

Dekko Washing Ltd.

Narashinghopur, Zirabo, Ashulia, Savar, Dhaka-1341, Bangladesh.

(23.927258, 90.304361)

10 March 2025

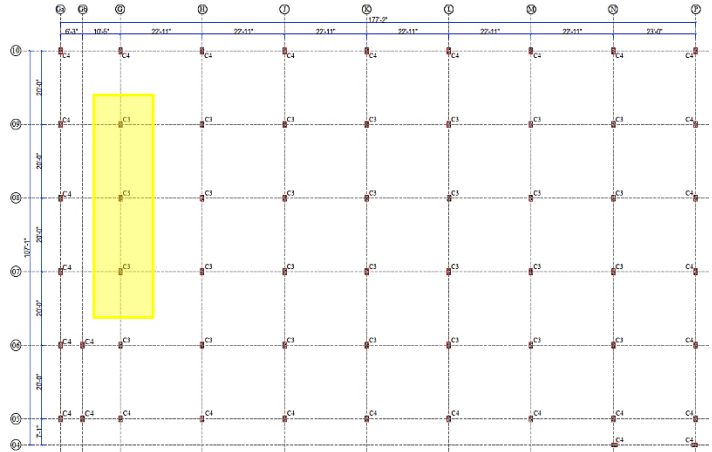


1. Building Information

- | | |
|-----------------------|---|
| 1) Washing Building | : Three-storied (G+M+2) reinforced concrete (RC) structure. |
| 2) ETP Plant | : RC effluent treatment plant. |
| 3) Wastage Shed | : Single-storied mono-slope steel shed. |
| 4) Store Shed | : Single-storied mono-slope steel shed. |
| 5) CNG Plant Shed | : Single-storied steel shed. |
| 6) Empty Drum Shed | : Single-storied mono-slope steel shed. |
| 7) Male Toilet Block | : Partially two-storied masonry structure. |
| 8) Bleach Mixing Shed | : Single-storied mono-slope steel shed. |

2. Observations

Observation 1: Stress in the column exceeds the normal design limit. [Washing Building]



Description: The cursory calculation indicates that columns are stressed above the normal design limit at the marked locations considering the prepared load plan, equivalent concrete core strength, and 415 MPa re-bar strength. The building engineer is required to review design and column stresses based on in-situ concrete strength at the marked location. Produce and actively manage load management plans.

Observation 2: Significantly low strength of concrete core. [Washing Building]



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

Mirpur Cantonment, Dhaka-1216

Compressive Strength of Concrete Drilled Cores

CATS Reference	: 2376/Con/42724-727/09/2024	Date	: 05.09.2024
Client	: Dekko Design Ltd		
Client Ref	: Dekko Washing/DEA/00124		
Project Name & Address	Dekko Design Ltd (Building Name: Dekko Washing Ltd) of Ashulia, Dhaka, Bangladesh		
Sample Brought By	: Engr. Ashrafal Alam	Date of Receiving	: 27.08.2024
Test Method	: ASTM C 42/C 42-M	Date of Test	: 05.09.2024
Type of Sample	: Drilled Core	Sample Condition	: Unsealed
Construction Year	: Not Mentioned	Quantity of Sample	: 04 nos
No of Story	: Not Mentioned	Type of Aggregate	: Stone Chips

SI No.	Sample: ID, Location, Structure Type & Grid	Original Length	Sawed Length	Diameter	Crushing Load	Crushing Strength		Failure Type	Fracture Type
		mm	mm			MPa	psi		
1	Core-1, Ground Floor Column	185.0	131.0	67.0	10.4	3.0	440	Combined	Columnar
2	Core-2, 1st Floor Column	150.0	131.0	67.0	103.5	29.3	4250	Combined	Cone and Shear
3	Core-3, Ground Floor Column	170.0	131.0	67.0	111.8	31.7	4600	Combined	Cone and Shear
4	Core-4, 1st Floor Column	180.0	133.0	67.0	140.1	39.7	5760	Combined	Cone and Shear

REMARKS:

Description: During the inspection, a core test report was found for 4 no's core sample from the column. In the test report, one core sample was found significantly low crushing strength respective to the others. Provide justification for the lower strength and take some additional cores to calculate equivalent concrete strength.

Observation 3: Lack of design documents of the external steel stair. [Washing Building]



Description: As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. The design document shall include a design report and a set of structural drawings, which shall be prepared in compliance with sections 1.9.1.1 and 1.9.1.2 as per BNBC.

At the time of inspection, design documents (design report, as-built drawing, load plan, and adequate material test reports) were not available, which are required to be prepared in compliance with section 1.9.1 (part-6, BNBC).

Observation 4: Non-structural elements not anchored or braced. [Washing Building]



Description: Some racks on floors are not anchored or braced to resist lateral (earthquake) forces. The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.

Observation 5: Hairline crack on masonry wall. [Washing Building]



Description: During the inspection, hairline cracks were observed on the brick wall. The factory is required to repair the masonry wall cracks as per the recommendation of the building engineer.

Observation 6: Lack of design documents. [ETP Plant]



Description: The design report and as built drawings were not prepared for ETP Plant. The building engineer is required to prepare as-built drawings and design report following BNBC (part-6, section 1.9.1).

Observation 7: Lack of lateral stability system. [Wastage Shed]



Description: Absence of bracing system, inadequate members and non-engineered connection were observed. The building engineer is required to check the member, connection & stability system of the structure and suggest proper remediation accordingly as part of safety check report.

Observation 8: Damaged structural elements. [Wastage Shed]



Description: Damage was observed on the pipe column of the wastage shed. The building engineer is required to check the design of the column and repair the elements with a suitable method.

Observation 9: Hairline crack on masonry wall. [Wastage Shed]



Description: During the inspection, hairline cracks were observed on the brick wall. The factory is required to repair the masonry wall cracks as per the recommendation of the building engineer.

Observation 10: Lack of lateral stability system. [Store Shed]



Description: The absence of a bracing system, apparent inadequate members, and non-engineered connection were observed. The building engineer is required to check the lateral stability with connection adequacy and prepare a design report as per 1.9.1 BNBC. Prepare a remediation plan.

Observation 11: Non-structural elements not anchored or braced. [Store Shed]



Description: Some racks on floors are not anchored or braced to resist lateral (earthquake) forces. The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.

Observation 12: Corrosion on steel members. [Store Shed]



Description: Corrosion was observed on the steel members of the Store Shed. The building engineer is required to remove the corrosion with a suitable method and provide anti-corrosive coating.

Observation 13: Falling Hazard. [Male toilet block]



Description: Railing/parapet was not provided on the roof, which may cause a falling hazard. The factory is required to provide railing/barriers to avoid possible falling hazards.

Observation 14: Lack of lateral stability system. [Empty drum shed]



Description: Absence of bracing system, inadequate members and non-engineered connection were observed. The building engineer is required to check the member, connection & stability system of the structure and suggest proper remediation accordingly as part of safety check report.

Observation 15: Lack of lateral stability system. [Bleach Mixing Shed]



Description: The bracing system is absent for Bleach Mixing Shed. Also, connections are not proper, and the steel members are corroded. The building engineer is required to provide a stability system, repair the connections and apply anti-corrosive coating on steel members.

Observation 16: Lack of as-built drawings. [All ancillary structures]



Wastage Shed



Store Shed



Male toilet block



CNG Plant Shed



Empty drum shed



Bleach mixing shed

Description: As-built drawings were not found for the ancillary structures (Wastage Shed, Store Shed, CNG plant shed, Male toilet block, Empty drum shed, Bleach mixing shed). The building engineer is required to survey structures and prepare a full set of as-built drawings.

3. Action Plan

Item No	Observation	Action Plan	Timeline
1.	Stress in the column exceeds the normal design limit. [Washing Building]	The building engineer is required to review design and column stresses based on in-situ concrete strength at the marked location.	within 6 weeks
2.		Produce and actively manage load management plans.	within 6 weeks
3.		Implement remediation work if required.	within 6 months
4.		Implement a load management plan.	within 6 months
5.	Significantly low strength of the concrete core. [Washing Building]	Provide justification for the lower strength and take some additional cores to calculate equivalent concrete strength.	within 6 weeks
6.	Lack of design documents of the external steel stair. [Washing Building]	The building engineer is required to prepare design documents (including design reports, material test reports, live load plan and as-built drawings) in compliance with section 1.9.1 (part 6, BNBC).	within 6 weeks
7.		Produce accurate as-built drawings.	within 6 weeks
8.		Carry out the suggested remedial work (if any).	within 6 months
9.	Non-structural elements not anchored or braced. [Washing Building]	The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.	within 6 months
10.	Hairline crack on masonry wall. [Washing Building]	The factory is required to repair the masonry wall cracks as per the recommendation of the building engineer.	within 6 weeks
11.	Lack of design documents. [ETP Plant]	The building engineer is required to survey structures and prepare a full set of as-built drawings.	within 6 weeks
12.		The building engineer is required to prepare design report following BNBC (part-6, section 1.9.1).	within 6 weeks
13.		Carry out remedial work if required.	within 6 months
14.	Lack of lateral stability system. [Wastage Shed]	The building engineer is required to check the member, connection & stability system of the structure as part of safety check and suggest proper remediation accordingly.	within 6 weeks
15.		Carry out remedial work if required.	within 6 months

16.	Damaged structural elements. [Wastage Shed]	The building engineer is required to check the design of the column and repair the elements with a suitable method.	within 6 weeks
17.	Hairline crack on masonry wall. [Wastage Shed]	The factory is required to repair the masonry wall cracks as per the recommendation of the building engineer.	within 6 weeks
18.	Lack of lateral stability system. [Store Shed]	The building engineer is required to check the lateral stability with connection adequacy and prepare a design report as per 1.9.1 BNBC. Prepare a remediation plan.	within 6 weeks
19.		Carry out remedial work if required.	within 6 months
20.	Non-structural elements are not anchored or braced. [Store Shed]	The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.	within 6 months
21.	Corrosion on steel members. [Store Shed]	The building engineer is required to remove the corrosion using a suitable method and provide an anti-corrosive coating.	within 6 weeks
22.	Falling Hazard. [Male toilet block]	The factory is required to provide railing/barriers to avoid possible falling hazards.	within 6 weeks
23.	Lack of lateral stability system. [Empty drum shed]	The building engineer is required to check the member, connection & stability system of the structure as part of safety check and suggest proper remediation accordingly.	within 6 weeks
24.		Carry out remedial work if required.	within 6 months
25.	Lack of lateral stability system. [Bleach Mixing Shed]	The building engineer is required to check the member, connection & stability system of the structure as part of safety check and suggest proper remediation accordingly.	within 6 weeks
26.		Carry out remedial work if required.	within 6 months
27.	Lack of as-built drawings. [All ancillary structures]	The building engineer is required to survey structures and prepare a full set of as-built drawings.	within 6 weeks