

## **SOP FOR STRUCTURAL AUDIT OF OPERATIONAL BUILDINGS IN GIFT CITY**



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## **1. Background**

In line with the provisions of GIFT DCR – Part 5 General Procedural Requirements, Clause 4.4- ***“Structural Audit must be carried out at least once in 10 years for each building in GIFT Area, by the concerned society/association of Leaseholders as maybe formed, at its sole cost and expense for the first twenty years of completion of building and at least once in five years thereafter. Structural Audit shall be performed by accredited professional and shall include all structural elements and building components.”*** The purpose of this SOP is to establish a set of procedures for compliance of this GIFT DCR requirement by the concerned Developers/Co-Developers within GIFT City. This encompasses a detailed process of Structural Audit starting from the Consultant Appointment till the issuance of Structural Stability Certificate by them.

## **2. Structural Consultant Appointment Criteria: -**

- Structural Consultant shall mandatorily be accredited with GIFTCL.
- The Structural Consultant chosen by the Developer/Co-Developer/Owner for the Structural Audit shall preferably be different from the Principal Design Structural Consultant of the Building.
- The lab chosen by Structural Consultant shall be a NABL lab for conducting NDT tests or any other tests required for building materials etc.
- The Structural Consultant possessing prior experience of structural analysis of old buildings, retrofitting works etc. is desirable.
- The cost of appointment of Structural Consultant shall be borne by the Developer/Co-Developer, in line with the provisions of GIFT DCR.

## **3. Scope of works for the Structural Audit: -**

The scope of work involves assessing and ensuring the structural audit of all operational buildings that are more than ten years old from the date of their OC certificate, as per GIFT DCR. Detailed scope of work shall be as follows: -

➤ **Site History Review:**

- Collect historical data about the building, previous renovations, and changes/modifications in occupancy with reference to approved As -Built drawings/OC Stage Drawings.
- Review any past structural modification and assessments records.

➤ **Initial Site Inspection:**

- Conduct a thorough visual inspection to identify visible defects such as cracks, corrosion, deflections, and any signs of structural distress.
- Document all findings with photographs and detailed notes.

➤ **Documentation Review:**

- Study existing construction documents, including architectural and structural drawings, to understand the original design and any modifications made over time.
- Review previous inspection reports and maintenance records for insights into recurring issues.

➤ **Load Analysis:**

- Load profiling of entire building to assess the current load-bearing capacity of the structure and compare it with the required standards.
- Evaluate the impact of any changes due to occupancy or usage on the structure.

➤ **Detailed Structural Assessment:**

- Perform non-destructive testing (NDT) methods such as ultrasonic testing, ground-penetrating radar, and infrared thermography to evaluate the integrity of structural elements like beams, columns, shear wall and slabs etc.
- Conduct material testing to assess the quality and strength of concrete, steel, and other construction materials.

➤ **Structural Analysis:**

- Perform the structural analysis of building model in line with existing loading situation / modification made over time and simulate various load conditions.
- Identify any weaknesses or areas needing reinforcement / structural strengthening based on the analysis.

➤ **Limitations of Structure:**

- Evaluate the load bearing capacity of the basement extent to restrict the movement of vehicles accordingly. A suitable marker should be placed at certain locations around basement extent to guide the vehicle movement.

➤ **Structural Stability Certificate (with Recommendations for Repairs, if needed):**

- Provide a comprehensive report with recommendations for structural strengthening /repairs or reinforcements needed to ensure stability.
- Implement necessary repairs such as crack filling, reinforcement of beams and columns, corrosion protection, and replacement of deteriorated materials.
- Conduct a final inspection to ensure all recommended structural strengthening / repairs have been completed satisfactorily if required.
- Provide a certificate of structural stability along with a detailed report based on the completed work.

**4. Process for carrying out Structural Audit by Developers/Co-Developer/Owner: -**

- Developer/Co-Developer/Owner shall mandatorily carry out the Structural Audit of the buildings which have completed 10 years post obtaining OC (Occupancy Certificate).
- Developer/Co-Developer/Owner shall appoint the Structural Consultant from the list of Accredited Consultants with GIFTCL.
- After the appointment of Structural Consultant, Developer/Co-Developer/Owner shall intimate GIFTCL before carrying out structural audit of the building.
- Structural Audit Report shall be submitted to GIFTCL in the prescribed format (Annexure 1), within 90 days of completion of 10 years for that particular building.

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### Responsibility Matrix for the SOP

Item Description	Developer/Co-Developer/Owner	Structural Consultant	GIFTCL(PA&E)
<b>Process Initiation</b>			Formally intimation via email to the Society/Leaseholders of the Buildings which has completed 10 years post issuance of OC date to initiate the Structural Audit Process.
<b>Appointment of Structural Consultant.</b>	Select and appoint an accredited Structural Consultant as per GIFT guideline.	-	-
<b>Intimation to GIFTCL</b>	Inform GIFTCL about the appointment and audit schedule before one week.	-	Receive intimation
<b>Performing Structural Audit of the building</b>		Conduct thorough Structural Audit of the building as per the defined "Scope of work"	
<b>Submission of Structural Audit Report</b>	Submit report to GIFTCL within 90 days of completion of 10 years	Prepare and sign & stamp the report.	Receive and review the report.
<b>CASE 1: - If Structural Audit Report, found ok</b>			On satisfactory review of the report, GIFTCL will intimate via email regarding the acceptance of the report and <b>thus closure of the process.</b>

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Item Description	Developer/Co-Developer/Owner	Structural Consultant	GIFTCL(PA&E)
<b>CASE 2: - If Pre-liminary Structural Audit Report (PSAR) has recommendations for Repairs</b>	Implement recommended repairs	Provide recommendations and oversee repairs in Pre-liminary Structural Audit Report (PSAR)	GIFTCL may award another 90 days to the Developer/Co-Developer/Owner to execute repairs as per Structural Consultant recommendations.
<b>Final Inspection</b>	Facilitate final inspection	Conduct final inspection and certify structural stability.	Intimate GIFTCL for the scheduled final inspection. GIFTCL Representative may join the inspection, solely on their discretion.
<b>Submission of Final Structural Audit Report (FSAR)</b>	Submit Final Structural Audit Report (FSAR) to GIFTCL within 90 days of submission of PSAR.	Prepare and sign & stamp the FSAR.	Receive and review the FSAR.
<b>Closure of the Process</b>			On satisfactory review of the FSAR, GIFTCL will intimate the Developer/Co-Developer/Owner via email regarding the acceptance of the report and thus closure of the process.



**A. Format of Structural Stability Certificate**

To

Competent Authority  
GIFT City

Sr. No.		Details
1.	Building ID	
2.	Block	
3.	Zone	

I hereby confirm that I possess the requisite qualifications and experience to act as a Structural Engineer for the review of the aforementioned building. I have been appointed as the Accredited Structural Engineer to conduct the structural audit and prepare the associated report in accordance with the provisions outlined in the **SOP for Structural Audit of Buildings in GIFT City**. I am fully aware of my duties and responsibilities in this regard and assure that I will fulfil them diligently. The structural audit report, which I have prepared and signed, accurately reflects the findings from my site inspection, as well as the review of relevant building design documents, test reports, and other pertinent information.

The recommendations I have made to ensure the structural safety of the building have been communicated to the Developer/Co-Developer/Owner, and I am satisfied that they are being fully complied with. Based on my thorough assessment, I hereby certify the building's structural safety, adequacy, maintainability, and stability for its intended use.

Signature.....

Reg.No.....

Date:.....

Name of Structural Consultant: .....

Address: .....

Tel.No. ....

*Encl. – Structural Audit Report (Annexure 1)*



**Annexure -1 Structural Audit Report**

(This form has to be completed by an accredited Structural Consultant after his site Inspection and verification regarding compliance of all recommendations by the Developer/Co-Developer.)

Sr. No.	Description
01.	<b>Brief of the Project: -</b> Name of Project & Developer, along with Building Footprint No.: - Name of Accredited Structural Consultant: - Type of the building (Use case): - Date of occupancy Certificate: - Year of subsequent additions: - Nature of additions or alterations: - Date of Last Inspection Report: -
02.	<b>Detailed Inspection Observations:</b> <ul style="list-style-type: none"> <li>• <b>Site History Review:</b> - Historical data, history of any renovation, alteration etc.</li> <li>• <b>Initial Site Inspection:</b> - Inspection to identify any visual defects such as cracks, corrosion etc.</li> <li>• <b>Documentation Review:</b> - Review of existing construction documents such as Structural drawings, Inspection Reports etc.</li> <li>• <b>Detailed Structural Assessment:</b> - NDT testing &amp; Material test reports</li> <li>• <b>Structural Analysis:</b> - Structural Analysis of the building software model in line with existing loading conditions.</li> </ul>
03.	<b>Recommendations &amp; Suggestion for Repairs (if any) :</b>
04.	<b>Compliance Conformance: -</b>