

Shad Fashion Ltd. (New Building)

Gorat, Ashulia, Savar, Dhaka
(23.944135, 90.302859)
22nd December 2020.



Building Information

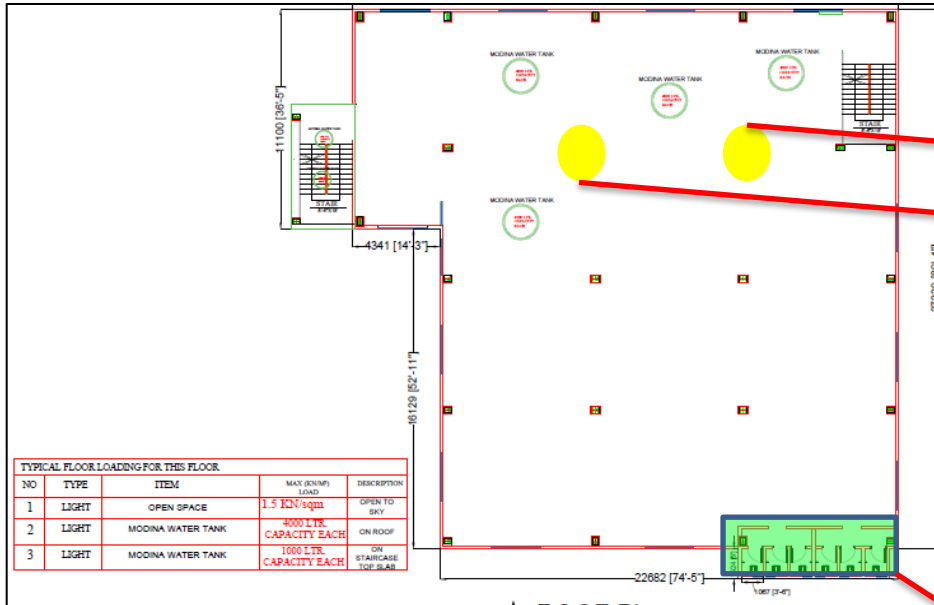
1. New Building. (G+2)

Observations

Discrepancies in as built drawing

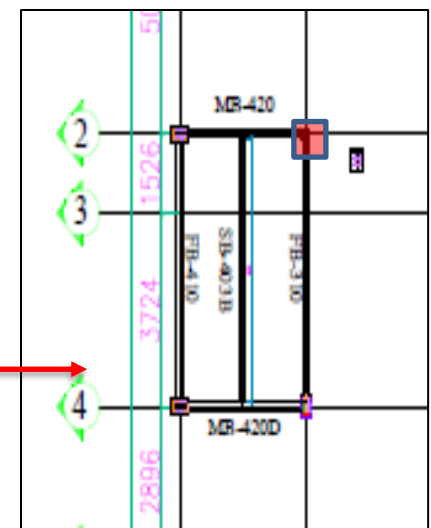
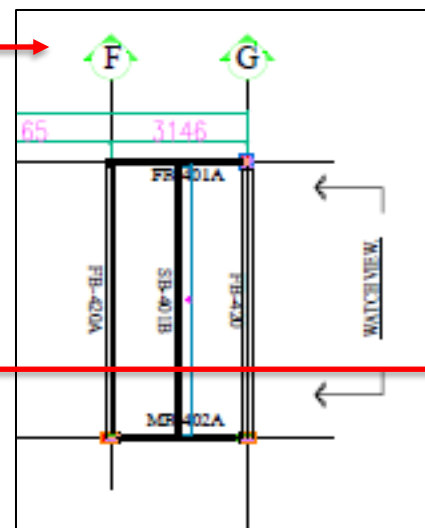
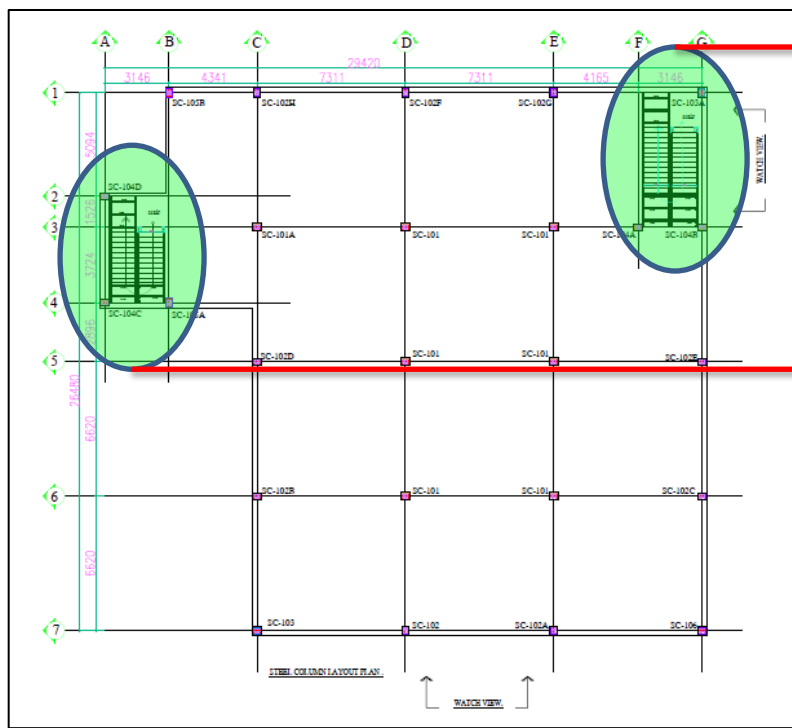


4000-liter water tank



There are 2 water tanks on roof top whose allowable capacity is 4000-liter. But 4 nos. 4000-liter water tanks have been shown in as-built drawing & also water tank position has not matched with as-built drawing. Moreover, 6 nos. of toilets has shown in as-built drawing, but that area is open to sky on site.



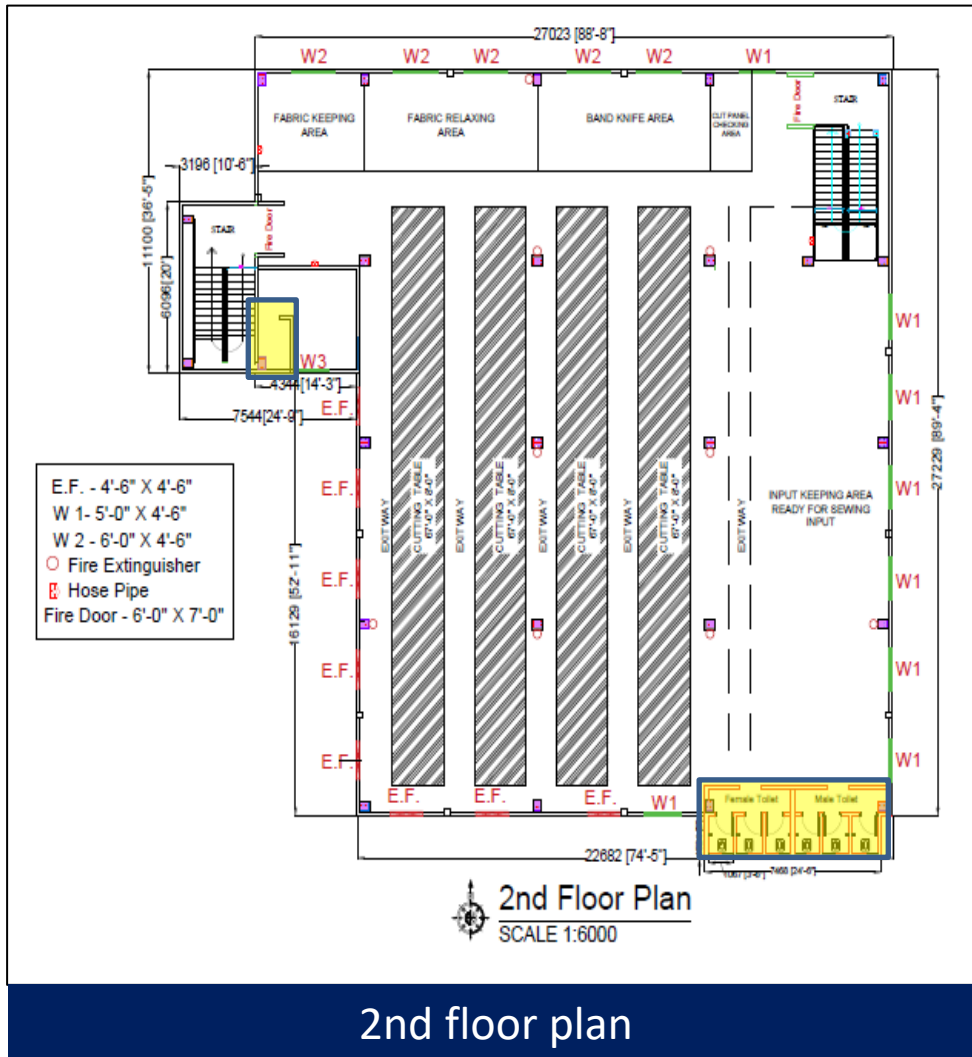


Stair top beam layout

The details of stair sub-beam (SB-401 B & SB-403 B) has not been shown in drawing. The layout of stair main-beam (MB-420 D & MB-402) were found different with grid section. Moreover, the flange thickness of (FB-420 & FB-310) was measured 5 mm but in as-built drawing thickness was shown 6 mm.



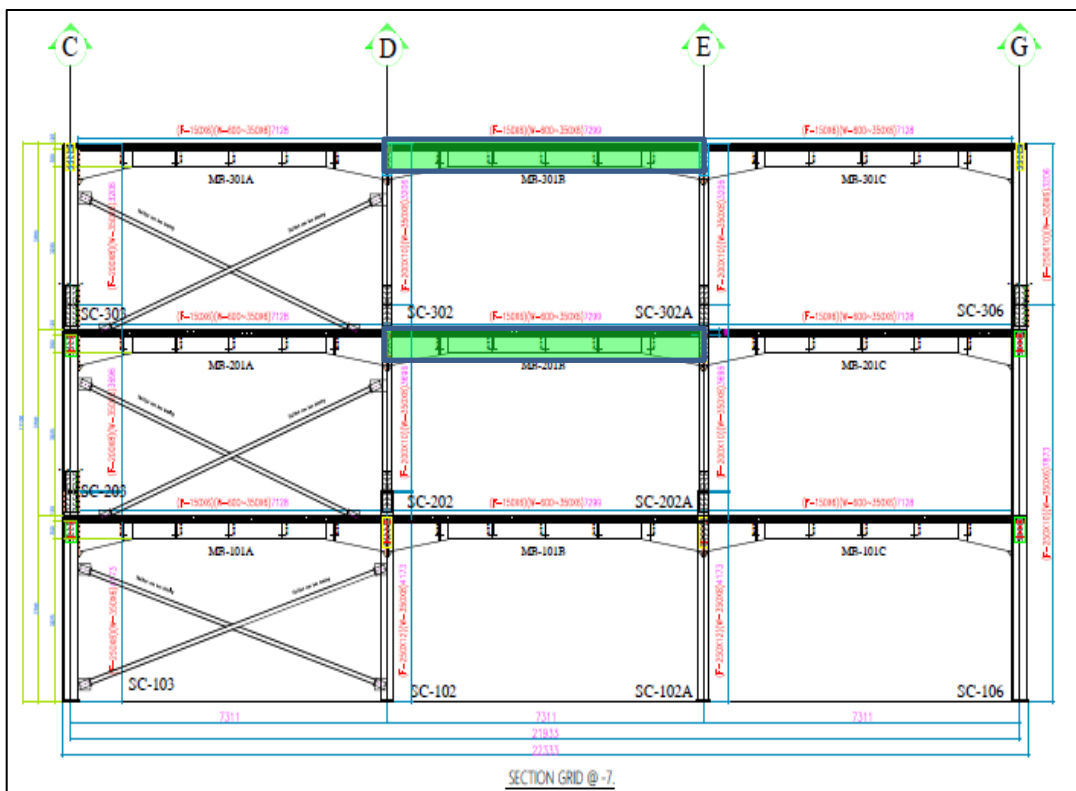
Flange thickness found 5mm



Floor Build-up was found at toilet zone area at site condition. Build-up height was measured approximately 200 mm. The information regarding build-up has not been shown in as-built drawing.



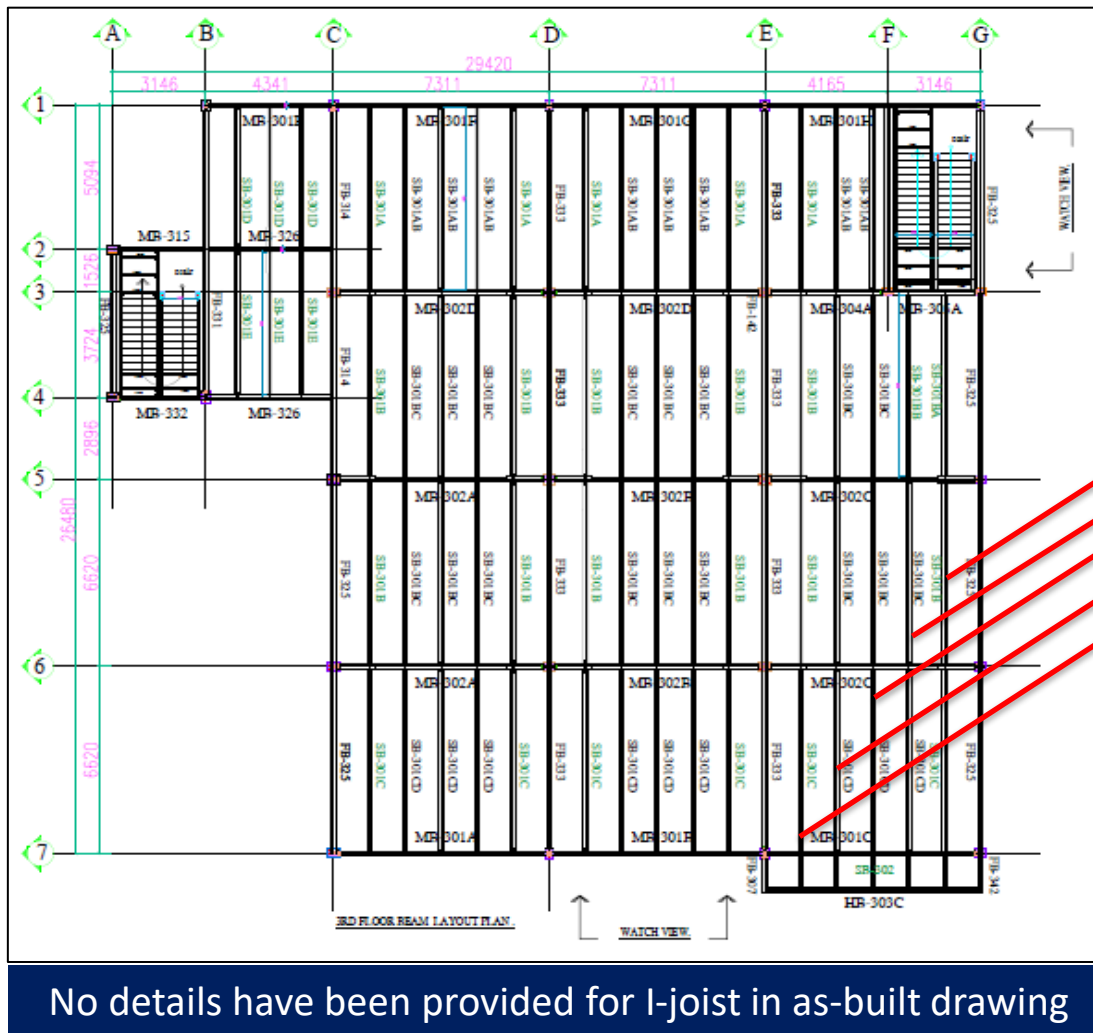
Build-up at toilet zone



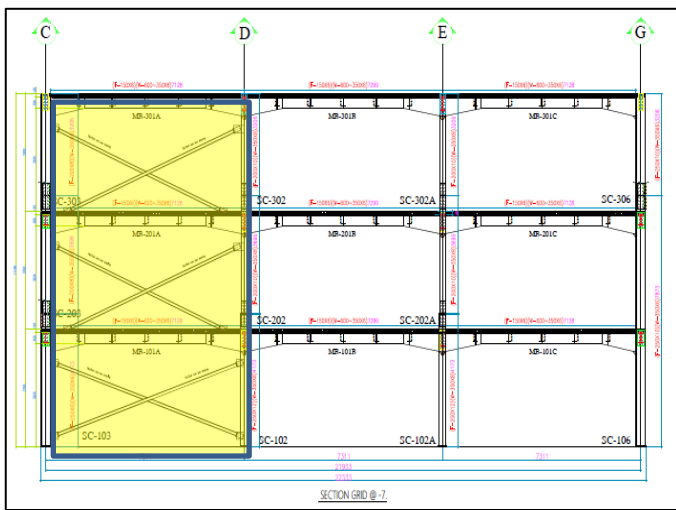
Flange thickness of primary floor beam MB-301G at grid-1 was found 5 mm on site instead of 6 mm. Also the flange thickness of beam MB-201B & MB-301B were found 5 mm in stead of 6 mm.



Flange thickness



I-Joist (SB-301B) was found as W:275 mm; F: (150X5) mm on site



In as-built drawing the size of the bracing has been shown 75X75X4 mm (box section). But the Vertical bracing was measured 70X70 mm (box section) on site.



Undocumented Canopy at the entrance of the building which is connected by welding with the steel beam. No information has been provided regarding this canopy in the as-built drawing.



Factory engineer is required to survey the hole structures and prepare accurate as built drawings.

Design report need to be revised

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)
DEPARTMENT OF CIVIL ENGINEERING
 Mobile: 01819 557 954; PABX: 966 5650-80 Ext: 7226; www.buet.ac.bd/cve/
STRENGTH OF MATERIALS LABORATORY

TENSION TEST OF M.S. PLATES (ASTM A370)
 Sent by: Executive, Structural Engineering Ltd., Eskaton Garden, Dhaka-1000, Bangladesh.
 BRTC No.: 1102-02495/19-20/CE; Date: 11/12/2019
 Reference: Letter; Date: 11/12/2019
 Date of Test: 21/12/2019

Project: -

Serial No.	ID Mark	Nominal thickness (as per letter)	Test Coupon width	Test coupon length	Area Under Test	Yield or Proof Load	Yield or Proof Strength *	Average Yield or Proof Strength	Ultimate Load	Ultimate Strength *	Average Ultimate Strength	Elongation (%) (Gage Length = 203.2 mm)	Average Elongation (%) (Gage length = 203.2 mm)	Blend Test
		mm	mm	sq. mm	mm	KN	MPa	MPa	KN	MPa	MPa			
1	---	20 mm	19.80	29.0	574	200	350	350	272	470	470	27	27	-
2	---	20 mm	19.80	29.0	574	203	350	350	271	470	470	28	27	-
3	---	20 mm	19.70	28.8	567	198	350	350	268	470	470	27	27	-
1	---	16 mm	15.80	29.0	458	172	380	370	221	480	480	23	24	-
2	---	16 mm	15.80	29.0	458	170	370	370	222	490	490	24	24	-
3	---	16 mm	15.90	29.2	464	174	380	370	223	480	480	25	25	-

Conversion factors: 1.0 kg/cm² = 14.219 psi (lb/in²) = 0.0007 MPa (N/mm²)
 Samples were received in unsealed condition

Countersigned by: 
 Dr. Md. Abdul Jalil
 Professor, Dept. of Civil Engg.

Authenticity of this page is verifiable from <http://verify.ce.buet.ac.bd> with the QR Code or ID

Test performed by: 
 Md. Ruhul Amin
 Assistant Professor, Dept. of Civil Engg.

22.12.2019

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STRENGTH OF MATERIALS LABORATORY

TENSION TEST OF M.S. PLATES (ASTM A370)
 Sent by: Mr. Md. Tazbir Haque, Managing Director, Structural Engineering Limited, Eskaton Garden, Dhaka-1000, Bangladesh.
 BRTC No.: 1101-90556/18-19/CE; Date: 26/6/2019
 Reference: Letter; Date: 26/6/2019
 Date of Test: 27/7/2019

Project: -

Serial No.	ID Mark	Nominal thickness (as per letter)	Test Coupon width	Test coupon length	Area Under Test	Yield or Proof Load	Yield or Proof Strength *	Average Yield or Proof Strength	Ultimate Load	Ultimate Strength *	Average Ultimate Strength	Elongation (%) (Gage Length = 203.2 mm)	Average Elongation (%) (Gage length = 203.2 mm)	Blend Test
		mm	mm	sq. mm	mm	KN	MPa	MPa	KN	MPa	MPa			
1	---	12 mm	12.00	29.3	352	136	390	400	197	560	560	23	24	-
2	---	12 mm	12.20	29.0	354	152	430	430	200	570	570	23	24	-
3	---	12 mm	12.20	29.0	354	140	400	400	196	550	550	25	25	-
1	---	8 mm	8.20	29.0	180	76	420	430	96	630	630	20	20	-
2	---	8 mm	8.00	29.2	175	75	430	430	96	550	550	18	19	-
3	---	8 mm	8.20	29.0	180	78	430	430	97	540	540	19	19	-

Conversion factors: 1.0 kg/cm² = 14.219 psi (lb/in²) = 0.0007 MPa (N/mm²)
 Samples were received in unsealed condition

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Test performed by: 
 Md. Ruhul Amin
 Assistant Professor, Dept. of Civil Engg.

10/07/2019

Tensile strength test report for steel sections (without mentioning the project name)

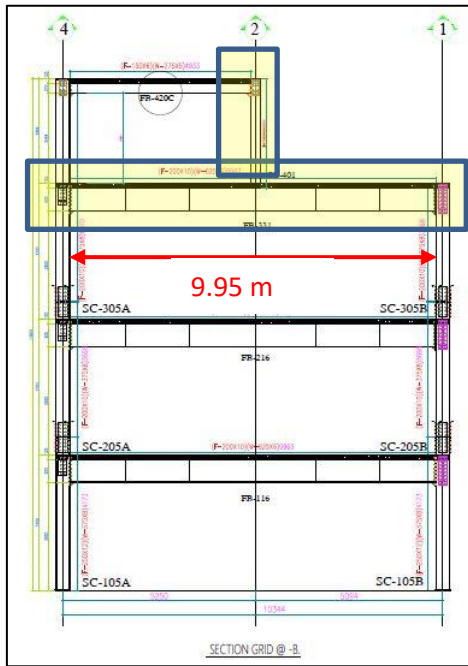
In design report tensile strength of steel plate has been considered 50 Ksi. But the factory provided test reports do not contain the project name as well as any reference of Shad Fashion Ltd. (New Building). So, the test reports can not be justified for considering the steel strength 50 Ksi. Moreover, no test report was found for the 10 mm & 8 mm steel plate which was widely used in beam & column.

2. Material Strength considered:

- ❖ Concrete compressive strength=3.0 ksi (for column and foundation).
- ❖ Concrete compressive strength= 3.0 ksi (for beam and slab).
- ❖ Reinforcement yield strength= 60 ksi
- ❖ Steel members yield strength = 50 ksi.

In design report tensile strength of steel members has been considered 50 ksi

Factory engineer is required to revise the design report considering the steel strength 36 ksi otherwise conduct plate test from the existing structure to proof the strength of the steel members for 50 ksi.



A beam (length 9.95m) is supporting a column of stair roof. And there are two plastic water tanks having 1000 L water capacity each. The adequacy (deflection capacity) check of the beam required to be incorporated in design report.



Adequacy for all type of connections is required to be incorporated in design report.

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. Factory engineer is required to revise design report following BNBC requirements.

Significant gap in connection



Significant gaps in connection observed in beam-column joint at several location. Factory engineer is required to identify all the locations and carry out suitable remedial works for connection gap.

Priority Actions

Problems Observed

New Building:

- Item 1: Discrepancies in as built drawing.
- Item 2: Design report need to be revised.
- Item 3: Significant gap in connection.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Discrepancies in as built drawing	Building Engineer to survey the structure and update the as-built (architectural and structural) drawings that are compliance with section 1.9.1.2 as per BNBC (part-6, BNBC).	6-weeks
02	Design report need to be revised.	Building engineer to update the design document including design report that in compliance with section 1.9.1.1 as per BNBC.	6-weeks
03	Design report need to be revised.	Provide adequacy of all type of connections in design report.	6-weeks
04	Design report need to be revised.	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months
05	Design report need to be revised.	Continue to implement floor loading plan.	6-months
06	Significant gap in connection.	Building Engineer is required to identify the locations and carryout suitable repair works for the connection gap.	6-weeks