Oxford Knit Composite Ltd.

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(23.748374, 90.541429)

19 August 2021

RSC RMG SUSTAINABILITY COUNCIL

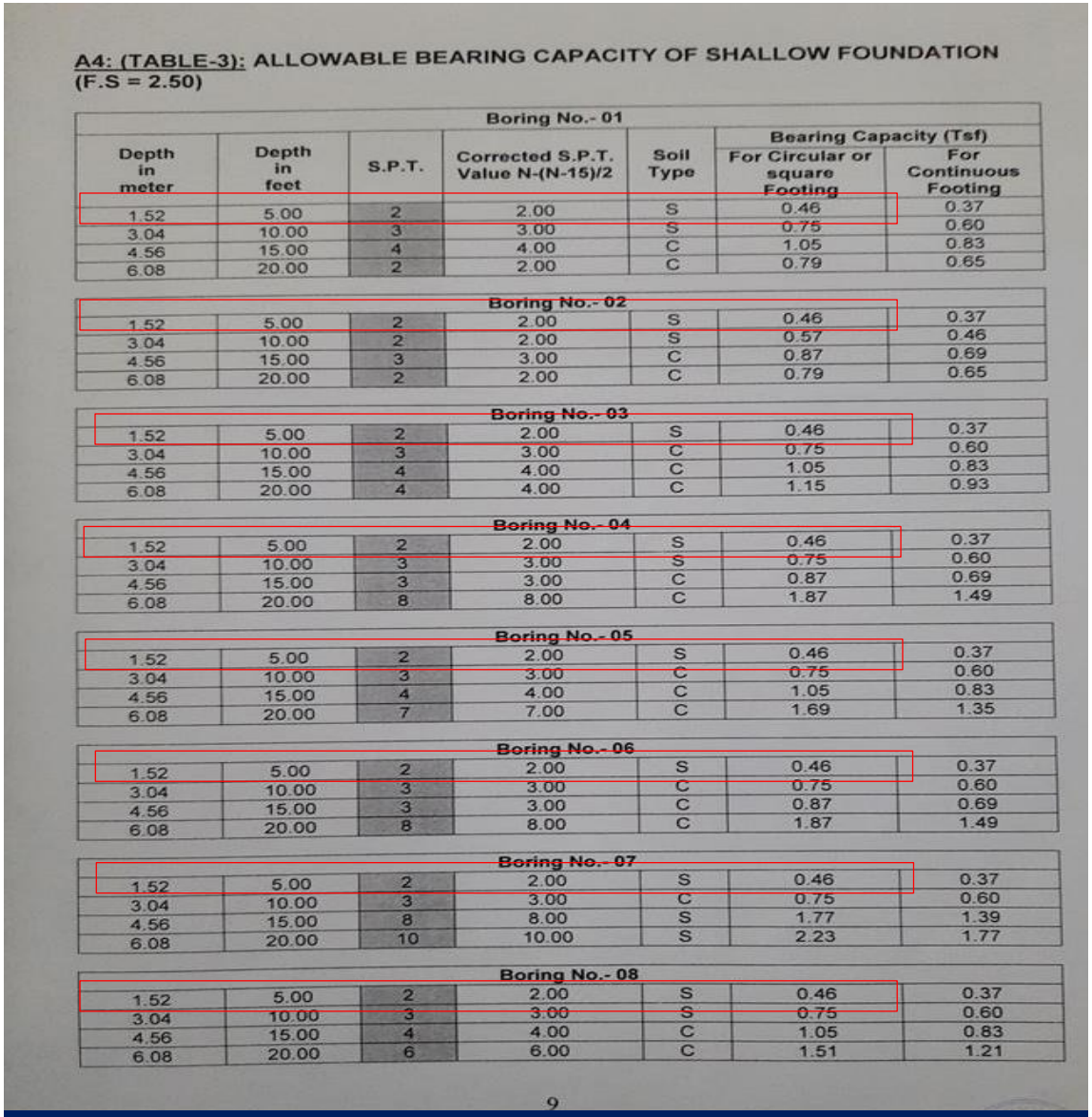
Buildings Information

1. Production Building (Building 1) (G+1)
2. Substation building (Building 2) (single storied RCC building)
3. Security and fire building (Building 3) (single storied RCC building)
4. Boiler and compressor building (Building 4) (G+1)

Observations

Footings are stressed above normal design limit

Observation: Building 1, 2 & 4



A4: (TABLE-3): ALLOWABLE BEARING CAPACITY OF SHALLOW FOUNDATION (F.S = 2.50)

Depth in meter	Depth in feet	S.P.T.	Corrected S.P.T. Value N-(N-15)/2	Soil Type	Bearing Capacity (Tsf) For Circular or square Footing	Bearing Capacity (Tsf) For Continuous Footing
Boring No.- 01						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	S	0.75	0.60
4.56	15.00	4	4.00	C	1.05	0.83
6.08	20.00	2	2.00	C	0.79	0.65
Boring No.- 02						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	2	2.00	S	0.57	0.46
4.56	15.00	3	3.00	C	0.87	0.69
6.08	20.00	2	2.00	C	0.79	0.65
Boring No.- 03						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	C	0.75	0.60
4.56	15.00	4	4.00	C	1.05	0.83
6.08	20.00	4	4.00	C	1.15	0.93
Boring No.- 04						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	S	0.75	0.60
4.56	15.00	3	3.00	C	0.87	0.69
6.08	20.00	8	8.00	C	1.87	1.49
Boring No.- 05						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	C	0.75	0.60
4.56	15.00	4	4.00	C	1.05	0.83
6.08	20.00	7	7.00	C	1.69	1.35
Boring No.- 06						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	C	0.75	0.60
4.56	15.00	3	3.00	C	0.87	0.69
6.08	20.00	8	8.00	C	1.87	1.49
Boring No.- 07						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	C	0.75	0.60
4.56	15.00	8	8.00	S	1.77	1.39
6.08	20.00	10	10.00	S	2.23	1.77
Boring No.- 08						
1.52	5.00	2	2.00	S	0.46	0.37
3.04	10.00	3	3.00	S	0.75	0.60
4.56	15.00	4	4.00	C	1.05	0.83
6.08	20.00	6	6.00	C	1.51	1.21

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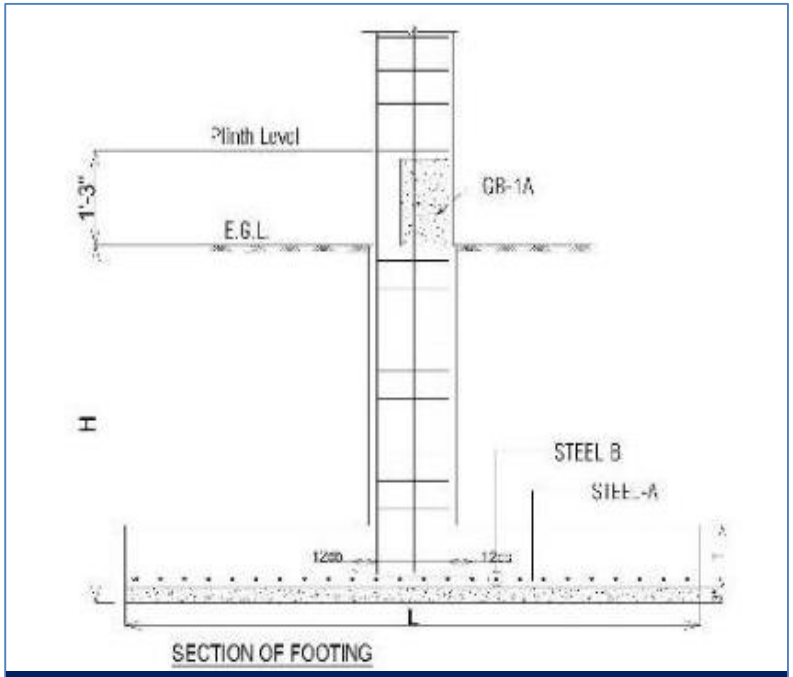
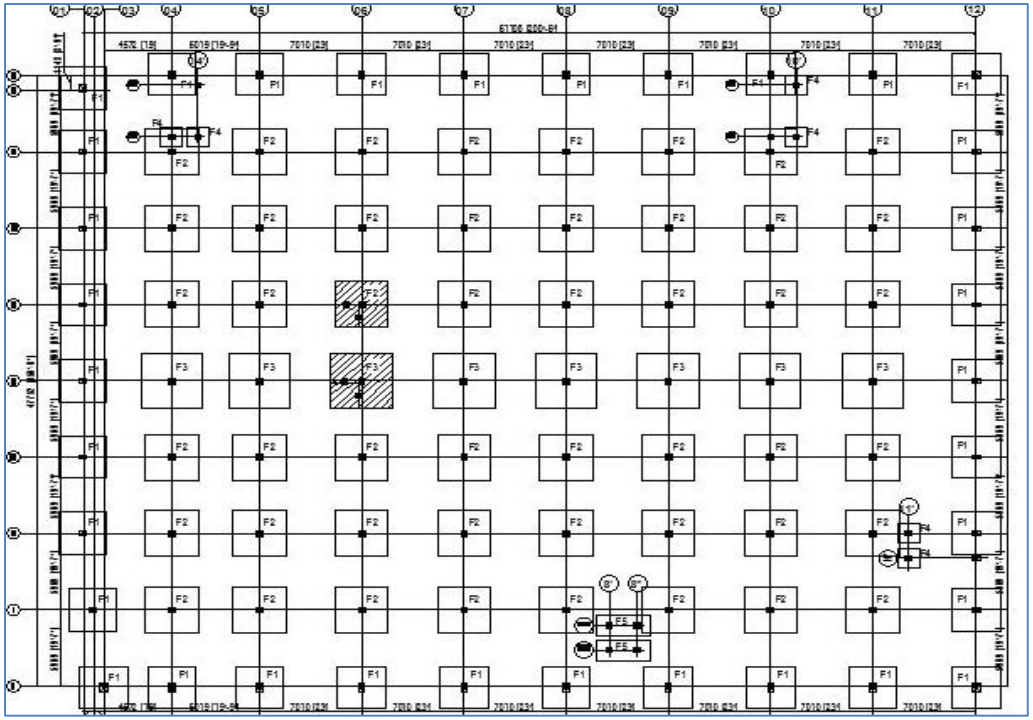
As per geotechnical investigation report, the allowable bearing capacity is 0.46 tsf (49.33 KN/m2) at depth 5 ft (1.5 m) considering F.S 2.5.

Cursory calculation indicates that footing appears to be stressed above normal design limits considering the recommended soil bearing capacity in geotechnical report and footing sizes in drawing. Factory engineer is required to review the adequacy of footings and comply with BNBC.

Observation: Building 1,2 & 4



Typical Section of Footing

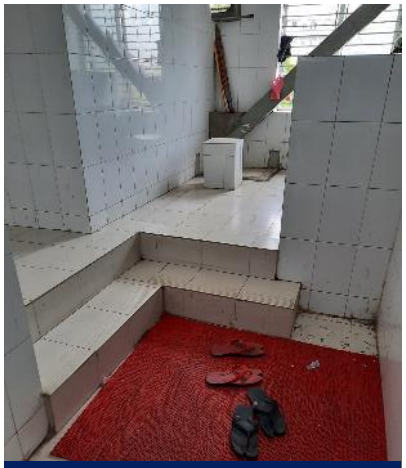


Isolated footing layout

FOOTING SCHEDULE:- Building 1

FOOTING NO	LENGTH (L)	BREADTH (B)	DEPTH-(H)	T	DIMENSION STEEL-(A)	STEEL-(B)
F-01	3300	3300	1200	400	16Ø@125c/c	16Ø@125c/c
F-02	3675	3525	1200	400	16Ø@125c/c	16Ø@125c/c
F-03	3525	3525	1200	400	16Ø@125c/c	16Ø@125c/c
F-04	1500	1500	900	375	16Ø@125c/c	16Ø@125c/c
F-05	3775	1600	900	375	16Ø@125c/c	16Ø@125c/c

Footing schedule



345 mm buildup loading

Observation: Building 1

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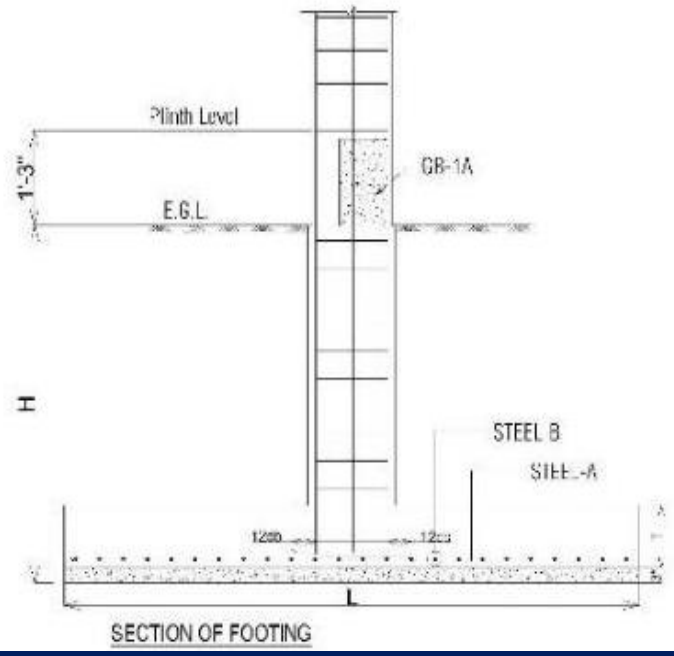
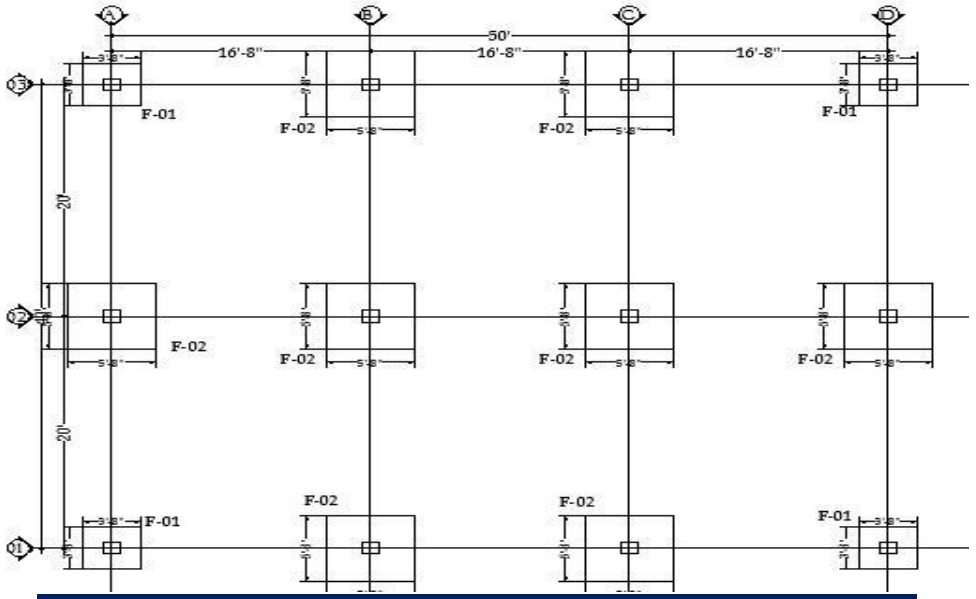


Typical Section of Footing



Footing layout plan

FOOTING SCHEDULE:- Building 2

FOOTING NO	LENGTH (L)	BREADTH (B)	DEPTH-(H)	DIMENSION		STEEL-(A)	STEEL-(B)
				T	D		
F-01	3'-8"	3'-8"	3'-0"	16"	13"	16Ø@150c/c	16Ø@150c/c
F-02	5'-8"	5'-8"	3'-0"	17"	14"	16Ø@150c/c	16Ø@150c/c

Footing schedule

Observation: Building 2

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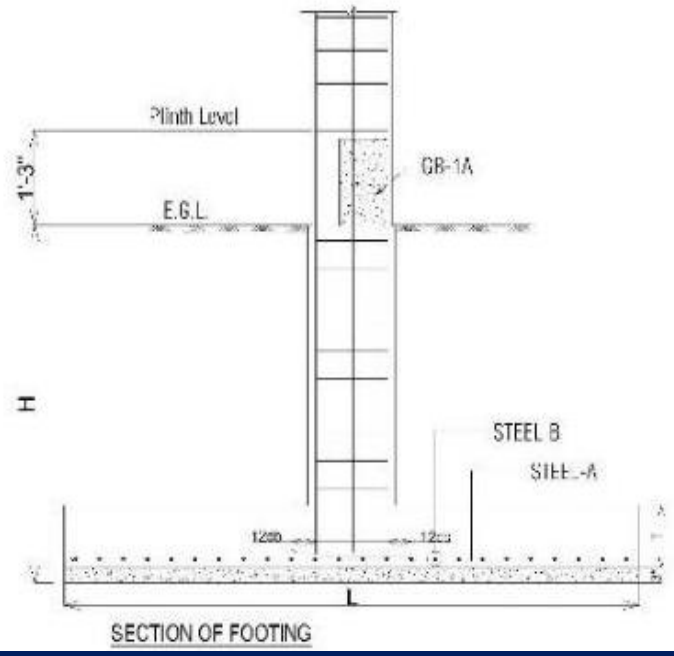
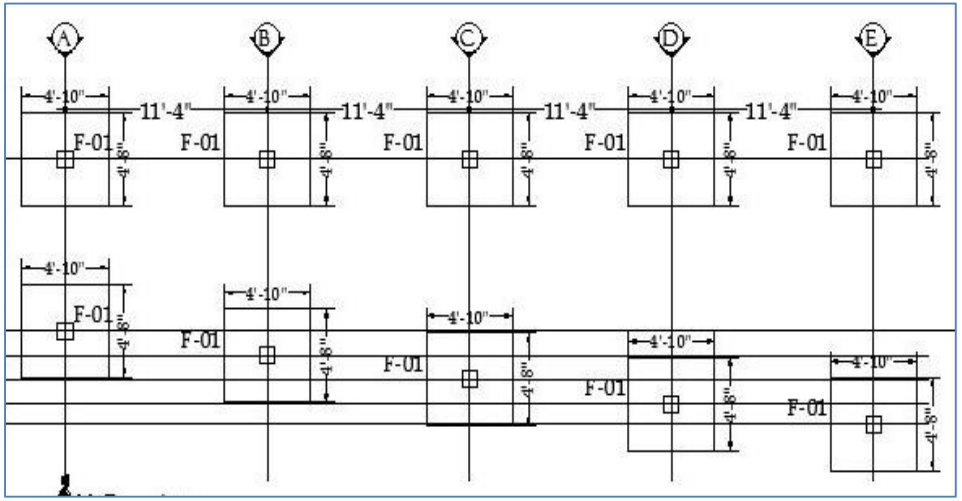


Typical Section of Footing



Footing Layout Plan

FOOTING SCHEDULE:- Building 4

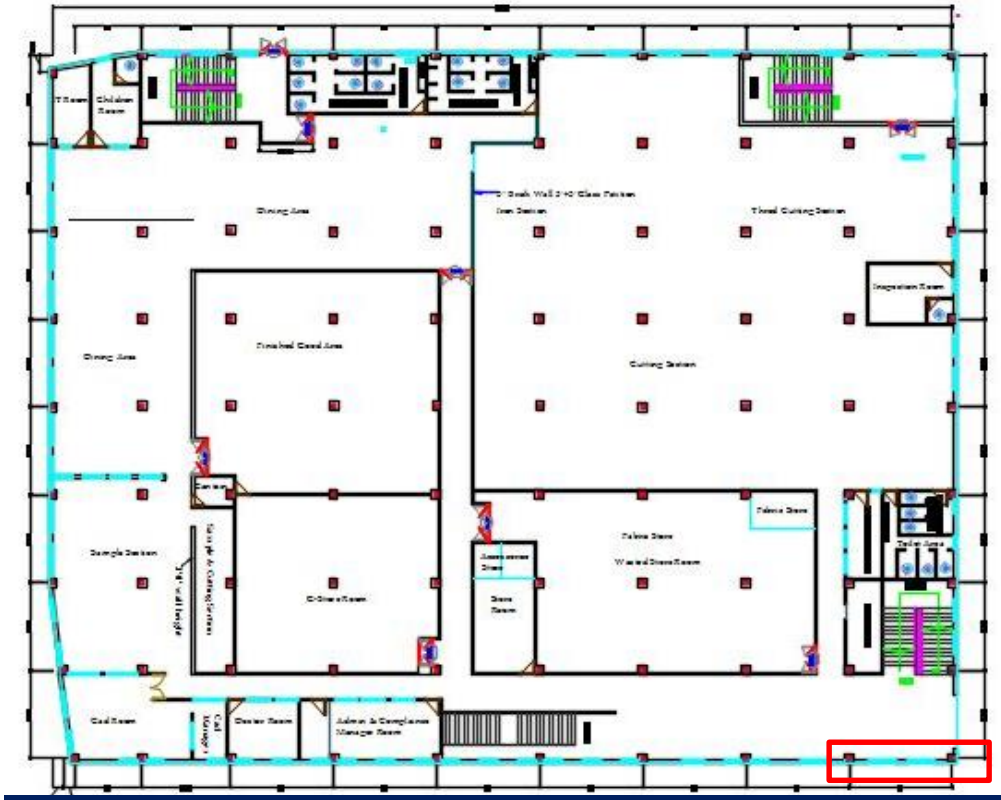
FOOTING NO	LENGTH (L)	BREADTH (B)	DEPTH-(H)	DIMENSION T	STEEL-(A)	STEEL-(B)
F-01	4'-10"	4'-8"	4'-3"	13"	16Ø@150c/c	16Ø@150c/c

Footing schedule

Observation: Building 4

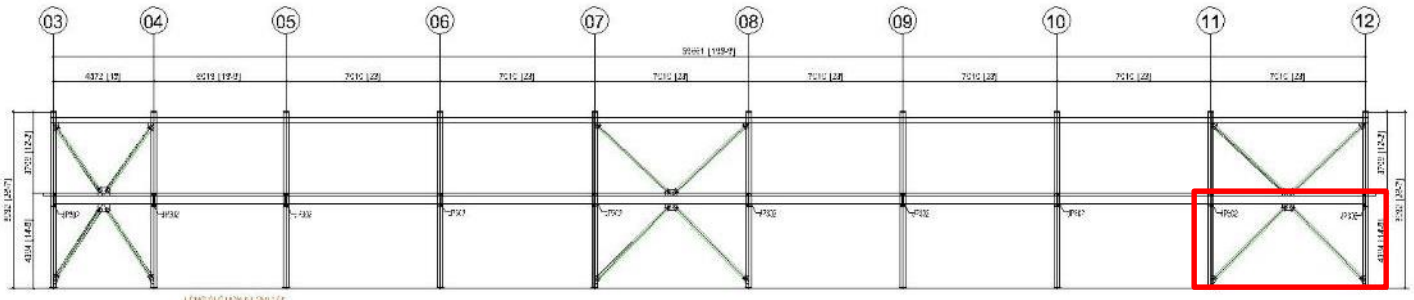
Vertical bracing missing in North-South direction

Observation: Building 1



Ground floor layout plan

Missing bracing



Vertical bracing plan

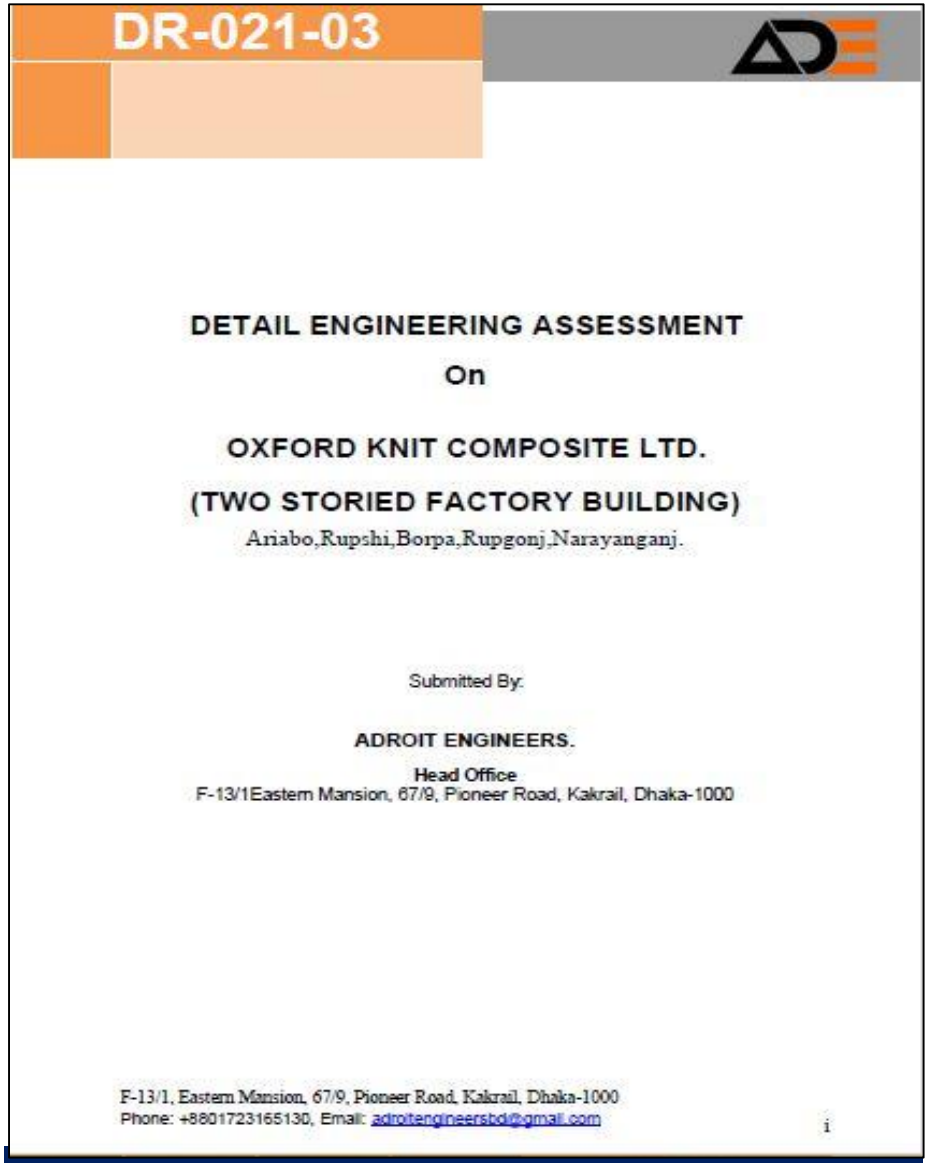
Vertical bracing found missing in long direction.
Building engineer is required to re-install all the missing bracing as per the design specifications.

Observations: Building 1

Serviceability checks not provided in design report

Observation: Building 1

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. The design report was available on site, but serviceability checks as per BNBC, and rafter adequacy checks are not addressed. Building engineer is required to prepare design report in compliance with section 1 9 1 1 (part 6 BNBC)


DR-021-03

DETAIL ENGINEERING ASSESSMENT

On

OXFORD KNIT COMPOSITE LTD.

(TWO STORIED FACTORY BUILDING)

Ariabo,Rupshi,Borpa,Rupgonj,Narayanganj.

Submitted By:

ADROIT ENGINEERS.

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Design report

Observations: Building 1

Corrosion on steel member

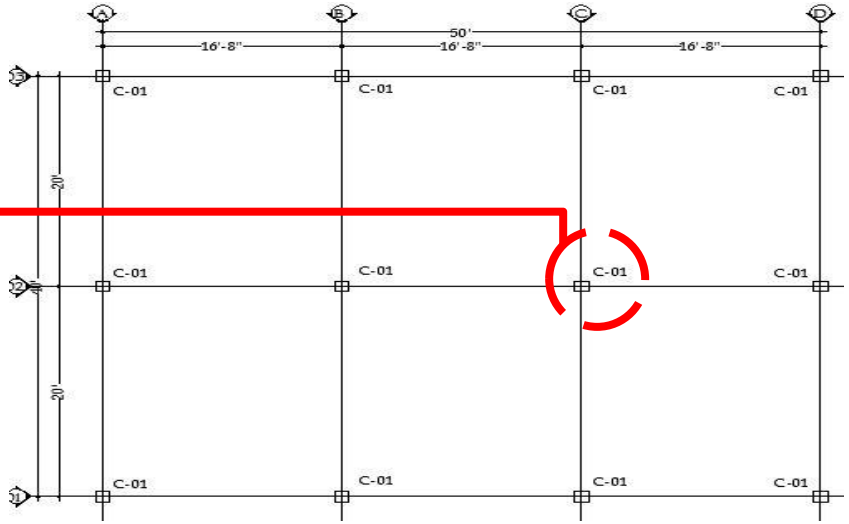
Observation: Building 1

Corrosion in steel members was observed at toilet area. The extent of corrosion to be investigated by a qualified structural engineer.

Observation: Building 1

Tests carried out

Brick Aggregate



Column Layout- Building 2

Ferro-scanning

Tests carried out

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Problems Observed

01: Footings are stressed above normal design limit. (Building 1,2 & 4)

02: Vertical bracing missing. (Building-1)

03: Design report not fully comply with BNBC. (Building-1)

04: Corrosion on steel member. (Building-1)

Priority Actions

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Footings are stressed above normal design limit (Building 1)	Building engineer is required to review the adequacy of footings and comply with BNBC.	6-weeks
02	Footings are stressed above normal design limit (Building 1)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
03	Footings are stressed above normal design limit (Building 1)	Produce and actively manage a loading plan for all floor plates within the factory Building considering floor, column and foundation capacity.	6-weeks
04	Footings are stressed above normal design limit (Building 1)	Produce and actively manage a loading plan for all floor plates within the factory Building considering floor, column and foundation capacity.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
05	Footings are stressed above normal design limit (Building 2)	Building engineer is required to review the adequacy of footings and comply with BNBC.	6-weeks
06	Footings are stressed above normal design limit (Building 2)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
07	Footings are stressed above normal design limit (Building 2)	Carryout remedial works where necessary.	6-months
08	Footings are stressed above normal design limit (Building 4)	Building engineer is required to review the adequacy of footings and comply with BNBC.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
09	Footings are stressed above normal design limit (Building 4)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
10	Footings are stressed above normal design limit (Building 4)	Carryout remedial works where necessary.	6-months
11	Vertical bracing missing. (Building 1)	Building engineer is required to re-install all the missing bracing as per the design specifications. Or check whether the existing bracing system are adequate for lateral stability.	6-weeks
12	Vertical bracing missing. (Building 1)	Complete implementation of any remedial works deemed necessary by the Design Report.	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
13	Design report not fully comply with BNBC. (Building 1)	Building Engineer to prepare design report as per BNBC (part-6; Article 1.9.1) by reviewing design, loads and capacity of structural members.	6-weeks
14	Corrosion on steel member (Building 1)	Building engineer is required to take necessary action to prevent further corrosion and repair the corroded steel members with suitable method.	6-weeks