



Prime Sweater Ltd.

Naibari, Pubail, Gazipur.
(23.933718N, 90.450326E)

26th November 2017





Observations



High stress level in columns that require immediate review



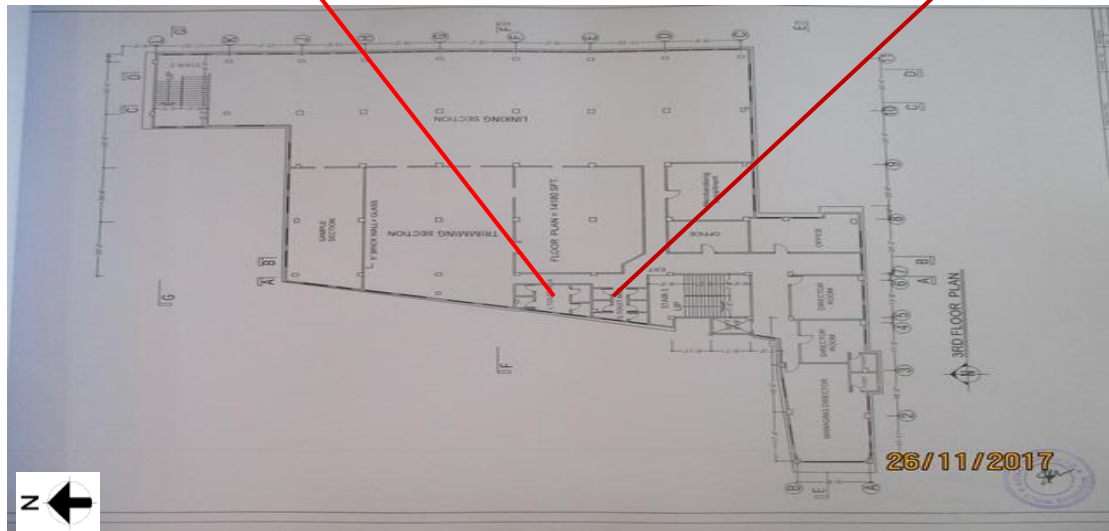
Toilet Zone with masonry walls



275 mm Toilet build up



Water reservoir at roof

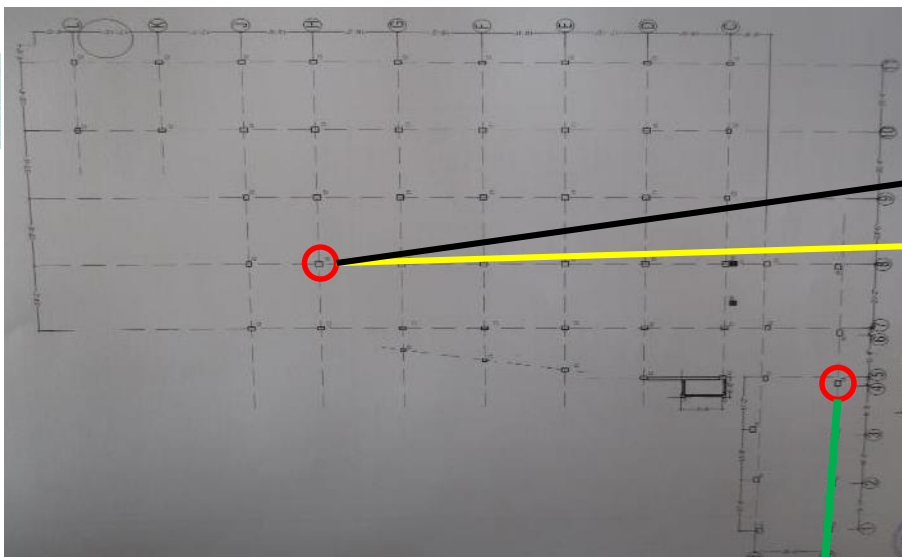


Typical floor Layout

Cursory calculations indicate that the column stress are exceed normal design limit. A Detail engineering assessment must carried out immediately.



Evaluation of concrete compressive strength based on aggregate type



Column layout



Stone chips
aggregate found in
basement floor
column



Brick chips
aggregate found in
1st floor column

Centre for Advisory and Testing Services (CATS-MIST)
Military Institute of Science and Technology

Compressive Strength of Concrete Drilled Cores

CATS Reference : 233701/00N/1200/11/17 Date : 28.11.2017

Client : Prime Soudar Ltd.

Project Name & Address : Prime Soudar Ltd. Nay Bari, Jyotibon, Trapani, Dhaka

Sample brought by : Engr. Helton Das Date of receiving : 22.11.2017

Test Method : ASTM C 42/C 42-M Date of Test : 22.11.2017

Sample : Drilled Core Sample Condition : Unaltered

Sample Location : 2nd Floor Column C1, 5000 0.30 x 0.30

Construction Year : Not mentioned Quantity of Sample : 02 Nos

No of Story : Existing (Dorm Basement) 1 5 Aggregate Type : Stone Chips (Mixed)

Sr No.	Sample Identification on Mark	Original Length mm	Sawed Length mm	Diameter mm	Crushing Load kN	Crushing Strength N/mm ²	Failure Type	Fracture Type
1	S/V	151.0	145.0	100.0	90.8	24.4	Combined	Shear
2	S/V	151.0	146.0	100.0	110.1	27.4	Combined	Shear

REMARKS:

- All information displayed above the table are provided by the client. CATS-MIST did not verify any of those.
- Samples are retained in unaltered condition without alteration from the competent authority. Therefore, authenticity of these samples and their history could not be verified.

Test Supervised By: *[Signature]* Countersigned By: *[Signature]*

APRIL VERTANA
Senior Engineer/Engineer
Test Dept. (Civil)

Dr. Md. Zahid Hossain
Senior Engineer/Engineer
Test Dept. (Civil)

Note: Samples as supplied to us have been tested in our laboratory. CATS-MIST does not have any responsibility as to the representative character of the samples received to be tested. It is recommended that samples to be sent in secure and sealed cover/packages/container under signature of the competent authority in order to transfer. Information of test results. It is recommended to collect all test reports by duly authorized personnel not by the contractor/supplier himself.

Tel: +88-02-2000040, Cell: 01799-923004, Web: www.mist.ac.bd, cats.mist@gmail.com

Core test report for 2nd floor
column

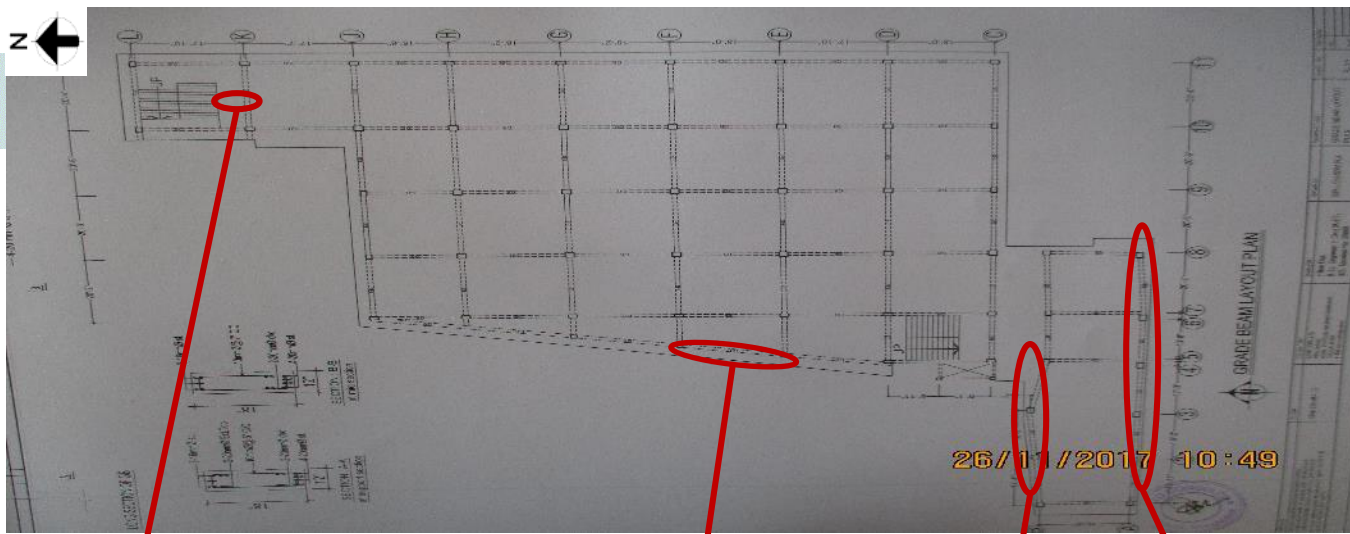


Mixed of stone
and brick
aggregate found in
ground floor
column

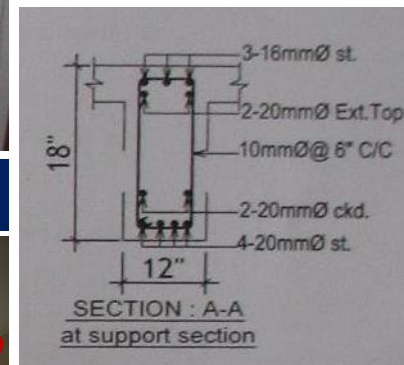
Stone aggregate was found in basement floor column but in 1st floor column, brick aggregate was found. Moreover, mixture of stone and brick aggregates were found in ground floor column. Whereas, stone aggregate was mentioned in all provided reports of compressive strength test. For this reason, except basement column cores test result were not considered in cursory calculation.



Discrepancies between provided drawing and on site condition



Provided Column Layout



B-2 beam size
shown 300mm x
450mm in provided
drawing

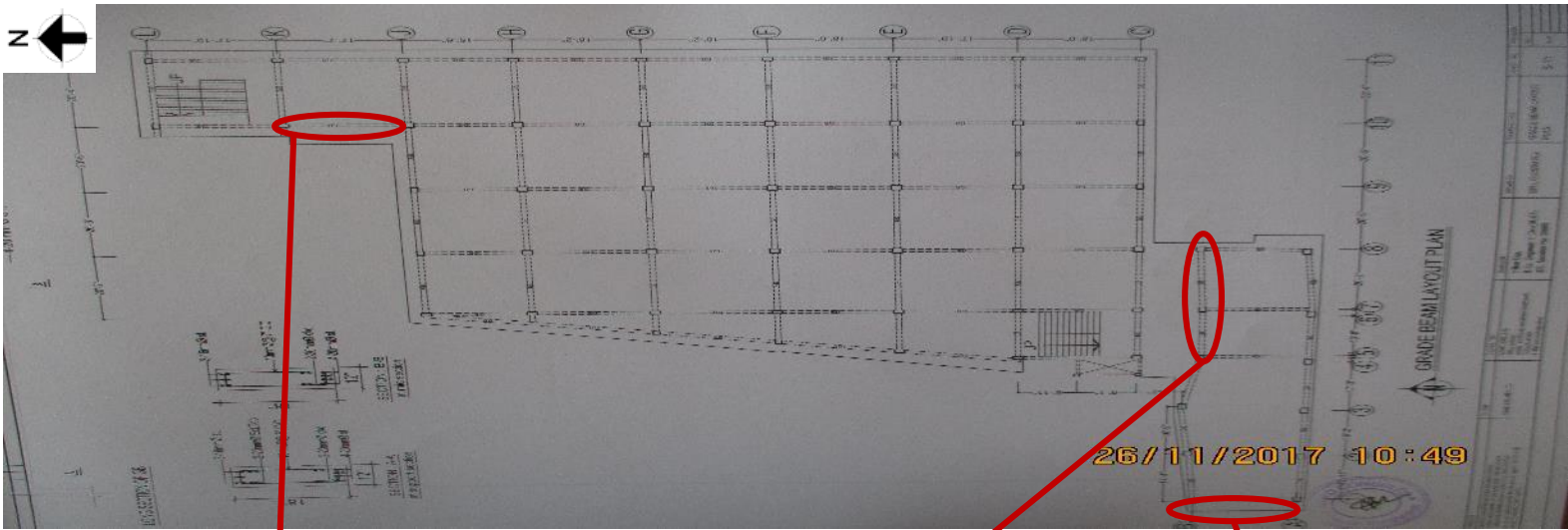


Marked beam size
measured 300mm x
375mm which was not
shown in beam layout



Marked Beam size found 300mm x 400mm at
1st floor which are denoted as B2 (300mm x
450mm) type beam in beam layout





Provided Column Layout



Marked Beams were missing in 1st floor which are denoted as B2 type beam in beam layout



Corrosion observed on roof top exposed rebar



Exposed Rebar on roof top tends to corrosion

Exposed rebar was observed on roof top which tends to corrosion. Some corroded rebar was observed. Factory is required to take necessary steps to avoid corrosion.



**Water proofing and edge protection were
not observed on roof**



Edge protection was not observed on roof. Besides, no proper water proofing or drainage system was observed.



Problems Observed:

Production building

- Item 1:** High stress level in columns that require immediate review
- Item 2:** Evaluation of concrete compressive strength based on aggregate type
- Item 3:** Discrepancies between provided drawing and on site condition
- Item 4:** Corrosion on roof top exposed reinforcement
- Item 5:** Water proofing and edge protection were not present at roof

Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	High stress level in columns that require immediate review	Toilet zone of 4th and 5th floor should remain unoccupied. Loading should be limited up to 1Kpa for 1st floor to 3rd floor toilet zone and surroundings.	Immediate - Now
2	High stress level in columns that require immediate review	Factory Engineer to review design, loads and columns stresses in all columns.	Immediate - Now
3	High stress level in columns that require immediate review	Verify grade of steel reinforcement used.	Immediate - Now
4	High stress level in columns that require immediate review	A Detail Engineering Assessment of Factory to be commenced, see attached Scope.	Immediate - Now
5	High stress level in columns that require immediate review	Produce and actively manage a loading plan for all floor plates within the factory giving consideration to floor capacity and column capacity.	6-weeks
6	High stress level in columns that require immediate review	Detail Engineering Assessment to be completed.	6-weeks
7	High stress level in columns that require immediate review	Make structural alterations as advised by Engineer.	6-months
8	High stress level in columns that require immediate review	Continue to implement load plan	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 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/>).

Item No.	Observation	Recommended Action Plan	Recommended Timeline
9	Evaluation of concrete compressive strength based on aggregate type	Factory engineer to investigate the aggregate type of the columns. Evaluate the compressive strength of concrete by taking 100mm diameter cores from columns based on aggregate type.	6-weeks
10	Discrepancies between provided drawing and on site condition	Building Engineer required to prepare As –Built drawings reflecting the on site condition.	6-weeks
11	Corrosion on roof top exposed reinforcement	Building engineer to check the reinforcement for corrosion and take proper remedial action.	6-weeks
12	Water proofing and proper edge protection were not present at roof	Install adequate edge protection on roof level.	Immediate - Now
13	Water proofing and proper edge protection were not present at roof	Provide proper drainage and water proofing layer with appropriate water proofing materials.	6-weeks