

Karnaphuli Sportswear Industries Ltd. (Extension)

Plot # 09-20, Sector # 07, Chattogram Export Processing Zone, Chattogram, Bangladesh.

(22.299963, 91.774262)

23 January 2025



1. Building InformationExecutive Summary

KSL-3 new part: Partial six-storied reinforced concrete (RC) structure

KSL-3 old part: Four-storied reinforced concrete (RC) structure

Kitchen & Canteen Building: Five-storied reinforced concrete (RC) structure

Gas Generator: Two-storied reinforced concrete (RC) structure

Chemical & Garbage Sorting Area: Single storied masonry structure with steel roof shed

Security Post & Fire Command Station-2: Single-storied brick structure

Garbage Shed: Single-storied steel shed

Pump House (Positive suction): Single storied RC building with steel roof shed

Prayer Room: single storied steel shed

Kitchen North Toilets: Single-storied masonry structure

Fire Pump House (West Side): Single-storied light weight steel structure

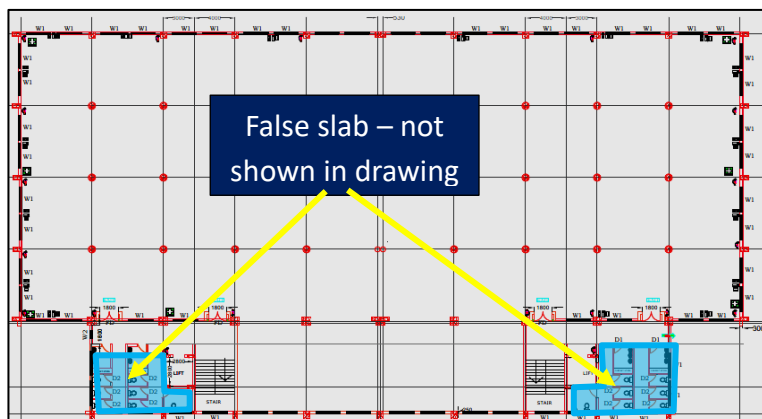
Pump House: Single-storied lightweight steel shed

RO Plant 3: Single-storied light weight steel shed

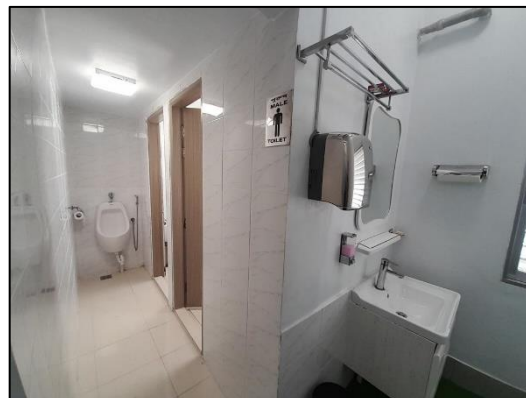
Connecting Bridge (KSL-1 to KSL-3): Self-supported single-storied steel Structure

2. Observation

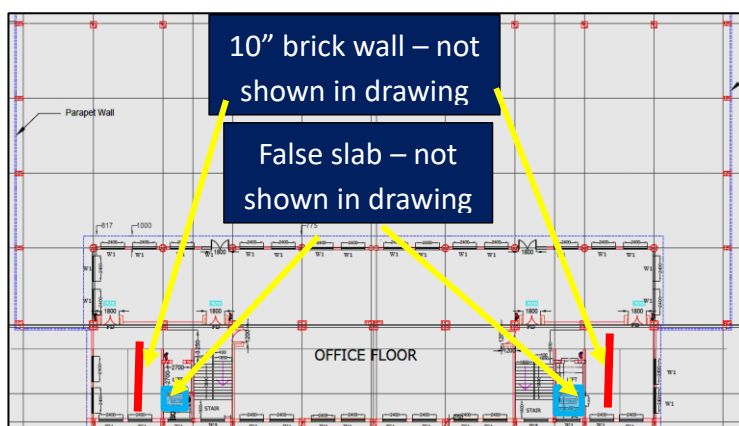
Observation-1: Discrepancies in as built drawings (KSL-3 new part)



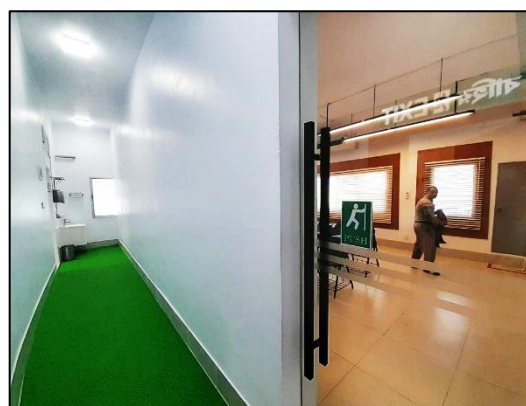
1st to 4th floor plan



False slab at toilet area



5th floor layout plan



10" brick partition wall

Description: Some mismatches (false slab at toilet area, partition wall layout etc.) were found between onsite condition and as-built drawing. The building engineer is required to survey the full structure, update as-built drawings as per site condition and incorporate in the assessment.

Observation-2: Insufficient concrete strength test reports (KSL-3 new part)

Material Strength

Equivalent In-situ Compressive Strength, $f'_c = 4,000 \text{ lb/in}^2$ (As Per Consideration)

Yield Strength of Steel for Use in Concrete Structure, $f_y = 60,000 \text{ lb/in}^2$

DESIGN REPORT OF PROPOSED SIX
STORIED YOUNGONE – KSL2 (EAST
WING) FACTORY BUILDING,
KARNAPHULI SPORTSWEAR
INDUSTRIES LTD., SECTOR
7, CHATTOGRAM EXPORT
PROCESSING
ZONE(CEPZ), CHATTOGRAM,
BANGLADESH.

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Document Management

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Department of Civil Engineering
Chittagong University of Engineering & Technology (CUET)
Chattoogram-4349, Bangladesh

TEST REPORT OF CONCRETE CYLINDER

Memo No. : BRTC/TEST/CE/2022/1262 Date: 05/04/2022
Supplier : QC In-Charge, Ready-mix plant, Confidence Cement Ltd. Date: 05/04/2022
Reference No. : CCL/RMC/CUET/Tes-333/22 Date: 05/04/2022
Name of the Test : Compressive Strength (Ref. Standard : ASTM C39-18)
Target Strength : 4500 psi Ratio : Not Available
Date of Casting : 06/03/2022 Sample : Sealed
Date of Crushing : 05/04/2022 Age of Specimen : 30 days
Location : Mat, Youngone Sports Shoes Industries Ltd.

Sample No.	Average Diameter, mm	Cross-sectional Area, mm ²	Maximum Load, kN	Compressive Strength, MPa (psi)	Avg. Compressive Strength, MPa (psi)	Failure Mode
1	100.0	7854	256	32.6 (4739)	32.8 (4760)	Mode 1
2	100.0	7854	268	34.1 (4940)		Mode 1
3	100.3	7893	250	31.7 (4600)		Mode 1

Remarks: * Mode 1: Mortar failure, Mode 2: Aggregate failure, Mode 3: Combined failure

Countersigned by: *[Signature]* Test Conducted by: *[Signature]*
Head, Department of Civil Engineering, CUET Dr. G. M. Sadiqul Islam
Professor

QR Code

Description: In the design report concrete strength is considered 4000 psi for column, beam and slab but the available test reports are insufficient to meet the evaluation & acceptance criteria of BNBC. The building engineer is required to evaluate concrete strength by taking cores, revise design report accordingly and submit to RSC for review.

Observation-3: Significant vibration at template machine area of 4th floor (KSL-3 new part)



Description: Significant vibration was felt at template machine area of 4th floor. The building engineer is required to provide anti-vibration pads or take any other measures to mitigate the vibration.

Observation-4: Discrepancies in as built drawings (KSL-3 Old part).



Undocumented plastic water tank at roof.



C4 column found 400x400 instead of 500x500 on the ground floor.

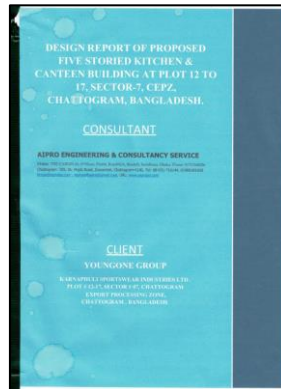
Description: Some mismatches (column C4 size at ground floor, undocumented plastic water tank on roof) were found between onsite condition and as-built drawing. The building engineer is required to survey the full structure, update as-built drawings as per site condition and incorporate in the assessment.

Observation-5: Design report needs to be reviewed against lateral forces (KSL-3 Old part).



Description: The design report prepared needs to be reviewed against lateral forces. Submit the design report to the RSC for detailed review.

Observation-6: Inconsistency and lack of information in the Design Report (Kitchen & Canteen Building).



Description: Detailed seismic calculation and framing system consideration not provided in the design report. Concrete strength considering BNBC 5.12.1 not incorporated. Also, serviceability checks not incorporated in the design report.

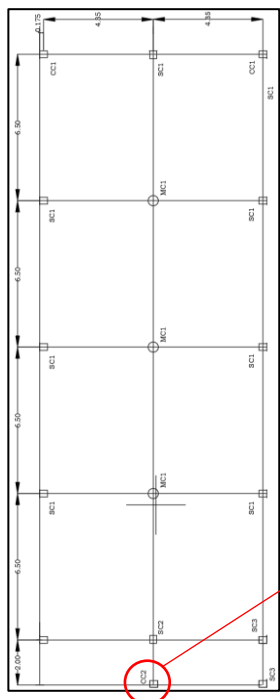
Building engineer is required to revise the design report as per BNBC 1.9

Observation-7: Design report needs to be reviewed against lateral forces (Gas Generator).



Description: The design report prepared needs to be reviewed against lateral forces. Submit the design report to the RSC for detailed review.

Observation-8: Crack on RC column at stair (Gas Generator).



Description: Crack was found on the stairs' column. The building engineer is required to investigate the identified cracks and produce an investigation report, along with a detailed repair methodology, must be submitted to RSC.

Observation-9: Lack of design documents (Garbage shed).



Description: 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, a design report was not available. Also, no drawing was available for the structure. The building engineer is required to prepare a full set of as-built drawings and a Engineering Assessment (EA) for the structure.

Observation-10: Lack of as-built drawing (Security Post & Fire Command Station-2 and Kitchen toilet).



Security Post & Fire Command Station-2



Kitchen toilet

Description: No as-built drawing was available of the structures. The building engineer is required to prepare a full set of as-built drawings.

Observation-11: Discrepancies in as built drawings [Pump House (positive suction)]



SCHEDULE OF STEEL RAFTER

NAME	D (mm)	TW (mm)	BF (mm)	TF (mm)
R1	250	08	200	10

SECTION
100X50X5 mm

Description: Rafter was found box 100X50X5 instead of I-section. The building engineer is required to survey the full structure and update the as-built drawings.

Observation-12: Inadequate connection [Pump House (positive suction)]



Description: Inadequate connection was observed. The building engineer is required to check the connection adequacy and improve the connection if required.

Observation-13: Lack of as-built drawing (Chemical & Garbage Sorting Area, Prayer Room)



Chemical & Garbage Sorting Area



Prayer Room

Description: As-built drawing for Chemical & Garbage Sorting Area, Prayer Room were not available. The building engineer is required to survey the whole structures and produce as-built drawings as per onsite condition.

Observation-14: Lack of as-built drawing (RO Plant 3, Pump House)



Description: As-built drawing for RO Plant 3, Pump House were not available. The building engineer is required to survey the whole structure and produce as-built drawings as per onsite condition.

Observation-15: Inadequate member size and stability (RO Plant 3, Pump House)



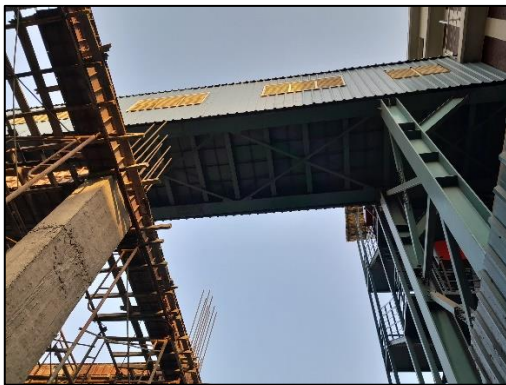
RO Plant



Pump House

Description: Inadequate member size and stability system were observed. The building engineer is required to check the member adequacy and prepare a safety check report.

Observation-16: Poor connection details of connecting bridge (Connecting Bridge)



Poor connection details

Description: Poor connection details were observed in the connecting bridge. Building engineer is required check the connection adequacy and suggest remedial works.

3. Action Plan:

Item No.	Observation	Action Plan	Timeline
1	Discrepancies in as built drawings (KSL-3 new part)	The building engineer is required to survey the whole structure and update the as-built drawings.	within 6 weeks
2	Insufficient concrete strength test reports (KSL-3 new part)	Verify in situ concrete strength by collecting minimum 4 nos. cores from columns and 4 nos. from beams/slabs	within 6 weeks
3		The building engineer is required to revise the design report for the concrete strength and submit it to RSC for review.	within 6 weeks
4		Carry out suggested remedial works if required.	within 6 months
5		Implement floor load plan	within 6 months
6	Significant vibration at template machine area of 4th floor (KSL-3 new part)	The building engineer is required to provide anti-vibration pads or take any other measures to mitigate the vibration.	within 6 weeks
7	Discrepancies in as built drawings (KSL-3 old part).	The building engineer is required to survey the full structure, update as-built drawings as per site condition and incorporate in the assessment.	within 6 weeks
8	Design report needs to be reviewed against lateral forces (KSL-3 old part).	The building engineer is required to submit the design report to RSC for review	within 6 weeks
9		Implement the remedial works if required.	within 6 months
10		Implement floor load plan	within 6 months

Item No.	Observation	Action Plan	Timeline
11	Inconsistency and lack of information in the Design Report (Kitchen & Canteen Building).	Building engineer is required to update the design report as per BNBC 1.9.1	within 6 weeks
12		Implement the remedial works if required.	within 6 months
13		Implement floor load plan	within 6 months
14	Design report needs to be reviewed against lateral forces (Gas Generator).	The building engineer is required to submit the design report to RSC for review	within 6 weeks
15		Implement the remedial works if required.	within 6 months
16		Implement floor load plan	within 6 months
17	Crack on RC column at stairs (Gas Generator).	The building engineer is required to investigate the identified cracks and produce an investigation report, along with a detailed repair methodology, must be submitted to RSC.	Immediate
18		Implement the remedial works	within 6 weeks
19	Lack of design documents (Garbage shed).	The building engineer is required to prepare a full set of as-built drawings and Engineering Assessment (EA) for the structure.	within 6 weeks
20		Implement the remedial works if required.	within 6 months

Item No.	Observation	Action Plan	Timeline
21	Lack of as-built drawing (Security Post & Fire Command Station-2 and Kitchen toilet).	The building engineer is required to prepare a full set of as-built drawings.	within 6 weeks
22	Discrepancies in as built drawings [Pump House (positive suction)]	The building engineer is required to survey the whole structure and update the as-built drawings.	within 6 weeks
23	Inadequate connection [Pump House (positive suction)]	The building engineer is required to check the connection adequacy.	within 6 weeks
24		Carry out suggested remedial works if required.	within 6 months
25	Lack of as-built drawing (Chemical & Garbage Sorting Area, Prayer Room)	The building engineer is required to survey the whole structure and update the as-built drawings.	within 6 weeks
26	Lack of as-built drawing (RO Plant 3, Pump House)	The building engineer is required to survey the whole structure and produce the as-built drawings as per site condition	within 6 weeks
27	Inadequate member size and stability (RO Plant 3, Pump House)	The building engineer is required to check the member adequacy and prepare a safety check report according to Accord Building Standard.	within 6 weeks
28		Implement the remedial work if required.	within 6 months
29	Poor connection details of connecting bridge (Connecting Bridge)	The building engineer is required to check the connection adequacy and suggest remedial works.	within 6 weeks
30		Implement the remedial works where required.	within 6 months