TENDER DOCUMENT

STRUCTURAL AUDIT & STRENGTHENING ASSESSMENT FOR BEAMS AND COLUMNS

The Delhi Transporters' CGHS Ltd.

Plot No. 2, Sector 2, Dwarka, New Delhi - 110075

1. INTRODUCTION

The Delhi Transporters' CGHS Ltd invites sealed tenders from reputed, experienced and licensed Structural Consultants/Structural Engineers registered with MCD/DDA/NDMC for carrying out comprehensive Structural audit of Society buildings.

2. OBJECTIVE

To undertake a comprehensive structural audit of the existing beams and columns of the Society buildings to assess their present condition, structural adequacy, extent of deterioration/damage and requirement for repair, strengthening, jacketing or other structural intervention, and to prepare detailed strengthening recommendations, drawings/specifications and a measurable BOQ.

3. SCOPE OF STRUCTURAL AUDIT

3.1 Review of Available Information

Review available structural/architectural drawings, previous structural reports, repair records and relevant information relating to the age, alterations, additions and usage of the buildings.

3.2 Detailed Visual Inspection

Carry out systematic inspection of all accessible beams and columns, including basement/stilt, ground and upper floors, terraces and other relevant areas. Record cracks, spalling, exposed reinforcement, corrosion, honeycombing, dampness, leakage, deformation, distress, construction defects and signs of overloading or alteration.

3.3 Structural Condition Mapping

Prepare floor-wise and block-wise condition mapping identifying each distressed beam and column. Record location, member size, defect type, approximate extent and severity, supported by dated photographs.

3.4 Dimensional & Reinforcement Assessment

Verify representative beam and column dimensions and assess reinforcement details using suitable non-destructive methods such as cover meter/rebar locator and other appropriate techniques.

3.5 Non-Destructive Testing

Carry out appropriate NDT/testing, as considered necessary by the Structural Consultant, including rebound hammer, UPV, rebar detection/cover measurement, half-cell potential, carbonation depth and other relevant tests.

The Delhi Transporters C.G.H.S. Ltd. Plot No.-2 Sector-2, Dwarka New Delhi-110075

3.6 Limited Destructive / Laboratory Testing

Where technically justified, recommend and conduct limited core sampling or other destructive tests to establish concrete strength and material condition. Locations and number of tests shall be determined by the Structural Consultant.

3.7 Reinforcement Corrosion Assessment

Assess the extent and significance of reinforcement corrosion, concrete cover deficiency, carbonation and other factors affecting durability and structural capacity.

3.8 Structural Analysis & Adequacy Assessment

Undertake structural analysis/checks of representative and critical beams and columns based on available drawings, site measurements, observed condition, material test results and applicable design/loading requirements. Identify members requiring strengthening, repair, replacement or further investigation.

3.9 Strengthening Scheme

For each member identified as deficient, recommend the appropriate strengthening method, such as RCC jacketing, steel plate/section strengthening, FRP/CFRP or other technically suitable systems. Provide design calculations, member-wise strengthening details and construction methodology.

3.10 Priority & Safety Classification

Classify deficiencies according to urgency and structural risk, clearly identifying any beam or column requiring immediate temporary support, restriction of access/use or urgent strengthening.

3.11 Strengthening BOQ

Prepare a member-wise measurable BOQ for recommended strengthening works, including quantities of concrete/micro-concrete, reinforcement, structural steel, FRP/CFRP, anchors, bonding agents, repair materials, formwork and associated works, as applicable.

4. REQUIRED DELIVERABLES

- Comprehensive structural audit report for beams and columns.
- Block-wise/floor-wise list of inspected beams and columns.
- Defect and distress mapping with photographs.
- NDT and laboratory test results with technical interpretation.
- Assessment of structural adequacy and identified deficient members.
- Member-wise strengthening recommendations.
- Structural strengthening design calculations.
- Detailed strengthening drawings/details and specifications.
- Method statement and sequence of strengthening works.
- Priority/risk classification of members.
- Final measurable BOQ for strengthening of beams and columns.
- Recommendations for monitoring and future structural inspection.

5. BOQ FOR STRUCTURAL AUDIT & STRENGTHENING DESIGN

The following BOQ is for appointment of the Structural Consultant for audit, investigation, assessment and preparation of strengthening design. Strengthening execution quantities are to be finalised after the audit.

Sl. No.	Description	Unit	Qty	Rate (₹)
1	Review of available structural/architectural drawings and previous structural records	LS		
2	Detailed visual inspection and condition survey of beams and columns	Sqm/Floor/LS		
3	Preparation of beam and column distress/condition mapping with photographic documentation	LS		
4	Rebound Hammer Test on concrete	No.		
5	Ultrasonic Pulse Velocity (UPV) Test	No.		
6	Rebar detection / cover measurement using suitable NDT equipment	No.		
7	Half-cell potential / corrosion assessment, where required	No.		
8	Carbonation depth / concrete durability assessment, where required	No.		
9	Concrete core extraction and laboratory compressive strength test, where required	No.		
10	Structural analysis and adequacy assessment of existing beams and columns	LS		
11	Assessment of load-carrying capacity and identification of	LS		

New Delhi-110075

	deficient members			
12	Design of RCC jacketing strengthening for columns, where required	No.		
13	Design of RCC jacketing/section enlargement strengthening for beams, where required	No.		
14	Design of structural steel strengthening for beams/columns, where required	No./Kg		
15	Design of FRP/CFRP strengthening system, where required	Sqm/No.		
16	Detailed structural strengthening drawings and member-wise details	LS		
17	Design calculations and structural strengthening report	LS		
18	Preparation of final member-wise strengthening BOQ and technical specifications	LS		
19	Site visits during tender clarification / pre-construction stage, as required	Visit		
20	Final inspection and certification of proposed strengthening scheme	LS		

6. SPECIAL CONDITIONS

The audit shall specifically focus on the structural safety and strengthening requirement of beams and columns; general architectural repairs are outside this scope unless they directly affect structural safety.

- The consultant shall not merely identify defects but shall establish, as far as reasonably possible, their cause, structural significance and remedial requirement.

- Any recommendation for strengthening shall be supported by structural calculations and detailed drawings/specifications.
- The consultant shall clearly distinguish between repair of deterioration and strengthening required to restore or enhance structural capacity.
- No strengthening work shall be executed without approved structural drawings and method statements.
- All testing locations and quantities shall be determined by the Structural Consultant based on site conditions and engineering judgement.
- Final strengthening quantities shall be measured member-wise after completion of the structural audit and design.
- The consultant shall identify any member requiring immediate temporary support or other safety action.
- The consultant should submit proof of his qualifications, experience, registration(s) with the regulatory bodies (DDA/MCD/NDMC etc) and accreditations.
- Last date of submission of tender is 30/09/26.

Dated : 14 Sep 26

The Delhi Transporters C.G.H.S. Ltd., Plot No.-2, Sector-2, Dwarka New Delhi-110075

(AVM S Saxena)
Hony Secretary

(Jagat Singh Ahlawat)
President