Hardfire: Critical Response to Tony Szamboti

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Additional On-Line Resources:

9/11 Myths: http://www.911myths.com

Mark Roberts' Pages: http://wtc7lies.googlepages.com/

9/11 Guide: http://911guide.googlepages.com/

Why does Balzac-Vitry experience a "Jolt?"

- *Verinage* demolition technique
- All columns on the collapse floor were broken in unison to control debris field
- Concrete structure with relatively heavy and strong floor systems
- Upper portion falls distance of two floors without any significant contact
- Drop was followed by a square, uniform impact between portions, with no visible tilt

WTC 1 and 2: No Jolt! Why?

- Support columns did *not* fail simultaneously
- Both collapses begin with a significant rotation, not a sudden fall
- This rotation gradually breaks the “hinge” causing a gentle transition to vertical collapse
- Most contact points are floor structures – light weight and springy by comparison
- Columns and large chunks of debris would pierce floors at essentially unpredictable times

WTC 1: Tilt onto Floors Below

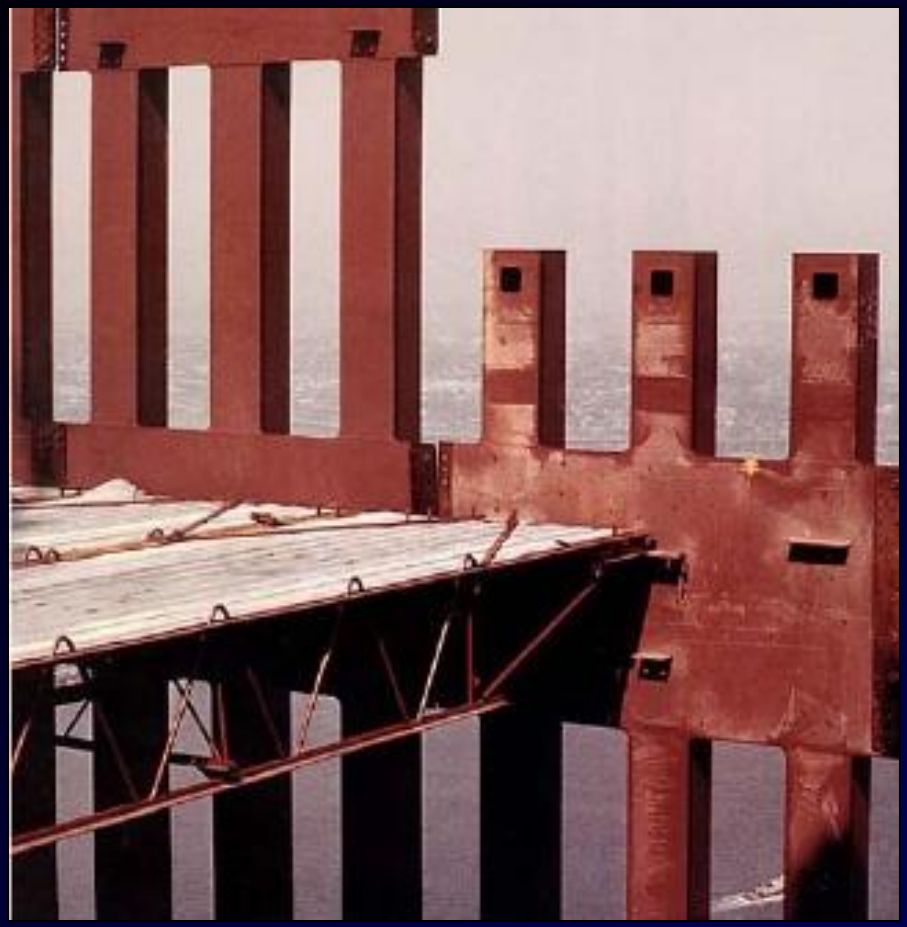


Figure 2-17, NCSTAR1-1

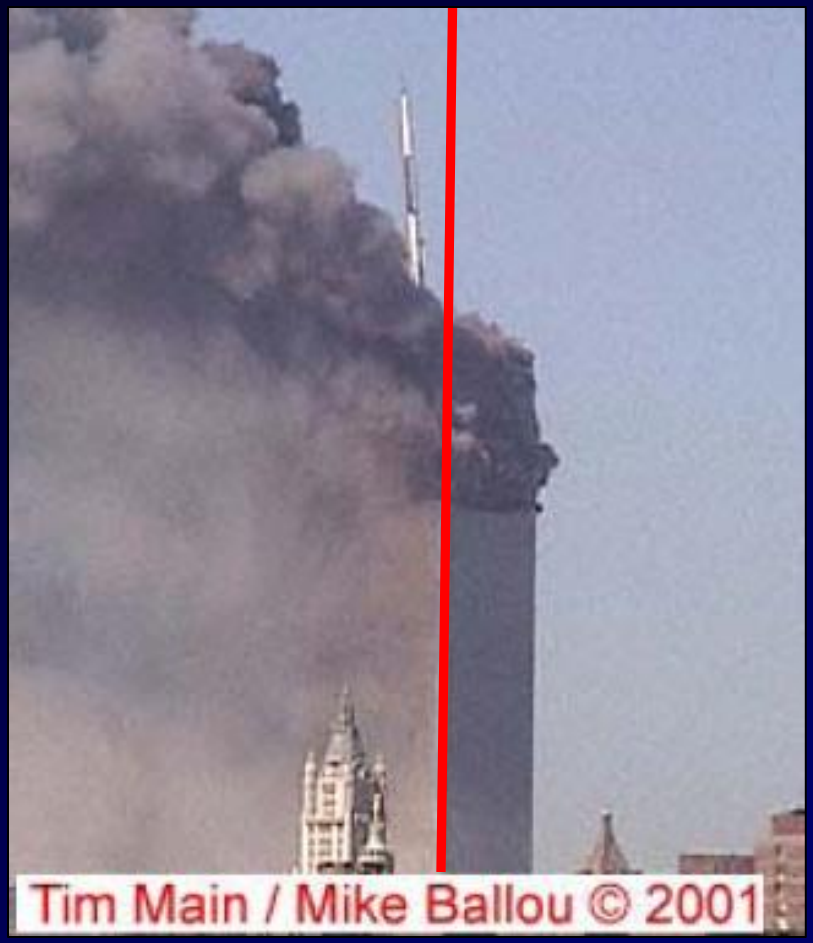
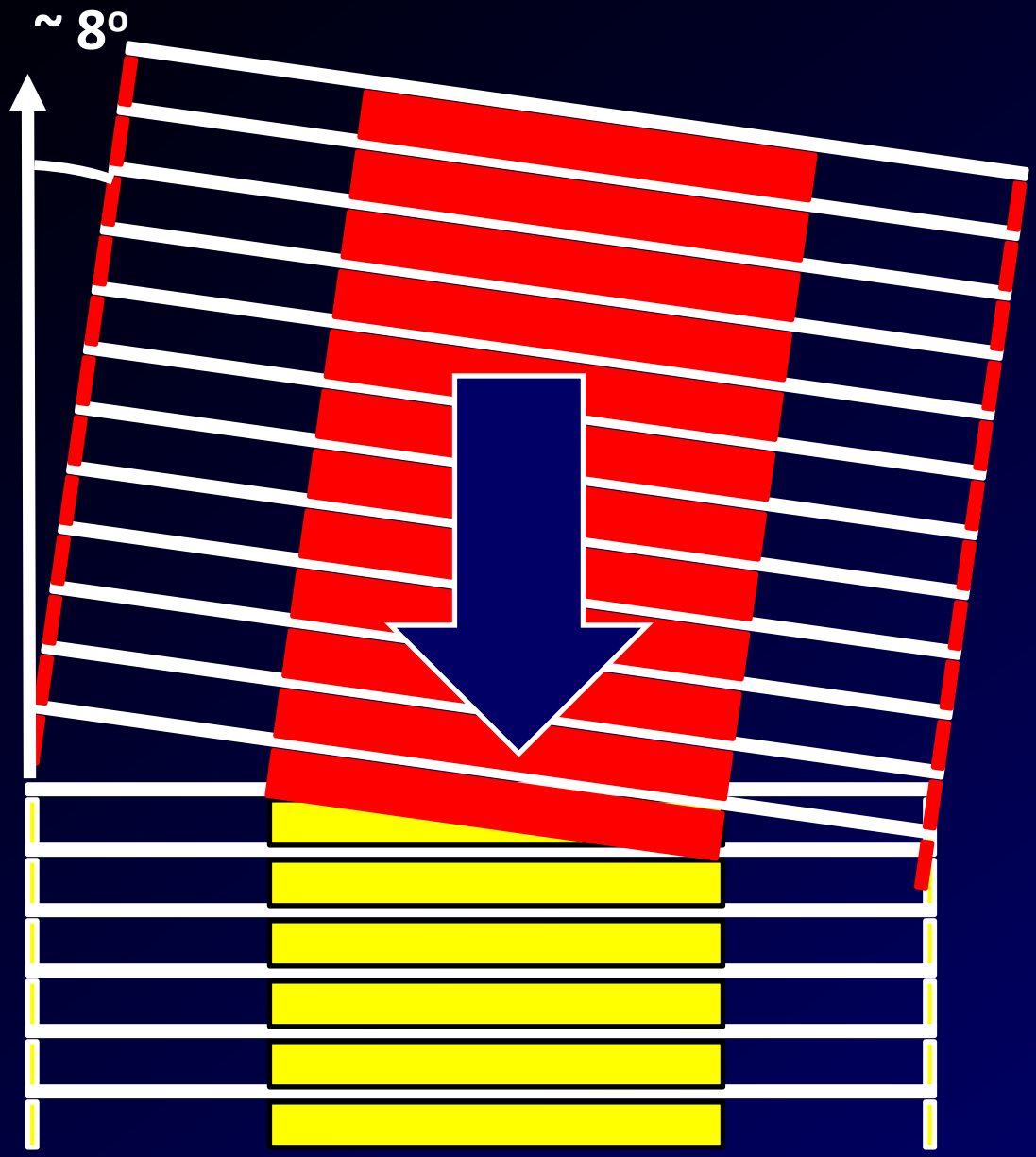


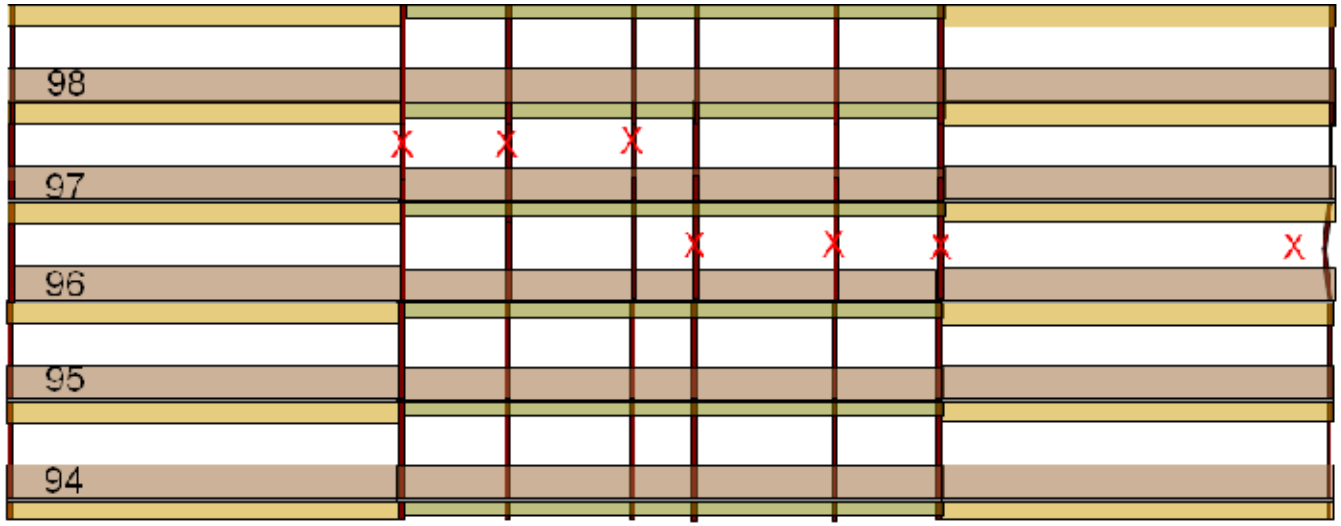
Figure E-11, NCSTAR1-6D

WTC 1: Visualizing Tilt

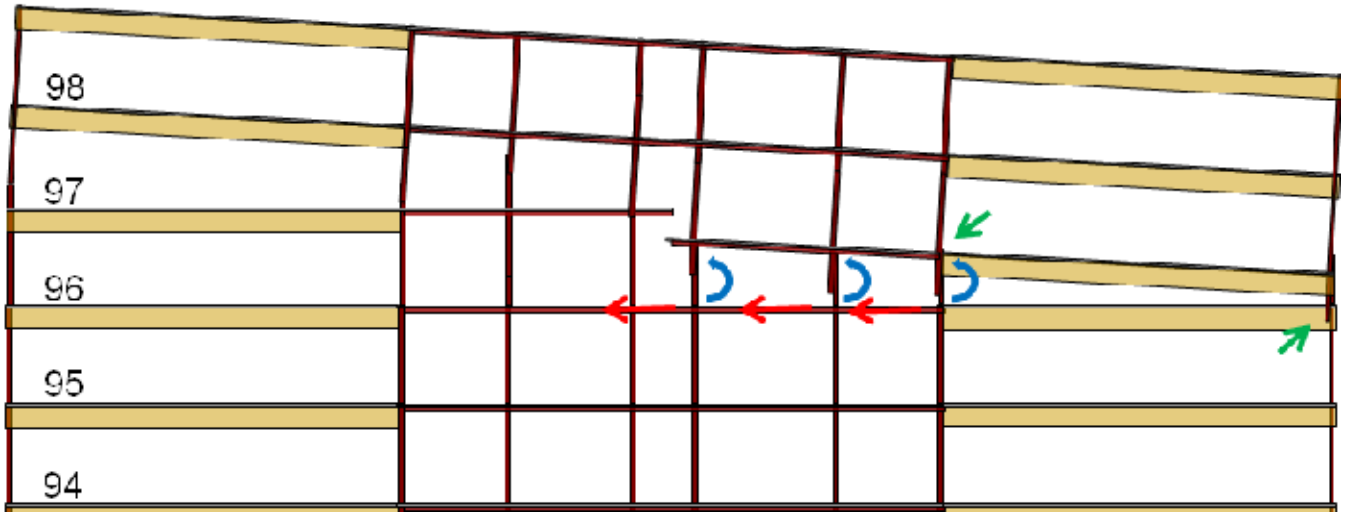


- Video confirms the upper block rotated before falling
- Thus, there are no square impacts
- Floors fail gradually across their width, all the way down the structure

WTC 1: Evolution of Tilt



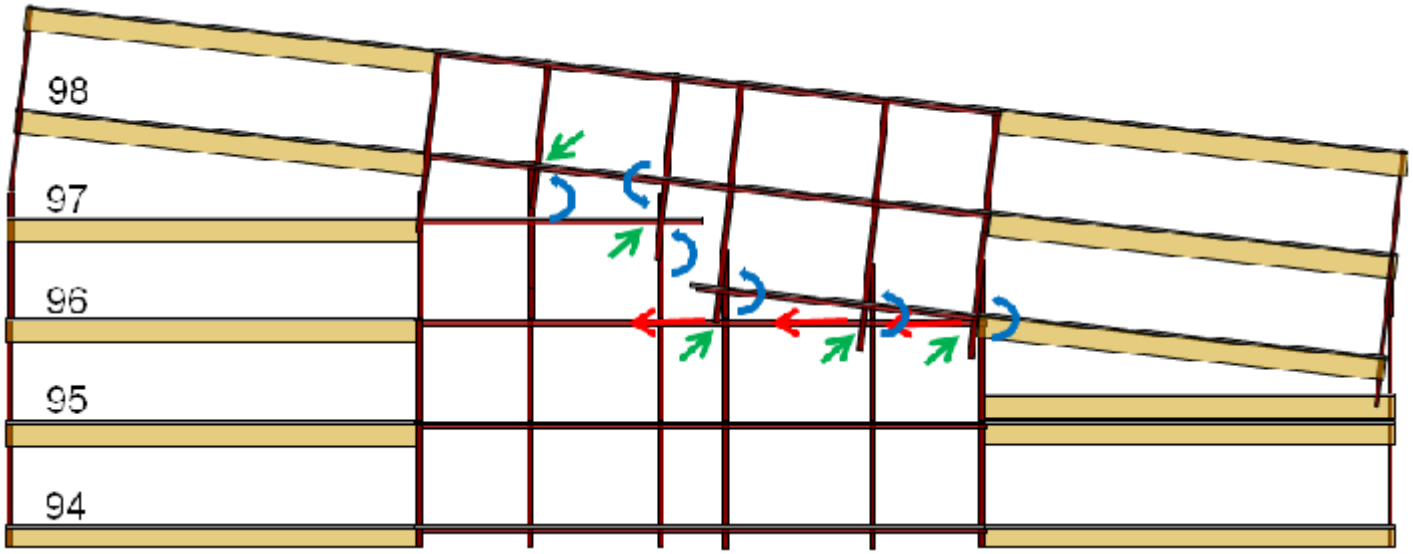
No rotation



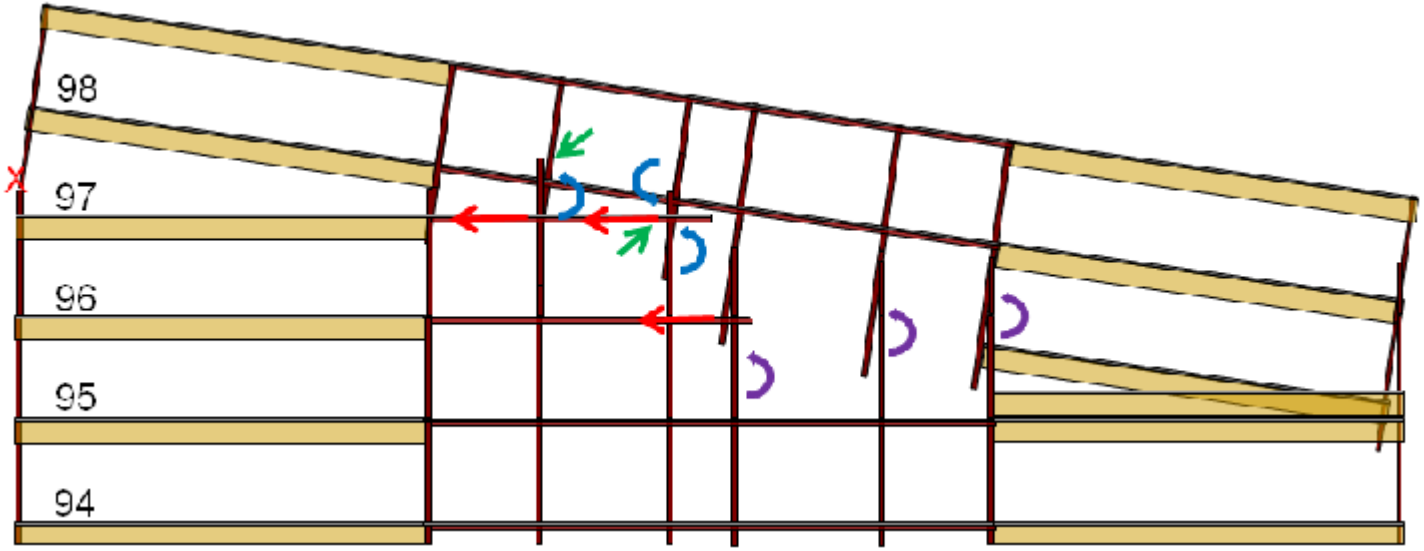
3^{o} rotation

Figure Credits: Gregory Urich, JREF Forum

WTC 1: Evolution of Tilt

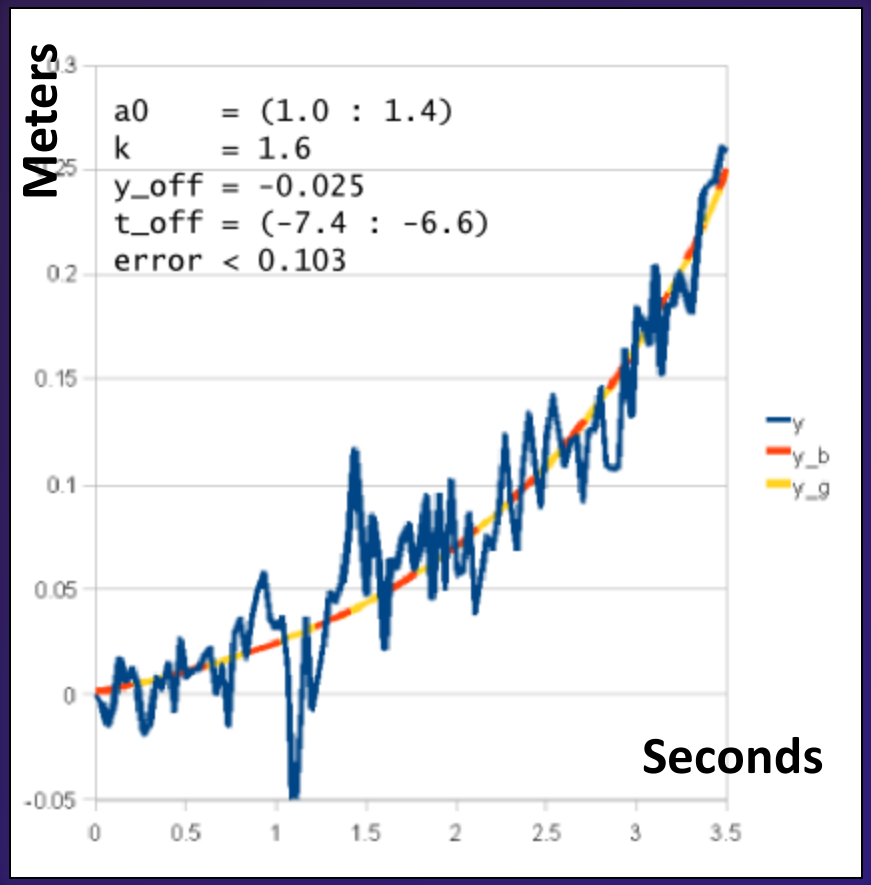


6° rotation



8° rotation

WTC 1: Fitting Antenna Motion



- Graph shows early displacement of WTC 1 antenna vs. time
- Period immediately before Tony's graph
- Curve fit matches a rotation caused by buckling perimeter wall

Graph Credit: Poster OneWhiteEye
http://the911forum.freeforums.org/wtc-1-collapse-initiation-t172-30.html

How Could We Prevent A Jolt?

- Suppose for sake of argument Mr. Szamboti is correct
- If true, WTC 1 and 2 must have been damaged so that the upper block *never* contacted the lower floors
  - Can we destroy the lower floors before the upper portion arrives?
  - No! In this case, the upper portion will never be slowed *at all*, and hits bottom in roughly 9 seconds.
  - The lower structure absorbs energy roughly equal to **40 tons of TNT** equivalent. Without this, the collapse will happen *too fast!*
- Nothing other than the lower structure could possibly slow down the upper portion

WTC 1 and 2: Surviving Core Structures

- In both collapses, building cores were the last pieces left standing

- Shown: WTC 1 collapse
- Core remnant is approximately 70 stories in height
- Clearly, the cores were not destroyed by explosives

WTC 1 and 2: Evidence Against Demolition

- Mr. Szamboti's hypothesis requires nearly every column connection to be deliberately destroyed (explosives?)
- NIST recovered many columns, with intact ends, from the debris
- None of them were destroyed by explosives
- True for both perimeter and core columns
- In fact, absolutely no recovered steel of any type shows signature marks of explosives

Recovered Perimeter Columns

Figure 3-42, NCSTAR1-3C
Perimeter columns from
WTC 1 Floors 90-93

Figure 3-47, NCSTAR1-3C
Perimeter column from
WTC 1 Floor 92

Recovered Core Columns

Figure 4-1, NCSTAR1-3C
Core column from
WTC 1 Floors 92-94

Figure 3-12e, NCSTAR1-3B
Recovered core columns
from WTC 1

WTC 1 and 2: More Evidence Against Demolition

- Both towers were *visibly* and *gradually* damaged as the fires burned
- How could this be the work of explosives?
- If fire can weaken the structure, why can't fire weaken it to failure?
- If explosives were used, why did the core fail *last?* How was it brought down without damaging the core?

WTC 1: Gradual Deterioration

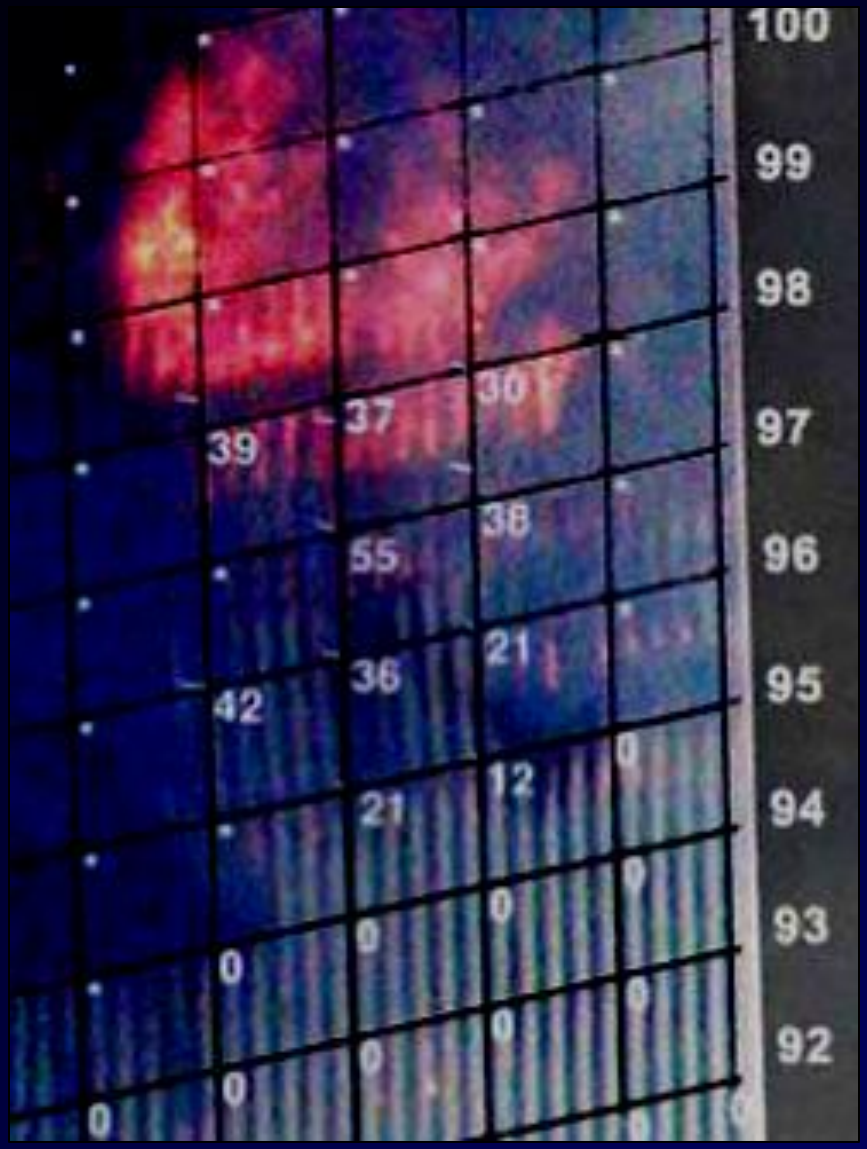


Figure 5-6, NCSTAR1-6D
Inward bowing of
WTC 1 perimeter
Eight minutes before collapse

Estimated up to 55 inches of perimeter deflection

WTC 1: Fireproofing

- NIST does not predict *all* fireproofing on far side from impact removed
- Only where fuselage went through, and some went through at very high speed
- Evidence, the opposite section punched out at impact
- Also, many researchers have calculated that even with intact fireproofing, collapse was inevitable
- Collapse started on that side due to prevailing winds, pileup of combustibles, and longer floor trusses. This was the weakest point. (verify side)

WTC 1: Fireproofing Damage

Figure 6-1, NCSTAR1-5A
WTC 1 Impact + 3.5 seconds,
North Face

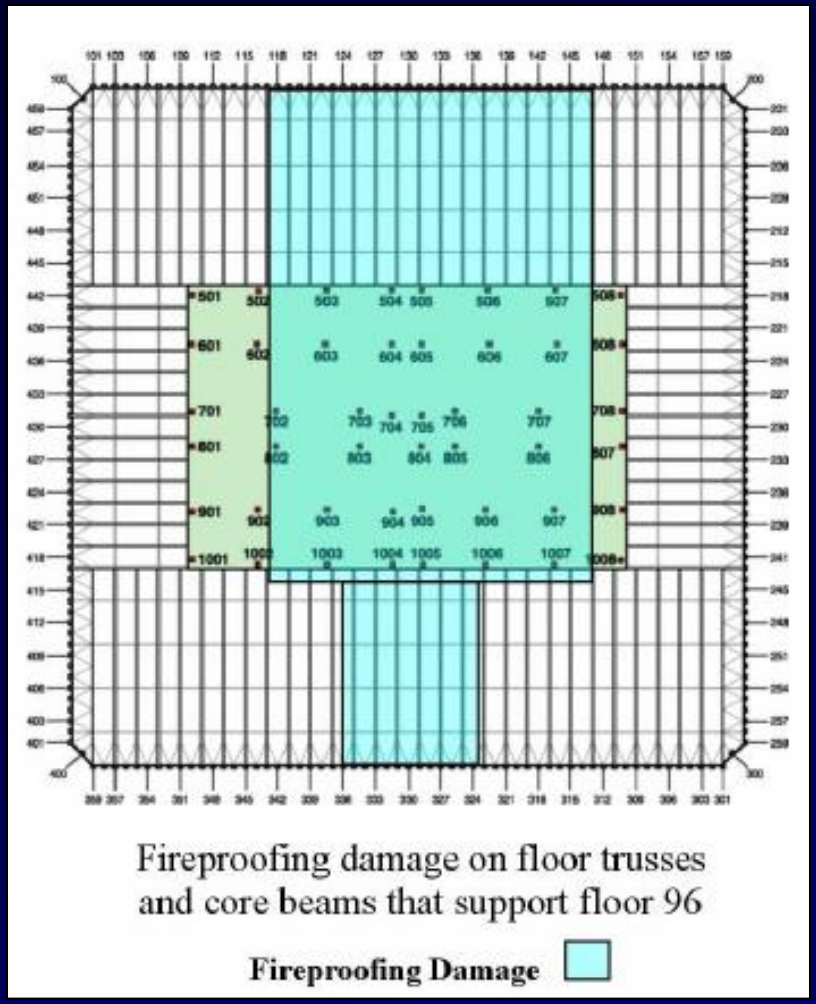


Figure 9-5, NCSTAR1-5G
WTC 1, Floor 96, Case B

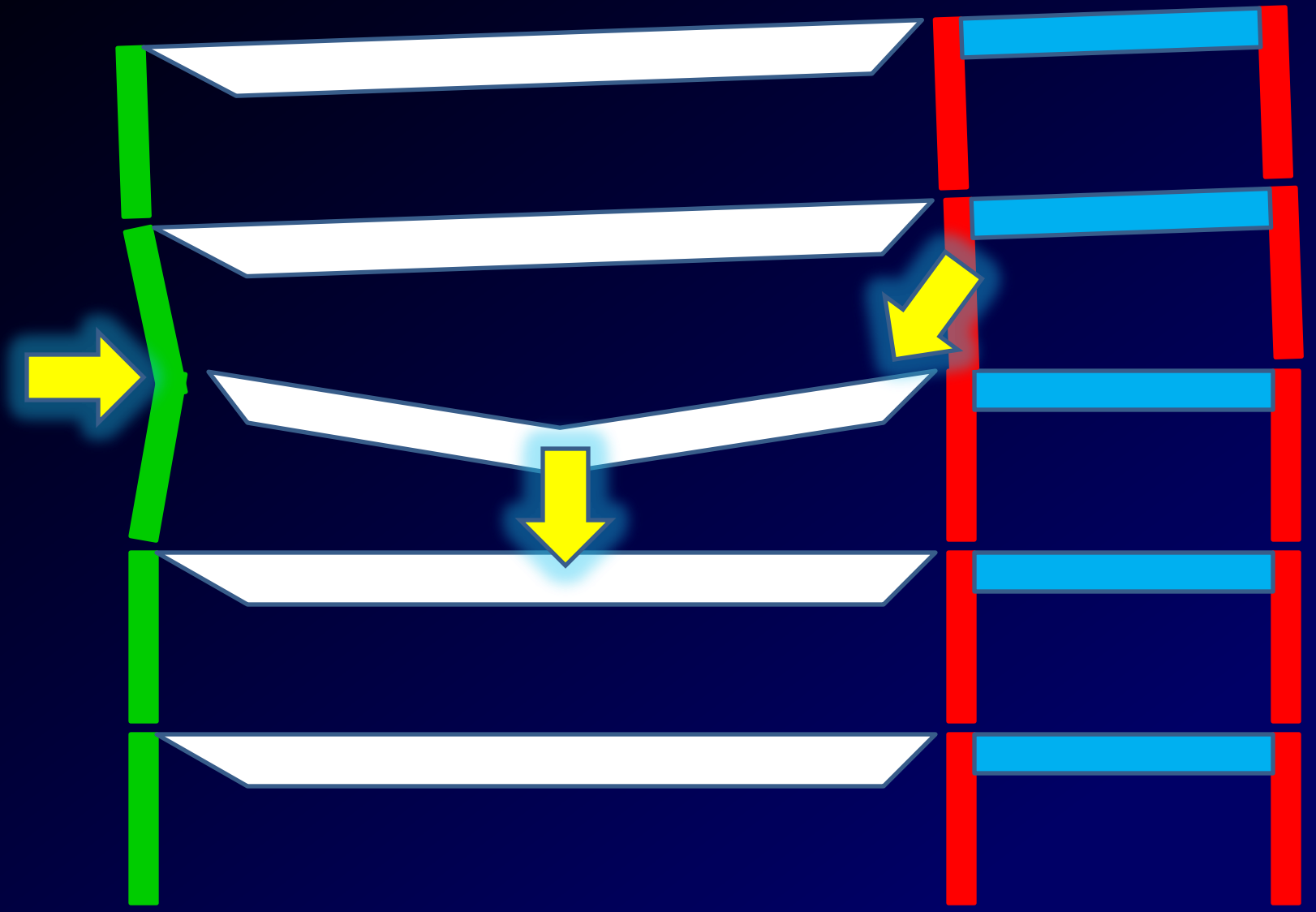
WTC 1 and 2: The Wedge Hypothesis

- After the first few floors collapse, most of the interface is rubble – amorphous, heavy, and moving fast
  - Tends to slide away from the heavier core, falling to the side and landing on the truss sections
  - This breaks and shears off the trusses and pushes perimeter columns and spandrels outward
- Core beams are sitting on welded seats, but beams themselves are not welded to the columns and lift out easily
  - Lower core resists impact, but upper core falls apart
- This mechanism hits the structure in a way it was never designed to withstand, so the strength of the structure has little effect on the collapse
- Consistent with recovered perimeter sections and survival of core remnants

The Wedge: Phase 1

- At collapse initiation, a perimeter wall buckles, and the upper block begins to rotate about a hinge
- Rotation of about 8-10 degrees
- Crushes several floors opposite the hinge
- This phase takes about 1.5 seconds

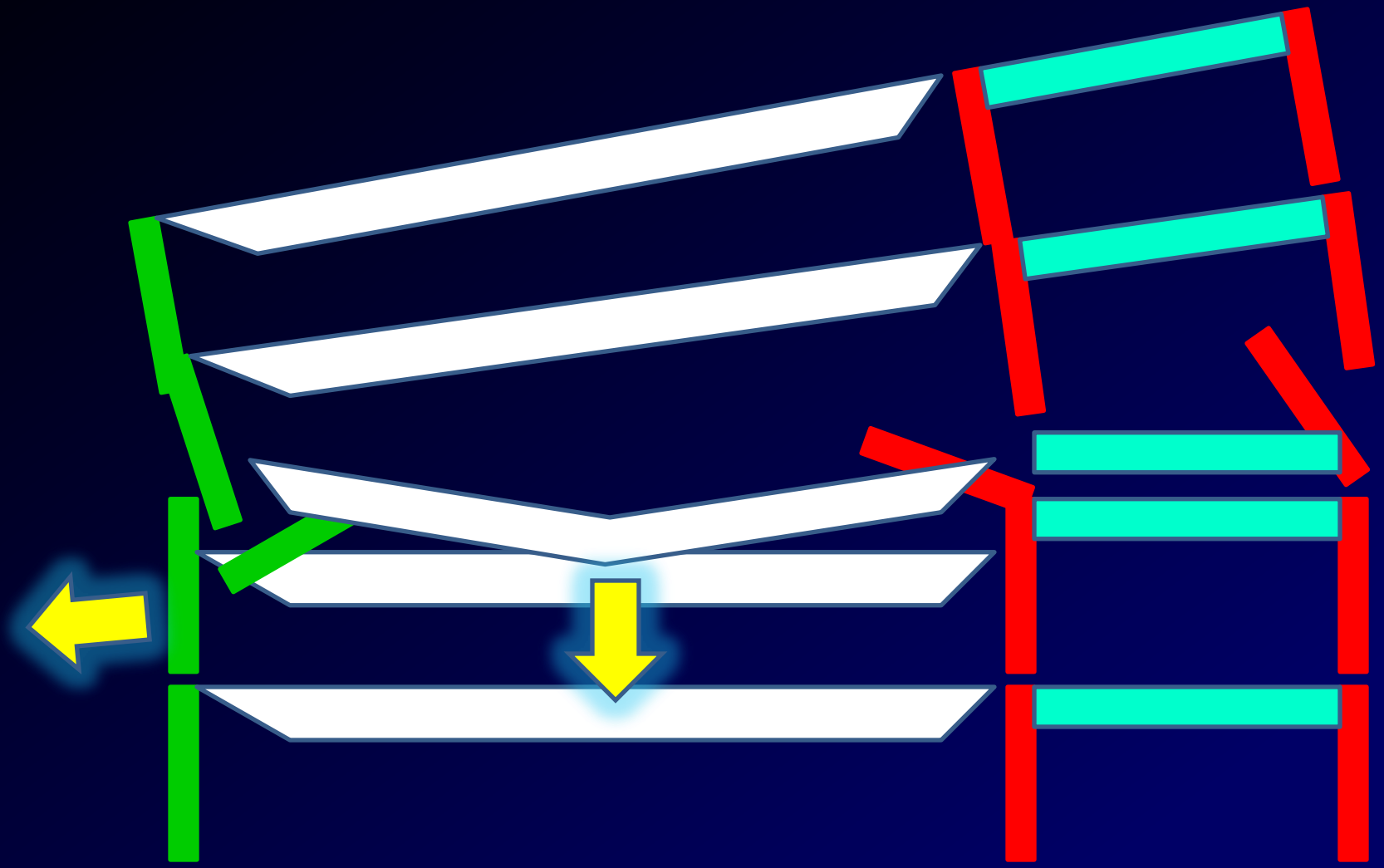
The Wedge: Phase 1



The Wedge: Phase 2

- After rotating about 10 degrees, the “hinge” fails completely
- Upper portion now falls as a free body
- Tilt angle, however, channels rubble and mass mostly *inside* the perimeter columns
- Exerts an outward pressure on those columns, shearing their bolted connections

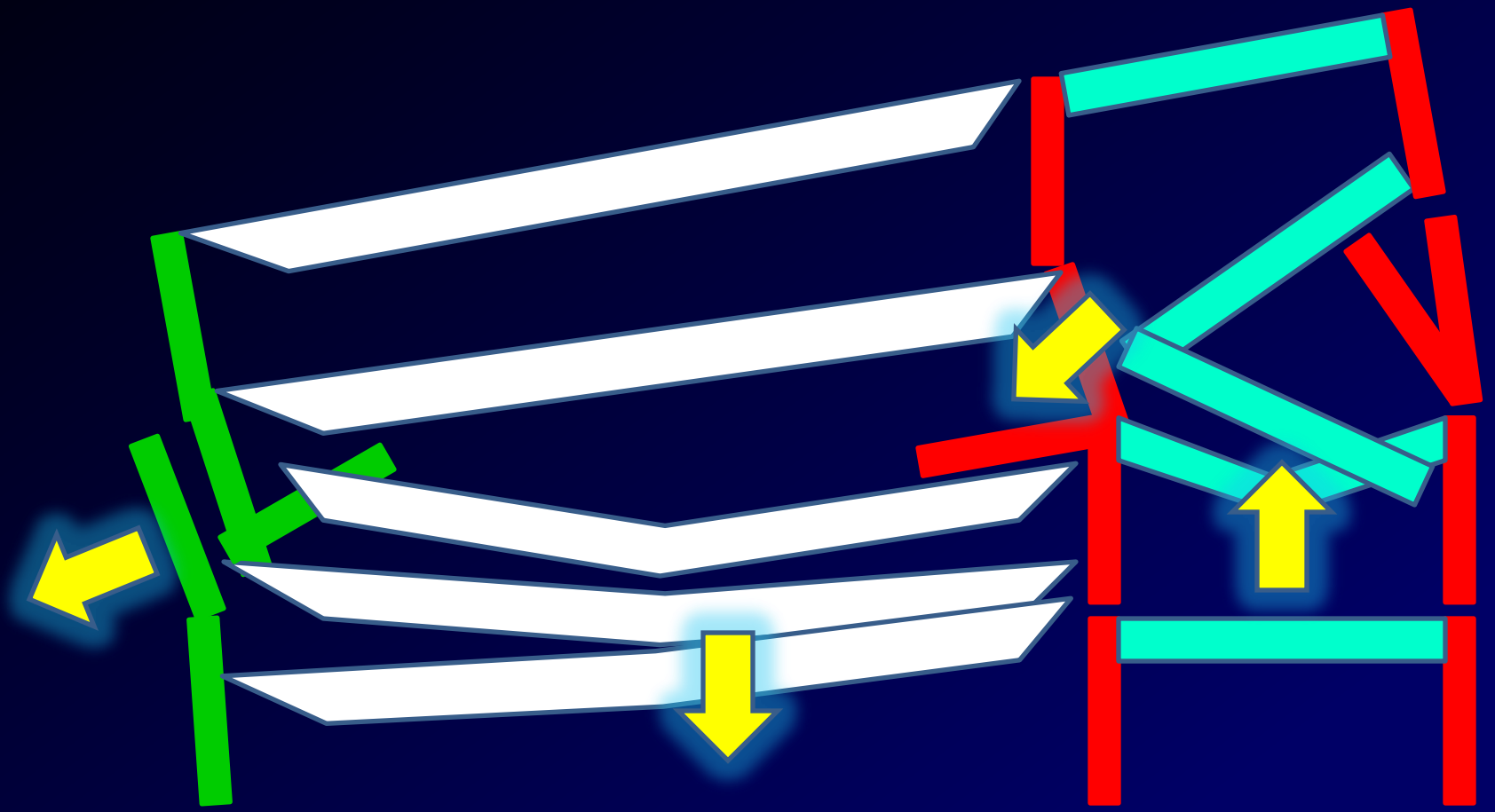
The Wedge: Phase 2



The Wedge: Phase 3

- Over time, the core resists better than the floors and perimeter
- Core is weaker when hit from below than against top impacts, so the upper core begins to break up
- Surviving lower core channels debris to the sides, increasing the load on floors, which buckle and snap free
- Some of core survives until after the outside is completely stripped away

The Wedge: Phase 3



WTC 7: Should there be a "Jolt?"

- WTC 7 suffered an almost total internal collapse *before* the perimeter started to fall
  - Not at all like Balzac-Vitry or any of the *verinage* cases
- Perimeter behaves like a thin shell buckling under its own weight – a total system failure, not a floor-by-floor failure as in WTC 1 and 2
- There is nothing substantial for the perimeter remnant to hit until it has descended out of view
- Outer shell may buckle all at once, or may buckle in stages – each one leading to a "jolt." Maybe.

WTC 7 vs. Beijing TVCC Fire

WTC 7:

- All steel structure
- No firefighting possible
- Burned for over seven hours
- Long-span steel beams between core and perimeter
- Fire ventilated by impact damage

TVCC Building:

- Reinforced concrete with internal and external fire-resistant cladding
- Vigorous firefighting, under control in about one hour
- Braced tube “superstructure” needing no stabilization from floor spans
- Unoccupied and low fuel load
- Specifically built with lessons from WTC 7

TVCC Fire, Continued

- Massive *concrete* frame visible from construction photos
- Concrete cores are typical of all post-September 11th skyscrapers
- Despite precautions, building was heavily damaged by fire anyway

Photo Credit: Tom van Dillen, www.vandillen.net

Summary: Why do we disagree with Mr. Szamboti?

- Presents no clear, testable hypothesis for how the Towers could have been sabotaged
- Demolition is unnecessary – many published results prove the Towers were expected to collapse completely
- "Missing Jolt" argument ignores details of the collapses that complicate the situation
  - Early rotation of upper structure or internal collapse
  - Descending mass primarily hitting truss-framed floors, not load-bearing elements
  - Comparisons to *verinage* situations are not appropriate
- There is no evidence in favor of sabotage
- There is considerable evidence against sabotage

Summary, Continued

- Now pretend the WTC *was* sabotaged
  - How did the devices get there?
  - Why are there no recorded sounds of explosives?
  - Why weren't thousands killed by flying glass?
  - Why did occupants and security fail to detect them?
  - Why would anyone plant them in the first place?
  - Why is there no support at all for this hypothesis in the scientific and engineering community?
- The idea depends on numerous leaps of faith, and raises more questions than it solves

This is typical of conspiracy theories