

ECHOKNITS LTD (Extension)

A-99/1; Bokterpur; Kaliakoir; Gazipur

(24.057498, 90.230201)

27 December 2023



1. Building Information

Building-04 (General Store): Single storied RC building.

Building-05 (ETP): Two storied RC building.

Building-06 (Maintenance Building): Two storied RC building.

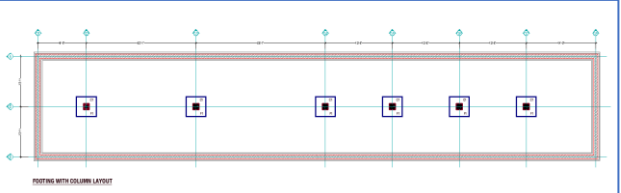
Shed-12 (Empty Carton Store): Single storied steel shed.

Shed – 13 (Warehouse): Single storied steel shed.

2. Observation

Observation-01: Mismatches in as-built drawings. (Building-04 (General Store))

SCHEDULE OF COLUMNS.		
Designation and no of Columns	Reinforcement	
	BELOW P.L.	ABOVE P.L.
C1 6 Nos.	 1 of 6-Ø 16 Ø 10mm @ 4"-6"-4" c/c 2 1/2" clear cover all around	 1 of 6-Ø 16 Ø 10mm @ 4"-6"-4" c/c 1 1/2" clear cover all around



Column Schedule & layout



Number of rebar by ferro scan

Description: Number of rebar in C-1 column was found 4 nos instead of 6 nos. Building engineer is required to survey the whole structure and prepare accurate as-built drawings.

Observation-02: Lack of design report. (Building-04 (General Store))



General Store



Core cutting location

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 section 1.9.1.1 and section 1.9.1.2, part 6 of BNBC. On the other hand, core cutting location was found onsite but core cutting layout was not available. The building engineer is required to prepare the design report considering concrete strength based on core test report.

Observation-03: Cracks found on the load bearing walls. (Building-04 (General Store))



Cracks on load bearing wall



Cracks on load bearing wall

Description: Crack found on the load bearing walls of General Store. Building engineer is required to investigate the cause of cracking and repair with a suitable method.

Observation-04: Non-structural elements are not anchored or braced. (Building-04 (General Store))



Unbraced racks on floor



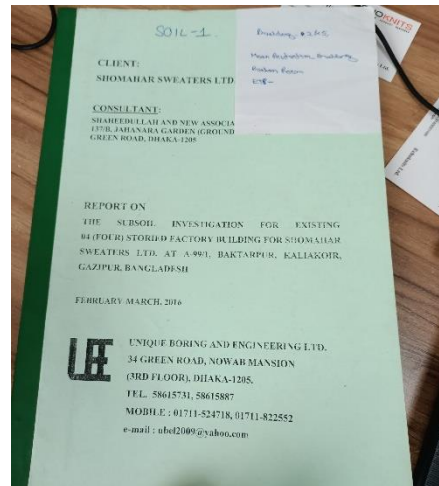
Unbraced racks on floor

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-05: Lack of foundation details & soil test report. (Building-05 (ETP))



ETP Building



Ground floor slab

Description: Foundation details and soil test report were not found for the two storied ETP Building. Factory has provided a soil test report for a 4-storied Factory Building in which bore hole location is almost 27 m far from the ETP building. Detail engineering assessment (DEA) required to be carried out for the structure.

Observation-06: Falling hazard risk on roof. (Building-05 (ETP))



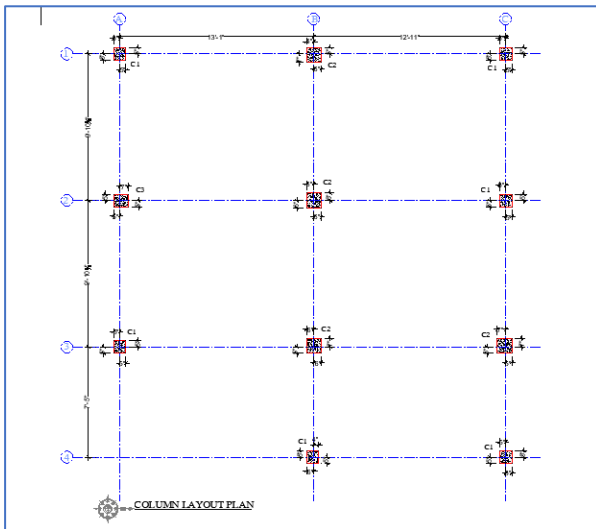
Parapet on roof



Parapet on roof

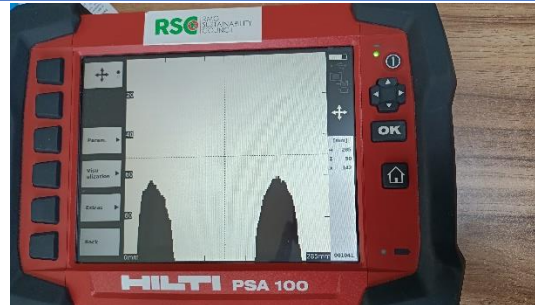
Description: Falling hazard risk was observed on the roof of ETP building. The existing parapet wall's height was found only 24 inches. Building engineer is required to increase the wall height at least 42 inches to mitigate the falling hazard risk.

Observation-07: Discrepancies in as-built drawings. (Building-06 (Maintenance Building))



Column Layout

COLUMN SCHEDULE:		
C2= 12"X12" REINF. = 6-16mm Ø CL. COVER=1.5 INCH	C1= 10"X10" REINF. = 4-16mm Ø CL. COVER=1.5 INCH	C3= 10"X12" REINF. = 6-16mm Ø CL. COVER=1.5 INCH



Number of rebar by ferro scan

Description: Number of rebar in C-2 column was found 4 nos instead of 6 nos. Building engineer is required to survey the whole structure and prepare accurate as-built drawings.

Observation-8: Lack of design report. (Building-06 (Maintenance Building))



Maintenance Building



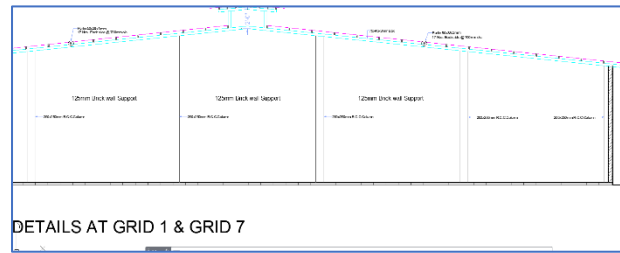
Core cutting location

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 section 1.9.1.1 and section 1.9.1.2, part 6 of BNBC. On the other hand, core cutting location was found onsite but core cutting layout was not available. The building engineer is required to prepare the design report considering concrete strength based on core test report.

Observation-09: Lack of information in the as-built drawings. (Shed-12 (Empty Carton Store))



Connection



Sectional details

Description: Connection details are not shown in the grid sections. Also, lintel or tie beams are not shown in the sectional details of end grid. Building engineer is required to survey the whole structure and prepare complete structural drawings.

Observation-10: Apparently inadequate connection. (Shed-12 (Empty Carton Store))



Connection



Truss frame

Description: Lack of lateral stability system (strut and bracing), apparent inadequate members and non-engineered connection was observed. The building engineer is required to check the member, connection & stability system of the structure and suggest proper alternatives accordingly.

Observation-11: Non-structural elements not anchored or braced. (Shed-12 (Empty Carton Store))



Racks



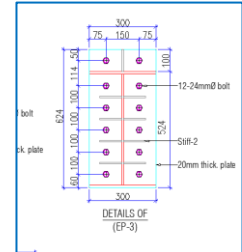
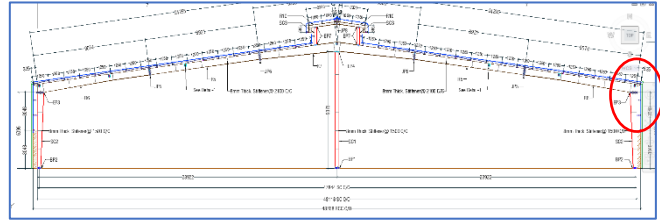
Racks

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: Discrepancies in as-built drawings. (Shed – 13 (Warehouse))



Vertical bracing and compression strut



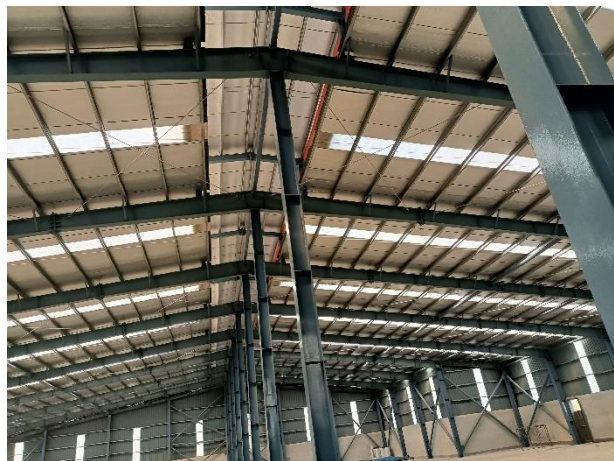
Joint EP-3

Description: Compression strut layout and connection details of vertical bracing were not found in the drawings. Also, the number of bolts were not matched in joint type EP-3. On site 10 nos of bolts were found instead of 12 nos. Building engineer is required to survey the whole structure and prepare complete structural drawings.

Observation-13: Lack of design report. (Shed – 13 (Warehouse))



Warehouse



Frame Section

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 section 1.9.1.1 and section 1.9.1.2, part 6 of BNBC.

3. Action Plan:

Item No.	Observation	Action Plan	Timeline
1	Mismatches in as-built drawings. (Building-04 (General Store))	Building engineer is required to prepare the as-built drawings with complete structural details.	within 6 weeks
2	Lack of design report. (Building-04 (General Store))	Building engineer is required to prepare the design documents including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2, part-6 of BNBC and submit it to RSC for review.	within 6 weeks
3	Lack of design report. (Building-04 (General Store))	Implement remediation work if required.	within 6 months
4	Cracks found on the load bearing walls. (Building-04 (General Store))	Building engineer is required to investigate the cause of cracking and repair with a suitable method.	within 6 weeks
5	Non-structural elements are not anchored or braced. (Building-04 (General Store))	The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.	within 6 weeks
6	Lack of foundation details & soil test report. (Building-05 (ETP))	Detail engineering assessment (DEA) required to be carried out for the structure.	within 6 weeks
7	Lack of foundation details & soil test report. (Building-05 (ETP))	Building engineer is required to survey the whole structure and prepare full set of as-built drawings.	within 6 weeks
8	Lack of foundation details & soil test report. (Building-05 (ETP))	Produce and actively manage floor load plan considering floor, column, and foundation capacity.	within 6 months
9	Lack of foundation details & soil test report. (Building-05 (ETP))	Implement remediation work if required.	within 6 months
10	Lack of foundation details & soil test report. (Building-05 (ETP))	Implement accepted floor load plan	within 6 months
11	Falling hazard risk on roof. (Building-05 (ETP))	Building engineer is required to increase the wall height at least 42 inches to mitigate the falling hazard risk.	within 6 months
12	Discrepancies in as-built drawings. (Building-06 (Maintenance Building))	Building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks

13	Lack of design report. (Building-06 (Maintenance Building))	Building engineer is required to prepare the design documents including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2, part-6 of BNBC and submit it to RSC for review.	within 6 weeks
14	Lack of design report. (Building-06 (Maintenance Building))	Carry out remedial works (if any) after review by RSC.	within 6 months
15	Lack of design report. (Building-06 (Maintenance Building))	Implement accepted floor load plan	within 6 months
16	lack of information in the as-built drawings. (Shed-12 (Empty Carton Store))	Building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
17	Apparently inadequate connection. (Shed-12 (Empty Carton Store))	The building engineer is required to check the member, connection & stability system of the structure and suggest proper alternatives accordingly.	within 6 weeks
18	Apparently inadequate connection. (Shed-12 (Empty Carton Store))	Implement remediation work if required.	within 6 months
19	Non-structural elements not anchored or braced. (Shed-12 (Empty Carton Store))	The factory is required to anchor/brace all non-structural elements adequately to resist earthquake forces.	within 6 weeks
20	Discrepancies in as-built drawings. (Shed – 13 (Warehouse))	Building engineer is required to survey the whole structure and prepare complete as-built drawings.	within 6 weeks
21	Lack of design report. (Shed – 13 (Warehouse))	Building engineer is required to prepare the design documents including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2, part-6 of BNBC and submit it to RSC for review.	within 6 weeks
22	Lack of design report. (Shed – 13 (Warehouse))	Implement remediation work if required.	within 6 months