IFL FACTORY LIMITED

140 Dhour Uttara Turag, Uttara, Dhaka

(23.892344, 90.364389)

6th May 2018

ACCORD
on Fire and Building Safety in Bangladesh

Observations

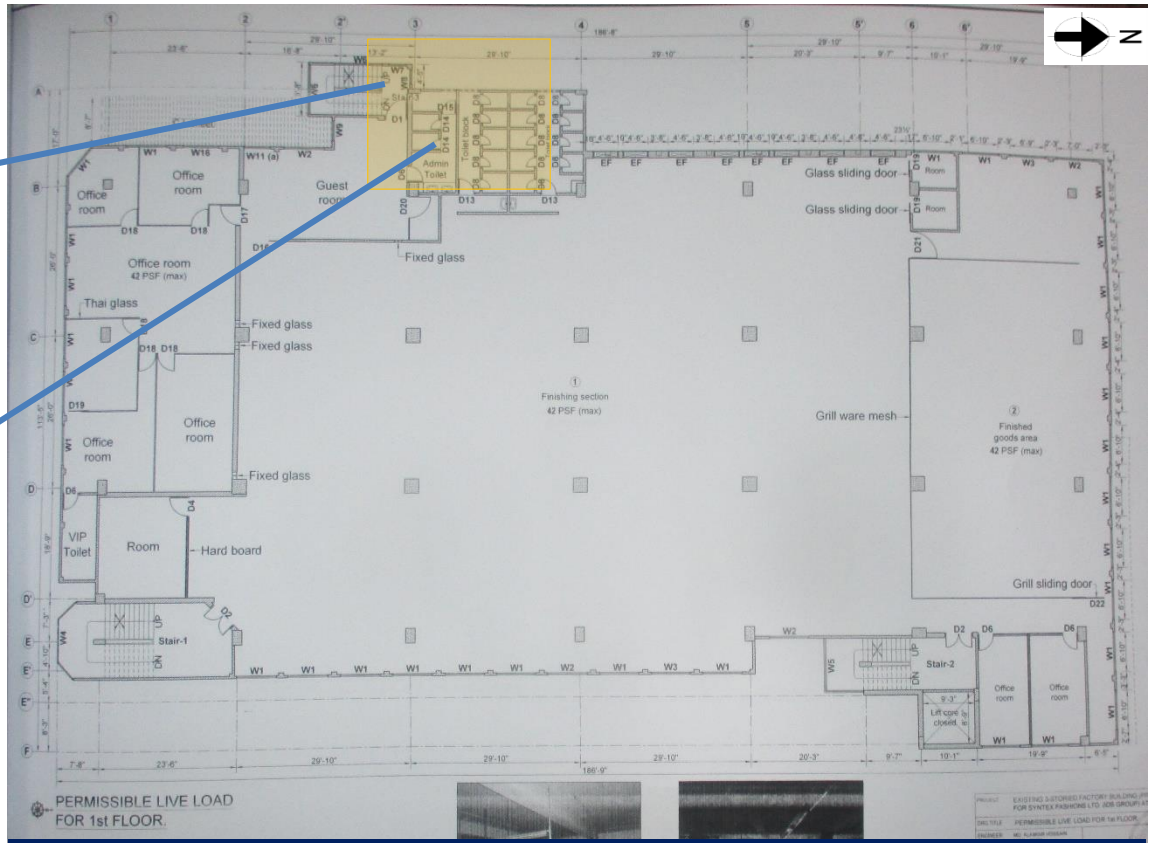
Column stress exceeds the normal design limits

Observation : Factory Building

Cursory calculations indicate that the working stress of ground floor column & foundation under toilet area exceeds the normal design limits, assuming minimum concrete strength. Building engineer to verify in-situ concrete strength and confirm grade of steel reinforcement used.

Satir at Cantilever

Toilet zone



First Floor Layout Plan

Observation : Factory Building

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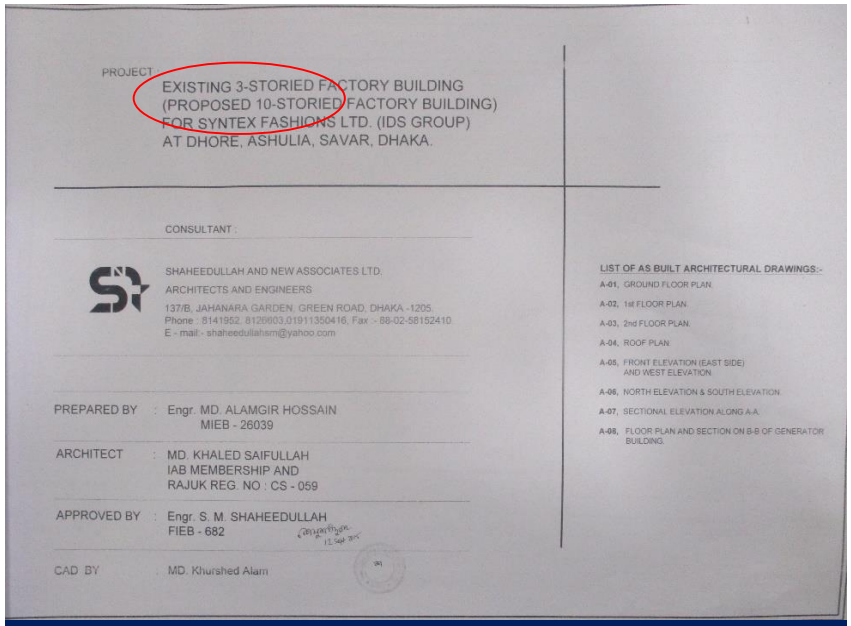
Insufficient as-built drawings of factory building & utility buildings.



PROJECT :
EXISTING 3-STORIED FACTORY BUILDING
(PROPOSED 10-STORIED FACTORY BUILDING)
FOR SYNTEX FASHIONS LTD. (IDS GROUP)
AT DHORE, ASHULIA, SAVAR, DHAKA.

CONSULTANT :

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FIEB - 682

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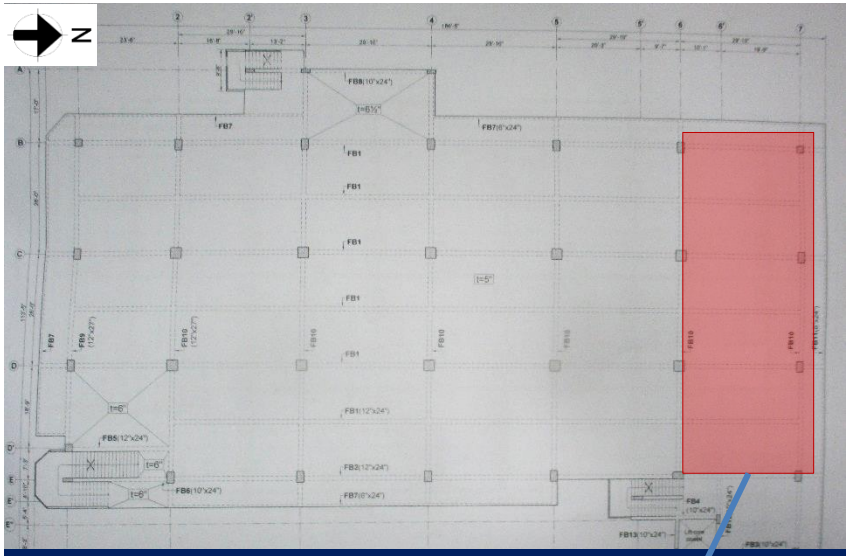
LIST OF AS BUILT ARCHITECTURAL DRAWINGS:-

A-01, GROUND FLOOR PLAN.
A-02, 1st FLOOR PLAN.
A-03, 2nd FLOOR PLAN.
A-04, ROOF PLAN.
A-05, FRONT ELEVATION (EAST SIDE) AND WEST ELEVATION.
A-06, NORTH ELEVATION & SOUTH ELEVATION.
A-07, SECTIONAL ELEVATION ALONG A-A.
A-08, FLOOR PLAN AND SECTION ON B-B OF GENERATOR BUILDING.

Provided drawing



Typical Beam layout plan

During inspection the building was 6 storied. A set of as-built drawing has been provided for 3 storied factory building which was prepared in 2015. However, factory is required to prepare full set of as-built drawing.

At 5th floor steel column & beams are found at North side of the building. No details were found for steel part.

Steel beam-column

Observations: Factory Building

Utility Building - 1

Utility Building - 2

Structural drawings are not prepared for utility building. Only layout has been prepared for utility building 1 & 2. Factory engineer is required to Prepare “as constructed” drawings which reflect the actual site dimensions with complete structural information.

Observations: Utility Buildings

Water ponding on roof

Observation : Factory Building

Stagnant water on roof

Stagnant water on roof

Water ponding was found at 5th floor and roof of the factory building. Factory is required to improve water drainage system to avoid water clogging.

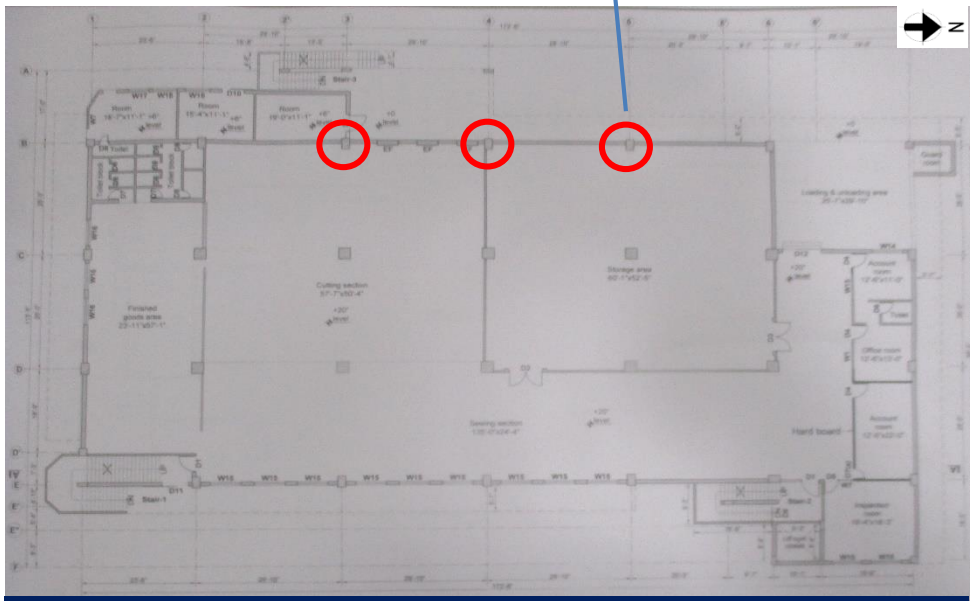
Stagnant water on 5th floor

Observation : Factory Building

Columns susceptible to vehicle impact

Observation : Factory Building

Impact protection not provided to columns at loading –unloading area. Columns are susceptible to impact loading from vehicles.



Ground floor layout plan

Observation : Factory Building

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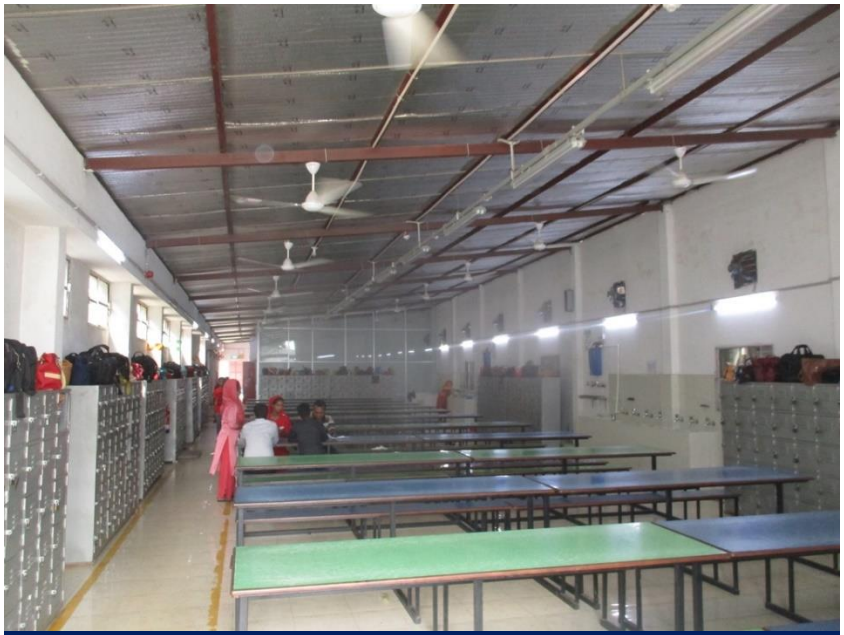
Apparently non-engineered single storied steel shed

Observations: Single Storied Steel Shed

As-built drawings were not available for single storied steel shed. Lateral load transferring media was not available in this structure. Also there are no proper connection. Building engineer to prepare as-built drawings and check the stability of the structure under lateral and vertical loading.



Rafter and purlin layout

Rafter connection with brick wall

Observations: Single Storied Steel Shed

Problems Observed

Factory Building:

Item-1: Column stress exceeds the normal design limits.

Item-2: Insufficient as-built drawings of factory building & utility buildings.

Item-3: Water ponding on roof.

Item-4: Columns susceptible to vehicle impact.

Single Storied Steel Shed:

Item-5: Apparently non-engineered single storied steel shed.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	(Factory building) Column stress exceeds the normal design limits	Factory Engineer to review design, loads and columns & foundation stresses in area identified above.	**6-weeks**
2	(Factory building) Column stress exceeds the normal design limits	Verify in-situ concrete stresses by 100mm dia. cores from min. 4 no. column from ground floor level.	**6-weeks**
3	(Factory building) Column stress exceeds the 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**
4	(Factory building) Column stress exceeds the normal design limits	Continue to implement load plan	**6-months**
5	(Factory building) Column stress exceeds the normal design limits	Remedial works to be carried out if required.	**6-months**
6	(Factory Building & Utility Buildings) Insufficient as-built drawings of factory building & utility buildings	Building Engineer to survey as-built structure and prepare an “as constructed” drawings which reflect the actual site dimensions with complete structural information.	**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 ACCORD DEA guideline , ACCORD standard for Assessment of Structural Integrity of Existing RMG Factory Buildings in Bangladesh (Tripartite Document), the latest version of these document should be referenced. These 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 Elevation 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 ACCORD DEA guideline , ACCORD standard 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 see ACCORD DEA guideline & ACCORD standard more details.
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 ACCORD DEA guideline & ACCORD standard (http://bangladeshaccord.org/factories/resource-centre/).

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Item No.	Observation	Recommended Action Plan	Recommended Timeline
7	(Factory Building) Water ponding on roof	Factory is required to provide water proofing layer and improve water drainage system to avoid water clogging.	**6-weeks**
8	(Factory Building) Columns susceptible to vehicle impact	Install a barrier to prevent vehicle impact in columns.	**6-weeks**
9	(Single Storied Steel Shed) Apparently non-engineered single storied steel shed	Prepare update as-built documentation for single storied steel shed.	**6-weeks**
10	(Single Storied Steel Shed) Apparently non-engineered single storied steel shed	Building engineer to check the capacity of the structure under lateral and vertical loading.	**6-weeks**
11	(Single Storied Steel Shed) Apparently non-engineered single storied steel shed	Carry out remedial works resulting from engineering assessment of building.	**6-months**