


# REPORT OF STABILITY ASSESSMENT OF ST. JOHN'S HIGH SCHOOL SECTOR-26 CHANDIGARH



National Institute of Technical Teachers Training & Research  
Sector-26, Chandigarh

  
**PRINCIPAL**  
**ST. JOHN'S HIGH SCHOOL**  
(A Unit of CCBI)  
Sector 26, Chandigarh - 160019

## 1. INTRODUCTION

To check the present condition and stability of existing building of St. John's High School Sector-26 Chandigarh, the estate department of school referred the matter to Civil Engineering Department of NITTTR. An inspection was arranged and the structure was inspected by Team of NITTTR so as to assess the present strength of structural members of buildings. Non-destructive testing of various members along with condition survey was carried out to assess the integrity of school building.

### 1.1 Initial Visual Inspection

Visual examination is the starting point of inspection. Cracks, rust staining, and spalling are the most obvious defects which can be identified. Often the location of these can give a good indication of the cause of the problem, but an open mind must be kept at this stage until further investigation is undertaken to confirm the root cause. If visual inspection of a structure suggests that a problem may be present, an in-depth examination should be carried out.

The purpose of the site inspection is to identify the type and age of construction, gravity and lateral load resisting systems, and to make a preliminary assessment of the existing condition of the structure. Visual defects may be related to poor workmanship or material deterioration. These show up as excessive deflection and flexural cracking, while foundation movements may cause diagonal cracks. Material deterioration is normally indicated by cracking and spalling. It is particularly important to differentiate between the various types of cracks found. Examination of crack patterns often suggests the most probable cause of the problem.

Access facilities are usually minimal, so the extent of examination is limited. Hammer-tapping (to locate hollowness or delamination), and the use of the Schmidt Hammer, cover meter, or crack width gauge are often helpful. Potential problems associated with cracking, excessive deflections, water permeability, and evidence of corrosion should be specially noted. By observing the site and examining pertinent drawings and records, the probable causes of damage are deduced, and the areas of serious concern are located. It is often possible to judge whether the damage is corrosion related and this is useful in planning the subsequent detailed survey.

### 1.2 Condition Survey

The purpose of the survey is to collect sufficient data to pinpoint the cause and source of the problem and to determine the extent of the damage. Depending on the probable cause of the damage, the site work involves a combination of the following processes:

- ◆ Detailed visual inspection;
- ◆ Survey of cracks, spalls, steel pitting and other defects;
- ◆ Schmidt hammer test for Delamination or compressive strength (comparison only);
- ◆ Ultrasonic test for honeycombing depth of cracks, or compressive strength (comparison only);

**2 Visual Inspection:** Photographs 1,2,3,4 & 5 shows the present condition of the various blocks of the school. As per the visual inspection following observations are made:

1. No seepage was observed in any of the building
2. No cracks and corrosion was observed in all the blocks except for surface cracks in the plaster work at few locations.
3. No signs of dampness were observed in critical locations in all the blocks.
4. The roof top was found to be in good condition.
5. Various load bearing members were found to be in good condition.

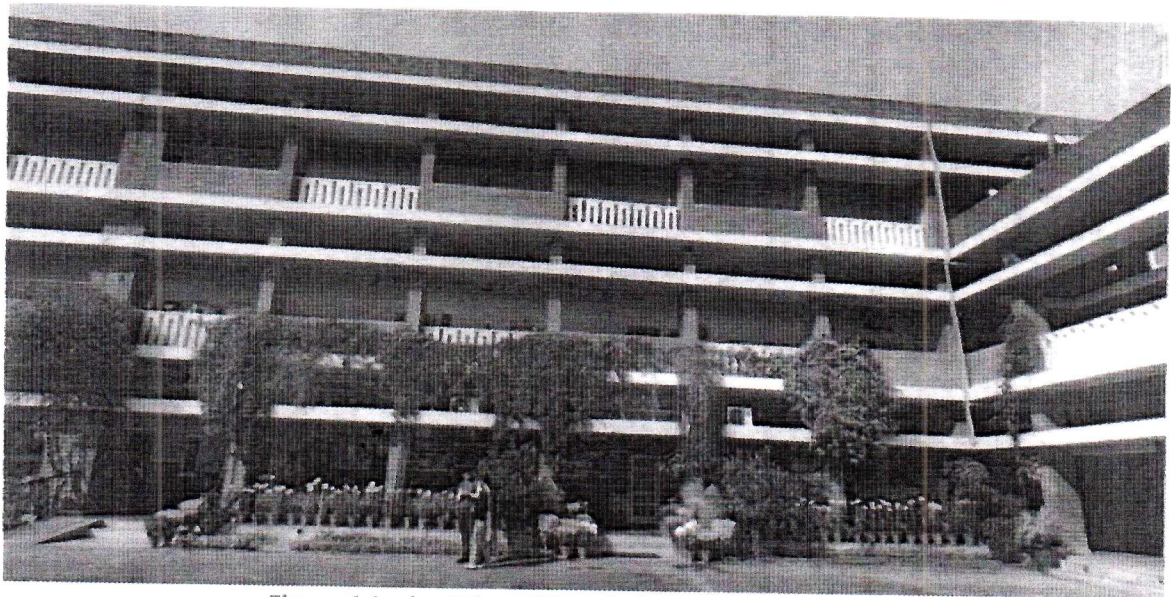


Figure 1 Junior Wing of St. John's High School

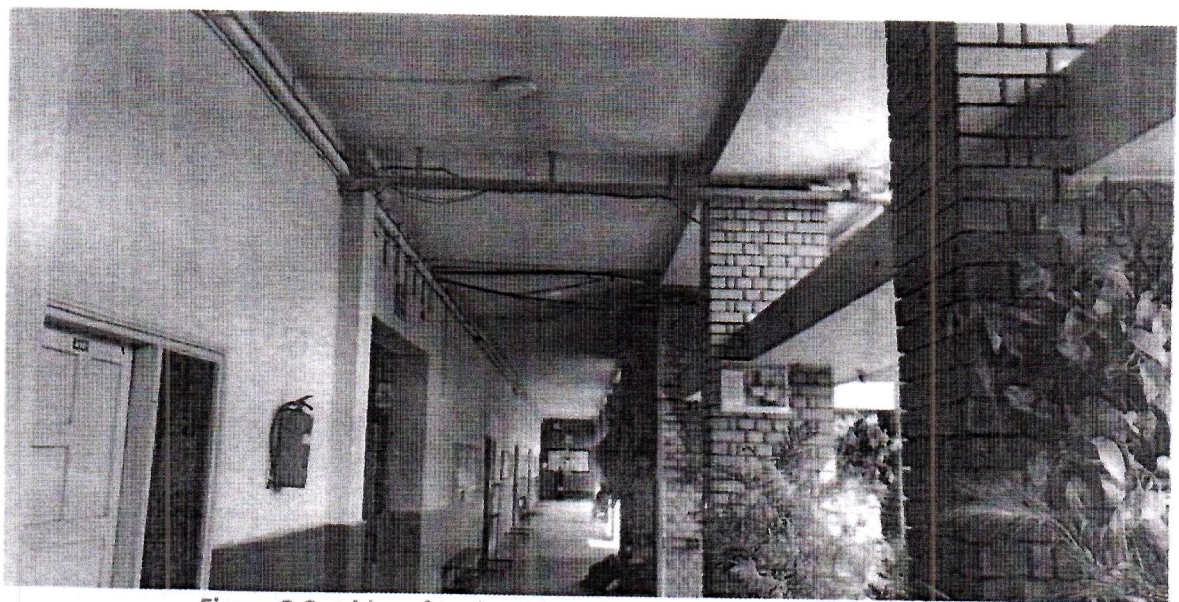


Figure 2 Corridor of Junior Wing of St. John's High School

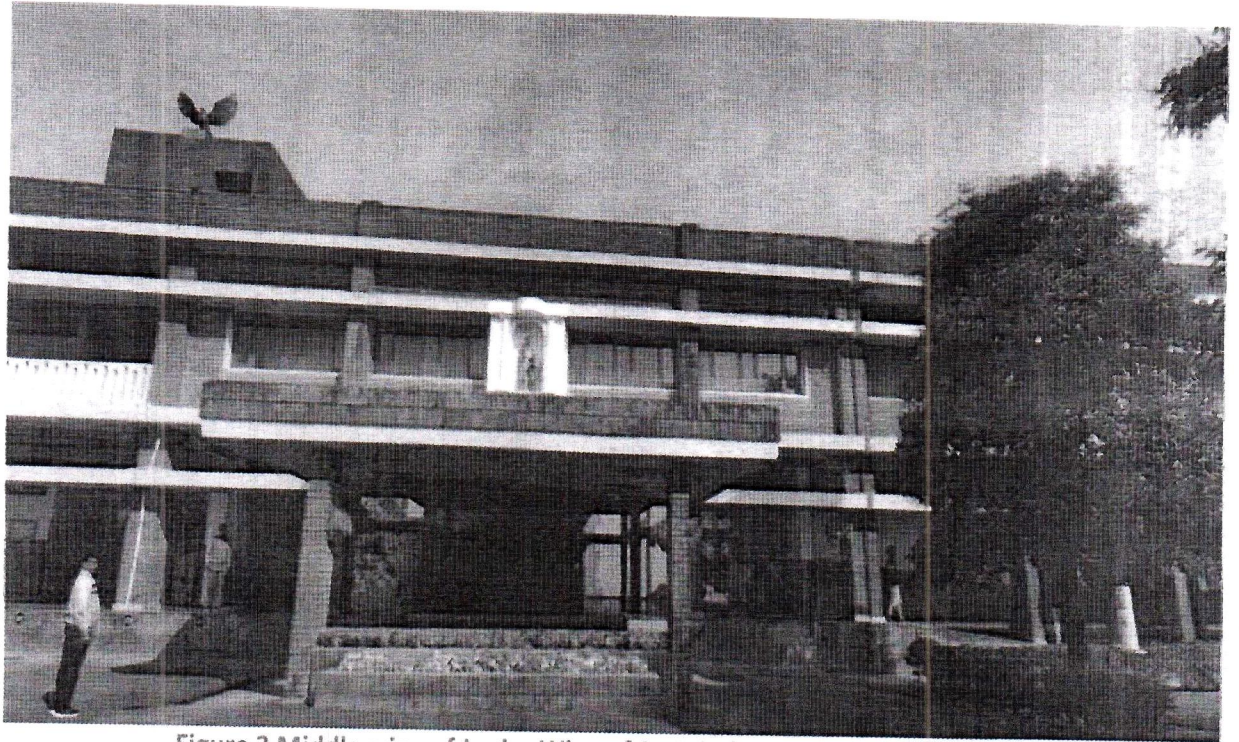


Figure 3 Middle wing of Junior Wing of St. John's High School

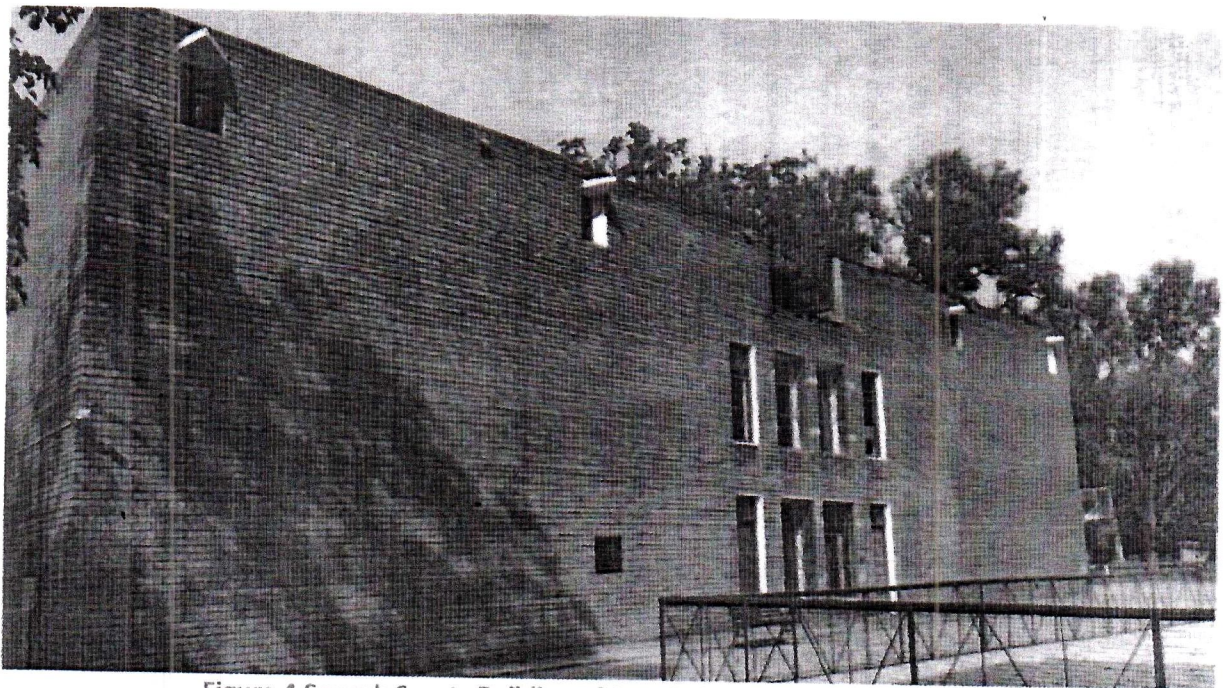


Figure 4 Squash Sports Building of St. John's High School

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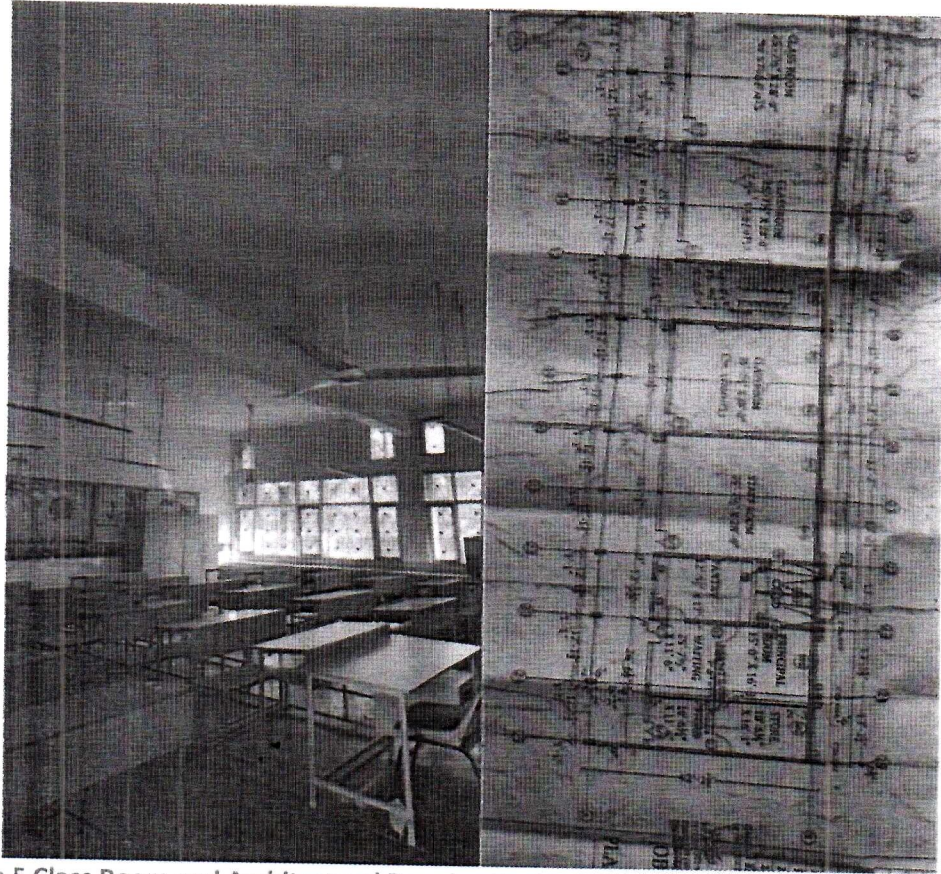



Figure 5 Class Room and Architectural Drawing Senior Wing of St. John's High School

### 3 CONCLUSIONS: -

Based on the investigation & study carried out on various members, the following conclusions are drawn:


- The average relative strength of concrete varies from 20 N/mm<sup>2</sup> to 22 N/mm<sup>2</sup> corresponding to the rebound hammer test.
- The general quality of concrete is in the range of good quality corresponding to the Ultra sonic Pulse Velocity test.
- No signs of dampness, seepage, corrosion and distress were observed in the existing building.

Based on the visual inspection and tests carried the building was found to be in good condition. Hence it is certified that building is safe and stable as per the designed load conditions.

  
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