Jeans Plus Ltd. (Extension)

Plot No-398, Sreepur Bus Stand, Ganakbari, Savar, Dhaka.

(23.961222, 90.269591)

14 October 2024

1. Building Information:

Factory Building (Extension): 6 storied (G+5) building with a partial basement.

2. Observations

Observation 01: Inconsistency in the design report (for concrete design strength, combination of framing system, live loading on ground level suspended floors / prayer & dining room) (Factory Building- Extension) (Factory Building- Extension)

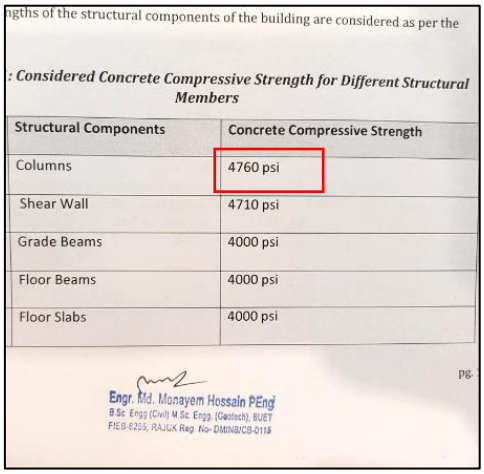

DESIGN REPORT FOR

JEANS PLUS LIMITED (EXTENSION)

PROPOSED G+9+10 STORIED FACTORY BUILDING AT SAVAR, DHAKA.

DESIGN REPORT PREPARED BY:

ADVANCE ENGINEERING
HOUSE-343, ROAD-5,
DHANMONDI, DHAKA.


ngths of the structural components of the building are considered as per the

: Considered Concrete Compressive Strength for Different Structural Members

Structural Components	Concrete Compressive Strength
Columns	4760 psi
Shear Wall	4710 psi
Grade Beams	4000 psi
Floor Beams	4000 psi
Floor Slabs	4000 psi

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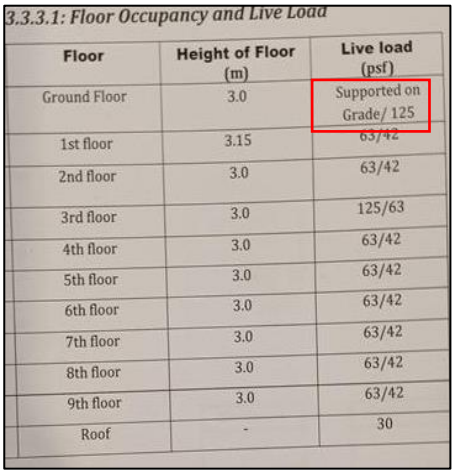

3.3.3.1: Floor Occupancy and Live Load

Floor	Height of Floor (m)	Live load (psf)
Ground Floor	3.0	Supported on Grade/ 125
1st floor	3.15	63/42
2nd floor	3.0	63/42
3rd floor	3.0	125/63
4th floor	3.0	63/42
5th floor	3.0	63/42
6th floor	3.0	63/42
7th floor	3.0	63/42
8th floor	3.0	63/42
9th floor	3.0	63/42
Roof	-	30

3. CONCRETE

a) TYPE : CONCRETE COMPRESSIVE STRENGTH CONSIDERED AS FC
i) ALL COLUMN UPTO 4TH SLAB, f 'c = MINIMUM 4500 psi
ii) FOR ALL OTHER STRUCTURES , f 'c = 4000 psi
WHICH ARE TO BE CONFORMED BY TRIAL MIX DESIGN.

b) MIXING PROPORTION OF CONCRETE SHALL BE MINIMUM
i) 1:1½:3 FOR 4500 psi CONCRETE USING ADMIXTURE.
ii) 1:1½:3 FOR 4000 psi CONCRETE.

c) MINIMUM CYLINDER STRENGTH : BASED ON CYLINDER TEST OF DIAMETER, D = 100 & HEIGHT, H = 200 FOR 4500 psi CONCRETE
i) 28TH DAY STRENGTH, f'c = 4500 psi
ii) 7TH DAY STRENGTH, f'c = 2500 psi

7. STEEL REINFORCEMENT

a) YIELD STRENGTH OF STEEL f'y =60,000 psi

PVC WT on stair roof

Ground floor storage

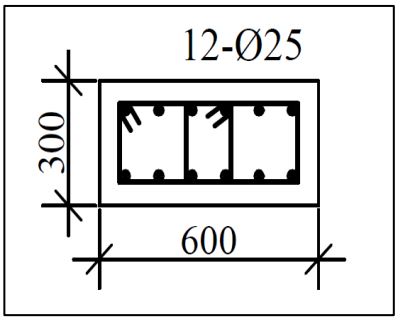
Fire pump at basement

Description: Concrete design strength is considered in the report as 4760 psi (32.83 MPa) whereas 4500 psi in the structural documents. The structural framing is made of shear wall and moment frame but only moment frame considered in the design report. The floor live load plan was not prepared for suspended floors (UGWR top slab, rooftop slab, and basement mat). Also, the live load limit of dining & prayer area doesn't satisfy BNBC requirement. So, update the design documents based on design concrete strength and submit to RSC for review.

Observation 02: Mismatches/lacking in the as-built drawing (SW size, built-ups, basement layout) (Factory Building- Extension)

Built-ups

PVC water tank on stair roof



C8 column size & rebar

Description: Floor built-up was not shown in the load plan, basement & rooftop floor layout not prepared, column size at roof level found 900 mm instead of 600 mm. The building engineer is required to survey the structure and prepare as-built drawings.

Observation 03: Heavy storage load on the ground floor suspended slabs. (Factory Building- Extension)

Description: During inspection, heavy storage (live load approximately 100 psf/5 kPa) was found on the top slab of UGWR at ground floor, load height marking was missing, and there was no live load plan available onsite. However, reduce storage loading immediately from ground floor suspended area to 3 kPa and maintain until finalization of load plan. Implement allowable load management plan (posting load plan, marking area & load height, maintaining floor load accordingly) after finalization.

Observation 04: Cracks in ground floor suspended slab. (Factory Building- Extension)

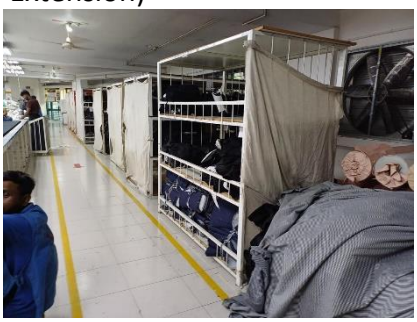



Description: Cracks were found in the ground floor suspended slab (storage area & fire pump room). The building engineer is required to identify the reason for the crack, prepare an investigation report and submit it to RSC for review. Carryout remedial works as per crack investigation report after RSC approval/consent.

Observation 05: Dampness on brick walls. (Factory Building- Extension)

Description: Dampness observed on brick walls at north stair zone due to water intrusions. The factory is required to identify all the damp locations, seal the source of water, and repair the damp areas with suitable method.

Observation 06: Lack of anchorage/bracing for non-structural elements including storage racks. (Factory Building- Extension)



Description: Lack of anchorage/bracing was observed for storage racks. Provide anchorage/bracing to the storage racks and water tanks.

3. Action Plan

SL	Observation	Action Plan	Timeline
1.	Inconsistency in the design report (for concrete design strength, combination of framing system, live loading on ground level suspended floor slabs / prayer & dining room) (Factory Building- Extension)	The building engineer is required to update the design report based on in-situ material strength and submit the RSC for review.	within 6 weeks
2.		Produce and actively manage a loading plan for all suspended floor slabs considering floor, column and foundation capacity.	within 6 weeks
3.		Carry out suggested remedial works if required.	within 6 months
4.	Mismatches/lacking in the as-built drawing (SW size, built-ups, basement layout) (Factory Building- Extension)	The building engineer is required to survey the structure and prepare as-built drawings.	within 6 weeks
5.	Heavy storage load on the ground floor suspended slabs. (Factory Building- Extension)	Reduce loading immediately from ground floor suspended area to 3 kPa and maintain until finalization of allowable floor live load plan.	Immediate
6.		Implement final floor load plan (posting load plan, marking area & load height, maintaining floor load accordingly).	within 6 months
7.	Cracks in ground floor suspended slab. (Factory Building- Extension)	The building engineer is required to identify the reason for the crack, prepare an investigation report and submit it to RSC for review. Carryout remedial works as per crack investigation report after RSC approval/consent.	within 6 weeks
8.	Dampness on brick walls. (Factory Building- Extension)	The factory is required to identify all the damp locations, seal the source of water, and repair the damp areas with suitable method.	within 6 weeks
9.	Lack of anchorage/bracing for non-structural elements including storage racks. (Factory Building- Extension)	Provide anchorage/bracing to the storage racks.	within 6 months