

Dear Editors,

I want to draw your attention on the WTC failure issue.

As Structural Engineer, specialized with Eladio Dieste in Stability of Structures, the explanation of the article on WTC is absurd. I have worked by twenty years in Intelligent Structures stability, and one structure was nominated for fib 2010 Outstanding Structure Awards.

I have studied the WTC failure by two stability investigation methods: 1) energy flow minimisation and 2) monitoring displacements vs. efforts convergence.

The structure of the WTC was held by the bracing of the exterior columns by the floor steel joist at each floor level. The weakest point is the union column-steel joist, and although it was fully protected with fire-resistant foam, it is a

union without redundancy. Redundancy of joints is a must for live loads.

Structural stability is a subject beyond the mechanical strength; a temperature of 800 ° F (measured indirectly by the colour of steel), which does not affect the strength of steel, caused differential deflections that were enough to disconnect the junctions steel joist- pillar. The joints, which were welded for construction speed, were not redundant and failed. When the joints failed, the steel joists fell and the pillars buckled for lack of horizontal bracing.

The fire affected the floors above of the impact floor, just the failing of only two connections trigger a displacement mechanism, floor by floor, exactly as seen in the videos.

A study by two researchers at MIT, Prof. Oral Buyukozturk and Dr. Oguz

Gunes, by other roads leads to the same result as listed above (see *The Collapse of Twin Towers: Causes and Effects*, Keynote Lecture, EFCA 2004 CONFERENCE, May 22-May 25, 2004 Istanbul, Turkey). Without these failings the towers would not have fallen. They recommend increasing the redundancy of connections onwards. This failure mechanism is consistent with the final NIST report 2008 in http://ws680.nist.gov/publication/get_pdf.cfm?pub_id=861610

Modern high-rise structures use other structural systems, including e.g. high performance concrete.

The structural engineering requires faithful adherence to the laws of physics, and good engineering judgement. People's lives depend on us. ■

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Thoughts from a Former NIST Employee

I was a member of the NIST technical staff during the period 1997-2011. I initially joined the High Performance Systems and Services Division and later became a member of what was, at the time, the Mathematical and Computational Sciences Division of the Information Technology Laboratory. My fellow NIST employees were among the finest and most intelligent people with whom I have ever worked.

I did not contribute to the NIST WTC investigation or reports. But in August of this year, I began to read some of those reports. As I then watched several documentaries challenging the findings of the NIST investigation, I quickly became furious. First, I was furious with myself. How could I have worked at NIST all those years and not have noticed this before? Second, I was furious with NIST. The NIST I knew was intellectually open, non-defensive, and willing to consider competing explanations.

The more I investigated, the more apparent it became that NIST had reached a predetermined conclusion by ignoring,

dismissing, and denying the evidence. Among the most egregious examples is the explanation for the collapse of WTC 7 as an elaborate sequence of unlikely events culminating in the almost symmetrical total collapse of a steel-frame building into its own footprint at free-fall acceleration.

I could list all the reasons why the NIST WTC reports don't add up, but others have already done so in extensive detail and there is little that I could add. What I can do, however, is share some thoughts based on common sense and experience from my fourteen years at NIST.

First, if NIST truly believes in the veracity of its WTC investigation, then it should openly share all evidence, data, models, computations, and other relevant information unless specific and compelling reasons are otherwise provided. For example, would the release of all files and calculations associated with the ANSYS collapse initiation model jeopardize public safety to an extent that outweighs the competing need for accountability?

Second, in its reports, NIST makes a great show of details leading to collapse initiation and then stops short just when it becomes interesting. The remainder of the explanation is a perfunctory statement that total collapse is inevitable and obvious. It is easy to see through this tactic as avoidance of inconvenient evidence. In response to any challenges, NIST has provided curt explanations from its Public Affairs Office. There were many contributors to the NIST WTC investigation: Why not let them openly answer questions in their own voice with the depth of knowledge and level of detail that follows from the nuts and bolts of their research?

Lastly, awareness is growing of the disconnect between the NIST WTC reports and logical reasoning. The level of interest in "15 years later" is a good example. Due to the nature of communication in today's world, that awareness may increase approximately exponentially. Why not NIST blow the whistle on itself now while there is still time?

Truth is where our healing lies. ■

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