

H.I Apparels Ltd.

Alishah Road, Abbas Para, Loharpool, North Haliashahar , Chattogram.

(22.333476, 91.771176)

4th August 2019





Observation



Discrepancies between drawings and on-site condition

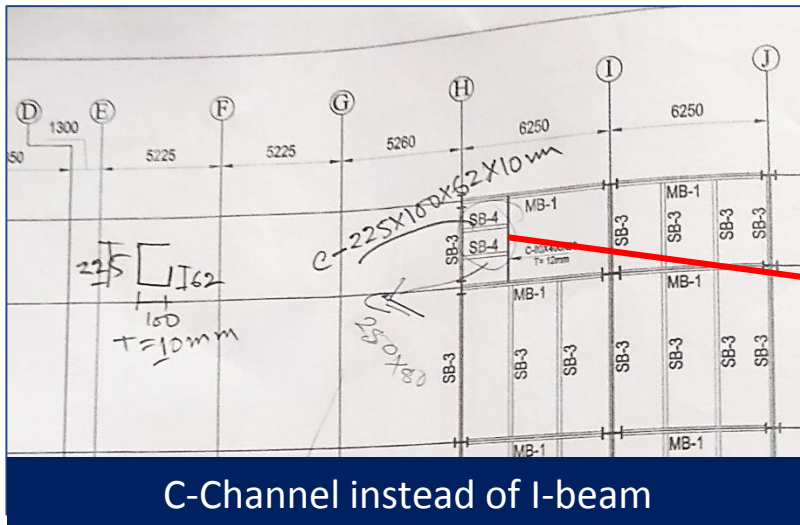


Flange thickness of secondary beam at 3rd floor did not match with the provided drawings. Also, C-channel found instead I-beam at north side stair landing. Building engineer is required to produce an “as constructed” drawings with complete structural information.

C.S.	WEB (mm)	WEB THICKNESS (mm)	FLANGE (mm)	FLANGE THICKNESS (mm)
MB-2	500	12	220	13
MB-3	500	12	200	12
SB-2	525	14	200	14
SB-4	250	10	150	10
SB-5	400	14	200	14
SB-6	325	12	200	13
SB-7	320	12	50	1200

Secondary Beam Schedule

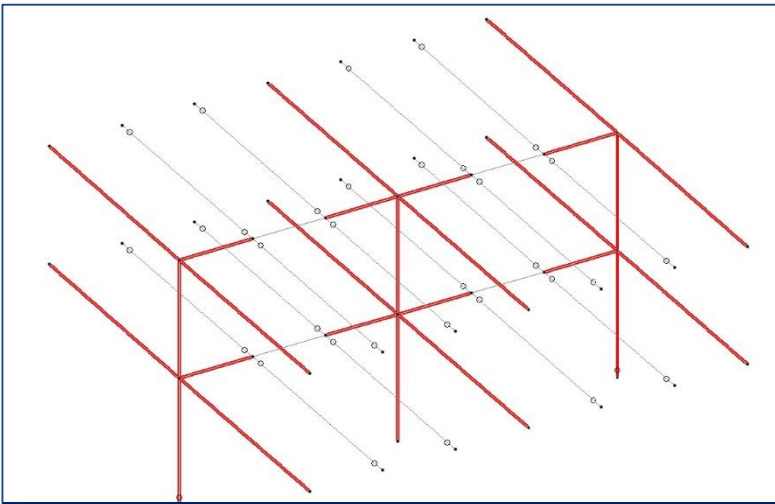
12 mm thickness of flange instead of 14 mm



C-channel (225x62x10mm)



Connection rigidity of beam-column joint



Beam-column rigid connection in the FEA model.

As per the provided Finite Element Analysis (FEA) model, the beam-column connection has been considered as rigid. But the beam detail indicates that the beam ends are not rigidly connected with columns. In addition, the top flange of some framing beams were found cut-off to accommodate the connections. So that, connection rigidity is required to be verified for those beam connections



Beam-column joint at top level



Top flange found cut near the joint

Observations: Production Building



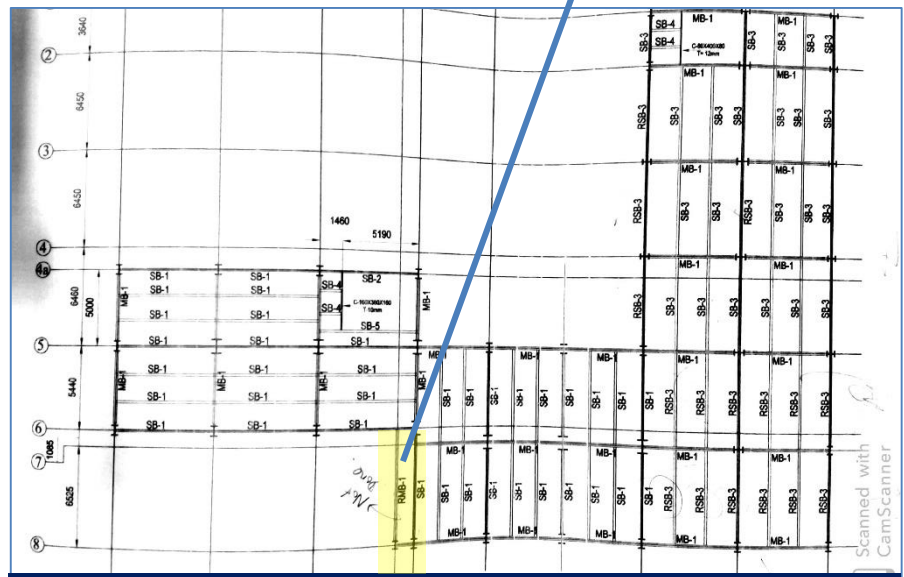
Prepared DEA report required to be reviewed



As per the provided DEA report, the factor of Safety (FoS) of some pile foundations are below the allowable limit of 2.50 (BNBC-06, Sec-3.11.1.11). Also, required retrofitting works of secondary beams are not completed marked location. Factory is required to revised the DEA.



Retrofitting not done



Retrofitting Beam Layout

CLECTIC							H.I. APPARELS LTD.	
609	DL+LL	287.70	2					
610	DL+LL	180.38	2	143.85	300	2.1	OK	
611	DL+LL	239.45	2	90.19	300	3.3	OK	
612	DL+LL	380.42	3	119.73	300	2.5	OK	
613	DL+LL	415.43	3	126.81	300	2.4	OK	
614	DL+LL	341.99	3	138.48	300	2.2	OK	
615	DL+LL	142.63	2	114.00	300	2.6	OK	
616	DL+LL	220.42	2	71.31	270	3.8	OK	
617	DL+LL	225.86	2	110.21	270	2.4	OK	
618	DL+LL	295.64	2	112.93	270	2.4	OK	
619	DL+LL	145.63	2	147.82	300	2.0	OK	
620	DL+LL	77.92	2	72.81	270	3.7	OK	
621	DL+LL	215.08	2	38.96	270	6.9	OK	
622	DL+LL	206.97	2	107.54	300	2.8	OK	
623	DL+LL	206.06	2	103.49	270	2.6	OK	
624	DL+LL	200.68	2	103.03	270	2.6	OK	
625	DL+LL	121.87	2	100.34	270	2.7	OK	
626	DL+LL	359.68	3	60.93	300	4.9	OK	
627	DL+LL	312.44	3	119.89	270	2.3	OK	
628	DL+LL	317.40	3	104.15	270	2.6	OK	
629	DL+LL	296.89	3	105.80	300	2.8	OK	
630	DL+LL	183.60	2	98.96	270	2.7	OK	
631	DL+LL	204.86	2	91.80	270	2.9	OK	
632	DL+LL	198.91	2	102.43	270	2.6	OK	
633	DL+LL	198.91	2	99.45	300	3.0	OK	
633	DL+LL	276.72	2	138.36	270	1.96	OK	
634	DL+LL	306.01	3	102.00	270	2.6	OK	
635	DL+LL	198.00	2	99.00	300	3.0	OK	
636	DL+LL	204.94	2	102.47	270	2.6	OK	
637	DL+LL	302.87	3	100.96	270	2.7	OK	
638	DL+LL	196.57	2	98.29	270	2.7	OK	
639	DL+LL	201.10	2	100.55	300	3.0	OK	
640	DL+LL	297.30	3	99.10	270	2.7	OK	
641	DL+LL	194.24	2	97.12	270	2.8	OK	
642	DL+LL	174.89	2	87.45	300	3.4	OK	
643	DL+LL	285.03	3	95.01	270	2.8	OK	
644	DL+LL	157.01	2	78.50	270	3.4	OK	
645	DL+LL	109.27	2	54.63	270	4.9	OK	
646	DL+LL	175.98	2	87.99	300	3.4	OK	
647	DL+LL	82.36	2	41.18	270	6.6	OK	

Here Factor of Safety is more than 2. So all Piles are adequate according to BNBC 2006 load

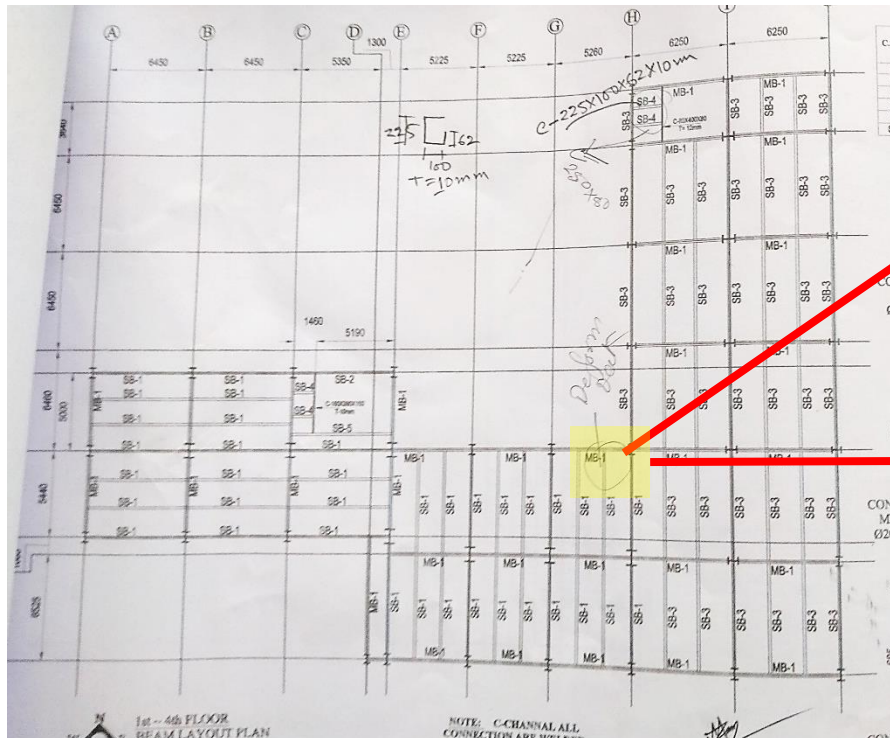
FoS of pile



Construction fault of deck slab



Minor deflection was found at deck slab on 2nd floor roof. Factory engineer is required to monitor the deck slab deflection and keep record.



Sub beam layout



Deflected portion of deck slab



Drawings not available



No documentation was available onsite for utility shed.



Problems Observed

Production Building

- 1: Discrepancies between drawings and on-site condition.
2. Connection rigidity of beam-column joint.
3. Prepared DEA report required to be reviewed.
4. Construction fault of deck slab.

Security Building

5. Drawings not available.



Priority Actions



Item No.	Observation	Recommended Action Plan	Recommended Timeline
1	Discrepancies between drawings and on-site condition	Engage an Engineer to produce an “as constructed” drawings which reflect the actual site dimensions with complete structural information.	6-weeks
2	Connection rigidity of beam-column joint	Connection rigidity and capacity of beam is required to be verified.	6-weeks
3	Connection rigidity of beam-column joint	Carry out strengthening work if required.	6-months
4	Prepared DEA report required to be reviewed	Revise the DEA report and complete the review with ACCORD.	6-weeks
5	Prepared DEA report required to be reviewed	Complete remedial works arising from design report.	6-months
6	Prepared DEA report required to be reviewed	Continue to implement load plan.	6-months
7	Construction fault of deck slab	Factory engineer is required to monitor the deck and keep record.	6-weeks
8	Construction fault of deck slab	Factory engineer is required to confirm that deck has adequate capacity to take the floor load otherwise suggest remedial actions.	6-weeks
9	Drawings not available	Prepare “as constructed” drawings which reflect the actual site dimensions with complete structural information.	6-weeks