

Neglecting Peer Review: A Case Study of Engineering Ethics and the Official Reports about the Destruction of World Trade Center Building 7 (WTC7) on 9/11

Wayne H. Coste, PE and Michael R. Smith
Architects & Engineers for 9/11 Truth

Presentation Outline

- Codes of Ethics for Engineers
- Disaster Studies
- History of Peer Review
- 9/11 – World Trade Center Towers
 - Setting the Frame: Twin Towers
 - Setting the Frame: World Trade Center Building 7
- Professional Repudiation of the Reports
- Official Collapse Mechanics (and Omissions)
- Conclusion and Epilogue

National Society of Professional Engineers Code of Ethics for Engineers

Preamble: Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

National Society of Professional Engineers Code of Ethics for Engineers

Preamble: Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

National Society of Professional Engineers

Code of Ethics for Engineers

I. Fundamental Canons: Engineers, in the fulfillment of their professional duties, shall:

- Hold paramount the safety, health, and welfare of the public
- Perform services only in areas of their competence
- Issue public statements only in an objective and truthful manner
- Avoid deceptive acts
- Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession

National Society of Professional Engineers

Code of Ethics for Engineers

I. Fundamental Canons: Engineers, in the fulfillment of their professional duties, shall:

- Hold paramount the safety, health, and welfare of the public
- Perform services only in areas of their competence
- Issue public statements only in an objective and truthful manner
- Avoid deceptive acts
- Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession

Disaster Studies

- Scott Knowles, Author of “Lessons in the Rubble: The World Trade Center and the History of Disaster Investigations in the United States” says:

“...that conflicts over authority, expertise, memory, and finally the attribution of responsibility suffuse the history of disaster in the United States. History shows that with time, a community of engineers and scientists has generally proven able to explain the technical particulars of a structural collapse ... the ‘disaster investigation,’ far from proving itself the dispassionate, scientific verdict on causality and blame, actually emerges as a hard-fought contest to define the moment in politics and society, in technology and culture.”

Knowles, S. G. (2003). *Lessons in the rubble: The world trade center and the history of disaster investigations in the United States. History and technology, 19(1)*, 9-28.

Expectations After Recent Disasters

- Open and transparent processes
- Peer review followed other recent disasters
 - Grand Hyatt Skywalk disaster
 - Space Shuttle Challenger disaster
 - Various bridge collapses
- Results of these investigations have been accepted by the
 - Professional community
 - Public
 - There are no organizations formed to challenge these reports, if there were, they would get media coverage

Neglecting Peer Review: A Case Study

- We will be looking at the consequences of high profile studies that skipped peer review and/or significant public comment
 - Enabled under legislation advocated by 9/11 Family Members
 - National Construction Safety Team Act (NCSTAR)
 - Public Law 107-231 October 1, 2002
 - Report authored within the National Institute of Standards and Technology (NIST)
 - Authored by engineers – including many licensed “PE”
- Degrees of review / acceptance for concept called “Peer Review”
 - Today, typically viewed as “quality control”
 - However, there are elements of censorship risks

Fitzpatrick's "History of Peer Review"

- Kathleen Fitzpatrick's chapter, "The History of Peer Review" describes the origins of the peer review process

" ... [today] authors [tend to] date the advent of [...] editorial peer review [defined as] the assessment of manuscripts by more than one qualified reader, usually not including the editor of a journal or press, to the 1752 Royal Society of London's creation of a "Committee on Papers" to oversee the review and selection of texts for publication in its nearly century-old journal, Philosophical Transactions."

Fitzpatrick, K. (2011). *Planned obsolescence: Publishing, technology, and the future of the academy*. NYU Press.

Fitzpatrick's "History of Peer Review"

"... peer review has its deep origins in state censorship, as developed through the establishment and membership practices of state-supported academies. Peer review was intended to augment the authority of a journal's editor rather than assure the quality of a journal's products.

Our contemporary notions about the purposes of peer review, [...] that we now value in the academy seems not to have become a universal part of the scientific method, and thus of the scholarly publishing process, until as late as the middle of the twentieth century."

Mario Biagioli's "From Book Censorship to Academic Peer Review"

"... the establishment of editorial peer review [was tied] to the royal license that was required for the legal sale of printed texts,

... this mode of state censorship, employed to prevent sedition or heresy, was delegated to the royal academies through the imprimatur granted them at the time of their founding.

The Royal Society of London ... passed a resolution in December 1663 ... that such book contains nothing but what is suitable to the design and work of the society

The purpose ... is more related to censorship than to quality control"

NIST NCSTAR Studies Fail Expectations

- An insular process seems to have been used to write NIST NCSTAR
 - Modern professional codes of ethics demand professionals to emulate modern academic peer review
 - Work products are expected to avoid institutional censorship
 - All NCSTAR reports are the target of professional criticism
- A comprehensive peer review process would have
 - Increased the likelihood of professional acceptance of NCSTAR
 - Such a process would have embodied the ideals:
 - Espoused by professional / engineering societies
 - Expected by the public

Setting the Frame

TWIN TOWERS

World Trade Center Twin Towers

- On the morning of September 11, 2001 the World Trade Center Twin Towers in New York City
 - Suffered structural trauma followed by fires
 - In less than two hours from the impact of the first plane
 - Both steel-framed structures were destroyed
 - All the way down into their basements
- We dedicate this presentation to those that lost their lives on that fateful morning and their surviving family members

Destruction of the South Tower



Destruction of the North Tower



If 90 % Of The Structure's Mass is Outside Footprint, What Did Crushing?



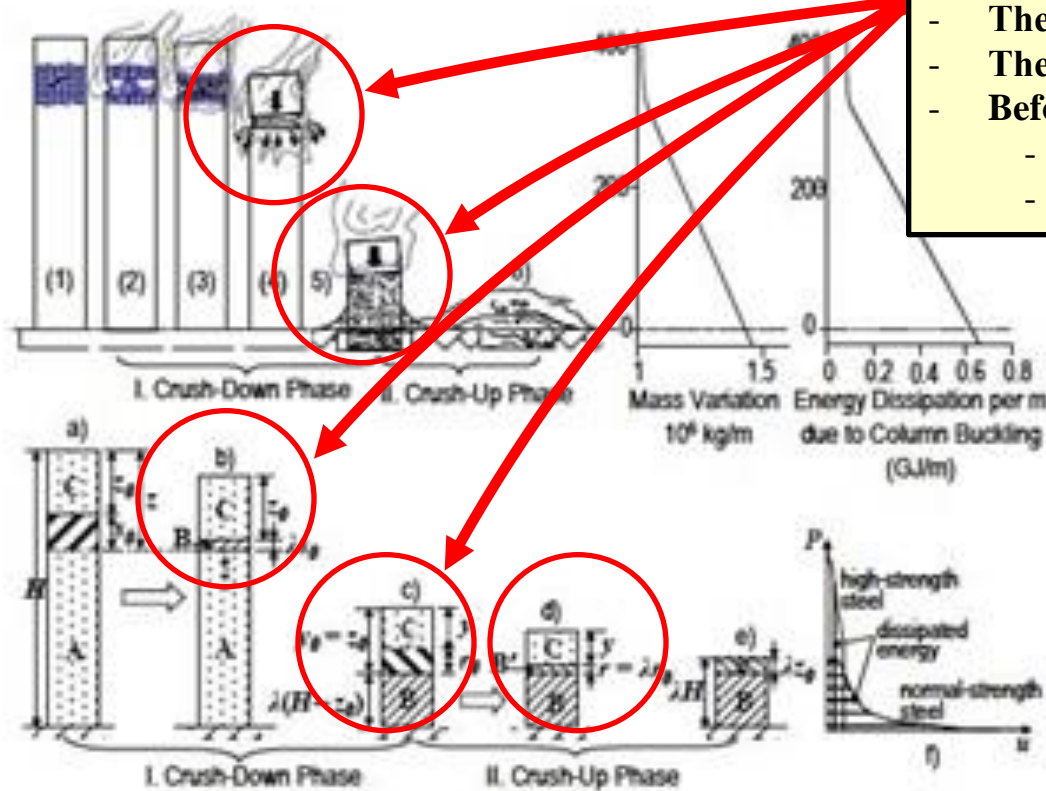
World Trade Center Building 7

Twin 1200' Diameter Debris Fields

FEMA Figure 1-7

Figure from Zedek Bazant et al

Note: Published in Peer Reviewed Journals



Bazant's explanation shows:

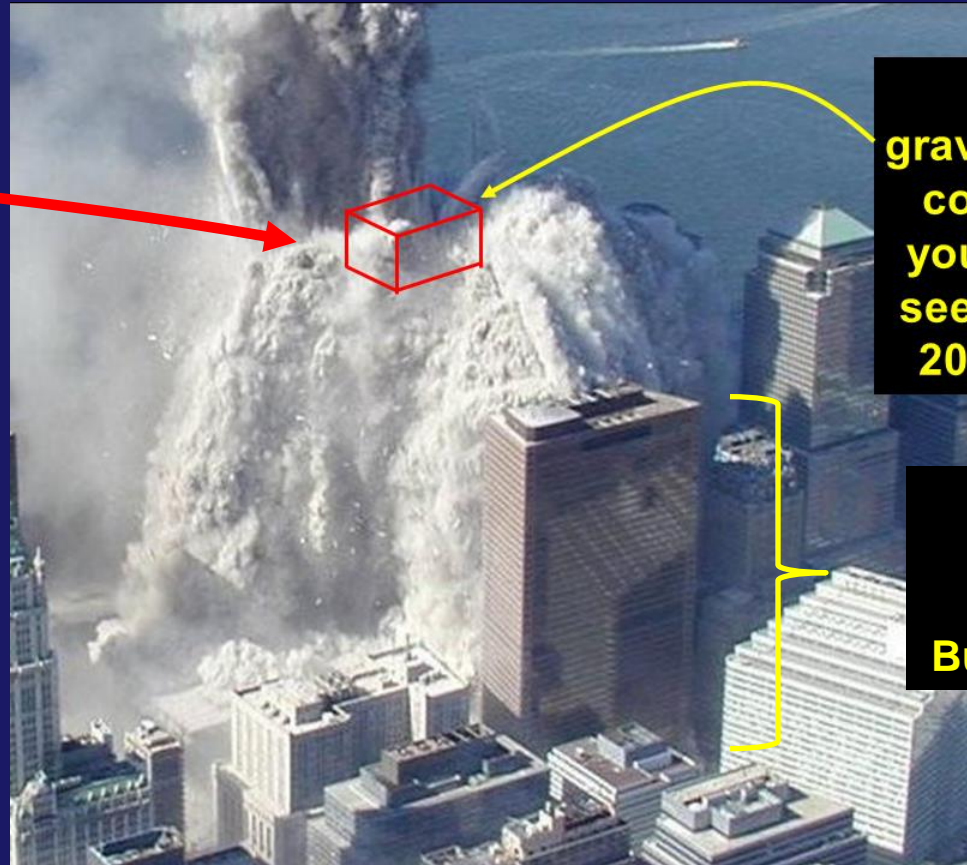
- The intact "Block C" crushing "Block B"
- Then "Block C" crushing all "Block A"
- Before reaching the ground
 - When "Block C" is destroyed
 - During the "Crush-up" phase.

Bazant, Z. P., Le, J. L., Greening, F. R., & Benson, D. B. (2008). What did and did not cause collapse of World Trade Center twin towers in New York?. Journal of engineering mechanics, 134(10), 892-906. <http://www.civil.northwestern.edu/people/bazant/PDFs/Papers/00%20WTC%20Collapse%20-%20What%20Did%20&%20Did%20Not%20Cause%20It.pdf>

Aerial View of the North Tower

Did Bazant's peer-reviewers verify the photographic evidence for his "Block C" hypothesis?

Consequence of engaging in only 'in-house' discussions?



In a gravitational collapse, you would see the top 20 Floors

World Trade Center Building 7

AE911Truth.org

Setting the Frame

WORLD TRADE CENTER BUILDING 7 (WTC7)

World Trade Center Building 7 (WTC7)

- 47 story skyscraper built to all applicable codes in 1985
- Was not hit by an airplane
- Media announced its collapse several times prior to actual event
 - First around 11:00 AM
 - Other about 5:00 PM
- At 5:21 PM
 - The roofline descended symmetrically under free-fall acceleration for 105 feet (8 stories)
 - Indistinguishable from a classic controlled demolition

Free-Fall Acceleration of WTC 7



Initial Investigation (2001 - 2002)

- The Federal Emergency Management Agency, (FEMA) was charged with:
 - Investigating the three building collapses
 - Including the collapse of WTC7
- FEMA's adjunct engineering team, ASCE volunteers, arrived at this conclusion:

“The specifics of the fires in WTC7 and how they caused the building to collapse remain unknown at this time ... the best hypothesis has only a low probability of occurrence. Further research, investigation, and analyses are needed to resolve this.”

Final Report on the Collapse of World Trade Center Building 7 (NCSTAR 1A)

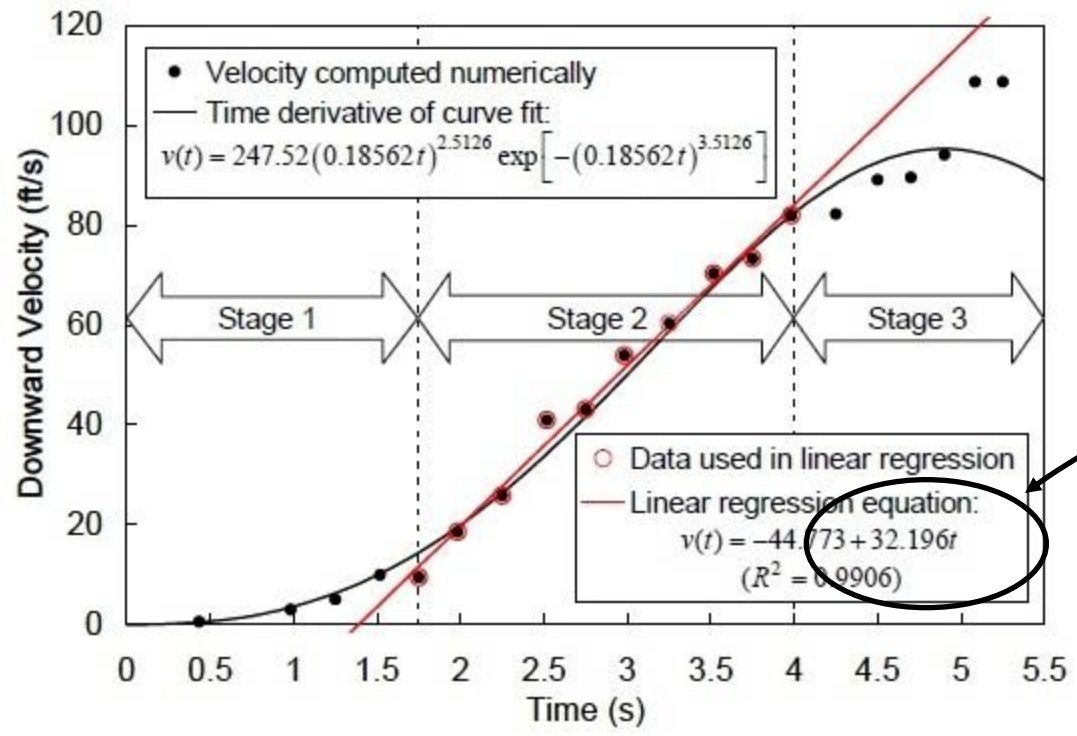
- NCSTAR 1A published in November 2008
 - Once released it was the subject of much criticism from the professional and scientific community
 - Forgoing peer review and engaging in ‘in-house’ discussions
 - Led to serious omissions and unsupportable conclusions
- Submitting incomplete analysis and evaluation is a violation of ethical ideals espoused by all professional engineering societies

PROFESSIONAL REPUDIATION OF NCSTAR 1A

Public comment opportunity for NCSTAR 1A

- The only public comment opportunity was seven years after 9/11
 - One question asked about how the building could be in free-fall
 - Initial reply by lead investigator said “free-fall” was impossible, because it would mean nothing was holding it up
 - Required NIST to acknowledge that WTC7 was in free fall
 - Verified free-fall acceleration across the entire roofline for 105 feet
- Free fall could only occur if
 - All supporting columns on each of 8 floors were destroyed synchronistically
 - Fire alone could not have accomplished this

NIST Documents Freefall Acceleration



32.196t is Indistinguishable From "Freefall Acceleration"

Figure 3-15. Downward velocity of north face roofline as WTC 7 began to collapse.

NCSTAR1A Figure3-15

Professional Repudiation of NCSTAR1A

- 2200 architects and engineers plus many prominent scientists
 - Documented key omitted information or incorrect information
 - Asked NIST to explain how its conclusions were reached
 - If responses given
 - They were typically incomplete
 - Frequently no response given (thus requiring FOIA requests)
- The magnitude of professional repudiation is enormous
 - Major embarrassment to a national technology institution
 - Professional societies are unwilling to acknowledge the critiques
 - The NCSTAR reports discredits “the honor, reputation, and usefulness of the profession” in the eyes of the public

Response to Public Comment: Acknowledge Free-Fall

- Even though NIST confirmed the observation of free fall
 - Authors did not revise their engineering models
 - Authors did not correct the public reports
 - Authors did not acknowledge that the entire supporting structure near the bottom of the building suddenly offered zero resistance

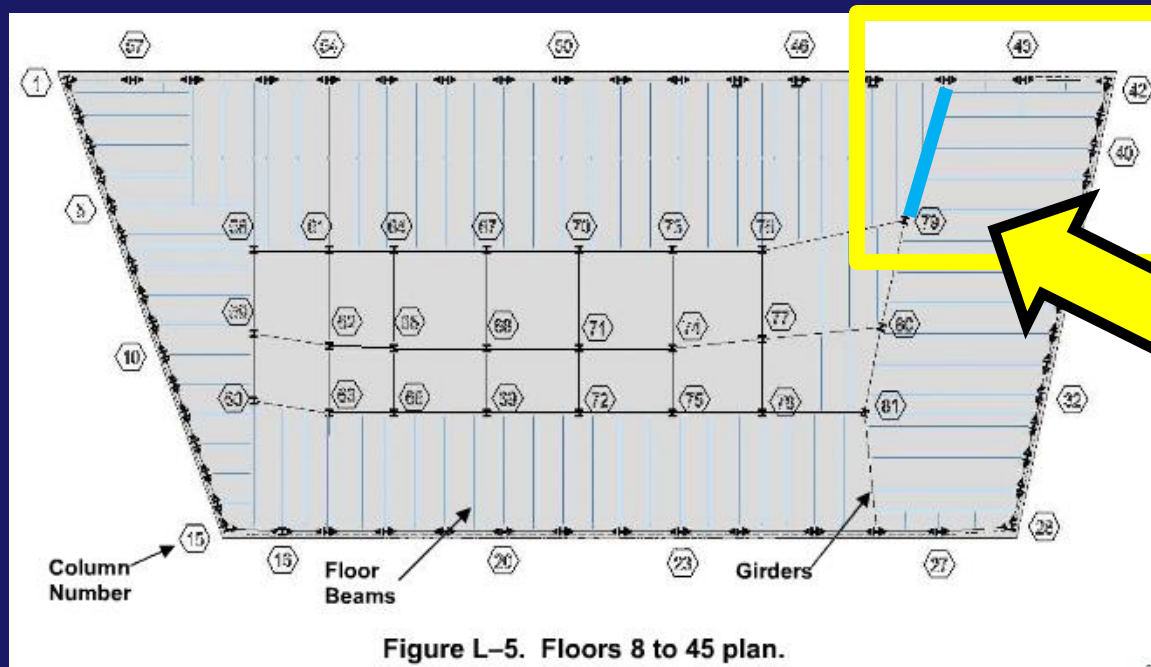
“Jeopardizing Public Safety”

- NIST refused to release computer input data used in its analysis:
 - NIST claimed, if this information were to be released
 - It would “jeopardize public safety”
- If NIST’s analysis is technically accurate:
 - Architects and engineers must have this information
 - To design tall buildings that will provide safety to the public
- If NIST’s analysis is flawed
 - NIST, or some other organization, needs to empanel a new open, transparent peer reviewed study
 - Include all available evidence

OFFICIAL COLLAPSE MECHANICS (AND OMISSIONS)

Floor 13 – Site of “Collapse Initiation”

NIST: “ ‘Normal office fires’ lead to the failure of a single column causing the collapse of the whole building, not damage from debris or leaking pressurized diesel fuel lines from the generators.” NIST 12/18/07

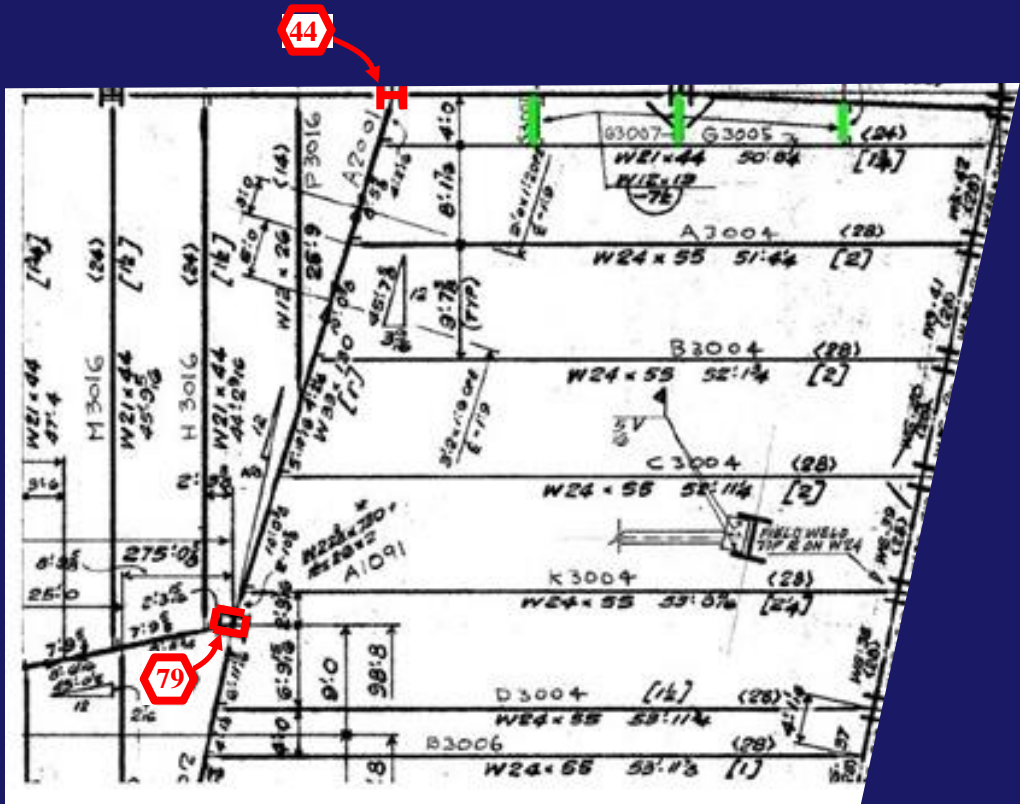


Area of
focus in
next
slides

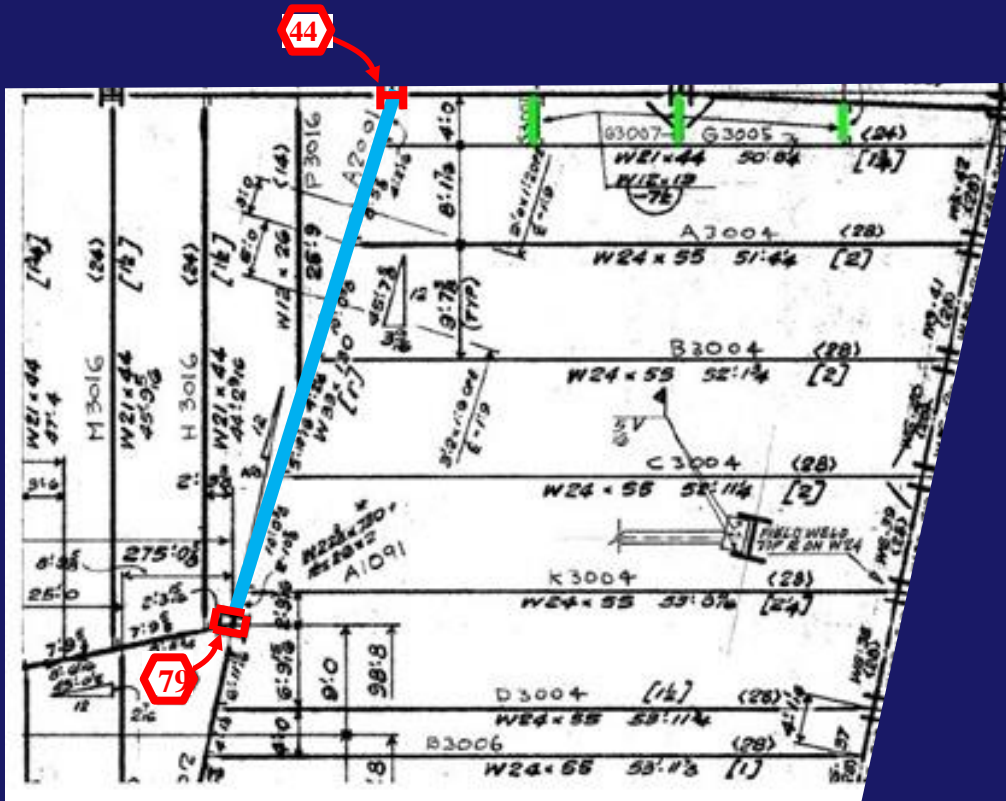
Floor 13 - Framing with Columns 44 and 79

West

East



Floor 13 Framing - Girder A2001

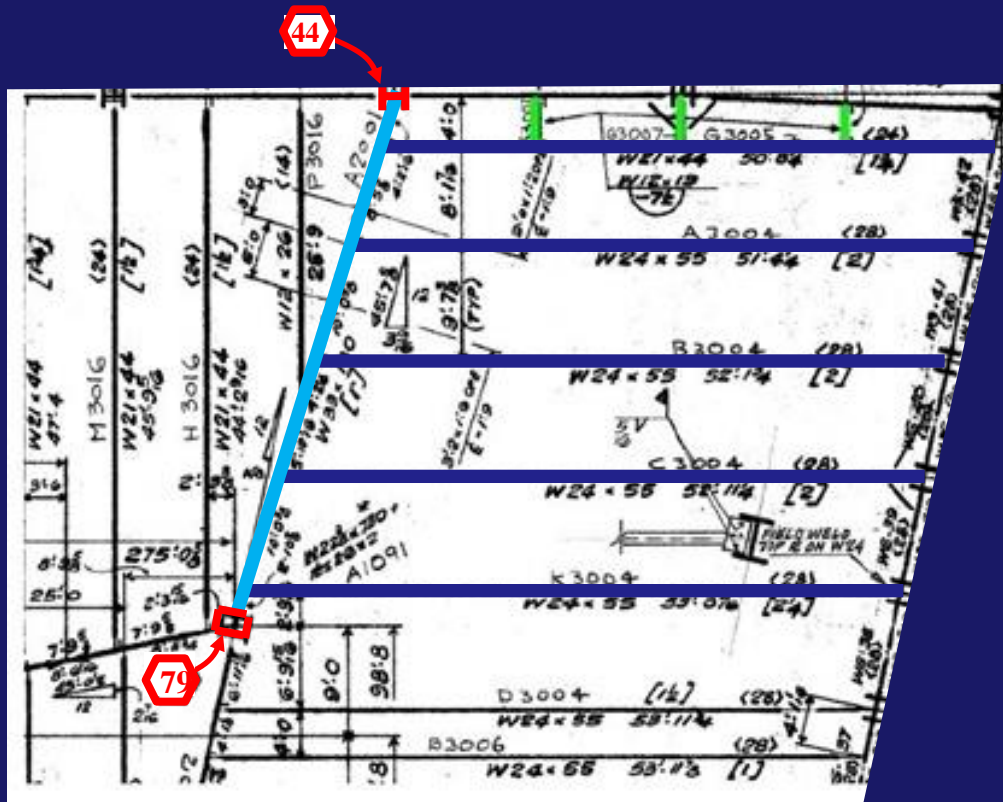


West

East

Floor 13 Framing - Beams

G3005, A3004, B3004, C3004 & K3004

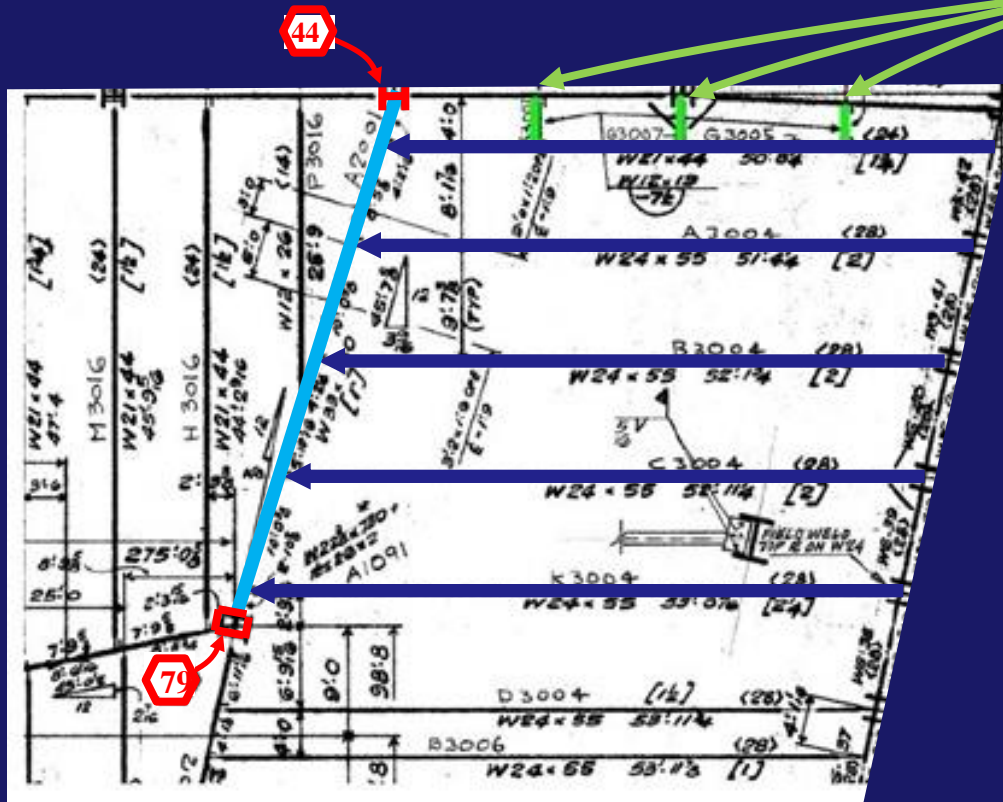


West

East

Hypothesis: Fire Heats and Expands Beams; Exerts pressure on Girder A2001

Lateral Supports:
S3007
G3007
K3007
Omitted from
Analysis

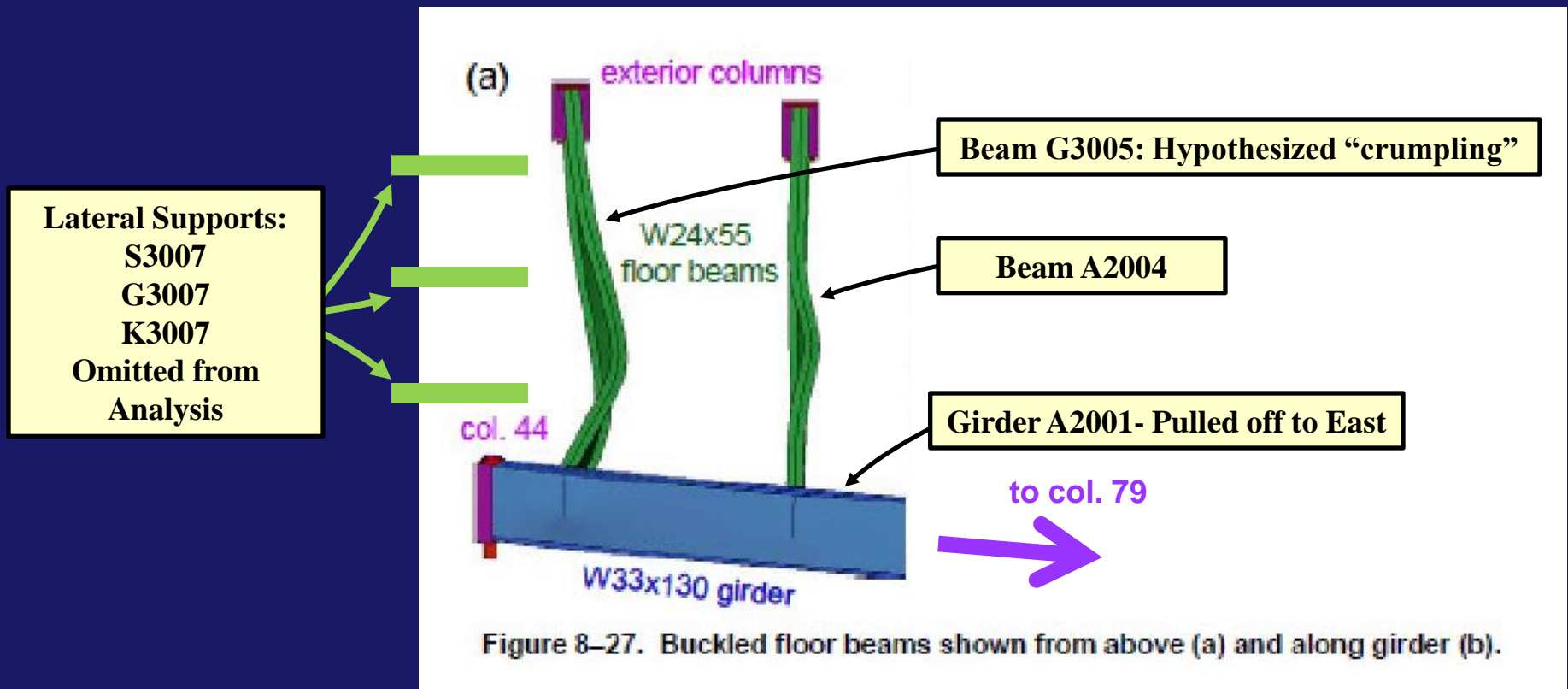


West

East

Preliminary Analysis: Beam G3005 Fails w/o Lateral Supports - Pulled off to East

Allowed NIST to claim shear studs can be ignored in their final simulation



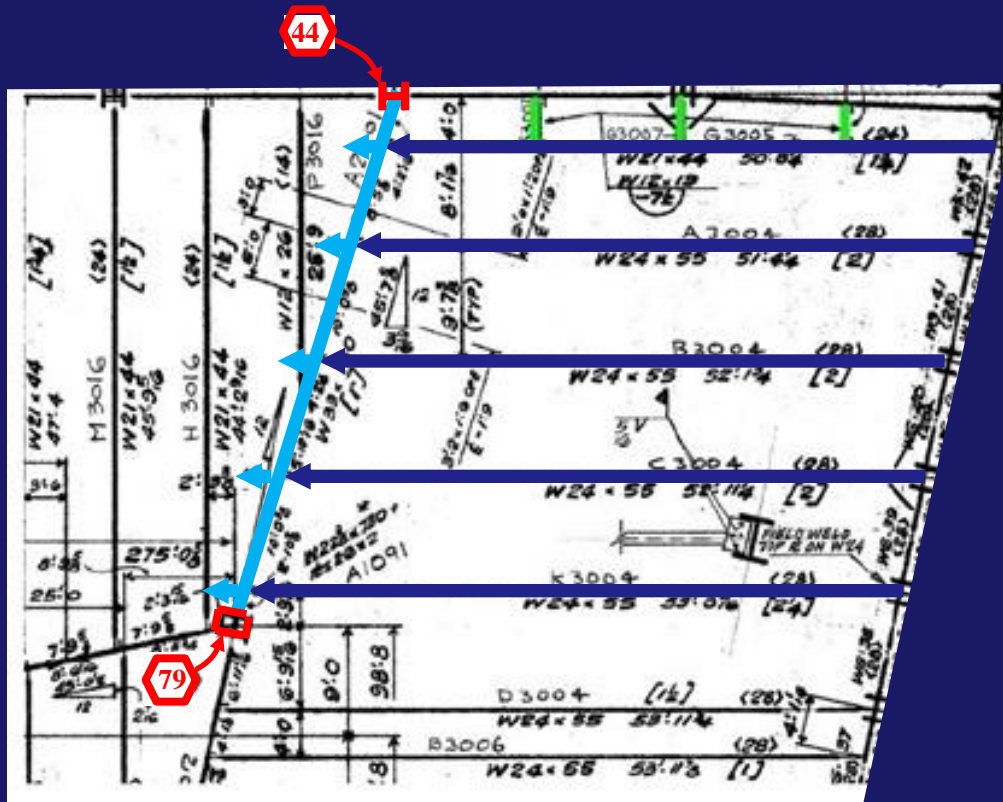
Final Hypothesis: Girder A2001 “Walks-Off” Seat - Pushed off to West

The final hypothesis for “Probable Collapse Sequence”:

- Thermal expansion of floor beams pushed Girder A2001 off its seat to the west
 - “[Girder A2001] between Columns 44 and 79 buckled and walked off the bearing seat between 3.7 h and 4.0 h”
 - “Building Response at 4.0 h - On Floor 13, all four of the north-south girders attached to Columns 79, 80, and 81 had failed, due to either buckling or girder walk off of the bearing seat at Columns 79 and 81.”

Note: “Starting the calculations at noon was convenient in that the simulation time was the same as the actual clock time.”

Hypothesis: Girder A2001 Pushed to Edge of the Seat at Column 79



West

East

Girder A2001 “Walks-Off” Seat at 4 PM ... Collapse Initiation Occurs at 5:21 PM

- “The bearing seat at Column 79 was 11 in. wide. Thus, when the girder end at Column 79 had been pushed laterally at least 5.5 in, it was no longer supported by the bearing seat.”
 - The bearing seat at Column 79
 - Confirmed to be 12 in. wide
 - Requiring lateral displacement of 6.0 inches
 - Not possible because the steel floor beams would have sagged and reduced westward displacement

Note: “starting the calculations at noon was convenient in that the simulation time was the same as the actual clock time.”

FEA Visualization



Freedom of Information Act Requests (FOIA)

- Limited, but critical, information about the flaws in the NIST analyses have been documented
 - NIST has acknowledged that flange stiffeners, critical structural elements were omitted from their FEA
 - Width dimension were too short for Girder A2001's seat
 - Claimed to be a typo in the report
 - But, thermal expansion would be inadequate for failure
 - Omission of three lateral support beams reinforcing the structure at a presumed point of collapse initiation has not been explained
- These and others factors are key to the failure hypothesis

CONCLUSION AND EPILOGUE

Conclusion

- The scholarship of what happened to World Trade Center Building was greatly improved by the single opportunity to ask about the free-fall acceleration of the roofline
- Additional Peer Review would have uncovered the
 - Missing shear studs
 - Correct dimensions of the Column 79 girder seat
 - Inclusion of stiffener plates
 - Omitted lateral supports
- Reconsideration would need to fully consider the hypothesis:
 - As an act of criminal mischief
 - Building destruction by means of pre-planted explosives

Epilogue from Scott Knowles’ 2003 Article

- “Lessons in the Rubble: The World Trade Center and the History of Disaster Investigations in the United States” concludes with:

“Almost certainly tourist will file through a September 11 Museum before the full technical narrative of the collapse is written. That the federal government now bears this research and moral burden opens a new perspective on an America transformed by September 11.”

Epilogue from Scott Knowles’ 2003 Article

- “Lessons in the Rubble: The World Trade Center and the History of Disaster Investigations in the United States” concludes with:

“Almost certainly tourist will file through a September 11 Museum before the full technical narrative of the collapse is written. That the federal government now bears this research and moral burden opens a new perspective on an America transformed by September 11.”

Epilogue from Scott Knowles’ 2003 Article

- “Lessons in the Rubble: The World Trade Center and the History of Disaster Investigations in the United States” concludes with:

“Almost certainly tourist will file through a September 11 Museum before the full technical narrative of the collapse is written. That the federal government now bears this research and moral burden opens a new perspective on an America transformed by September 11.”

Scott Knowles' Epilogue Was Prescient

Architects & Engineers for 9/11 Truth has compiled a vast amount of evidence proving that all 3 World Trade Center skyscrapers were deliberately destroyed with explosives on 9/11.

Visit us at AE911Truth.org and view the evidence for yourself. If you feel a new WTC 9/11 investigation is needed, please sign our petition and speak out.

Did you know
a 3rd
tower fell
on 9/11?

Over 2,000 experts call for an independent investigation into the destruction of Building 7 and the Twin Towers.

Ask Questions...
Demand Answers!

"On behalf of my son, Bobby, who we lost in the South Tower on 9/11, and all the family members, we thank the architects and engineers for their dedication in pursuing the truth about what really happened."
— Bob McIlvaine



Architects & Engineers for 9/11 Truth
2442 Shattuck Ave., Suite 189
Berkeley, CA 94704
(510) 292-4710

AE911Truth.org

9/11
REALITY

Welcome to the
other story about 9/11

VISITOR GUIDE FOR TRUTH SEEKERS



Three Towers, including little-known Building 7

This guide will provide you with additional information about the destruction of WTC 1, 2, and 7 that you may not find in the official 9/11 Memorial Museum.

For further questions and inquiries, email
info@ae911truth.org

WTC Building 7

On the afternoon of September 11, 2001, a third skyscraper, 47-story tall World Trade Center Building 7, located 300 feet north of World Trade Center 1, collapsed at 5:20pm. Although it had sustained some damage and had a few small, scattered fires caused by falling debris from WTC 1, the building was completely destroyed by "normal office fires... fueled by office furnishings" according to NIST (National Institute of Standards and Technology), the agency responsible for investigating its collapse.



World Trade Center Building 7

Building 7 fell smoothly and symmetrically through what was the path of greatest resistance in under 7 seconds, and at free-fall acceleration for the first 100 feet.



47 stories destroyed in under 7 seconds

See the evidence at AE911Truth.org

All of the debris ended up in a compact pile centered within the building's footprint.



WTC 7's debris pile

WTC Twin Towers



WTC 1 'collapsing'

1 World Trade Center was hit by American Airlines Flight 11 at 8:46 am and completely collapsed in about 10 seconds at 10:28 am. Although called a gravitational collapse, multi-ton sections of structural steel, were hurled up to 600 feet sideways.

See the evidence at AE911Truth.org

2 World Trade Center was hit by United Airlines Flight 175 at 9:03 am and collapsed similarly to WTC 1 at 9:59 am. Although this was the second building hit by a plane, it was the first to fall. The official explanation for the collapse of both WTC 1 & 2 is plane impacts and subsequent jet fuel fires.



WTC 2 'collapsing'

Explosive Controlled Demolitions?

The Twin Tower collapses have all the characteristics of controlled demolitions using explosives, including a rapid onset of destruction and complete dismemberment of all structural connections on each floor. They differ from the collapse of WTC 7 in their outward, explosive nature, whereas Building 7 appears to be an internal implosion. All 3 buildings had to have their core columns severed to fall the way they did.



Disintegrated thermite was discovered by scientists who studied samples of the WTC dust.

Another thing all 3 buildings have in common is the discovery of molten metal beneath their piles of rubble. Jet fuel does not burn hot enough to melt steel, but incendiaries like thermite, which was discovered in the WTC dust, can cut through steel like a hot knife through butter.

Questions?