



हरकोर्ट बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर – 208002, उ.प्र., भारत

HARCOURT BUTLER TECHNICAL UNIVERSITY

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : [vc@hbtu.ac.in](mailto:vc@hbtu.ac.in)



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## Report on Site Visit to Fire-Damaged Humraz Complex

**Department of Civil Engineering**

**Date of Visit:** 15 October 2025

**Location:** Humraz Complex, Basmandi, Kanpur

**Guided by:** Mr. Manish Kumar,

**Accompanied by:** Dr. Kavita Tandon, Dr Riya Catherine George and Dr. Rajiv Ganguly

**Participants:** Final Year and Third Year B.Tech. (Structural Fire Engineering) Students

### 1. Purpose of Visit

The visit was organized under the guidance of our respected Head of Department, **Prof. Deepesh Singh**, to provide students with hands-on experience in post-fire structural evaluation and non-destructive testing (NDT) techniques. The **Humraz Complex**, located at Basmandi, was selected as the site for inspection since it had been damaged by fire three years ago.

The objectives of the visit were:

- To conduct a visual inspection of the fire-damaged structure.
- To perform Rebound Hammer and Ultrasonic Pulse Velocity (UPV) tests.
- To understand the nature of fire-induced damages and assess the current structural condition.

### 2. Activities Conducted

Students performed hands-on training on the following instruments:

- Rebound Hammer Test – for surface hardness and estimation of in-situ compressive strength of concrete.
- Ultrasonic Pulse Velocity (UPV) Test – for evaluating the quality and homogeneity of concrete.

Additionally, a comprehensive visual inspection of the entire building was carried out under faculty supervision.

### 4. Visual Inspection Summary

#### a. Type of Structure and Materials

- The building is an RCC framed structure with panelled brick masonry walls.
- The structure comprises one basement, a ground floor, and five upper floors used for commercial purposes.



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- No records of concrete or steel grades are available; however, based on exposure and construction era, Fe-415 grade steel was identified.
- Many partition walls (75 mm brick on edge) have suffered partial or complete damage.

#### **b. Quality of Construction**

- Construction quality is average, with visible lack of cover to reinforcement in several areas.
- Materials used are of good quality, and no major material deterioration has been noted beyond fire-affected regions.

#### **c. Finishing and Coatings**

- Poor maintenance is evident; rust-based spalling is observed near rainwater pipes.
- Plaster thickness on columns and beams exceeds standard practice.
- Overall finishing is average, except in fire-damaged zones.

#### **d. Spalling**

- Spalling is widespread in RCC members due to thermal expansion of reinforcement.
- Some areas also show spalling caused by corrosion near rainwater pipes.

#### **e. Settlement of Foundations**

- No signs of foundation settlement were detected during basement inspection.

#### **f. Sagging of Beams and Slabs**

- Multiple instances of sagging observed, caused by thermal effects and loss of bond between concrete and reinforcement.

#### **g. Leaning of Columns**

- No columns were found to be leaning; apparent lean in some was due to spalling.

#### **h. Dampness**

- Minor dampness noted near vertical rainwater downpipes; otherwise, no major dampness observed.

#### **i. Efflorescence**

- One instance of efflorescence was noticed at the basement level only.



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## j. Peeling of Plaster

- Peeling is confined to fire-affected zones, mainly due to heat-induced expansion or beam sagging.

## k. Termite and Ant Colonies

- Effects observed in basement and ground floor areas in contact with soil.

## l. Rodent Holes

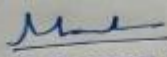
- No rodent holes were found during inspection.

## 5. Learning Outcomes

- Students gained practical exposure to fire damage assessment techniques.
- They learned how to interpret visual and NDT findings to evaluate structural integrity.
- The visit strengthened their understanding of post-fire rehabilitation and repair methods.

## 6. Conclusion

The site visit to Humraz Complex provided valuable insights into real-life structural assessment of fire-damaged buildings. The students actively participated in the NDT tests and inspection activities, enhancing their practical understanding of structural evaluation, safety considerations, and remedial engineering measures.



Manish Kumar  
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100 YEARS  
1921 - 2021

### List of Students who went on Industrial Visit

S.No.	Name	Roll No.
1	Kishan Kumar	230002002
2	Khushi Singh	220102033
3	Akanksha Tiwari	220102007
4	Insha Rasheed	230002004
5	Suchi Dwivedi	220102064
6	Vaibhav Kumar	220102073
7	Aman	220102011
8	Isha jaiswal	220102032
9	Mallika Singh	220102037
10	Utkarsh Mishra	220102071
11	Arpit Raj	220102018
12	Om Katiyar	220102046
13	PRASHANT RAI	220102052
14	Aaradhy	220102001
15	Vivek Verma	220102076
16	Shreya kumari	220102061
17	Sannidhya Upadhyay	220102057
18	Ashutosh Yadav	220102019
19	Alok Mani Tiwari	220102010
20	Amrita Kushwaha	22102012
21	Swayam Pandey	220102069
22	Suryansh singh	220102067
23	Devansh Sharma	220102024
24	Harsh Vardhan	220102030
25	Anubhav Pandey	220102015
26	Mohd Akib	220102040
27	Siddhanth Raj Singh	220102062
28	Harsh Kapil	220102028
29	Harshit Pal	220102031
30	rajat jain	220102053
31	Avinash Singh	220102020
32	Adesh Kumar	230002001
33	Reetu Saroj	220102054
34	Bhupendra Ahirwar	220102022
35	Parikshit Yadav	220102047
36	Ameer Faaiz	220102039



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Third Year Students		
37	Chetan Baghel	23102026
38	Titisa Uttam	230102070

  
Manish Kumar  
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