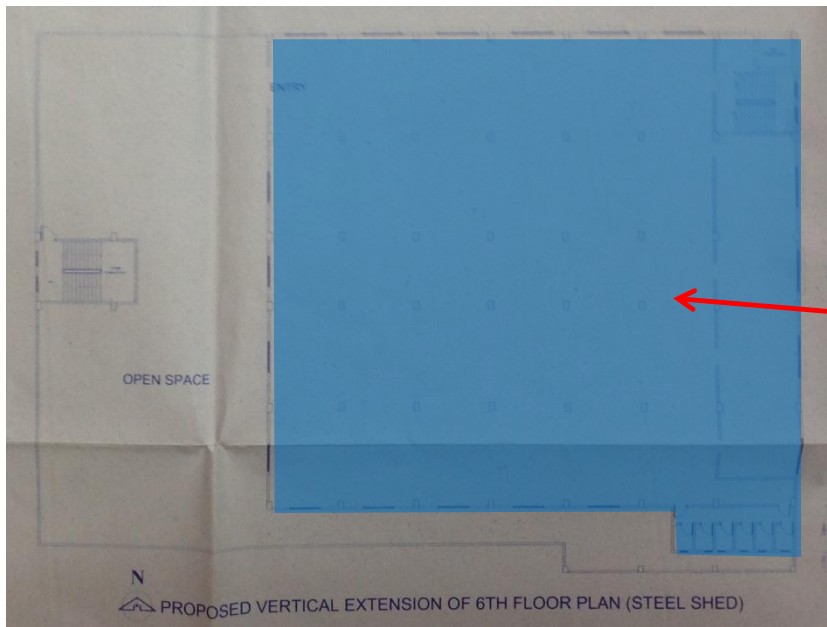
Roof Plan

Building Engineer to survey as-built structure and update drawings including verification of steel structure at roof level



Steel structure at roof level not shown on structural drawings

**Check required to confirm that the steel roof
rafters over the dining area are adequately
designed to allow for notch in the steelwork for
the roof gutter**



Roof Plan



Roof structure to Dining Area

Dining area structure not shown on structural drawings.

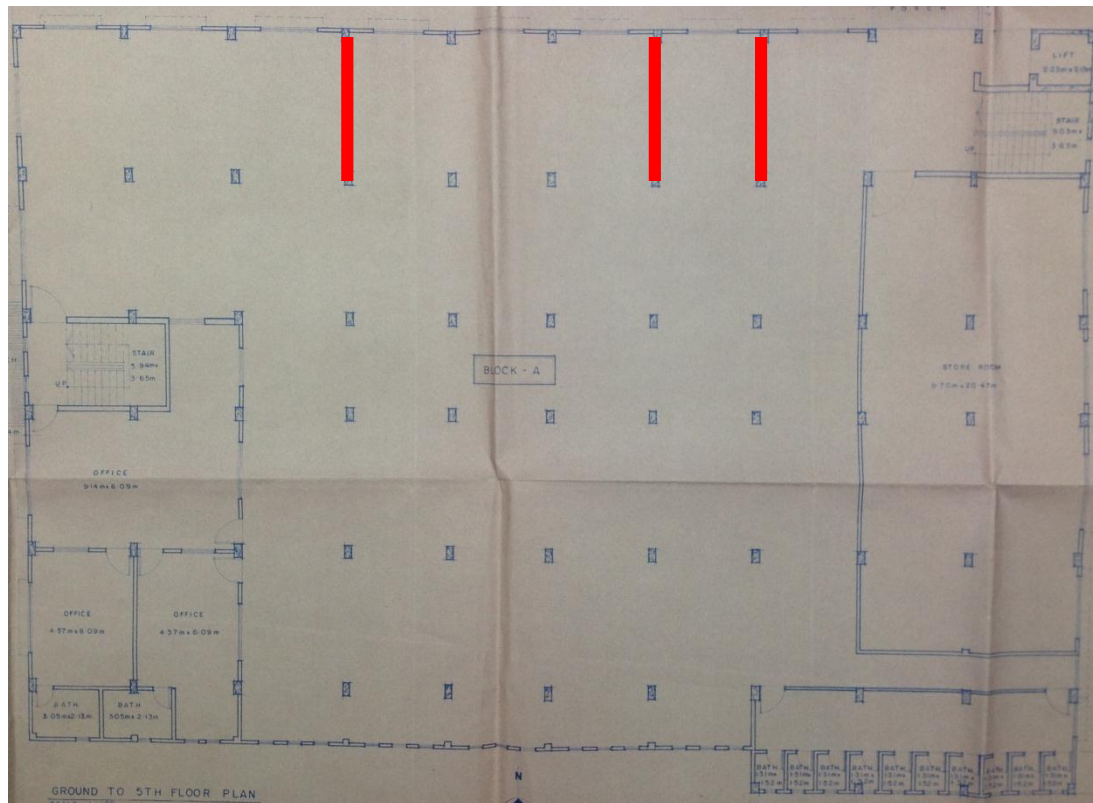
Building Engineer to check design of steel rafter allowing for notch in the steelwork for the roof gutter.



Steel Rafter – notched for gutter

Steel Roof Structure

Hairline cracking of beams on the 4th floor soffit



Floor Plan

Crack Locations



Beam cracks to be reviewed by removing plaster to confirm that cracks do not extend into structure.



Beam Cracking



Beam Cracking

Beam Cracking – 4th Floor Soffit

Priority Actions

Problems Observed

ITEM 1: Columns appear to be stressed in excess of normal design limits

ITEM 2: Structural adequacy of concrete roof slab and columns to support antenna house and water tanks

ITEM 3: Management of storage loads

ITEM 4: Structural drawings not consistent with the as-constructed arrangement of the factory

ITEM 5: Check required to confirm that the steel roof rafters over the dining area are adequately designed to allow for notch in the steelwork for the roof gutter

ITEM 6: Hairline cracking of beams on the 4th floor soffit

Item No.	Observation	Recommended Action Plan	Priority
1	Columns appear to be stressed in excess of normal design limits	Maintain current use of the floors and do not change use or increase occupation, either of which could increase loading.	Immediate - Now
2	Columns appear to be stressed in excess of normal design limits	Factory Engineer to review design, loads and stresses in all columns.	Immediate - Now
3	Columns appear to be stressed in excess of normal design limits	Verify insitu concrete strength either by 100mm diameter cores or existing cylinder strength data for cores from 6 columns. Verify reinforcement within as built columns.	Immediate - Now
4	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
5	Columns appear to be stressed in excess of normal design limits	Detail Engineering Assessment to be completed including a specific design check on columns at ground level which support roof level concrete water tanks and antenna house	6-weeks
6	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
7	Columns appear to be stressed in excess of normal design limits	Continue to implement load plan	6-months
8	Structural adequacy of concrete roof slab and columns to support antenna house and water tanks	Building Engineer to carry out design calculations to verify that roof beam/slab and columns have sufficient capacity to support fully filled water tanks and antenna house.	6-weeks

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	Priority
9	Management of storage loads	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
10	Management of storage loads	Continue to implement load management plan	6-months
11	Structural drawings not consistent with the as-constructed arrangement of the factory	As part of Detail Engineering Assessment, Building Engineer to commence survey of as-built structure and update drawings.	Immediate - Now
12	Structural drawings not consistent with the as-constructed arrangement of the factory	Complete as-built survey and Detail Engineering Assessment	6-weeks
13	Structural drawings not consistent with the as-constructed arrangement of the factory	Produce and actively manage a loading plan for all floors within the Factory giving consideration to floor capacity and column capacity.(Refer to Item 1)	6-months
14	Structural drawings not consistent with the as-constructed arrangement of the factory	Continue to implement load plan	6-months

Item No.	Observation	Recommended Action Plan	Priority
15	Check required to confirm that the steel roof rafters over the dining area are adequately designed to allow for notch in the steelwork for the roof gutter	Steel roof to dining area should be designed by the Building Engineer and a design check carried out to confirm that the steel roof rafters are adequately designed to allow for notch in the steelwork for the roof gutter	6-weeks
16	Hairline cracking of beams on the 4th floor soffit	Sections of plaster finish to beams to be removed to investigate if cracks penetrate the building structure. Building Engineer to review further if cracks are found to penetrate into building structure.	6-weeks
17	Hairline cracking of beams on the 4th floor soffit	Carry out repair remedial works as required.	6-weeks
18	Hairline cracking of beams on the 4th floor soffit	Continue to monitor for cracking on an on-going basis.	6-months