

Euro Arte Apparels Ltd. (Extension)

344, 345 Kabirpur, Ashulia, Savar, Dhaka-1349.

(24.0091233501, 90.247991401)

11 December 2023

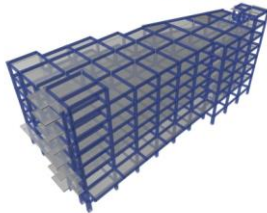
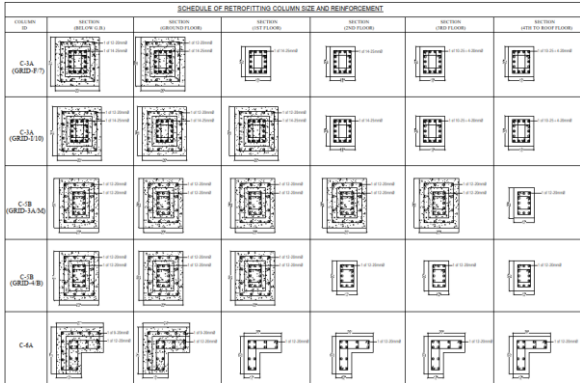


1. Building Information

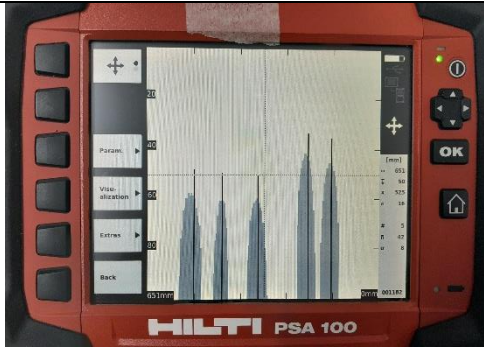
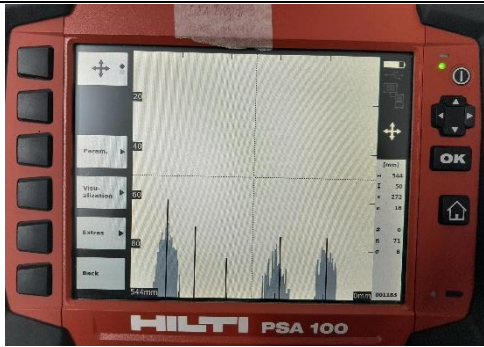
1. Extension building is a six-storied reinforced concrete (RC) building.

2. Observations

Observation 1: Lack of retrofitting material test report. (Extension Building)

DETAIL ENGINEERING ASSESSMENT (DEA) REPORT OF EXISTING 6-STORIED FACTORY BUILDING LOCATION: AT R3 DAG NO-244, 345, 350/2A, KABIRPUR, P.S. - ARBOLLA, SAVAR, DHAKA. NAME OF THE CLIENT EURO ARTE APPARELS LTD  Date of Submission: 25-07-2023 Submitted By  DESIGN & DEVELOPMENT SOLUTION Lamin K2, Broom #102, Ground Floor, Rau DORE, Mirpurhat, Dhaka-1212. Phone: +8802-36232366 Email: quoting@dpssolutions.com Web: www.dpssolutions.com	Centre for Advisory and Testing Services [CATS-MIST (CEI)] Military Institute of Science and Technology Compressive Strength of Concrete Drilled Cores CATS Reference: 13876/Con/27755-356/11/2021 Date: 24.11.2021 Client: Euro Arte Apparels Ltd Project Name & Address: Euro Arte Apparels Ltd Building 6 (6th) Storied Industrial Building at Kibpur, Arbolla, Savar, Dhaka Sample Brought By: Mr. Abdul Quader Date of Receiving: 18.11.2021 Test Method: ASTM C422P-47M Date of Test: 23.11.2021 Type of Sample: Drilled Core Sample Condition: Unstressed Location of Sample: 1st Floor Column, Grid D/2A, Elev. 10.26 m Quantity of Sample: 04 nos. Construction Year: 2016-2017 Type of Aggregate: Stone Chips No. of Story: 1 to 6th Storey Type of Aggregate: Stone Chips <table><tr><th>S. No.</th><th>Sample Identification Mark</th><th>Original Length (mm)</th><th>Sample Length (mm)</th><th>Diameter (mm)</th><th>Crushing Load (kN)</th><th>Crushing Strength (MPa)</th><th>Failure Type</th><th>Structure Type</th></tr><tr><td>1</td><td>Core-1, Core 1/2A</td><td>180.0</td><td>135.0</td><td>65.0</td><td>116.8</td><td>37.1</td><td>Normal</td><td>Column and Slab</td></tr><tr><td>2</td><td>Core-2, Core 1/2A</td><td>165.0</td><td>132.0</td><td>65.0</td><td>140.1</td><td>43.9</td><td>Normal</td><td>Column and Slab</td></tr><tr><td>3</td><td>Core-3, Core 1/2A</td><td>180.0</td><td>132.0</td><td>65.0</td><td>102.9</td><td>32.2</td><td>Normal</td><td>Column and Slab</td></tr><tr><td>4</td><td>Core-4, Core 1/2A</td><td>165.0</td><td>131.0</td><td>65.0</td><td>173.2</td><td>49.5</td><td>Normal</td><td>Column and Slab</td></tr></table> REMARKS: 1. All information displayed above are true and correct as provided by the client. 2. Please compare the results with your compressive strength design and consult with your design engineer. Test Supervised By:  Counter Signed By:  Dr. G. M. Fahim Hossain Professor Director of Engineering MIST, Mirpurhat, Dhaka Note: The test results are for the purpose of the sample only and are not to be used for any other purpose. The results are for the purpose of the sample only and are not to be used for any other purpose. The results are for the purpose of the sample only and are not to be used for any other purpose.	S. No.	Sample Identification Mark	Original Length (mm)	Sample Length (mm)	Diameter (mm)	Crushing Load (kN)	Crushing Strength (MPa)	Failure Type	Structure Type	1	Core-1, Core 1/2A	180.0	135.0	65.0	116.8	37.1	Normal	Column and Slab	2	Core-2, Core 1/2A	165.0	132.0	65.0	140.1	43.9	Normal	Column and Slab	3	Core-3, Core 1/2A	180.0	132.0	65.0	102.9	32.2	Normal	Column and Slab	4	Core-4, Core 1/2A	165.0	131.0	65.0	173.2	49.5	Normal	Column and Slab
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The following strength parameter is considered for design of building <table><tr><th>SL/No</th><th>Strength</th><th></th></tr><tr><td>01</td><td>Column & Footing Concrete Grade (Stone chips)</td><td>5834 Psi</td></tr><tr><td>02</td><td>Beam & Grade Beam Concrete Grade (Stone chips)</td><td>3500 Psi</td></tr><tr><td>02</td><td>Slab Concrete Grade (Stone chips)</td><td>3000 Psi</td></tr><tr><td>06</td><td>Flexural strength of all Reinforcement, f_y</td><td>60,000 Psi</td></tr></table>	SL/No	Strength		01	Column & Footing Concrete Grade (Stone chips)	5834 Psi	02	Beam & Grade Beam Concrete Grade (Stone chips)	3500 Psi	02	Slab Concrete Grade (Stone chips)	3000 Psi	06	Flexural strength of all Reinforcement, f_y	60,000 Psi																															
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Retrofitted column schedule	Retrofitted column																																													
Description: The factory conducted retrofitting in column & foundation of the building in 2020. During inspection retrofitting material test report was not available. After completion of retrofitting works, the factory taken four concrete cores from existing columns. However, a Detail Engineering Assessment (DEA) report was available on site considering concrete strength 37.1 MPa for column based on core test report. The factory is required to verify the retrofitting material strength either from cylinder test report or by taking cores from retrofitted column/foundations and revise the design report accordingly.																																														

Observation-2: Mismatch in as-built drawing. (Extension Building)



C-2	● 14-25mmØ+ ● 4-20mmØ+		● 14-25mmØ+ ● 4-20mmØ+		● 10-25mmØ+ ● 8-20mmØ+	
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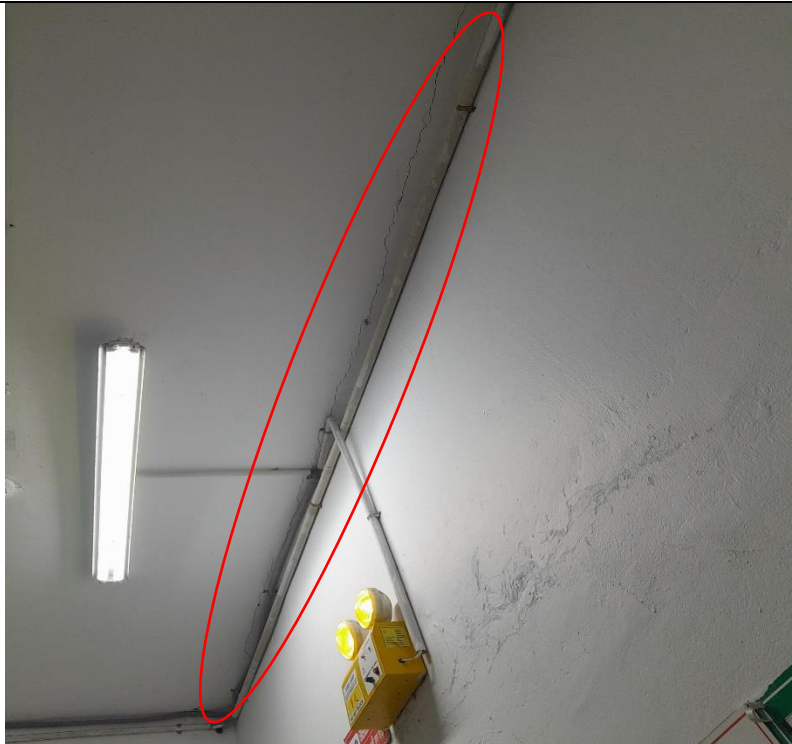
Description: During the inspection, rebar mismatch was found in C2 column. 16 rebars were found onsite instead of 18 rebars. The building engineer is required to survey the full structure and update the as-built drawing accordingly.

Observation-3: Dampness on brick wall. (Extension Building)



Description: During the inspection, dampness was found on the brick wall on the ground floor. Factory is required to check the extent of dampness and repair as per engineer’s suggestion.

Observation-4: Expansion joint filled with rigid material. (Extension Building)



Description: Expansion joint with adjacent building was found filled with rigid material which may result in development of crack and falling hazard during an earthquake or lateral movement of the buildings. Factory is required to fill the gap with any flexible material suggested by the structural/fire engineer.

3. Action Plan

SL	Observation	Action Plan	Timeline
01.	Lack of retrofitting material test report. (Extension Building). (Extension Building)	The factory is required to verify the retrofitting material strength either from cylinder test report or by taking cores from retrofitted column/foundations and revise the design report accordingly.	within 6 weeks
02.	Lack of retrofitting material test report. (Extension Building). (Extension Building)	Carry out suggested remedial works if required.	within 6 months
03.	Lack of retrofitting material test report. (Extension Building). (Extension Building)	Implement floor loading plan.	within 6 months
04	Mismatch in as-built drawing. (Extension Building)	The building engineer is required to survey the full structure and update the as-built drawing accordingly.	within 6 weeks
05.	Mismatch in as-built drawing. (Extension Building)	Carry out suggested remedial works if required.	within 6 months
06.	Dampness on brick wall. (Extension Building)	The factory is required to check the extent of dampness and repair as per engineer's suggestion.	within 6 weeks
07.	Expansion joint filled with rigid material. (Extension Building)	Factory is required to fill the gap with any flexible material suggested by the structural/fire engineer.	within 6 months

Survey Limitations and Assumptions

This report is for the private and confidential use of RSC for whom it was prepared together with their professional advisors as appropriate. It should not be reproduced in whole or in part or relied upon by third parties for any use without the express written permission of RSC.

This report can be used in discussion with the supplier or factory owner as a means to rectify or address any observations made. The report is not comprehensive and is limited to what could be observed during a visual inspection of the building.

This Report is not intended to be treated as a generalized inspection and does not cover the deterioration of structural members through dampness, fungal or insect attack, nor does it deal with problems and defects of a non-structural nature. Other non-structural aspects of the building such as fire safety have not been assessed in this survey.

Except as otherwise noted, drains and other services were not viewed or tested during our inspection and are therefore similarly excluded from this Report. We have not inspected any parts of the structure which are covered, unexposed or inaccessible and we are therefore unable to report that any such part of the property is free from defect.

External inspection of the façade walls has generally been carried out from ground level only by visual sighting. No opening up works were carried out (except as noted) and we rely on the Architects and Engineers drawings provided to us for our views on concealed parts of the structure and in particular foundations. Strengths of materials and components are untested and we recommend that the factory owners Building Engineer carries out in situ testing over and above those suggested to satisfy themselves with the material strengths and component details.

Recommendations, where given, are for the purpose of providing indicative advice only, are not exhaustive, relate solely to identifying key and obvious structural defects as identified in this presentation, and do not take the form of or constitute a specification for works. We take no responsibility for the works as constructed. This report does not interfere with the factory owners Building Engineers responsibility for the structural performance of this building, The Building Engineer remains fully responsible for the structural adequacy of the building.

This report does not comment in detail on the future seismic performance of the building and only highlights the fact that the building may experience significant damage or collapse in a seismic event along with many others in the Dhaka region.

The observations in this report are based on the Engineering Judgement of the lead surveyor/engineer at the time of the survey. We assume in making these observations that no covering up of faults defects, filling or plastering over cracking or significant repair work has been carried out by the building owner. Any future alteration or additional work by the building owner will void this report.