

SHOVON KNITWEAR LTD (Extension)

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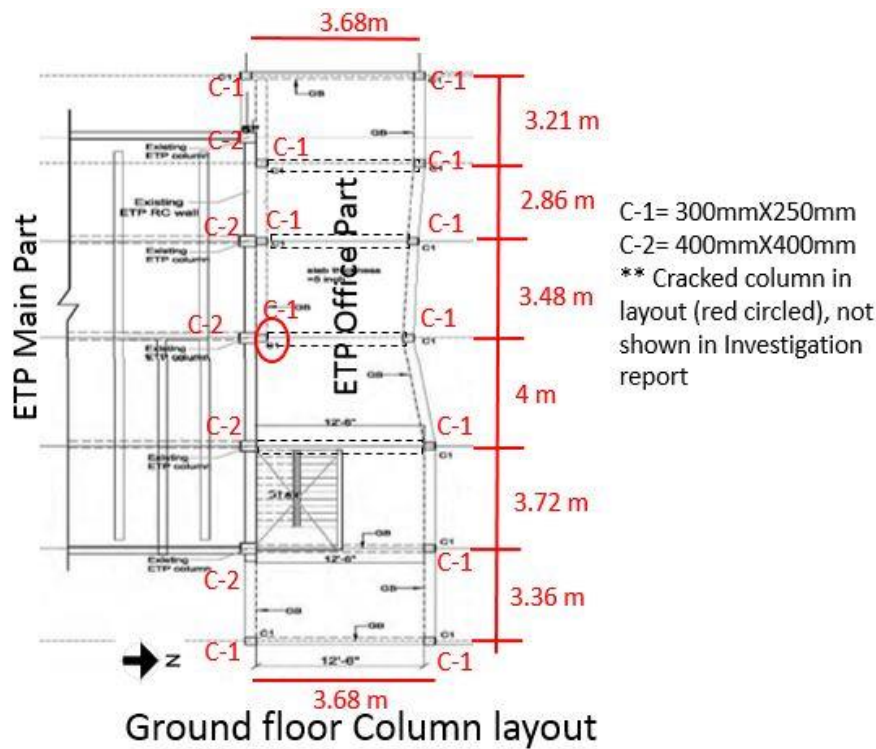


Buildings Information

1. Effluent Treatment Plant (ETP) (G+2)
2. Substation Building (G+1)
3. Medical & Childcare Room (single storied)

Observations

**Crack on ground floor column, brick wall and beam
column joint**



Cracked column in layout



Crack on column surface

At the time of inspection, crack was found on column surface in ground floor at marked location (see layout). The factory must immediately engage a consultant to investigate the extent and reason of cracks, prepare a detailed investigation report with proper remediation methodology and submit to RSC for review.



Locally repaired crack on column

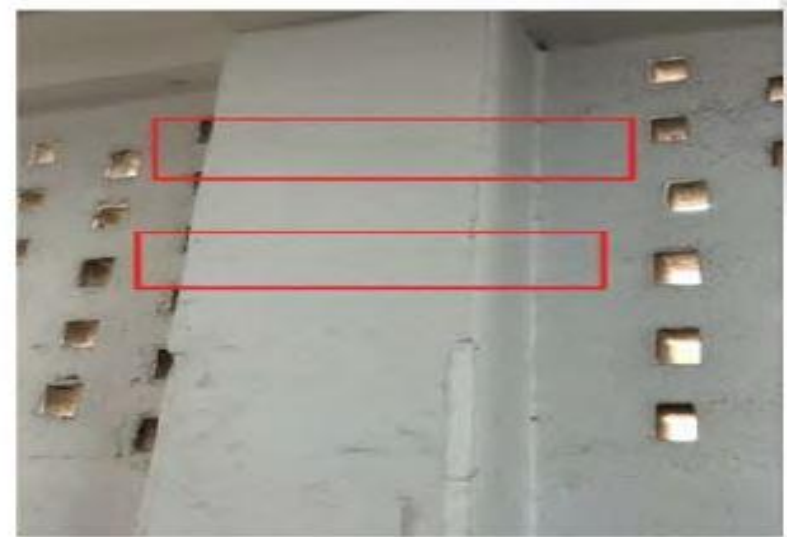
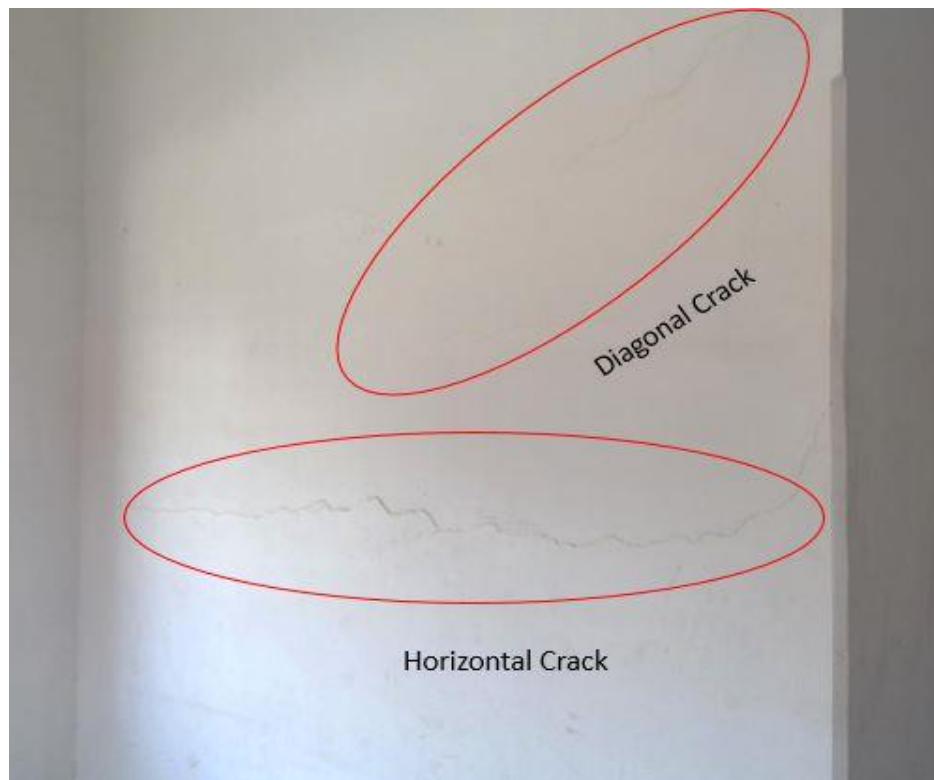


Fig: Pictorial evidence of Crack -1

Horizontal crack shown on column in Investigation report

A crack investigation report was available on site, which shows horizontal cracks in two columns at the ground floor. However, those cracks in columns have been locally repaired by plaster and paint. Further, in the investigation report those cracks were mentioned as structural cracks without chipping the cracked surface. The factory must immediately engage a consultant to investigate the cracks in depth, prepare a detailed investigation report with proper remediation methodology and submit to RSC for review.



Horizontal and diagonal crack found on brick wall



Crack on beam-column joint

Some cracks on wall were still visible in different locations and some were found repaired locally by plaster and paint. Also, crack was observed in beam-column joint at ground floor. The factory must immediately engage a consultant to identify the reason of cracks, prepare a detailed investigation report with proper remediation methodology and submit to RSC for review.

Absence of design documents and lack of information in as-built drawing



Effluent Treatment Plant (ETP)

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with 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 as per BNBC. At the time of inspection, design report was not available. Also, structural drawing was not available for the office part. Building engineer is required to prepare a design report and a full set of as-built drawing in compliance with section 1.9.1.1 and section 1.9.1.2 (BNBC, part-6).

Significant vibration at ground floor



Heavy vibration at ground floor near blower machine

Significant vibration felt at ground floor near the blower machine which may developed crack in structural elements due to the dynamic effect. Building engineer is required to investigate the area and propose a suitable remediation plan to avoid any hazardous situation in future.

Apparently non engineered shed



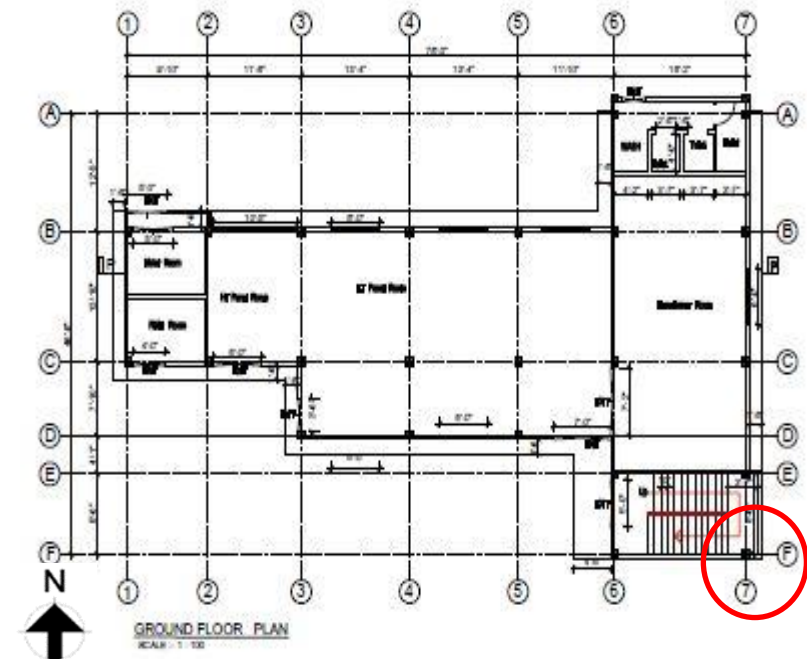
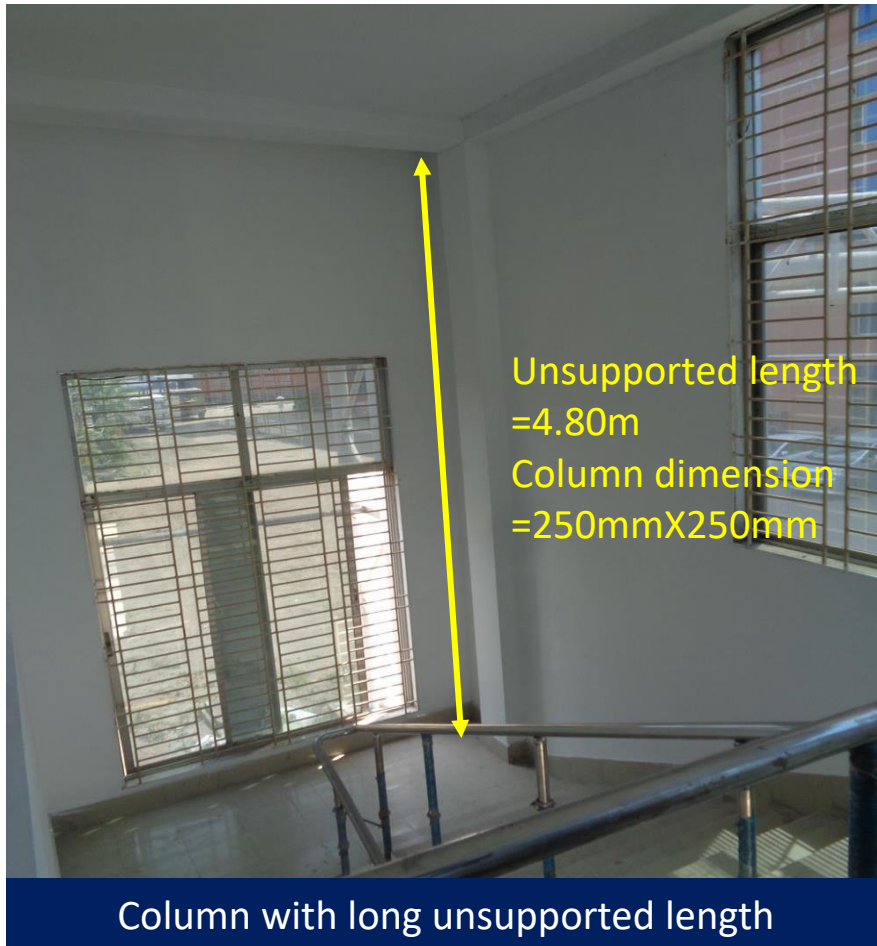
Rooftop Shed-1



Rooftop Shed-2

Both Shed-1 and Shed-2 were appeared to be non engineered due to lack of lateral stability system and apparently inadequate member sizes. The building engineer is required to check the lateral stability of the sheds against lateral forces.

Columns appear to be slender



Long columns in layout

The column is 4.80m long with least dimension 250 mm which may be critical for slenderness effect. Building engineer is required to check the adequacy of the highlighted columns considering slenderness effect.

Observations: Substation Building

Absence of design documents



Substation Building

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with 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 as per BNBC. At the time of inspection, no design report was available. Building engineer is required to prepare a design report and a full set of as-built drawing in compliance with section 1.9.1.1 and section 1.9.1.2 (BNBC, part-6).

Lack of lateral stability

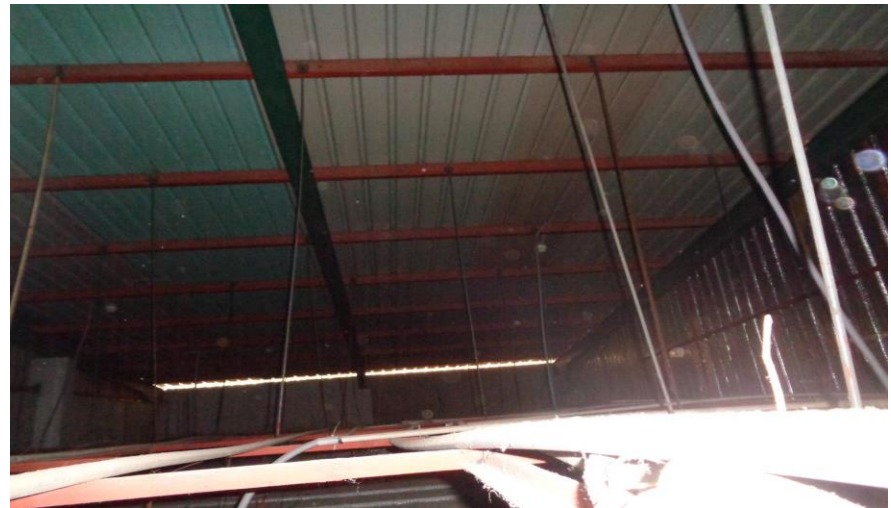


A tie beam in short direction only at one grid



No tie beam in short direction at all grid

A tie beam is provided in short direction only at one grid. Tie beam is not provided along the long direction where the unsupported eave height is 5.48 m. Also, no bracing system is provided to resist the lateral loads. Building engineer is required to check the lateral stability of the shed and suggest proper remedial measure accordingly (where required).



No bracing system is provided

Observations: Medical & Childcare Room

Absence of design documents



Substation Building

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with 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 as per BNBC. At the time of inspection, no design report was available. Building engineer is required to prepare a design report and a full set of as-built drawing in compliance with section 1.9.1.1 and section 1.9.1.2 (BNBC, part-6).

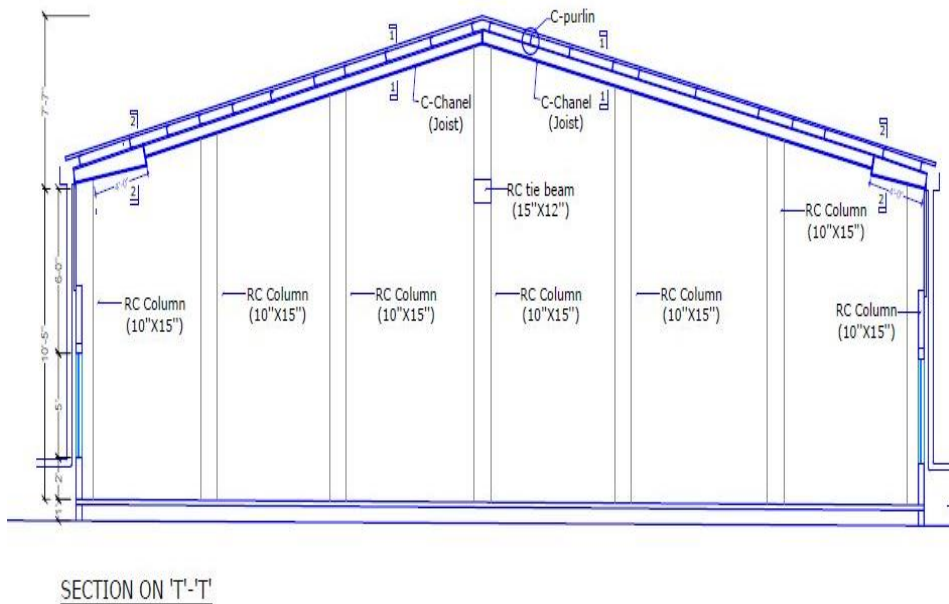
Structural connection with adjacent shed



The shed is structurally connected by beam with another shed. Building engineer is required to consider the lateral connections with adjacent shed during the structural analysis. And carry out remedial action if suggested by the building engineer.

Observations: Medical & Childcare Room

Discrepancy in as-built drawing



C-shaped rafter section in the as-built drawing

C-shaped rafter section shown in the as-built drawing but I-shaped rafter found onsite. However, the building engineer is required to survey the structural system and update the as-built drawing.



I-section rafter found onsite



ETP: Stone aggregate



Substation Building: Brick aggregate



Ferro scanning

Tests Carried Out:

Problems Observed

Effluent Treatment Plant (ETP):

Item 01: Crack on ground floor column, brick wall and beam column joint

Item 02: Absence of design documents and lack of information in as-built drawing

Item 03: Significant vibration at ground floor

Item 04: Apparently non engineered shed

Substation Building:

Item 05: Columns appear to be slender

Item 06: Absence of design documents.

Medical & Childcare Room:

Item 07: Lack of lateral stability.

Item 08: Absence of design documents.

Item 09: Structural connection with adjacent shed

Item 10: Discrepancy in as-built drawing.

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Crack on ground floor column, brick wall and beam column joint (Effluent Treatment Plant (ETP))	The factory must immediately engage a consultant to investigate the extent and reason of cracks, prepare a detailed investigation report with proper remediation methodology and submit to RSC for review.	Immediate
02	Crack on ground floor column, brick wall and beam column joint (Effluent Treatment Plant (ETP))	Implement remediation works as per investigation report.	6-weeks
03	Absence of design documents and lack of information in as-built drawing (Effluent Treatment Plant (ETP))	Building engineer is required to prepare a design report and a full set of as-built drawing in compliance with section 1.9.1.1 and section 1.9.1.2 (BNBC).	6-weeks
04	Absence of design documents and lack of information in as-built drawing (Effluent Treatment Plant (ETP))	Implement remediation work if required.	6-months
05	Significant vibration at ground floor (Effluent Treatment Plant (ETP))	Building engineer is required to investigate the area and propose a suitable remediation plan to avoid any hazardous situation in future.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
06	Significant vibration at ground floor (Effluent Treatment Plant (ETP))	Implement remediation work if required.	6-months
07	Apparently non engineered shed (Effluent Treatment Plant (ETP))	The building engineer is required to check the lateral stability of the sheds against lateral forces.	6-weeks
08	Apparently non engineered shed (Effluent Treatment Plant (ETP))	Implement remediation work where required.	6-months
09	Columns appear to be slender (Substation Building)	Building engineer is required to check the adequacy of the highlighted columns considering slenderness effect.	6-weeks
10	Columns appear to be slender (Substation Building)	Implement remediation work if required.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
11	Absence of design documents (Substation Building)	Building engineer is required to prepare a design report in compliance with section 1.9.1(BNBC).	6-weeks
12	Absence of design documents (Substation Building)	Implement remediation work if required.	6-months
13	Lack of lateral stability (Medical & Childcare Room)	Building engineer is required to check the lateral stability of the shed and suggest remedial measures accordingly.	6-weeks
14	Lack of lateral stability (Medical & Childcare Room)	Implement remediation work if required.	6-months
15	Absence of design documents (Medical & Childcare Room)	Building engineer is required to prepare a design report in compliance with section 1.9.1 (BNBC, part-6).	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
16	Absence of design documents (Medical & Childcare Room)	Implement remediation work if required.	6-months
17	Structural connection with adjacent shed (Medical & Childcare Room)	Building engineer is required to consider the lateral connections with adjacent shed during the structural analysis.	6-weeks
18	Structural connection with adjacent shed (Medical & Childcare Room)	Implement remediation work if required.	6-months
19	Discrepancy in as-built drawing (Medical & Childcare Room)	Building engineer is required to update the as-built drawing as per onsite condition.	6-months
20	Discrepancy in as-built drawing (Medical & Childcare Room)	Implement remediation work if required.	6-months