

Midland Knitwear Ltd. (Extension)

Stadium Link Road, Narayanganj 1421

(23.643975, 90.488281)

20 December 2023



1. Building Information

Extension Building-2: The structure is an eight-storied (G+M+7) Reinforced Concrete (RC) building.

Admin Building: The structure is a six-storied (G+5) RC building.

Dyeing and Finishing (Office Building): The structure is a three storied (G+2) steel building.

Dyeing & Finishing Shed-1: The structure is a single storied steel truss shed.

Dyeing & Finishing Shed-2: The structure is a single storied steel truss shed.

Sample Dyeing and Maintenance Shed-3: The structure is a single storied steel truss shed.

2. Observations

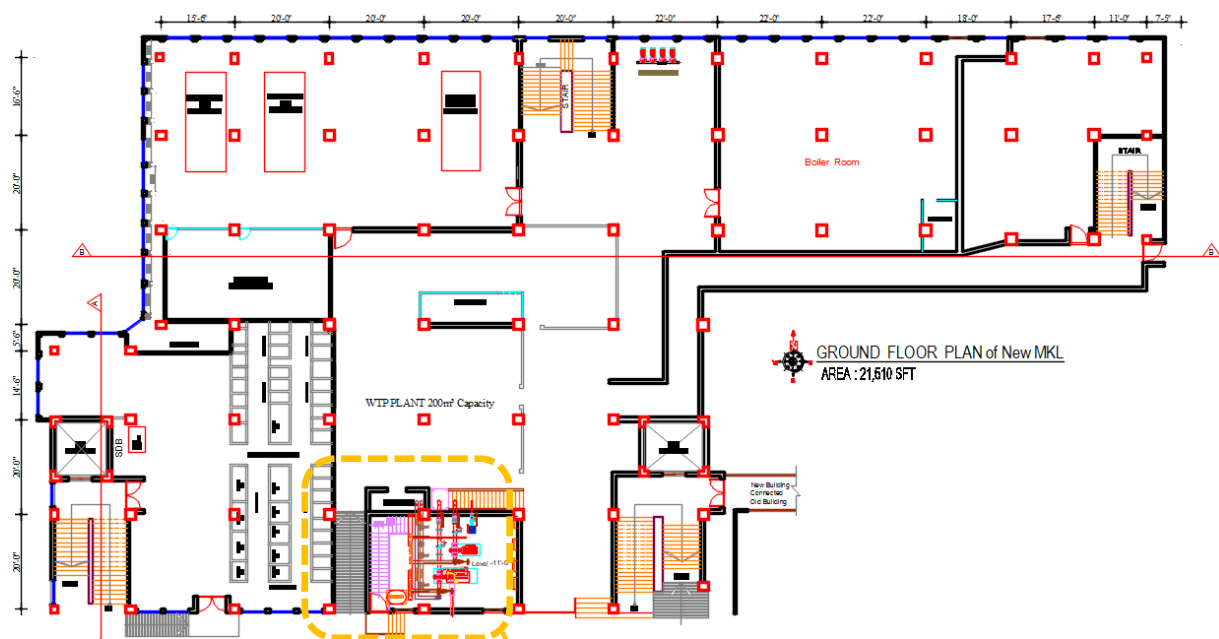
Observation-1: Considered loading doesn't comply with BNBC 2006. (Extension building-02)

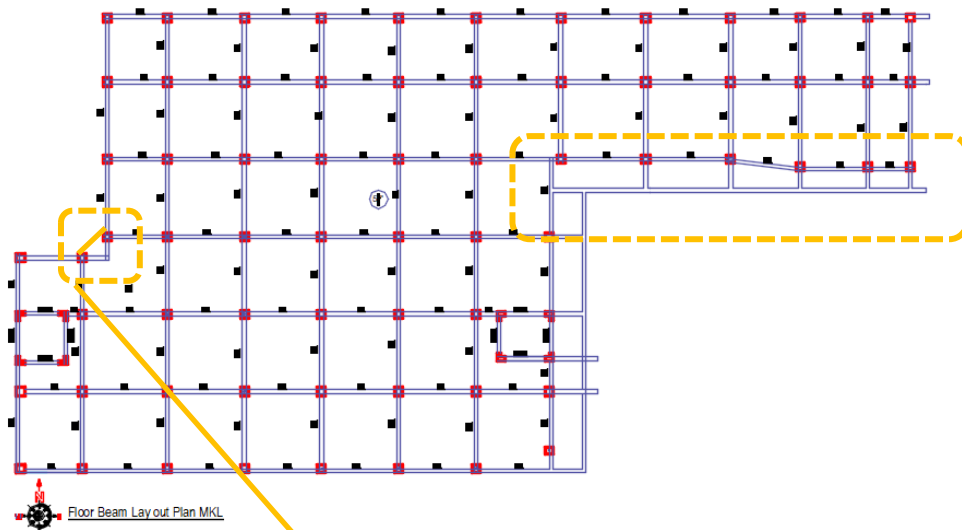


Description: During the inspection, live load for storage area in several locations was found considered 4 kPa which doesn't comply with BNBC 2006. Also, in stairs, the live load was considered 4 kPa instead of 5 kPa. Furthermore, the load of large vessels over the ground floor suspended slab was not incorporated in the analysis model.

The building engineer is required to survey the whole structure revise the design documents as per BNBC loading and submit it to RSC for review.

Observation-2: Discrepancies in as-built drawings (Extension building-02)

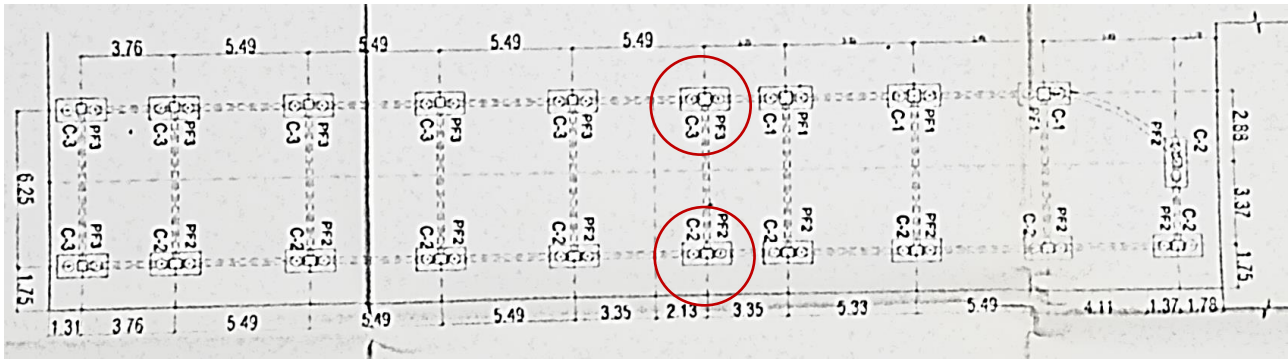




Description: In the as-built drawings, no information was found regarding the mezzanine portion. Also, the beam layout did not match the actual site condition.

The building engineer is required to survey the full structure and produce accurate as-built drawings.

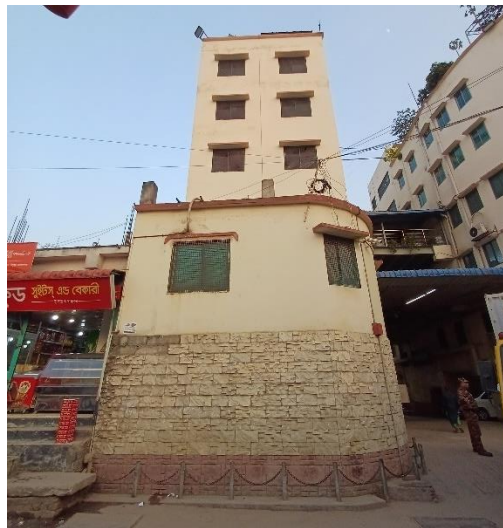
Observation-3: Stress in column exceeds normal design limit (Admin Building).



Description: The cursory calculation indicates that column stress exceeds the normal design limit considering a typical floor live load of 2kPa, roof live load of 1.5 kPa, and concrete strength of 16.31 MPa.

The building engineer is required to review the design, loads, and column stresses for the marked columns based on in-situ material strength.

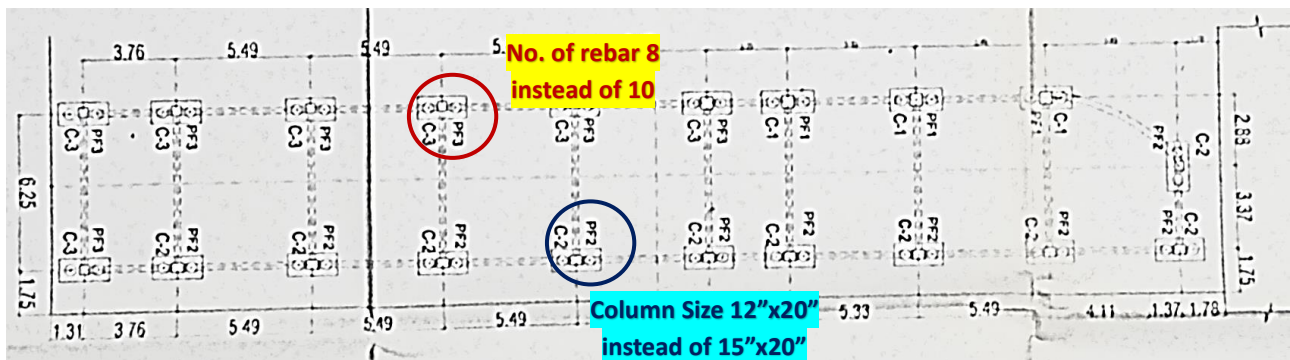
Observation-4: Lack of design report (Admin Building).



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 documents shall include as-built drawings and a design report which shall be prepared in compliance with section 1.9.1, part-6 of BNBC.

During inspection, the design report was not available on site. The building engineer is required to prepare a design report based on in-situ material strength & software-based analysis and submit it to RSC for review.

Observation-5: Discrepancies in as-built drawings (Admin Building).



Description: During the inspection, mismatches were found between the onsite condition and the as-built drawing. Discrepancies were found in column size (C-2), and column rebar (C-3). Also, the beam layout was missing in the as-built drawings.

The building engineer is required to survey the full structure and produce accurate as-built drawings.

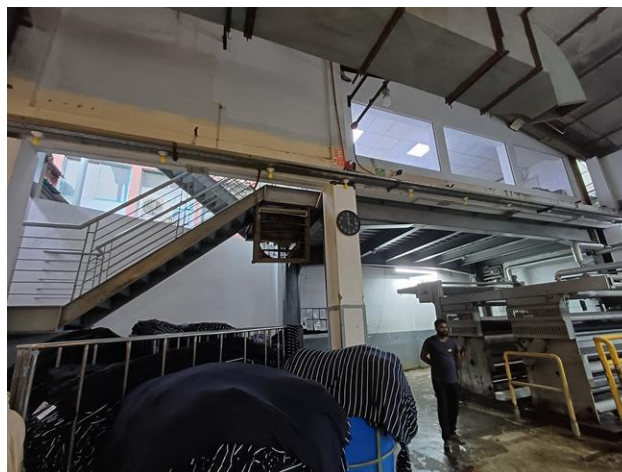
Observation-6: Load transfer from the connection bridge (Admin Building).



Description: During the inspection, a connecting bridge was observed between the admin building and Liberty Knitwear Ltd (ID-9501) at the 2nd-floor and 3rd-floor levels.

The building engineer is required to survey the full structure and produce accurate as-built drawings. Also building engineer is required to check the load transfer mechanism from the connecting bridge and include in design report. Factory is required to submit the required design documents to RSC for review.

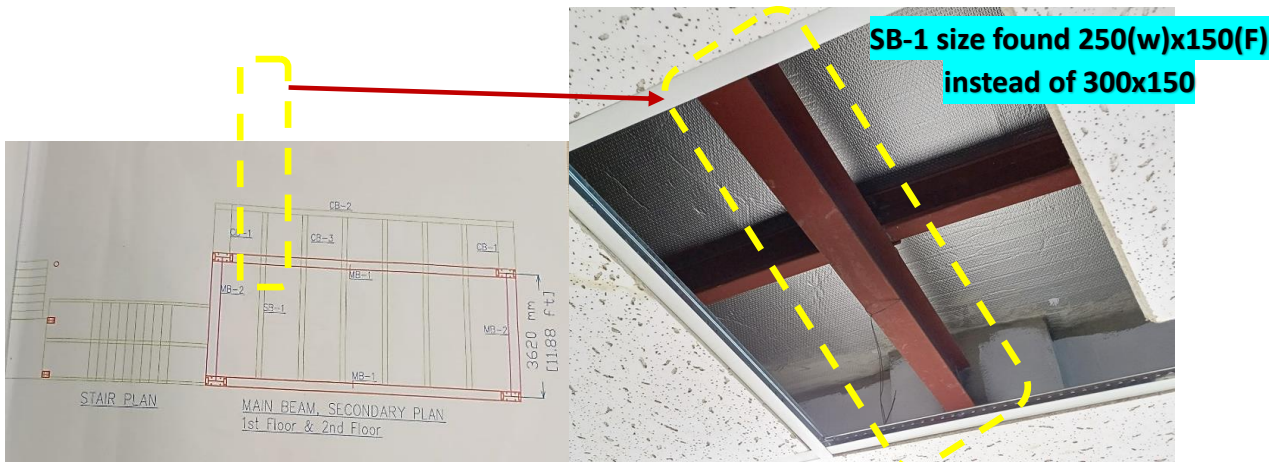
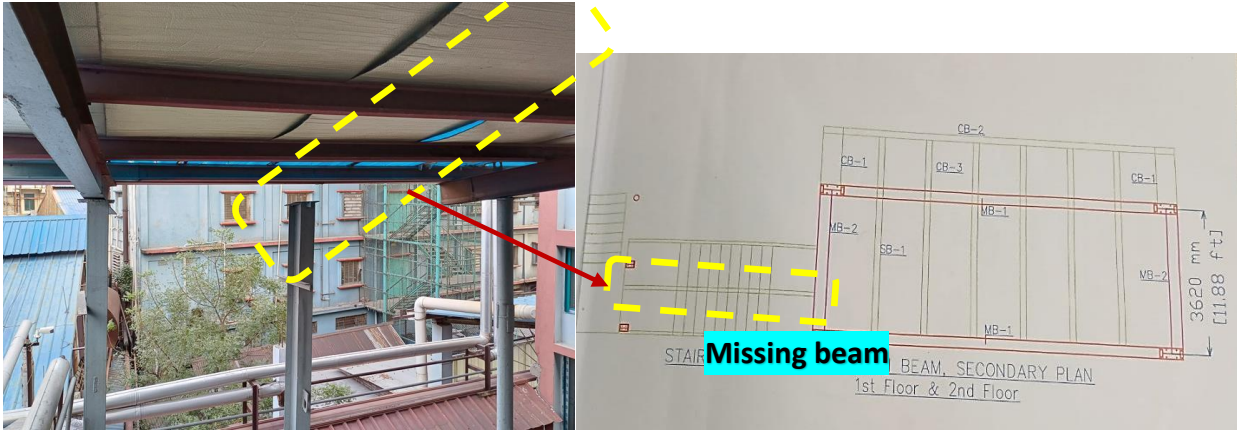
Observation-7: Lack of design report (Dyeing and Finishing (Office Building)).



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 documents shall include drawings as built and a design report which shall be prepared in compliance with section 1.9.1, part-6 of BNBC.

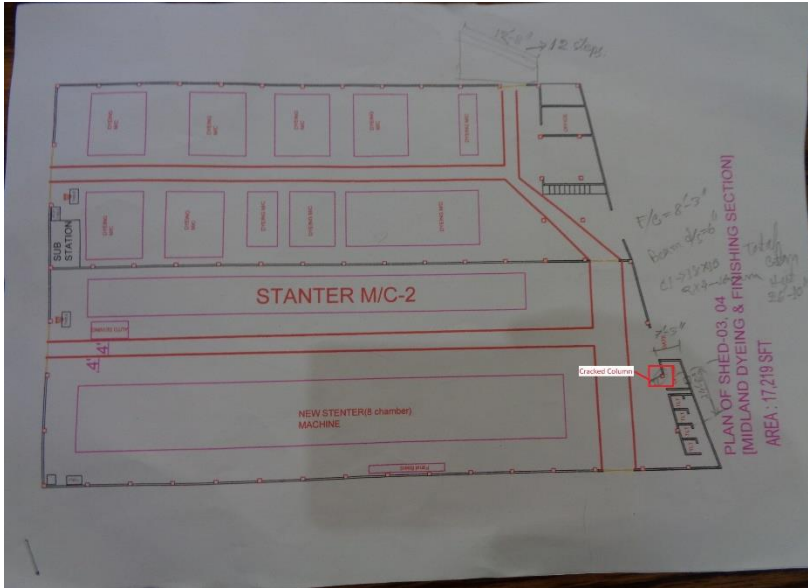
During the inspection, the design report was not available on site. The building engineer is required to prepare a design report based on in-situ material strength & software-based analysis and submit it to RSC for review.

Observation-8: Incomplete as-built drawings (Dyeing and Finishing (Office Building))



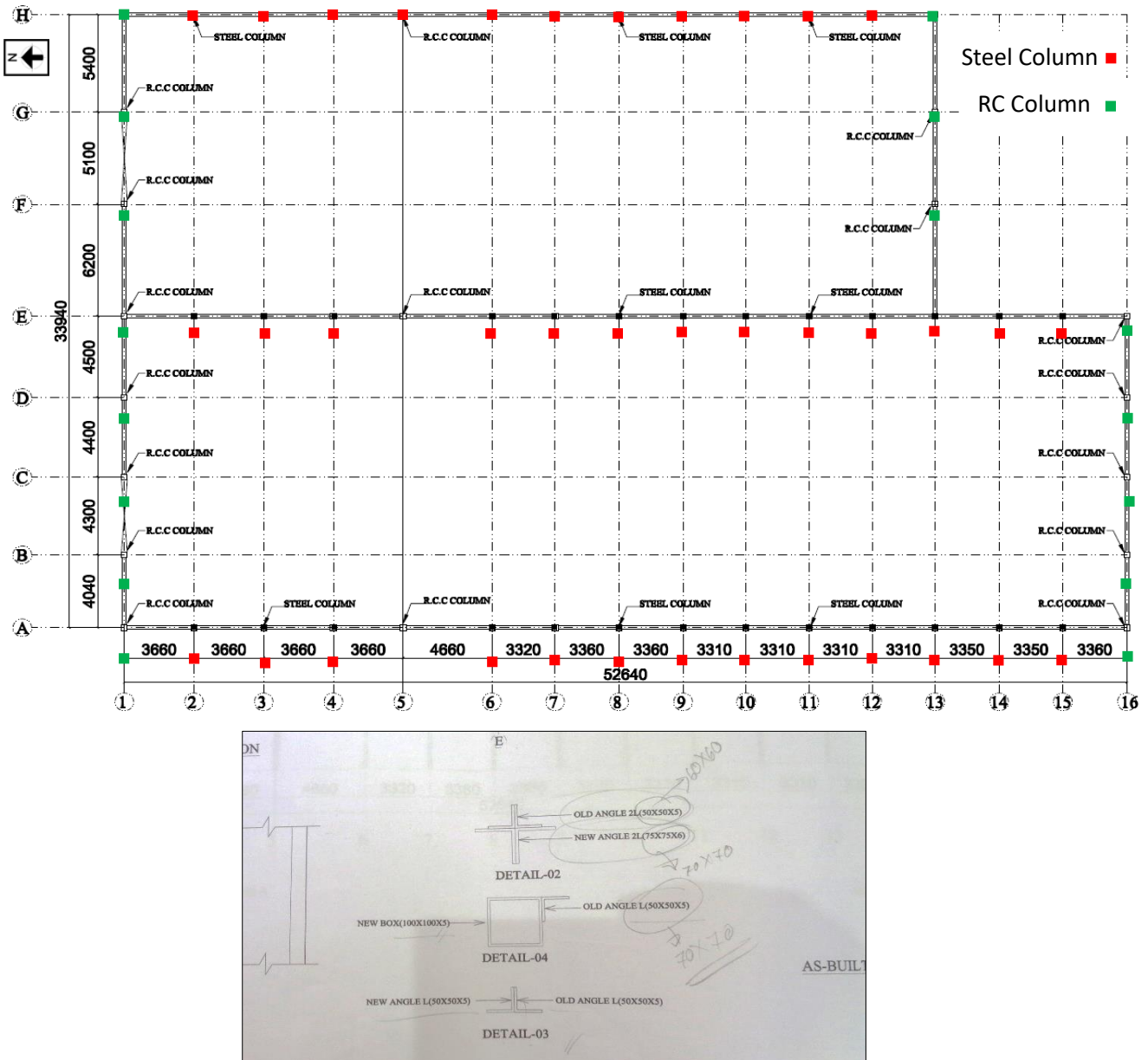
Description: During the inspection, the Roof beam was found missing. Also, the SB-1 beam size was found changed. Furthermore, no connection details and dimensions were provided. The building engineer is required to survey the full structure and produce accurate as built drawings

Observation-9: Crack found in column (Dyeing & Finishing Shed-1).



Description: Crack was found in the ground floor column of the two-storied RC mezzanine of the Dyeing & Finishing Shed-1 marked in the provided layout. The factory must immediately engage a consultant to investigate the cracks and prepare a detailed investigation report with proper remediation methodology. Any safety measures, if required as suggested by the consultant, must be taken immediately to ensure safety.

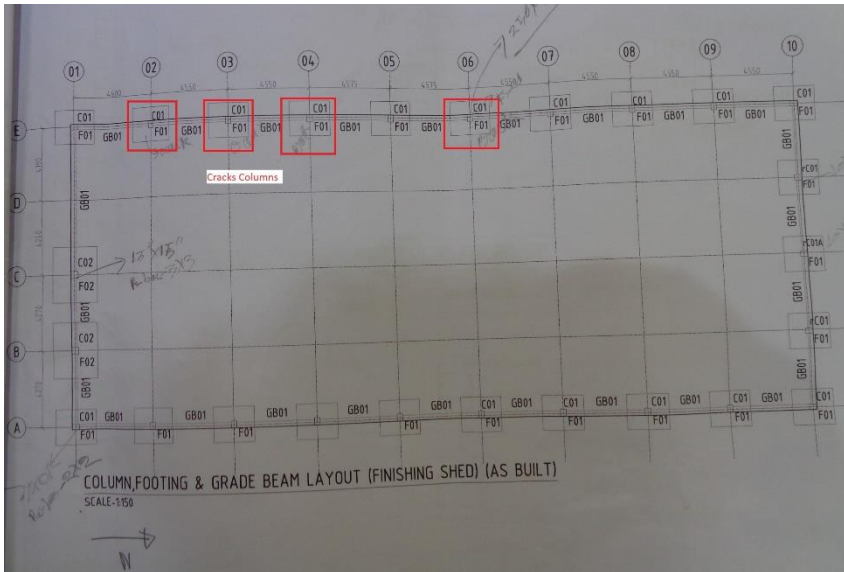
Observation-10: Inconsistencies in as-built drawings and lack of design documents.
(Dyeing & Finishing Shed-1).



Description: During the inspection, mismatch was found between the provided as-built drawing and the actual site condition. Steel columns were found in the red-marked location which has not been shown in the drawing. The bottom cord angle leg length was found to be 60mm and 70mm instead of 50mm and 75mm respectively. The angle leg length of the top cord was found 70mm instead of 50mm. The Truss layout has not been shown properly in the drawing. No information has been provided for the RC Mezzanine.

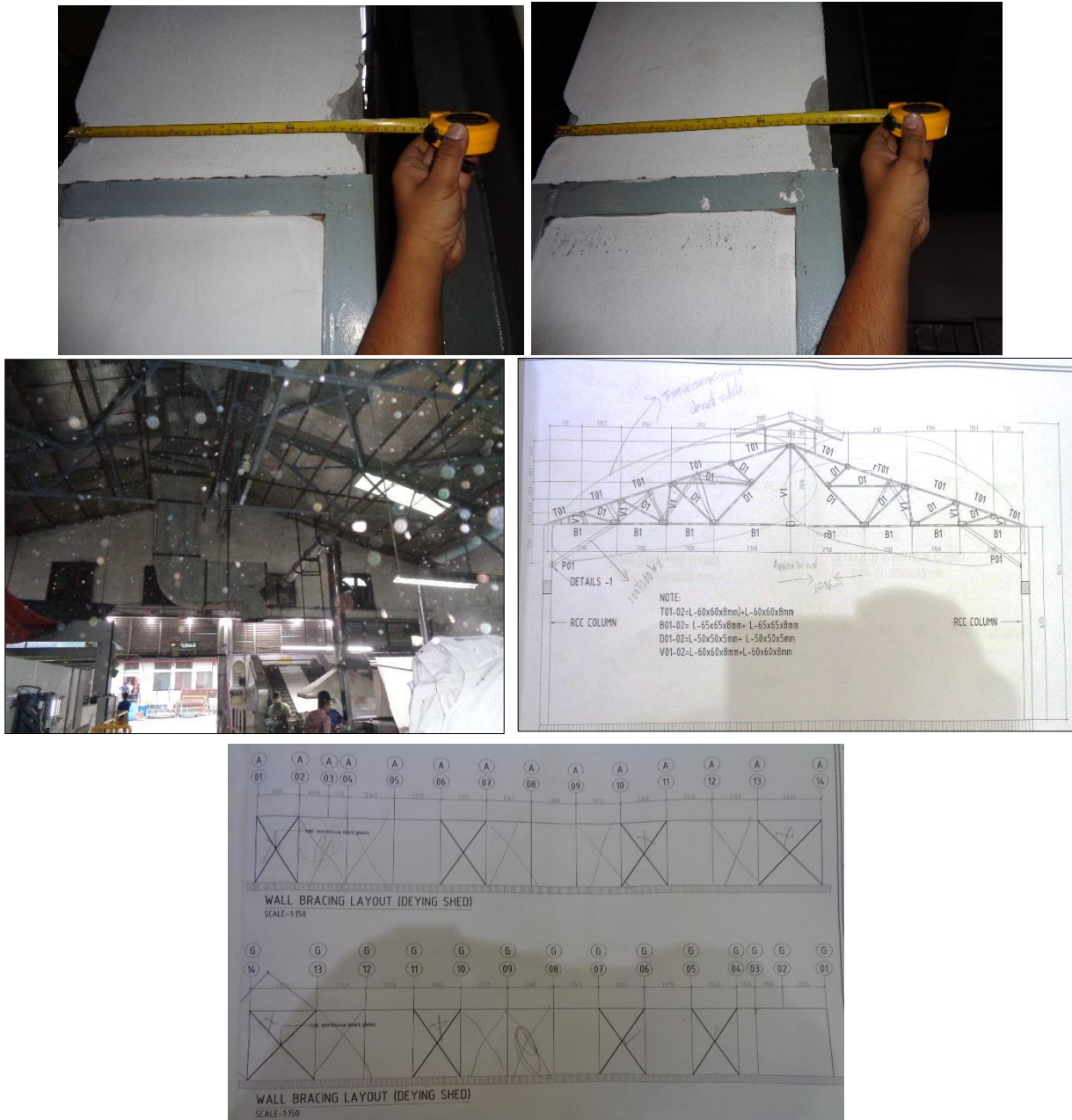
As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. During the inspection, the design report and as-built structural drawing were not available on site. The building engineer is required to survey the whole structure and prepare accurate as building as-built drawings. Also Building engineer is required to prepare a set of design documents including as-built drawings, live load plan at the roof and a design report based on actual site condition in compliance with section 1.9.1, part-6 of BNBC.

Observation-11: Crack found in column (Dyeing & Finishing Shed-2: Part A-Finishing Shed).



Description: Crack was found in the ground floor column of Dyeing & Finishing Shed 2 marked in provided layout. The factory must immediately engage a consultant to investigate the cracks and prepare a detailed investigation report with proper remediation methodology. Any safety measures, if required as suggested by the consultant, must be taken immediately to ensure safety.

Observation-12: Inconsistencies in as-built drawings and lack of design documents.
(Dyeing & Finishing Shed-2).



Description: During the inspection, mismatch was found between the provided as-built drawing and the actual site condition. The size of the RC columns do not match the as-built drawing. The arrangement of the vertical and diagonal members of the truss do not match the site condition. The truss was found at the gable but shown in the as-built drawing. The layout of the vertical bracing does not match with site conditions.

As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. During the inspection, the design report and as-built structural drawing were not available on site.

The building engineer is required to survey the whole structure and prepare accurate as building as-built drawings. Also Building engineer is required to prepare a set of design documents including as-built drawings, live load plan at the roof and a design report based on actual site condition in compliance with section 1.9.1, part-6 of BNBC.

Observation 13: Inconsistencies in as-built drawings and lack of design documents.
(Sample Dyeing and Maintenance Shed-3)



Description: The size of the truss members has not been mentioned in the as-built drawing. Also, the mismatch was found in column size and re-bar.

As per BNBC, every building or structure designed shall have its design documents prepared following the provision of Section 1.9.1. During the inspection, the design report and as-built structural drawing were not available on site.

The building engineer is required to survey the whole structure and prepare accurate as building as-built drawings. Also Building engineer is required to prepare a set of design documents including as-built drawings, live load plan at the roof and a design report based on actual site condition in compliance with section 1.9.1, part-6 of BNBC.

3. Action Plan

Observation	Action Plan	Timeline
The load considered doesn't comply with BNBC 2006. (Extension building-02)	Produce and actively manage floor live load plans as per BNBC.	within 6 weeks
	The building engineer is required to revise the design document based on actual site conditions and submit it to RSC for review.	within 6 weeks
	Implement the remediation work if any	within 6 months
	Implement a floor management program	within 6 months
Discrepancies in as-built drawings (Extension building-02)	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
Stress in the column exceeds the normal design limit (Admin Building).	Verify in-situ concrete stresses by core strength from 4 columns from lower tier columns.	Immediate
	The building engineer is required to review the design, loads and column stresses.	within 6 weeks
	Produce and actively manage a loading plan for all floor plates within the factory considering floor capacity and column capacity.	within 6 weeks
	Implement the remediation work if any	within 6 months
	Implement a floor management program	within 6 months
Lack of design report (Admin Building).	The building engineer is required to prepare a full set of design documents in compliance with BNBC section-1.9.1; Part-6.	within 6 weeks
	Implement the remediation work if any	within 6 months
Discrepancies in as-built drawings (Admin Building).	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
Load transfer from the connection bridge (Admin Building).	The building engineer is required to prepare accurate as-built drawings and check the adequacy of connecting bridge as part of design documents.	within 6 weeks
Lack of design report (Dyeing and Finishing (Office Building)).	The building engineer is required to prepare a full set of design documents in compliance with BNBC section-1.9.1; Part-6.	within 6 weeks
	Implement the remediation work if any	within 6 months
Incomplete as-built drawings (Dyeing and Finishing (Office Building)).	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks

Crack found in column (Dyeing & Finishing Shed-1).	The building engineer is required to investigate the cracks and prepare a detailed investigation report with proper remediation methodology.	Immediate
	Any safety measures, if required as suggested by the consultant, must be taken immediately to ensure safety.	Immediate
	Complete the remediation as suggested in the investigation report	within 6 weeks
Inconsistencies in as-built drawings and lack of design documents. (Dyeing & Finishing Shed-1).	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
	The building engineer is required to prepare a full set of design documents in compliance with BNBC section-1.9.1; Part-6.	within 6 weeks
	Implement the remediation work if any	within 6 months
Crack found in column (Dyeing & Finishing Shed-2: Part A-Finishing Shed).	The building engineer is required to investigate the cracks and prepare a detailed investigation report with proper remediation methodology.	Immediate
	Any safety measures, if required as suggested by the consultant, must be taken immediately to ensure safety.	Immediate
	Complete the remediation as suggested in the investigation report	within 6 weeks
Inconsistencies in as-built drawings and lack of design documents. (Dyeing & Finishing Shed-2).	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
	The building engineer is required to prepare a full set of the design documents in compliance with BNBC section-1.9.1; Part-6.	within 6 weeks
	Implement the remediation work if any	within 6 months
Inconsistencies in as-built drawings and lack of design documents. (Sample Dyeing and Maintenance Shed-3).	The building engineer is required to survey the whole structure and prepare accurate as-built drawings.	within 6 weeks
	The building engineer is required to prepare a full set of the design documents in compliance with BNBC section-1.9.1; Part-6.	within 6 weeks
	Implement the remediation work if any	within 6 months