

Apparels Village Ltd. (Shirts) - New Building 2

37, Khagan, Birulia-1340, Dhaka, Bangladesh

(23.875295, 90.305875)

2 January 2024



1. Building Information:

Building-8 (Warehouse-2): Six (G+5) storied RC building.

Building-9 (ETP): Three storied RC building.

Guard Room: Single-storied RC structure.

Access Control Room: Single-storied masonry structure.

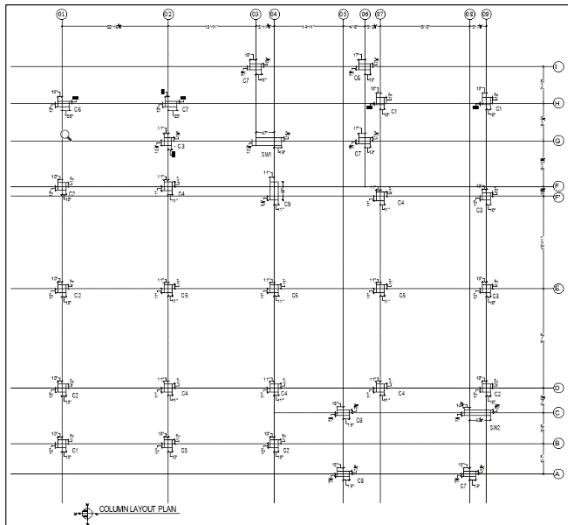
RMS Room: Single-storied roof shed supported by RC structure boundary Column.

Sludge storage room: Single-storied RC structure.

Ansar room: Single-storied steel shed supported by masonry wall.

2. Observations:

Observation-1: Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)



Column Layout plan and floor loading

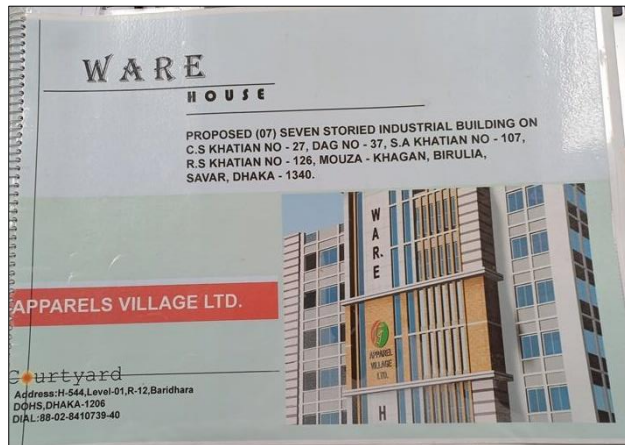


Description: The cursory calculation indicates that column stress exceeds the normal design limit considering a typical floor live load of 6kPa, roof live load of 1.5 kPa, and concrete strength of 16.31 MPa and tensile re-bar strength 413MPa.

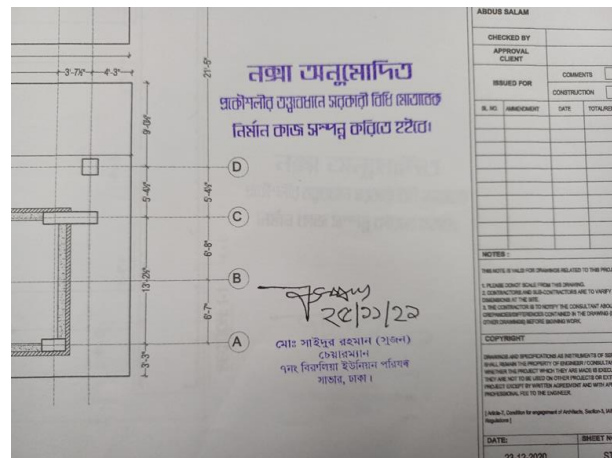
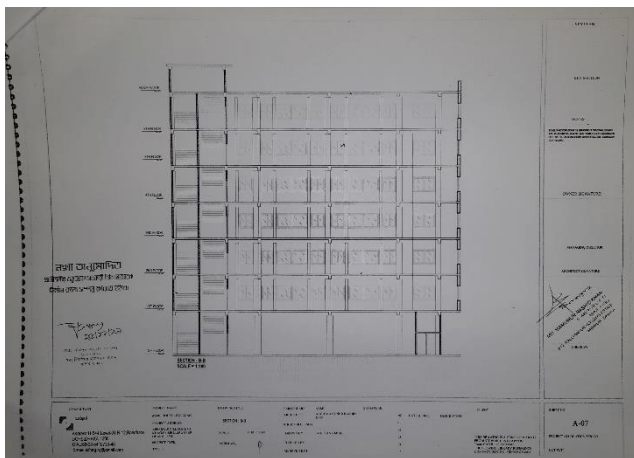
The building engineer is required to verify in-situ concrete stresses either by concrete cores (100mm dia. cores from column and floor based on material types) or existing cylinder strength data. Building Engineer is required to review design, loads and columns stresses based on in-situ concrete strength following recent building code.

During inspection, the load plan was not available. Building engineers is required to produce and actively manage a loading plan for all floor plates within the factory considering floor, column and foundation capacity.

Observation-2: Detail Engineering Assessment (DEA) needs to be performed before Future Vertical Extension. Building-8 (Warehouse-2)



Proposed for the seven storied and constructed up to six storied.



Description: The building permission layout is for seven storied structure from Birulia union parishad dated 25-Nov-2021. But the construction of the building was started in October 2020 and completed up to six stories in February 2023.

So, there is a possibility of future vertical extension. Building engineer is required to prepare full set of drawing & documents for the seven storied structure prior to commencement of further extension work.

Observation-3: Exposed re-bar at roof. Building-8 (Warehouse-2)



Description: Exposed reinforcement was found on roof top for columns, beam and slab. Building engineer is required to provide anti-corrosive coating in re-bar to prevent the corrosion in exposed rebar.

Observation-4: Cracks in brick wall supported by cantilever slab. Building-8 (Warehouse-2)



Description: During inspection, cracks were found in periphery brick wall supported by cantilever slab. Building engineer is required to investigate the crack considering the deflection of the cantilever slab and carry out suitable repair works.

Observation-5: Lack of as built drawing (Guard Room, Access Control Room, Ansar Room, RMS Room and Sludge Storage Room).



Sludge Storage Room



Guard Room



Access Control Room



RMS Room



Ansar Room

Description: As built drawing of Guard Room, Access Control Room, Ansar Room, RMS Room and Sludge Storage Room were not available on site at the time of inspection. The building engineer required to prepare as built drawing of all these structures.

Observation-6: Apparently inadequate connection (Ansar Room and RMS Room).



Description: Inadequate structural connection details were found in Ansar Room and RMS Room. The Building engineer is required to check the adequacy of the steel connection for uplift forces.

Observation-7: Crack on RC column (RMS Room).



Description: Crack found in two boundary columns of RMS Room. The building engineer is required to investigate the cause of the crack and repair columns as per recommendation of the investigation report immediately.

Observation-8: Crack on wall. (Ansar Room and Sludge storage room).



Sludge storage room



Ansar Room

Description: Crack found in the walls of Ansar Room and Sludge storage room. The building engineer is required to investigate the cause of the crack and repair walls as per recommendation of the investigation report.

Observation-9: Dampness on slab & brick wall (Guard Room, Access control room, Ansar Room, and Sludge storage room).



Access control room (dampness on slab)



Guard Room (dampness on wall)



Sludge storage room (dampness on wall)

Description: Dampness found on the brick wall of Guard Room, Ansar Room, and Sludge storage room and on slab of Access control room. The building engineer is required to identify the source of dampness and take remedial measures to repair the wall accordingly.

Observation-10: The adequacy of connections needs to be verified. Building-9 (ETP Shed)



Description: During inspection lightweight sheds were found at 3rd floor of the ETP building. Connections between angle and columns appeared to be non-engineered. Building engineer is required to check the connection for the uplift pressure of wind.

3. Action Plan:

SL. No.	Observation	Action Plan	Timeline
1.	Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)	Building Engineer to review design, loads and column stresses.	within 6 weeks
2.	Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)	Verify in-situ concrete strength by taking concrete core or adequate cylinder test report from all types of structural members.	within 6 weeks
3.	Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)	Produce and actively manage a loading plan for all floor plates considering floor, column and foundation capacity.	within 6 months
4.	Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)	Carry out remedial works where required.	within 6 weeks
5.	Stress in the column exceeds normal design limit. Building-8 (Warehouse-2)	Continue to implement floor loading plan	within 6 months
6.	Detail Engineering Assessment (DEA) needs to be performed before Future Vertical Extension. Building-8 (Warehouse-2)	Prior to the vertical extension, building engineer is required to produce a Detailed Engineering Assessment (DEA) of the structure according to BNBC and submit it to RSC for review.	within 6 weeks
7.	Detail Engineering Assessment (DEA) needs to be performed before Future Vertical Extension. Building-8 (Warehouse-2)	Carry out recommendation as outcome of the DEA.	within 6 months
8.	Exposed re-bar at roof. Building-8 (Warehouse-2)	All exposed reinforcement is to be protected from corrosion which may cause degradation of the concrete.	within 6 months
9.	Cracks in brick wall supported by cantilever slab. Building-8 (Warehouse-2)	Building engineer is required to investigate the cause of crack and repair the crack as per recommendation from investigation report.	within 6 weeks
10.	Lack of as built drawing (Guard Room, Access Control Room, Ansar Room, RMS Room and Sludge Storage Room).	The building engineer required to prepare as built drawing of all these structures.	within 6 weeks
11.	Apparently inadequate connection (Ansar Room and RMS Room).	The building engineer is required to check the adequacy of the steel connection for uplift forces.	within 6 weeks

12.	Apparently inadequate connection (Ansar Room and RMS Room).	Carry out remedial work where required.	within 6 months
13.	Crack on RC column (RMS Room).	The building engineer is required to investigate the cause of the crack and repair columns as per recommendation of the investigation report immediately.	Immediate
14.	Crack on wall (Ansar Room and Sludge storage room).	The building engineer is required to investigate the cause of the crack and repair walls as per recommendation of the investigation report.	within 6 weeks
15.	Dampness on slab & brick wall (Guard Room, Access control room, Ansar Room, and Sludge storage room).	The building engineer is required to identify the source of dampness and take remedial measures to repair the wall accordingly.	within 6 months
16.	The adequacy of connections needs to be verified. Building-9 (ETP-Shed)	Building engineer is required to check the connection of the steel shed for the uplift pressure of wind.	within 6 weeks
17.	The adequacy of connections needs to be verified. Building-9 (ETP-Shed)	Carry out remedial work where required.	within 6 months