

CTBUH Questions NIST Draft Report on WTC 7

In October 2008, the Council on Tall Buildings and Urban Habitat (CTBUH) published a report on the NIST WTC 7 draft report.

In its report, titled "The Council on Tall Buildings and Urban Habitat Comments on the 'Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7 August 2008,'" the CTBUH questioned critical aspects of NIST's WTC 7 collapse theory and highlighted problems with NIST's draft report. In so doing, the Council expected NIST to correct these problems in its final report.

Though the Council raised several technical points about details of the modeling, it did not question NIST's conclusion, which was that fire had caused floor beams to fail, in turn leading to buckling of the internal columns and resulting in global failure.

The CTBUH report proves that its officials did not understand NIST's hypothetical collapse scenario, in which the floor beams did not *fail* but, rather, expanded lengthwise due to thermal expansion, causing a girder to be pushed off its seat.

CTBUH wrote: "[W]e cannot see any credible scientific evidence of a controlled demolition on WTC 7 or any of the other WTC buildings."

Apparently, the CTBUH officials who made this statement are not familiar with the laws of physics—specifically, free-fall acceleration and its relevance to WTC 7.

CTBUH wrote: "Several conclusions drawn in the NIST report on the contribution of structural components in failure initiation are unexpected and have raised concerns within the Council. These conclusions involve the role of both shear studs and local global buckling of the floor beams in failure initiation."

As mentioned above, the floor beams did *not* buckle in NIST's collapse scenario. Instead, the buckling occurred *only* in its interim computer model. In that fraudulent model, the fire heated the beams but not the cement slab. The temperature differential between the steel and the cement broke the shear studs, according to the computer model. This temperature differential, however, could *never* occur in a real fire.

In any case, it was shear stud failure, not buckled floor beams, which NIST used in its contrived computer model.

CTBUH wrote: "The failure of shear studs is surprising, and has been modeled in a very simplistic way, which may overestimate the failure of this element. Prior studies and real fire cases have not previously identified shear stud failure as a significant possibility."

CTBUH wrote: "It is unclear what the effect of a more accurate shear stud model would have produced in the NIST study, and in the somewhat extreme case of WTC 7 (given the multiple fire floors) it is unlikely that a significantly different overall conclusion might be reached."

Both of the above comments about shear studs were answered by two engineers at Victoria University in Melbourne, Australia. David Proe, a professorial research fellow, and Ian Thomas, director of the Center for Environmental Safety & Risk Engineering, wrote [here](#), in response to the NIST draft report:

4. Similarly the LS-DYNA analysis on pp. 349-354 locks in thermal stresses by imposing no translation at all slab edges and **no thermal expansion or temperature in the slab. Both are unrealistic.**

5. We conducted a series of 21 standard fire tests on simply-supported composite beams in the 1980's [1]. These were summarized and the failure times were compared with those calculated based on strength. Excellent correlation was achieved, based on full composite connection. There was **no indication that shear stud failure could cause premature failure.** However, the beams were 3 m in length not 16 m, but the calculations on p. 347 do not show or imply any dependence on length."

CTBUH wrote: "It is surprising to see in-plane buckling of the beam as being a key generation of the initial failure, since it would be expected that the floors would bend out of the way on their major axis, combined with a local buckling of the bottom flange, like those found in the Cardington Fire Tests."

Again, CTBUH officials revealed their ignorance of the NIST collapse scenario.

CTBUH wrote: "It appears that the fire on Level 12 had passed its peak in the area of Column 79. Is it possible that failure occurred as part of the cooling cycle?"

This observation by CTUBH is correct. The fire *had* burned out in the area of collapse initiation more than an hour before the collapse occurred.

CTBUH wrote: "The report does not describe the detail failure mechanism of the girder connection to Column 79. Since this was critical to the failure we would expect to see diagrams of it, in its deflected, deformed shape immediately prior to collapse."

This is incorrect.

NIST describes the failure mechanism on page 611 [PDF page 273] of NCSTAR 1-9, Vol. 2 (http://www.nist.gov/manuscript-publication-search.cfm?pub_id=861611):

Initial Local Failure for Collapse Initiation. The simple shear connection between Column 79 and the girder that spanned the distance to the north face (to Column 44) failed on Floor 13. The connection failed due to shearing of erection bolts, caused by lateral thermal expansion of floor beams supporting the northeast floor system and, to a lesser extent, by the thermal expansion of the girder connecting Columns 79 and 44. Further thermal expansion of the floor beams pushed the girder off its seat, which led to the failure of the floor system surrounding Column 79 on Floor 13. The collapse of Floor 13 onto the floors below—some of which were already weakened by fires—triggered a cascade of floor failures in the northeast region. This, in turn, led to loss of lateral support to Column 79 in the east-west direction over nine stories (between Floors 5 and 14). The increase in unsupported length led to the buckling failure of Column 79, which was the collapse initiation event.

A graphic of the girder being pushed off its seat was included in NIST's [technical briefing](#) slide show on August 26, 2008 (page 32), but it was not included in the final report, which was published on November 25, 2008.

We agree with CTBUH's criticisms of the NIST draft report and believe that NIST's obfuscation of its methodology was enough to cause these professionals to conclude that the WTC 7 collapse resulted from floor beams buckling when, in fact, NIST's final analysis was that the beams expanded and pushed a girder off its seat.

How can professional engineers be expected to properly analyze a government report when its conclusion is so obscure and befuddling?

The fraudulent interim computer model that NIST used to invent the shear stud failure is just one of many frauds enumerated in a series of articles published by AE911Truth between November 2014 and May 2015 (see below):

INTRODUCTION (#1 of 6 in November 2014): <http://www.ae911truth.org/news/186-news-media-events-1-of-6-nist-fraud.html>

PART 1: NIST and Popular Mechanics Fabricate Myth About WTC 7's "Scooped-Out" 10 Stories (#2 of 6 in December 2014): <http://www.ae911truth.org/news/190-news-media-events-2-of-6-nist-fraud.html>

PART 2: NIST's Fictitious Gouge Launches Design Flaw Myth and Collapse Initiation Theory (#3 of 6 in February 2015): <http://www.ae911truth.org/news/197-news-media-events-3-of-6-nist-fraud-3.html>

PART 3: Trusses & Tanks — Popular Mechanics Helps NIST Create More Myths (#4 of 6 in March 2015): <http://www.ae911truth.org/news/206-news-media-events-4-of-6-nist-fraud-4.html>

PART 4: Independent Analysis Disproves NIST's New Thermal Expansion Hypothesis (#5 of 6 in April 2015): <http://www.ae911truth.org/news/215-news-media-events-5-of-6-nist-fraud-5.html>

PART 5: How Skyscrapers Are *Really* Imploded (#6 of 6 in May 2015): <http://www.ae911truth.org/news/217-news-media-events-6-of-6-nist-fraud-6.html>

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