

# Intimate Creations Limited

Plot no: 62-63, Sector-7, South halishahar, CEPZ, Chattogram-4223, Bangladesh

(22.29775, 91.77703)

28<sup>th</sup> September 2021



# Building Information

Main Building: (G+2).

Guard room, Childcare & medical: (single storied).

Fire Pump room: (single storied).

Gas connection room: (single storied).

Compressor Room: (G+1).

# Observations

**Design report needs to be revised**



Load plan for 1<sup>st</sup> to 5<sup>th</sup> floor. - Floor loading has been shown (84 psf) 4 kPa.

INDUSTRIAL, STORAGE & HAZARDOUS (Occupancy - G, H & J)				
Workshop, factory, warehouse	1	Light workroom without storage	3.0	2.7
	2	Machinery hall & circulation area	4.0	4.5
	3	Factory, workshop etc.	5.0	4.5
	4	Manufacturing : light	6.0	4.5 <sup>(S)</sup>
		heavy	12.0	9.0 <sup>(S)</sup>
		ice	15.0	9.0 <sup>(S)</sup>
	5	Printing plant :		
		Press room	7.0	11.0
		Composing and linotype room	5.0	9.0 <sup>(S)</sup>
	Paper storage room	12.0	9.0 <sup>(S)</sup>	
6	Motor room, fan room etc. including the weight of machinery	7.5	4.5	
7	Cold storage, grain storage	15.0	9.0 <sup>(S)</sup>	
8	Storage warehouses : light	6.0	4.5 <sup>(S)</sup>	
	heavy	12.0	9.0	
9	Foundries	20.0	12.0	

Live load Table- BNBC 2006

TYPICAL FLOOR LOADING FOR SECOND FLOOR				
	Type	Item	Max. Live Load	Description
1	LS	Office Area	84 psf	Some light furniture and workers.
2	LS	Finished Warehouse Area	84 psf	Finished Warehouse Area
3	LS	Stair	84 psf	Stair Case
4	LS	Toilet	42 psf	Toilet Zone.

Floor loading has been shown 4 kPa for 2<sup>nd</sup> floor at Storage area.

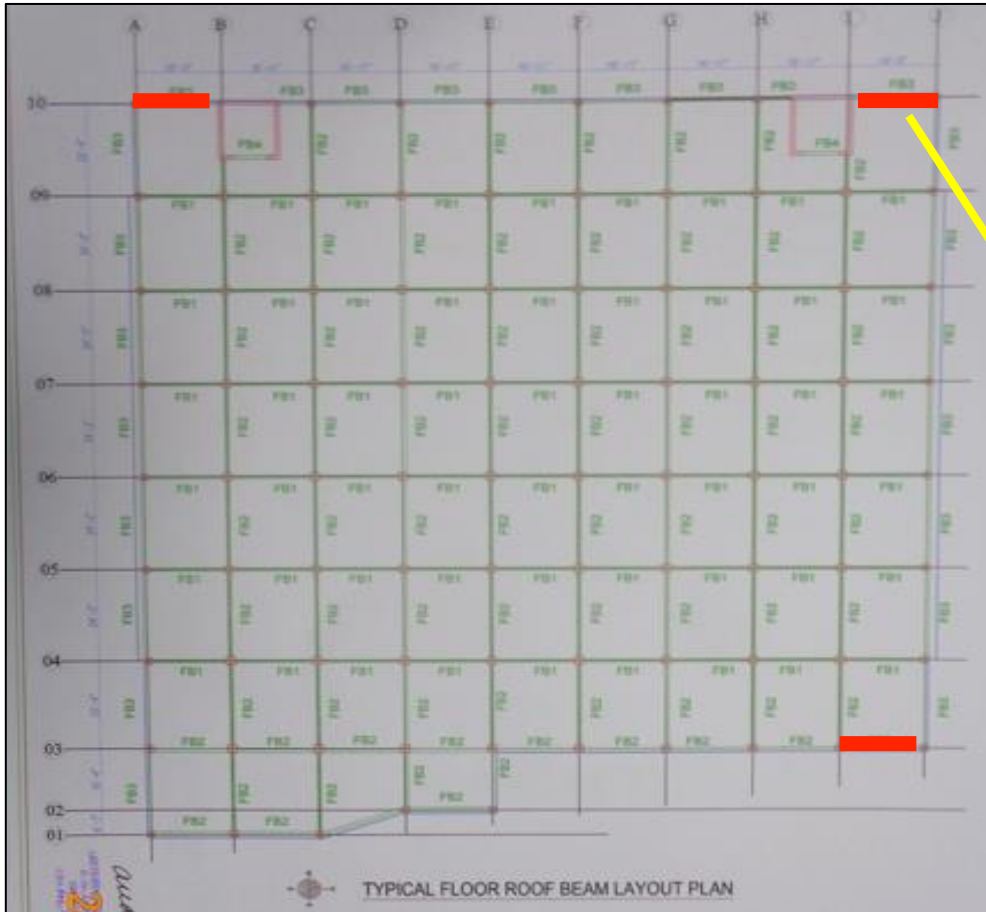
**5.4 Live Load**  
 Live load has been considered 105 psf (Factory building) for overall structure & 42 psf for toilet areas as per BNBC 2006.

In Design report floor loading has been considered (105 psf) 5 kPa which do not match with posted load plan in floor.

As per BNBC, minimum 6 kPa live loading is required to be considered for the light storage facilities. During inspection, load plan was found posted considering (84 psf) 4 kPa at 2<sup>nd</sup> floor.

As per BNBC, every building or structure designed shall have its design documents prepared in accordance with the provision of Section 1.9.1. Now, the factory engineer is required to revise design report the structure as per BNBC 2006.

# Discrepancies in as-built drawings



Beam Layout

Floor beam layout did not match with on site condition. Floor beam at staircase (marked as red on drawing) at all floor level was found missing.



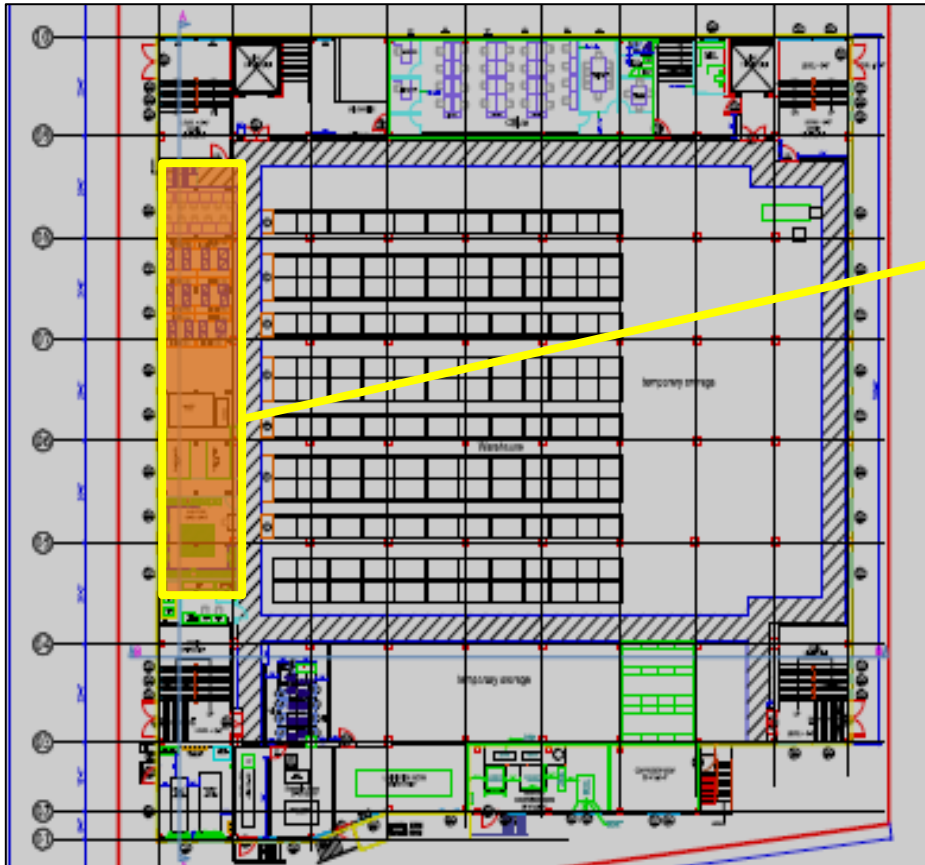
Beam missing

**Non-engineered shed on roof (RO plant)**



Non-engineered shed. The factory engineer is required to replace the non-engineered shed with an engineered one.

# Undocumented steel mezzanine at ground floor



A self supported steel mezzanine was observed at the ground floor of main building. Building Engineer is required to check the adequacy of the mezzanine for vertical & lateral loadings and prepare a floor live load plan based on floor, column and foundation capacity.

# Lack of information in as-built drawings



1st floor



Ground floor

As per as built drawing “Compressor Room” is a single storied structure. But, during inspection we found that there is a steel shed on the roof of Compressor Room.

# Apparently non-engineered shed



Garbage reception area above compressor room is apparently non-engineered shed. Box rafter is anchored in brick wall at one end and rest on steel box on other side. Building engineer to check the stability of the lightweight roof structure against lateral loading and if inadequate then replace the structure with an engineered one.

# Absence of design documents

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 and load plan was not available which is required to be prepared in compliance with section 1.9.1.1 (part-6, BNBC).



Design report and load plan was not available for Compressor Room

# Non engineered external steel stair

Apparently inadequate connection was observed at external steel stair of Compressor Room. Factory engineer is required to carry out connection adequacy & lateral stability check of the steel stair.



External Steel Stair



Support System of Steel Stair



Apparently Inadequate Connection

# Apparently non-engineered roof



Light weight roof supported on peripheral wall



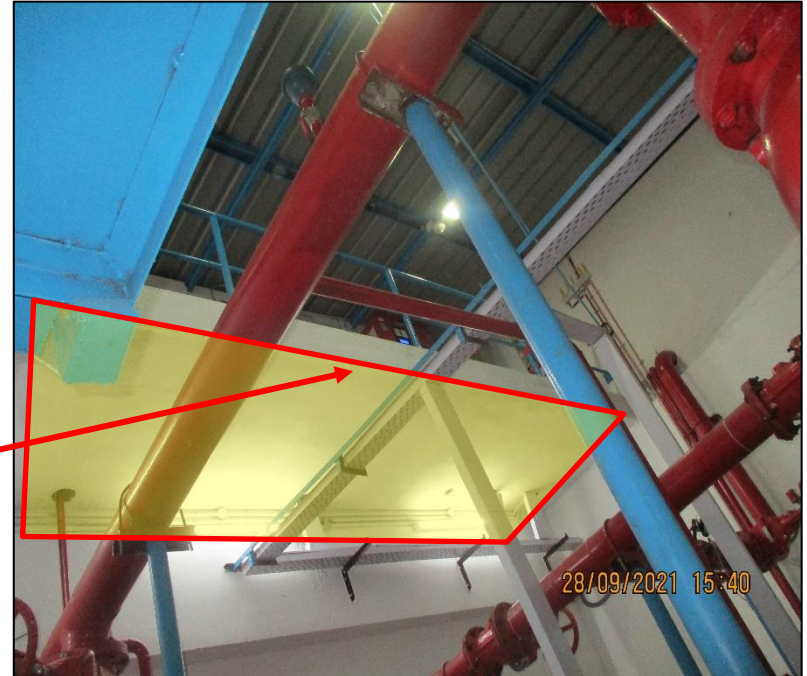
Non-engineered connection

Roof of pump room is apparently non-engineered. C-channel rafter is embedded in peripheral brick wall. Building engineer to check the stability of the lightweight roof structure against lateral loading and if inadequate then replace the structure with an engineered one.

# Adequacy of cantilever slab



Cantilever slab in pump room



No support system

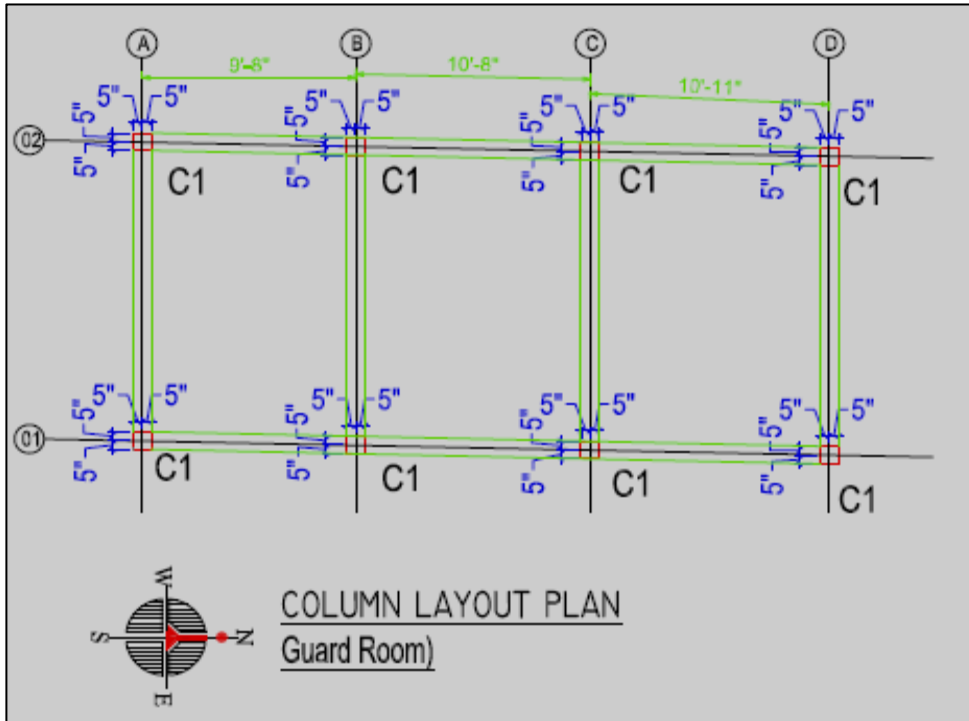
During inspection, 1.2 m (4 ft) wide cantilever slab in the east side of pump room was observed which was not shown in drawings. The cantilever slab to be incorporated in drawing. Also, adequacy of the slab to be checked.

# Non engineered steel stair

Apparently inadequate connection was observed at steel stair of pump Room. Factory engineer is required to carry out connection adequacy check of the steel stair.



**Foundation system unknown**



Column layout plan



Guard Room, Childcare, Medical

Guard Room, Childcare, Medical is a single storied RCC building. Foundation layout & details were missing in as built structural drawing. Factory is required to verify the foundation system and prepare accurate as built structural drawings.

# Priority Actions

# Problems Observed

## Main Building:

Item 1: Design report needs to be revised.

Item 2: Discrepancies in as-built drawings.

Item 3: Non-engineered shed on roof (RO plant).

Item 4: Undocumented steel mezzanine at ground floor.

## Compressor Room:

Item 5: Lack of information in as-built drawings.

Item 6: Apparently non-engineered shed.

Item 7: Absence of design documents.

Item 8: Non engineered external steel stair.

## Pump Room:

Item 9: Apparently non-engineered roof.

Item 10: Adequacy of cantilever slab.

Item 11: Non engineered steel stair.

## Guard Room, Childcare & medical:

Item 12: Foundation system unknown.

Item No.	Observation	Recommended Action Plan	Recommended Timeline
01	Design report needs to be revised (Main Building)	Factory engineer to revise the design documents including a design report, load plan and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC.	6-weeks
02	Design report needs to be revised (Main Building)	Produce and actively manage a loading plan for all floor plates within the factory, considering floor, column and foundation capacity.	6-weeks
03	Design report needs to be revised (Main Building)	Continue to implement loading plan.	6-months
04	Discrepancies in as-built drawings (Main Building)	Building Engineer is to survey the whole structure and update as-built drawings representing accurate site condition.	6-weeks
05	Non-engineered shed on roof (RO plant) (Main Building)	Building engineer to check the stability of the lightweight roof structure against lateral loading and if inadequate then replace the structure with an engineered one.	6-weeks
06	Non-engineered shed on roof (RO plant) (Main Building)	Carry out remedial/alteration works if necessary.	6-months
07	Undocumented steel mezzanine at ground floor (Main Building)	Building Engineer to check the adequacy of the steel mezzanine for vertical & lateral loading.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
08	Undocumented steel mezzanine at ground floor (Main Building)	Building Engineer to prepare the allowable load plans.	6-weeks
09	Undocumented steel mezzanine at ground floor (Main Building)	Carry out remedial works if necessary.	6-months
10	Undocumented steel mezzanine at ground floor (Main Building)	Continue to implement load plan.	6-months
11	Lack of information in as-built drawings (Compressor Room)	Building Engineer is to survey the whole structure and update as-built drawings representing accurate site condition.	6-weeks
12	Apparently non-engineered shed (Compressor Room)	Building engineer to check the stability of the lightweight roof structure against lateral loading.	6-weeks
13	Apparently non-engineered shed (Compressor Room)	Carry out the remedial works where necessary.	6-months
14	Absence of design documents (Compressor Room)	Factory engineer is required to prepare the design documents including a design report, and a set of structural drawings in compliance with section 1.9.1.1 and section 1.9.1.2 as per BNBC part 6 and submit to RSC for review.	6-weeks

Item No.	Observation	Recommended Action Plan	Recommended Timeline
15	Absence of design documents (Compressor Room)	Carry out remedial works ( if any ) after review by RSC.	6-months
16	Non engineered external steel stair (Compressor Room)	Factory engineer is required to carry out connection adequacy & lateral stability check of the steel stair.	6-weeks
17	Non engineered external steel stair (Compressor Room)	Implement remediation work where necessary	6-months
18	Apparently non-engineered roof (Pump Room)	Building engineer to check the uplift capacity of the lightweight roof structure against lateral loading.	6-weeks
19	Apparently non-engineered roof (Pump Room)	Carry out remedial/alteration works if necessary	6-months
20	Adequacy of cantilever slab (Pump Room)	Building Engineer to survey the structure and prepare accurate as-built (both architectural & structural) drawings.	6-weeks
21	Adequacy of cantilever slab (Pump Room)	Building Engineer to check the adequacy of cantilever slab.	6-weeks
22	Adequacy of cantilever slab (Pump Room)	Carry out remedial/alteration works if necessary	6-months

Item No.	Observation	Recommended Action Plan	Recommended Timeline
23	Non engineered steel stair (Pump Room)	Factory engineer is required to carry out connection adequacy & lateral stability check of the steel stair.	6-weeks
24	Non engineered steel stair (Pump Room)	Implement remediation work where necessary	6-months
25	Foundation system unknown (Guard Room, Childcare & medical).	The factory engineer is required to verify the foundation system and prepare accurate as built structural drawings. Foundation system must be verified.	6-weeks