

Spring 2026

ARCH 594 FF: Building Failures and Forensics

3 CR or 4 CR (with additional project)

Fridays 1:00pm to 3:50pm, 1065 Lincoln Hall

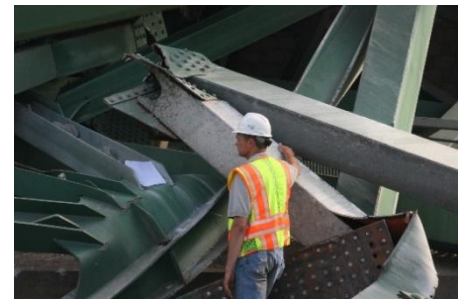
SOLVING FOR 'WHY?': FAILURES & FORENSICS IN OUR BUILT ENVIRONMENT

Instructor/ Course Developer: **Daniel Lemieux**, FAIA NCARB FASTM (Principal, WJE), Affiliate Faculty

Instructor: **Anthony Cinnamon**, NCARB (Associate Principal, WJE), Affiliate Faculty

Instructor/ Coordinator: **Sudarshan Krishnan**, Ph.D., Associate Professor and Chair, Bldg. Performance

Why do buildings and infrastructure fail? And what can we learn from these disasters and tragedies? Whether it involves loss of life, loss of property – or perhaps both – failures in our built environment have much to teach us. This interdisciplinary course will feature guest lectures by subject-matter experts from internationally recognized firms who were directly involved in the aftermath of several of the most significant failures in our built environment over the past 50 years. Through a combination of case studies, classroom lectures, and direct engagement with practicing professionals and subject-matter experts, this class will offer students a unique opportunity to explore the factors that can lead to failure in our built environment. The course will be offered both as a graduate and undergraduate class with reflective essays and graded assignments consistent with each class level. If you are a student in the School of Architecture or Civil & Environmental Engineering, or simply interested in building forensics, this course will demonstrate through real world examples how engineers, architects, and materials scientists have worked together to investigate some of the most complex building failures and structural collapses of the past half-century.



Class No. 1: Introduction to Failures & Forensics (Jan 23)

Overview of Class Schedule, Format, and Grading Rubric

Class No. 2: Failures and Forensics: History, Significance, and Lessons Learned (Jan 30)

Notable Failures in History and Lessons Learned

Class No. 3: Introduction to Steps in an Investigation (Feb 6)

Steps in an Investigation

INTRODUCTION TO TERM PROJECT: "YOU ARE THE PRINCIPAL INVESTIGATOR"

Class No. 4: Introduction to Technical Writing and Research Strategies with AI (Feb 13)

How to Structure a Report and Why

Class No. 5: Structural (Feb 20)

When Buildings and Bridges Collapse

Class No. 6: Architectural (Feb 27)

The Impact of Seismic Events and Natural Disasters on Our Cultural Landmarks

Class No. 7: Materials Science (Mar 6)

Material Selection, Product Substitutions, and Unintended Consequences

CLASS TRIP TO THE WJE STRUCTURAL AND MATERIALS SCIENCE LABORATORY

Class No. 8: Building Science (Mar 13)

Heat/Air/Moisture Transport, Energy Use, and Climate Change

MID-TERM DRAFT REPORTS AND PRESENTATIONS DUE

SPRING BREAK (March 14-22)

Class No. 9: Leaks, Cracks, and Lawsuits (Mar 27)

Design Errors, Omissions, and Construction Defects

Class No. 10: A Failure of Process - Terry Paret (April 3)

Tragedy Averted: A Case Study and Cautionary Tale

Class No. 11: A Tragedy that Still Resonates - Gary Klein (April 10)

Champlain Towers and the Kansas City Skywalk Collapse

Class No. 12: Forensic Blunders & Professional Ethics - Howard Hill (April 17)

Forensic Blunders and Professional Ethics

Class No. 13: Preliminary Project Presentations (April 24)

FINAL REPORTS AND DRAFT PRESENTATIONS DUE

Class No. 14: Final Project Presentations

READING DAY: THURSDAY, MAY 7

NO CLASS: FRIDAY, MAY 8 (FINAL EXAMS BEGIN)

THURSDAY, MAY 14 (FINAL EXAMS END)