UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF NEW YORK

• 445 Broadway; Albany, NY. 12207-2936 •

Unified United States Common Law Grand Jury; **Sureties of the Peace**
P.O. Box 59, Valhalla, NY 10595; Fax: (888) 891-8977.

AL, AK, AZ, AR, CA, CO, CT, DE, FL, GA, HI, ID, IL, IN, IA, KS, KY, LA, ME, MD, MA, MI, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VT, VA, WA, WV, WI, WY:

Grand Jury, Sovereigns of the Court
We the People

- Against -

Undisclosed (sealed)
Defendants

Jurisdiction: Court of Record, under the rules of Common Law
Action at law:

Case NO: 1:16-CV-1490
Magistrate: Daniel J. Stewart

EVIDENCE REPORT

GRAND JURY REPORT REGARDING THE CRIMINAL INVESTIGATION INTO 911

AUGUST 7, 2017

On September 11, 2001, the three worst structural failures in modern history took place when World Trade Center Buildings 1, 2, and 7 suffered complete and rapid destruction. In the aftermath of the tragedy, most members of the architecture and engineering community, as well as the general public, assumed that the buildings' destruction had occurred as a result of the airplane impacts and fires. This view was reinforced by subsequent federal investigations, culminating in FEMA's 2002 Building Performance Study and in the 2005 and 2008 reports by the National Institute of Standards and Technology (NIST).

Since 9/11, however, independent researchers around the world have assembled a large body of evidence that overwhelmingly refutes the notion that airplane impacts and fires caused the destruction of the Twin Towers and WTC 7. This body of evidence, most of which FEMA and NIST omitted from their reports, instead supports the troubling conclusion that all three skyscrapers were destroyed in a process known as "controlled demolition," where explosives and/or other devices are used to bring down a building.

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The following articles discuss and analyze the evidence for explosive controlled demolition of the Twin Towers and WTC 7. While most of these articles are intended for a general audience, the articles under "Technical Critiques of the NIST Reports" are geared toward readers with greater technical knowledge.

60 Structural & Civil Engineers Cite Evidence for Controlled Demolition in Collapses of All 3 WTC High-Rises on 9/11

How could all 47 core columns fail at the same instant? Fires could not do that.

Official Collapse Theory Defies All Laws of Physics

By James McDowell and AE911Truth Staff

Since its inception in 2006, Architects & Engineers for 9/11 Truth has remained steadfast in its mission of exposing the flaws in the claims made by the National Institute of Safety and Technology (NIST) — namely, that the impact of two planes and the resulting fires brought down three steel-framed skyscrapers on September 11, 2001. We do scientific, cogent, and comprehensive analyses, backed by forensically-tested, unassailable facts.

One outcome of our insistence on remaining true to our mission is that our ranks of signatories has swelled from less than a dozen to more than 2,300 building and technical professionals who are petitioning the government for a new, independent investigation of the catastrophic destruction at the World Trade Center on 9/11.

Additionally, over 20,000 citizens have signed the AE911Truth petition, and more than 250,000 supporters have "liked" our Facebook page. Last August we introduced this once-taboo topic with a 45-minute interview on C-SPAN, foiling a mainstream media blackout and allowing a national audience of millions to finally hear the most poignant — and suppressed — facts about that fatal day.

While much of AE911Truth's success can be ascribed to the perseverance of its founder and the other members of its board of directors, who have remained focused on the science, none of its achievements would have been possible without the professional credibility lent by an ever-growing contingent of professional signatories: structural engineers. The members of this distinguished group, numbering 60 to date, are experts in the capability of steel-frame structures to resist all kinds of forces. Their courage in stepping up to speak the "inconvenient truth" secures for them a venerable place as "the scientific backbone" of AE911Truth.

RICHARD GAGE

Five years after 9/11, San Francisco Bay Area architect Richard Gage, AIA, began raising technical questions among his professional colleagues about the destruction of the Twin Towers and 47-story WTC Building 7. He realized that an organized effort by building professionals and scientists was needed to shine light on the government's false version of 9/11. In the years since founding AE911Truth, Gage has discovered that those who take time to look at the facts overwhelmingly agree that vital questions about the forensic evidence and

video testimony remain unanswered by government officials.

That's why he and more than 2,300 other degreed and/or licensed architects and engineers — including 60 structural engineers who hail from the US, Canada, Australia, the UK, and Europe — have signed the petition that demands an unbiased, unimpeachable investigation of the World Trade Center's destruction. Every day, more professionals — all of them carefully vetted by AE's verification team — join the existing signatories.

For Some, the Doubts Began Early

"Something is wrong with this picture," thought **Nathan Lomba, S.E., P.E., of Eureka, California,** as he watched televised replays of the Twin Tower collapses on September 11, 2001. As a licensed structural engineer trained in buildings' responses to stress, Lomba saw more on the screen than did the average viewer. He tried to answer this perplexing question, "How did the structures collapse in near-symmetrical fashion when the damage was clearly not symmetrical?"

Lomba was hardly alone in his doubts and discomfort that day. Whether they publicly admit it or not, and whether they saw the events unfold "live" or watched endless television and internet reruns later, most building professionals — or individuals with any knowledge of building collapses — were surprised when the towers fell. Demolitions expert Van Romero voiced his thoughts the day the planes struck, though he unaccountably reversed his position ten days later. Also early on, MIT engineer and research scientist Jeff King made his first impressions of 9/11 known in this speech. Even TV anchors (see here and here, for example) expressed their unfiltered opinions on the air that fateful day.

How did the structures collapse in near-symmetrical fashion when the damage was clearly not symmetrical?

By and large, though, building professionals kept their misgivings to themselves. In the ensuing days, weeks, and months, they watched in bewilderment as reputable magazines like *Scientific American* and the *Journal of Engineering Mechanics*, well-regarded television stations like the BBC and The History Channel, and government agencies including NIST and the Federal Emergency Management Agency (FEMA) trotted out varying and imaginative hypotheses as to how fires could have leveled all *three* high-rise structures.

Many structural engineers, like Lomba, find the unnatural symmetry of the fall of all *three* skyscrapers highly suspicious. The rapidity of collapse — eventually acknowledged by NIST as free-fall acceleration — also troubles them. Some note that the fires were weak, low-temperature, and short-lived. Others ask how the tilting upper section of the South Tower, WTC 2, "straightened" itself. Everywhere they look, pieces of the puzzle "don't fit with what we've been told," these engineers insist.

New evidence that has come to light over the years but was omitted from government reports — dozens of eyewitness testimonies of explosions, unexplained molten iron in the debris pile, and chemical evidence of steel-cutting incendiaries — has only validated these engineers' initial suspicions.

More than a few of them also point to the implausible aspects of civil engineering professor Zdeněk Bažant's pile driver model, first published a mere two days after 9/11, which these

engineers view as a rush to judgment based on extremely limited data, and later codified in his 2008 analysis.

They also cite the impossibilities — as well as slipshod and dishonest methodology — of both the 2002 FEMA report and the NIST final reports on the Twin Towers (2005) and Building 7 (2008).

Mystifying many of these professionals is the abrupt fall, in the late afternoon of 9/11, of WTC 7, which was not hit by an airplane but only by debris ejected from the North Tower when it came down. The repeated postponement of the government's reports only added figurative fuel to the fire, in the minds of many a skeptical engineer.


PAUL MASON

Artificial Symmetry

The symmetry of collapse struck **both Paul Mason, a structural engineer in Melbourne, Australia,** and **Dennis Kollar, P.E., a structural engineer in Wisconsin**, as disconcerting. Kollar remains troubled by the "totality and uniformity of the destruction" and by the fact that "the mass of debris remained centered on the building core all the way down."

John Watt, a chartered structural engineer in Edinburgh, UK, voices similar concerns. "With respect to the Twin Towers," he says, "the main puzzle was how two buildings with highly asymmetric damage could fail vertically downwards into the strongest part of the buildings — their steel-columned cores. And not only fail vertically, but at a speed that indicated structural resistance being removed sequentially from under the collapse wave. Few engineers would imagine buildings a quarter-of-a-mile high failing vertically, into their main structures, rather than failing laterally — given the eccentric damage."

The towers should have fallen "with increasing eccentricity as the collapse progressed," observes **Howard Pasternack, P.Eng., of Toronto, Canada.** Moreover, these systematic collapses required that many structural connections not only fail "nearly simultaneously, but also in sequential order," according to **Frank Cullinan, P.E., who designs bridges in Northern California.** That's "impossible from asymmetrical impact loading and . . . small, short-duration fires."


ANDERS BJÖRKMAN

The engineers find it difficult to believe the government's claim that scattered fires brought about such an orderly collapse. Failure of heat-weakened steel would show "large deflection, asymmetric local failure, and slow progress," **David Scott, C.Eng., a chartered consulting structural engineer in the UK,** told colleagues at the Institution of Structural Engineers in the UK. It's "a *gradual* process," agrees Anders Björkman, and "cannot be simultaneous everywhere." A Swedish naval architect and marine engineer working in France, Björkman maintains that failures "will always be local and topple the mass above in the direction of the local collapse."

William Rice, P.E., a Vermont licensed structural engineer, expects fire-induced failures to be "tilting, erratic and twisting," while **Ronald Brookman, S.E., a licensed structural engineer in Novato, California,** figures on "a partial collapse to the side."

"Symmetrical collapse requires simultaneous failure of all supporting columns," notes **Charles Pegelow, P.E., a Houston, Texas, licensed civil engineer** who has performed

design work on numerous tall buildings as well as oil rigs. "How could all 47 core columns fail at the same instant?" Pegelow wondered briefly, then concluded definitively, "Fires could not do that."

Impossible Collapse Acceleration

After NIST characterized the Twin Towers' collapse as "essentially in free fall" (See Section 6.14.4 of NIST NCSTAR 1, page 146 [PDF page 196]), Brookman wrote to NIST investigators, asking why debris fell "with little or no resistance from the intact structure below."

And, though Rice didn't address NIST directly, he, too, questioned — and continues to question — how each tower "inexplicably collapsed upon itself, crushing all 287 columns on each floor, while maintaining near-free-fall acceleration, as if the 80,000 tons of supporting structural steel framework underneath didn't exist."

Falling objects, notes Pasternack, should take "the path of least resistance," yet official explanations claim that tower debris took the path of *greatest* resistance, through the strong core structure all the way to the ground.

The Twin Towers were overbuilt to prevent office workers from getting seasick on windy days, says Kollar. "There's so much redundancy. . . . The building has to be stiff enough so it doesn't sway [excessively]." Perimeter columns designed to endure hurricanes, Scott says, were loaded only to "about 10% of their ultimate capacity" in the gentle breeze on 9/11. (See "How Columns Will Be Designed for 110-Story Buildings," *Engineering News-Record,* April 2, 1964.)

Gravity was "a negligible part of the loading," says Kollar, citing a claim by the Twin Towers' engineers Worthington, Skilling, Helle & Jackson that even with all the columns on one side — and several around the two corners — cut, each tower would still withstand 100 mile-per-hour winds. (See James Glanz and Eric Lipton, *City in the Sky: The Rise and Fall of the World Trade Center*, New York: Times Books, 2003.)

The rapid breakup of these robust structures appears to defy the laws of physics, AE911Truth engineers say. Fifty years of structural design experience inform the view of **Santa Rosa, California, licensed structural engineer Bob Briscoe, P.E.,** who maintains that the government's collapse theories "defy the laws of mechanics, conservation of energy, and known structural failure behavior."

In the official collapse story, the kinetic energy (of motion) of the falling debris would have been largely absorbed by the existing structure, bending and twisting steel components, and breaking up 220 acres of concrete floors. To accomplish all this while achieving a nearly free-fall collapse is "simply not physically possible," says Mason. "There is not sufficient energy available . . . . For this massively strong structure to just crumble away at near-free-fall acceleration would have required immense amounts of explosive energy."

Weak Fires vs. Explosive Events

Though four official accounts blame fire for the destruction of all *three* World Trade Center towers, the fires do not appear to have been particularly severe, the engineers contend. In fact, even NIST states that the jet fuel burned off in just minutes. (See NIST NCSTAR 1, page 183 [PDF page 233].)

The government agency even "acknowledged that office furniture burns up in only about 20 minutes in any one area" before it's consumed, Scott points out. "There's ample evidence that the steel temperatures got nowhere close to the "600+ degrees Centigrade [1,200 degrees Fahrenheit] required to initiate failure." (See NIST NCSTAR 1, page 129 [PDF page 179] and page 183 [PDF page 233].)

That does not look anything like a heat-induced, gravitational collapse mechanism

We saw no "raging infernos" on TV, notes **David Huebner, P.E., a licensed structural engineer in Michigan.** On the contrary, sooty smoke and dull red flames indicate "cool fires . . . fuel-starved fires," says Scott. He adds that firefighters working at the 78th-floor impact zone reported "only two small fires, not the 1,000-degree-Centigrade inferno" that government officials claim.

New York Fire Department (FDNY) personnel, trained to assess fires' structural hazards, had no reason to expect total collapse, Brookman maintains. In fact, Scott notes, several steel-framed towers have burned longer, hotter, and much more intensely without collapse. "As engineers, we know what fire can do to steel and what it can't."

"Over 100 recorded witnesses reported hearing and seeing multiple explosions," Rice recalls.

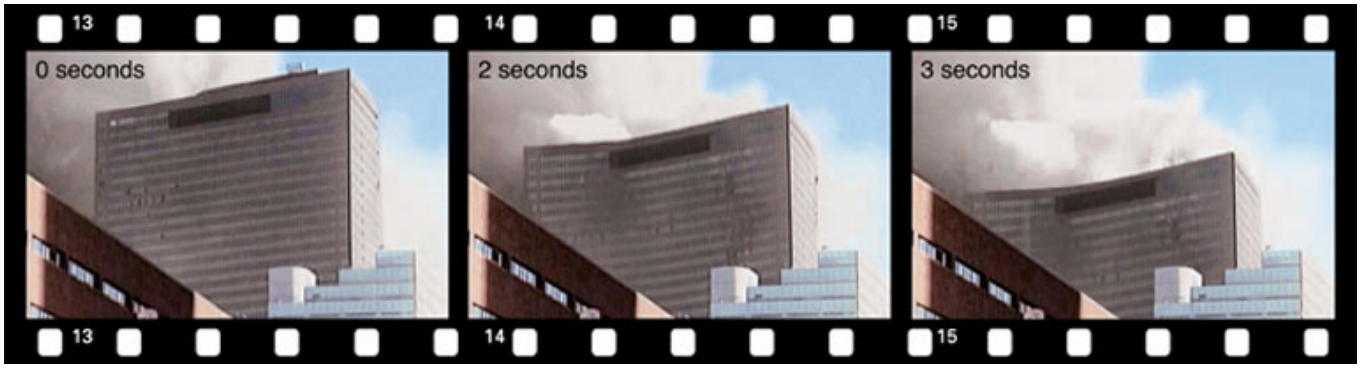
Brookman, too, cites "numerous eyewitness accounts, including the FDNY oral histories, of secondary explosions . . . well below the impact floors." His letter to congressional representatives describes "explosive clouds of dust and debris moving horizontally and vertically." "That does not look anything like a heat-induced, gravitational collapse mechanism," Brookman writes. Rice, noting that "perimeter columns weighing several tons each were ejected laterally up to [600] feet," contends that this phenomenon is "not possible without explosives."

Angular Momentum Arrested

As the South Tower began to fail, the top 29 stories tipped as a unit, photos show. "The tilting block doesn't look right," Brookman asserts. It should "continue to rotate and fall to the ground." **Phoenix, Arizona, licensed structural engineer Edward Knesl, S.E.,** and Lomba echo Brookman. The failure mode of such tall structures should have been "a fall over to the side" (Knesl) and "a toppling of the upper floors to one side, . . . not a concentric, vertical collapse" (Lomba). "It looked like an explosive event," adds Brookman. "[The upper section] began tilting toward the damage zone, and then suddenly dropped straight down and disintegrated in the process."

Building 7's Mystifying Implosion

Baffling as the towers' "collapses" were, even more perplexing to the 60 structural engineers was the destruction of World Trade Center Building 7. "Unprecedented," says Rice. "Unexplainable," vouches Huebner. After all, as all the engineers know, and as **London chartered structural engineer Graham Inman** declares bluntly on their behalf, "No plane hit this building."



Few Americans have given any thought to the *third* World Trade Center high-rise destroyed on September 11th, since it, unlike the Twin Towers' destruction, was not repeatedly televised. **Fremont, California-based Kamal Obeid, S.E., a consulting licensed structural engineer,** ponders the fall of the third high-rise structure. "A localized failure in a steel-framed building like WTC 7 cannot cause a catastrophic collapse like a house of cards without a simultaneous and patterned loss of several of its columns at key locations within the building," he contends.

Videos of Building 7 show "simultaneous failure of all columns," says Inman, "rather than [the expected] phased approach," in which undamaged columns would show resistance sequentially.

Though the 47-story building housed "offices of the CIA, the Secret Service, and the Department of Defense, among others," Rice notes that the 9/11 Commission left WTC 7's collapse out of its report. FEMA's 2002 inquiry blamed WTC 7's collapse on fires, though it admitted that its "best hypothesis [fire] has only a low probability of occurrence." The mainstream media, says Rice, have "basically kept the collapse of WTC Building #7 hidden from public view."

The Phantom Pile Driver

A mere two days after 9/11, Dr. Zdeněk Bažant, a civil engineering professor at Northwestern University, offered a highly stretched rationale for the most catastrophic structural failure in history. Thirteen years later, his thesis (see Bažant's 2008 final analysis) remains the key support for the government's claim that the collapses were "inevitable." (NIST used the word "inevitable" in its NCSTAR 1 report on WTC 7 twice — once on page xxxvii [PDF page 39], footnote 2, and again on page 82 [PDF page 132], footnote 13.)

Bažant's mathematical model of the upper floors' transformation into a "pile driver block" free-falling one story to hammer the entire tower down to the ground involves "very misty allegations — actually inventions," says Björkman. His opinion derives from 40 years in ship surveying and construction, design of tankers and seagoing ferries, and practical observations of steel vessels after collisions. Never before, Björkman notes, has "a smaller object (the light-weight, upper, actually non-rigid, flexible steel structure consisting of many smaller parts) destroyed the bigger and stronger other object (the complex steel structure below) only with the assistance of gravity."

Björkman scoffs at Bažant's mythical free-falling top block bringing 287 columns hammering down in perfect array on the 287 columns below. Steel bends and mashes in Björkman's salty world, and "it is not certain that the hammer even hits the nail." Real-life columns miss, lodge in horizontal structures, and punch holes in floors, creating energy-absorbing frictions, deformed steel, local failures, and "a soft collision (not impact!)" that tangles damaged floors in a shuffled array — and stops well short of total collapse.

The marine engineer maintains that videos show Bažant's *alleged* pile driver disintegrating "within 3.5 seconds after the roof starts to fall, . . . before global collapse starts!" Björkman challenges Dr. Bažant and his followers to produce a "timetable, analysis, and explanation" consistent with the video evidence. "And tell us . . . what happened to the upper block?!"

Molten Iron "Flowing Like Lava"

As far as Watt is concerned, the most compelling evidence for controlled demolition is the numerous reports of molten steel. "These came from firemen and rescue personnel involved in the initial rescues immediately after the collapses then many weeks after the collapses, where red-hot molten steel was noted. From extensive research into office building fires, we know that while steel can deform under office fire temperatures, it comes nowhere close to melting. If steel had melted due to fires at the high levels, we would again expect a tilting failure, not vertical collapse."

Steel starts melting at 2,700° F, almost 1,000° hotter than burning jet fuel or office fires, notes Pegelow. "Why did the NIST investigation not consider reports of molten steel in the wreckage?" he asks. FDNY Captain Philip Ruvolo reported seeing "molten steel . . . like you were in a foundry, like lava."

Even Leslie Robertson, one of the design engineers of the World Trade Center and a supporter of the official collapse story, acknowledged, "So when we were down at the B1 level [basement level 1], one of the firefighters said, 'I think you will be interested in this . . . .' And they pulled out the big block of concrete, and there was like a little river of steel . . . flowing."

According to Richard Garlock, a structural engineer in Robertson's firm, "Going below . . . the debris past the columns was red-hot, molten, running."

Dr. Abolhassan Astaneh-Asl, another supporter of the official story and the first structural engineer given access to the WTC steel, told PBS, "I saw melting of girders in [the] World Trade Center."

Jet fuel cannot melt steel, but, asserts Rice, "thermite incendiaries can . . . create temperatures in excess of 4,000 degrees Fahrenheit, "instantly melting/severing short segments of steel columns and beams." Chemical evidence of thermite found in the powdered debris by physicist Dr. Steven Jones is cited by Rice, by Obeid, and by Clark Townsend.

Brookman challenges NIST to explain tiny "iron-rich spheres found in the WTC dust," which appear to be solidified droplets of once-molten iron.

Crucial Evidence Survives Discredited 2002 FEMA Report

The FEMA 403 report was "incomplete at best and a cover-up at worst," says an anonymous East Coast AE911Truth petition signer and structural engineer whose name is being withheld by request. He notes that the report's Appendix C.2, found "evidence of a severe high temperature corrosion attack on the steel . . . with subsequent intergranular melting" forming a "sulfur-rich liquid" that "severely weaken[ed]" the structural steel.

Later in the same report (Appendix C.6), FEMA scientists added that "no clear explanation for the source of the sulfur has been identified." The East Coast engineer finds FEMA's dodge unacceptable: "The report has uncovered an unexplainable phenomenon [within the context of the official story] that may have led to the collapse of the three WTC buildings. FEMA has stated that further study is needed, yet none has been commenced."

Several of the structural engineers are outraged that evidence has not just been ignored; it was destroyed by officials. Destroyed evidence caused firefighters to riot at Ground Zero in protest of how the dead were being desecrated by the hasty "scoop and dump" clean-up of the structural steel debris.

"The destruction of the crime scene evidence is inexcusable," Huebner holds. Scott laments the "mass of vital forensic evidence" lost. Even editor-in-chief Bill Manning of *Fire Engineering* magazine called FEMA's investigation "a half-baked farce."

Steel components were stamped with identification numbers that would have aided their reassembly for study, but that reassembly never took place. Brookman asks, "Why was the steel . . . not thoroughly examined by fire-safety and structural experts before being shipped to Asia for recycling?" Pegelow charges that "FEMA hampered and distorted the investigation," citing Dr. Abolhassan Astaneh-Asl's complaints in 2002 to the House Committee on Science that FEMA held back essential engineering drawings and videotapes and photographs.

Such flawed methodology was accompanied by inadequate theories that "cannot explain the loss of the cores," Scott points out. He says FEMA's notion that floor connections all failed simultaneously at the outer wall and at the core is "not plausible." **Bill Genitsaris, a structural engineer based in Melbourne, Australia**, believes that a pancake-style collapse "should have left the supporting columns standing." Such a collapse would have left 110 shattered floors in the building footprint below. Yet only very small floor sections were found, and not many of them.


LYNN AFFLECK

"Where are the columns?" asks **licensed structural engineer Lynn Affleck, P.E., of Las Vegas, Nevada.** "As the tallest buildings in the world at the time, they would have to have had huge steel columns to carry all the loads, wind, and earthquake forces. In the design of such premier buildings, they would have used the latest technology codes. It would be my assessment that the flanges on the columns would have to be two inches thick or some equivalent. Perhaps it might be possible that the building floors would pancake down, but the huge steel columns would be left protruding out the top as the floors went down. In such an event, [one would] be able to see columns located somewhere in the floor plan, which were continuous all the way down to the ground."

Deceptive presentation has further damaged FEMA's credibility in the eyes of these engineers. **Thomas Lackey, P.E., of Stowe, Vermont, a licensed structural engineer who designs bridges for the Vermont Agency of Transportation,** cites the Minneapolis River Bridge collapse study as the "kind of analysis and straightforward explanation" the WTC investigation needed.

FEMA's reports are so poorly done that some of its graphics "omit the cores altogether," says Scott. Other graphics depict columns half as wide and twice as far apart as they actually were. Scott decries such "attempts to distort important technical information." The Australian engineers use more colorful terminology: We have been "taken for suckers" (Mason) and "stooged" (Genitsaris).

Truncated and Fudged Computer Model Undermines 2005 NIST Report

By those who haven't read its 10,000 pages, NIST's $20 million report is generally believed to explain how fires and plane impacts destroyed the WTC. Then there are those, such as the AE911Truth structural engineers, who *have* read the entire report and who know that, as Brookman points out, it "not only fails to explain why and how the towers completely collapsed, but it states that the collapse became inevitable, without any further explanation." He asks why NIST considered conservation of energy and momentum principles "only up to the moment prior to collapse."

Scott makes the same complaint: NIST "stopped its computerized models before the onset of collapse. No work was done to calculate what happened during the actual failure. Why are we content with this?"

Sums up Brookman: "The complete collapse mechanism . . . cannot be 'omitted for brevity' in any comprehensive analysis."

NIST's Report on WTC 1 and WTC 2

NIST's claim that a kinetic gravitational "attack" exceeded the WTC buildings' reserve strength is not supported by any calculations or "by any evidence whatsoever or any serious structural analysis," declares Björkman.

Equally troubling, while NIST fails to show essential work on central issues, its numerous volumes are packed with distracting trivia. Huebner, whose thirty years of structural engineering experience includes forensic investigation of structural collapses, compares NIST's effort to a "college paper where you just keep adding [stuffing] to make the paper longer. Lots of pages of nothing! Definitely trying to cover up something."

They'd simply adjust the input until the desired outcome is achieved

When Brookman asked NIST investigators to explain the "complete pulverization of building materials and contents" and "visibly explosive clouds of dust, ash, and debris," he received no reply. "I believe in the laws of physics," reasons Brookman, "and rely on them every day." NIST's reports, however, chimes in fellow engineer Pasternak, "seem to require multiple leaps of faith in highly improbable events."

"Computer models using NIST's best estimates of temperature and damage could not even generate a collapse," Scott points out. They'd "simply adjust the input until the desired outcome is achieved." He

believes NIST probably overestimated core column damage, almost certainly overestimated steel temperatures, and definitely overestimated damage to fire protection. Such an important inquiry should, Scott suggests, "rely on logical deduction, reason and first-principle analysis, not circular reasoning and adjusting models to get agreement with a preconceived explanation."

47-Story Building 7's Freefall Defies 2008 NIST Report

"We've had trouble getting a handle on building No. 7," acknowledged NIST's 9/11 lead investigator Dr. Shyam Sunder to *New York Magazine* in 2006. That "trouble" is clearly reflected in NIST's 2008 final report on WTC 7, which blames one buckling column, number 79, for the building's global and near-symmetrical collapse, yet characterizes its fires as "normal office fires," which typically burn only 20 minutes or so in any given location before moving on.


DAVID TOPETE

David Topete, S.E., a San Francisco licensed structural engineer, asks why no other nearby buildings collapsed, when some of them were much more severely damaged by fire and Twin Tower debris than was Building 7.

Obeid rejects the official hypothesis that one failing column could cause adjacent columns to come down in such robustly designed buildings. "It is not possible for a local failure within the lower structure to spread horizontally," he objects. "Such a failure would cause a break-away . . . instead of pulling the structure with it." Even if NIST's horizontal progression were somehow triggered, Obeid says, "the building would not have collapsed so neatly and symmetrically. All core columns have to be severed at the same time to make such a collapse."

Disturbing Questions that Must Be Answered

"To preserve America's unprecedented freedoms, we must pursue the truth," reasons **Santa Rosa, California, licensed structural designer Clayton Simmons, P.E.** He admits to being troubled by "my profession's involvement [i.e. the ASCE endorsement of the official story] in this apparent cover-up and the media's refusal to address these critical questions."

"Some years ago," adds Affleck, "the media seemed to serve the purpose of keeping the government honest. Things would get reported and the government would have to scramble to explain. But [these days] the big media seems now to be the mouthpiece for the government."

Watt agrees. "The evidence for molten steel has been officially denied so far. The evidence of many, many witnesses to explosions has been ignored. The evidence for explosive residues in 9/11 dust has never, to my knowledge, been officially investigated. And no coherent collapse mechanisms have been officially proposed. The silence on these matters is deafening."

Scott, too, expresses consternation that structural engineers' response "has been amazingly muted," even "uninterested."

Structural engineer Charles Walker sums up the common stance held by his colleagues: "They understand the truth yet have been unwilling to speak out against NIST's fraudulent claims, adopting instead passive postures such as 'Don't rock the boat. Ignorance is bliss.'"

Rice observes that citizens aren't the only ones who lack interest in ferreting out the facts of 9/11: He has also found politicians remarkably blasé.

Many people "remain willfully ignorant," posits Genitsaris. "They believe that 9/11 does not affect their lives . . . regardless of the fact that our freedoms are being taken from us." Perhaps so few are questioning, Brookman says, because it's "painful to look directly at the events and consider the implications." Affleck asserts, "Engineers and architects are being discounted as though they are ignorant. The official report and the way the media handled the 9/11 incident is basically an insult to the engineering profession."

Toronto-based structural consultant William Acri, P.Eng., believes that the engineer's oath "to hold public safety above all else" demands that the members of his profession speak up.

Indeed, if three modern steel high-rises really underwent total progressive collapse in less than two hours of relatively small fires and some damage to the fireproofing, seconds Scott, "we need to understand WHY!"

And, adds Inman, if WTC 7 failed from, substantially, a localized fire event, why didn't the owners and insurers sue the designers? "Either the building design was criminally faulty or other causes not related to the structural design or fire" brought down WTC 7, he concludes.

Watt points out that the question of how three steel-framed multi-story buildings collapsed "is still, officially, an open question." He goes on to say, "In a world of ever-increasing safety rhetoric and legislation, it is astonishing to professional engineers that there has not been a forensic investigation into the mechanisms of these collapses. Any aircraft suffering a catastrophic structural failure is subject to scrupulous investigation to help prevent recurring accidents and yet, in spite of these building structures being replicated all over the world, we have seen no significant structural changes in steel-framed buildings. The implications of this are deeply concerning to professional engineers interested in the safety of their designs."

Why Should Science-Based Forensic Evidence Be Taboo?

The structural engineers we spoke to are calling for a new investigation into the catastrophic destruction of the three World Trade Center high-rises on September 11. "The implications of the controlled demolition evidence as outlined on our website are staggering," says Gage, speaking on behalf of the group's architects and engineers. "We therefore invite all Americans to examine the science-based forensic evidence very carefully and come to their own conclusions."

Lomba's conclusion, drawn from his initial perceptions and validated by subsequent developments, is clear: "Even if, for the sake of discussion, we accept the hypothesis that the fire protection was damaged and the fires somehow weakened the steel frames, that still does not explain the relatively concentric nature of the failures."

Scott challenges his fellow structural engineers: "The building performance on 9/11 matched controlled demolition. It does not match fire-induced collapse. We have the expertise to discern this. Do we have the courage to broadcast it?"

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On: World Trade Center 7

September 2009

Evidence for the Explosive Demolition of World Trade Center Building 7 on 9/11

Introduction

Architects & Engineers for 9/11 Truth (AE911Truth) is a non-partisan, non-profit organization now numbering over 700 technical professionals and thousands of other supporters dedicated to revealing factual evidence about the violent destruction (often mistakenly called "collapses") of all three World Trade Center (WTC) high-rises on 9/11.

We are calling for a new independent investigation with subpoena power. We present here well-documented facts that support the conclusion that WTC Building 7 was destroyed by explosive controlled demolition. We ask that you set aside any pre-judgment, bias, or fear that might keep you from evaluating these facts objectively, and let the chips fall where they may. Most building professionals who review this evidence agree with our conclusions and sign our petition which is available on our website, AE911Truth.org.

Their concerns are most quickly and easily understood through a review of the evidence surrounding the third-worst structural failure in modern history—World Trade Center Building 7—and how that evidence was mishandled by the National Institute of Standards and Technology (NIST), the federal agency last tasked with explaining the unprecedented destruction of the World Trade Center.

World Trade Center Building 7

WTC 7 was a 47-story steel-framed fire-protected high-rise that was a football field's length from the WTC North Tower and was the third high-rise to be destroyed on 9/11.

It was not hit by an airplane, yet it collapsed anyway at 5:20pm in the afternoon, rapidly, evenly, and completely. The official story, according to NIST, is that WTC 7 collapsed due to "normal office fires" which created a "new phenomenon" in high-rise catastrophes: destruction due to thermal expansion of the

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

beams leading to the progressive collapse of 9 floors. This ultimately caused the failure of column #79 – the first one to fail – followed by all the rest.

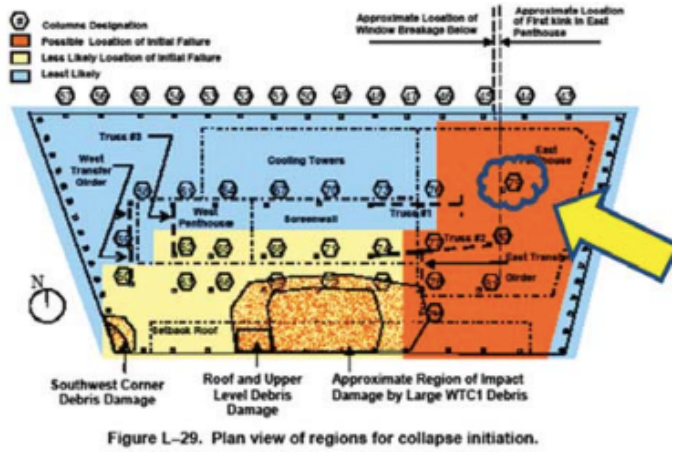


Figure 1: 24 columns removed within a fraction of a second - by fire?

Some had speculated that stores of diesel fuel in the building might have produced exceptionally intense fires leading to collapse, but NIST has officially acknowledged that diesel fuel was not involved. NIST also concluded that the impact of debris from the North Tower was not a significant contribution to the collapse of WTC 7 (other than starting the fires). What NIST's top engineers fail to explain in their Final Report, or in some cases to even acknowledge, is the many features of the destruction that are seen only in controlled demolitions.

WTC 7's "Collapse" Displayed Features Never Seen Outside of Controlled Demolition

In every respect for which we have evidence one way or the other, the destruction of WTC7 was indistinguishable from a classic controlled demolition.

- ***Speed of Collapse***

WTC 7 descended at free-fall acceleration over 2 seconds for a distance of over 100 feet – at least eight stories. NIST initially denied the fact of free-fall in its final draft report released in August 2008. In the technical briefing that followed, NIST's lead investigator, Shyam Sunder explained, "A free-fall time would be an object that has no structural components below it." He claimed that WTC7 took 40% longer than "free-fall time" to collapse, "and that is not at all unusual because there was structural resistance that was provided in this particular case. And you had a sequence of structural failures that had to take place and everything was not instantaneous."

However, physics instructor and AE911Truth associate David Chandler had used network television videos to carefully measure the acceleration of the building during its fall and shown conclusively that a significant period of free-fall was an indisputable fact. He publicly challenged NIST's claims at the technical briefing. Along with several others, he filed formal requests for corrections during the public response period.

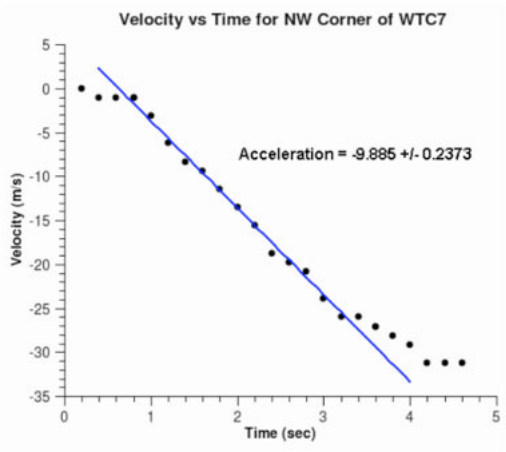


Figure 2: WTC 7 in free-fall for 8 stories

In its final report NIST reversed itself on its denial of free-fall, but it couched its revised statement in deceptive language and failed to address how free-fall could be compatible with its fire-induced progressive collapse analysis. For the observed straight-down collapse, a thick network of heavy steel columns and beams, had to be forcibly removed and more than 400 structural steel connections had to fail per second, evenly all across each of the eight floors involved. These failures had to occur *ahead* of the collapsing section – NOT caused by it – because a free-falling object cannot exert force on anything in its path without slowing its own fall.

Yet NIST's admission of the fact of free-fall, together with Shyam Sunder's acknowledgment of the simple meaning of that fact, led to no reconsideration of its fire-induced, single-column-initiated, progressive collapse hypothesis. Moreover, in what looks like an attempt to bury the discussion, its change of stance on the question of free-fall was omitted from the list of changes in its final report.

• *Symmetry*

The overall building mass fell uniformly and with almost perfect symmetry through what should have been the path of greatest resistance – 40,000 tons of structural steel. This requires a precisely timed patterned removal of critical columns – which office fires, a gradual organic process, is not capable of. Only a carefully engineered implosion could cause this 47-story building to collapse in on itself – and land mostly within its own footprint. After all, demolition companies are paid large sums to accomplish this feat, and only a few can do it with tall buildings. Also, the destruction was complete. The building had been built especially strong so that alternate floors could be removed in case a tenant needed an extra tall space. Yet its forty-seven stories were reduced, in less than seven seconds, to about four stories of debris – like a house of cards – with the virtually complete dismemberment of the steel skeleton, including both braced and welded moment-resisting (bend-resistant) frames.

Figure 3: Total dismemberment of WTC 7's steel structure.

Did the Dog Eat Their Homework? NIST Withheld Crucial Evidence

Had officials taken *all* the relevant evidence into account and provided a superficially coherent explanation, it would at least make sense to *entertain* the idea that, 1) fire might have acted in ways that it had never acted before, 2) modern structural steel might have acted in ways that it had never acted before, and 3) that this all just happened to occur on a day when terrorists did something they had never done before. Yet, officials have *not* taken all the relevant evidence into account and they have *not* provided even a superficially coherent explanation.

• *"A High Temperature Corrosion Attack" and Molten Iron/Steel: Undeniable Evidence of Thermitic Incendiaries*

Prior to the NIST investigation, FEMA, the Federal Emergency Management Agency, had conducted a preliminary, cursory, underfunded investigation and produced a Building Performance Assessment Report. In Appendix C of that report, FEMA described steel samples from Building 7 that had undergone a "high temperature corrosion attack" that had turned a heavy steel flange "into Swiss cheese." They found "evidence of a severe high temperature corrosion attack on the steel, including rapid oxidation and sulfidation with subsequent intergranular melting…."

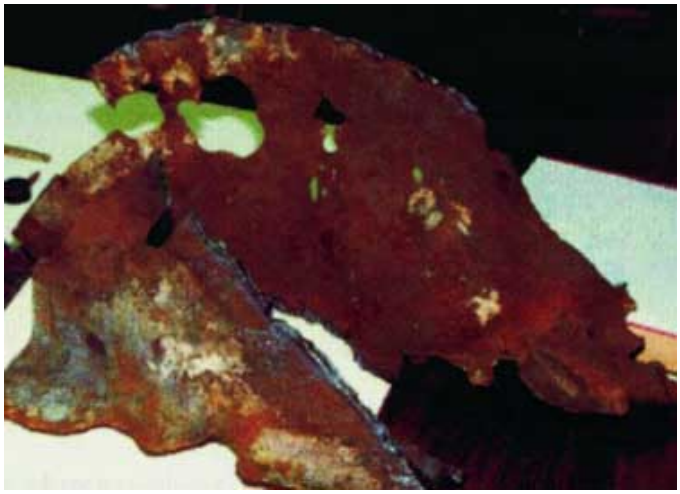


Figure 4: Office fires don't do this to steel.

FEMA's metallographic analysis showed that the steel had not only melted but some of it had even "evaporated". "A liquid eutectic mixture containing primarily iron, oxygen, and sulfur formed during this hot corrosion attack on the steel."… "No clear explanation for the source of the sulfur has been identified." The *New York Times* called this "perhaps the deepest mystery uncovered in the investigation." What did NIST say about this mystery described by FEMA? They did not mention it.

Neither jet fuel nor office fires can reach anywhere close to steel's melting point, much less its boiling point, even if those critical temperatures had been lowered by the presence of free sulfur. So what could have caused this "high temperature corrosion attack"?

Thermite is a mixture of powdered iron oxide and elemental aluminum which, when ignited, reacts violently at 4000-4500° F. – well above iron's melting point of 2800° F, producing aluminum oxide and molten iron in a very dangerous, volcanic eruption-like display. When free sulfur is added to the mixture, the iron melts at a lower temperature. Thermite with sulfur added is called *thermate*. Structural steel in contact with ignited thermate also melts at a lower temperature. Contrary to what NIST and others have claimed, the sulfur could not have come from gypsum wallboard in which it is an inert, chemically "locked" ingredient. (FEMA metallurgists would have proposed that explanation themselves if it were within the realm of possibility.)

Still, additional evidence of molten iron and/or steel abounds – for all three high-rises. Photos and numerous credible witnesses (including first responders and structural engineers) confirm the existence of several tons of molten metal under the debris pile – described by some fire fighters as "flowing like lava." Photos clearly reveal molten

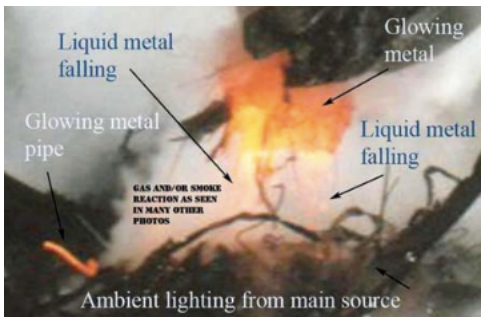


Figure 5: Office fires are not hot enough to create the molten metal seen by dozens of witnesses.

metal dripping out of the material held in the jaws of "crabclaw" excavators.

Video taken of the South Tower shortly before it came down shows a spout of molten metal spewing from near the impact hole, brightly glowing orange-yellow in daylight, unlike molten aluminum, which appears silvery under these conditions. It could only be molten iron or steel.

Figure 6: Jet fuel and office fires can't create molten metal

John Gross, lead engineer for NIST, publicly denied the existence of molten metal despite the abundant evidence. Shyam Sunder of NIST later acknowledged it but could not offer a rational explanation for it. NIST's afterthought Answers to Frequently Asked Questions (FAQ) webpage attributes the spout's color to mixing of office contents with the aluminum – a hypothetical phenomenon that physicist Steven Jones and independently a NASA engineer have been unable to reproduce in two laboratory experiments. Given the stakes, one might expect NIST to have used some of the 20 million dollars allocated to the WTC study to show us – not just speculate – that this miraculous mixing of light, fluffy office materials with heavier aluminum makes a poured stream of impure aluminum appear, in bright sunlight, like the orange molten metal seen in the South Tower videos.

• *Hot Spots with Extreme Temperatures Measured by USGS/NASA*

USGS used NASA thermal imaging of the surface of the WTC rubble pile to document hot spots with extreme temperatures of almost 1,400°F. These temperatures, too, are hotter than most office fires produce. And there were no fires on the surface of the WTC 7 pile following the collapses.

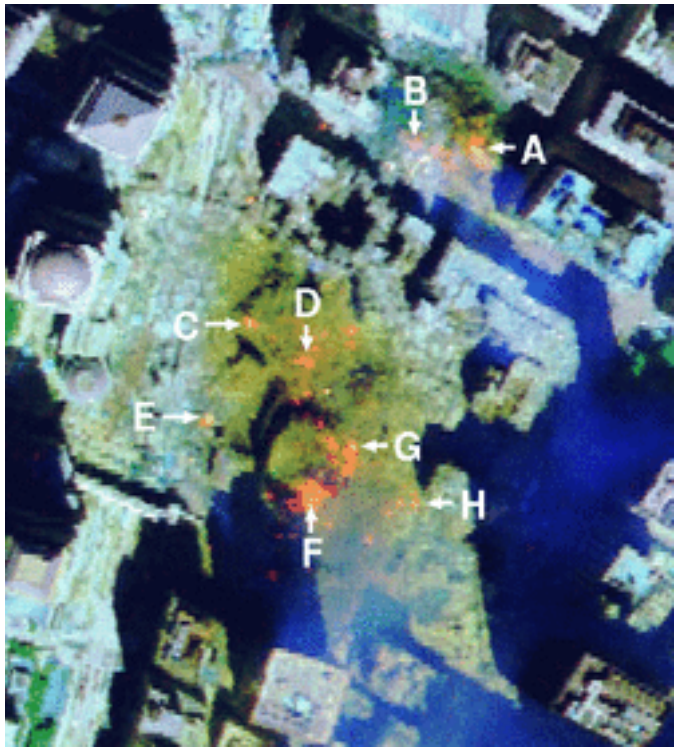


Figure 7: Impossible temperatures on the surface of Ground Zero a week after the collapses.

The detected surface temperatures indicate much higher temperatures deep in the pile, which persisted for several weeks despite the

continuous spraying of millions of gallons of water onto Ground Zero – so much water that one worker described the result as “a giant lake.” Thermite contains its own source of oxygen and burns just as well under water.

- ***Molten Iron Droplets in the WTC Dust***

Chemical and micrographic analysis of the dust that blanketed Lower Manhattan after the destruction of each of the Twin Towers revealed the presence of iron-rich “microspheres.” These microspheres were found in separately collected samples of the dust both near and far from Ground Zero, some of it collected before cleanup operations had begun. Their shape indicates that they were previously molten fragments that were pulled into spherical form by surface tension into droplets, which solidified before hitting the ground. They are direct evidence that temperatures exceeding the melting point of iron were present during the buildings’ destruction. These microspheres could not have been produced by friction or any other known process during the Towers’ collapses. Furthermore, they lack the chromium present in structural steel and contain manganese, an ingredient of potassium permanganate, a common thermite additive.

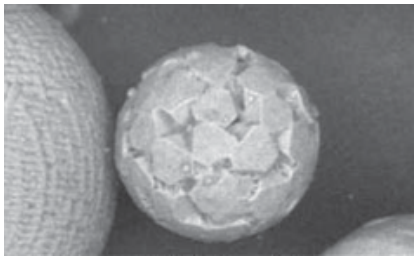


Figure 9: Billions of previously molten iron spheres found in all WTC dust samples.

- ***Aluminothermic Nanocomposites – Unignited Nanothermite in the WTC Dust***

An even more definitive discovery arose during a scientific examination of the dust: red-gray chips. An international team of chemists, physicists, and others confirmed that the chemical makeup of the red layer of these chips, their granular structure, and thermal behavior, were all consistent with those of advanced thermitic explosives.

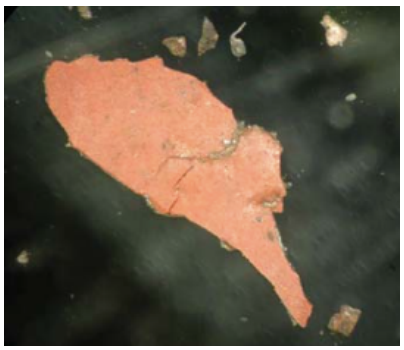


Figure 8: Hundreds of red/gray chips of "unignited nanothermite" in every WTC dust sample.

Particle sizes of less than a tenth of a micron in the red layer classify this material as nanothermite. The significance of the extremely small particle sizes is that the surface area is much greater for a given volume of the components, so chemical reactions are greatly accelerated.

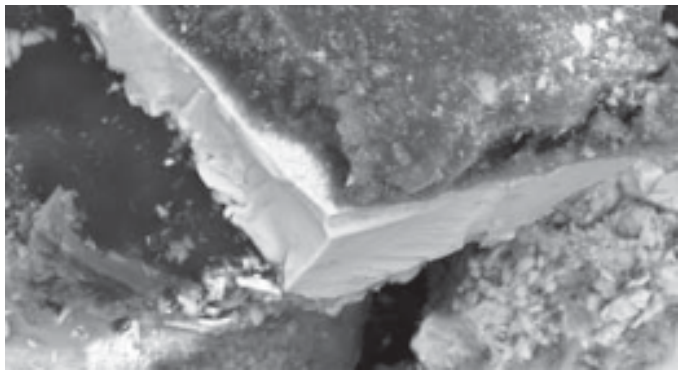


Figure 10: Nanothermite particle sizes are 1,000 times smaller than a human hair. This material is not made in a cave in Afghanistan.

The team published its findings in The Open Chemical Physics Journal in April 2009. Members of the team had earlier asked that NIST test the dust for evidence of explosives. NIST repeatedly refused to do so, even though such testing is

called for by NFPA 921, the National Fire Protection Association guideline for fire and explosion investigations throughout the United States.

NIST did not see fit to even discuss the issue of thermite or explosives in its formal reports. In its FAQ, referring narrowly to tests for ordinary thermite and thermate, they explained that "such tests would not necessarily have been conclusive" because "The metal compounds also would have been present in the construction materials making up the WTC towers…" This is technically correct, and NFPA 921 does emphasize the need to make inferences cautiously: "Presence of remains from the oxidizers does not in itself constitute an intentionally set fire." (section 22.2.4, 2008 edition). However, NFPA 921 does not provide any justification for *not performing* tests, especially when there is evidence of "high temperature accelerants (HTAs)," such as "melted steel" (22.4.1) The guidelines refer to thermite specifically: "Thermite mixtures also produce exceedingly hot fires. Such accelerants generally leave residues that may be visually or chemically identifiable."

Moreover, the team of scientists who *did* look at the dust found an exotic, highly engineered form of thermite, known as nanothermite, or superthermite. It doesn't just melt steel; it *explodes*. It can be chemically tuned to do so with less noise than conventional explosives. And it cannot be confused – even by overworked government engineers – with structural steel, rust, primer paint, aluminum cladding, or other "construction materials."

It contains ultra fine grain particles of aluminum and iron oxide, 1,000 times smaller than a human hair, "intimately intermixed" and embedded in a matrix of organic material. When it is heated slowly to about 430° C it "goes off " thermally, producing molten iron in spheroids reminiscent of those found in the dust. Clearly the reaction, triggered at only 430° C, releases enough energy to raise the temperature beyond the melting point of iron (1538°C.).

Looks Who's Here

Nanothermite could not have been made in a cave in Afghanistan. It was developed in the 1990's in US national laboratories, and is produced by only a few defense contractors. Some of those same contractors contributed personnel to the NIST investigation of the destruction of the World Trade Center. Very highly placed personnel, in fact, in positions of leadership at NIST:

Arden Bement, the metallurgist and expert on fuels and materials who was nominated as director of NIST by President George W. Bush in October 2001, was former deputy secretary of defense, former director of DARPA's office of materials science, and former executive at TRW.

Of course, DOD and DARPA are both leaders in the production and use of nanothermites…. And military and aerospace contractor TRW has had a long collaboration with NASA laboratories in the development of energetic materials that are components of advanced propellants, like nano-gelled explosive materials…. TRW Aeronautics also made fireproof composites and high performance elastomer formulations, and worked with NASA to make energetic aerogels…

Forman Williams, the lead engineer on NIST's advisory committee, and the most prominent

engineering expert for *Popular Mechanics*, is an expert on the deflagration of energetic materials and the "ignition of porous energetic materials…." Nanothermites are porous energetic materials. Additionally, Williams' research partner, Stephen Margolis, has presented at conferences where nano-energetics are the focus…. Some of Williams' other colleagues at the University of California San Diego, like David J. Benson, are also experts on nanothermite materials. (Kevin Ryan, "The Top Ten Connections Between NIST and Nano Thermites", July 2, 2008, Journal of 9/11 Studies.)

How did people with such expertise miss all the features of controlled demolition, and the nanothermite in the dust? For them to avoid even discussing the possibility in their 11,500 pages of "final" reports, and to wave it away with a few sentences on their website, is an outrage to science, at a minimum.

What About the Twin Towers?

The collapses of the WTC Twin Towers represent the worst structural failures in modern history.

Figure 11: South Tower - A very explosive event.

The official story suggests that the jetliner impacts and resulting fires weakened the structure, resulting in a gravitational collapse. The evidence, most of which was omitted from the NIST report, supports a different conclusion – one that points squarely to a unique type of controlled demolition. This evidence includes:

1. Rapid onset of destruction
2. Sounds of explosions and flashes of light heard and seen by over a hundred first responders before "collapse"
3. Continuous acceleration of the building mass straight down through the path of what *was* greatest resistance
4. Multi-ton steel sections ejected laterally 600 feet at 50 mph
5. Mid-air pulverization of 90,000 tons of concrete
6. Massive volume of expanding pyroclastic-like clouds
7. 1,200-foot diameter of improbably equal debris distribution
8. Isolated explosive ejections 20-60 stories below demolition waves
9. Total building destruction: dismemberment of steel frame
10. No stack of floors found at the base of either tower

If powerful insiders had the foreknowledge and technology to rig Building 7 long in advance of the jetliner impacts, the same is true for the Twin Towers. Every American must face his own conscience squarely when confronted with the gruesome evidence of the destruction of these high-rises on 9/11 – especially considering the resulting death of over a million people in the wars that followed, and the loss of many of our precious freedoms through quickly passed legislation.

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On:
World Trade Center 7

April 2014

Freefall and Building 7 on 9/11

by David Chandler

Galileo was the first to describe the amazing fact that, apart from air resistance, all objects fall at the same "rate." If you have not experienced this fact directly, try dropping a large rock and a pebble side by side. The rate we are referring to is not a "speed," because for a falling object the speed is constantly changing. The rate we are talking about is actually the "rate of increase of speed," how quickly the speed builds up, called acceleration. The acceleration achieved by all falling bodies, apart from air resistance, is called the "acceleration of gravity."

Gravity causes freely falling objects to increase their speed by about 32 ft/s per second. (The awkward unit, feet per second per second is commonly abbreviated ft/s2.) When an object is dropped, the speed is initially zero, but it immediately starts speeding up. After 1 second its speed will be 32 ft/s. After 2 seconds its speed will be 64 ft/s. Etc. 32 ft/s2 is an approximation. The "acceleration of gravity" actually varies slightly from place to place. In New York City it is 32.159 ft/s2.

Isaac Newton showed that the acceleration of an object is governed by its mass and the net force acting on it. (If several forces are acting at once they are combined to give a "net" force.) If the downward acceleration of a falling object equals the acceleration of gravity, then the net force is the gravitational force alone; any other forces must add up to zero.

What if a heavy object falls through other objects, breaking them as it goes? Newton's third law says that when objects interact, they always exert equal and opposite forces on each other. Therefore, while an object is falling, if it exerts any force on objects in its path, those objects must push back, slowing the fall. If an object is observed to be in freefall, we can conclude that nothing in the path exerts a force to slow it down, and by Newton's third law, the falling object cannot be pushing on anything else either.

Figure 1: Freefall of WTC 7

When the top section of a building collapses one would expect the falling section to crash into the lower section and exert a large force on it, like dropping an anvil on your toe. A typical controlled demolition exploits this fact: the crushing force of the falling section of the building contributes to

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

the demolition, and reduces the amount of explosives that are needed. However, amazingly, this is not what happened when Building 7 "collapsed" on 9/11.

We know that the falling section of Building 7 did not crush the lower section of the building because the top section of Building 7 fell at freefall. It didn't just fall at something close to freefall. It fell for about 2.5 seconds at a rate that was *indistinguishable* from freefall. If the falling section of the building had crushed the lower section, the lower section would have pushed back with an equal but opposite force. But that would have slowed the fall. Since the fall was not slowed in the slightest, we can conclude that the force of interaction was zero... in both directions. How can this be?

There were explosions in Building 7 heard by many witnesses throughout the day. One such explosion is recorded in a video clip where several fire fighters are gathered around a pay phone calling home to assure their families they are alright. Suddenly they are startled by a very loud, unmistakable explosion. This is one of the Building 7 explosions that occurred long before it fell.

Shortly before the ultimate collapse of the building the east penthouse and the columns beneath it suddenly gave way. NIST (the government agency assigned to investigate the building collapses) attributes the collapse of the east penthouse to the failure of a single column, in a complex scenario involving thermal expansion of beams supporting the column. But it is much more likely that at least two and possibly three supporting columns were "taken out" simultaneously. Three columns supported the east penthouse. One of our German colleagues has pointed to evidence that the east penthouse fell through the interior of the building at close to freefall, evidenced by a ripple of reflections in the windows as it fell. Yet the exterior of the building retained its integrity.

NIST claims that the collapse of their one key column led to a progressive collapse of the entire interior of the building leaving only a hollow shell. The collapse of the building, seen in numerous videos, is described by NIST as the collapse of the "facade," the hollow shell. They have no evidence for this scenario, however, and a great deal of evidence contradicts it. After the collapse of the east penthouse there is no visible distortion of the walls and only a few windows are broken at this time. Had the failure of interior columns propagated throughout the interior of the building, as asserted by NIST, it would surely have propagated to the much closer exterior walls and distorted or collapsed them. (Major crumpling of the exterior walls, by the way, is exactly what is shown in the animations produced by NIST's computer simulation of the collapse.) But the actual videos of the building show that the exterior remained rigid during this early period. At the onset of collapse you can see in the videos that the building suddenly goes limp, like a dying person giving up the ghost. The limpness of the freefalling structure highlights by contrast the earlier rigidity.

Furthermore, there are huge pyroclastic flows of dust, resembling a volcanic eruption, that poured into the streets following the final collapse of the building. If what we saw was only the collapse of the facade, why was the pyroclastic flow not triggered earlier when NIST claims the collapse of the much more voluminous interior occurred? And why did the west penthouse remain to fall with the visible exterior of the building? Its

supporting structure clearly remained to the very end and was "taken out" along with the rest of the building support all at once. NIST is scrambling to find a plausible scenario that will allow it to escape the consequences of what is plainly visible. (If you have not seen the collapse of Building 7, find it on YouTube and watch for yourself. For most people simply watching it collapse is all it takes. Most people are not stupid. Most people can recognize the difference between a demolition and a natural building collapse with nothing more being said. If you have never seen the collapse of Building 7 you might also stop and ask yourself why the mainstream media did not repeatedly show you this most bizarre event as it did the Twin Towers.)

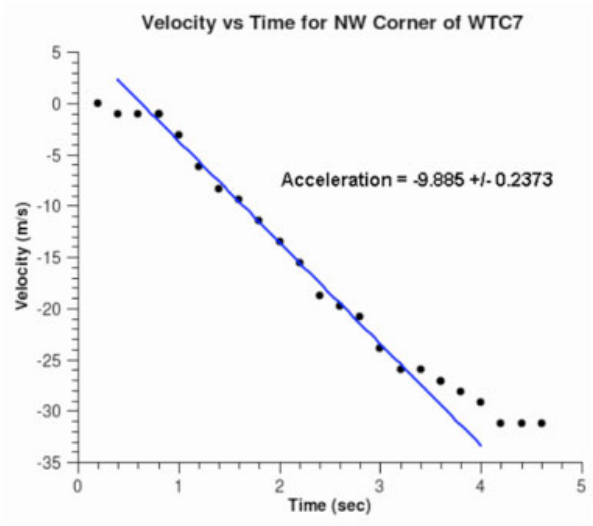


Figure 2: Velocity vs. Time for NW Corner of WTC 7

After the east penthouse collapsed, several seconds elapsed, then the west penthouse began to collapse, at nearly the same time the roofline of the building developed a kink near the center, then all support across the entire width of the building was suddenly removed, a vertical swath of windows under the west penthouse were simultaneously blown out, the building suddenly went limp, and (within a fraction of a second) it transitioned from full support to freefall. I am not using the term "freefall" loosely here. I used a video analysis tool to carefully measure the velocity profile of the falling building using CBS video footage from a fixed camera aimed almost squarely at the north wall. A video detailing this measurement is available at YouTube/user/ae911truth. I calibrated my measurements with the heights of two points in the building provided in the NIST Building 7 report released in August 2008, so I know the picture scale is good. My measurements indicate that with sudden onset the building underwent approximately 2.5 seconds of literal freefall. This is equivalent to approximately 8 stories of fall in which the falling section of the building encountered zero resistance. For an additional 8 stories it encountered minimal resistance, during which it continued to accelerate, but at a rate less than freefall. Only beyond those 16 stories of drop did the falling section of the building interact significantly with the underlying structure and decelerate.

Freefall is an embarrassment to the official story, because freefall is impossible for a naturally collapsing building. In a natural collapse there would be an interaction between the falling and the stationary sections of the building. This interaction would cause crushing of both sections and slowing of the falling section. I have done measurements on several known demolitions, using similar software tools, and found that they typically fall with accelerations considerably less than freefall. Building 7 was not only demolished, it was demolished with tremendous overkill. Freefall was so embarrassing to NIST that in the August 2008 draft release for public comment of their final report, the fact of freefall was denied and crudely covered up with the assertion that the collapse took 40% longer than "freefall time."

They asserted that the actual collapse, down to the level of the 29th floor, took 5.4 seconds whereas freefall would have taken only 3.9 seconds. They arrived at their figures with only two data points: the time when the roofline reached the level of the 29th floor and an artificially early start time several seconds prior to the beginning of the obvious, sudden onset of freefall. They started their clock at a time between the collapses of the east and west penthouses when the building was not moving. They claimed they saw a change in a "single pixel" triggering what they asserted was the onset of collapse, but anyone who has worked with the actual videos will recognize that the edge artifacts in the image of the building make this an unrealistic standard. Furthermore, even if there was a tiny motion of the building at that point, it continued to stand essentially motionless for several more seconds before the dramatic onset of freefall collapse. The fact of a cover up in NIST's measurement is underlined in that the formula they point to as the basis for their calculation of "freefall time" is valid only under conditions of constant acceleration. They applied that equation to a situation that was far from uniform acceleration. Instead, the building remained essentially at rest for several seconds, then plunged into freefall, then slowed to a lesser acceleration. Their analysis demonstrates either gross incompetence or a crude attempt at a cover up. The scientists at NIST are clearly not incompetent, so the only reasonable conclusion is to interpret this as part of a cover up. (It is important to stand back occasionally and recognize the context of these events. This was not just a cover-up of an embarrassing fact. It was a cover-up of facts in the murder of nearly 3000 people and part of a justification for a war in which well over a million people have since been killed.)

I had an opportunity to confront NIST about the easily demonstrated fact of freefall at the technical briefing on August 26, 2008. I and several other scientists and engineers also filed official "requests for correction" in the days that followed. When they released their final report in November 2008, much to the surprise of the 9/11 Truth community, they had revised their measurements of the collapse of the building, including an admission of 2.25 seconds of absolute freefall. However, they couched the period of freefall in a framework of a supposed "three phase collapse sequence" that still occupies exactly 5.4 seconds. The recurrence of 5.4 seconds, even in a completely revised analysis, is very puzzling until you realize its context. NIST lead investigator Shyam Sunder told the audience in the August 26, 2008 Technical Briefing that their computerized collapse model had predicted the collapse down to the 29th floor level would take 5.4 seconds, well beyond the 3.9 seconds required for freefall. From the events at the Technical Briefing it appears that a team headed by structural engineer John Gross dutifully fabricated a 5.4 second observation to exactly match the prediction. Anyone with any experience in laboratory measurement would have expected some amount of uncertainty between the prediction and the measurement. They would have been doing extremely well to come up with a computer model that would predict the collapse time within 10%. But no...their measurement exactly matched the prediction to the tenth of a second. Keep in mind that their computer model was constructed in the absence of the actual steel, which had long since been hauled away and destroyed. According to NIST's records, none of the steel from Building 7 remains. (Pause and ponder that fact for a moment. Anyone who has

watched CSI knows the importance of preserving the physical evidence in a crime scene.

Destroying a crime scene is in itself a crime, yet that is exactly what happened in the aftermath of 9/11, and it happened over the loud protests of the firefighters and others who had a stake in really finding out the truth.) Back to our story. NIST's computer model predicted 5.4 seconds for the building to collapse down to the level of the 29th floor. John Gross and his team found the time the roofline reached the 29th floor, then picked a start time exactly 5.4 seconds earlier to give a measurement that matched the model to the nearest tenth of a second. They took their start time several seconds prior to the actual start of freefall when nothing was happening. The building was just sitting there, with the clock running, for several seconds. Then it dropped, with sudden onset, and continued for 2.5 seconds of absolute freefall.

So, NIST now acknowledges that freefall did occur. How do they explain that? They don't. They simply state, without elaboration, that their three-phase collapse analysis is consistent with their fire induced collapse hypothesis. The only thing about the three-phase analysis that is consistent with their collapse hypothesis is the 5.4 second total duration, measuring from their artificially chosen starting time. In other words, they make no attempt to explain the 2.25 second period of freefall. They just walked away from it without further comment.

The fact remains that freefall is not consistent with any natural scenario involving weakening, buckling, or crushing because in any such a scenario there would be large forces of interaction with the underlying structure that would have slowed the fall. Given that even known controlled demolitions do not remove sufficient structure to allow for actual freefall, how could a natural fire-induced process be more destructive? Add to that the synchronicity of the removal of support across the whole width of the building, evidenced by the levelness of the roofline as it came down, and the suddenness of onset of collapse, and the immediate transition from full support to total freefall. Natural collapse resulting in freefall is simply not plausible. It did not happen. It could not happen. Yet freefall did in fact happen. This means it was not a natural collapse. Forces other than the falling upper section of the building suddenly destroyed and removed the supporting columns for at least eight stories across the entire length and width of the building.

The freefall of Building 7 is one of the clearest of many "smoking guns" that proves explosives were planted in the World Trade Center buildings prior to September 11, 2001.

David Chandler received a BS degree in a hybrid physics and engineering program at Harvey Mudd College, Claremont CA and a MS degree in mathematics from Cal Poly University, Pomona CA. He has taught physics, mathematics, and astronomy since 1972 at both the high school and college levels.

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On:
World Trade Center 7

November 2012

How Did They Know? Examining the Foreknowledge of Building 7's Destruction

by Dennis McMahon, J.D., LL.M.

WTC Building 7, also known as the Salomon Brothers Building or WTC 7, was a 47-story skyscraper that was part of the World Trade Center complex. Built in 1984, Building 7 would have been the tallest high-rise in thirty-three of our United States. Building 7 housed several intelligence and law enforcement agencies, and the NYC Office of Emergency Management's Emergency Operations Center, more commonly known as "Giuliani's Bunker," along with several major financial institutions.

Building 7, which was 100 yards from the Twin Towers, was not hit by an airplane on September 11, 2001, and suffered only minimal damage from debris falling from the North Tower. Several fires began burning on a few floors, and the entire building completely collapsed – almost into its own footprint – at 5:20 p.m. Numerous eyewitnesses, including members of the Fire Department of New York (FDNY) and other first responders, and multiple news sources, made statements that indicate that there was foreknowledge that WTC 7 was going to come down, despite the fact that no skyscraper in history had ever completely collapsed due to fire. (Much of this evidence of foreknowledge is detailed on the website of the Remember Building 7 campaign[1] and other related sites.)

Where foreknowledge of an extremely unusual event is demonstrated, the possibility must be considered that the foreknowledge derived directly or indirectly from those who had inside information about, and/or control over, the event itself. Thus, if foreknowledge of the collapse of Building 7 can be shown, this would be a strong indication that Building 7 was subjected to controlled demolition, and that advance warning of Building 7's demise derived ultimately from those who intended to bring the building down. Thus, foreknowledge of the collapse of Building 7 is not only consistent with, but supportive of, the controlled demolition hypothesis.

Certainty of impending collapse

To worry that a damaged building might collapse in some fashion is one thing. But to be certain that it will collapse is another. A detailed study of the FDNY accounts by 9/11 researcher Graeme MacQueen shows that more than half of those who received warnings of WTC 7's collapse (where a degree of certainty can be determined from the reports) were certain or were told with

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2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
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certainty that Building 7 was coming down. (The figures calculate to 31 out of 58. See MacQueen's report "Waiting for Seven…" at page 4.)[2]

Early FDNY announcements of collapse

If someone were observing the fires in WTC 7 and able to determine, in the last few moments of the building's existence, that a peculiar set of circumstances was beginning to threaten the building, that would be one thing. But to receive warnings of the building's collapse well before this set of circumstances arose raises suspicion. Yet, a detailed study of the FDNY reports shows that of the thirty-three cases where the time of warning can be determined, in ten cases warnings were received two or more hours in advance, and in six cases warnings were apparently received four or more hours in advance. (See MacQueen's "Waiting for Seven…" at page 4.)[3] In other words, the warnings came long before the unique set of circumstances had allegedly come together to cause the building's collapse.

Precise warnings of collapse

If the collapse warnings were derived from vague worries and concerns, as claimed by the National Institute of Standards and Technology (NIST), the warnings would not have been precise. A complete collapse, such as happened to WTC 1, WTC 2, and WTC 7 on 9/11, was unknown – unless the building was being brought down by controlled demolition. That is why FDNY member James McGlynn could say on 9/11, in reference to one of the Towers, "Any time I've heard of a collapse, it was never an entire building like this turned out to be." (See MacQueen's "Waiting for Seven," at page 21.)[4] Nevertheless, somehow, many people knew in advance that WTC 7 would suffer an unprecedented collapse. Which begs the question, "How did they know?" Consider the following exchange from the FDNY oral histories:

> *Q. "Were you there when building 7 came down in the afternoon?"*
>
> *A: "Yes"*
>
> *Q. "You were still there?"*
>
> *A. "Yes, so basically they measured out how far the building was going to come, so we knew exactly where we could stand."*
>
> *Q. "So they just put you in a safe area, safe enough for when that building came down?"*
>
> *A. "Five blocks. Five blocks away. We still could see. Exactly right on point, the cloud stopped right there."(See MacQueen's "Waiting for Seven…" at page 8.)*[5]

It is quite remarkable that a debris cloud estimate could be so precise for a collapse that was supposedly caused by unforeseen and unplanned events. Had Building 7 "tipped over," which would have been more realistic, given the structural damage that was supposed to be the reason for its collapse, the building could actually have ended up crushing several other tall buildings, creating a destruction zone much farther away from the building.

Building 7's collapse report in advance by CNN and BBC

In this BBC video,[6] correspondent Jane Standley reports that Building 7 has collapsed; meanwhile (at the 1:17 mark), a fully intact Building 7 can actually be seen — still standing — behind her. Who fed this information to Standley? Apparently, someone who had inside information about, and/or control over, the event itself, released that information to the media prematurely.

Figure 1: Jane Standley of BBC reports WTC 7's collapse more than 20 minutes prior to it occurring.

In another news clip,[7] while Building 7 is seen standing fully erect and showing no signs of impending trauma, CNN's Aaron Brown gives the following report: "We are getting information now that one of the other buildings, Building 7, in the World Trade Center complex, is on fire and has either collapsed or is collapsing…"

Figure 2: Aaron Brown of CNN reports WTC 7's collapse more than an hour prior to it occurring.

Who is he "getting information" from? Again, it appears to be from someone who had inside information about, and/or control over, the event itself, and who released that information to the media prematurely. Only such an individual could have expected Building 7 to come down.

In sum, both CNN and BBC did not merely report that WTC 7 was damaged or that it might collapse. Instead, they prematurely announced the actual collapse of Building 7. No satisfactory explanation has been given about these premature announcements, which were obviously based on data fed to the announcers, apparently by an unknown person or persons who had inside information about, and/or control over, the event itself, and who bungled matters by releasing that information to the media prematurely.

More evidence of foreknowledge of the collapse of Building 7 is preserved in this video where an eyewitnesses can be heard saying: "Keep your eye on that building. It'll be coming down soon." And "The building is about to blow up. Move it back." And also, "We are walking back. The building is about to blow up."[8]

Figure 3: How did construction workers and police on the scene of WTC 7 that afternoon know that "The building is about to blow up?"

These reports were later corroborated by first responder Indira Singh, who, in a radio interview about Building 7, revealed that the FDNY had stated that "We're going to have to bring it down."

Countdown…

The testimony of Kevin McPadden, an emergency medical technician and 9/11 first responder, is even more shocking. In a taped interview, McPadden indicated that there was an actual countdown preceding Building 7's collapse:[9]

> *"The Red Cross rep was like, he goes over and he says [to us], 'You gotta stay behind this line because they're thinking about bringing the building down.'...He goes over and he asks one of the...firefighters what was going on...He came back over with his hand over the radio and [you could hear] what sounded like a countdown. And, at the last few seconds, he took his hand off [the radio] and you heard 'three-two-one,' and he was just saying, 'Just run for your life! Just run for your life!' And then it was like another two, three seconds, you heard explosions. Like, BA-BOOOOOM! And it's like a distinct sound...BA-BOOOOOM! And you felt a rumble in the ground, like, almost like you wanted to grab onto something. That, to me, I knew that was an explosion. There was no doubt in my mind..."*

Figure 4: First responder Kevin McPadden has provided key eyewitness evidence regarding the foreknowledge of WTC 7's destruction.

NIST's response to WTC 7 foreknowledge

NIST has tried to evade the issue of foreknowledge of WTC 7's collapse in its report on the building's destruction by implying:

(a) that the FDNY, on the scene, saw the damage to the building caused by the collapse of WTC 1 and rationally concluded that WTC 7 might collapse; and

(b) that an engineer, early in the day, saw the damage to the building and concluded it might collapse passing on this assessment to others (as per NIST Lead Investigator Shyam Sunder, in a discussion with Graeme MacQueen on CKNX Radio, Wingham, Ontario, on Aug. 25, 2008).

It is true that damage to WTC 7 was directly witnessed by some firefighters and, apparently, led a few (about seven) of them to worry that the building might collapse. However, the great majority (approximately fifty) who were worried about collapse did not base this worry on the physical damage but on what they were told. (See MacQueen's "Waiting for Seven..." at page 5.)[10] Moreover, while an engineer may have communicated his opinion, early in the day, that the building might collapse, neither this communication nor communications from the FDNY is sufficient to explain all of the collective evidence indicating foreknowledge of Building 7's collapse.

Individually, each of the factors discussed above indicates the possibility of foreknowledge of Building 7's collapse: the certainty of Building 7's impending collapse as expressed and memorialized in the FDNY oral histories, the early announcements made by the FDNY, the precise nature of the early announcements, CNN's and the BBC's premature reporting of Building 7's collapse, and the actual countdown to Building 7's demise. Collectively, these factors provide evidence beyond a reasonable doubt that this foreknowledge is most readily explained by the

fact that Building 7 was brought down in an explosive controlled demolition carefully planned months in advance.

End Notes

[1]http://RememberBuilding7.org
[2]http://www.journalof911studies.com/volume/200701/MacQueenWaitingforSeven.pdf
[3] Ibid.
[4] Ibid.
[5] Ibid.
[6] http://youtu.be/6mxFRigYD3s
[7] http://youtu.be/N1LetB0z8_o
[8] http://youtu.be/cU_43SwWD9A
[9] http://youtu.be/b4z-Wrp1pY8
[10]http://www.journalof911studies.com/volume/200701/MacQueenWaitingforSeven.pdf

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On: World Trade Center 1 & 2

April 2010

Twin Towers Evidence Blows Away Fire Collapse Theory

The catastrophic destruction of the World Trade Center complex is said by government reports to have resulted from structural failure due mainly to fires initiated by the impacts of the airplanes. A closer look at the evidence reveals a much more disturbing crime.

Apart from the fact that no steel-framed high-rise building has ever collapsed due to fire prior to or since Sept. 11, the *manner* in which the buildings came down is itself a substantial cause for re-investigation. A collapse due to fire would likely proceed gradually with large deformations visible in the building's perimeter, with the building tipping over slowly in the direction of the steadily weakening structural members – to the path of *least* resistance.

Yet the Twin Towers both came down quite suddenly, without warning, and without any "jolts" that would indicate the upper mass impacting the lower mass. The smooth rate of descent was measured at 2/3 of free-fall. In other words, the building was accelerating (traveling faster and faster second by second) straight down through what should have been the path of *greatest* resistance – the 80,000 tons of structural steel

Figure 1: WTC 2 appears more like an explosion than a gravitational collapse.

below that was at least five times stronger than necessary to resist this load. Physicists and other experts[1] agree that this could have happened only if the underlying supporting structures were removed *ahead* of the falling upper building mass. The National Institute of Standards and Technology (NIST) acknowledges that each building was destroyed in fewer than a dozen

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2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

seconds, and that they “came down essentially in free-fall”.

For the New York City firefighters on the scene, this rapid destruction without any notice was well beyond their prior experience. Sgt. James Canham, in the oral histories of 118 first responders, put it this way: “This changed all the rules. This went from a structure to a wafer in seconds - in seconds. I couldn’t believe the speed of that tower coming down. I heard the rumble. I looked up. Debris was already 50 feet from the ground…”

More than a hundred first responders reported experiencing explosions and/or flashes of light[2] as the destruction commenced. Much of this evidence was also captured on video[3] by multiple cameras. EMT Captain Karin Deshore, in a Nov. 7, 2001, *New York Times* interview, described the astonishing events like this: “Somewhere around the middle of the World Trade Center, there was this orange and red flash coming out. Initially it was just one flash. Then this flash just kept popping all the way around the building and that building had started to explode. The popping sound - and with each popping sound it was initially an orange and then a red flash came out of the building and then it would just go all around the building on both sides as far as I could see. These popping sounds and the explosions were getting bigger, going both up and down and then all around the building.” There are many similar accounts in this astonishing series of oral recordings[4] effected by NYC Fire Commissioner, Thomas Von Essen, but kept hidden by the city of New York until it was ordered by a federal appeals court to release them to the *New York Times*.

> *“Initially it was just one flash. Then this flash just kept popping all the way around the building and that building had started to explode.”*
>
> --Karin Deshore, in a Nov. 7, 2001, New York Times interview

Also captured on video and still photos were isolated explosive jets[5] of material expelled from the sides of the structure 20-60 stories below the so-called “crush zone”. These precisely mimic what are known as “squibs” in the controlled demolition industry. Normally such charges are used to cut structural steel members[6] so that the structure is able to fall with little to no resistance.

Figure 2: Multiple isolated ejections up to 60 stories below the "crush zone" can be seen exploding horizontally.

The stack of 110 four-inch thick concrete floors in both towers, each an acre in size, are missing from the rubble pile where photos reveal only a two-story pile of metal debris. A gravitational collapse should have left a pile of floors about 20 stories tall.

As the WTC skyscrapers disintegrated before the eyes of stunned observers, steel framing sections weighing nine tons were hurled up to 600 feet away. This required an explosive force capable of ejecting these perimeter wall units[7] at up to 70 mph as if shot out of a cannon. Some 90,000

tons of concrete and metal decking were pulverized, creating pyroclastic-like flows (hot gases with suspended solids) similar to those observed and filmed during the explosion of the Mt. St. Helens volcano.

When the clouds of dust settled, what was left were remarkably symmetrical 1,400 foot diameter debris fields consisting mainly of completely dismembered structural steel framing. Although the media often repeats that the Twin Towers' concrete floors came down like a series of stacked pancakes, there were in fact no pancaked floors to be found in the photos or videos of the debris piles. "There's no concrete… it was pulverized,"[8] gasped Gov. Pataki at his first visit to the site.

For further documentation and analysis of the evidence at the destruction of the World Trade Center see the DVD "9/11: Explosive Evidence – Experts Speak Out" *available at AE911Truth.org.*

End Notes

[1]http://www.journalof911studies.com/volume/2008/TheMissingJolt7.pdf
[2]http://www.journalof911studies.com/articles/Article_5_118Witnesses_WorldTradeCenter.pdf
[3] http://youtu.be/hSApOavkHg8
[4]http://www.journalof911studies.com/articles/Article_5_118Witnesses_WorldTradeCenter.pdf
[5] http://youtu.be/zoAD8HlrLZg
[6] Ibid.
[7] http://youtu.be/djwBCEmHrSE
[8] http://youtu.be/MDuBi8KyOhw

ARCHITECTS & ENGINEERS for 9/11 TRUTH

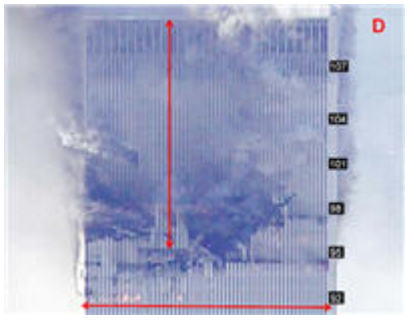
Focus On:

World Trade Center 1 & 2

November 2010

Lack of Deceleration of North Tower's Upper Section Proves Use of Explosives

Many people who think they have been keeping up with the revelations of the last several years about the destruction of the three high-rises in New York City on Sept. 11, 2001, will nonetheless be surprised to discover that the falling upper section of WTC 1 exhibited no measurable deceleration when it impacted the lower section. This is a startling revelation because it adds to the collection of "smoking guns" proving that the "collapse" of that building was not caused by the jetliner impact and ensuing fires.



Although theoretically possible, collapses of heavily constructed buildings like the Twin Towers and WTC 7 had never occurred prior to Sept. 11, 2001, without some form of "assistance." The reason for this is that they are built with significant reserve strength. The construction of each floor is designed to support several times the actual load above it.

The only way a collapse of a structure with significant reserve strength can continue is for the static load to be amplified in what is called dynamic loading. Dynamic loading occurs when the impacting object decelerates. For instance, if during an impact the falling object decelerates at twice the rate of gravity, it will impart a load on the object it strikes that is three times its static load. This occurs due to an additional force with an acceleration value twice that of gravity being added to the static load. This amplified load is represented by the equation F = mg + m(deceleration), where mg is the static load and the m(deceleration) term is the additional load due to dynamic effects. Dynamic loading was postulated in a paper used in the NIST report on the WTC collapses, written by Dr. Zdenek Bazant of Northwestern University. However, Dr. Bazant had not performed any actual measurements to support his theory.

Actual measurements of the descent of WTC 1 were performed independently in 2008 by physics instructor David Chandler of Fresno, California, and Professor Graeme MacQueen of Hamilton, Ontario. Both found no evidence of deceleration at any time during the descent. In fact the upper section of WTC 1 continuously

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for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
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accelerated, at approximately 2/3 of g (free-fall) during the first several seconds of the building's "collapse."

The contradiction caused by the lack of deceleration of the upper section of WTC 1 with the dynamic loading event postulated, but never measured, by Dr. Bazant or NIST, is discussed in a published paper entitled "The Missing Jolt," which can be found online at the Journal of 9/11 Studies.[1]

Proof that the necessary deceleration is observable in a collapse in which the momentum and kinetic energy of an upper section break the columns in the lower section is found in the demolition of several buildings in France. In recent years demolition engineers there have devised a system known as the Verinage technique, where they demolish buildings without the use of explosives. This technique uses hydraulic rams to break all of the columns in a couple of stories near the center of the building. The loss of vertical support in these stories then causes the upper section to fall unimpeded through a pre-determined distance before impacting the intact lower structure. Watch this video of one of these demolitions – of the Balzac-Vitry building.[2]

In all known measurements of these "Verinage" demolitions, the descent of the roofline shows definitive proof of deceleration of the upper building sections as they impact the lower structure, as seen in the velocity graph of the Balzac-Vitry building demolition below.

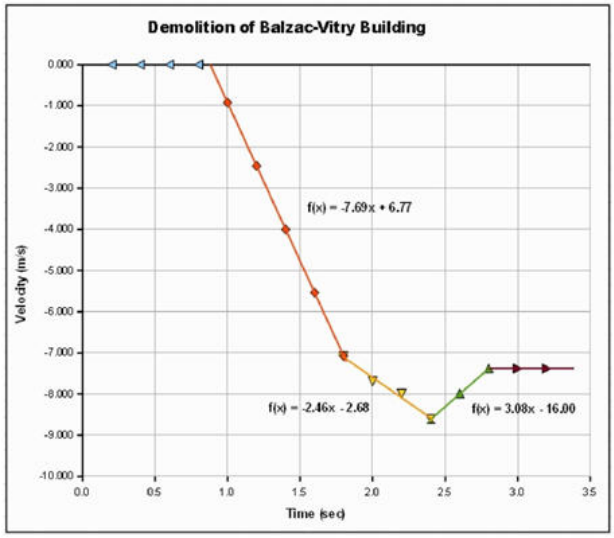

Figure 1: Demolition of Balzac-Vitry Building

Now compare the above velocity graph of the Balzac-Vitry demolition to the velocity graph of the WTC 1 "collapse."

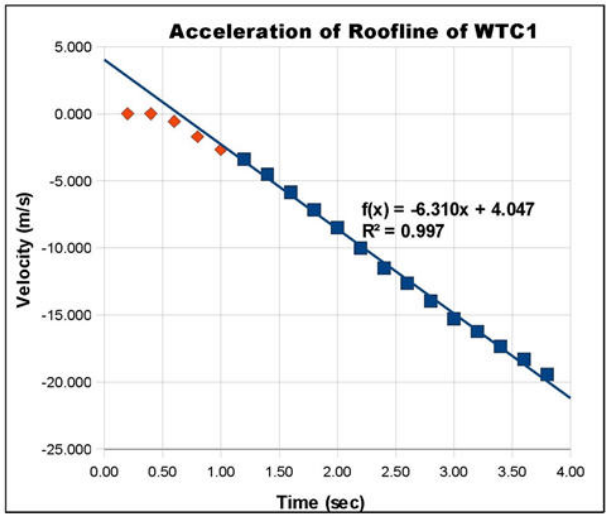

Figure 2: Acceleration of Roofline of WTC 1

The same measurement methodology is used in both cases.

There is obviously no deceleration in the fall of the upper section of WTC 1. A "natural" collapse (without the use of explosives) could not have

occurred without it. Therefore, this verified scientific data proves that explosives must have been employed to remove the structural columns – and thus to bring down the World Trade Center North Tower.

It stands to reason that if the North Tower was brought down surreptitiously with explosives, then the South Tower must have been as well. Its destruction was similarly explosive, rapid, and thorough, though with a few differences in the features of its destruction.

Some excellent video footage shows experiments and provides additional discussion on why the lack of deceleration by WTC 1's upper section could not have been caused by simple overload of columns – even though several may have been "cut" by the jetliner impact and others weakened by the ensuing fires. Professional engineer Jonathan Cole and David Chandler have recently produced several brief but cogent videos on the subject:

9/11 Experiments: Collapse vs. Demolition ~ Part 1 of 2[3]

9/11 Experiments: Collapse vs. Demolition ~ Part 2 of 2[4]

9/11 Experiments: Newton vs. NIST[5]

What a Gravity-Driven Demolition Looks Like[6]

End Notes

[1] http://www.journalof911studies.com/volume/2008/TheMissingJolt7.pdf
[2] http://youtu.be/syzKBBB_THE
[3] http://youtu.be/ww8hBFNY8jk
[4] http://youtu.be/dgZLXI3whGA
[5] http://youtu.be/tejFUDlV81w
[6] http://youtu.be/NiHeCjZIkr8

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Focus On:
World Trade Center 1 & 2

June 2014

What Was the Molten Metal Seen Pouring Out of the South Tower Minutes Before Its Collapse – Steel and Iron, or Aluminum and/or Lead?

by Simon Faulkner

A December 2001 paper, "Why Did the World Trade Center Collapse? Science, Engineering, and Speculation,"[1] dismissed early reports about molten steel at the demolished World Trade Center. Dr. Thomas W. Eagar, a professor of materials engineering and engineering systems at the Massachusetts Institute of Technology, and his graduate research student, Christopher Musso, pointed out that the theoretical maximum temperature of a building fire (maximum 1000°C / 1800°F) is not even close to the melting point of steel (approximately 1500°C / 2750°F). And they noted that the observed black smoke emanating from the Twin Towers was consistent with a typical oxygen-starved building fire.

Figure 1: The black smoke at the Twin Towers was indicative of the incomplete combustion usually associated with low-temperature fires. Office fires cannot melt steel, even given optimal conditions.

Eagar and Musso concluded that the actual temperature most likely remained below 650°C/1200°F. In so doing, they dispelled the myth that the jet fuel could have made the fires unusually hot, noting that it was "highly unlikely" that the temperature rose above 800°C/1470°F.

AE911Truth agrees that the jet-fuel-induced fires in the Twin Towers could not have melted steel. But because more recent reports confirm the presence of molten steel[2] and molten iron[3] both during and after the 9/11 event, it must be determined what actually melted those two metals and in so doing demolished two of the world's tallest steel-frame skyscrapers.

The Official Fire-Based Hypothesis Cannot Account for the Stream of Liquid Metal Seen Pouring Out of the South Tower

The National Institute of Standards and Technology (NIST) did document the flow of molten metal pouring out of the South Tower during the final seven minutes before its collapse, noting the accompanying "unusual

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

bright flame" and "plume of white smoke."[4] However, NIST failed to investigate the phenomenon, dismissing it as molten aluminum from the crashed jet, which melts at only 660°C/1220°F.

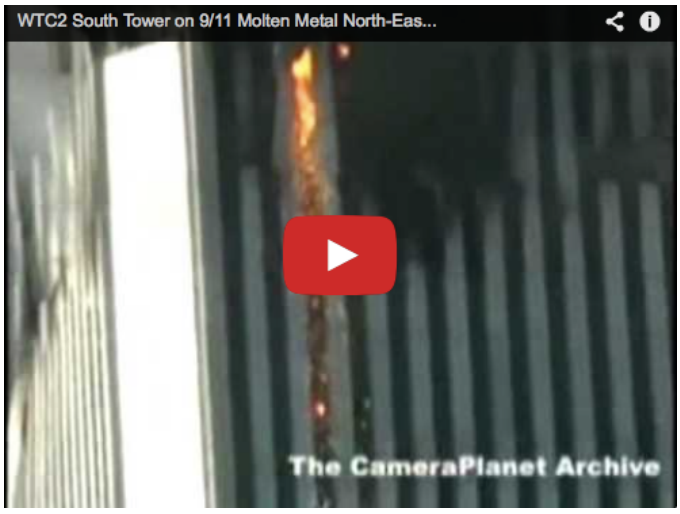

Figure 2: Yellow-white glowing molten metal is seen pouring from the South Tower just minutes before its collapse. Accompanying white smoke was sometimes visible. NIST did not investigate the phenomenon. Video may be viewed at http://youtu.be/OmuzyWC60eE.

NIST's hypothesis may seem plausible at first. But Dr. Steven Jones demonstrates in his 2006 paper "Why Indeed Did the WTC Buildings Completely Collapse?"[5] that the official government hypothesis is untested and implausible.

Dr. Jones' paper reveals that the initial bright yellow-white glow of the expelled liquid was consistent with a glowing stream of molten iron from "a nearby thermite reaction zone," and the expected white smoke (aluminum oxide off-gassing) supports that conclusion. NIST must rely on its claim of molten aluminum in order to validate its official fire-based explanation, because office fires cannot generate the extreme temperature required to melt steel or iron. The fundamental flaw of the aluminum hypothesis, though, is that the implied temperature of the white glow remains above 1200°C/2200°F, *regardless* of the metal involved. An independent researcher suggested that the molten substance could be lead from storage batteries,[6] but this explanation fails — as do all hypotheses based on alternative metals — because the temperature required for the yellow-white glow of the metal is beyond the capability of the building fire.

Figure 3: A thermite reaction generates yellow-white hot molten iron at well over 2,500°C/4,000°F and white smoke. This type of material can melt and cut steel beams.

Dr. Jones also notes that molten aluminum appears silvery as it melts at 660°C/1220°F, and that it remains silvery when poured in daylight conditions, regardless of the temperature. It is theoretically possible to continue heating liquid aluminum way past its melting point and into the yellow-white

Figure 4: Molten aluminum appears silvery when poured in daylight conditions, even if initially heated to the yellow-white temperature range in the crucible.

temperature range, but the office fire was not a plausible source for such high temperatures, and there was no crucible to contain liquid aluminum for continued heating. Put another way, even if the building fire could have somehow provided the needed temperature for the yellow-white glow, the unrestrained aluminum would have melted and trickled away before it could achieve such a temperature. This problem also rules out other proposed alternative metals — lead, for example — which have similarly low melting points.

Finally, Dr. Jones adds that even if liquid aluminum could have been restrained long enough to make it glow white, it would still have appeared silvery within the first two meters of falling through the air in daylight conditions, due to its high reflectivity and low emissivity.

Thus, the liquid metal seen pouring out of the South Tower could not have been aluminum, since it remains yellow in broad daylight, despite falling several hundred feet through the air.

NIST tries to circumvent this problem with the untested proposition that the observed glow could be due to the mixing of aluminum with combustible organic materials from the building's interior. But Dr. Jones has actually performed the experiments that soundly refute NIST's hypothesis. As he puts it, "This is a key to understanding why the aluminum does not 'glow orange' due to partially-burned organics 'mixed' in (per NIST theory), because they do *not* mix in! My colleague noted that, just like oil and water, organics and molten aluminum do not mix. The hydrocarbons float to the top, and there burn — and embers glow, yes, but just in spots. The organics clearly do *not* impart to the hot liquid aluminum an 'orange glow' when it falls, when you actually do the experiment!"

Figure 5: The liquid metal cannot be aluminum, for it remains orange-yellow, despite falling several hundred feet in broad daylight. NIST states that aluminum "can display an orange glow" if blended with organic materials, but Dr. Jones has experimentally invalidated this theory by demonstrating that organics and molten aluminum do not mix.

Dr. Jones *et al* confirmed the finding of molten iron in a 2008 paper, "Extremely high temperatures during the World Trade Center destruction,"[7] which documents their discovery of iron-rich microspheres in WTC dust samples from

two independent sources.

Figure 6: Several reports document the abundant iron-rich spheres in the WTC dust, confirming the formation of molten iron "during the event," according to an independent study of the South Tower dust by RJ Lee Group.

The Official Fire-Based Hypothesis Cannot Account for the Red-Hot Steel Beams and Pools of Molten Metal Seen During the First Weeks of Clean-up

Numerous professionals have testified that they saw "molten steel" beneath the Ground Zero rubble.[8] But they are not metallurgists, so how did they know enough to have identified it correctly as steel?

NIST dodges the answer to that question by claiming that there was no molten metal to investigate. NIST engineer John Gross, co-project leader of the official investigation, denied the existence of the witness reports.[9]

So we must look to the context, which provides a clear answer: The primary structural components of the WTC Towers were steel columns, steel beams, and steel floor trusses. Thus, steel was the *only* option that the witnesses had when they identified the unmistakable structural steel components coming out *molten* from under the rubble. Specific statements from these witnesses about "molten steel beams" and beams "dripping molten steel" dispel any remaining doubts.[10] The reported pools of molten metal under the rubble must also have contained some of that molten steel, and perhaps molten iron from thermitic cutting charges as well.

Dr. Jones addressed the evidence from yet another angle, pointing out that "we can rule out some metals based on available data."[11] A photograph taken 16 days after the 9/11 event shows an excavator grabbing debris that remains solid even though it is glowing in the salmon-to-yellow hot range.

Figure 7: An excavator picks up metal rubble from deep within the pile, and some of it is dripping a yellow-white hot liquid metal at or above 1,200°C/2,200°F. This is approximately double the temperature that can be reasonably expected from an oxygen-starved fire.

Dr. Jones notes that the *solid* metal, glowing in the 845°C/1550°F to 1080°C/1975°F temperature range, could not have been aluminum, lead, or other metals with low melting points, because none of them could have remained solid in this range.

The glowing debris was also dripping liquid metal that appears to have a bright yellow-white glow, which leads to the conclusion that the maximum temperature of the glowing rubble was probably above 1200°C/2200°F — consistent with the yellow-white hot glow of molten steel in a foundry. What makes this so remarkable is that anything over 1000°C/1800°F is above the maximum temperature of a perfectly ventilated fire, and is therefore way beyond the temperature limit of an oxygen-starved fire under the rubble.

The liquid metal could not have been aluminum because it would have had a silvery appearance as it dripped away at its 660°C/1220°F melting point. And we suspect that the powerful floodlights at the demolition site would have made it appear silver-colored, anyway, regardless of the temperature, due to the low emissivity and high reflectivity of aluminum. Dr. Jones adds that the metal in question also needed a "fairly low heat conductivity and a relatively large heat capacity" to remain red hot and even molten for several weeks under the rubble — two traits that identify the metal as steel or iron.

A New York warehouse (see Figure 8) stores similar, but solidified, Ground Zero debris, which supports the conclusion that the excavator at Ground Zero is picking up iron or steel. This solidified lump has the embedded remains of the steel beams seen all around the excavator. Also fused to the warehouse lump are steel reinforcing bars that look like the rods that are seen glowing hot in the claw (see Figure 7). These embedded remains display the characteristic reddish color of rusted iron or steel.

Figure 8: The reddish (rust) color of similar, previously-molten, Ground Zero debris, shown in this warehouse photo, indicates the presence of iron or steel.

The PBS documentary "Relics from the Rubble" shows a similar lump of fused molten concrete and molten steel, which became known as "the meteorite." The leader of the Ground Zero artifact recovery, architect Bart Voorsanger, describes the object, which must have weighed several tons, as "fused element[s] of steel ... molten steel and concrete — and all of these things ... all fused by the heat."[12]

Thermitic Materials Can Account for the Molten Iron and the Molten Steel

Since building fires cannot account for the reported molten steel beams in the Ground Zero rubble, the official fire-based explanation for the collapses of the WTC buildings must be false.

The official explanation also fails to account for the plenitude of iron-rich spheres, which happen to be yet another signature marker for a thermite reaction. An independent study by the RJ Lee Group actually used the previously liquefied iron-

rich spheres as a signature marker to distinguish the WTC dust from normal building dust, because they were so abundant.[13] Since thermitic materials can actually cut and melt steel beams,[14] evidence of this type of material in the dust provides a plausible explanation for the observed liquid iron and steel: Thermitic cutting charges[15] melt a slit through the steel beams via a directed blast of molten iron,[16] leaving behind the expected residues of molten iron from the charges and molten steel from the beams.

Chemist Kevin Ryan notes[17] that NIST violated the NFPA 921 investigative standard[18] by denying the evidence of molten iron and molten steel, and by refusing to look for pyrotechnic and explosive materials. This is especially suspicious, according to Ryan, because "NIST had considerable connections to nano-thermites, both before and during the WTC investigation."

Although NIST has failed to fulfill its duty, a team of nine scientists has investigated samples of dust from the collapsed Twin Towers and has documented the discovery of microscopic-but-intact remnants of nano-thermite. This type of energetic material can be easily tailored to be either pyrotechnic or explosive.

Chemist Dr. Niels Harrit leads the team of scientists, which includes Dr. Steven Jones and Kevin Ryan. Their investigation resulted in the 2009 peer-reviewed paper, "Active Thermitic Material Discovered in Dust from the 9/11 World Trade Center Catastrophe."[19] Harrit *et al* identify only one of the thermitic materials that must have been used, but they do not attempt to ascertain if the cutting charges were composed of this particular material. Chemical engineer Mark Basile has already independently verified the conclusion of their paper.[20] His study is still being completed and will hopefully be published by the end of 2014.

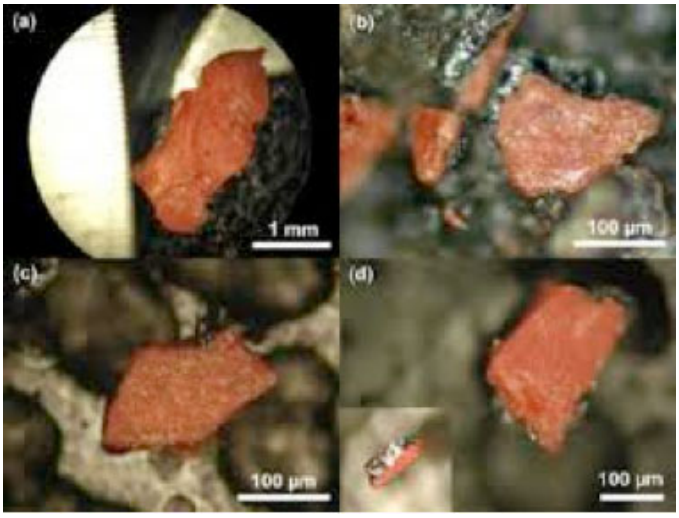

Figure 9: Dr. Niels Harrit leads an international team of scientists that documents that finding of red-gray nano-thermite chips in four independently collected WTC dust samples. This material ignites and forms the iron-rich spheres that were so abundant in the dust.

Kevin Ryan summarizes the molten metal evidence that we have reviewed here, as well as additional evidence in favor of thermitic materials, in his December 2013 article, "9/11 Truth: How to Debunk WTC Thermite at Ground Zero."[21] Ryan concludes that the evidence is "extensive and compelling," and that the suspected controlled demolition of the WTC buildings via thermitic materials is now "a tested and proven theory." And, as demonstrated above, thermite remains the only viable theory that provides a logical explanation for the liquefied iron and steel found in the World Trade Center rubble.

End Notes

[1]http://www.tms.org/pubs/journals/jom/0112/eagar/eagar-0112.html

[2] http://www.ae911truth.org/news/41-articles/347-high-temperatures-persistent-heat-a-molten-steel-at-wtc-site-challenge-official-story.html
[3] http://www.ae911truth.org/news/41-articles/348-previously-molten-iron-spheres-were-in-wtc-dust-reveal-use-of-thermitic-materials.html
[4]http://www.nist.gov/manuscript-publication-search.cfm?pub_id=101356
[5]http://www.journalof911studies.com/volume/200609/Why_Indeed_Did_the_WTC_Buildings_Completely_Collapse_Jones_Thermite_World_Trade_Center.pdf
[6] http://www.ae911truth.org/en/news-section/41-articles/879-debunking-the-911-truth-debunkers-the-saga-continues.html
[7]http://www.journalof911studies.com/articles/WTCHighTemp2.pdf
[8] http://www.ae911truth.org/news/41-articles/347-high-temperatures-persistent-heat-a-molten-steel-at-wtc-site-challenge-official-story.html
[9] http://youtu.be/fs_ogSbQFbM
[10] http://www.consensus911.org/point-tt-6/
[11]http://www.journalof911studies.com/volume/200609/Why_Indeed_Did_the_WTC_Buildings_Completely_Collapse_Jones_Thermite_World_Trade_Center.pdf
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ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On: World Trade Center 1 & 2

August 2010

High Temperatures, Persistent Heat & "Molten Steel" at WTC Site Contradict Official Story

Extremely high temperatures were evident before and during the destruction of the World Trade Center Twin Towers and at Ground Zero. Seven minutes before the destruction of the South Tower, a flow of molten metal[1] appeared, accompanied by several smaller flows, as documented by the National Institute of Standards and Technology (NIST).[2] The material's glowing color showed that its temperature was close to "white hot" at the very beginning of the flow and "yellow-orange" further down.[3] Iron-rich spheres in the WTC dust are additional proof of temperatures above the melting point of iron. Pyroclastic-like, rapidly expanding dust clouds after the destruction of the Towers can also be explained only by the expansion of hot gases.[4]

The high-temperature phenomena at Ground Zero are documented by various sources:

Bechtel engineers, responsible for safety at Ground Zero, wrote in the Journal of the American Society of Safety Engineers: "The debris pile at Ground Zero was always tremendously hot. Thermal measurements taken by helicopter each day showed underground temperatures ranging from 400ºF to more than 2,800ºF."[5]

The fact that high-temperature phenomena were an important issue at Ground Zero is underscored by the large number of thermal images[6] acquired: images by SPOT,[7] MTI, AVIRIS/NASA,[8] "Twin Otter"/U.S. Army, and at least 25 images by EarthData, taken between

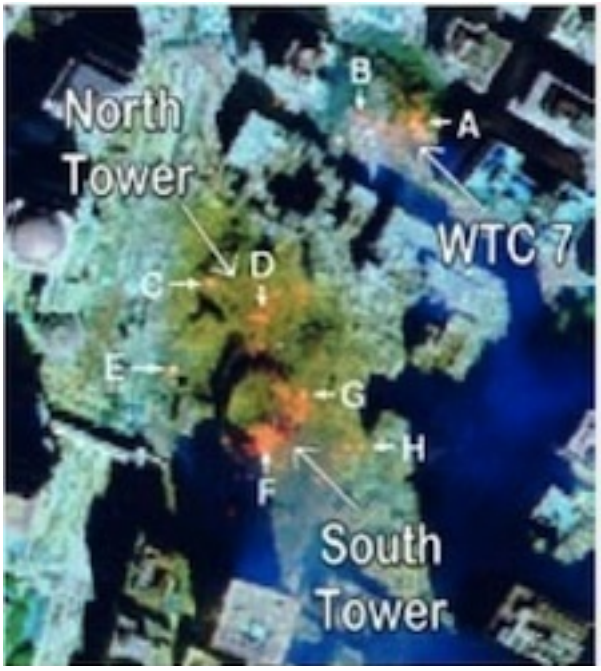

Figure 1: Sept. 16, 2001 thermal images reveal 1,400ºF temperatures at the surface of the WTC 1, 2 & 7 debris piles - yet there were no fires at the surface after the collapses. These are the radiant temps from the molten metal deep beneath the surface.

Architects & Engineers for 9/11 Truth
2342 Shattuck Ave. Suite 189 Berkeley, CA 94704 Tel. (510) 292-4710
Fax (925) 938-1489 info@AE911Truth.org www.AE911Truth.org

Sept. 16 and Oct. 25. In addition, temperature measurements by helicopter were taken each day,[9] and the firefighters used onsite sensors too.[10]

Many witnesses, including rescue personnel and firefighters working on the piles, described the phenomenon of "molten steel." Terms used in witness statements[11] are, for example, "molten steel," beams "dripping from molten steel," "molten steel … like you're in a foundry. Like lava, from a volcano." A photograph taken on September 27 by a Ground Zero worker shows an excavating machine lifting debris from the WTC wreckage dripping yellow/orange molten metal.[12]

WTC clean-up workers and 9/11 artifacts architect Bart Voorsanger, in the PBS video "Relics from the Rubble,"[13] described what must have been several tons of "fused element[s] of steel … molten steel and concrete and all of these things …all fused by the heat," weighing several tons each. These foreign objects came to be known as "meteorites."

Figure 2: An excavating machine at Ground Zero lifts debris dripping with molten metal.

The heat at Ground Zero was not only extreme, it was also persistent, as proven not only by witness statements and a photograph by LiRo Group / Engineering of orange-red glowing steel as late as October 21,[14] but also by thermal images taken by NASA[15] and EarthData satellites. The EarthData thermal images also show that the "hot spots" remained at the same locations. The phenomenon did not "move" across the site, like one would expect from fire as it consumes the fuel available in any one location.

University of California professor Abolhassan Astaneh-Asl,[16] the first structural engineer given access to the WTC steel at Fresh Kills Landfill notes, "I saw melting of girders at the World Trade Center." Astaneh also "describes the connections [between supporting columns] as being smoothly warped:[17] 'If you remember the Salvador Dalí paintings with the clocks that are kind of melted – it's kind of like that. That could only happen if you get steel yellow hot or white hot – perhaps around 2,000 degrees.'"

Iron workers at the site pointed out[18] that huge columns that were bent[19] into horseshoe shapes - without the flanges showing any cracks or buckling. They cited, "It takes thousands of degrees to bend steel like this".[20]

FEMA documents in their Appendix C of its May 2002 WTC Building Performance Assessment Team study, for sample 1, "evidence of a severe high temperature corrosion attack on the steel, including oxidation and sulfidation with subsequent intergranular melting." A "sulfur-rich liquid" containing "primarily iron, oxygen, and sulfur" "penetrated" into the steel.[21]

The extremely high temperatures contradict the official story. Office and hydrocarbon fires burning in open air (~500° to 1,500° F) cannot reach

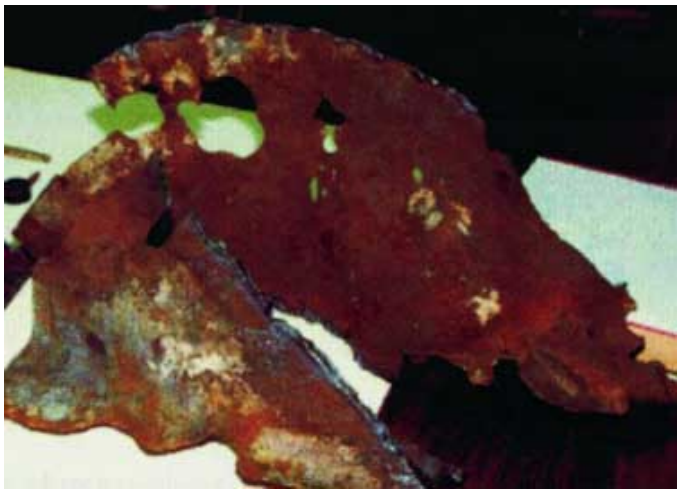

Figure 3: FEMA's May 2002 report documents evidence of a severe high temperature corrosion attack on the steel.

temperatures in the range that iron or structural steel melts (2,700° F). This was even acknowledged by NIST's Co-Project Leader, John Gross, in the same public talk where he stated regarding the phenomena of molten steel, "I know of absolutely nobody, no eyewitnesses that said so, nobody that's produced it."[22] Yet there is abundant proof of the molten metal, which subsequent tests reveal to be iron, in the debris piles.[23] Furthermore, NIST itself performed extensive fire tests to establish the temperatures reached by the WTC office and jet fuel fires.[24] The temperatures established are far below the temperatures required to produce all of the above phenomena – which occurred both before and during the destruction and at Ground Zero.

The steel problem was "solved" by NIST by excluding most of the steel from being systematically examined for failure modes and heat excursions.[25] The steel collected by the Port Authority, which has been stored in Hangar 17 at JFK Airport, was not included in the investigation except for 12 pieces. Of the 236 pieces that NIST possessed, many were excluded based on the circular argument that only columns from impact and fire floors were of interest in the investigation. Thus, NIST avoided having to discuss 51 of its 55 core columns. Sample 1 from FEMA's Appendix C was also excluded.

In addition, NIST developed a new method of "visual examination" that it then substituted in place of the systematically used tool.[26] NIST's "paint cracking" method has the following "advantages": paint cracks can be produced not only by high temperature excursions, but also by "corrosion"/ "environmental degradation" and by plastic deformation; many columns had no paint left for examination, Moreover, by relying on a method that requires microscopic examination, NIST was able to ignore pieces that were obviously heat-affected but had come from non-fire floors. A contractor's report that employed common visual examination was "reviewed": NIST contrasted the contractor's results with their newly developed method and their fire exposure observations, and by employing again a circular argument. NIST's steel "examination" shows that its "working hypothesis" was in fact its premise, and that NIST gone to great lengths to maintain this premise.

Some want to cite "natural thermite reactions" for the high-temperature phenomena: airplane aluminum must have reacted with rust. This possibility can be ruled out based on the findings of a study that was conducted in 2002 at the Colorado School of Mines for the Minerals Management Service. Officially, the study, whose lead author is a close research associate of T. W. Siewert of NIST, is about thermite-sparking in offshore environments. But due to a very odd study design the question about the feasibility of natural thermite reactions in the WTC is answered too. The authors established the ignition temperatures for rust, dehydrated rust and iron-oxide-based thermite reactions. The

necessary temperatures are so high that one can conclude that thermite reactions between airplane aluminum and rust (some rust was on beams according to documents), dehydrated rust (rust dehydrates in fire) or iron oxide (iron oxide was part of the primary paint) were not feasible in the WTC. Also tested was what happens when aluminum impacts rust at very high velocity, so, interestingly, even the possibility that the impacting airplanes caused natural thermite reactions can be ruled out.[27]

The overwhelming evidence of these extremely high temperatures, which normal office fires and jet fuel cannot produce, cries out for a new investigation. The hypothesis of explosive controlled demolition must be examined and, if confirmed, followed wherever it leads, so that Americans can know for sure what was the real cause of the catastrophic loss of life at the WTC on 9/11 and the identities of everyone who was responsible for it.

End Notes

[1] http://youtu.be/OmuzyWC60eE
[2] http://www.nist.gov/manuscript-publication-search.cfm?pub_id=101356
[3] http://www.journalof911studies.com/volume/200609/Why_Indeed_Did_the_WTC_Buildings_Completely_Collapse_Jones_Thermite_World_Trade_Center.pdf
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[9] http://911research.wtc7.net/cache/wtc/analysis/asse_groundzero1.htm
[10] http://mceer.buffalo.edu/publications/wtc/02-SP05-screen.pdf
[11] http://youtu.be/fs_ogSbQFbM
[12] http://www.journalof911studies.com/volume/200609/Why_Indeed_Did_the_WTC_Buildings_Completely_Collapse_Jones_Thermite_World_Trade_Center.pdf
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[24] http://www.nist.gov/el/disasterstudies/wtc/
[25] http://www.ae911truth.org/documents/How_NIST_Avoided_a_Real_Analysis_of_the_Physical_Evidence_of_WTC_Steel.pdf
[26] Ibid.
[27] http://www.ae911truth.org/documents/How_NIST_Avoided_a_Real_Analysis_of_the_Physical_Evidence_of_WTC_Steel.pdf

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On: World Trade Center 1 & 2

August 2010

Billions of Previously Molten Iron Spheres in WTC Dust, Reveal Use of Thermitic Materials

The World Trade Center dust is remarkable due not only to its having blanketed Lower Manhattan 4" to 12" thick in many places, but also for the dark secrets that it would reveal.

Iron-rich microspheres were so common in the WTC dust that EPA's WTC panel discussed their use as one of the signature components to distinguish the WTC dust from so-called "background" dust (i.e. common office-building dust).[1]

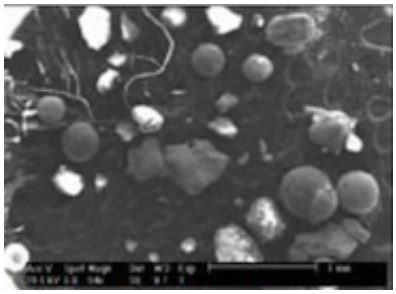


Figure 1: SEM (Scanning Electron Microscope) image of WTC dust shows large quantities of iron-rich microspheres.

RJ Lee Group, evaluating the contamination of the Deutsche Bank building at 130 Liberty Street, also described these iron-rich spheres,[2] and actually used them as one of their signature markers.[3] In other words, dust wasn't regarded as WTC dust unless it contained these spheres. The chemical composition[4] and micro-images of two WTC iron-rich spheres[5] [6] were documented by the US Geological Survey.[7]

The fraction of microspheres in the dust varied (between 0.2 and 1.3 % for USGS outdoor samples[8] and a mean of 5.87% for all RJ Lee samples[9]) depending on the area where the samples were taken. Due to their shape and density, the spheres were not likely to have traveled as far as other components of the dust. The diameter of the spheres in two evaluated dust samples ranged from about one micron (0.001 mm) to 1.5 mm.[10]

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

The microspheres must have been formed at extremely high temperatures during the World Trade Center's destruction – temperatures exceeding the melting point of iron (~2,700° F). The spheres must have been molten when they were created in order to take their spherical shape. Such high temperatures could not have been produced by jet fuel or office building fires, which reach only up to 1,800 °F under the most severe fire conditions. However, the thermite reaction produces molten iron and aluminum oxide as the reaction products.[11] After being ejected into the atmosphere, molten iron droplets would be pulled into roughly spherical shapes by surface tension. They would then cool, solidify, and fall out – preserving in their spherical shape the information that they were once molten, and preserving in their chemical signature information about their origin.

This, along with the chemical makeup of the spheres, was first discussed by physicist Steven Jones and other scientists in two articles published in 2007[12] and 2008.[13] The chemical signature of several of the spheres shows significant amounts of aluminum, thus matching the signature of thermite residue but not that of steel. Some of these spheres also contain sulfur but no calcium. So the origin of the sulfur cannot be gypsum (from the buildings' wallboard). Thermate, a special thermite mixture developed by the military, contains sulfur. The chemical signature of many of the WTC dust spheres also "strikingly" matches that of the spheres and spheroids found in the residue of ignited red/gray nanothermite composite chips.[14]

Surely a new investigation is called for that takes into account the minimum 2800° F heat source necessary to create billions of molten iron droplets. Join AE911Truth and the burgeoning 9/11 Truth movement in our pursuit of real answers and accountability from governmental officials who were tasked with explaining the destruction of the WTC towers.

End Notes

[1]http://www.ae911truth.org/documents/EPA_dust_SubGroupComments_110305_iron_spheres.pdf
[2]http://www.ae911truth.org/documents/nyenvirolaw_WTCDustSignatureCompositionAndMorphology.pdf
[3]http://www.ae911truth.org/documents/WTCDustSignature_ExpertReport.051304.1646.mp_.pdf
[4]http://pubs.usgs.gov/of/2005/1165/table_1.html
[5]http://pubs.usgs.gov/of/2005/1165/graphics/IRON-03-IMAGE.jpg
[6]http://pubs.usgs.gov/of/2005/1165/graphics/IRON-04-IMAGE.jpg
[7]http://pubs.usgs.gov/of/2005/1165/5080F05-1165.html#toc
[8]http://pubs.usgs.gov/of/2005/1031/pdf/OF2005_1031_508.pdf
[9]http://www.ae911truth.org/documents/nyenvirolaw_WTCDustSignatureCompositionAndMorphology.pdf
[10]http://www.journalof911studies.com/articles/WTCHighTemp2.pdf
[11]http://www.journalof911studies.com/volume/200704/JonesWTC911SciMethod.pdf
[12]Ibid.
[13]http://www.journalof911studies.com/articles/WTCHighTemp2.pdf
[14]http://benthamopen.com/tocpj/articles/V002/7TOCPJ.pdf

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On:
World Trade Center 1 & 2

August 2010

Advanced Pyrotechnic or Explosive Material Discovered in WTC Dust

Starting in 2007, a group of independent researchers began examining the dust from the World Trade Center disaster to see if identifiable residues might help explain the highly energetic destruction that was observed in the videos. Naked-eye and microscopic examination revealed numerous tiny metallic and magnetically attracted spheres and red/gray chips, quite distinctive in the dust samples.

The existence of iron-rich microspheres in the WTC dust was documented in 2004[1] and 2005.[2] But nothing yet had been published about the red/gray chips in the dust until Steven Jones first described them in 2007. What might have been misinterpreted as the residue of common paint when seen with the naked eye proved to be a highly energetic advanced nano-composite material.

In April 2009, a team of scientists that included physicist Steven Jones (formerly BYU), chemist Niels Harrit (University of Copenhagen, Denmark), physicist Jeffrey Farrer (BYU), and six other authors published their findings regarding the red/gray chips in the peer-reviewed paper "Active Thermitic Material Discovered in Dust from the 9/11 World Trade Center Catastrophe," The Open

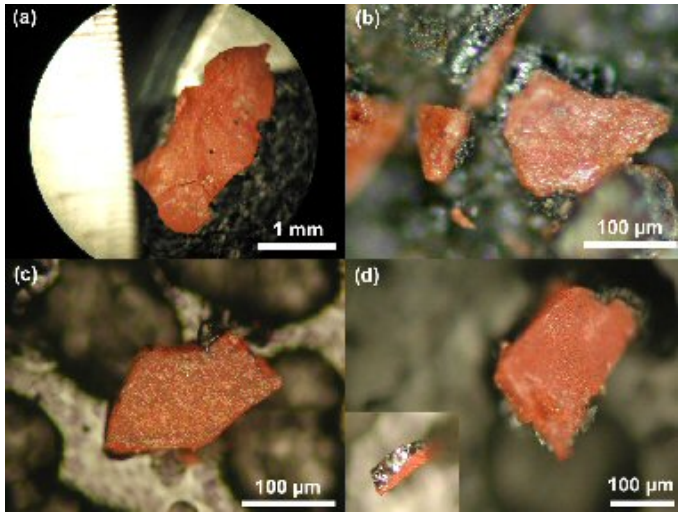


Figure 1: Highly energetic pyrotechenic or explosive red/gray chips discovered in WTC dust samples.

Chemical Physics Journal, 2009, 2, 7-31, available online.[3] Red/gray chips from four different WTC dust samples were examined using scanning electron microscopy, X-ray energy dispersive spectroscopy (XEDS), and differential scanning calorimetry. The main findings of the study are as follows:

The material in the red layer consists of intimately mixed particles of iron oxide and aluminum embedded in a carbon-rich matrix. The particles range in size from tens to hundreds of nanometers. Elemental aluminum was present in thin plate-like structures, while iron oxide was

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

present as faceted grains, roughly 100 nm across – about a thousand times smaller than a human hair.

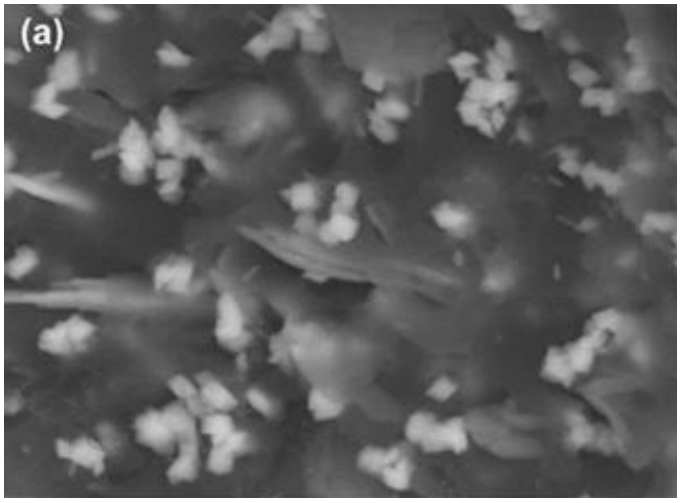


Figure 2: This 50,000X magnification REM/BSE image of a red/gray chip reveals uniform nano-sized faceted iron oxide particles (here whitish) and thin aluminum platelets embedded in a carbon-oxygen-silicon matrix.

Iron oxide and aluminum are the ingredients of classic thermite, an incendiary that burns unusually hot at approximately 4500°F, producing aluminum oxide and molten iron. The carbon content of the matrix indicates the presence of an organic substance.

When the red/gray chips were heated to about 430° C. (806° F.), they ignited, releasing relatively large amounts of energy very fast. This behavior matches "fairly closely an independent observation on a known super-thermite sample", as reported in a paper published by researchers associated with Lawrence Livermore National Laboratories. The residue of the ignited red/gray chips included iron-rich spheres, "indicating that a very high temperature reaction had occurred, since the iron-rich product clearly must have been molten to form these shapes." The chemical signature of the spheres and spheroids "strikingly matches the chemical signature of the spheroids produced by igniting commercial thermite, and also matches the signatures of many of the microspheres found in the WTC dust."

The scientists concluded based on all their findings that the red layer of the red/ gray chips "is active, unreacted thermitic material, incorporating nanotechnology," and that it "is a highly energetic pyrotechnic or explosive material." See the published study for the remainder of the findings.

Energetic nanothermitic compounds have been researched since the 1990s. One "advantage" of nanothermites as stated in the literature is their ability to enhance the destructive effect of high explosives; the high rate of reaction in nanothermites allows the main explosive charge to release its energy even faster when nanothermite is used as an igniter.[4] Such igniters also do not leave behind lead-containing residues as lead azide igniters do. Nanothermitic composite materials have been extensively researched by US national labs. The energy release of these special materials can be tailored for various applications,[5] they can be designed to be explosive by adding gas-releasing compounds[6] (such as what the matrix of the WTC chips' red layer might consist of) and they have potential for easy storage and safe handling.

As of 2002, the production process at the Naval Surface Warfare Center for ultra fine grain (UFG) aluminum, alone, required several pieces of high-tech equipment.[7] The article states: "The current state of UFG aluminum production is that this is an area that still requires considerable effort" (AMPTIAC Quarterly, Special Issue, "DOD Researchers Provide A Look Inside Nanotechnology," 2002).

Red/gray chips, with a red layer that comprises ultra fine grain aluminum platelets intimately mixed with faceted grains of nanosized iron oxide, embedded in a carbon-rich matrix, cannot have been widely available in 2001. Niels Harrit, lead author of the study, stated "These new findings confirm and extend the earlier finding of previously molten, iron-rich microspheres in the World Trade Center dust. They provide strong forensic evidence that the official explanation of the WTC's destruction is wrong."

Given the explosive nature of the destruction of the WTC Twin Towers along with the finding of this high-tech nanocomposite pyrotechnic or explosive material in the WTC dust samples, there exists strong evidence which should compel all who are aware to be active in supporting AE911Truth in our effort to obtain a real investigation.

End Notes

[1]http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=239769
[2]http://pubs.usgs.gov/of/2005/1165/5080F05-1165.html#heading08
[3]http://benthamopen.com/tocpj/articles/V002/7TOCPJ.htm
[4]http://www.technologyreview.com/news/403624/military-reloads-with-nanotech/
[5]https://www.dsiac.org/about
[6]https://e-reports-ext.llnl.gov/pdf/318263.pdf
[7]https://www.dsiac.org/about

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On: World Trade Center 1 & 2

August 2010

Evidence Destroyed Is Justice Denied

The destruction of the three World Trade Center skyscrapers on 9/11 caused the greatest loss of life and property damage in U.S. fire history and constituted the largest structural failures in world history. This event should have received the most thorough investigation of any event in history.

Even with ordinary house fires evidence is collected and an investigation is performed in order to determine the cause, especially if foul play is suspected. But the WTC investigations performed by the National Institute of Standards and Technology (NIST) were at best incomplete and at worst criminally fraudulent. FEMA cleanup workers and NIST engineers alike completely ignored the most obviously relevant and applicable recommendations of the National Fire Protection Association, NFPA 921, the nationally accepted guideline for fire and explosion investigation.

Wholesale Destruction of Forensic Evidence

The 9/11 disaster scene in Manhattan, dubbed "Ground Zero," should have been treated as a crime scene in accordance with 9/11's immediate appellation "the Crime of the Century," in greater measure than simply as the scene of a terrorist attack that would immediately be labeled an "act of war." Certainly material and debris, where injured people might be trapped, had to be removed as quickly as practical. But, as important evidence, it should have been taken to a secure site for further investigation. NFPA 921 states:

"Once evidence has been removed from the scene, it should be maintained and not be destroyed or altered until others who have a reasonable interest in the matter have been notified." Moreover, after there was no reasonable hope of finding any more victims alive, there was no longer any need for the headlong rush to dispose of the steel.

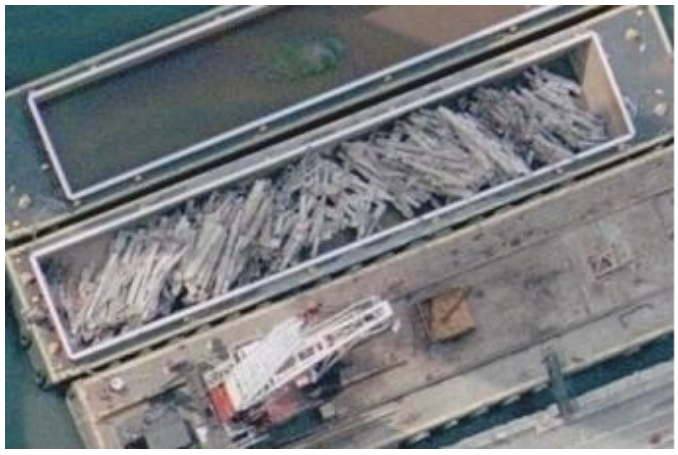


Figure 1: Instead of being analyzed to determine cause of failure, the WTC steel was rapidly shipped off to China for recycling.

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

As the NIST report admitted, the three WTC skyscrapers whose destruction was blamed primarily on fire were the only cases of modern steel-framed high-rise buildings in world history to have ever completely collapsed because of fire. The structural steel was therefore extremely important evidence. Yet this evidence was quickly hauled away by up to 400 trucks per day and taken … where? Not to a secure place to await inspection, but to barges where it was readied for shipping.

Figure 2: 400 truck-loads of steel per day were removed.

Instead of being analyzed to determine the cause of failure, the WTC steel framing pieces were rapidly shipped off to India and China for recycling. New York Mayor Rudi Giuliani, a former prosecutor, surely knew the importance of securing evidence – and that the law in fact requires it. Yet, of the 200,000 tons of structural steel contained in the Twin Towers, only a few hundred pieces were saved. And, only one piece of steel framing said to have come from WTC 7 was saved.

According to Erik Lawyer, founder of Firefighters for 9/11 Truth, officials in charge of the scene admitted that "the majority of the evidence was destroyed."[1] Building fire expert and editor-in-chief of *Fire Engineering* Magazine Bill Manning wrote, "Such destruction of evidence shows the astounding ignorance of government officials to the value of a thorough, scientific investigation…I have combed through our national standard for fire investigation, NFPA 921, but nowhere in it does one find an exemption allowing the destruction of evidence. To treat the September 11 incident any differently would be the height of stupidity and ignorance… The destruction and removal of evidence must stop immediately."

Explosive Evidence Ignored

NIST ignored clear evidence of explosives and incendiaries in the destruction of all three high-rises. NIST excluded anything that happened after the so-called point of collapse initiation from the Twin Towers investigation despite that one of their stated "objectives" was to determine "how WTC 1 and WTC 2 collapsed."

Hundreds of first responders and others on the scene reported hearing explosions – yet NIST ignored them. More than 100 of these reports were recorded by orders of Fire Commissioner Thomas Von Essen in October of 2001,[2] but the City of New York withheld this key evidence until forced by the New York State Court of Appeals to release it in August 2005.

NFPA 921 calls for the consideration of the possibility of exotic accelerants or explosives when "pulverized concrete", "high order damage", and "lateral ejection of building elements" are found. Pulverized concrete covered all of lower Manhattan and comprised up to 30% of the WTC dust. The Twin Towers were completely destroyed down to their individual structural elements, and ejected as far as 600 feet.

NFPA 921 states that accelerants should be investigated in any fire crime scene and that molten steel may indicate the use of thermite, an incendiary and accelerant. Yet NIST did not look for thermite. Since then, however, independent scientists have found a high-tech version of thermite, known as nanothermite, in dust samples collected from the WTC site.[3] Previously molten iron micro-spheres had already been found in the WTC dust by USGS researchers and environmental engineers, further indicating high temperatures associated with the use of thermite.[4]

Molten Metal and High-Temperature Phenomena Ignored

More than two-dozen eyewitnesses have reported seeing molten steel in the basements of all three WTC high-rises. This is confirmed by photos and verified by infrared satellite images indicating extremely high temperatures. Yet John Gross, Lead Engineer for NIST, denies even having heard any reports of molten metal at Ground Zero.[5]

Figure 3: Molten metal witnessed by dozens completely omitted by NIST report.

NIST stated in 2007 on its website to have the "vision to lead the world in methods of measurement and prediction of the behavior of fire and its effects." Conspicuously, NIST never has shown any interest in investigating the unusual, allegedly fire-related, high temperature phenomena in the WTC collapse piles.[6]

A Cover-Up?

It is clear that the actions by NYC/Port Authority officials, FEMA managers, and NIST engineers relative to the collection, preservation, and analysis of the evidence of this monumental crime looks more like a cover-up than an investigation. AE911Truth is dedicated to obtaining a real investigation that properly accounts for all the evidence and which uses the scientific method to analyze it. Join us in this historic pursuit of justice.

End Notes

[1] http://youtu.be/TULmLtqRXZ4
[2] http://www.911docs.net/graeme_macqueen.php
[3] http://www2.ae911truth.org/downloads/Full_Thermite_paper.pdf
[4] http://911research.wtc7.net/wtc/evidence/residues.html
[5] http://youtu.be/fs_ogSbQFbM
[6] http://www.ae911truth.org/news/41-articles/347-high-temperatures-persistent-heat-a-molten-steel-at-wtc-site-challenge-official-story.html

Areas of Specific Concern in the NIST WTC Reports

Below is a series of twenty-five provable points which clearly demonstrate that the reports produced by the National Institute of Standards and Technology (NIST) on the destruction of the World Trade Center (WTC) were unscientific and fraudulent. Therefore NIST itself – including its lead authors, Shyam Sunder and John Gross - should be investigated.

Table of Contents

WTC 7 – THE THIRD SKYSCRAPER

1. OMISSION OF GIRDER STIFFENERS SHOWN ON FRANKEL DRAWING #9114

Technical Statement: NIST maintains that WTC 7 collapsed due to fire acting upon the 13th floor A2001 girder between columns 79 and 44 and the beams framing into it from the east. They said that the beams expanded by 5.5" (revised in June 2012 to 6.25"), broke the girder erection bolts, and pushed this girder off its column 79 seat. This girder fell to floor 12, which then precipitated a cascade of floor failures from floor 12 down to floor 5, and column 79 then became unsupported laterally, causing it to buckle. It is then said that column 79's buckling caused the upper floors to cascade down, which started a chain reaction — a north-to-south then east-to-west horizontal, progressive collapse — with a global exterior collapse that was captured on the videos.

The first omission concerns flange-to-web stiffeners on the south end of the girder (A2001). See drawing 9114. These omitted stiffeners would prevent the girder flange from folding when the girder web moved beyond the seat, requiring twice the possible expansion of the beams framing into the girder from the east to move the girder far enough to the west for it to fall off its seat.

References:

- Frankel Shop Drawing #9114 https://www.dropbox.com/s/r009pjr3qhduyjg/9114.TIF?dl=0
  - Girder_A2001_Stiffeners_Plan_HL https://www.dropbox.com/s/jnt2f9i2vnm0wa3/Girder_A2001_Stiffeners_Plan.jpg?dl=0
  - Girder_A2001_Stiffeners_Elevation_HL https://www.dropbox.com/s/uy7cehcn2saorh1/Girder_A2001_%20Stiffeners_Elevation.jpg?dl=0

2. OMISSION OF THREE LATERAL SUPPORT BEAMS ON THE 13TH FLOOR G3005 BEAM

Technical Statement: NIST omitted three lateral support beams from the exterior frame to the north-most beam (G3005) framing into the A2001 girder between columns 44 and 79 from the east. The NIST WTC 7 report contains a second possible failure initiation mechanism, where G3005 buckles and causes the other four beams framing into the girder from the east (A3004, B3004, C3004, and K3004) to also buckle, lose their load-carrying capability, collapse downward, and rock (pull) the girder off its seats back to the east. When these lateral support beams are excluded in the NIST analysis, the beam slenderness is increased by 16 times, and this reduces the actual buckling load to 6% of what it would have been in reality. Analysis with the lateral support beams included shows that the beam would not buckle and that it would actually deflect the girder and put the other four beams in tension, eliminating any chance of them buckling, as beams and columns need to be in compression in order to buckle.

References:

- Frankel Shop Drawing #3005 https://www.dropbox.com/s/qoikgin4l8x0yub/3005.TIF?dl=0
- Frankel Shop Drawing #3007 https://www.dropbox.com/s/f9n62mr3c1mdvqs/3007.TIF?dl=0

- Frankel Shop Drawing #9150 https://www.dropbox.com/s/2fne2vd75p0yjcy/9150.TIF?dl=0
- Frankel Erection Drawing #E12/13
  https://www.dropbox.com/s/0rw4w6hc1ih8g2t/Erection_Drawing_1213.jpg?dl=0

3. WTC 7 COLLAPSE AT FREE-FALL ACCELERATION IS NOT EXPLAINED

Technical Statement: After initially denying it, NIST was ultimately forced into a public acknowledgement in their final report on WTC 7 that the building fell at full free-fall acceleration for 2.25 seconds, during which time it traversed the vertical distance of eight stories, or just over 100 feet. However, there is no attempt in the report to confront the implications that there could not have been any structural resistance during this eight-story fall at gravitational acceleration. Since every other skyscraper in history that has fallen in the manner in which WTC 7 did was an explosive controlled demolition, and since there is abundant eyewitness testimony of explosions and molten iron as well as chemical evidence of incendiaries found in the debris pile, one would expect NIST to at least consider the possibility of explosive or incendiary use and test for them, according to the National Fire Protection Association investigation standard NFPA 921: Guide for Fire and Explosion Investigations, which is strictly followed by the FDNY. Incredibly, NIST continues to refuse to test the remaining debris for explosives or incendiaries.

References:

- NCSTAR 1-9, Chapter 12
- NIST FAQ on WTC 7, updated 6/27/2012 http://www.nist.gov/el/disasterstudies/wtc/faqs_wtc7.cfm
- Physicist David Chandler's analysis of the descent of WTC 7 in three parts
  https://www.youtube.com/watch?v=Rkp-4sm5Ypc
  https://www.youtube.com/watch?v=iXTlaqXsm4k
  https://www.youtube.com/watch?v=v3mudruFzNw
- NFPA 921: Guide for Fire and Explosion Investigations
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=SBmyPW6gGGI

4. VIDEOS OF THE COLLAPSE OF WTC 7 BETRAY NIST'S COMPUTER MODEL

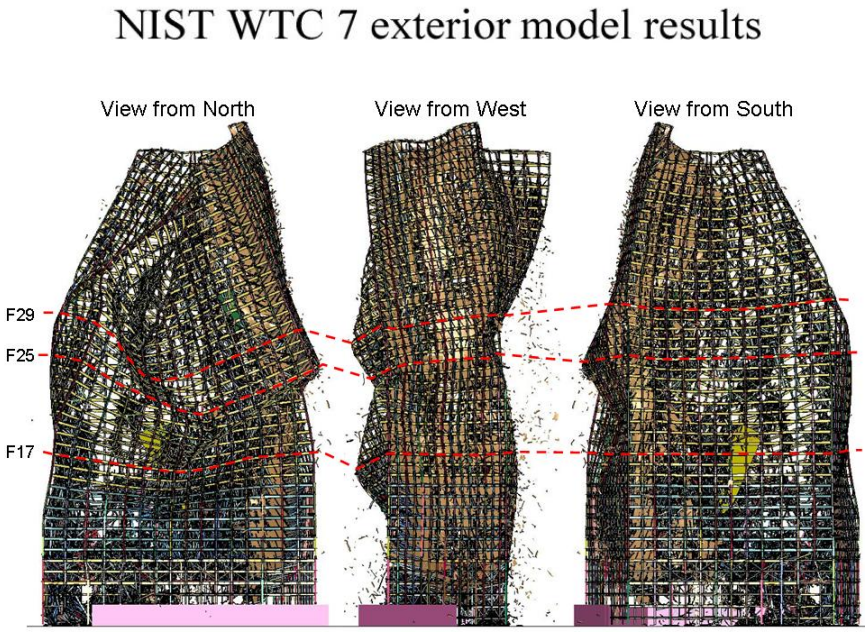
Technical Statement: The exterior of the NIST WTC 7 computer model shows large deformations, as would be expected in a natural collapse, but which are not observed in the video of the actual event. There is no attempt in the report to explain this discrepancy.

In footage of the actual collapse, the west penthouse and screen wall of WTC 7, which together span nearly half the length of the roof, start to fall one-half of a second prior to the full exterior collapse, yet the NIST report claims that the entire interior failed and completely collapsed prior to the exterior shell collapsing. Since there was little-to-no visible deformation of the exterior in the actual collapse and since the west penthouse and screen wall collapse timing indicates near-simultaneous interior and exterior failure, it seems clear that the severe deformation of the building's exterior in the NIST model shows that their model does not replicate the actual collapse situation at all. The west penthouse and screen

wall drop starting just prior to that of the exterior is also indicative of controlled demolition, where the interior columns are severed just a fraction of a second prior to the exterior, in order to create an inward pull on the exterior and keep the debris contained within the building's footprint.

References:

- Videos from September 11, 2001, showing the collapse of WTC 7
  http://www.youtube.com/watch?v=LD06SAf0p9A
  http://www.youtube.com/watch?v=AsJQKpnkZ10
- NCSTAR 1-9
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=4PEumpBtuy8



5. CLAIMS OF INVESTIGATING CONTROLLED DEMOLITION WITHOUT TESTING FOR EXPLOSIVE RESIDUES

Technical Statement: In their WTC 7 FAQ, NIST claims to have investigated whether the building could have been brought down by controlled demolition and concluded that it was not. NIST says this even while admitting that they did not test for explosive residues in the rubble, after initially claiming that they "found no evidence of explosives or explosive residues" (while also making the simultaneous claim that no steel was saved from WTC 7 for analysis). Their conclusion is simply based on their claims that there were no sound levels measured which they feel would be indicative of the size of an explosion needed to destroy column 79 and that rigging the building in an undetected way would be difficult.

Belying the NIST argument that it would be difficult to rig WTC 7 without being detected, there was a secret retrofit of the Citibank Tower in New York City in 1978, due to an engineering error that could have allowed the building to topple in 70 mph winds. In that

case, after the problem was realized, secrecy was maintained to keep building occupants and nearby residents from panicking, though there was very little actual risk of danger. An evacuation plan for the building and surrounding area was drawn up, with the intent to implement it if high winds were imminent.

References:

- NIST FAQ on WTC 7, updated 6/27/2012 http://www.nist.gov/el/disasterstudies/wtc/faqs_wtc7.cfm
- The Secret Retrofit of the Citibank Tower in 1978 http://sciencehack.com/videos/view/O_ekNosnieQ
- Pertinent short clips from the documentary film*, 9/11: Explosive Evidence—Experts Speak Out*
    - https://www.youtube.com/watch?v=u6X6ZbZ4H8w
    - https://www.youtube.com/watch?v=fTglkuffB0E
    - https://www.youtube.com/watch?v=Ri9ywmzewRQ

6. CHANGES OF STATEMENTS ON COMPOSITE BEAMS AND SHEAR STUD USE BETWEEN DRAFTS

Technical Statement: NIST's draft WTC 7 report said, "Most of the beams and girders were made composite with the slabs through the use of shear studs. Typically, the shear studs were 0.75 inches in diameter by 5 inches long, spaced 1 to 2 feet on center." However, in the final WTC 7 report, NIST says shear studs were *not* used on the girders. The significance here is that they claim the 13th floor A2001 girder was pushed off its seat at column 79 by thermally expanded beams from the east side of the building. If shear studs had been used on the girder, it would have been impossible for the beams to push the girder off its seat with the column. No drawings are shown in the final report to substantiate this new claim.

The contention is made that the shear studs on the beams are broken due to differential expansion of the steel and concrete, allowing the beams to freely expand and force the now non-shear-studded girder off its seat at column 79, causing floors 13 to 5 surrounding column 79 to collapse, leaving the column without sufficient lateral support and causing it to become unstable and to buckle. However, in some sections of their WTC 7 report, NIST does not heat the concrete, only the steel. Concrete has nearly the same Coefficient of Thermal Expansion (CTE) as steel and would expand and contract at almost the same rate when heated or cooled. There is no analysis or attempt to justify the position that the steel would have heated up to a greater degree than the concrete and produced a differential expansion. No physical testing was done to investigate the actual behavior of the materials involved; only computer modeling was performed, and in some cases without heating the concrete.

References:

- See attached copy of NIST NCSTAR 1-1 (Draft), p. 14 http://web.archive.org/web/20051219234553/wtc.nist.gov/pubs/NISTNCSTAR1-1.pdf
- NCSTAR 1-1A, pp. 49, 50
- NCSTAR 1-9 Vol. 1, pp. 15, 341-360
- NCSTAR 1-9 Vol. 2, pp. 529, 534, 535, 546, 561, 603, 615

7. REFUSING OF FOIA REQUESTS

Technical Statement: A registered structural engineer's Freedom of Information Act (FOIA) request to NIST for calculations and analysis substantiating the walk-off failures of horizontal members from their seats, at columns 79 and 81, was denied in January 2010 by the director of NIST, who claimed that releasing this data "might jeopardize public safety." On the contrary, if it were a peculiar situation that NIST had discovered, it would be the refusal to release this information to the architects and engineers who are tasked with the public's safety that would be jeopardizing that very safety.

References:

- The NIST letter refusing to release calculations and analysis substantiating the walk-off failures at columns 79 and 81 is available at http://cryptome.org/wtc-nist-wtc7-no.pdf
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out* https://www.youtube.com/watch?v=u6X6ZbZ4H8w

ALL THREE BUILDINGS

8. NEGLIGENCE IN SALVAGING STEEL

Technical Statement: At one point, NIST admitted that only 0.25% to 0.50 % of the steel from the Twin Towers was saved for analysis. Later, NIST claimed that none of the steel from WTC 7 was saved for analysis. At another time, NIST mentioned that Dr. John Gross was in the salvage yards and was involved in the selection of pieces of steel to save.

The NIST WTC Tower and WTC 7 reports do not explain why so little steel was saved and, incredibly, in the case of the Twin Towers, was dismissive when forced to admit that the steel saved from the buildings did not show that it had experienced high temperatures, by contending that "the sample size was not sufficient to be representative." Why didn't Dr. Gross save a sufficient sample size? The space required to store the steel would have been insignificant relative to the massive and historic issues to be resolved.

References:

- At 5:00 minutes into this video, Dr. John Gross says he was on the WTC site and in the steel yards early on http://www.youtube.com/watch?v=3SLIzSCt_cg
- NCSTAR 1-3, p. 27
- NCSTAR 1-3, Paragraph 6.6.2, p. 95
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out* https://www.youtube.com/watch?v=xPsVVdV6Dg0

9. IGNORING THE RESULTS OF FEMA 403, APPENDIX C

Technical Statement: NIST did not take the FEMA documentation of melted steel and sulfidation in its Appendix C forensic analysis as being indicative of something that could

have contributed to the collapses. Instead, NIST claims, without a basis, that the damage was caused in the rubble pile, although the extreme temperatures required to melt steel and the presence of sulfidation have no logical mechanism there.

In February 2012 an FOIA request produced three photos, taken during October 2001, showing Dr. John Gross of NIST posing with a heavily eroded WTC 7 beam. These photos contradict Dr. Gross' statements about not witnessing steel that had been subjected to high temperatures. In fact, Dr. Gross was on the team headed by Dr. Jonathan Barnett, who was responsible for discovering, during the FEMA investigation, the WTC 7 beam featured in the Appendix C forensic analysis, which was melted and sulfidated. This is one of the steel beams the ends of which Barnett had previously described as "partially evaporated." Such evaporation required temperatures exceeding 4,000° F.

References:

- FEMA World Trade Center Building Performance Study Appendix C http://www.fema.gov/pdf/library/fema403_apc.pdf
- Pertinent short clip from the documentary film,*9/11: Explosive Evidence—Experts Speak Out* https://www.youtube.com/watch?v=9oVs_94VHk8
- Photo below of NIST WTC 7 report leader John Gross in steel yards with melted and eroded steel

10. INVOLVEMENT IN NOT SAVING STEEL FOR INVESTIGATION

Technical Statement: In their initial draft report on the three building collapses, NIST claims that none of the steel from WTC 7 was saved for analysis. This is disconcerting, considering WTC 7 would have been the first steel-framed high-rise in history to ostensibly completely collapse due to fire.

Alarmingly, in their final report on WTC 7 in November 2008, NIST makes no mention of the fact that no steel was saved from WTC 7 for analysis.

This is confusing, as we now know that Dr. John Gross was involved as early as October 2001 in selecting pieces of steel to save for the NIST investigations into the failures of all three buildings.

References:

- NIST NCSTAR 1-3D (Draft), pp. 271, 273
  http://web.archive.org/web/20060221020101/wtc.nist.gov/pubs/NISTNCSTAR1-3DDraft.pdf
- Pertinent short clip from the documentary film*, 9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=xPsVVdV6Dg0

11. FIRE SIMULATIONS AND DURATIONS ARE EXAGGERATED

Technical Statement: The fire severity and durations shown in the NIST reports do not match the observations in the videos of all three skyscrapers. They are highly exaggerated. The actual fires, particularly in WTC 2, are nearly exhausted, with thick black smoke indicating cooler fires. The WTC 7 fires are few, small, and scattered. On floor 12, the location of the fires that NIST claims to have caused the initiation of collapse due to thermal expansion are shown to be burned out more than one hour prior to the building's fall. Thus they could not have been responsible for WTC 7's destruction, as the expanding beams would have cooled and contracted by then.

References:

- NCSTAR 1-5, 1-5A, 1-5B, 1-5C, 1-5E, 1-5G
- E. Douglas, "The NIST WTC Investigation--How Real Was The Simulation?" *Journal of 9/11 Studies*, Vol. 6, pp. 1-27, December 2006
  http://www.journalof911studies.com/volume/200612/NIST-WTC-Investigation.pdf
- http://www.ae911truth.org/downloads/WTC_fire_sim_comparison_080912c.pdf
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=Q5pydjc9aSU

12. NO DISCUSSION OF THE MOLTEN METAL FOUND IN THE RUBBLE OF THE THREE COLLAPSED BUILDINGS

Technical Statement: Dr. John Gross has denied that there is evidence of molten iron/steel in the rubble of the three collapsed buildings, despite numerous eyewitnesses testifying to this and despite the physical evidence of what have come to be called "meteorites," which are made up of solidified slag from pools of molten iron and steel that were "flowing like lava," according to firefighters. Again, the significance here is that the temperatures which can be achieved by diffuse flame hydrocarbon or office fires range from 600° to a maximum of 1,800° F, which is well below the 2,750° F initial melting temperature of steel and iron.

References:

- Video with John Gross claiming he knows of no one who saw molten metal in the rubble of the three collapsed buildings http://www.youtube.com/watch?v=3SLIzSCt_cg and http://www.youtube.com/watch?v=fs_ogSbQFbM
- Pertinent short clips from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
    - https://www.youtube.com/watch?v=9oVs_94VHk8
    - https://www.youtube.com/watch?v=Ri9ywmzewRQ

13. REFUSAL TO TEST FOR EXPLOSIVE RESIDUE

Technical Statement: NIST has admitted that they did not test for explosives, and their director of public relations is on record saying, "If you are going to test for something that is not there, you are wasting your time and the taxpayers' money." In the oral histories taken down in late 2001 and early 2002 from New York City emergency personnel, there are over 100 individuals who make comments about seeing, hearing, and experiencing explosions.

These oral histories were documented well before NIST started their WTC investigation in September 2002. This testimony should have caused the presumption that there was a good chance explosive residue would be found — and justified testing for it rather than the opposite. On what basis would NIST have presumed that there was little chance of explosive residue to be found and that it would be a waste of time and money?

NIST acknowledges in their response to a Request for Correction submitted by AE911Truth that they are "unable to provide a full explanation of the total collapse." And yet NIST refused to consider the possibility that explosives could have been used to cause the collapses of the Twin Towers — though controlled demolition is consistent with all of the available technical evidence.

References:

- J. Abel, "Theories of 9/11," *Hartford Advocate*, Hartford, Connecticut, January 29, 2008 http://web.archive.org/web/20080430203236/http://www.hartfordadvocate.com/article.cfm?aid=5546
- The September 11 records via *The New York Times* http://graphics8.nytimes.com/packages/html/nyregion/20050812_WTC_GRAPHIC/met_WTC_histories_full_01.html
- G. MacQueen, "118 Witnesses: The Firefighters' Testimony to Explosions in the Twin Towers," *Journal of 9/11 Studies*, Vol. 2, pp. 1-60, August 2006 http://www.journalof911studies.com/articles/Article_5_118Witnesses_WorldTradeCenter.pdf
- Request for Correction of the NIST WTC report http://stj911.org/actions/NIST_DQA_Petition.pdf
- NIST's answer to the above Request for Correction http://www.journalof911studies.com/volume/2007/NISTresponseToRequestForCorrectionGourleyEtal2.pdf
- NIST August 2006 FAQ http://www.nist.gov/public_affairs/factsheet/wtc_faqs_082006.cfm
- Dr. David Ray Griffin's essay, "The Destruction of the World Trade Center: Why the Official Account Cannot Be True" http://911review.com/articles/griffin/nyc1.html
- Pertinent short clips from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
    - https://www.youtube.com/watch?v=u6X6ZbZ4H8w
    - https://www.youtube.com/watch?v=fTglkuffB0E

14. FAILURE TO FOLLOW STANDARD FIRE INVESTIGATION PROTOCOL

Technical Statement: NIST and FEMA did not follow standard procedure for fire and explosion investigations. This is covered in the National Fire Protection Association's investigation standard NFPA 921, Guide for Fire and Explosion Investigations, where it is clearly stated that looking for explosive residues and accelerants is the standard procedure for fire and explosion investigations. NFPA 921 also states that if they are not tested for one should be prepared to explain why they weren't.

NIST is often responsible for generating information from which the NFPA standards are written. Why would the NFPA standard not be followed in this case? NIST has not answered this question publicly.

References:

- National Fire Protection Association, "Guide for Fire and Explosion Investigations," NFPA 921
- Pertinent short clips from the documentary film, *9/11: Explosive Evidence--Experts Speak Out*
    - https://www.youtube.com/watch?v=u6X6ZbZ4H8w
    - https://www.youtube.com/watch?v=Q5pydjc9aSU

THE TWIN TOWERS

15. STRIPPING OF THE FIRE PROOFING IS EXAGGERATED

Technical Statement: NIST claims that the aircraft impact debris in WTC 1 stripped the fireproofing materials from the floor truss assemblies — even on the opposite side of the building from the impact — to the point where the floor assembly steel was then vulnerable to fire. NIST attempted to validate this hypothesis with ballistic firing equipment, firing buckshot and shrapnel at steel plates and bars coated with SFRM (Sprayed on Fire Resistant Material). During the testing, the gun was fired at velocities of approximately 500 ft/s and produced damage to the SFRM, but at one point it misfired and produced a projectile velocity of just 102 ft/s (31 m/s), which resulted in no damage to the SFRM.

WTC 1 was impacted on the north side of the building. NIST claims that the fireproofing was stripped from the trusses on the south side, causing them to sag and pull the south face of the building inward, initiating the collapse. However, NIST's own analysis of the aircraft's deceleration, 0.40 seconds after impacting WTC 1 on the north face, shows the debris field moving at approximately 51 ft/s (15 m/s) as it enters the floor assembly area on the south side of the building. How can NIST justify the aircraft debris damaging the SFRM on the floor assembly steel on the south side of the building when their own testing and analyses seem to rule it out?

References:

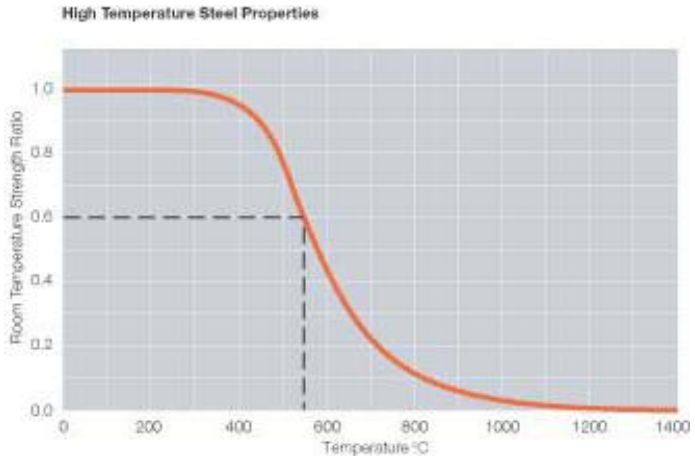
- NCSTAR 1-6A, Appendix C, pp. 263 to 274
- NCSTAR 1-2, pp. 171 to 180

16. PRE-COLLAPSE STEEL TEMPERATURES ARE EXAGGERATED

Technical Statement: NIST's own physical testing for actual steel temperatures on the 236 pieces they selected from the Twin Towers in the areas closest to the hottest fires showed that only three pieces had experienced temperatures above 250° C — a temperature where steel has not yet lost any strength. Of those three, none had experienced temperatures beyond 600° C, the point at which structural steel loses about half its strength. Note this critical zone in the graph below. NIST's own physical evidence shows that the vast majority of the steel had not experienced temperatures where it lost any strength, though in the report NIST claims a large number of steel structural members would have been heated to temperatures of 700° C.

References:

- NCSTAR 1-3C Chapter 6
- NCSTAR 1-3 paragraph 6.6.2, p. 95
- NCSTAR 1-5B Chapter 11
- NCSTAR 1-5G
- *Pertinent short clip from the documentary film, 9*/11: Explosive Evidence—Experts Speak Out https://www.youtube.com/watch?v=c18kPAtkJh0
- Below, chart from Corus Construction showing steel strength at increased temperature compared to room temperature strength



17. TESTED FLOOR ASSEMBLIES DID NOT FAIL

Technical Statement: NIST hired Underwriter Laboratories to perform testing of the Twin Tower floor assemblies per ASTM E119 in a two-hour, 2,000° F fire test. During the tests, the main trusses did not fail — and sagged only 4" after 60 minutes and 6" after 100 minutes, which were the approximate durations of the fires in WTC 2 and WTC 1, respectively. NIST was clearly not using these test results as their basis when they showed the main trusses sagging more than 40" in their models.

References:

- NCSTAR 1-6B, Chapters 4 and 5

- NCSTAR 1-6C
- Anonymous and F. Legge, "Falsifiability and the NIST WTC Report: A Study in Theoretical Adequacy," *Journal of 9/11 Studies*, Vol. 29, pp. 1-20, March 2010 http://www.journalof911studies.com/volume/2010/Falsifiability.pdf

18. INITIATION OF COLLAPSE – "INWARD BOWING" WAS INDUCED ARTIFICIALLY

Technical Statement: The NIST report claims that the collapse of WTC 1 was initiated by the south exterior wall buckling. The report claims that this was due to "inward bowing" and buckling of the exterior columns — alleged to be caused by sagging of the floor trusses. However, the NIST computer model did not show this to occur with natural inputs and sagging floor trusses. To actually cause the perimeter column failure, an artificial lateral load of 5,000 lbs. had to be applied to each perimeter column from the outside of the building. In reality, there was of course no such force available.

NIST claims, in a circular argument, that this artificial lateral load was applied to the exterior columns in an attempt to match the observed inward bowing, even though their model could not produce it naturally with their theory of sagging trusses causing it. It is much more likely that the core columns, which would have been falling after their failure was caused by explosives or incendiaries, would have pulled on the trusses with great force, generating the observed inward bowing of the exterior columns to which the opposite end of the trusses were attached.

References:
- NCSTAR 1-6D, pp. 180, 181, Chapter 5, and Appendix A

19. COLUMN STRESS DUE TO LOAD REDISTRIBUTION IS NOT SUFFICIENT TO CAUSE FAILURE

Technical Statement: The analysis in the NIST WTC report for the columns of the east and west perimeter walls of WTC 1 shows that after a south wall failure, the additional loads on these columns increase their total stress to only about 30% of their yield strength. This amount of stress cannot cause failure. Although this is not stated specifically, it can be deduced, because NIST provides their "in-service load" and the additional load carried due to "redistribution." In spite of this, NIST simply makes the claim that once the south wall buckled, the instability somehow "spread across the rest of the building."

References:
- NCSTAR 1-6, pp. 301, 304
- NCSTAR 1-6D, Chapters 4 and 5

20. NO EXPLANATION GIVEN FOR HORIZONTAL PROPAGATION OF COLLAPSE

Technical Statement: The NIST WTC report acknowledges that it does not provide a technical analysis of the structural behavior of the Twin Towers during the collapse itself.

The report stops its analyses for both towers at the point of collapse initiation where the claim is made that "the tower was poised to collapse." It simply suggests that "global collapse naturally followed" and then depends upon a paper written by Northwestern University civil engineering professor Zdenek Bazant for an explanation of how the collapse could continue (a complex study that was, interestingly, submitted just two days after 9/11/01).

However, Dr. Bazant starts his analysis *after* the upper section of the building has already fallen one story. Since NIST actually stopped their analysis at an alleged south exterior wall failure in WTC 1 and east exterior wall failure in WTC 2, prior to any "fall" at all, this leaves completely unexplained how these partial failures could have propagated *across* the building, to cause the collapses of the full upper sections of the buildings. In fact, what is seen in the videos is quite different from anything modeled, or claimed, by NIST. The videos show a "disintegration" of the initiating zone at the onset of each collapse. The upper 12-story section of the North Tower destroys itself in the first four seconds of the building's collapse — almost in a telescoping internal implosion like a controlled explosive demolition — such that it is not even available as a mass, after the initial four seconds of the "collapse," to act as the "pile driver" propelling the rest of the building down to the ground, as is alleged by NIST and Bazant.

References:

- NCSTAR 1-6D, p. 314
- NCSTAR 1-6, pp. lxvii, lxix, 300, 304, 308, 309, 323
- Slow-motion video from the northwest of WTC 1 collapse initiation http://www.youtube.com/watch?v=y9-owhlIM9k

21. WTC 1 TILT OCCURRED AFTER SYMMETRICAL COLLAPSE FOR AT LEAST TWO STORIES

Technical Statement: The NIST report claims that WTC 1 tilted 8° to the south and then began its descent. There is no analysis provided to back this assertion. Analyses of video by individual researchers have shown only a very small tilt of 1° or less prior to the descent of the upper 12 stories, and only after at least a two-story vertical drop was there a larger tilt of 8° to the south. Most or all of the columns on the 98th floor, where the collapse initiated, must have failed simultaneously in order to allow the initial symmetrical descent at two-thirds of free-fall acceleration, destroying the upper 12-story block in the first four seconds. The only mechanism available for such destruction or failure of columns is timed-sequenced explosives — typical in controlled implosions. This sudden collapse, which could only have been the result of instantaneous column destruction, also refutes the NIST assertion that a south wall failure precipitated a gradual south-to-north failure.

References:

- NCSTAR 1-6D, p. 314
- NCSTAR 1-6, pp. lxvii, 304
- Slow-motion video from the northwest of WTC 1 collapse initiation http://www.youtube.com/watch?v=y9-owhlIM9k

- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out* https://www.youtube.com/watch?v=nC0eQ3_FUs0&list=PLUshF3H0xxH2FFyiA3OZnLA7WfjNxJmcO&index=11

22. NO JOLT – CONTINUOUS ACCELERATION OF COLLAPSE WAS IGNORED

Technical Statement: In his papers, Dr. Zdenek Bazant claims that an "amplified dynamic load" occurred at the impact between the Twin Towers' falling upper section and the structure below, and that this is what caused the reserve strength of the structure below to be overcome by the otherwise insufficient static load above. However, by definition, the generation of an amplified load requires a deceleration upon impact, and a velocity loss would be a necessary result of such deceleration.

Since Dr. Bazant's first paper was written and published, the rate of fall of the upper section of WTC 1 has actually been measured by a number of individual researchers. Dr. Bazant initially neglected this simple analysis in his paper submitted to the *Journal of Engineering Mechanics* on Sept. 13, 2001, only two days after the event. These measurements all show that the upper section never decelerates and never experiences velocity loss. In fact, the upper section of WTC 1 continuously accelerates at approximately 64% of the rate of gravity. By contrast, building demolitions that use the Verinage technique, where gravity alone is used to demolish the structure below after a fall of a couple of stories instigated by mechanical means such as hydraulic rams breaking the columns, a clear deceleration and velocity loss is observed when the upper section impacts the lower.

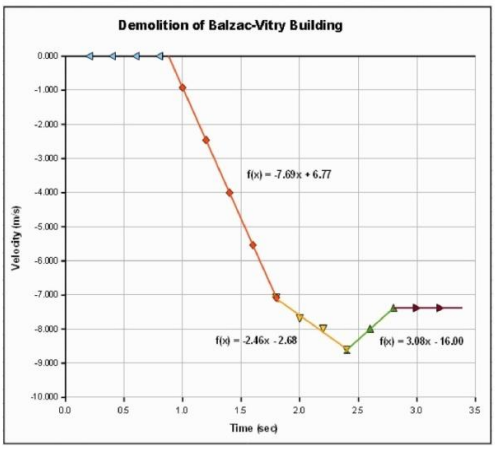
All of Dr. Bazant's papers use free-fall acceleration through the first story and the maximum design load mass of the falling upper section. Neither of these are representative of the actual situation, so this causes an embellishment of the upper section's kinetic energy in his papers. He also significantly underestimates the energy dissipation due to column deformation during impact. Dr. Bazant has been made aware of these problems with his hypothesis, and in January 2011 he had a paper published by the *Journal of Engineering Mechanics* where, with a graduate student as his co-author, he tried to claim the deceleration would not be observable. This paper has been shown to use fraudulent values for both inertial and column deformation energy losses. However, NIST continues to use his work.

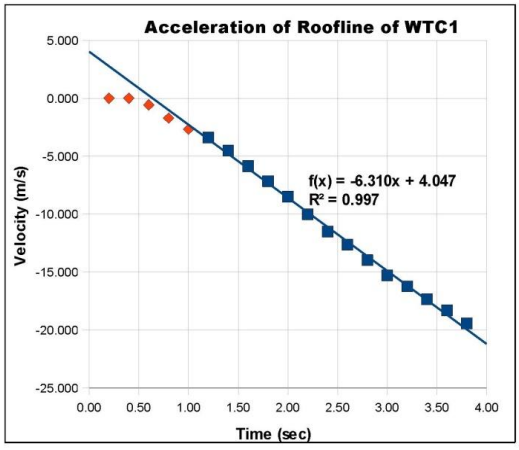
Recent research using test results *vs*. the three-hinge method for estimating energy dissipation caused by plastic hinge formation in axially-loaded buckling columns has shown the three-hinge method to significantly underestimate it — and this is without using fraudulently low column plastic moment (Mp) values, as Le and Bazant did in their paper. This research provides even more support for the contention that the lack of deceleration in the descent of WTC 1 is a severe impediment for a natural-collapse scenario.
The velocity graphs of the upper sections of both a building demolished by the Verinage technique and that of WTC 1 are shown below. Note the abrupt reduction of velocity in the *natural* force collapse using the Verinage demolition method on the Balzac-Vitry building in France *vs.* the *continuous* acceleration of WTC 1. The columns in WTC 1 must have been

"removed" prior to impact. This can only be done by explosives — for which there is abundant evidence, as outlined in the documentary film, *9/11: Explosive Evidence—Experts Speak Out*.

References:

- NCSTAR 1-6, p. 323
- Z. Bazant and Y. Zhou, "Why Did the World Trade Center Collapse?—Simple Analysis," *Journal of Engineering Mechanics*, pp. 1-7, January 2002 http://www.civil.northwestern.edu/people/bazant/PDFs/Papers/405.pdf
- G. MacQueen and T. Szamboti, "The Missing Jolt: A Simple Refutation of the NIST/Bazant Collapse Hypothesis," *Journal of 9/11 Studies*, Vol. 24, pp. 1-27, January 2009 http://www.journalof911studies.com/volume/2008/TheMissingJolt7.pdf
- D. Chandler, "Destruction of the World Trade Center North Tower and Fundamental Physics," *Journal of 9/11 Studies*, Vol. 28, pp. 1-17, February 2010 http://www.journalof911studies.com/volume/2010/ChandlerDownwardAccelerationOfWTC1.pdf
- "9/11 – North Tower Acceleration," David Chandler http://www.youtube.com/watch?v=28ds5sFvTG8
- Video: "What a Gravity-Driven Demolition Looks Like" https://www.youtube.com/watch?v=NiHeCjZlkr8
- Jia-Liang Le and Z. Bazant, "Why the Observed Motion History of the World Trade Center Towers is Smooth," *Journal of Engineering Mechanics*, pp. 82-84, January 2011 http://www.civil.northwestern.edu/people/bazant/PDFs/Papers/405.pdf
- T. Szamboti and R. Johns, "ASCE Journals refuse to correct fraudulent paper they published on WTC collapses," Letter in *Journal of 9/11 Studies*, September 2014 http://www.journalof911studies.com/resources/2014SepLetterSzambotiJohns.pdf
- R.M. Korol and K.S. Sivakumaran, "Reassessing the Plastic Hinge Model for Energy Dissipation of Axially Loaded Columns," *Journal of Structures*, Vol. 2014, Article ID 795257, 7 pages, February 2014 http://www.hindawi.com/journals/jstruc/2014/795257
- Pertinent short clips from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  - https://www.youtube.com/watch?v=nC0eQ3_FUs0
  - https://www.youtube.com/watch?v=CYCuAa0eFKg
- Two velocity charts below





23. NO PILE DRIVER IS OBSERVED IN VIDEOS

Technical Statement: NIST claims that the "upper section" of each of the Twin Towers crushed the lower section. However, video analysis clearly reveals that the upper section's structure (above the point of jet plane impacts) disintegrated significantly prior to any *crushing* of the lower block. After this point some other set of forces must be destroying the buildings. A closer look at the videos reveals those sources to be a series of explosions racing down the corners of the building, under the zone of destruction, at a rate equal to about two-thirds of free-fall acceleration.

References:

- NCSTAR 1-6D, p. 314
- Slow-motion video of WTC 1 collapse initiation
  http://www.youtube.com/watch?v=y9-owhllM9k
- Video: "Acceleration + Serendipity" by David Chandler
  http://www.youtube.com/watch?v=i9M1iufUAVA
- Pertinent short clips from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  - https://www.youtube.com/watch?v=nC0eQ3_FUs0
  - https://www.youtube.com/watch?v=fTglkuffB0E

24. COLUMN LOADS WERE CALCULATED FOR WORST CASE, NOT ACTUAL IN-SERVICE LOADS

Technical Statement: NIST calculates the DCR (Demand-to-Capacity Ratio, which is the reciprocal of factor of safety) of the tower columns for a worst-case design load, not the actual in-service load. As a result, the reader is left with the impression that the tower columns were less robust relative to the load they were carrying than they were in reality. A failure analysis normally uses the actual in-service load and provides the actual DCR, or factor of safety, during failure.

References:

- NCSTAR 1-2A
- NCSTAR 1-6D
- Released core column cross sectional and material strength data
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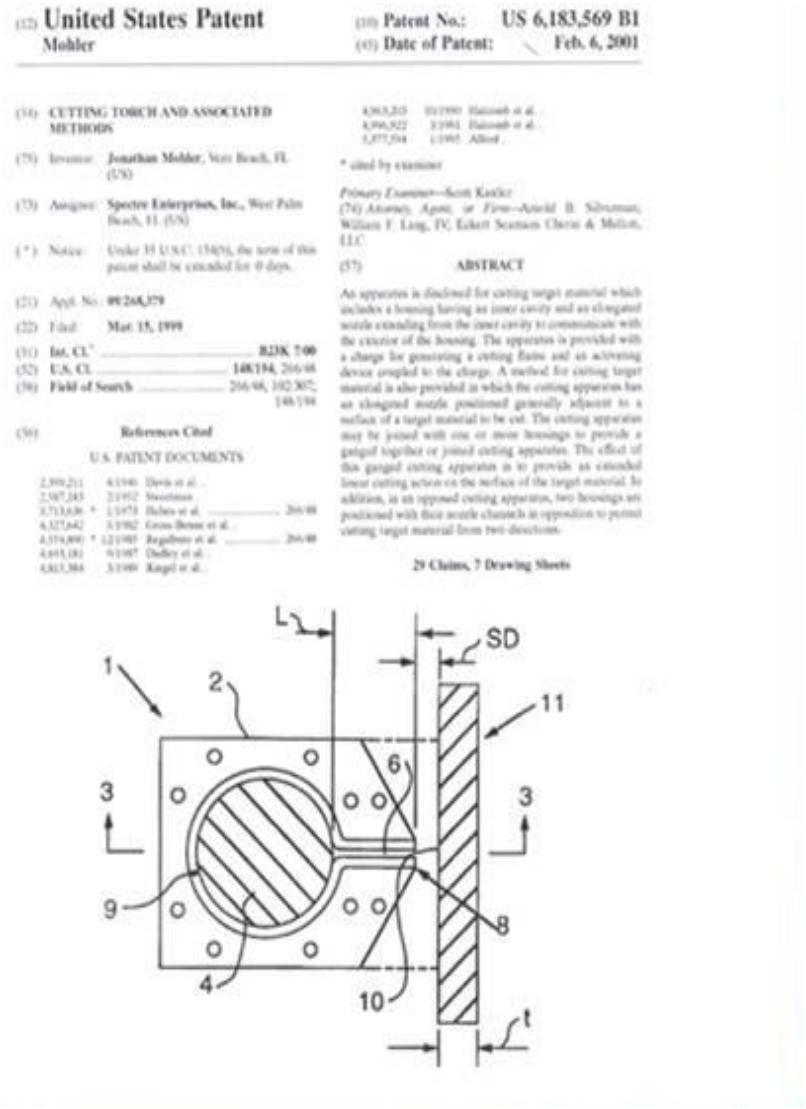
- Mass analysis of WTC 1
  http://www.journalof911studies.com/volume/200703/GUrich/MassAndPeWtc.pdf
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=nC0eQ3_FUs0

25. MOLTEN METAL OBSERVED POURING OUT OF THE CORNER OF WTC 2 REMAINS UNRESOLVED

Technical Statement: NIST has not adequately explained the yellow-orange fluorescing molten metal observed pouring out of the northeast corner of the 78th floor of WTC 2 shortly before its collapse. In a FAQ article, they claimed that it could have been aluminum.

However, when it was explained to them that aluminum fluoresces as a silvery color, they postulated that the aluminum could have been mixed with organics to give it the yellow-orange glow. When physics professor Dr. Steven Jones performed an experiment by adding organics to molten aluminum, they did not mix. The organics consistently floated to the top, no matter how thoroughly they were mixed into the molten aluminum. The significance here is that the maximum temperatures which can be achieved by diffuse flame hydrocarbon (jet fuel or office fires) is in the range of 600° to a maximum of 1,800° F, well below the 2,750° F minimum melting temperature of steel or iron (which *does* fluoresce yellow-orange in its molten state). Further chemical tests by Dr. Jones on samples of solidified molten metal slag from the WTC site found that it was indeed molten iron — and that the molten iron had the chemical evidence of thermite in it. Thermite is an incendiary designed to cut through steel like a hot knife through butter — particularly when used in a patented cutter charge device designed to eject liquid molten iron in just milliseconds, as described in the text of the patented thermite cutter charge device shown below.



(12) **United States Patent**
Mohler

(10) **Patent No.: US 6,183,569 B1**
(45) **Date of Patent: Feb. 6, 2001**

(54) **CUTTING TORCH AND ASSOCIATED METHODS**

(75) Inventor: **Jonathan Mohler**, Vero Beach, FL (US)

(73) Assignee: **Spectre Enterprises, Inc.**, West Palm Beach, FL (US)

(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) Appl. No.: **09/268,379**

(22) Filed: **Mar. 15, 1999**

(51) **Int. Cl.**[7] **B23K 7/00**

(52) **U.S. Cl.** **148/194**; 266/48

(58) **Field of Search** 266/48, 102 307, 148/194

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Primary Examiner—Scott Kastler
(74) *Attorney, Agent, or Firm*—Arnold B. Silverman; William F. Long, IV; Eckert Seamans Cherin & Mellott, LLC

(57) **ABSTRACT**

An apparatus is disclosed for cutting target material which includes a housing having an inner cavity and an elongated nozzle extending from the inner cavity to communicate with the exterior of the housing. The apparatus is provided with a charge for generating a cutting flame and an activating device coupled to the charge. A method for cutting target material is also provided in which the cutting apparatus has an elongated nozzle positioned generally adjacent to a surface of a target material to be cut. The cutting apparatus may be joined with one or more housings to provide a gasgel together or joined cutting apparatus. The effect of this gasgel cutting apparatus is to provide an extended linear cutting action on the surface of the target material. In addition, in an opposed cutting apparatus, two housings are positioned with their nozzle channels in opposition to permit cutting target material from two directions.

29 Claims, 7 Drawing Sheets

There has been no further response from NIST on this issue.

References:

- Videos of molten metal pouring from the northeast corner of WTC 2 moments before collapse
  https://www.youtube.com/watch?v=aMBTp27k_wE
  https://www.youtube.com/watch?v=LivXaOguXRA
- Question #21 in NIST WTC FAQ
  http://www.nist.gov/el/disasterstudies/wtc/faqs_wtctowers.cfm
- Pertinent short clip from the documentary film, *9/11: Explosive Evidence—Experts Speak Out*
  https://www.youtube.com/watch?v=9oVs_94VHk8

ARCHITECTS & ENGINEERS for 9/11 TRUTH

Focus On:
The NIST Reports

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The NIST Analyses: A Close Look at WTC 7

by Ronald H. Brookman, SE

Preface

The following comments and questions describe why I consider the Final Reports NCSTAR 1A, 1-9 and 1-9A to be incomplete, inconsistent and erroneous. Sincere thanks are due to Chris Sarns, Gregg Roberts, David Chandler and Dwain Deets for their helpful comments. I hope many others will spend the time to evaluate the NCSTAR reports carefully, follow the references herein, and draw their own conclusion. Public disclosure of one's convictions is always a risk, but silent acceptance is not an option. Permission is granted to reprint or quote excerpts freely and solely without charge.

Introduction

Many architects, engineers and others have never seen the rapid descent of the 47-story World Trade Center Building Seven (WTC 7) into its footprint in less than seven seconds on the afternoon of September 11, 2001. This unprecedented event—the first steel-frame building in history to collapse suddenly and completely following an uncontrolled office fire—was captured on film from various angles. Engineers at the National Institute of Standards and Technology (NIST) performed extensive thermal and structural analyses of the building in an attempt to explain the complete collapse in terms of impact damage, fire damage, column buckling and progressive collapse. This extraordinary effort by NIST provides a close-up view inside WTC 7 during the final hours, minutes and seconds before its precipitous fall. But the discovery of extreme temperatures as well as residues of molten iron and highly reactive pyrotechnic material in the World Trade Center debris[1] [2] [3] invalidates the NIST conclusions, and further independent investigation is required.

The purpose of this article is to closely examine the contents of the final National Construction Safety Team Act Report (NCSTAR)[4] numbers 1A, 1-9 and 1-9A in an effort to understand the NIST

[1] Niels H. Harrit et al., "Active Thermitic Material Discovered in Dust from the 9/11 World Trade Center Catastrophe", The Open Chemical Physics Journal, 2009, Volume 2.

[2] Steven E. Jones et al., "Extremely High Temperatures during the World Trade Center Destruction", Journal of 9/11 Studies, Volume 19, January 2008.

[3] Jonathan Barnett et al., FEMA 403, World Trade Center Building Performance Study: Data Collection, Preliminary Observations, and Recommendations, May 2002, Appendix C, "Limited Metallurgical Examination".

[4] All of the NCSTAR reports can be found at http://wtc.nist.gov.

Architects & Engineers
for 9/11 Truth

2342 Shattuck Ave.
Suite 189
Berkeley, CA 94704
Tel. (510) 292-4710

Fax (925) 938-1489
info@AE911Truth.org
www.AE911Truth.org

hypotheses, methods of analysis and conclusions. Careful examination is necessary to verify how NIST has fulfilled its duty to the public as required by the National Construction Safety Team (NCST) Act of 2002.[5] One of the duties charged to NIST under this law is to establish the most likely technical cause of the building failure; NIST has succeeded in casting serious doubt on the credibility of its conclusions by focusing solely on the analytical aspects and by ignoring relevant physical and testimonial evidence. This article does not constitute proof that explosives were present in the building. Simply demonstrating that NIST has not fulfilled its mandatory duty to the public is sufficient grounds to call for a new investigation of the incident, and any meaningful investigation must account for all of the relevant evidence. More than a year has elapsed since the final reports were issued in November 2008, and the goal of this article is to establish agreement—supported by facts—that a new investigation is necessary to explain the complete destruction of WTC 7.

Anyone reading this article knows the events of 9/11 have changed our lives. The "global war on terror" was immediately declared, and wars in Afghanistan and Iraq were initiated. These wars continue—more than eight years later—with no clear goal and no end in sight. Many citizens worldwide consider the "Muslim hijacker" conspiracy theory promoted by media and government sources to be false, and there is still no hard evidence to confirm its veracity. Many citizens worldwide also know that an understanding of 9/11 is essential to achieving a peaceful resolution to current conflicts. This effort is dedicated to the thousands of innocent victims of 9/11 and their families including citizens of Iraq and Afghanistan, the first responders, survivors, witnesses, friends and colleagues who continue to search for honest answers to extremely difficult questions.

The NIST Hypothesis

The NIST authors have not proven their hypothesis regarding the fate of WTC 7. The summary report allegedly "describes how the fires that followed the impact of debris from the collapse of WTC 1 (the north tower) led to the collapse of WTC 7;"[6] the report actually describes the NIST hypothesis for a fire-induced collapse of WTC 7 based on complex computer simulations. The NIST conclusions are not based on physical evidence that can be tested and confirmed by others. NIST frequently uses the term "probable collapse sequence"[7] to describe their hypothesis, but their report never quantifies this probability. A preliminary study of WTC 7 published by the Federal Emergency Management Agency (FEMA)[8] concluded that the best hypothesis of a fire-induced collapse had only a low probability of occurrence, so the NIST conclusions still reflect a significant degree of uncertainty.

Various hypotheses were considered for the initiation of complete global collapse. The possibilities considered by NIST included (1) a fire-induced local failure leading to vertical and horizontal failure progression throughout the entire structural system, (2) a fire-induced failure from burning diesel fuel leading to complete

[5] U.S. Congress, H.R. 4687, "National Construction Safety Team Act", 107th Congress, 2nd Session, January 2002.

[6] S. Shyam Sunder et al., NIST NCSTAR 1A, Final Report on the Collapse of World Trade Center Building 7, Washington: U.S. Government Printing Office, November 2008, p. xv.

[7] NCSTAR 1A, p. xv.

[8] Ramon Gilsanz et al., FEMA 403, Ch. 5, "WTC 7", p. 5-31.

global collapse, and (3) a blast-induced demolition scenario. According to NIST:

> *The leading hypothesis for the failure sequence that characterized the initial local failure was based on fire-induced failure events in the tenant floors.*[9]

A heat-induced column failure hypothesis was quickly ruled out after concluding the fires were not hot enough for the duration of time required to reduce the steel strength by 50 percent.

> *Therefore, it would not have been possible for a building contents fire to have heated a massive, insulated column such as Column 79 to the point of failure.*[10]

The NCST Act was signed into law in 2002, and it specifies NIST's responsibility to "establish the likely technical cause or causes of the building failure;" the focus of the WTC 7 investigation as defined by NIST is not the same as establishing the likely cause of collapse.

> *The challenge was to determine if a fire-induced floor system failure could occur in WTC 7 under an ordinary building contents fire.*[11]

In its brief dismissal of the controlled demolition scenario, NIST argues that careful preparation of columns for demolition could not be accomplished without detection, and "Controlled demolition usually prepares most, if not all, interior columns in a building with explosive charges, not just one column."[12] While NCSTAR authors imply that demolition of multiple columns would be required and unlikely, the same authors conclude that the buckling failure of a single column was sufficient to trigger a complete progressive collapse of the entire building. If a single-column failure could bring the entire building down, it does not matter how that column was removed. If a man-made collapse required extensive preparation to deliberately break every column on multiple floors, then a "natural" single-column failure could not possibly cause rapid, symmetrical, and complete global collapse—straight down in classic controlled-demolition style.

> *Observations for WTC 7 do not match the typical sequence of events for a controlled demolition.*
>
> *This collapse sequence is inconsistent with a typical controlled demolition…*[13]

There are thousands of alert and well-informed citizens worldwide, including scientists, demolition experts, architects and structural engineers, who disagree with the preceding statements. Furthermore, the collapse sequence referred to by NIST is the one taking place during their computer simulation—a sequence of events invisible to witnesses and, to a significant extent, under the control of NIST analysts. There is no need for further speculation; an independent investigation of the incident is required.

Only *fire-induced floor-system failure* was seriously considered by NIST as the cause of collapse initiation. Abundant and well-documented evidence suggesting the controlled demolition of WTC 7—including news videos,

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[9] Therese P. McAllister et al., NIST NCSTAR 1-9, Structural Fire Response and Probable Collapse Sequence of World Trade Center Building 7, Washington: U.S. Government Printing Office, November 2008, p. 323.

[10] NCSTAR 1-9, p. 330.

[11] NCSTAR 1-9, p. 331.

[12] NCSTAR 1-9, pp. 614-15.

[13] NCSTAR 1-9, p. 615.

witnesses hearing explosions, foreknowledge of the collapse, first responder reports of molten metal in the debris, extreme surface temperatures recorded by NASA thermal imaging for weeks following the collapse, and evidence of melted structural steel—was simply ignored.[14] It is difficult to imagine how anyone interested in establishing the likely technical cause of the building failure could ignore evidence of a "liquid eutectic mixture containing primarily iron, oxygen and sulfur formed during this hot corrosion attack on the steel."[15] This was obviously not caused by an ordinary fire consuming only building contents.

Building Code Issues

NIST discusses building code requirements in effect at the time of construction.[16] The minimum fire-rating requirement for WTC 7 was stated: "For a sprinklered building, a Type 1-C classification required a 2 h fire resistance rating on the columns and a 1.5 h fire resistance rating on the floors."[17] In the same paragraph NIST admits "In this report, Type 1-C classification was assumed, but the actual classification may have been type 1-B." The Type 1-B classification—more restrictive than Type 1-C—required a threehour rating on the columns and a two-hour rating on the floors including girders, beams and the underside of metal deck. Drawings, specifications and spray-on fireproofing thickness measurements all indicated a Type 1-B classification for WTC 7. NIST engineers, however, assumed a less fire-resistant construction classification when all documentation indicated otherwise.

NIST recommended several improvements to building codes including a list of characteristics for infrequent fires that should be considered in structural design.

> *…historical data suggests that infrequent fires which should be considered in structural design involve: ordinary combustibles and combustible load levels, local fire origin on any given floor, no widespread use of accelerants, consecutive fire spread from combustible to combustible, fire-induced window breakage providing ventilation for continued fire spread and accelerated fire growth, concurrent fires on multiple floors, and active fire protection systems rendered ineffective. The fires in WTC 7 involved all of these.*[18]

The statement that fires in WTC 7 included no widespread use of accelerants is unsubstantiated. Extensive documentation in the NCSTAR reports does not indicate that NIST ever tested debris samples for accelerants, incendiary or pyrotechnic compounds following the WTC 7 fires, and such an obvious omission casts serious doubt on their conclusions. In fact, as late as 2009, NIST defended its decision not to test any of the WTC debris for explosive residues claiming that "such testing would not necessarily have been conclusive."[19] Yet such testing might have *been* conclusive. While the National Fire Protection Association publication "NFPA 921: Guide for Fire and Explosion Investigations" counsels caution in interpreting the results of such testing, it does *not* state that such tests are not required if the results *might* be inconclusive. NIST thus chose to remain willfully ignorant as to

[14] See http://www.ae911truth.org for an excellent overview of the evidence.

[15] Barnett et al., FEMA 403, Appendix C, p. C-1.

[16] NCSTAR 1-9, p. 11.

[17] NCSTAR 1-9, p. 12.

[18] NCSTAR 1A, p. 64.

[19] Catherine S. Fletcher, "Letter in response to request for corrections," Journal of 9/11 Studies, July 2009, http://journalof911studies.com/volume/2007/NISTresponseToRequestForCorrectionGourleyEtal2.pdf.

the presence of detectable explosive residues. Its rationale seems flawed, if not disingenuous.

Current building codes require structural design for life safety and stability under normal use and some extreme loading conditions. NIST contends that "current model building codes do not require that buildings be designed to resist progressive collapse."[20] Progressive collapse is defined as "the spread of local damage from a single initiating event, from structural element to element, eventually resulting in the collapse of an entire structure or a disproportionately large part of it."[21] An extensive code change titled "Disproportionate Collapse" was proposed in response to NIST's recommendations, but it was not adopted into the 2009 International Building Code (IBC). *Progressive collapse* has now become the cliche explanation for all three World Trade Center collapses, but this cannot account for the chemical composition of the debris.

Lateral Ejections from WTC 1

Thousands of people witnessed World Trade Center Tower 1 (WTC 1) collapse suddenly and completely in 10-15 seconds following impact and the subsequent fire. Ample visual evidence is available in the form of photographs and videos taken on 9/11/01, including numerous photographs of the WTC 1 destruction.[22] NIST reports:

> *When WTC 1 collapsed at 10:28:22 a.m., most of the debris landed in an area not much larger than the original WTC 1 building footprint. However, some fragments were forcibly ejected and traveled distances up to hundreds of meters.*[23]

The FEMA report clearly states: "The debris field extended as far as 400-500 feet [120-150 meters] from the tower base."[24] Figure 2-23 of the FEMA report shows an aerial photograph where a significant amount of debris—certainly more than a few fragments—from each tower landed up to a hundred meters away from the tower's base. The NIST discussion of damage caused to WTC 7 by flying debris from WTC 1 includes the following statements.

> *...several substantial pieces of debris were expelled outward toward WTC 7 from the main cloud of the falling material.*[25]

> *...the exterior walls of the towers were constructed from preassembled steel panels consisting of three story columns joined by spandrels to form a 3.0 m wide x 11.0 m high (10 ft x 36 ft) wall section.*[26]

> *The appearance of the falling object in Figure 5-41 suggests that it was formed from at least one panel section.*[27]

A kinematic analysis of this projectile was performed by physics instructor David S. Chandler.[28] His calculations reveal an initial horizontal velocity component of over 70 miles

[20] NCSTAR 1A, p. 60.

[21] NIST, "Questions and Answers about the NIST WTC 7 Investigation (Updated 12/18/2008)," http://www.nist.gov/public_affairs/factsheet/wtc_qa_082108.html.

[22] NCSTAR 1-9, Ch. 5, Fig. 5-40—5-46, pp. 131-40.

[23] NCSTAR 1A, p. 16.

[24] Ronald Hamburger et al., FEMA 403, Ch.2, "WTC 1 and WTC 2", p. 2-27.

[25] NCSTAR 1-9, p. 130.

[26] NCSTAR 1-9, p. 133.

[27] NCSTAR 1-9, p. 133.

[28] David S. Chandler, "Another High Speed Ejection from WTC 1", See http://www.youtube.com/watch?v=djwBCEmHrSE.

per hour (nearly 32 meters per second.) Other steel panels were thrown laterally from WTC 1 up to 500 feet (150 meters) to impact the World Financial Center across West Street. The NIST report does not explain the lateral force or energy source capable of hurling a perimeter column/spandrel unit weighing at least 6,000 pounds to impact WTC 7. NIST, therefore, has not established the likely cause of initial damage to WTC 7 on 9/11/01.

Eyewitness Observations

The NIST account of eyewitness observations contains several glaring contradictions. The following statements imply those remaining inside WTC 7 at 10:30 a.m. had no intention of leaving.

> *By the time WTC 2 collapsed at 9:59 a.m., all the building occupants who intended to leave WTC 7 had done so.*[29]

> *NIST was unable to find any evidence that, by approximately 10:30 a.m., any of the original occupants who intended to leave WTC 7 had not already done so (Chapter 7).*[30]

The preceding statements are false considering the following testimonial evidence.

> *Investigation interviews indicated that this window was broken out by people who were trapped on this floor when WTC 1 collapsed (Chapter 6). Video clips in the database show one of these people inside an open window (8-42A) on the eastern edge of the north face.*[31]

> *As all of the emergency responder restructuring operations were underway, three people became temporarily trapped inside WTC 7. Two New York City employees had gone to the OEM Center on the 23rd floor and found no one there.*[32]

Not everyone had evacuated WTC 7 by the time WTC 1 collapsed. WTC 7 interview numbers 2041604 and 1041704 from 2004 are cited regarding the two New York City employees. The WTC 7 interviews listed in the NIST report have not been released, but Dylan Avery's interview with Barry Jennings, who was trapped inside WTC 7 when both of the Twin Towers collapsed, is available.[33] His personal experience on 9/11 included explosions inside WTC 7 prior to the collapse of WTC 1. This indicates, again, that NIST has not established the likely cause of initial structural damage to WTC 7.

Impact Damage to WTC 7

The structural damage described by NIST is attributed to flying debris from WTC 1 which was located over 300 feet (90 meters) to the south of WTC 7. The location and extent of damage is especially significant because the horizontal progression of failures during the global collapse sequence reported in NCSTAR 1-9 and 1-9A depends on significant interior damage to the western core structure, even though NIST clearly states that significant damage to the core framing was unlikely. Figures 5-92 through 5-101[34] graphically show the extent of impact damage based on visual data. NIST concludes the following in the summary of debris damage to

[29] NCSTAR 1A, p. 16.
[30] NCSTAR 1-9, p. 297.
[31] NCSTAR 1-9, p. 180.
[32] NCSTAR 1-9, p. 298.
[33] Dylan Avery, "Barry Jennings Uncut", See http://www.prisonplanet.com/barry-jenningsuncut.html.
[34] NCSTAR 1-9, pp. 183-87.

> *...it is likely that the structural damage (steel and floor slabs) did not penetrate beyond the perimeter of the building core.*[35]

> *...there was relatively little damage to the interior of WTC 7.*[36]

> *WTC 7 withstood debris impact damage that resulted in seven exterior columns being severed...*[37]

> *The structural damage to WTC 7 was primarily located at the southwest corner and adjacent areas of the west and south faces, on Floors 5 through 17. Severed columns were located between Floors 7 and 17 on the south face (six columns) and the west face (one column) near the southwest corner.*[38]

> *The core columns and girders were assumed to be structurally undamaged.*[39]

This summary of structural damage due to debris impact indicates no damage to floor framing in the western core. The following statement regarding the analysis of debris impact and collapse progression from east to west through the core structure demonstrates the contradiction between statements based on visual data and statements based on the analytical model.

> *In the analysis with debris impact damage, the core framing damage on the west side resulted in a more rapid failure of the west interior columns in the last stages of the horizontal progression.*[40]

NCSTAR 1-9 Section 12.4.2 is titled "Building Response to Debris-Impact Damage." This section, however, does not say how the debris-impact damage was estimated. A graphical summary of vertical displacements following application of the impact damage is shown, but there is no discussion of the extent of damaged framing and connections assumed in the analysis. Figure 12-42 shows a "Failure of cantilevered floor framing in debris impact zone, due to accumulated damage in connections."[41] This occurs primarily in line with columns 67-69 (incorrectly labeled 67- 75). Figures 12-48, 12-49 and 12-52 through 12-55[42] also show internal floor failures at the western core around columns 67-69. Finally, Figure 12-57 shows a "Secondary collapse in western core due to early debris damage."[43] The buckling failure of the “Group 7" columns 59, 62, 65 and 68 contradicts the impact damage estimates in NCSTAR 1-9 Chapter 5 as shown in figures 5-92 through 5-101. So what was the source of the western core framing damage that helped the core collapse? The following clue still does not explain this mystery.

> *Damage to the western core developed early in the initialization process as a result of the WTC 1 debris impact damage.*[44]

Figure 4-39[45] shows what appear to be floor

[35] NCSTAR 1A, p. 16.
[36] NCSTAR 1A, p. 16.
[37] NCSTAR 1A, p. 47.
[38] NCSTAR 1A, p. 50.
[39] NCSTAR 1-9, p. 182.
[40] NCSTAR 1A, p. 43.
[41] NCSTAR 1-9, p. 573.
[42] NCSTAR 1-9, pp. 578-83.
[43] NCSTAR 1-9, p. 584.
[44] Robert MacNeill et al., NIST NCSTAR 1-9A, Global Structural Analysis of the Response of World Trade Center Building 7 to Fires and Debris Impact Damage, Washington: U.S. Government Printing Office, November 2008, p. 83.
[45] NCSTAR 1-9A, p. 94.

beams that are severed at mid span, and these beams appear to be supported only by the girder along the southwestern core perimeter. These cantilever beams were noted to cause girder connection failures at column 69 leading to column buckling, but it is not likely that falling debris would sever steel beams as shown in NCSTAR 1-9A Figure 4-39. The questions remain: does the structural model input data correspond to damage estimates documented in NCSTAR 1-9 Chapter 5, and is the input data realistic?

Fires

NIST states "The fires in WTC 7 were ignited as a result of the impact of debris from the collapse of WTC 1,"[46] but this remains an assumption because there was never a basic fire investigation to determine the exact source or nature of the fires. There were fires reported in WTC 7 after the debris cloud cleared,[47] but these accounts do not pinpoint the initial source of fire. NIST admits that the source of the fire is unknown.

> *The specific ignition processes are not known, e.g., whether from flaming brands, electrical shorts, etc.*[48]

What other possibilities are included in the "etcetera" category? Was arson a possibility? How about evidence of incendiary or pyrotechnic materials found in the debris? Why has NIST neglected to investigate these possibilities? It is apparent that this type of criminal investigation was declared "beyond the scope" of the WTC 7 study, but even NIST cannot determine the most likely cause of building failure without a complete accounting of the facts.

NIST describes the fire simulations performed using their Fire Dynamics Simulator (FDS). The purpose of the fire dynamics simulation is to model the growth, spread and temperature distribution of the fire. The Overview[49] provides no real evidence—photographic, eyewitness or otherwise—leading to a conclusion that the collapse of WTC 1 started the fires on floors seven through nine and 11 through 13. Calculations performed for WTC 7 were similar to those performed for the Twin Towers, but NIST admits "the details of these fires are not as precise as for the fires in the towers."[50] The uncertainty of the calculations based on little visual or other evidence is implied.

> *...the ignition and early course of the fires were unknown because they were presumed to have occurred in the damaged and heavily smoke shrouded southern portion of the building.*[51]

Regarding the spread of fire on the 12th floor, NIST says "The floor plan suggests that fire may have spread onto the east face from the south by moving along a corridor."[52] Corridors in office buildings have practically no combustible materials, so this assumption may be inconsistent with the calculations. Additional photographs and statements magnify the uncertainty in the NIST prediction of fire dynamics. For example the northeast corner of WTC 7 was photographed with the camera facing south at around 4:00 p.m. on 9/11/01. In NIST's words "...there is no indication of fires burning on

[46] NCSTAR 1A, p. xxxvi.
[47] NCSTAR 1-9, p. 301.
[48] NCSTAR 1-9, p. 47.
[49] NCSTAR 1-9, p. 361.
[50] NCSTAR 1-9, p. 362.
[51] NCSTAR 1-9, p. 377.
[52] NCSTAR 1-9, p. 200.

the east side of the 12th floor at this time."[53] The north face at floors 10 through 14 was also photographed at around 4:38 p.m. In NIST's words "All of the visible windows on the 12th and 13th floors are open in Figure 5-149. There is no indication of fire at these locations on either floor."[54] Indeed, all the windows appear dark. NIST also states "Closer inspection of Figure 5-142 reveals what appears to be a relatively light plume of white smoke rising from near the top of the louvers that spanned the 5th and 6th floors on the east face."[55] According to NIST, however, "The floors below Floor 7…did not heat significantly due to the absence of fire activity."[56] So what was the source of the white smoke from below floor seven?

Gas temperatures predicted by the FDS were applied to the 16-story ANSYS structural model and the 47-story LS-DYNA model via the Fire Structure Interface (FSI). Case A temperatures were obtained directly from the fire-dynamics calculations, Case B temperatures were increased 10 percent above Case A, and Case C temperatures were decreased 10 percent below Case A.

> *Given the limited visual evidence, the Investigation Team estimated, using engineering judgment that a 10 percent change was within the range of uncertainty in the extent and intensity of the fires.*[57]
>
> *A 10 percent increase or decrease in gas temperatures resulted in a roughly 30 percent increase or decrease in the heat flux to structural members.*[58]

Engineering judgment is a useful tool, and this enables us to assume Case C temperatures are equally likely as Case A or Case B temperatures. Also by engineering judgment, a 30 percent increase or decrease in heat transfer to structural members is a reasonable approximation based on the probabilistic nature of the NIST analyses. All three cases should have an equal statistical probability considering the fact that Case B and Case C were derived by engineering judgment as a reasonable representation of reality.

The 16-story ANSYS model was subjected to the Case A temperatures, as well as 10 percent higher Case B temperatures and 10 percent lower Case C temperatures. All three cases resulted in similar structural damage to the ANSYS model except the failure time required, as expected, was shorter for the higher Case B temperatures than the failure time required for the lower Case C temperatures. At this point NIST declared:

> *…only the fire-induced damage produced by Case B temperatures was carried forward as the initial condition for the LS-DYNA analysis (Chapter 12), since the damage occurred in the least computational time (about 6 months).*[59]
>
> *The ANSYS results [Case B at four-hour duration] were input to the LSDYNA analysis when it appeared that an initial failure event might be imminent.*[60]

The first statement above implies the reason for choosing Case B temperatures (and discarding

[53] NCSTAR 1-9, Fig. 5-141, p. 227.
[54] NCSTAR 1-9, p. 235.
[55] NCSTAR 1-9, p. 228.
[56] NCSTAR 1-9, p. 394.
[57] NCSTAR 1-9, p. 4.
[58] NCSTAR 1-9, p. 391.
[59] NCSTAR 1-9, p. 6.
[60] NCSTAR 1A, p. 36.

cooler Cases A and C) was for computational efficiency, but the latter statement suggests that an initial failure event may not have occurred in the LSDYNA model without a boost from the fire-induced damage data from the ANSYS analysis. The fire-induced damage estimated from Case B temperatures at four-hour duration were enough to cause an unstable structural model, but the fire-induced damage estimated from Case B temperatures at 3.5 hours was not enough to cause global instability of the LS-DYNA model.[61] It is likely that cooler Case A or C temperatures at four-hour duration would not have led to the prediction of global instability.

> *The simulations of the Floor 12 fires (and thus the derivative Floor 11 and 13 fires) may have overestimated the duration of the fires and the fraction of the burning near the north face windows, relative to the fraction of burning in the interior of the tenant space.*[62]

The LS-DYNA analysis using fire-induced damage estimates resulting from Case B temperatures at 3.5-hour duration did not lead to a prediction of global collapse.[63] An overestimate of fire duration of 1/2 hour (about 12 percent) led to a conclusion supporting global collapse as opposed to a conclusion not supporting global collapse. Also, an overestimate of the fraction burning near the windows must have also led to an overestimate of temperatures due to increased oxygen available near the windows.

> *The floors below Floor 7, Floor 10, and the floors above Floor 14 did not heat significantly due to the absence of fire activity. The exterior columns and core columns also did not heat significantly on the fire floors.*[64]
>
> *The connection, beam, and girder failures in the floor systems, and the resulting structural responses, occurred primarily at temperatures below approximately 400Åã C (750Åã F), well below the temperatures at which structural steel loses significant strength and stiffness.*[65]

None of the column elements in the entire ANSYS model were heated enough to lose any significant strength or stiffness. Nevertheless, NIST claims "The fires thermally weakened Floors 8 to 14."[66] The question remains: Did NIST simply "turn up the heat" on the FDS, ANSYS and LSDYNA analyses to create the global instability necessary to demonstrate a correlation with events observed on 9/11?

Structural Modeling

NIST created numerous finite-element models for the thermal and structural analyses of WTC 7. These models simulated structural components such as core columns and beam-column connections, subsystems such as partial and full tenant floors, and the global structure. The two global models included (1) the lower 16-story ANSYS model and (2) the 47-story LS-DYNA model. NIST was obviously concerned about obtaining reasonable results under extreme computational demands, and NIST analysts made many simplifying assumptions.

> *Modifications were made to reduce the model size and complexity and enhance computational performance without adversely affecting the*

[61] NCSTAR 1-9A, p. xlvi.
[62] NCSTAR 1A, p. 52.
[63] NCSTAR 1A, p. 42.
[64] NCSTAR 1-9, p. 394.
[65] NCSTAR 1A, p. 53.
[66] NCSTAR 1A, p. 54.

accuracy of the results.[67]

NCSTAR 1-9 Section 8.8 describes the finite-element analysis of a partial single-floor framing system bounded by interior column 79 and exterior columns 44, 42 and 38. This is the area blamed for the collapse initiation; this is the subsystem model that predicted failure of shear-studs and girder connections, beam buckling and excessive lateral displacement of a girder at column 79—all triggering collapse initiation. The purpose of this subsystem analysis was to demonstrate "possible failure mechanisms that were used to develop the leading collapse hypothesis further."[68] Girder and beam temperatures were assumed to be 500 degrees and 600 degrees Centigrade respectively, and the slab was assumed to remain unheated.[69]

> *No thermal expansion or material degradation was considered for the slab, as the slab was not heated in this analysis.*[70]

Why not? The concrete floor slab could not possibly remain unheated in an atmosphere where steel beams supporting the slab were heated to 600 degrees. The beams were coated with thermal insulation, so the air temperature would have been even hotter than 600 degrees.

> *The boundary conditions and temperatures were selected to create maximum shear forces on the stud connectors and beam and girder connections.*[71]

Obviously the NIST partial-floor model did not allow the slab to expand thermally with the steel beams, and neglecting thermal expansion of the slab has the effect of imposing additional relative displacement on the shear studs connecting the concrete to the steel. This subsystem analysis formed the basis for special connection elements used in the global analyses as described in the following passages.

> *The failure modes in this model [the partial floor] were incorporated into the 16 story ANSYS and 47 story LS-DYNA analyses.*[72]

> *These results helped to guide the development of special connection elements…that captured the salient features and failure modes of the various types of connections used in the floor system of WTC 7.*[73]

NIST states that "even though steel and concrete have similar coefficients of thermal expansion, differential thermal expansion occurred between the steel floor beams and concrete slab when the composite floor was subjected to fire."[74] This relative displacement occurred in the ANSYS model, and no physical testing was done to verify its magnitude in the steel-and-concrete structure. Obviously NIST took steps to maximize the destructive effects of any relative displacement due to thermal movement.

NCSTAR 1-9 Chapter 11 discusses structural analysis of the initial failure event based on the 16-story ANSYS model. Although this model was capable of including thermal conductivity, NIST does not mention this important material property.

> *The [ANSYS] model accounted for nonlinear geometric effects, temperature dependent*

[67] NCSTAR 1-9, p. 5.
[68] NCSTAR 1-9, p. 353.
[69] NCSTAR 1-9, p. 349.
[70] NCSTAR 1-9, p. 352.
[71] NCSTAR 1-9, p. 349.
[72] NCSTAR 1-9, p. 353.
[73] NCSTAR 1-9, p. 359.
[74] NCSTAR 1-9, p. 490.

behavior of members and connections (including thermal expansion and stiffness and strength degradation), the sequential failure of structural framing and connections under fire conditions, and removal of failed elements (with user intervention).[75]

Heat transfer within structural elements and between structural elements was considerable in the steel framing, and it dissipated heat energy from the hottest parts of the steel. Did the analysts consider heat transfer, or was this property simply ignored to enhance computational performance?

ANSYS results were input to the LS-DYNA model.

The purpose of the ANSYS model was to simulate the accumulation of local damages and failures up to the initiation of overall global collapse due to fire.[76]

The fire-induced damage from the ANSYS model were [sic] input into the LS-DYNA model as initial conditions.[77]

...it was not necessary to input more than one solution to the global analysis of the collapse. The fire-induced damage produced by Case B temperatures at 4.0 h was carried forward as the initial condition for the LS-DYNA analysis.[78]

Column splices were also not modeled for interior columns, as the purpose of the ANSYS model was to accumulate local failures up to the point of buckling in a column. When column buckling appeared to be imminent, the analyses were continued in the LS-DYNA 47 story model.[79]

The preceding statements imply that the 47-story LS-DYNA model was initially damaged due to preexisting fire effects, and NIST controlled the initial conditions by using the 16-story ANSYS model to predict an initial failure state for the 47-story model. The LS-DYNA model was loaded with gravity dead loads plus 25 percent of the original design live loads in addition to the high-temperature thermal loading Case B. The initial damage state for the LS-DYNA model included debris impact damage from WTC 1 plus the accumulated fire-induced damage predicted by the ANSYS analysis. Was the LS-DYNA model capable of predicting the initial failure resulting from the Case B temperature distribution without preexisting damage imposed?

NIST enlisted Applied Research Associates (ARA) to provide analytical assistance with the 47-story model of WTC 7. The following statements in the agreement between NIST and ARA[80] demonstrate the nature of the collaboration as it relates to the WTC 7 analyses.

ARA will conduct analyses, in collaboration with NIST, to determine the location and cause of the initiating event...

NIST will conduct all fire analysis of the building and analysis of the structural response to fires in-house and supply ARA initiating event data based on the in-house analyses.

The detailed floor analyses will determine likely modes of failure for Floors 8 to 46 due to failure of one or more supporting columns...

[75] NCSTAR 1-9, p. 457.
[76] NCSTAR 1-9, p. 484.
[77] NCSTAR 1-9, p. 457.
[78] NCSTAR 1-9, p. 535.
[79] NCSTAR 1-9, p. 476.
[80] NIST, "WTC 7 Structural Analysis and Collapse Hypotheses", See http://wtc.nist.gov/solicitations/wtc_awardQ0186.htm.

> *Final analyses will support the determination of the location and cause of the initiating event, by incorporating data from NIST for simulating the initiating event, as well as the location and cause of subsequent failures that led to global collapse.*

NIST supplied the initiating event data even though the contract states that ARA would perform analyses to determine the location and cause of collapse initiation. ARA only looked at failure modes of floors eight through 46 even though previous engineering studies by FEMA engineers stated clearly that "the most likely [structural failure] event would have been the collapse of Truss 1 and/or Truss 2 located in the east end of the 5th and 6th floors."[81] According to the contractual language ARA did not look for possible failure modes on floors one through seven, and the analysis documented by ARA was *required* to support the initiating-event hypothesis as determined by NIST.

The Introduction to NCSTAR 1-9A clearly states the purpose of the LS-DYNA analysis.

> *The purpose of this work was to analyze the global response of WTC 7 to an initial failure event due to fire and to analyze the resulting component and subsystem failures to determine the events that led to the global collapse.*[82]

The initial failure event was predetermined by NIST. ARA was not responsible for analysis of the structural response to the fires and varying temperature distribution from the start, although LS-DYNA is capable of analyzing thermal softening and thermal expansion of structural materials. NCSTAR 1-9A also states the LS-DYNA model of WTC 7 "was focused on capturing the entire collapse initiation and collapse propagation process of the building..."[83] This is clearly false; the LS-DYNA model of WTC 7 was initialized with data representing fire-induced damage that NIST estimated had occurred leading to collapse initiation.

A two-floor subassembly model was constructed by ARA to "assess the model behavior for failure events during the model development and to assess the global model performance..."[84] Two temperature profiles were considered during the two-floor model analyses. These are described as Case A and Case B *at five hours*,[85] but NCSTAR 1A and NCSTAR 1-9 discuss only temperature profiles with 3.5-hour and four-hour duration. The final reports are inconsistent with respect to this important detail.

ARA analyzed their two-floor model with several specific load cases in conjunction with the Case A and Case B temperatures at *five-hour duration*. Load Case 1 had no imposed (preexisting) connection or support failures.[86] The Case A temperature distribution did not lead to instability of the floor structure. The Case B temperature distribution predicted a partial collapse of the framing, but this did not occur at the east end of the building as predicted by the ANSYS analysis. Only Load Cases 2 and 3 exhibited a partial collapse at the east end of WTC 7, and these load cases imposed *preexisting* failures of connections at columns 79 and 81. Not one of

[81] Gilsanz et al., FEMA 403, Ch. 5, p. 5-28.
[82] NCSTAR 1-9A, p. 1.
[83] NCSTAR 1-9A, p. 1.
[84] NCSTAR 1-9A, p. 64.
[85] NCSTAR 1-9A, p. 65.
[86] NCSTAR 1-9A, p. 70.

the three load cases predicted a collapse of floor framing at the northeast corner as predicted by the ANSYS model—the event described by NIST as causing collapse initiation.

ARA also constructed a 14-story model that was used to evaluate the structural response to debris impact damage.[87] The subassembly model was determined to be stable following impact damage. The 14-story model was also used to evaluate the response to removal of column 79 support. The abrupt removal of support resulted in a vertical progression of collapse of all 14 floors at the northeast corner—no surprise. Also no surprise is the fact that it did not lead to a horizontal progression of failures resulting in complete collapse of the 14-story model. Unfortunately ARA did not include results or discussion of their 14-story model subjected to Case A and Case B temperature distributions *without any imposed damage to framing and connections* as they did with their two-story model. It would be helpful to know if the 14-story LS-DYNA model experienced similar results as the two-story model, or if fire-induced failures were predicted similar to the 16-story ANSYS model. Why was this important comparison and verification omitted from the report?

The 47-story LS-DYNA model is impressive with nearly 3,600,000 node points, over 3,000,000 shell elements, over 33,000 nonlinear spring elements, over 3,000 beam elements and nearly 2,500 solid elements.[88] The global model included gravity effects from 25 percent of the design live load. This is reasonable for office areas with a design live load of 50 pounds per square foot (psf), but it may overestimate gravity effects in areas such as corridors, lobbies and other public areas that were evacuated on 9/11/01 and had no furniture, files or other miscellaneous weight to account for. Original design loads for WTC 7 are listed in Figure 11-17;[89] floors one through six and 21 through 23 were designed for live loads exceeding 50 psf. Floors supporting switchgear and mechanical equipment, such as floors five and six, are frequently designed for live loads of 100 psf or greater. But the lobbies, conference center, meeting spaces, and cafeteria located on floors one through four had practically zero live load on the afternoon of 9/11/01. Floors 21 through 23 were offices and also were evacuated.

The loads applied to the LS-DYNA global model included gravity, debris impact damage, Case B temperatures (applied smoothly in two seconds), and fire-induced damage from the ANSYS analysis.[90]

> *In the model, the debris damage was instantaneously applied to approximate the actual dynamic event.*[91]
>
> *The final step in the initialization process was to apply fire-induced damage from the 16 story ANSYS analysis.*[92]
>
> *…the fire-induced damage obtained from the 16-story ANSYS analysis, including damage to floor beams, girders, and connections, was applied instantaneously.*[93]
>
> *Any imposed structural damage was applied instantaneously immediately following*

[87] NCSTAR 1-9A, p. 73.
[88] NCSTAR 1-9A, p. xxxvi.
[89] NCSTAR 1-9, p. 485.
[90] NCSTAR 1-9, p. 563.
[91] NCSTAR 1-9A, p. 83.
[92] NCSTAR 1-9A, p. 118.
[93] NCSTAR 1-9A, p. 51.

temperature initialization.[94]

The elevated temperatures and fire-induced damage to structural elements occurred over a period of several hours, and sudden removal of damaged structural elements does not account for a gradual redistribution of static loads. Thermal conductivity and heat flux affect the temperature distribution as a function of time. What effect does the rate of application of heat and fire-induced damage have on the global analysis? This is one more question the report does not address.

Damage to framing and connections was taking place in the LS-DYNA analysis prior to the application of the ANSYS estimated damage.

> *During the temperature application cycle in the LS-DYNA analysis, combined thermal expansion and thermally degraded material properties resulted in beam and girder connection damage throughout the heated floor structures. The connection damage and buckled beam data transferred from the 16 story ANSYS analysis were then applied.*[95]

If the application of elevated temperatures were sufficient to cause framing and connection damage throughout the floor structures, and the LS-DYNA analysis considered thermal expansion and thermally-degraded material properties, then why was it necessary to impose additional fire-induced damage determined by the NIST ANSYS analysis?

Models of framing connections used in the LS-DYNA analysis were compared to the ANSYS connection models.

> *A comparison was performed between the LS-DYNA and ANSYS FHK [fin, header, and knife] shear connection models. The comparison showed good agreement for selected connections, which increased confidence in both of the separately developed modeling approaches.*[96]

What is considered "good agreement", and what about connections other than the "selected connections"? NIST does not show any documentation of this comparison. NCSTAR 1-9A Figure E-2 shows the elements of a seated connection model.[97] This connection model appears to have the necessary components for prediction of connection performance and any failure due to thermal stresses. So why does the LSDYNA global analysis depend on the 16-story ANSYS analysis performed by NIST to predict the fire-induced damage to framing members and connections? NIST attempts to explain this procedure.

> *The ANSYS analysis estimated the damage that occurred as the fires grew and spread on Floors 7, 8, and 9 and Floors 11, 12, and 13. The LSDYNA analysis, by comparison, considered only a temperature profile at the time when thermally-induced damage was transferred from the ANSYS analysis.*[98]

This does not explain why the LS-DYNA analysis was not started cold and allowed to develop the thermally-induced damage from data provided by the NIST fire simulation. Not only does the LS-DYNA temperature profile go from zero to nearly 500 degrees Centigrade in two seconds, but the thermal damage estimated by NIST occurred

[94] NCSTAR 1-9A, p. 65.
[95] NCSTAR 1-9A, p. 79.
[96] NCSTAR 1-9, p. 555.
[97] NCSTAR 1-9A, p. xxxvii.
[98] NCSTAR 1-9A, p. xxxix.

gradually over several hours, and it was applied to the structural model instantaneously. This is not credible for a structural model used to predict the response and interaction of structural materials with time and temperature-dependent properties.

NIST compared visual observation times and analytical prediction times of various events leading up to and including the global collapse. The first entry in Table 3-1 of NCSTAR 1A indicates an observation time of minus six seconds for the cascading floor failures that preceded the buckling failure of column 79. This "event" was not observed by NIST or anyone else, so the table is erroneous to imply that it was observed before column buckling or the start of global collapse. The buckling of columns 79 through 81 and the horizontal progression of core column buckling were also not observed events as clearly shown in the table.

A significant discrepancy is obvious in the last two observations listed in Table 4-2 of NCSTAR 1-9A. These include the vertical motions of the roof-mounted screen wall (between the east and west penthouses) and the west penthouse. Visual observations clearly show the screen wall falling prior to the west penthouse. The global LS-DYNA model (including debris impact damage) indicates the west penthouse falling out of sequence prior to the screen wall, and NIST falsely claims "the simulation closely matched the observed behavior."[99] This is related to the column failures in the western core that occurred out of sequence in the global model. How do ARA and NIST explain this discrepancy?

Figures 4-13 and 4-14 of NCSTAR 1-9A illustrate the 47-story model during collapse progression. These figures are viewed from the northeast rather than the northwest as labeled, and they indicate significant distortion in the upper stories that were not apparent in any of the photographs or videos taken during the event on 9/11.

> *This behavior created numerical difficulties in the analysis, which were not likely to occur in the structure.*[100]

The "behavior" referred to above is the torque applied to spandrel beams from "softened" slab elements that carried floor live loads but had reduced stiffness. In some cases the supporting beam elements had failed and had been removed from the analysis. How many other numerical difficulties were encountered in the complex finite-element models that were not likely to occur in the steel and concrete structure?

> *Computer simulations…can be used to predict a complex degradation and collapse of a building.*[101]

This may be true, but computer simulations—regardless of their complexity—cannot replace an honest and complete forensic investigation of the collapse site and debris. As Professor E.L. Wilson points out with regard to computer simulations: "Remember the result obtained from a computer model is an estimation of the behavior of the real structure. The behavior of the structure is dictated by the fundamental laws of physics and is not required to satisfy the building code or the computer program's user manual."[102]

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[99] NCSTAR 1-9A, p. 120.

[100] NCSTAR 1-9, p. 489.

[101] NCSTAR 1-9, p. 625.

[102] Edward L. Wilson, Three Dimensional Static and Dynamic Analysis of Structures, Berkeley: Computers and Structures, Inc., 3rd Ed., April, 2000, p. 1-14.

Structural Details

Most engineers involved with building design and construction know that structural details are critical to the success of a project. It was common practice on the east coast when WTC 7 was built for the steel fabricator's detailer to design the framing connections using the Manual of Steel Construction, Eighth Edition, 1980 by the American Institute of Steel Construction (AISC). It was then the engineer's responsibility to review the detailer's shop drawings, including connection details, for conformance with the structural design.

NCSTAR 1-9 Figures 12-13 and 12-14 show schematic details of composite-floor construction at interior beams and girders. NIST concluded that the W33x130 girder spanning between exterior column 44 and interior column 79 had no shear studs to provide composite action with the concrete floor slab.[103] Although composite action was not required for the girder to carry its vertical floor load, good detailing practice would include shear studs if they were used elsewhere on the floor. Figure 12-14 shows a double row of studs on the interior girder, but refers to the framing plan for more information.[104] No shear studs were indicated for the girder on a partial framing plan,[105] and this was interpreted by NIST to mean no shear studs were provided. But simply omitting the number of studs from the structural framing plan does not prove that shear studs were not present on the interior girders. They could have been specified in written notes or specifications located elsewhere. Structural plans, and even fabrication drawings, do not always accurately reflect the existing construction; an examination of the steel debris before it was removed and destroyed would have answered this question.

Figure 8-21 of NCSTAR 1-9 shows the connection at column 79 supporting the W33x130 girder that spanned between columns 44 and 79. This column had three girders framing into it, but NIST says:

> *The details of the connections of the other two girders are not shown.*[106]

Why not? The other two girders also provided lateral bracing for column 79, and the connection details are important.

Damage to framing connections from the ANSYS analysis was applied to the LSDYNA model as shown in NCSTAR 1-9 Figure 12-36 (and in NCSTAR 1-9A Figure 3-58.) A 100 percent failure state was assumed to occur for any calculated damage over 75 percent. The report says this assumption was made due to "the coarseness of the shell element modeling of the fin, knife, and header connections in the LSDYNA model..."[107] Residual connection strength of 25 percent of the original strength, however, is substantial considering the safety factor used to ensure adequate design. This illustrates another simplification assumed by NIST in favor of a progressive collapse.

> *W14x730 refers to wide flange section that is nominally 14 in. deep end [sic] weighs 730 lb/ft.*[108]

[103] NCSTAR 1-9, p. 342.
[104] NCSTAR 1-9, p. 543.
[105] NCSTAR 1-9, p. 343.
[106] NCSTAR 1-9, p. 348.
[107] NCSTAR 1-9, p. 566.
[108] NCSTAR 1-9, p. 29, footnote 2

Actually a W14x730 wide-flange column is over 22 inches in depth with a three-inch thick web and five-inch thick flanges nearly 18 inches wide. This is the heaviest rolled steel section listed in the AISC Manual of Steel Construction, Eighth Edition. NIST grossly understates the size of these massive columns by implying a 14-inch depth.

The Initiation Event

Failure of the floor framing at the east end of floor 13 was blamed for initiating the series of events that led to complete collapse. A discussion of existing floor plans and combustibles includes the following statement:

> *...there was some uncertainty regarding the nature of some spaces. Notably, the U.S. Securities and Exchange Commission (SEC) and American Express occupied all but the east side of the 13th floor, and NIST was unable to find people who recalled the nature of the unoccupied space.*[109]

It is unlikely that those who managed the tenant spaces of this 47-story office building could not recall, or could not find out, who or what occupied the specific location where the collapse initiation was said to occur. Apparently NIST did not use their subpoena power to obtain this information from the building owner.

According to NIST the floor framing failed as a result of several factors including failure of shear studs, buckling of beams, and "walk off" of girders due to unrestrained thermal expansion of perpendicular beams.

> *At this temperature [greater than 300 .C.] in the shear studs, differential thermal expansion of the floor beams and floor slab resulted in significant shear force in the shear studs and caused them to fail.*[110]

> *Primarily for the east tenant floor, when a floor beam thermally expanded, the beam displaced the girder at the interior end of the floor beam but did not displace the exterior frame at the other end of the floor beam.*[111]

> *Many of the east floor beams on Floors 12, 13, and 14 failed by buckling, as shown in Figure 11-27 and Figure 11-35.*[112]

NIST implies a restrained (pinned) support condition at the exterior frame and an unrestrained (roller) support condition at the interior girder. If the beams are unrestrained at one end, how can they develop the compressive force necessary for buckling to occur? Alternatively, how can the beams push the girder laterally if they have buckled in compression?

Reasons listed for the loss of lateral support to columns 79 through 81 include the following.

> *The buckling failure of the east floor beams and exterior columns was caused by restrained thermal expansion and failure of the shear studs along the beam length.*[113]

It is not clear what buckling failure of exterior columns is referred to in the preceding statement, and NIST previously stated ...the beam displaced the girder at the interior end of the floor beam but did not displace the exterior

[109] NCSTAR 1-9, p. 48.

[110] NCSTAR 1-9, p. 473.

[111] NCSTAR 1-9, p. 526.

[112] NCSTAR 1-9, pp. 526-27.

[113] NCSTAR 1-9, p. 537.

frame at the other end of the floor beam."[114] If thermal expansion of the floor beams did not displace the exterior frame, then buckling of exterior columns would not occur.

> *The connection, beam, and girder failures in the floor systems, and the resulting structural responses, occurred primarily at temperatures below approximately 400°C (750°F), well below the temperatures at which structural steel loses significant strength and stiffness.*[115]

> *The thermal expansion of the WTC 7 floor beams that initiated the probable collapse sequence occurred primarily at temperatures below approximately 400°C (750°F).*[116]

Unrestrained thermal expansion of 52-foot long beams was blamed for pushing a girder off its bearing seat at column 79. This linear expansion is about 3.5 inches at 400°C, but this is a full two inches short of the 5.5-inch lateral displacement required for loss of vertical support. "Walk off" is the term NIST used to describe the failure mode where a beam or girder moved axially or laterally off its bearing seat losing all vertical support. The walk-off failure was assumed to be complete when lateral displacement of the beam or girder end moved past the point at which the beam web was aligned vertically with the edge of the bearing seat.[117] One of the least "state-of-the-art" features of the complex analysis performed by NIST is the means by which they accounted for the lateral walk-off failure of the girder at column 79, and convincing documentation of this triggering failure mode is nonexistent.

> *A control element (COMBIN37), a unidirectional linear spring element with the capability of turning on and off during an analysis, was used to model walk-off.*[118]

> *The travel distance for walk off was 6.25 in. along the axis of the beam and 5.5 in. lateral to the beam.*[119]

Since the COMBIN37 element could only account for displacement in one direction (axially), what accounted for displacement in the lateral direction?

> *A control element was used to model beam walk-off in the axial direction. Beam walk off in the lateral direction was monitored during the analysis.*[120]

Monitored by what? NIST summarized the floor framing failures that led to collapse initiation, and *lateral* girder walk off at columns 79 and 81 was the failure mode allegedly responsible for the start of collapse.[121] Where are the analytical results that substantiate walk-off failures at columns 79 and 81? Where is the output data from the ANSYS analysis that confirms the lateral walk-off failures? A recent Freedom of Information Act (FOIA) request to NIST for analysis results that substantiate the walk-off failures was denied with the statement that "The NIST Director determined that the release of these data might jeopardize public safety."[122]

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[114] NCSTAR 1-9, p. 526.
[115] NCSTAR 1A, p. 53.
[116] NCSTAR 1A, p. 59.
[117] NCSTAR 1-9, p. 488.
[118] NCSTAR 1-9, p. 480.
[119] NCSTAR 1-9, p. 482.
[120] NCSTAR 1-9, p. 482.
[121] NCSTAR 1-9, p. 536.
[122] See http://cryptome.org/wtc-nist-wtc7-no.pdf.

Collapse Progression

The exterior steel moment-resisting frame encompassed WTC 7 with 58 perimeter columns. Apparently all of these columns had to buckle within two seconds for the building to drop unimpeded straight down as seen in the video documentation.

> *Exterior column buckling began at Column 14, adjacent to the debris impact zone near the southwest corner, between Floors 10 and 12.*[123]

> *Exterior column buckling spread from column to column, as loads were redistributed, until all the exterior columns had buckled between Floors 7 and 14 within approximately 2 s.*[124]

Are the preceding statements describing the actual event on 9/11, and are they confirmed by witnesses, or are they simply statements describing the NIST computer simulations?

> *In the analysis with debris impact damage, the core framing damage on the west side resulted in a more rapid failure of the west interior columns in the last stages of the horizontal progression.*[125]

There was no core framing damage on the west side according to NCSTAR 1-9, page 182.

NCSTAR 1-9 Section 12.5.2 is titled "Aspects Following the Collapse Initiation." The NIST authors' style is exemplified in the first paragraph of this section with the following illumination.

> *Once simulation of the global collapse of WTC 7 was underway, there was a great increase in the uncertainty in the progression of the collapse sequence, due to the random nature of the interaction, break up, disintegration, and falling of the debris. The uncertainties deriving from these random processes increasingly influenced the deterministic physics-based collapse process, and the details of the progression of the horizontal failure and final global collapse were increasingly less precise.*[126]

The preceding statement by NIST implies that complete and rapid internal and external collapse was inevitable based on a computer simulation without any physical testing. Details of the actual collapse initiation, vertical progression and horizontal progression were not visible and have not been established by NIST based on any physical evidence, so "increasingly less precise" can only mean *unknown*.

NIST's summary of findings states:

> *The horizontal progression of failure was sensitive to the extent of the estimated initial structural damage in WTC 7 due to debris impact from the collapse of WTC 1.*[127]

It describes how several columns in the western core lost lateral support in the north-south direction from debris impact damage and buckled prior to failure of the central core columns. This sequence of events differed from the analysis without debris impact damage imposed. The latter analysis correlated with the actual observed sequence of the roof screen wall falling prior to the west penthouse structure. The "best estimate analysis" which included debris impact damage did not correlate with the

123 NCSTAR 1-9, p. 586.
124 NCSTAR 1-9, p. 588.
125 NCSTAR 1-9, p. 599.
126 NCSTAR 1-9, pp. 599-600.
127 NCSTAR 1-9, p. 606.

observed sequence of events at the roof level.

> *This suggests that the damage scenario that was imposed in the best estimate analysis was slightly more severe than actually occurred.*[128]

How true, and the impact damage estimate described previously included no core damage at all. The description "slightly more severe..." may be another understatement by NIST, and an overestimate of impact damage undoubtedly favors collapse progression.

> *The initial westward progression and the overall speed of the collapse was [sic] not sensitive to the extent of the estimated structural damage to WTC 7 due to the debris from the collapse of WTC 1.*[129]

But:

> *The horizontal progression of failure was sensitive to the extent of the estimated initial structural damage in WTC 7 due to the collapse of WTC 1.*[130]

So which one is correct?

Free-fall Acceleration

Kinematic analysis of videos taken of the global collapse proves that the north face, the east face and the entire building descended at free-fall acceleration for 2.25 seconds spanning a height of eight stories.[131]

> *...the north face descended at gravitational acceleration, as the buckled columns provided negligible support to the upper portion of the north face.*[132]

> *Global collapse occurred as the entire building above the buckled region moved downward as a single unit.*[133]

> *In Stage 2, the north face descended at gravitational acceleration, as exterior column buckling progressed and the columns provided negligible support to the upper portion of the north face.*[134]

Gravitational acceleration—or free-fall acceleration—implies zero resistance was provided by the structural elements below the free-falling mass. If free-fall acceleration is defined such that all available potential energy is converted to kinetic energy in unrestrained motion, then what additional energy was available—and necessary—to yield and fracture multiple supporting steel framing members and connections as the collapse progressed? NIST does not account for this energy requirement during this 2.25-second period in their analyses. NIST simply dismisses this anomaly by saying it was consistent with the global collapse analysis. This brief dismissal is neither convincing nor complete documentation for an authoritative and

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[128] NCSTAR 1-9, p. 606.

[129] NCSTAR 1-9, p. 625.

[130] NCSTAR 1-9, p. 612.

[131] Chandler, "WTC 7 in Freefall—No Longer Controversial" is located at http://www.youtube.com/watch?v=rVCDpL4Ax7I. Chandler, "WTC 7: NIST Finally Admits Freefall (Part I)" is located at http://www.youtube.com/watch?v=eDvNS9iMjzA. Chandler, "WTC 7: NIST Finally Admits Freefall (Part II)" is located at http://www.youtube.com/watch?v=iXTlaqXsm4k. Chandler, "WTC 7: NIST Finally Admits Freefall (Part III)" is located at http://www.youtube.com/watch?v=v3mudruFzNw.

[132] NCSTAR 1A, p. 45.

[133] NCSTAR 1A, p. 48.

[134] NCSTAR 1-9, p. 602.

comprehensive report, and it is not acceptable by any reasonable standard of care.

Steel Debris

NIST writes:

> *...that the building and the records kept within it were destroyed, and the remains of all the WTC buildings were disposed of before congressional action and funding was available for this Investigation to begin. As a result, there are some facts that could not be discerned and, thus, there are uncertainties in this accounting.*[135]

The building had been completely evacuated several hours before its collapse. No one was trapped in the debris pile, so there was no need to rapidly dismantle and destroy the steel debris. Why was the structural steel disposed of before a proper investigation? Who authorized the disposal of the steel before it could be adequately observed and documented? What are the uncertainties in NIST's accounting that resulted from the disposal of the steel framing, and how has NIST compensated for these uncertainties?

The NIST hypothesis was based, in part, on a "critical study of steel framing" from WTC 7.[136] The NIST report, however, does not attempt to explain the "severe high-temperature corrosion attack" on several WTC steel samples as documented in Appendix C of the FEMA report.[137] A detailed study was recommended by FEMA, but the observed "intergranular melting" of the steel was never reconciled by NIST. If NIST has performed the recommended studies, then why have the results not been published? Otherwise, why has NIST ignored the recommendations made in 2002 for critical research of the unexplained material behavior?

Conclusion

After reading and studying NCSTAR 1A, 1- 9 and 1-9A, technical professionals and others must ask themselves several questions.

1. Has NIST followed accepted scientific protocol in its analysis procedure considering all available physical and testimonial evidence?

2. Has NIST presented its hypotheses, analyses and conclusions with clarity, transparency and completeness?

3. Has the NIST documentation answered all of your questions regarding WTC 7?

4. Would you endorse the NIST report?

The NIST analyses demonstrated that it may be possible, under certain unlikely circumstances, for ordinary fire effects to cause severe damage and partial collapse of a high-rise steel structure. NIST has, however, focused entirely on the fire-induced collapse hypothesis and has ignored relevant facts and evidence that lead to a contrary conclusion regarding the *most likely* cause of collapse. It is obvious that NIST engineers were primarily concerned with providing an explanation of what "may have happened" rather than an explanation of the *most likely* cause of collapse considering all relevant data and evidence. The NIST analyses fail to provide a convincing explanation of events

[135] NCSTAR 1A, p. xxxv.
[136] NCSTAR 1A, p. 25.
[137] Barnett et al., FEMA 403, Appendix C.

observed on 9/11 and in the days and weeks following. Specifically NIST has failed to explain evidence of *extreme* temperatures[138] and the presence of highly reactive pyrotechnic materials discovered in the debris.[139] The NIST analyses, therefore, have not fulfilled the legal requirement—as stated in the NCST Act of 2002—to determine the *most likely* cause or causes of the collapse.

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[138] Jones et al.

[139] Harrit et al.

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About the Author

Mr. Brookman is a licensed structural engineer in the state of California. He obtained B.S. Civil Engineering (1984) and M.S. Structural Engineering (1986) degrees from the University of California at Davis, and has over 23 years experience in structural analysis, design, evaluation and rehabilitation of buildings in northern California.

How NIST Avoided a Real Analysis of the Physical Evidence of WTC Steel

(Full length version)[1]

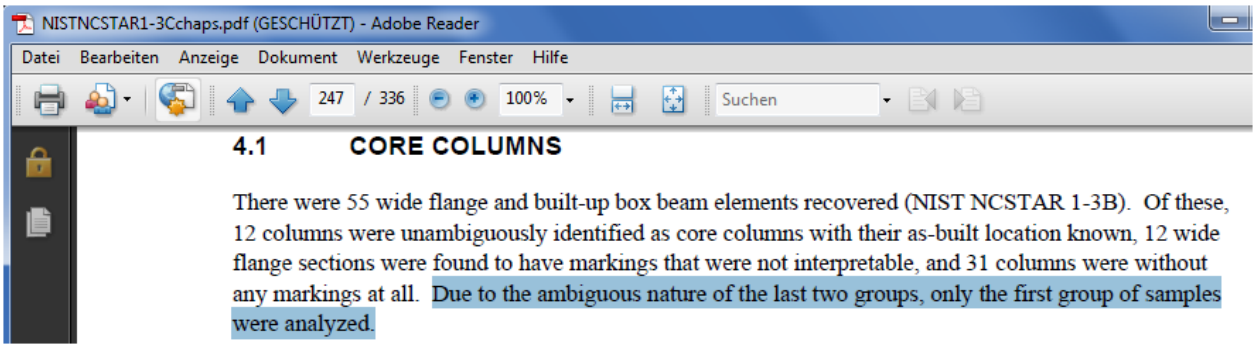
Andrea Dreger

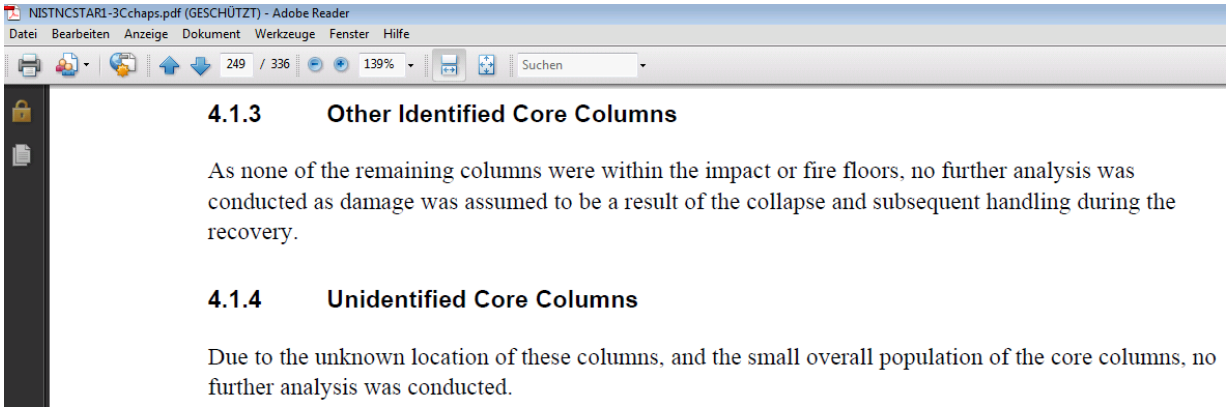
(I) NIST's exclusion of most of the recovered structural steel from being adequately examined for their damage and failure modes

The 236 pieces of structural WTC steel that the National Institute of Standards and Technology (NIST) "catalogued"[2] for its WTC investigation[3] included 55 columns that NIST discuss in paragraph 4.1 "CORE COLUMNS" in NIST NCSTAR 1-3C.[4] NIST analyzed only four of these 55 columns for damage and failure modes. The remaining 51 columns were excluded from being examined for damage and failure modes based on the argument that only columns with a known as-built location[5] in or near the impact and fire areas were of interest for the WTC investigation. See two quotes/screenshots

[1] An abridged version of this article can be found on the website of AE911Truth.org.
[2] The term "catalogued steel" is used by NIST to refer to the 230 pieces of recovered WTC steel stored at NIST's location in Gaithersburg, Maryland, and to 6 pieces stored in hangar 17 at JFK airport. This "catalogued steel" was the steel that was – at least in theory – to be examined by NIST as part of their WTC investigation. Much more steel was saved than the 236 pieces, but excluded by NIST from being examined or at least "catalogued" (see below).
[3] "Federal Building and Fire Safety Investigation of the World Trade Center Disaster," http://wtc.nist.gov/NCSTAR1/, published 2005 and 2008.
[4] NIST makes ambiguous statements if it considers all these members as Twin Tower core columns or not. See NIST NCSTAR 1-3C, "4.1.4 Unidentified Core Columns", and NIST NCSTAR 1-3B, Table 3-4. "Other built-up box columns and wide flange sections from WTC 1 and WTC 2 with ambiguous stampings and/or markings", and NIST NCSTAR 1-3B, 3.2 "IDENTIFICATION OF WTC STRUCTURAL STEEL ELEMENTS'.
[5] Every column was supposed to have a code (stenciled, stamped or handwritten), dating back from the time of the erection of the Twin Towers, that stated its intended as-built location in the building and other data. In some cases these codes were missing or not complete for various reasons. In such cases the size and other characteristics of a column can support a deduction of its possible as-built location.

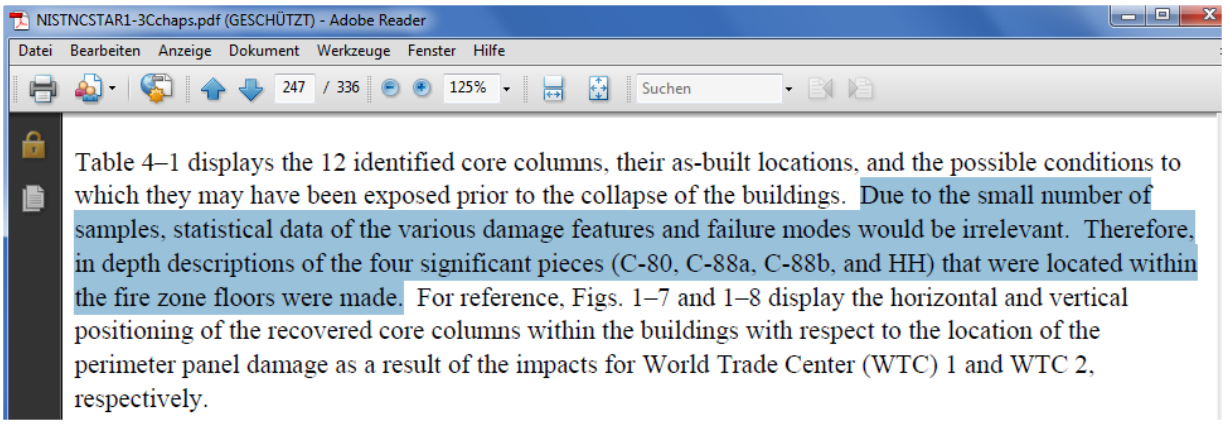
from NIST NCSTAR 1-3C, “Chapter 4. PHYSICAL DAMAGE OF CORE ELEMENTS (COLUMNS AND CHANNELS),” blue highlight added.





NIST’s argument for exclusion involves two steps: First they state that only the 12 core columns with known as-built locations were of interest. Next, they exclude 8 of these 12 columns because they were located outside the fire and impact areas, arguing implicitly that their damage and failure modes can be only of statistical interest.[6] See quote/screenshot from NIST NCSTAR 1-3C, 4.1 “Core Columns.” [7]

[6] Even NIST’s argument that statistical data “would be irrelevant” due to the “small overall number” of core columns is questionable. At least, NIST would have had more core columns available if they had not deliberately



A similar argument was applied by NIST to the 90 “catalogued” perimeter wall panels[8] and their columns. NIST describes only those 5 of the 90 panels “in-depth” that were located in the airplane impact zone of WTC 1. See two quotes/screenshots from NIST NCSTAR 1-3C, blue highlights added.

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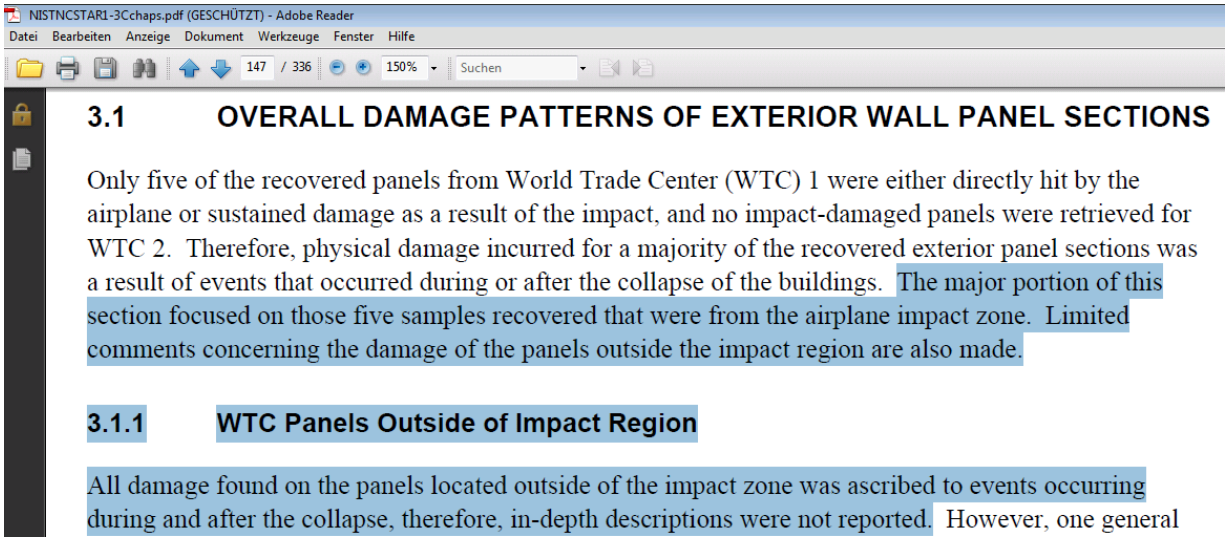
excluded almost all of the WTC steel saved by PANYNJ (see below). The implicit argument that failure modes can be only of statistical interest was also used to exclude the unidentified columns from further examination. See above screenshot from NIST “4.1.4 Unidentified Core Columns.”

[7] Table 4-1, mentioned in this screenshot, lists as “possible conditions to which they may have been exposed prior to the collapses” only if the columns have as-built locations in impact and fire floors, but gives no information that was based on the actual failure modes of the columns.

[8] When the WTC was built prefabricated perimeter panels were used. A standard panel consisted of three perimeter columns, stretching over three stories, its three spandrel plates (which made up parts of the web of the columns), the seats attached to these parts, and the end plates of the columns. There were also other kinds of prefabricated panels used, for example, for the mechanical floors. Many of the recovered panels are not complete. The term perimeter panel is used in this article (in line with NIST's use of the term) also for the pieces when only a part of the panel was recovered.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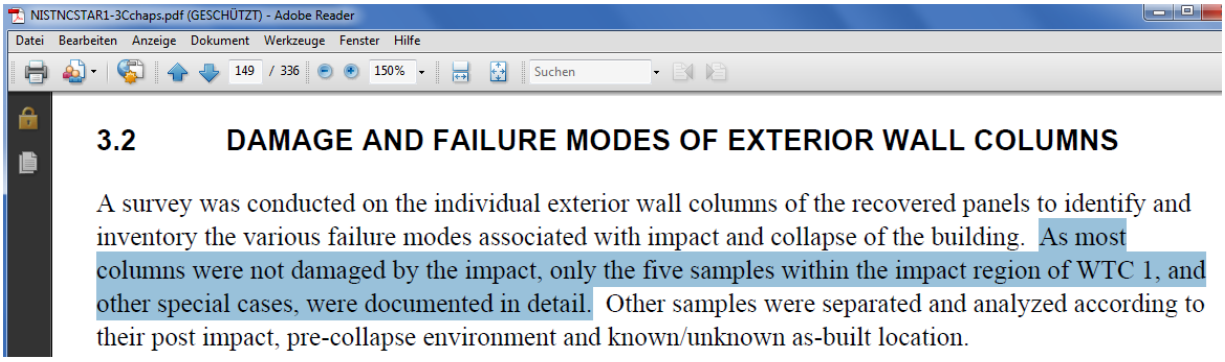
3.1 OVERALL DAMAGE PATTERNS OF EXTERIOR WALL PANEL SECTIONS

Only five of the recovered panels from World Trade Center (WTC) 1 were either directly hit by the airplane or sustained damage as a result of the impact, and no impact-damaged panels were retrieved for WTC 2. Therefore, physical damage incurred for a majority of the recovered exterior panel sections was a result of events that occurred during or after the collapse of the buildings. The major portion of this section focused on those five samples recovered that were from the airplane impact zone. Limited comments concerning the damage of the panels outside the impact region are also made.

3.1.1 WTC Panels Outside of Impact Region

All damage found on the panels located outside of the impact zone was ascribed to events occurring during and after the collapse, therefore, in-depth descriptions were not reported. However, one general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3.2 DAMAGE AND FAILURE MODES OF EXTERIOR WALL COLUMNS

A survey was conducted on the individual exterior wall columns of the recovered panels to identify and inventory the various failure modes associated with impact and collapse of the building. As most columns were not damaged by the impact, only the five samples within the impact region of WTC 1, and other special cases, were documented in detail. Other samples were separated and analyzed according to their post impact, pre-collapse environment and known/unknown as-built location.

NIST provides indeed only “limited comments” regarding the damage and failure modes of most panels and their columns except for the named few pieces. The damage and failure modes of most perimeter columns are reported in summary fashion in just a few sentences and in one table with statistical data. This table (see screenshot from NIST NCSTAR 1-3C) is the most detailed information that can be found in NIST’s report regarding the damage and failure modes of those about[9] 128 perimeter columns that were

[9] The number of columns of the identified panels (60 columns from WTC 1 and 38 columns from WTC 2) and of the unidentified panels (55 columns, the table counts 56) is stated in NIST NCSTAR 1-3C (page 99; PDF-page 149). Nine identified columns from three WTC 2 panels were not analyzed due to their storage in hangar 17, JFK airport. The five WTC 1 panels from the impact area comprised 13 columns. NIST does not state which panels or columns are meant with the “other special cases” (see screenshot above). The damage of three perimeter columns from outside the impact area is described in NIST because they were analyzed for their possible exposure to high temperatures. These three columns are considered here also as described “in depth” (though NIST only describes such characteristics that are possibly related to high temperature exposure).

outside of the “focus” of NIST’s analysis.

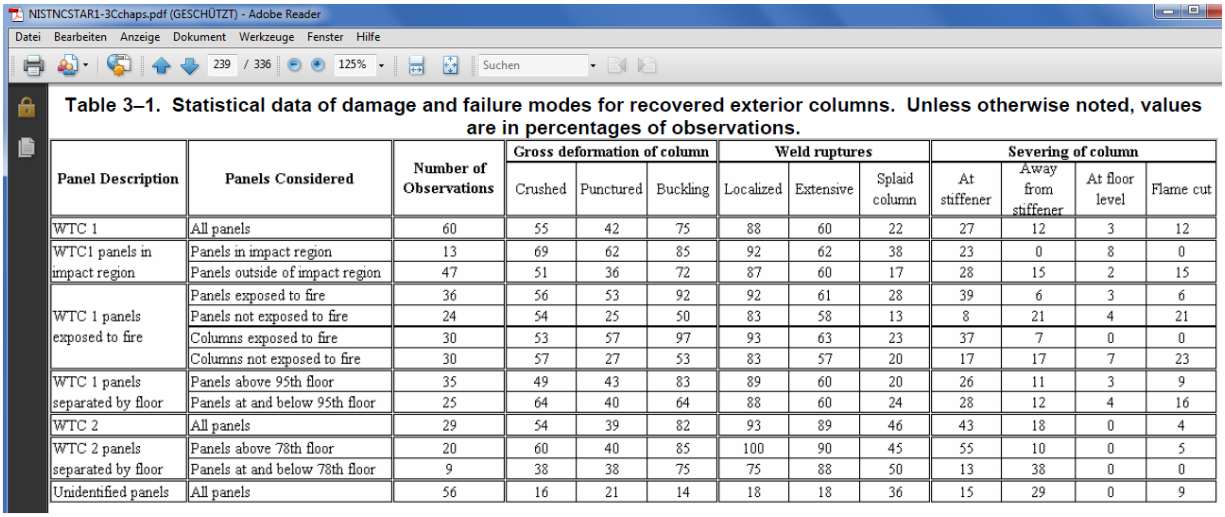
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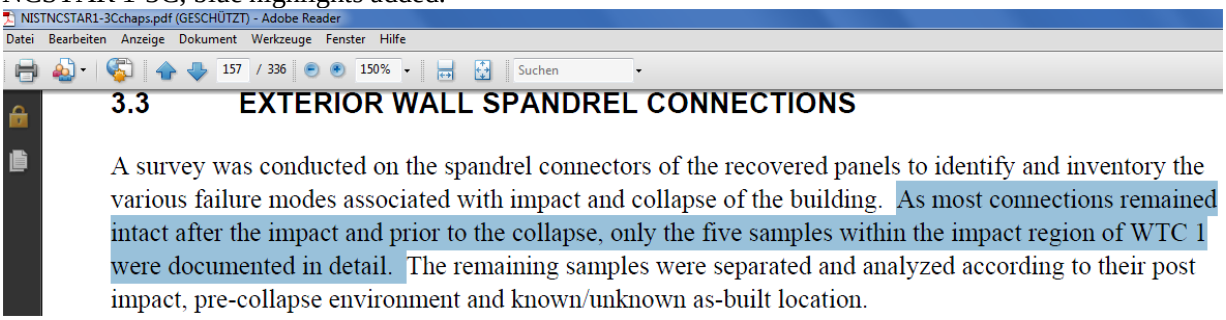
Table 3–1. Statistical data of damage and failure modes for recovered exterior columns. Unless otherwise noted, values are in percentages of observations.

Panel Description	Panels Considered	Number of Observations	Gross deformation of column			Weld ruptures			Severing of column			
			Crushed	Punctured	Buckling	Localized	Extensive	Splaid column	At stiffener	Away from stiffener	At floor level	Flame cut
WTC 1	All panels	60	55	42	75	88	60	22	27	12	3	12
WTC1 panels in impact region	Panels in impact region	13	69	62	85	92	62	38	23	0	8	0
	Panels outside of impact region	47	51	36	72	87	60	17	28	15	2	15
WTC 1 panels exposed to fire	Panels exposed to fire	36	56	53	92	92	61	28	39	6	3	6
	Panels not exposed to fire	24	54	25	50	83	58	13	8	21	4	21
	Columns exposed to fire	30	53	57	97	93	63	23	37	7	0	0
	Columns not exposed to fire	30	57	27	53	83	57	20	17	17	7	23
WTC 1 panels separated by floor	Panels above 95th floor	35	49	43	83	89	60	20	26	11	3	9
	Panels at and below 95th floor	25	64	40	64	88	60	24	28	12	4	16
WTC 2	All panels	29	54	39	82	93	89	46	43	18	0	4
WTC 2 panels separated by floor	Panels above 78th floor	20	60	40	85	100	90	45	55	10	0	5
	Panels at and below 78th floor	9	38	38	75	75	88	50	13	38	0	0
Unidentified panels	All panels	56	16	21	14	18	18	36	15	29	0	9

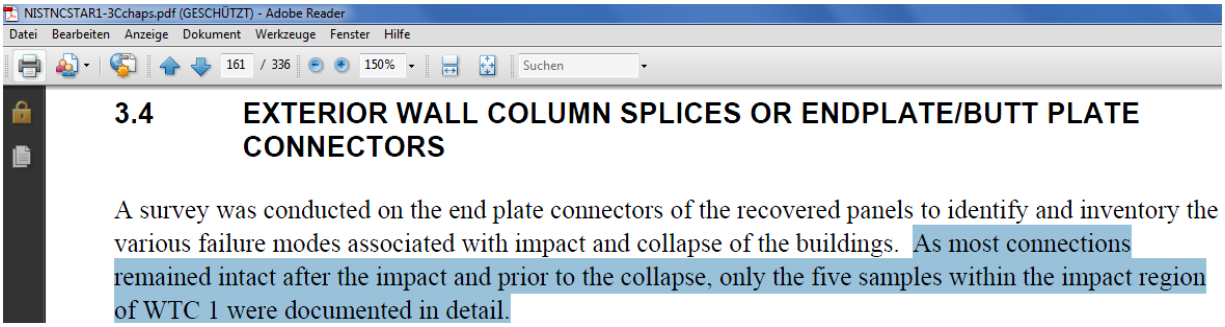
Likewise, the damage and failure modes of the spandrel connections and end plate connections are summarized for panels from outside the impact area and for unidentified panels in only a few sentences and in tables with statistical data.[10]

[10] While NIST examined the column splices and spandrel connections of all “catalogued” perimeter panels, NIST reports in detail only for the five panels with as-built locations in the impact areas. See screenshots from NIST NCSTAR 1-3C, blue highlights added.


NISTNCSTAR1-3Cchaps.pdf (GESCHÜTZT) - Adobe Reader

3.3 EXTERIOR WALL SPANDREL CONNECTIONS

A survey was conducted on the spandrel connectors of the recovered panels to identify and inventory the various failure modes associated with impact and collapse of the building. As most connections remained intact after the impact and prior to the collapse, only the five samples within the impact region of WTC 1 were documented in detail. The remaining samples were separated and analyzed according to their post impact, pre-collapse environment and known/unknown as-built location.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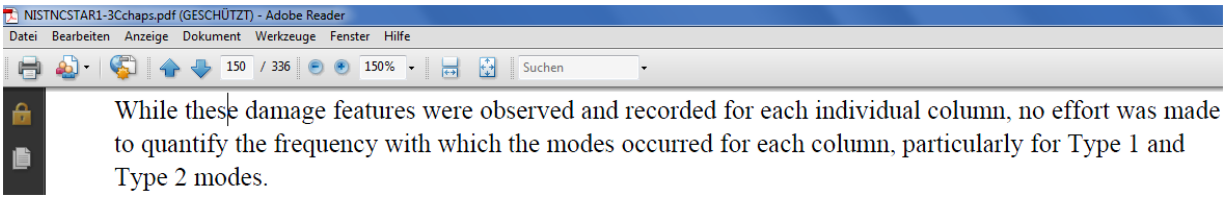
3.4 EXTERIOR WALL COLUMN SPLICES OR ENDPLATE/BUTT PLATE CONNECTORS

A survey was conducted on the end plate connectors of the recovered panels to identify and inventory the various failure modes associated with impact and collapse of the buildings. As most connections remained intact after the impact and prior to the collapse, only the five samples within the impact region of WTC 1 were documented in detail.

NIST excluded over 90% of the catalogued columns that are not perimeter columns from any examination for their damage and failure modes. This is different in the case of the perimeter columns. Due to the collection of the data necessary to provide the table with the "statistical data," all perimeter columns were examined to some degree for their damage characteristics. But the provided "statistical data" are not an adequate analysis of the damage and failure modes of the single pieces. The following quote by NIST (screenshot from NIST NCSTAR 1-3C)[11] underlines that no adequate damage and failure analysis was conducted for about 90%[12] of the perimeter columns.



The superficiality of the data provided by NIST is illustrated by NIST's use of the term "crushed," which is used in the provided table to describe a damage characteristic of perimeter columns, for very different damage patterns. To explain the use of this term NIST provides two photographs,[13]

[11] "Type 1" refers to "gross physical distortion of flange/web material" (crushed sections, punctured flanges and/or webs, buckling of flanges and/or webs). "Type 2" refers to "fracture near fillet welds" (localized or extensive fracture associated with welded joints; or columns that were "splayed open").
[12] See above, footnote # 9. The 9 catalogued columns stored in hangar 17 at JFK airport, which are not included in NIST's table 3-1, raises the overall number of not adequately examined perimeter panels to about 137.
[13] The two photographs with caption (screenshots from NIST NCSTAR 1-3C):

but the “crushed column” from panel K-1 (see photograph below, paragraph “Perimeter Panel K-1”), the failure mode of which is described as “crushed” by NIST too, has a completely different quality of “crushed.”[14]

Any serious investigation into the reasons why the Twin Towers were completely destroyed would attempt to find out why the strong steel frames below the impact and fire areas lost their strength and gave way. But NIST deliberately decided not to do this. NIST excluded – quite systematically and based on the explicit argument that only the few columns with a known as-built location in the impact and fire areas were of interest for the investigation – the columns from the parts that failed and gave way so unexpectedly, i.e., the columns with as-built locations below the impact and fire areas, from

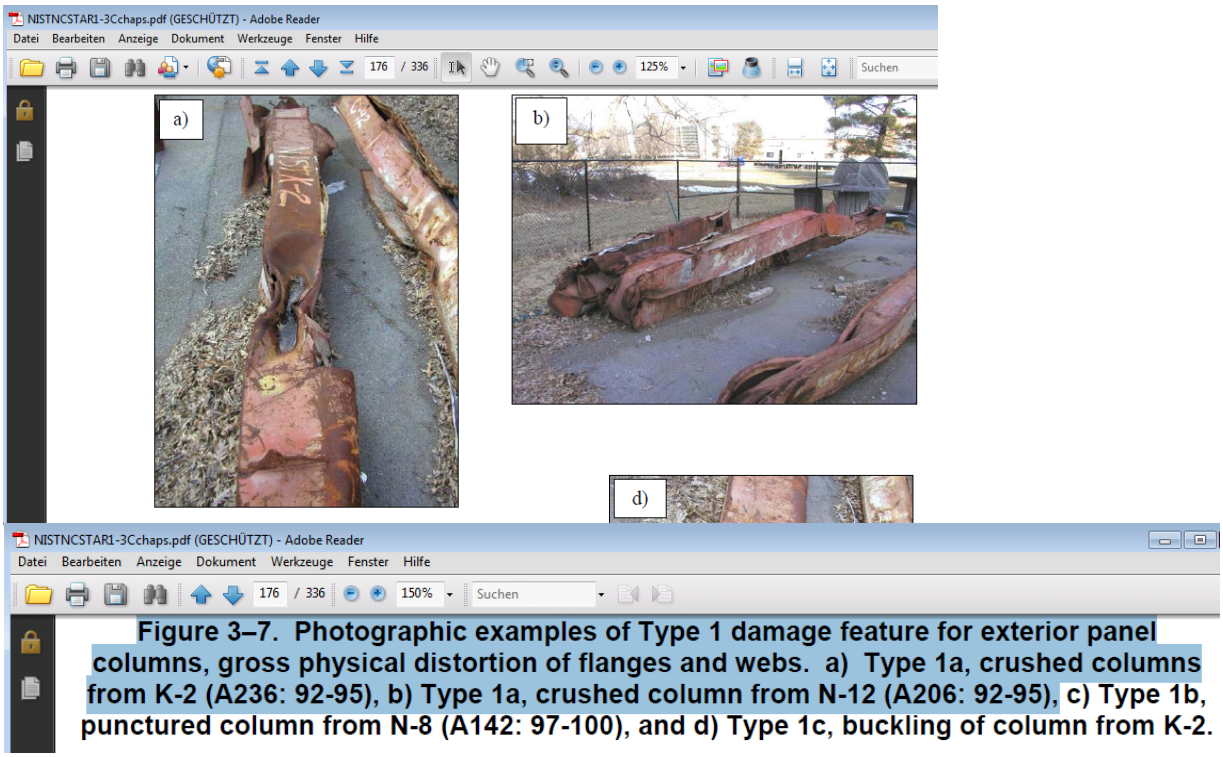


Figure 3–7. Photographic examples of Type 1 damage feature for exterior panel columns, gross physical distortion of flanges and webs. a) Type 1a, crushed columns from K-2 (A236: 92-95), b) Type 1a, crushed column from N-12 (A206: 92-95), c) Type 1b, punctured column from N-8 (A142: 97-100), and d) Type 1c, buckling of column from K-2.

[14] See NIST NCSTAR 1-3C, page 219 (PDF-page 269) for NIST’s description of K-1

being adequately examined for their damage and failure modes.[15] Scientists and engineers in relevant fields should know that those parts of the structure that gave way need to be included in the investigation of a building failure.

There are many indications that NIST's scientists and engineers have been actually well aware that the failure of the load bearing structures of the Twin Towers cannot be investigated by focusing exclusively on the collection of data concerning the impact and fire areas. For example, NIST developed a "structural database" that included the data for the structural members from bottom to top (and not just for the structural members in the impact and fire areas). They developed "global structural models" for both Towers that stretched over their full heights (based on the named structural database, blueprints and other documents). And they analyzed the performance of the undamaged structures (using its global structural models) for three loading cases, and checked the demand/capacity ratio for the structural components.[16] NIST examined (as part of the same "Project 3: "Mechanical and Metallurgical Analysis of Structural Steel," which systematically excluded steel from outside the impact and fire areas from being adequately examined) samples of all steel qualities used throughout the buildings to check if they complied with the demanded quality standards.[17]

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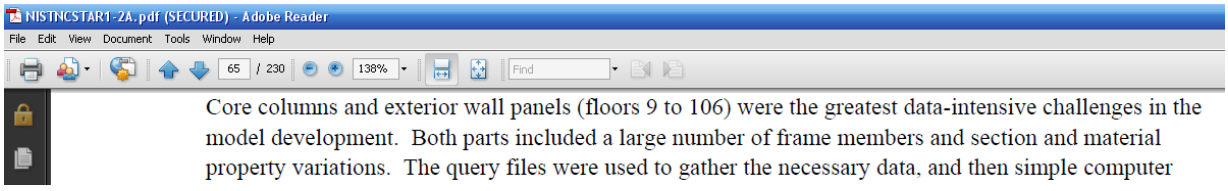
[15] One exception is perimeter column K-16, which is examined by NIST in detail despite its as-built location below the impact and fire area. The column was already discussed (as "sample 2") in Appendix C of the FEMA/BPAT study, that called for further examination of its two samples. See J. Barnett, R. R. Biederman, R.D. Sisson, Jr.: "Limited Metallurgical Examination" in FEMA/BPAT, "World Trade Center Building Performance Study," 2002, Appendix C, http://wtc.nist.gov/media/AppendixC-fema403_apc.pdf, C.6, page 13.

[16] See NIST NCSTAR 1-2 and NIST NCSTAR 1-2A. As one example, see the following quote/screenshot from NIST NCSTAR 1-2A:



[17] NIST NCSTAR 1-3 and NIST NCSTAR 1-3E As one example, see the following table/screenshot from NIST NCSTAR 1-3E. The last numbers given in the table-column "Column ID" specify the as-built locations (stories) of the columns, from

NIST cannot justify the exclusion of the steel from being adequately examined for damage and failure modes by its published result of the investigation, i.e., the "how the point of collapse initiation was reached" models and the few lines with suggestions why "global collapse ensued." The named models and suggestions were presented by NIST as results of the investigation, so they should not have influenced decisions at the beginning of the investigation. Examining the evidence and collecting data based on the evidence was a task that NIST needed to perform before any hypotheses were formulated. But NIST excluded identified core columns and perimeter columns that where built-in outside the impact and fire areas, and columns with an unknown as-built location, from being adequately examined for their damage and failure modes at the very beginning of the investigation. Thus, by a process of circular reasoning NIST avoided an adequate analysis of the physical evidence of the steel for data that might have answered the question why the strong steel frames below the impact and fire areas gave way as completely and quickly as they did; by proceeding on the basis of a preconceived premise, NIST compromised the validity of the investigation.

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which the examined steel samples were taken. The three columns in the first lines of the table were, for example, once located in stories 15-18, 33-36, and 12-15, i.e. far below the impact and fire areas.

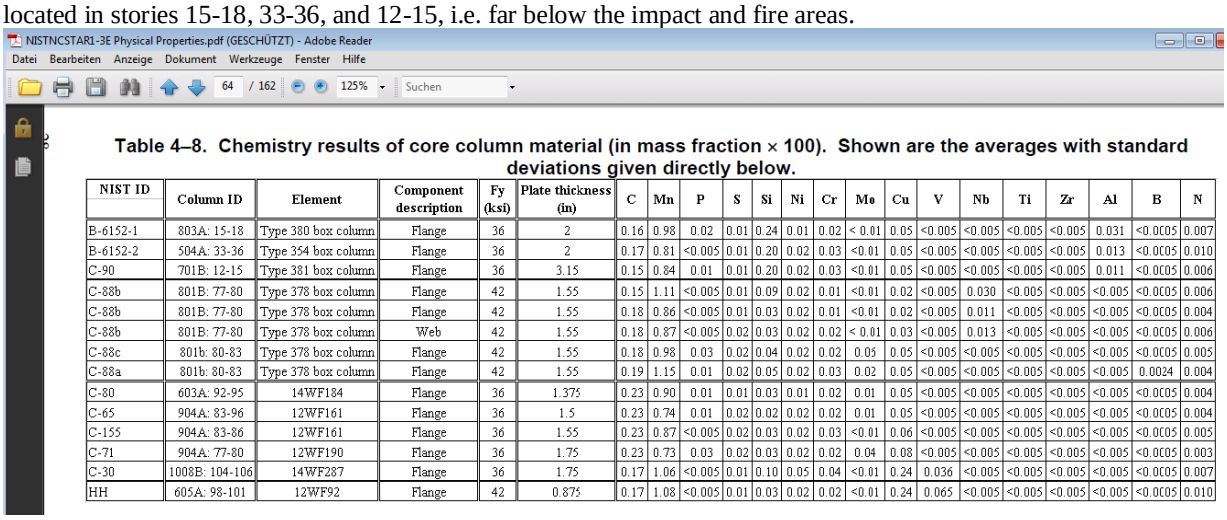


Table 4–8. Chemistry results of core column material (in mass fraction × 100). Shown are the averages with standard deviations given directly below.

NIST ID	Column ID	Element	Component description	Fy (ksi)	Plate thickness (in)	C	Mn	P	S	Si	Ni	Cr	Mo	Cu	V	Nb	Ti	Zr	Al	B	N
B-6152-1	803A: 15-18	Type 380 box column	Flange	36	2	0.16	0.98	0.02	0.01	0.24	0.01	0.02	< 0.01	0.05	<0.005	<0.005	<0.005	<0.005	0.031	<0.0005	0.007
B-6152-2	504A: 33-36	Type 354 box column	Flange	36	2	0.17	0.81	<0.005	0.01	0.20	0.02	0.03	<0.01	0.05	<0.005	<0.005	<0.005	<0.005	0.013	<0.0005	0.010
C-90	701B: 12-15	Type 381 box column	Flange	36	3.15	0.15	0.84	0.01	0.01	0.20	0.02	0.03	<0.01	0.05	<0.005	<0.005	<0.005	<0.005	0.011	<0.0005	0.006
C-88b	801B: 77-80	Type 378 box column	Flange	42	1.55	0.15	1.11	<0.005	0.01	0.09	0.02	0.01	<0.01	0.02	<0.005	0.030	<0.005	<0.005	<0.005	<0.0005	0.006
C-88b	801B: 77-80	Type 378 box column	Flange	42	1.55	0.18	0.86	<0.005	0.01	0.03	0.02	0.01	<0.01	0.02	<0.005	0.011	<0.005	<0.005	<0.005	<0.0005	0.004
C-88b	801B: 77-80	Type 378 box column	Web	42	1.55	0.18	0.87	<0.005	0.02	0.03	0.02	0.02	< 0.01	0.03	<0.005	0.013	<0.005	<0.005	<0.005	<0.0005	0.006
C-88c	801b: 80-83	Type 378 box column	Flange	42	1.55	0.18	0.98	0.03	0.02	0.04	0.02	0.02	0.05	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.005
C-88a	801b: 80-83	Type 378 box column	Flange	42	1.55	0.19	1.15	0.01	0.02	0.05	0.02	0.03	0.02	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	0.0024	0.004
C-80	603A: 92-95	14WF184	Flange	36	1.375	0.23	0.90	0.01	0.01	0.03	0.01	0.02	0.01	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.004
C-65	904A: 83-96	12WF161	Flange	36	1.5	0.23	0.74	0.01	0.02	0.02	0.02	0.02	0.01	0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.004
C-155	904A: 83-86	12WF161	Flange	36	1.55	0.23	0.87	<0.005	0.02	0.03	0.02	0.03	<0.01	0.06	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.005
C-71	904A: 77-80	12WF190	Flange	36	1.75	0.23	0.73	0.03	0.02	0.03	0.02	0.02	0.04	0.08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	0.003
C-30	1008B: 104-106	14WF287	Flange	36	1.75	0.17	1.06	<0.005	0.01	0.10	0.05	0.04	<0.01	0.24	0.036	<0.005	<0.005	<0.005	<0.005	<0.0005	0.007
HH	605A: 98-101	12WF92	Flange	42	0.875	0.17	1.08	<0.005	0.01	0.03	0.02	0.02	<0.01	0.24	0.065	<0.005	<0.005	<0.005	<0.005	<0.0005	0.010

In addition, the exclusion from adequate examination of columns with unknown as-built locations, and of columns from above the impact and fire areas cannot be justified. Any column could hold conclusive evidence; one cannot determine that a piece does not yield any useful clues before it has been adequately examined.[18]

Several statements by NIST, for example, "… only the first group of samples were analyzed" (paragraph "4.1.3 Other Identified Core Columns", see above), "… no further analysis was conducted" (paragraph "4.1.4 Unidentified Core Columns", see above), or "While these damage features were observed and recorded for each individual [perimeter] column, no effort was made to quantify the frequency with which the modes occurred for each column, particularly for Type 1 and Type 2 modes." (paragraph "3.2.1 Types of Failure Modes", see above) show that the exclusion of steel from being adequately examined is not just a reporting problem in the published final report but a problem of NIST's study design. The named steel was indeed not adequately examined, but excluded from the very beginning.

NIST's published report even contains a systematic examination of the damage and failure modes of a certain group of parts, but in line with its premise NIST chose floor truss connectors to demonstrate its ability to conduct a systematic analysis of damage and failure modes, i.e., NIST examined in a much more adequate manner a group of parts that were attached to the main load bearing structural components, but failed to examine the main load bearing components themselves in an adequate manner. The damage and failure modes of any floor truss connector from identified panels are documented with photographs; even for parts from stories below the impact and fire areas. But most of the columns are featured in NIST's report

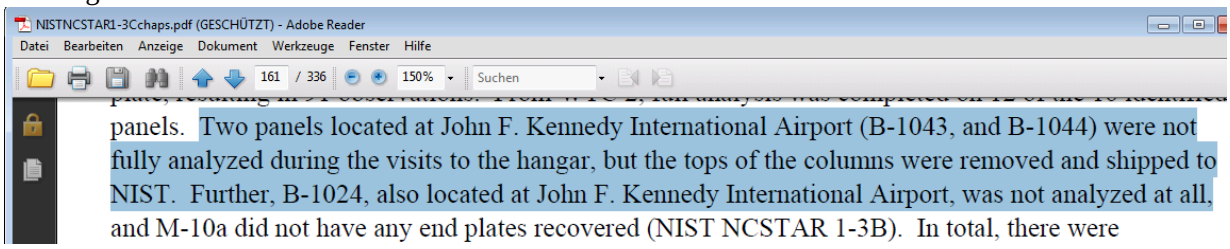
[18] For example, if a box-column would show evidence that incendiaries or explosives severed the bolts that connected it with the column below, it would not matter if the as-built location of this column is unknown; it would constitute nevertheless relevant evidence.

as single pieces only in tables that list their as-built location, size, and sometimes also the steel quality used.

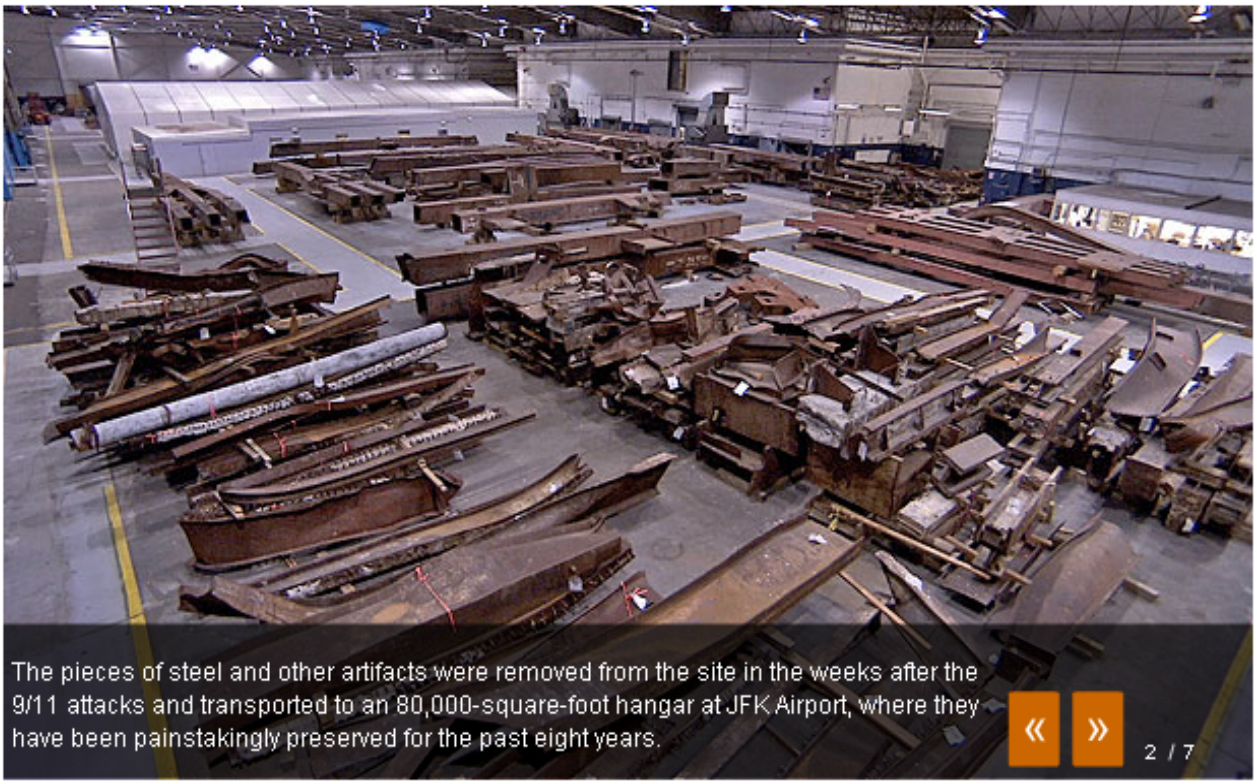
Indeed, NIST excluded not only most of its "catalogued" core columns and perimeter panels from being adequately examined, it excluded the majority of the recovered WTC steel pieces even from being "catalogued" for the investigation. Of the large number of structural steel members collected by the Port Authority of New York and New Jersey (PANYNJ), located in hangar 17 at JFK airport, only 6 whole pieces, and portions of a further 6 pieces were shipped to NIST's location in Gaithersburg and "catalogued" for NIST's WTC investigation. NIST does not attempt to justify the exclusion of so many pieces of saved WTC steel from its investigation with any arguments, circular or not, but reports only that "NIST personnel visited the hangar and identified 12 additional pieces that were considered important to its Investigation. Six of these samples were moved whole to the Gaithersburg campus. The remaining pieces had portions removed and sent to NIST …"[19] The reader is left to conclude that NIST's personnel considered most of the steel stored in hangar 17 as not being important for the investigation.[20] No

[19] Quoted from NIST NCSTAR 1-3B, page 4 (PDF-page 32). The term "additional" refers to the steel pieces already catalogued by NIST. The term "[t]he remaining pieces" refers to the remaining six pieces, see NIST NCSTAR 1-3, page 28 (PDF-page 76).

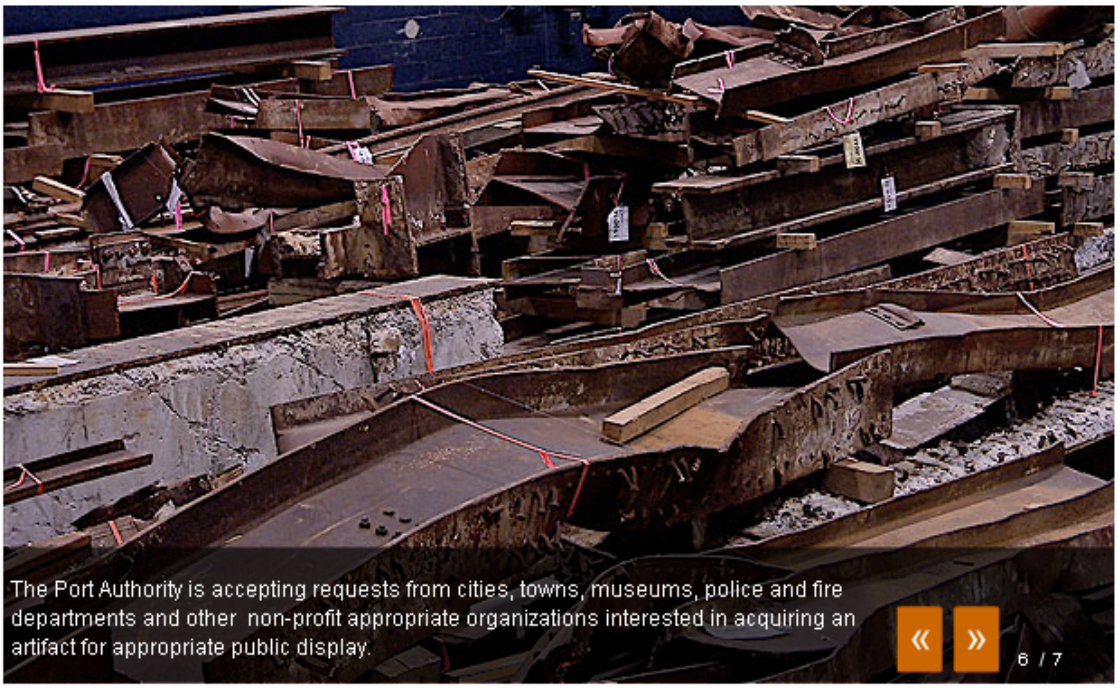
[20] The visit to hangar 17 cannot have involved an adequate examination. There is no mention in the NIST report of any such examination, nor of any results. In addition, NIST states repeatedly in NIST NCSTAR 1-3, in respect to three perimeter panels that had portions removed, that they were not fully analyzed, and, in another paragraph, that two were not fully analyzed, and one not at all. See one quote/screenshot from NIST NCSTAR 1-3C, blue highlights added. Note that these "not fully" and "not at all" analyzed panels were panels that NIST at least "catalogued."



evidentiary justification is given why NIST's personnel "considered" the bulk of the steel as not important. The photographs below show recovered WTC steel, held in hangar 17 at JFK airport. All the steel pieces on these photographs, except the 6 pieces from which NIST had portions removed, were not "catalogued" by NIST[21] and were thus de facto excluded from NIST's WTC investigation.



[21] See the table "A.1 DATABASE OF RECOVERED STEEL" in "APPENDIX A: DATA on RECOVERED WTC STEEL"; NIST NCSTART 1-3B, page 59ff (PDF-page 87). From this table it is clear that NIST lists as "recovered" only pieces stored at NIST's locations and in addition the few pieces from hangar 17, JFK airport, which were not shipped in their entirety to NIST, but only portions of them.



Photographs from http://www.panynj.gov/wtcprogress/wtc-9-11-steel.html

The recovered WTC steel constitutes physical evidence. It was NIST's duty to do what they claim to have done, namely to perform an "[e]xtensive failure analysis of the recovered steel,"[22] but NIST did not do so. NIST's decision to exclude most of the steel from being adequately examined, based on circular arguments in the case of the "catalogued" columns and perimeter panels, and without any evidentiary justification in the case of the PANYNJ steel, is one of the reasons that NIST's report does not comply on even a very basic level with what is widely accepted as good practice in science.

(II) NIST's exclusion of a common examination method

When steel deforms at high temperatures it can have distinctive deformations and/or characteristics that are easy to note with the naked eye. The method of unaided visual examination uses such deformations and

[22] NIST NCSTAR 1-3, pages xxxviii and 2 (PDF-pages 40 and 50)

characteristics to detect steel that was, or that might have been subjected to high temperatures. The named method is not only useful; it is also established common practice. See, for example, that the "NFPA 921 Guide for Fire and Explosions Investigations"[23] refers to the "deformation" of a material, defined as a "change in its shape,"[24] and to "the bending and buckling of steel beams and columns"[25] when "changes that have occurred in materials due to fire" are discussed.[26] The method of unaided visual examination was also used by one of NIST's contractors, Wiss, Janney, Elstner Associates, Inc. (WJE), which

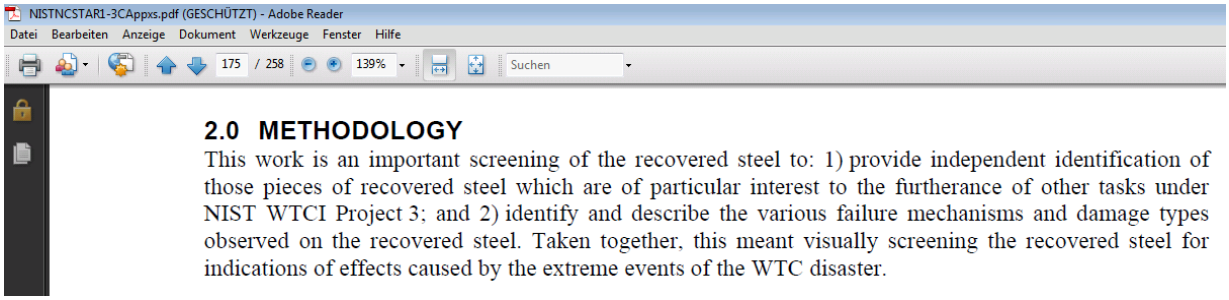
[23] Published by the National Fire Protection Association (http://www.nfpa.org). The 2008 edition of the NFPA 921 Guide is cited here and in the following quotes. NIST participates in the Technical Committee that is responsible for the statements in the NFPA 921.

[24] NFPA 921: ***6.2.2 Temperature Estimation Using Fire Effects.*** *If the investigator knows the approximate temperature required to produce an effect, such as melting, the color change, or deformation a material [sic], an estimate can be made of the temperature to which the material was raised. This knowledge may assist in evaluating the intensity and duration of the heating, the extent of heat flow, or the relative rates of heat release from fuels.*
(The same statement can be found in the 2011 edition, which is the current approved national standard.)
6.2.9 Thermal Expansion and deformation of Materials.
Many materials change shape temporarily or permanently during fires. Nearly all materials expand when heated. […] Deformation is the change in shape characteristics of an object separate from the other changing characteristics defined elsewhere in this chapter. Deformation can result from a variety of causes ranging from thermal effects to chemical and mechanical effects. […]
(The same statement can be found in the 2011 edition, which is the current approved national standard.)

[25] NFPA 921: ***6.2.9.1*** *Bending and buckling (deformation) of steel beams and columns occurs when the steel temperature exceeds approximately 538 ºC (1000 ºF). At elevated temperatures, steel exhibits a progressive loss of strength. When there is a greater fire exposure, the load required to cause deformation is reduced. Deformation is not the result of melting. A deformed element is not one that has melted during the fire, and therefore the occurrence of such deformation does not indicate that the material was heated above its melting temperature. On the contrary, a deformed as opposed to melted item indicates that the material's temperature did not exceed its melting point. Thermal expansion can also be a factor in the bending of the beam, if the ends of the beam are restraint.*
(The same statement can be found in the 2011 edition, which is the current approved national standard.)

[26] NFPA 921: ***6.2 Fire Effects. 6.2.1*** *To identify fire patterns, the investigator must recognize the changes that have occurred in materials due to fire. These changes are referred to as fire effects, which are the observable or measurable changes in or on a material as the result of a fire.*

was tasked[27] to examine WTC steel; see quotes/screenshots from NIST NCSTAR 1-3C where the WJE report is published as Appendix F: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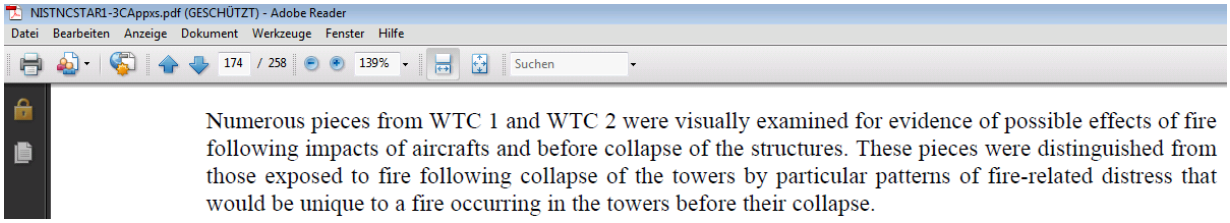
2.0 METHODOLOGY

This work is an important screening of the recovered steel to: 1) provide independent identification of those pieces of recovered steel which are of particular interest to the furtherance of other tasks under NIST WTCI Project 3; and 2) identify and describe the various failure mechanisms and damage types observed on the recovered steel. Taken together, this meant visually screening the recovered steel for indications of effects caused by the extreme events of the WTC disaster.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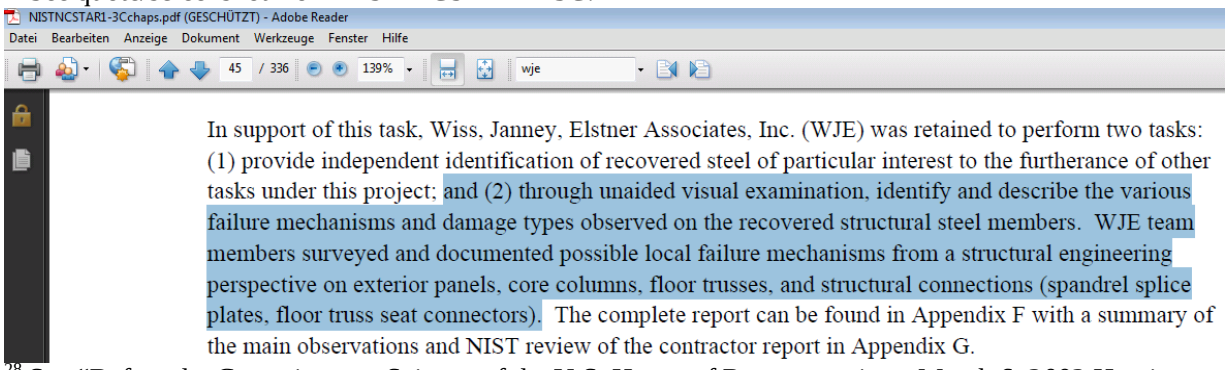
Numerous pieces from WTC 1 and WTC 2 were visually examined for evidence of possible effects of fire following impacts of aircrafts and before collapse of the structures. These pieces were distinguished from those exposed to fire following collapse of the towers by particular patterns of fire-related distress that would be unique to a fire occurring in the towers before their collapse.

The statements made by WJE's engineers in their report make it clear that they had no doubt that unaided visual examination is the first thing one does when searching for clues as to whether high temperatures affected the WTC steel. The method was also used by A. Astaneh-Asl, professor at the Department of Civil and Environmental Engineering at the University of California, Berkley, who started to search through WTC steel in September 2001, supported by a grant from the National Science Foundation.[28] The

[27] See quote/screenshot from NIST NCSTAR 1-3C: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In support of this task, Wiss, Janney, Elstner Associates, Inc. (WJE) was retained to perform two tasks: (1) provide independent identification of recovered steel of particular interest to the furtherance of other tasks under this project; and (2) through unaided visual examination, identify and describe the various failure mechanisms and damage types observed on the recovered structural steel members. WJE team members surveyed and documented possible local failure mechanisms from a structural engineering perspective on exterior panels, core columns, floor trusses, and structural connections (spandrel splice plates, floor truss seat connectors). The complete report can be found in Appendix F with a summary of the main observations and NIST review of the contractor report in Appendix G.

[28] See "Before the Committee on Science of the U.S. House of Representatives. March 6, 2002 Hearing on 'Learning from 9/11: Understanding the Collapse of the World Trade Center,'" http://911research.wtc7.net/mirrors/guardian2/wtc/astaneh-wtc.htm

statements by Astaneh-Asl, as reported in mass media articles, refer clearly to the method of unaided visual examination, used to detect WTC steel pieces that were affected by high temperatures:[29]

[…]But to Astaneh, the contrast is clear. One clue is fire damage. Only those members that were subjected to very high temperatures - hot enough to burn away fireproofing and scorch metal – could soften to the buckling point.

But the main clue, he says, is shape. "If you drop something from that 1,000-feet elevation, the bend will be random. But if a structure buckles, the buckle shape is exactly like a wave shape. That shape is a mathematical equation. It's a nice curve," he says.

"It must have happened somewhere up in the building. It can't have happened when it dropped. This must have buckled up there. When it buckles up there, it's important," he says. About half of the steel members are stamped with an identification number, so Astaneh can pinpoint exactly where in the towers they originated. […]

He also came across severely scorched members from 40 or so floors below the points of impact. He believes that the planes obliterated the elevator walls, allowing burning fuel to pour down into the building, igniting blazes hundreds of feet below the main fire. "When the plane hit," he says, "the walls around the elevator shaft were gone, just thrown away." These lower-floor fires may have contributed to the collapse, and certainly added to the death toll.

Further:[30] *To support his theory,[31] he [Prof. Astaneh-Asl] cites the way the steel has been bent at several connection points that once joined the floors to the vertical columns. If the internal supporting columns had collapsed upon impact, he says, the connection points would show cracks, because the damage would have been done while the steel was cold. Instead, he describes the connections as being smoothly warped: "If you remember the Salvador Dalí paintings with the clocks that are kind of melted -*

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[29] D. Kohn: "Culling Through Mangled Steel. Engineer Becomes World Trade Center Detective," CBS News, March 12, 2002, http://www.cbsnews.com/stories/2002/03/07/terror/main503218.shtml
In line with the media reports at this time, Astaneh-Asl attributes the very high temperatures to which some steel pieces were exposed to the effects of jet-fuel fires. But jet-fuel fires can reach maximum temperatures of about 1200ºC only (this temperature can only be reached when a larger pool of jet-fuel burns in a well-ventilated area). According to NIST's FAQ's (http://wtc.nist.gov/pubs/factsheets/faqs_8_2006.htm) "maximum upper layer air temperatures of about 1,100 ºCelsius (2,000 degrees Fahrenheit)" were reached in the jet-fuel and office fires. (Note that these are the temperatures in the air, not in the steel.)

[30] J.R. Young: "Scholars Work to Rebuild the World Trade Center Virtually.
Computer models could help minimize destruction from earthquakes or terrorist attacks," in "THE CHRONICLE OF HIGHER EDUCATION, December 7, 2001 issue, http://chronicle.com/free/v48/i15/15a02701.htm

[31] The term "his theory" refers to: "*He says the buildings might have survived the plane crashes if the ensuing jet-fuel fires had not weakened the upper floors and started a 'pancaking collapse.'*"

- it's kind of like that. That could only happen if you get steel yellow hot or white hot -- perhaps around 2,000 degrees.

Further:[32] *One piece Dr. Astaneh-Asl saw was a charred horizontal I-beam from 7 World Trade Center, a 47-story skyscraper that collapsed from fire eight hours after the attacks. The beam, so named because its cross-section looks like a capital I, had clearly endured searing temperatures. Parts of the flat top of the I, once five-eighths of an inch thick, had vaporized. Less clear was whether the beam had been charred after the collapse, as it lay in the pile of burning rubble, or whether it had been engulfed in the fire that led to the building's collapse, which would provide a more telling clue. The answer lay in the beam's twisted shape. As weight pushed down, the center portion had buckled outward. "This tells me it buckled while it was attached to the column," not as it fell, [sic!] Dr. Astaneh-Asl said, adding, "It had burned first, then buckled."[…] By comparing the beam's specifications with architectural drawings, Dr. Astaneh-Asl said he would be able to tell roughly where the beam came from. "I want to know which ones buckled and which ones did not," he said. "That will lead you to the sequence of events. I can tell you exactly what happened there." […] Dr. Astaneh-Asl said that in some places, the fireproofing melted into a glassy residue.*

WTC steel must have displayed distortions and characteristics typical for exposure to high temperature that were so easy to note by the common method of unaided visual examination that it made sense for Astaneh-Asl to *"enlist[…] the help of workers at the recycling center, training them to spot metal beams that might yield clues. Among the features he asks workers to look for are intense "fire burn" and any unusual bending patterns in the metal. Workers take digital photos of the steel that they process, he says, and save pieces that look unusual."*[33]

Nevertheless, NIST's scientists and engineers excluded the method of unaided visual examination, which includes the screening of the steel for such easy-to-note distinctive deformations and characteristics, when they examined

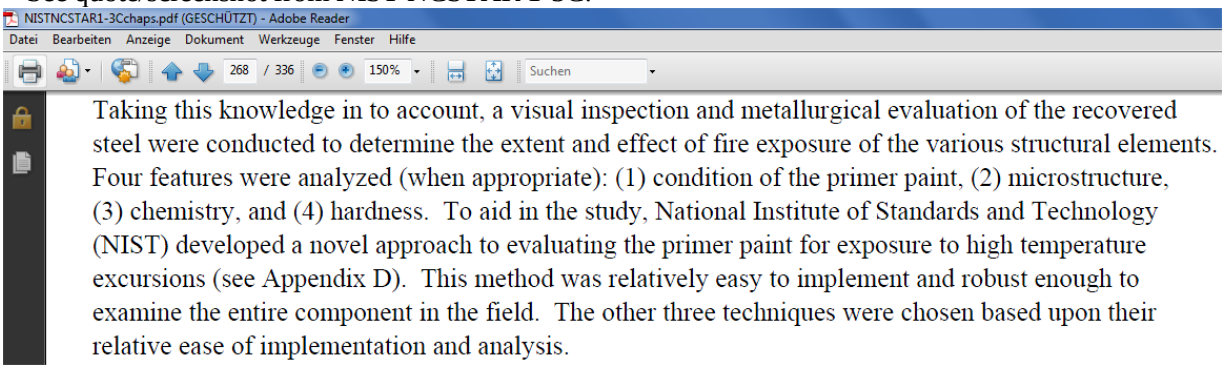
[32] K. Chang: "Scarred Steel Holds Clues, And Remedies," in New York Times, October 2, 2001, http://www.nytimes.com/2001/10/02/science/scarred-steel-holds-clues-and-remedies.html

[33] Quoted from J.R. Young: "Scholars Work to Rebuild the World Trade Center Virtually …," see above. Easily noted deformations on WTC steel typical for exposure to high temperatures were also described in a History Channel documentary ("Relics from the Rubble", see below), and on the website of PBS, featuring their program "America Rebuilds." (http://www.pbs.org/americarebuilds/artifacts/artifacts_09.html, http://www.pbs.org/americarebuilds/artifacts/artifacts_10.html. Note the photographs and the narratives below the photographs.) See also the following statement: *"The big beams that have obvious fire damage, we're putting aside for now,"* by *"Robert Kelman, senior vice president and general manager of Hugo Neu Schnitzer East of Jersey City, one of the two companies that are recycling the steel."* Quoted from K. Chang: "Scarred Steel Holds Clues …;" see above.

WTC core columns and perimeter panels for exposure to high temperatures.[34] NIST used instead a microscope-aided visual examination of the condition of the primary paint of the steel when they systematically screened WTC perimeter panels and core columns as to whether they were possible affected by high temperatures.[35] The microscope aided, paint-based method (the primary paint is examined if it shows a certain kind of crack pattern) is new; it was specifically developed by NIST for the WTC investigation.[36] It might be of some advantage to use a microscope-aided visual examination of the

[34] NIST excluded the common method of unaided visual examination when screening core columns and perimeter panels as to whether they were subjected to high temperatures. NIST used unaided visual examination with respect to other questions, for example, to check if columns were affected by the airplane impacts, if welds were fractured, etc. When in the following NIST's exclusion of the common method is discussed, terms like "the common method" refer always to the exclusion of this method in respect to the question as to whether steel was exposed to high temperatures.

[35] See quote/screenshot from NIST NCSTAR 1-3C.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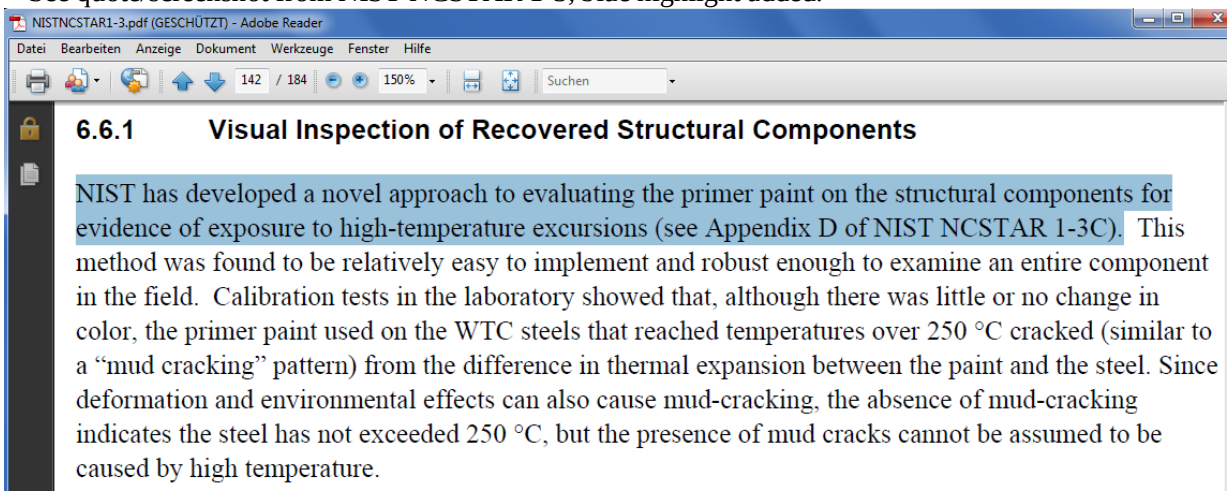
Taking this knowledge in to account, a visual inspection and metallurgical evaluation of the recovered steel were conducted to determine the extent and effect of fire exposure of the various structural elements. Four features were analyzed (when appropriate): (1) condition of the primer paint, (2) microstructure, (3) chemistry, and (4) hardness. To aid in the study, National Institute of Standards and Technology (NIST) developed a novel approach to evaluating the primer paint for exposure to high temperature excursions (see Appendix D). This method was relatively easy to implement and robust enough to examine the entire component in the field. The other three techniques were chosen based upon their relative ease of implementation and analysis.

Microstructure, chemistry and hardness were only examined in a few pieces where the paint based screening process suggested a possible exposure to temperatures above 250 ºC, and in sample (2) of FEMA Appendix C.

[36] See quote/screenshot from NIST NCSTAR 1-3, blue highlight added.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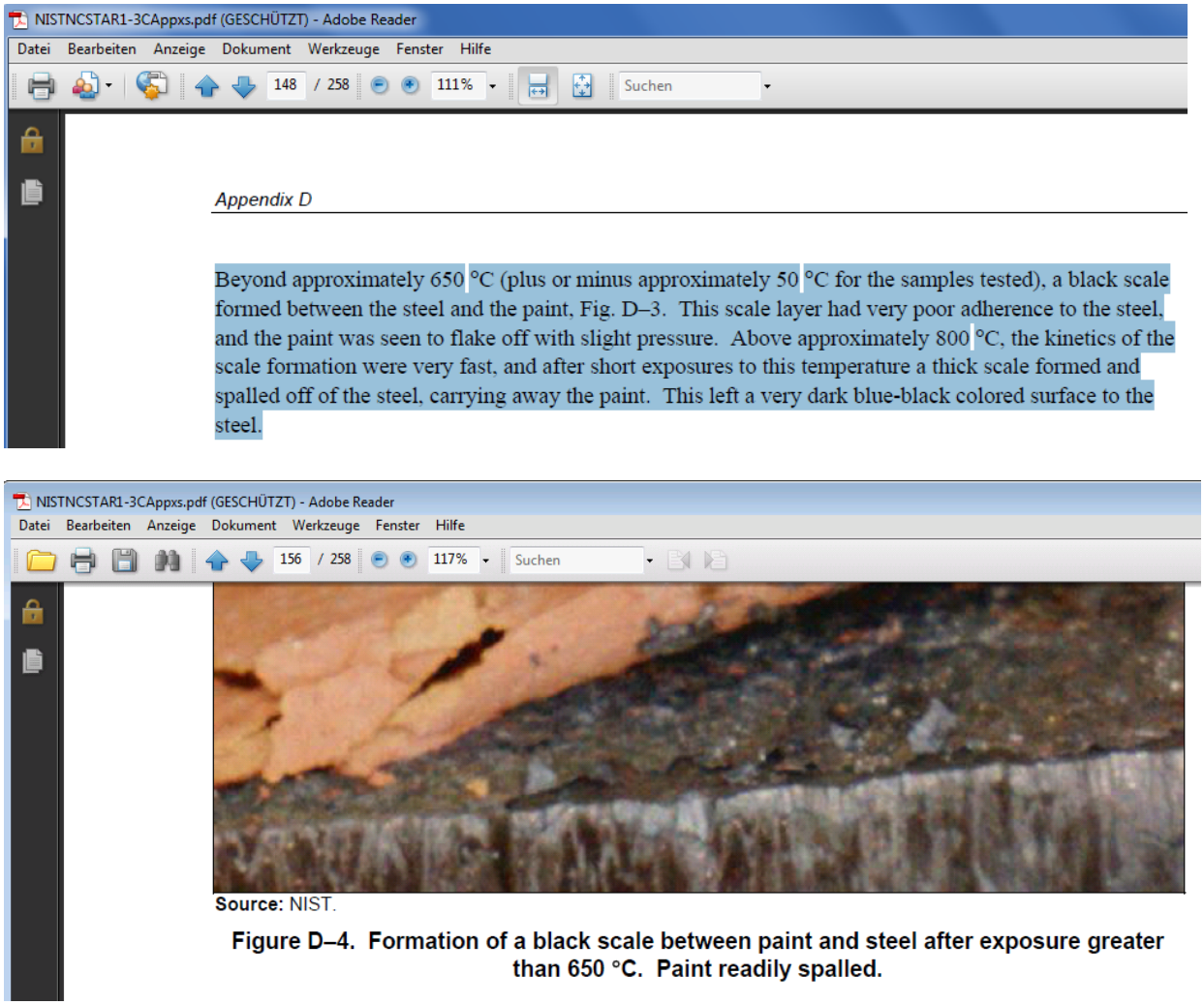
6.6.1 Visual Inspection of Recovered Structural Components

NIST has developed a novel approach to evaluating the primer paint on the structural components for evidence of exposure to high-temperature excursions (see Appendix D of NIST NCSTAR 1-3C). This method was found to be relatively easy to implement and robust enough to examine an entire component in the field. Calibration tests in the laboratory showed that, although there was little or no change in color, the primer paint used on the WTC steels that reached temperatures over 250 °C cracked (similar to a "mud cracking" pattern) from the difference in thermal expansion between the paint and the steel. Since deformation and environmental effects can also cause mud-cracking, the absence of mud-cracking indicates the steel has not exceeded 250 °C, but the presence of mud cracks cannot be assumed to be caused by high temperature.

protective paint on the steel in addition to the common unaided visual examination (where not just the paint *on* the steel but also the *actual* steel is examined) when examining WTC core columns and perimeter panels systematically for high temperature excursions. But this is not what NIST did. Instead NIST substituted for the common method of unaided visual examination of the steel the microscope-aided examination of the paint as the systematically used tool when screening the "catalogued" columns as to whether they were subjected to high temperatures. The paint-cracking method is the only method that is used by NIST to screen the named "catalogued" pieces as to whether they were subjected to high temperatures.

NIST's paint cracking method has two relevant limitations: First, NIST's method is, per design, most likely useless on all those areas of a steel member that experienced temperatures above approximately 650ºC, and almost certainly useless on all those areas of a steel member that experienced temperatures above approximately 800ºC. As NIST reports, a scale forms from 650ºC upwards between steel and paint,[37] and both are likely to fall off easily. See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added, and photograph (cropped)/screenshot from NIST NCSTAR 1-3C.

[37] At least if heated slowly. That NIST does not validate and/or report what happens in the case that the steel is suddenly subjected to high temperatures is an additional problem of NIST's method. Astaneh-Asl describes in the quote cited from the NYT (see above) that the SFRM (sprayed fire-resistive material, which was on top of the paint) was melted into a glassy residue, indicating that the SFRM experienced very high temperatures while the paint must have remained on the steel. NIST received the steel saved by Astaneh-Asl but any SFMR melted into a glassy residue is not mentioned in NIST's report. The melting of the SFRM (made up of "'slag wool and inorganic binders' with the 'chemical family' of 'silicates and calcium sulfites'") into a glassy residue indicates very high temperatures (see Chapter 9 in NIST NCSTAR 1-3E for the make-up of the SFRM).



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Appendix D

Beyond approximately 650 °C (plus or minus approximately 50 °C for the samples tested), a black scale formed between the steel and the paint, Fig. D–3. This scale layer had very poor adherence to the steel, and the paint was seen to flake off with slight pressure. Above approximately 800 °C, the kinetics of the scale formation were very fast, and after short exposures to this temperature a thick scale formed and spalled off of the steel, carrying away the paint. This left a very dark blue-black colored surface to the steel.

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Source: NIST.

Figure D–4. Formation of a black scale between paint and steel after exposure greater than 650 °C. Paint readily spalled.

Areas of columns that were heated above 650 or 800ºC were therefore highly unlikely to have any paint left. In NIST's experiments the steel shows a blue-black colored surface after the scale fell off at or above 800ºC. One might assume that the colored surface would have allowed NIST to detect pieces that experienced high temperatures. But WTC steel that lost its paint already in 2001, and not only in a laboratory furnace a few minutes before the examination, was rusty when NIST conducted its investigation, eliminating the possibility to detect any blue-black colored surfaces that would have indicated exposure to high temperatures.[38] NIST would have been able to

[38] There is also no mention in NIST's report that NIST would have screened the steel for blue-black surfaces.

follow up on columns that had no paint left using other methods (paint loss can be due to various reasons), but NIST did not do this[39] – despite the fact that paint loss is interpreted by the common method of unaided visual examination as a sign of possible exposure to high temperatures, and despite NIST's explicit knowledge of the fact that the paint will indeed be lost from 650ºC upwards.

Given that NIST selected only 4 of the 55 columns that NIST discuss in paragraph 4.1 "CORE COLUMNS" in NIST NCSTAR 1-3C, and 21 of the 90 panels to be screened as to whether they were subjected to high temperatures,[40] an inherent characteristic of the microscope aided method had the effect of being a limitation too – one can notice indications for a possible exposure to high temperatures only on such steel members that were selected to be examined. In contrast, the common method of unaided visual examination more or less "forces" one to notice (i.e., whether one wishes to recognize it or not) that certain steel members most likely experienced high temperatures, and works also well for steel members that have no paint left.

For someone who wants to exclude evidence for exposure to high-temperatures that has the potential to falsify NIST's premise, the limitations of the paint-cracking method are clearly advantageous. In fact, NIST went to great lengths to substitute its paint based method for the common method of unaided visual examination of the steel and to safeguard the exclusion of the common method (see below).

By deliberately excluding the data the common method of visual examination can provide in respect to high temperature exposure of steel, NIST is again, i.e., independent of the problem of the exclusion of steel, not in

[39] Except for the case of perimeter column K-16, which was examined already in a study published as Appendix C, "Limited Metallurgical Examination" of the FEMA/BPAT "World Trade Center Building Performance Study" that called for the further examination of its two samples.
[40] For NIST's selection method see NIST NCSTAR 1-3C, page 218 (PDF-page 268).

line with basic requirements of the scientific method. Using the paint-cracking method as the only systematically used tool to screen the steel, NIST was able to "miss" recognition of all indications for a possible exposure to high temperatures on those many pieces that were excluded from the microscope aided screening process, and all indications for an exposure to very high temperatures on areas of steel on the examined steel pieces. Based on its exclusive use of a microscope-aided screening method NIST felt free to turn, for example, a blind eye on the remarkable S-shaped deformation of the "catalogued" wide flange section that is by chance visible on one photograph in the NIST report, and on the possible high-temperature exposure of the steel that reminded Astaneh-Asl of Dali's melted clocks, and on the heat damaged steel from floors below of the impact areas collected by Astaneh-Asl,[41] and on the deformation of the structural steel visible on the photograph 1/7 from hangar 17, JFK airport, and on the horse-shoe bend column documented in "Relics in the Rubble." See a photograph from the S-shaped wide flange section[42] and from the named steel in hangar 17, JFK airport,[43] and a still frame from "Relics in the Rubble." [44]

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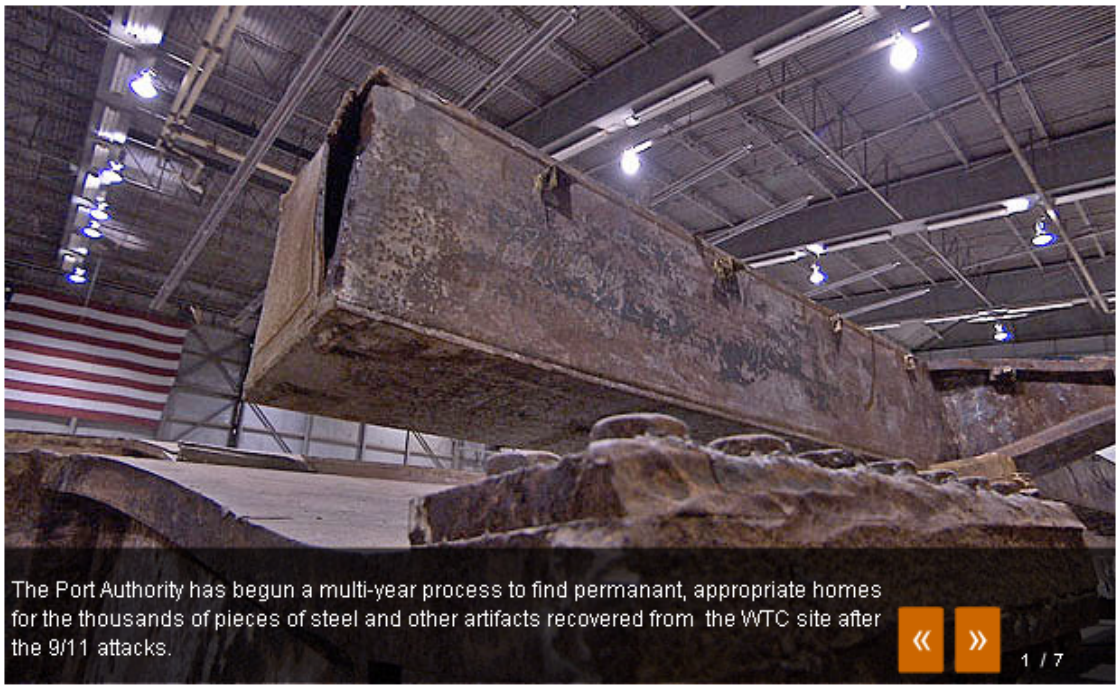
[41] Regarding the high temperature exposure of these parts, see the above statements in the media reports about Astaneh-Asl's work. That NIST held the steel collected by Astaneh-Asl during its WTC investigation is suggested by NIST's statement in NIST NCSTAR 1-3B, page 4 (PDF-page 32): "Facing concerns that the identified steel [i.e., steel that was collected by various teams] may not be properly preserved in the recovery yards, NIST arranged for the steel to be shipped to its campus in Gaithersburg, Maryland, starting in March 2002. Professor Astaneh-Asl also granted NIST permission to take custody of the steel that he had personally marked."

[42] Photograph (cropped) from NIST NCSTAR 1-3B, page 41 (PDF-page 69) Not even the "NIST-name" of this wide-flange section (very likely a core column) can be deduced from NIST's published report.

[43] Photograph from http://www.panynj.gov/wtcprogress/wtc-9-11-steel.html

[44] This piece, most likely a core column, should be part of the PANYNJ steel (see narrative below). "Relics from the Rubble," History Channel, 2002, broadcast as "THIS WEEK in HISTORY. SPECIAL," Senior Producer Robert Sharenow, Produced and written by Molly Thompsen. Narrative: "[Voice of narrator:] This eight-ton steel I-beam is six inches thick. It was selected to be preserved for future generations for the near perfect horse-shoe like bend formed during the collapse. [voice of person to the right hand side:] I got it hard to believe that it's actually bent because of the size of it and how it has no cracks in the iron. It bent without a single crack in it. It takes thousands degrees to bend steel like this… [voice of person to the left hand side:] There should be buckling and tearing at the tension side, but there is no buckling at all."


e)
C-71


The Port Authority has begun a multi-year process to find permanant, appropriate homes for the thousands of pieces of steel and other artifacts recovered from the WTC site after the 9/11 attacks.
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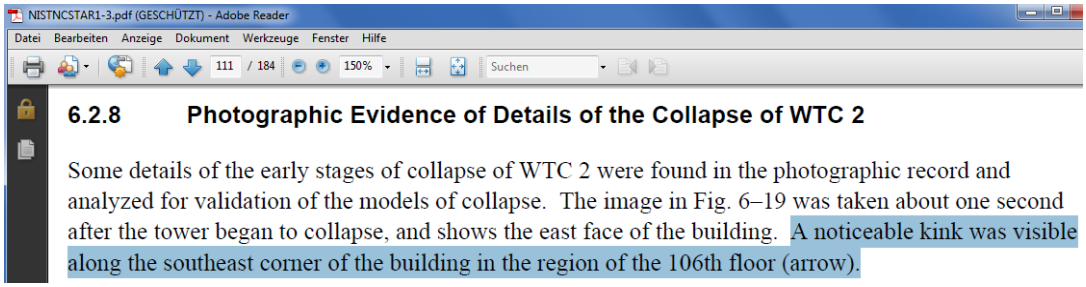
Another example of the effect of NIST's exclusionary tactics and of the poor quality of NIST's investigation is NIST's failure to adequately examine core column C-30.[45] The as-built location of C-30 was in WTC 2, stories 104 to 106[46] at the north-east corner of the core. The column displays obvious signs indicating that it was bent at high temperatures and while it was still restrained in a frame. C-30 shows for most of its length a smooth bend without cracks and without buckling of the flanges, indicating that the smoothly bent part was at high temperatures when it was bent. In addition, the column is bent only along one axis; the flanges are still in one plane,[47] indicating that the column was still well restrained in the frame when it was bent. See photographs from NIST NCSTAR 1-3B (page 44) and NIST NCSTAR 1-3D (page 258) that show C-30.

[45] NIST used C-30 when evaluating the quality of the WTC steel (see NIST NCSTAR 1-3D "Mechanical Properties of Structural Steels"), but did not examine its damage and failure modes.
[46] NIST NCSTAR 1-3B, page 10 (PDF-page 38)
[47] See also NIST NCSTAR 1-3D, page 254 (PDF-page 288)

Since it is indicated that the deformation of column C-30 happened at high temperatures and while the column was still in the building, and since the indications are so obvious to notice when the common method of unaided visual examination is employed, it would have been NIST's duty to follow up on the possibility of a high temperature exposure of column C-30 while it was still in the building. But C-30 was located far above the fire areas; following up on these indications had the potential of falsifying NIST's premise. If further examinations would have supported what is indicated by the deformation and characteristics of C-30, NIST would have documented data that prove that a fireproofed core column was exposed to very high temperatures outside of the fire areas. Both the circular argument described above (which excluded C-30 from any examination regarding its damage and

failure mode) and the exclusive use of the new-developed paint based method when screening the columns "allowed" NIST to act as if they did not notice the obvious indications of possible high temperature exposure of C-30 while restrained in the frame.

Any institution conducting a real investigation into the reasons of the Twin Tower destruction would have found the damage and failure modes of C-30 very interesting at least for the reason that it stretched over those stories where the top part of WTC 2 started to disintegrate, with no apparent reason, early in the final destruction; the edge of the building showed a "sharp kink"[48] in the south-east corner well above of the impact and fire area that degraded "into a gentle curve" in the north-east corner.[49] The kink and the curve are documented in NIST NCSTAR 1-3 and NIST NCSTAR 1-3C[50] – i.e. by "Project 3", which was responsible for steel examination,[51] and in NIST NCSTAR 1-6. See quotes/photograph/screenshots from NIST NCSTAR 1-3 and NIST NCSTAR 1-6, blue highlights added.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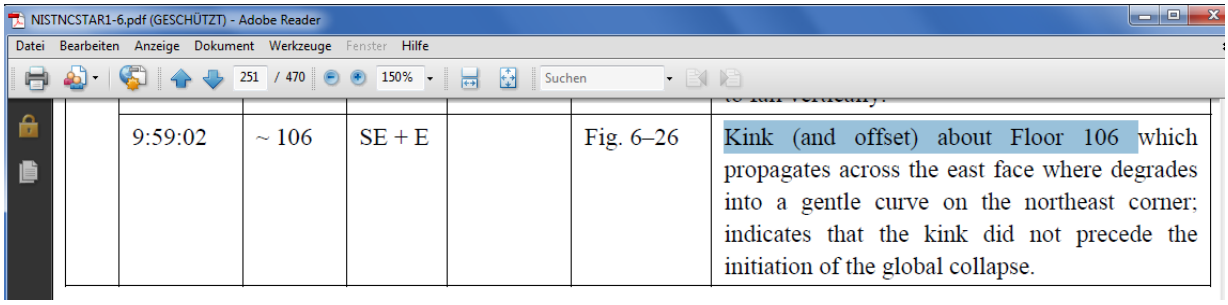
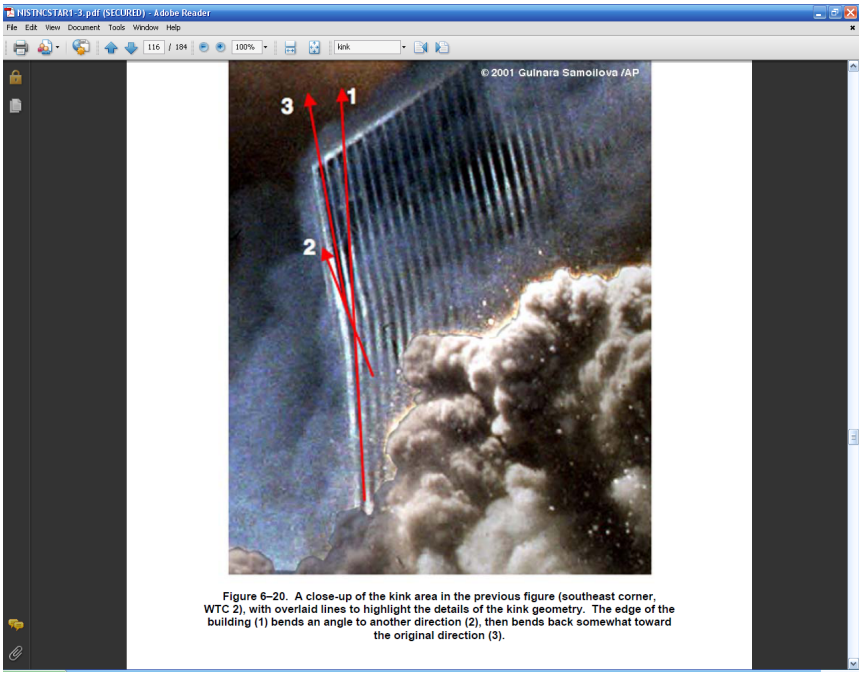
6.2.8 Photographic Evidence of Details of the Collapse of WTC 2

Some details of the early stages of collapse of WTC 2 were found in the photographic record and analyzed for validation of the models of collapse. The image in Fig. 6–19 was taken about one second after the tower began to collapse, and shows the east face of the building. A noticeable kink was visible along the southeast corner of the building in the region of the 106th floor (arrow).

[48] NIST NCSTAR 1-3, page 63 (PDF-page 111)
[49] NIST NCSTAR 1-6, page 169 (PDF-page 251)
[50] NIST NCSTAR 1-3, pages 63 and 67f (PDF-pages 111 and 115f); NIST NCSTAR 1-3C, page 25 (PDF-page 75).
[51] The kink and the curve are not explicable with the change in how gravitation acted on the building due to the leaning of the upper section; the Twin Towers were designed to withstand high wind loads (i.e., large lateral forces).

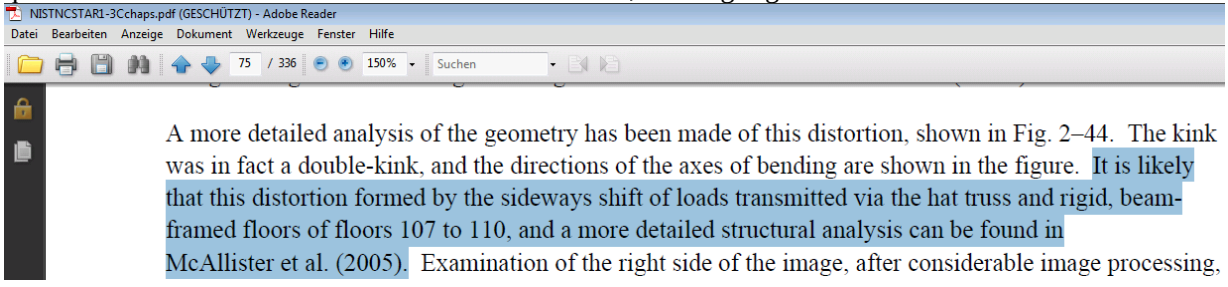


	9:59:02	~ 106	SE + E		Fig. 6–26	Kink (and offset) about Floor 106 which propagates across the east face where degrades into a gentle curve on the northeast corner; indicates that the kink did not precede the initiation of the global collapse.



The authors of the final report concerning the steel examination even expected that NIST would publish a discussion of the kink by T. McAllister (co-leader of Project 6 "Structural Fire Response and Collapse Analysis) as part of the final report, [52] but the scientists and engineers responsible for the steel

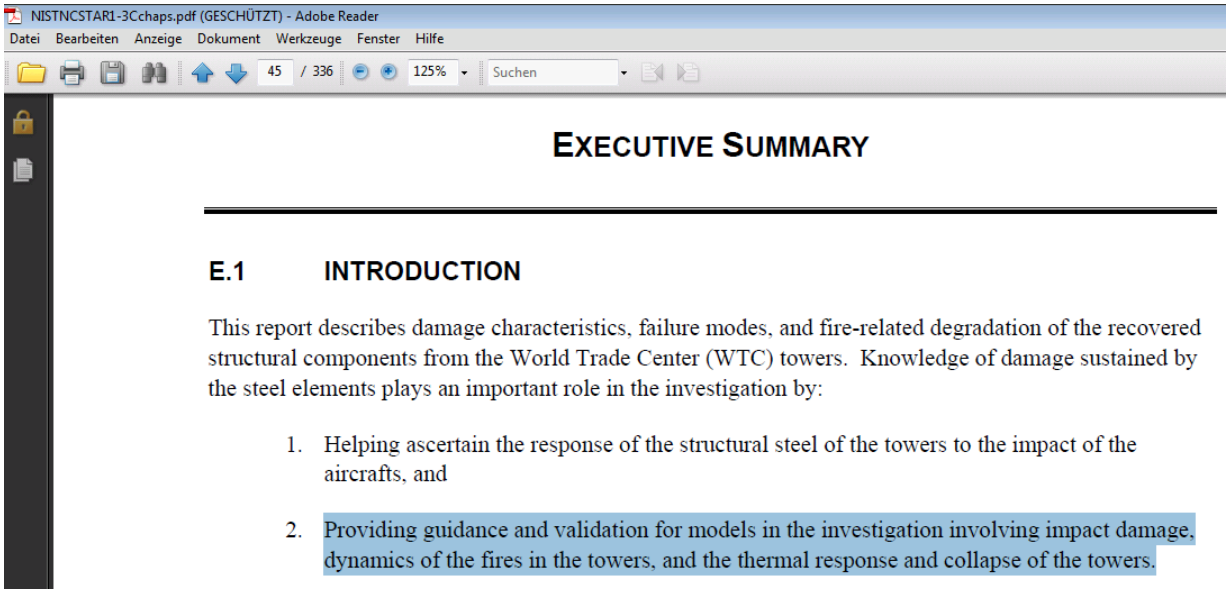
[52] The analysis of the "kink" was supposed to be published in a sub-file NIST NCSTAR 1-6E. See two quotes/screenshots from NIST NCSTAR 1-3C and 1-3, blue highlights added.



examination nevertheless neglected to examine C-30 for its damage and failure modes, and NIST failed to discuss C-30 in relation to the kink.

(III) NIST's lack of quality data for validating their models

Providing data for the validation of the temperature models and for the validation of "modeling efforts" of the "collapse analysis" was among the stated goals of NIST's steel examination. See quote/screenshot from the "Executive Summary" of NIST NCSTAR 1-3C, blue highlights added.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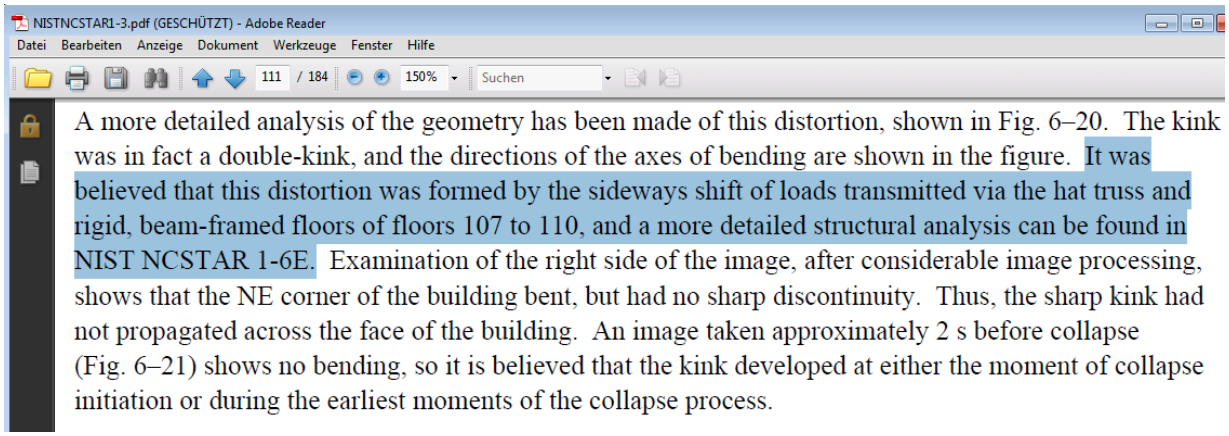
EXECUTIVE SUMMARY

E.1 INTRODUCTION

This report describes damage characteristics, failure modes, and fire-related degradation of the recovered structural components from the World Trade Center (WTC) towers. Knowledge of damage sustained by the steel elements plays an important role in the investigation by:

1. Helping ascertain the response of the structural steel of the towers to the impact of the aircrafts, and

2. Providing guidance and validation for models in the investigation involving impact damage, dynamics of the fires in the towers, and the thermal response and collapse of the towers.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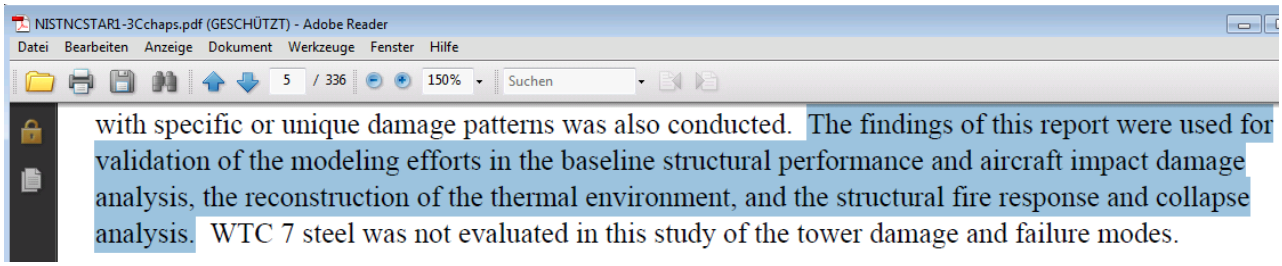
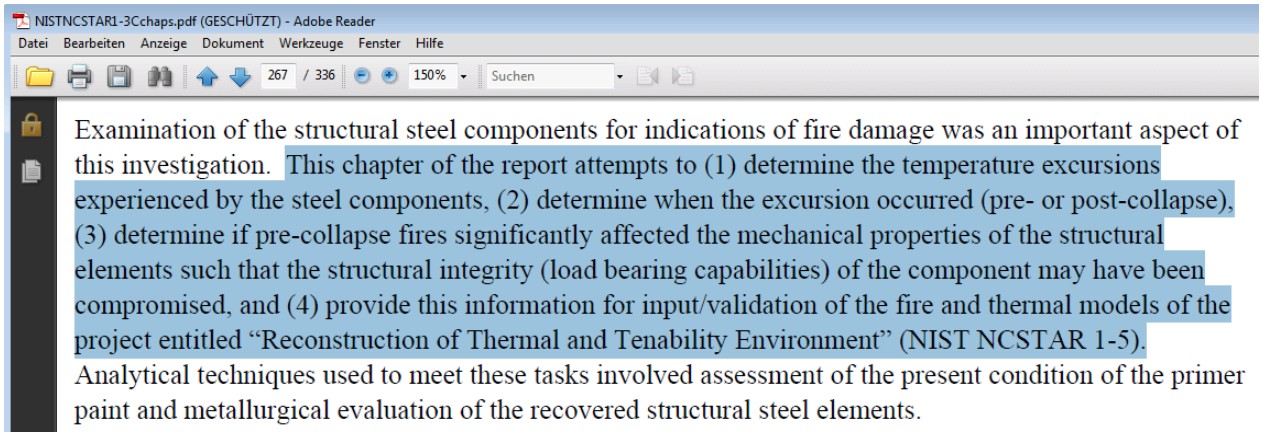
A more detailed analysis of the geometry has been made of this distortion, shown in Fig. 6–20. The kink was in fact a double-kink, and the directions of the axes of bending are shown in the figure. It was believed that this distortion was formed by the sideways shift of loads transmitted via the hat truss and rigid, beam-framed floors of floors 107 to 110, and a more detailed structural analysis can be found in NIST NCSTAR 1-6E. Examination of the right side of the image, after considerable image processing, shows that the NE corner of the building bent, but had no sharp discontinuity. Thus, the sharp kink had not propagated across the face of the building. An image taken approximately 2 s before collapse (Fig. 6–21) shows no bending, so it is believed that the kink developed at either the moment of collapse initiation or during the earliest moments of the collapse process.

The file NIST NCSTAR 1-6E has not been published.

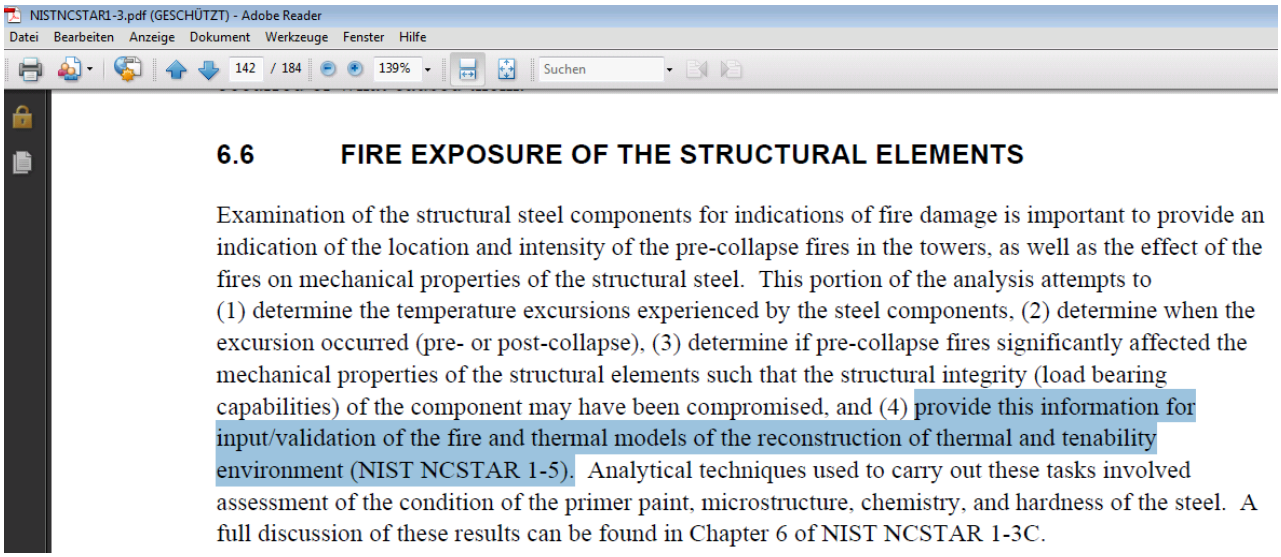
See also quote/screenshot from the “Abstract” of NIST NCSTAR 1-3C “Damage and Failure Modes of Structural Steel Components” (blue highlight added).



And, quote/screenshot from “Chapter 6. FIRE EXPOSURE OF THE STRUCTURAL ELEMENTS” of NIST NCSTAR 1-3C (blue highlights added).

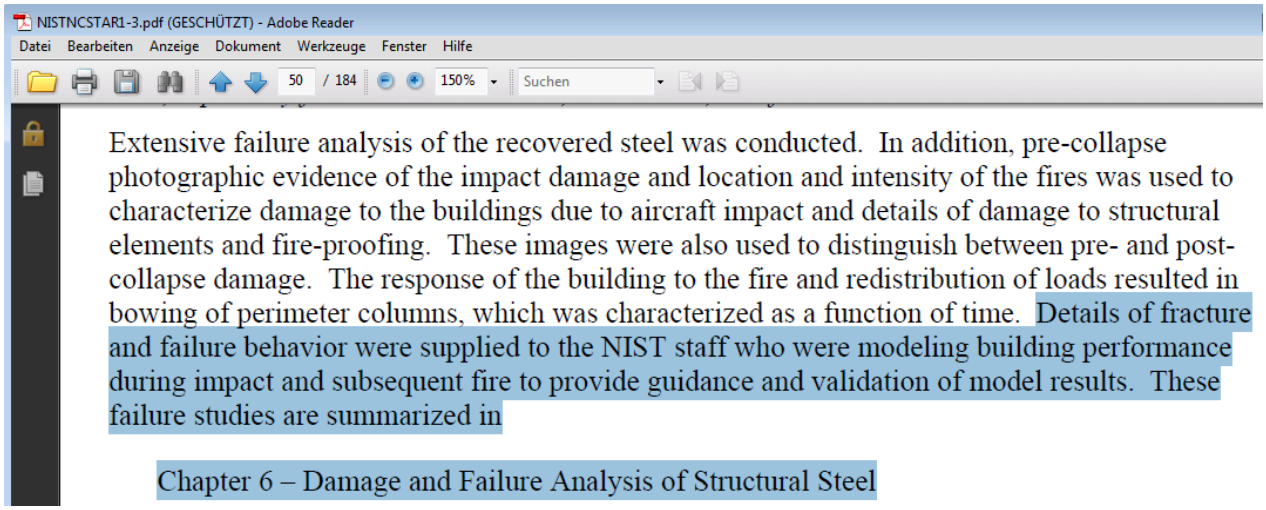


And, quote/screenshot from NIST NCSTAR 1-3, respectively NIST NCSTAR 1-3C, blue highlights added.



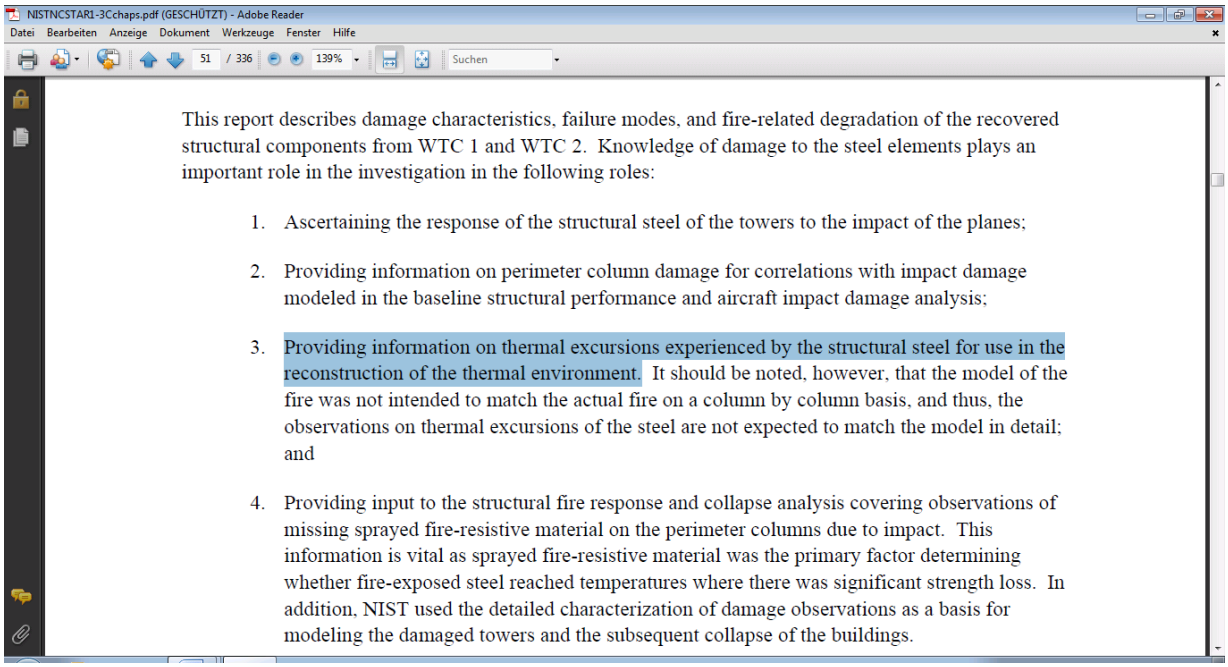
6.6 FIRE EXPOSURE OF THE STRUCTURAL ELEMENTS

Examination of the structural steel components for indications of fire damage is important to provide an indication of the location and intensity of the pre-collapse fires in the towers, as well as the effect of the fires on mechanical properties of the structural steel. This portion of the analysis attempts to (1) determine the temperature excursions experienced by the steel components, (2) determine when the excursion occurred (pre- or post-collapse), (3) determine if pre-collapse fires significantly affected the mechanical properties of the structural elements such that the structural integrity (load bearing capabilities) of the component may have been compromised, and (4) provide this information for input/validation of the fire and thermal models of the reconstruction of thermal and tenability environment (NIST NCSTAR 1-5). Analytical techniques used to carry out these tasks involved assessment of the condition of the primer paint, microstructure, chemistry, and hardness of the steel. A full discussion of these results can be found in Chapter 6 of NIST NCSTAR 1-3C.



Extensive failure analysis of the recovered steel was conducted. In addition, pre-collapse photographic evidence of the impact damage and location and intensity of the fires was used to characterize damage to the buildings due to aircraft impact and details of damage to structural elements and fire-proofing. These images were also used to distinguish between pre- and post-collapse damage. The response of the building to the fire and redistribution of loads resulted in bowing of perimeter columns, which was characterized as a function of time. Details of fracture and failure behavior were supplied to the NIST staff who were modeling building performance during impact and subsequent fire to provide guidance and validation of model results. These failure studies are summarized in

Chapter 6 – Damage and Failure Analysis of Structural Steel



But NIST cannot have data of sufficient quality to validate the temperature models they developed and applied for the fire areas. The paint based method fails above 650ºC and NIST did not follow up on parts like core columns C-88a and C-88b and on all three columns of panel S-10 where the paint method yielded “no conclusion” as “results” because no paint was left. [53] This means that NIST's Twin Tower “how the point of collapse initiation was reached” computer models, which are at the core of NIST’s presented results regarding the examination of the reasons for the failure of the structure of the Twin Towers, were run by NIST without any adequate validation of their temperature input-data. [54]

[53] NIST NCSTAR 1-3C, Appendix E, pages 447ff (PDF-pages 161ff in NISTNCSTAR1-3CAppxs.pdf); and NIST NCSTAR 1-3C “Chapter 6 FIRE EXPOSURE OF THE STRUCTURAL ELEMENTS”, pages 217ff (PDF-pages 267ff), especially page 226 (PDF-page 276)

[54] NIST’s temperature models not only lack proper validation due to NIST’s failure to adequately examine and analyze the steel, but they are also not in line with evidence (“glowing carets” that glow bright white, a “metal fire” with a “very bright white flame” “generating a plume of white smoke” and “molten flows” in the vicinity of the “metal fire”) that NIST documented in NIST NCSTAR 1-5A, Chapters 8 and 9.

In addition, the named models were run without adequate validation with respect to the "fracture and failure behavior" of the steel in the models too – at least when one wants models that are not bound by a premise that allowed only the consideration of the "fracture and failure behavior" of those steel pieces that were directly compromised by the airplane impact.

(IV) NIST went to great lengths to exclude the common method

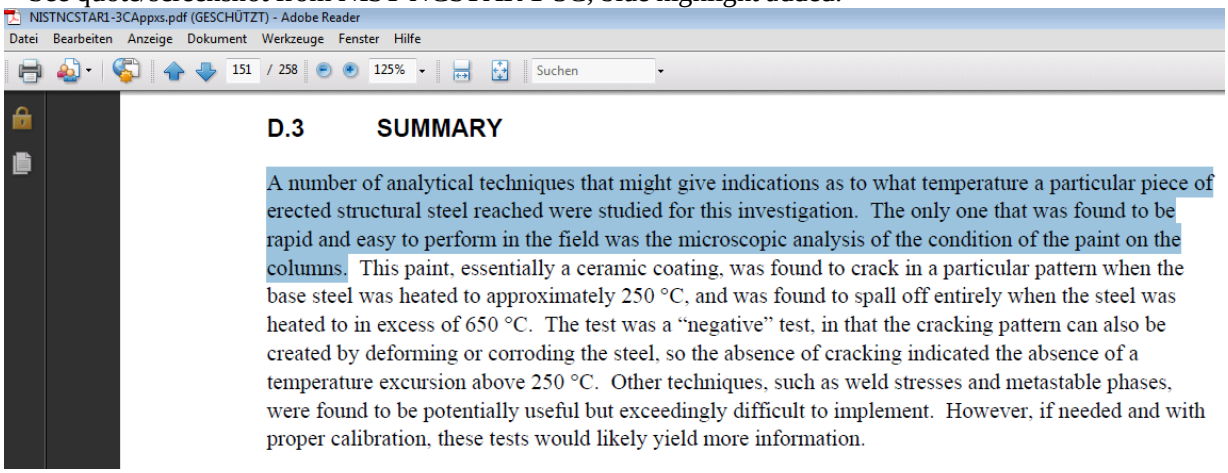
The method of unaided visual examination is indeed common to detect steel possibly exposed to high temperatures,[55] and NIST even used it – but just once on two small truss rods. In NIST's "Appendix D. FORENSIC THERMOMETRY TECHNIQUE DEVELOPMENT,"[56] methods are listed that might possibly be available to screen steel as to whether it was exposed to high temperatures. Conspicuously, the common unaided visual examination of the steel is not mentioned in this list. One might argue that the common method of unaided visual examination was not mentioned because the headline of the section is "FORENSIC THERMOMETRY TECHNIQUE DEVELOPMENT" and the common method is an existing method that does not need to be developed. But also no other section exists in NIST's report

[55] See above (reference to the common method in the NFPA 921, use of the common method by Astaneh-Asl and WJE). It may also be assumed that unaided visual examination was the first method of choice when "members of the Federal Emergency Management Agency (FEMA), American Society of Civil Engineers Association of New York (ASCE) and of the Building Performance Study (BPS) Team, and of the Structural Engineers Association of New York (SEAoNY)" started in October 2001 "to identify and collect World Trade Center (WTC) structural steel from the various recovery yards." They searched, inter alia, for "exterior column panels and interior core column from WTC 1 and WTC 2 that were exposed to fire" and for "badly burned pieces from WTC 7;" the Co-Project leader of project 6 of NIST's WTC investigation, Dr. J.Gross, "was involved in these early efforts." (The quoted parts are from NIST NCSTAR 1-3B, page 3 (PDF-page 31); similarly in NIST NCSTAR 1-3, page 27 (PDF-page 75). NIST's scientists and engineers must have had an idea how one searched in 2001 for fire affected and badly burned pieces of WTC steel. Given that they conclude in NIST NCSTAR 1-3C that all such methods like examining microstructural changes in the steel, or measurement of the residual stresses in welds, are not "easy to perform in the field"[(*)] they will not have assumed that these methods were performed in the recovery yards. [(*)]NIST NCSTAR 1-3C, "FORENSIC THERMOMETRY TECHNIQUE DEVELOPMENT", pages 433ff (PDF-pages 147ff in NISTNCSTAR 1-3CAppxs.pdf)

[56] NIST NCSTAR 1-3C, pages 433ff (PDF-pages 147ff in NISTNCSTAR1-3CAppxs.pdf)

where the method of unaided visual examination would be discussed by NIST as a possibly useful method to check whether steel was affected by high temperatures. Instead, NIST let it appear as if the new paint-based method would be the only one that was "easy to perform in the field";[57] and NIST even states: "Perhaps the most obvious physical indicator of a component's exposure to high temperatures is the condition of the paint."[58] This statement

[57] See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.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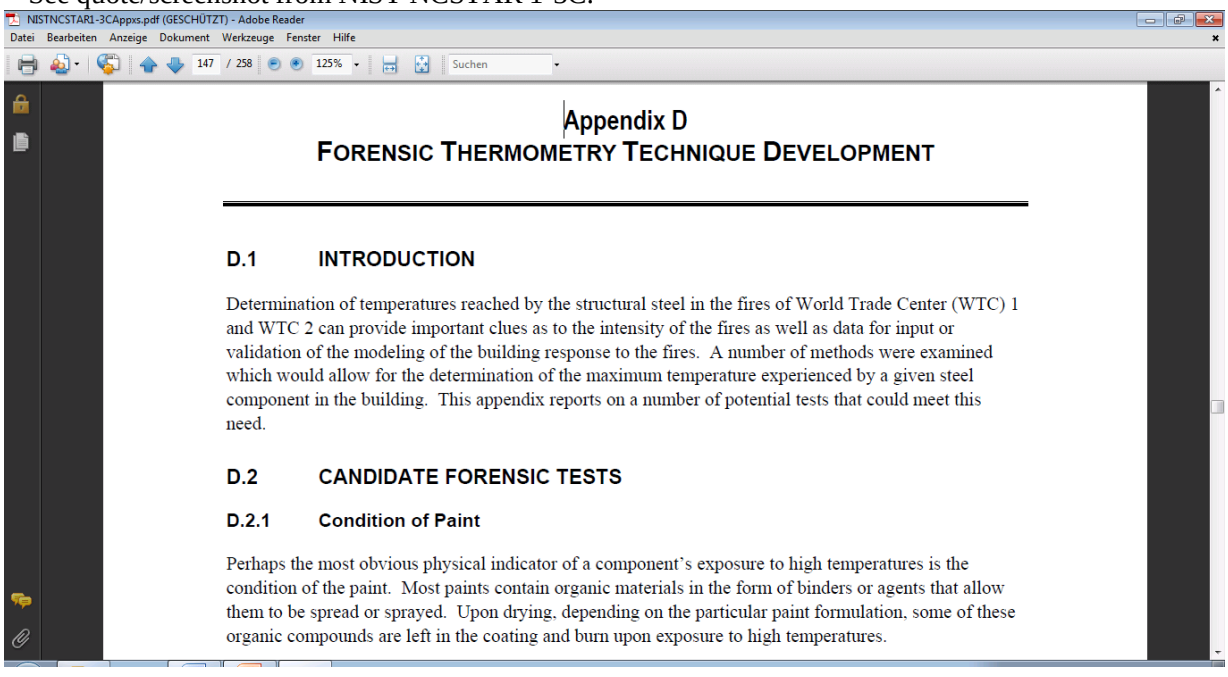
D.3 SUMMARY

A number of analytical techniques that might give indications as to what temperature a particular piece of erected structural steel reached were studied for this investigation. The only one that was found to be rapid and easy to perform in the field was the microscopic analysis of the condition of the paint on the columns. This paint, essentially a ceramic coating, was found to crack in a particular pattern when the base steel was heated to approximately 250 °C, and was found to spall off entirely when the steel was heated to in excess of 650 °C. The test was a "negative" test, in that the cracking pattern can also be created by deforming or corroding the steel, so the absence of cracking indicated the absence of a temperature excursion above 250 °C. Other techniques, such as weld stresses and metastable phases, were found to be potentially useful but exceedingly difficult to implement. However, if needed and with proper calibration, these tests would likely yield more information.

From the analytical techniques NIST selected to study, the paint based method might in fact be the best to use "in the field." What NIST does not mention is that it excluded the common method from its list.

[58] See quote/screenshot from NIST NCSTAR 1-3C.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Appendix D
FORENSIC THERMOMETRY TECHNIQUE DEVELOPMENT

D.1 INTRODUCTION

Determination of temperatures reached by the structural steel in the fires of World Trade Center (WTC) 1 and WTC 2 can provide important clues as to the intensity of the fires as well as data for input or validation of the modeling of the building response to the fires. A number of methods were examined which would allow for the determination of the maximum temperature experienced by a given steel component in the building. This appendix reports on a number of potential tests that could meet this need.

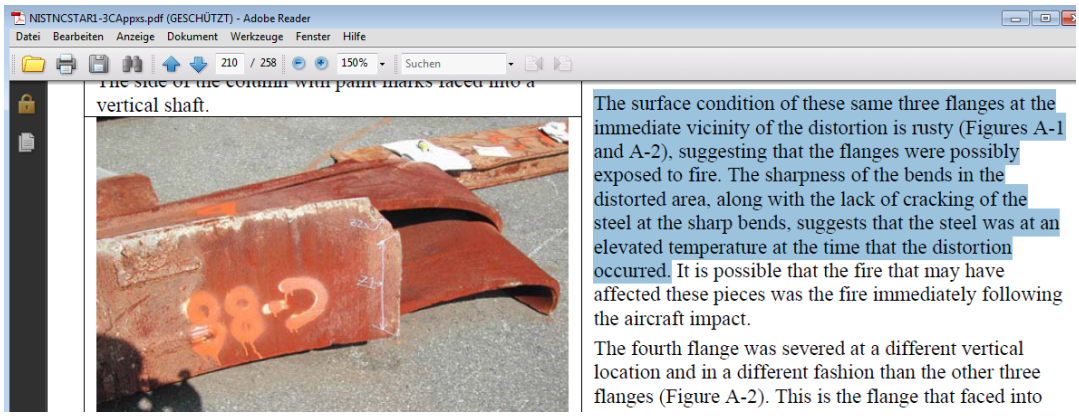
D.2 CANDIDATE FORENSIC TESTS

D.2.1 Condition of Paint

Perhaps the most obvious physical indicator of a component's exposure to high temperatures is the condition of the paint. Most paints contain organic materials in the form of binders or agents that allow them to be spread or sprayed. Upon drying, depending on the particular paint formulation, some of these organic compounds are left in the coating and burn upon exposure to high temperatures.

by NIST is especially remarkable when one considers the fact that the paint was likely to fall off steel that reached temperatures from 650ºC onwards, a fact NIST is well aware of. NIST's alleged "most obvious physical indicator" can – per design – hardly work on all those areas that experienced temperatures of approximately 650+ ºC, while the common method yields results at higher temperatures. If NIST would have included common visual examination as a possible method in its discussion, there would have been no way for NIST to argue that the paint based method was a good substitute for the common method. So it makes sense that NIST acts and writes throughout the report as if there was no method of unaided visual examination to screen columns and panels for exposure to high temperatures.

But NIST was not able to get rid of the common method just by pretending that it did not exist. NIST's contractor WEJ delivered, already in November 2003, the above mentioned report where the common method was used to examine whether selected WTC steel members, including core columns and perimeter panels from the impact and fire areas, might have experienced high temperatures. WJE used unaided visual examination as the only method applied, and based all results, including those related to the subjects "elevated temperatures / fire damage of steel," on the common method. For example, WJE relied on the shape of the bends, and on the lack of cracking in the bent area of core column C-88b when discussing its possible heat damage; see quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.

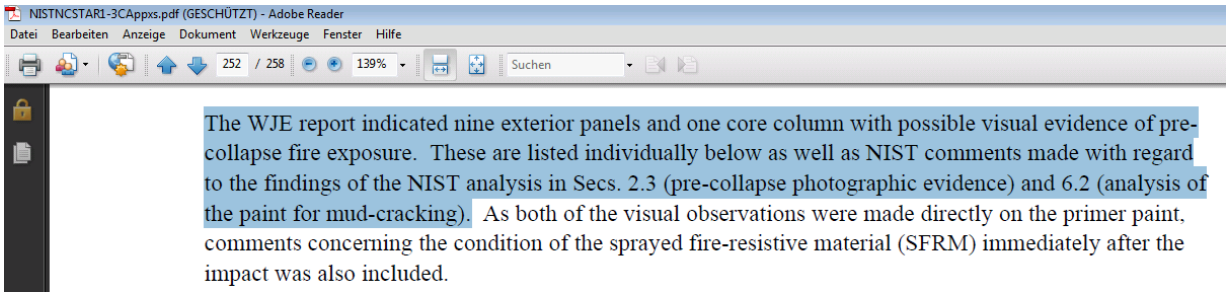


WJE's report confronted NIST with two problems: the existence and general acceptance of the common method is acknowledged by this report, and WJE provided some results that had the potential to cause a problem for NIST's premise.[59]

NIST reacted with a "review" of the WJE report, the "Summary" of which is published as Appendix G of NIST's sub-file NIST-NCSTAR 1-3C

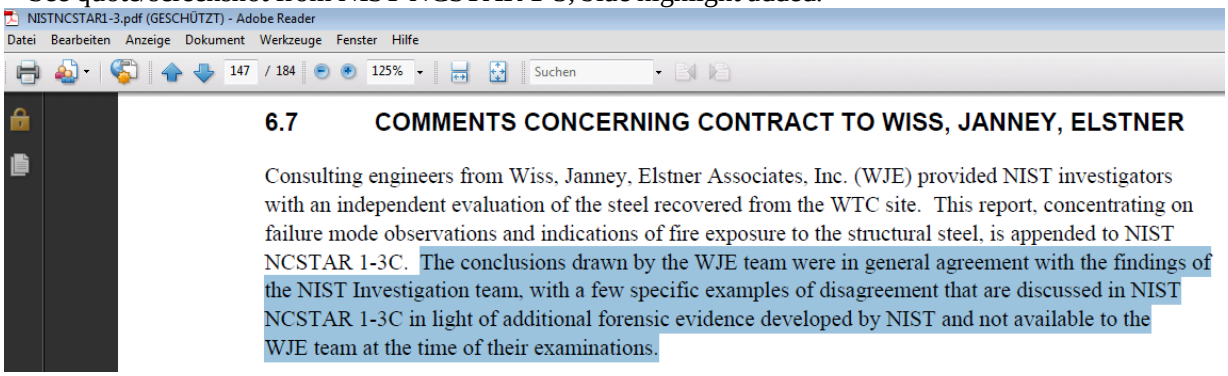
[59] There is no indication that WJE deliberately wanted to cause NIST and NIST's premise any problems. In contrast, WJE made sure to report mainly about pieces from the impact and fire areas. Interesting pieces like C-30 or the wide flange section visible on the photograph behind C-71, and parts from the lower stories are not mentioned in WJE's report. WJE states in this respect, that, while they "observed" all 236 pieces "in a general fashion," the allotted on-site time made it impossible "to make detailed observations on all 236 pieces." WJE further states: "Therefore, the priority was to examine pieces identified by NIST to be from close to the aircraft impact locations on WTC 1 and WTC 2, and pieces that had obvious visual indications of the effects of fire following aircraft impact and before the collapse of the towers. A limited survey was made of connections on exterior column pieces from WTC 1 and WTC 2. WJE also included observations on a limited number of pieces believed to be recovered from structures other than WTC 1 and WTC 2." (NIST NCSTAR 1-3C, Appendix F, page 462; PDF-page 176 in NIST NCSTAR1-3CAppxs.pdf). With this argument WJE excluded from their report steel from below the impact and fire areas from being systematically examined despite its relevance to determine the cause of the complete destruction. As it was stated already, one can expect that engineers and architects are aware that the relevant question related to the WTC destruction is why the Towers were completely destroyed, and that they must be aware that detailed descriptions of airplane impact damage on steel columns in an airplane impact area, and of fire damage to pieces in the fire affected area located on top of the huge and strong part that gave way are rather unlikely to answer this question. WJE was even tasked to provide "independent identification of recovered steel of particular interest to the furtherance of other tasks under Project 3." (Quoted from NIST's review of WJE's report; NIST NCSTAR 1-3C, page 473; PDF-page 249 in NIST NCSTAR1-3CAppxs.pdf). WJE chose - in line with NIST's premise - to spend the allotted on-site time mainly on documenting the kind of damage one would expect anyway and that is rather unlikely to give any clues why the Towers were completely destroyed.

(pages 473ff). It's not surprising that NIST agrees in general in its "review" with all observations made by WJE that are not related to the subjects "elevated temperatures / fire damage of steel."[60] The general problem that WJE used the common method was "solved" by NIST by listing "WJE observations" and "NIST observations" next to each other for those pieces where WJE noted the possibility that the piece was damaged by the jet-fuel and office fires. See the following quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.



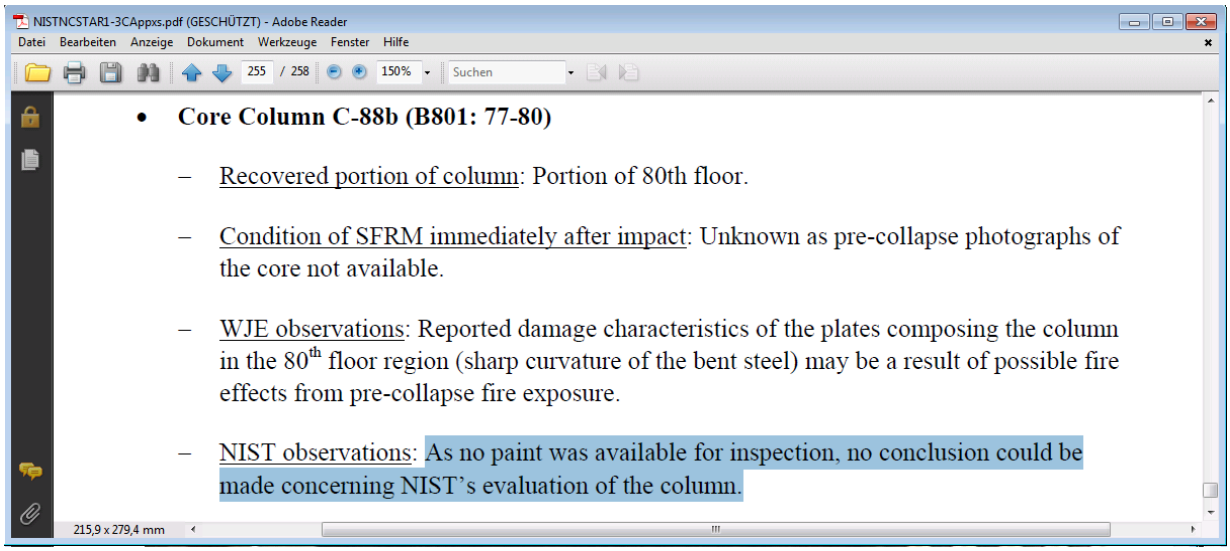
NIST's "observations" in these list are not based on the condition of the actual steel, but on the paint-cracking method. NIST notes whether a mud-cracking pattern of the paint was observed or not, and if paint was left on the piece. In addition, NIST lists the results of its fire exposure maps (which are based on videos and photos from September 11, 2001), and if the SFRM was lost or more likely not (based on the named photos and videos too). When no paint

[60] See quote/screenshot from NIST NCSTAR 1-3, blue highlight added.



The "additional forensic evidence" mentioned by NIST refers to the results of its paint-based method, and its fire exposure maps (based on videos and photos from September 11, 2001). See NIST NCSTAR 1-3C, Appendix G, page 475 (PDF-page 251 in NISTNCSTAR1-3CAppxs.pdf)

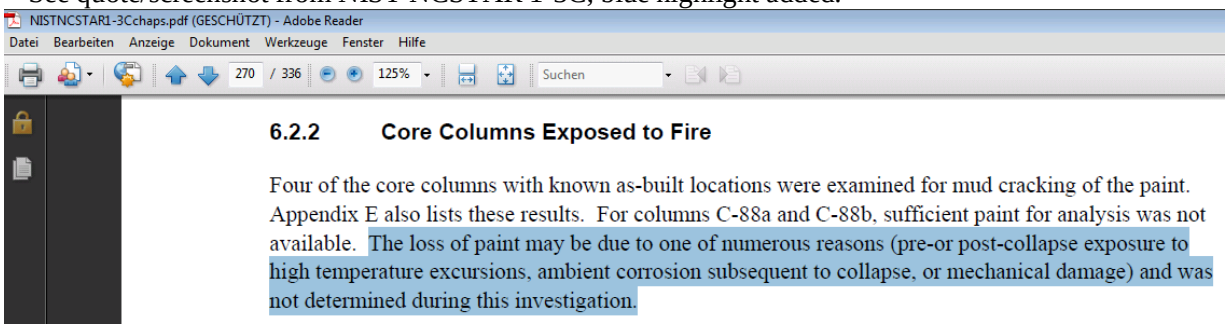
was left on a certain piece of steel, NIST states that they were not able to make a conclusion. See as an example a part of NIST's "review" regarding column C-88b (quote/screenshot from NIST NCSTAR 1-3C, blue highlight added).[61]



By doing so, and by not following up on pieces like C-88b[62] just for the reason that no paint was available, where WJE saw possible evidence for heat damage, NIST implicitly determined that the only examination method it considered reliable when screening the columns was their paint test, and that the results of their paint test "beat" results that are based on the common

[61] The not captured part states: "Pre-collapse photographic evidence: While the column was located within the fire floors, no direct information was available on the exposure of pre-collapse fires."

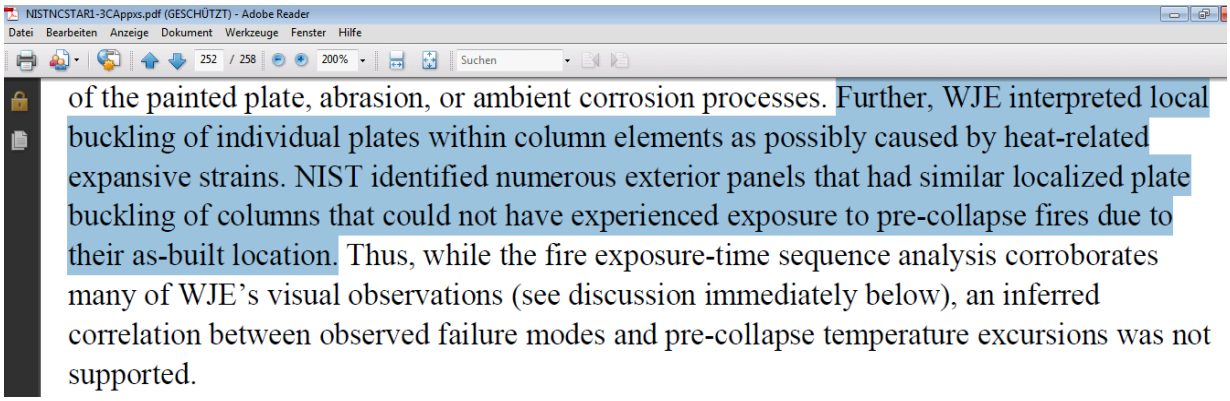
[62] See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.



NIST established only for two of the 55 "catalogued" columns discussed in that NIST discuss in paragraph 4.1 "CORE COLUMNS", NIST NCSTAR 1-3C, a result regarding their possible exposure to high temperatures.

unaided visual examination, even when no paint was left to be examined. It fits well that NIST does not really discuss the differences in the results (between WJE and NIST "observations") further; NIST needed to get rid of the common method without making the general problem it has with WJE's report too obvious. The result, that NIST substituted for the common method its paint based method, becomes only clear when one checks NIST-NCSTAR 1-3C to see whether NIST followed up on pieces like C-88b, which they did not.[63]

Another result of WJE was rejected by NIST explicitly, namely, WJE's interpretation of buckled plates of exterior columns as possibly heat damaged while in the building. See quote/screenshot from NIST NCSTAR 1-3C, page, with NIST's argument regarding the buckled column plates (blue highlight added).



If NIST would have accepted WJE's interpretation, NIST would have needed to conclude that numerous perimeter panels from stories outside of the fire areas "that had similar localized plate buckling of columns" might have been affected by high temperatures while still in the building, and to follow-up on this. To avoid this NIST determined – without any experiments or at least references from the literature – that WJE's interpretation of the localized plate buckling was unreliable (See last sentence in quote/screenshot above). When

[63] C-88b and C-88a were the only WTC 2 core columns NIST considered as relevant for its investigation.

different methods yield conflicting results one needs to assess possible reasons for this by validating the methods side by side and/or by following up using additional methods. NIST did not do this, but instead determined based on its premise that results based on the common method were unreliable. NIST cannot provide any proof that the columns in non-fire floors cannot have been affected by high-temperatures while still in the building. On the contrary, the deformation of column C-30, the horse-shoe bend column from "Relics in the Rubble," or Astaneh-Asl's observations, for example, suggest that steel members from outside the impact and fire areas were affected by high temperatures while they were still in the buildings. It was NIST's duty to examine pieces like the buckled plates of exterior columns from outside the fire areas in depth, but NIST instead determined that these pieces cannot have experienced heat damage while in the buildings[64] and dismissed WJE's results, and by this also the reliability of the common method, without any evidentiary justification.

There exists enough evidence in general for very high temperatures – too high to be caused by office and jet fuel fires – before and during the final destruction of the WTC.[65] With "glowing carets" that glow bright white, with a "metal fire" with a "very bright white flame" and "molten flows" in the vicinity of the metal fire,[66] NIST even documents evidence for extremely high

[64] NIST, which cooperates closely with the NFPA (see, for example, http://www.nfpa.org/assets/files/pdf/biechman.PDF), should be in general well aware of the fact that heat sources other than mere fires can affect a building. NIST also has a building and fire research facility http://www.nist.gov/building-and-fire-research-portal.cfm, http://www.nist.gov/bfsi-portal.cfm), and NIST employees are even members of the "Technical committee on fire investigations" that has been developing the cited NFPA 921 Guide for Fire and Explosion Investigations. See also the NFPA 921 Guide: ***6.2.2.2**** *[…] Burning metals and highly exothermic chemical reactions can produce temperatures significantly higher than those created by hydrocarbon- or cellulosic-fueled fires.*

[65] See, for example, S.E. Jones, J. Farrer, G.S.Jenkins, et al.: "Extremely high temperatures during the World Trade Center destruction," in Journal of 9/11 Studies 2008, http://www.journalof911studies.com/articles/WTCHighTemp2.pdf

[66] NIST avoids addressing the bright, whitish-yellow glowing color of the molten material at the point where it flows out of the building, which shows its very high temperature, but instead speculates about its composition. One of the photographs below shows also whitish smoke next to a "flow" (near the inserted number "79").

temperatures in the still standing buildings, though without acknowledging the implication of the documented evidence. See quotes and photographs (screenshots) from NIST NCSTAR 1-5A and NIST NCSTAR 1-5, blue highlights added.

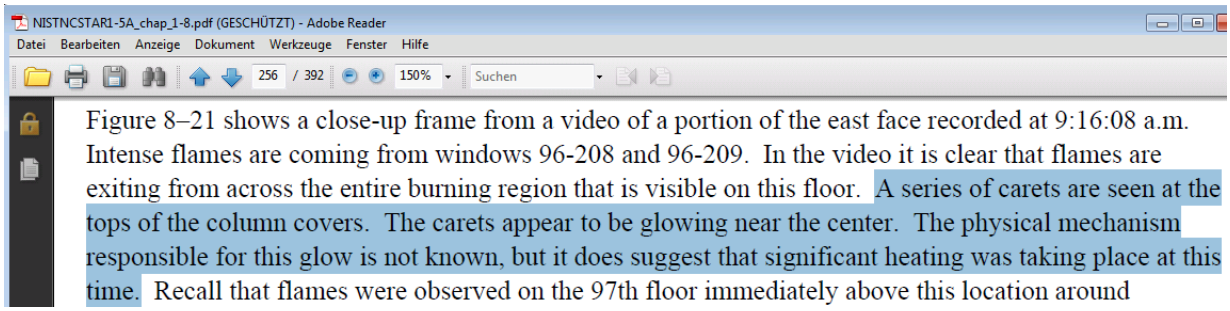
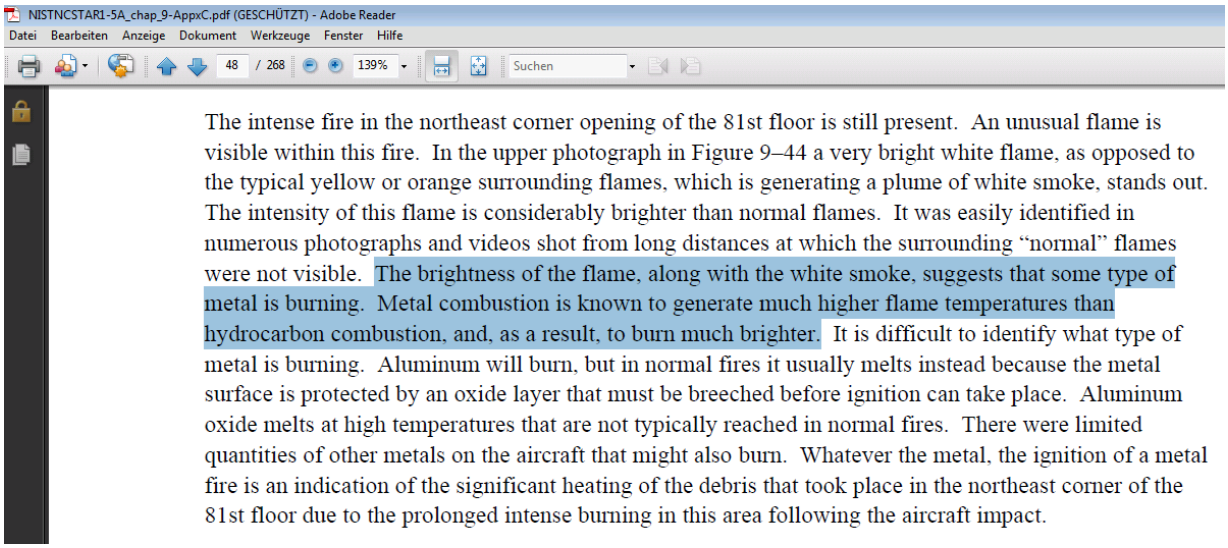
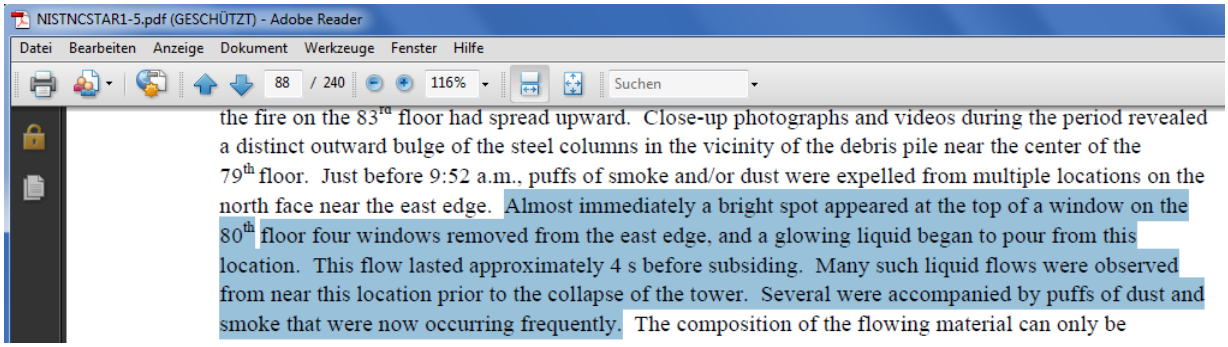


Figure 8–21 shows a close-up frame from a video of a portion of the east face recorded at 9:16:08 a.m. Intense flames are coming from windows 96-208 and 96-209. In the video it is clear that flames are exiting from across the entire burning region that is visible on this floor. A series of carets are seen at the tops of the column covers. The carets appear to be glowing near the center. The physical mechanism responsible for this glow is not known, but it does suggest that significant heating was taking place at this time. Recall that flames were observed on the 97th floor immediately above this location around

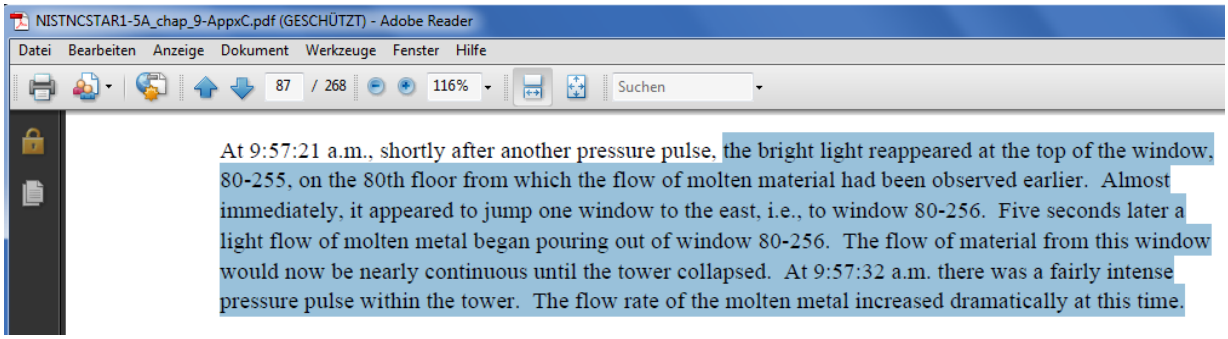
Figure 8-21. A close up of a portion of the east face of WTC 1 is shown. The image is a frame taken from a video recorded at 9:16:08 a.m. Column and floor numbers have been added. The area to the left with the scaffolding is another building in the foreground.



The intense fire in the northeast corner opening of the 81st floor is still present. An unusual flame is visible within this fire. In the upper photograph in Figure 9–44 a very bright white flame, as opposed to the typical yellow or orange surrounding flames, which is generating a plume of white smoke, stands out. The intensity of this flame is considerably brighter than normal flames. It was easily identified in numerous photographs and videos shot from long distances at which the surrounding "normal" flames were not visible. The brightness of the flame, along with the white smoke, suggests that some type of metal is burning. Metal combustion is known to generate much higher flame temperatures than hydrocarbon combustion, and, as a result, to burn much brighter. It is difficult to identify what type of metal is burning. Aluminum will burn, but in normal fires it usually melts instead because the metal surface is protected by an oxide layer that must be breeched before ignition can take place. Aluminum oxide melts at high temperatures that are not typically reached in normal fires. There were limited quantities of other metals on the aircraft that might also burn. Whatever the metal, the ignition of a metal fire is an indication of the significant heating of the debris that took place in the northeast corner of the 81st floor due to the prolonged intense burning in this area following the aircraft impact.



the fire on the 83rd floor had spread upward. Close-up photographs and videos during the period revealed a distinct outward bulge of the steel columns in the vicinity of the debris pile near the center of the 79th floor. Just before 9:52 a.m., puffs of smoke and/or dust were expelled from multiple locations on the north face near the east edge. Almost immediately a bright spot appeared at the top of a window on the 80th floor four windows removed from the east edge, and a glowing liquid began to pour from this location. This flow lasted approximately 4 s before subsiding. Many such liquid flows were observed from near this location prior to the collapse of the tower. Several were accompanied by puffs of dust and smoke that were now occurring frequently. The composition of the flowing material can only be



At 9:57:21 a.m., shortly after another pressure pulse, the bright light reappeared at the top of the window, 80-255, on the 80th floor from which the flow of molten material had been observed earlier. Almost immediately, it appeared to jump one window to the east, i.e., to window 80-256. Five seconds later a light flow of molten metal began pouring out of window 80-256. The flow of material from this window would now be nearly continuous until the tower collapsed. At 9:57:32 a.m. there was a fairly intense pressure pulse within the tower. The flow rate of the molten metal increased dramatically at this time.

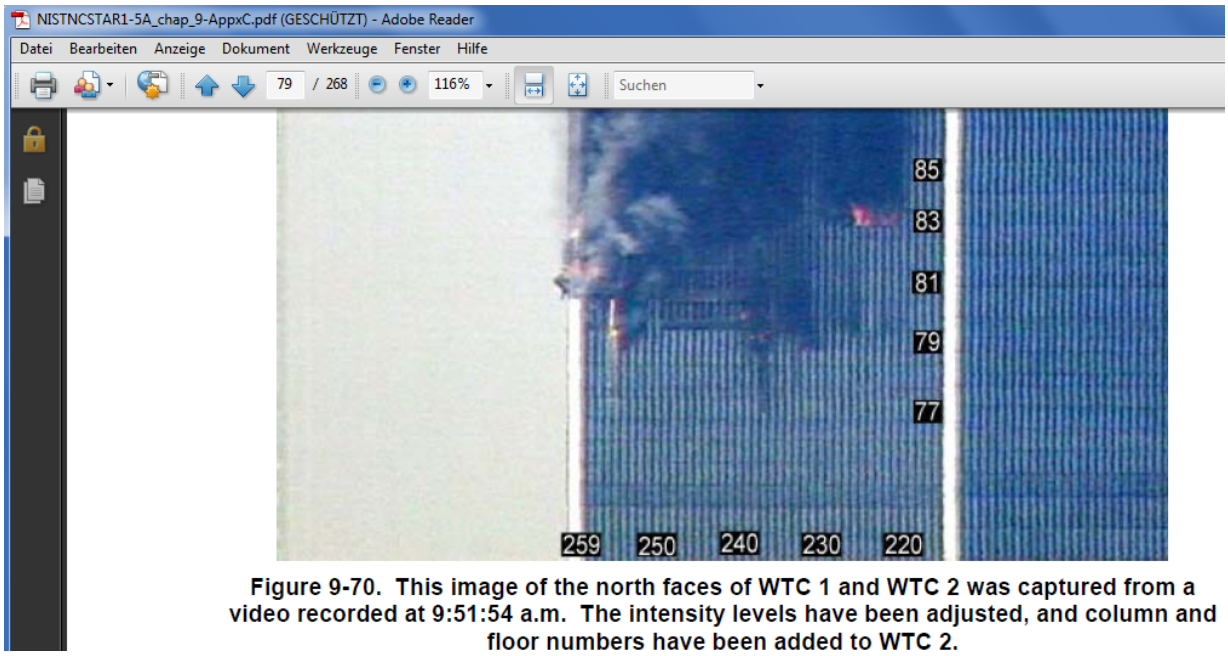


Figure 9-70. This image of the north faces of WTC 1 and WTC 2 was captured from a video recorded at 9:51:54 a.m. The intensity levels have been adjusted, and column and floor numbers have been added to WTC 2.

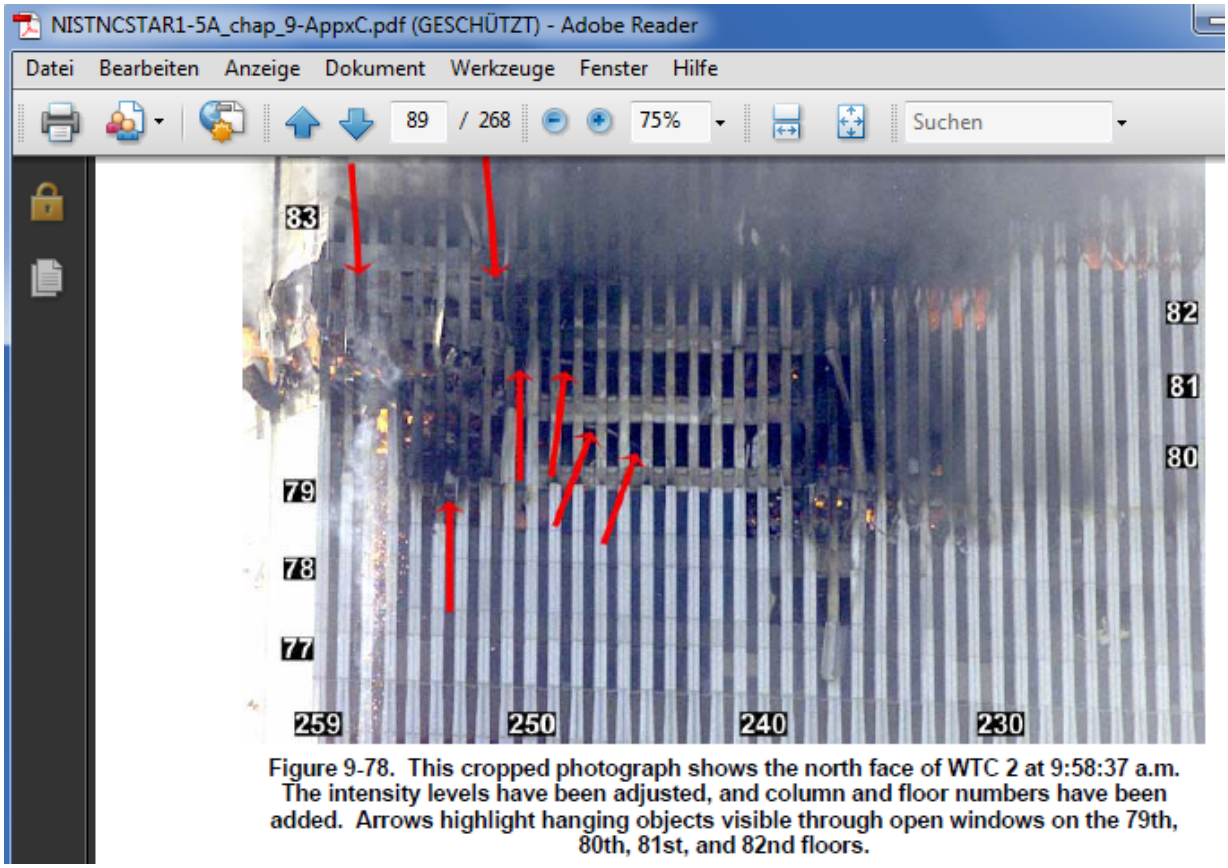


Figure 9-78. This cropped photograph shows the north face of WTC 2 at 9:58:37 a.m. The intensity levels have been adjusted, and column and floor numbers have been added. Arrows highlight hanging objects visible through open windows on the 79th, 80th, 81st, and 82nd floors.

NIST documents also evidence for “unusual fire behavior” in their timelines.[67] Unusual fire behavior is an indication that incendiaries might have been used, and it would have been NIST’s responsibility to follow up on this indication with appropriate tests on the physical evidence steel.[68]

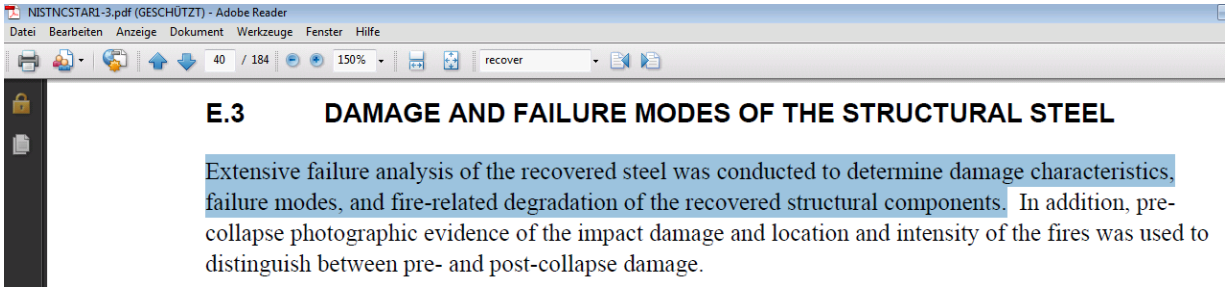
Had NIST not reviewed WJE’s report NIST would have implicitly had to acknowledge that the common method of unaided visual examination was a reliable method to check steel for high temperatures exposure, and the obvious question, like the elephant in the room, would have been why NIST did not follow up on the heat damage on smoothly bent pieces like column C-30, or on the buckling of perimeter column plates that were from non-fire floors but showed a similar buckling pattern like columns that WJE interpreted as being possibly caused by fire damage while the columns were still in the building. NIST would also have to acknowledge that pieces with no paint left needed to be followed up with other methods; WJE interpreted, in line with the common method, the loss of paint as a possible sign for exposure to high temperatures. But NIST wanted to conclude from the loss of paint only that “no conclusion” can be made; respectively, NIST "needed” to conclude this in order to safeguard its premise. One of the two “advantages” of NIST’s new developed paint-cracking method of microscope aided visual examination is exactly that only such areas of steel that experienced temperatures between 250 and 650ºC have to be recognized as possible affected by high temperatures.

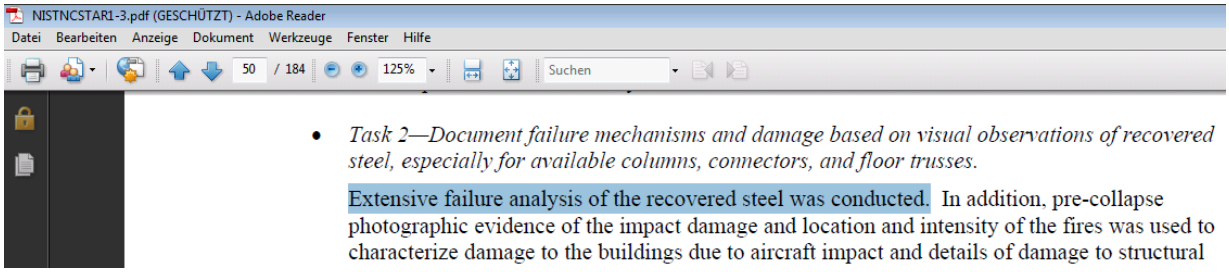
(V) Misleading Statements

Both in the “Executive Summary” and in Chapter 1 of NIST NCSTAR 1-3 it is claimed by NIST that: “Extensive failure analysis of the recovered steel was conducted to determine damage characteristics, failure modes, and

[67] See NIST NCSTAR 1-5 and sub-files, for example, “Chapter 5.3 UNUSUAL BURNING AND SMOKE BEHAVIORS”, NISTNCSTAR 1-5A pages 52f (PDF-pages 148f in NISTNCSTAR1-5A_chap_1-8pdf)
[68] See the NFPA 921, Chapter 22, especially “22.2.5 Unusual fuel load or Configuration”.

fire-related degradation of the recovered structural components." See quotes/screenshots from NIST NCSTAR 1-3, blue highlights added.





Performing an "extensive failure analysis of the recovered steel" was NIST's duty when conducting the WTC investigation; but this is not what NIST did. NIST excluded 51 "catalogued" columns of the 55 columns discussed in paragraph 4.1 "CORE COLUMNS" (NIST NCSTAR 1-3C) and all of the many pieces of Twin Tower steel left in hangar 17 from any "extensive failure analysis." Three examples for "catalogued" and identified core columns for which there is no discussion of the damage and failure modes in NIST's report are given here: Column C-65 (WTC 1, floors 86 to 89, below of the impact and fire area);[69] Column C-71 (WTC 1, floors 77-80, well below of the impact and fire area); Column C-90 (WTC 2, floors 12-15,

[69] See photograph from

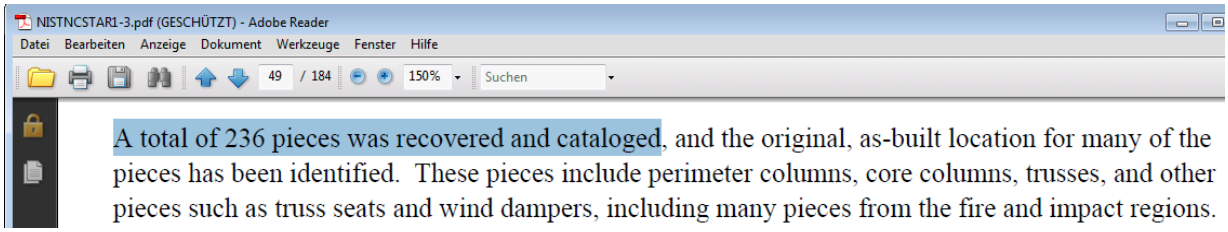
well below of the impact and fire area). See photographs from NIST NCSTAR 1-B.[70]

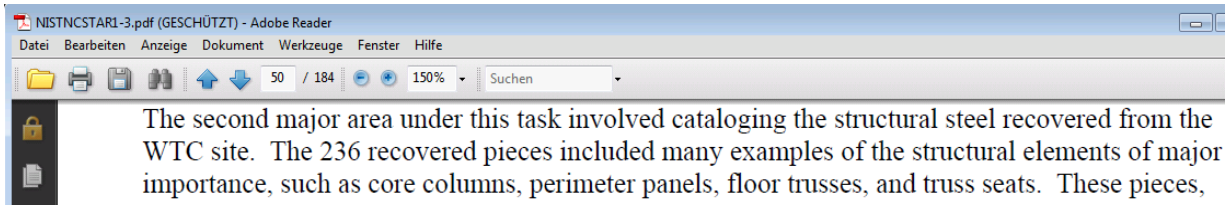
Source: NIST.

[70] C-60 and C-65: photograph from NIST NCSTAR 1-3B, page 40 (PDF-page 68). C-60, an unidentified column (NIST NCSTAR 1-3B, page 10, PDF-page 38) is to the right hand side in the photograph, C-65 is to the left hand side. C-90: photograph (cropped) from NIST NCSTAR 1-3B, page 44 (PDF page 72). For a photograph of C-71, see above, page 22.

These are just a few examples for the many columns for which NIST did not examine the damage and failure modes at all.

NIST is also not eager to let the reader know that it excluded many pieces of steel from its investigation from the very beginning, and how many were excluded. The "Abstract" at the beginning of the report concerning NIST's Project 3 (i.e., the file NIST NCSTAR 1-3 and sub-files) let the reader believe that "the" recovered steel was examined.[71] In the very first page of Chapter 1 of NIST's section on steel, it is misleadingly stated that a "total of 236 pieces were recovered and catalogued." See quote/screenshot from NIST NCSTAR 1-3, blue highlights added.





NIST does not explain the meaning of the term "catalogued steel" when it is first used (which is in the "Executive Summary" of the section on steel, paragraph "INVENTORY OF RECOVERED STEEL," page xxxviii[72]); but the reader has to read an 8-line long paragraph in "Chapter 5, STEEL INVENTORY AND IDENTIFICATION" to become aware that much more than just the 236 pieces were recovered, and that there exists more steel than

[71] See quote/screenshot from NIST NCSTAR 1-3, "Abstract", page 2 (PDF-page 50) above.
[72] Quote: "E.2 INVENTORY OF RECOVERED STEEL
A total of 246 recovered pieces of WTC steel were catalogued: the great majority belonging to the towers WTC 1 and WTC 2."

just the "catalogued" pieces. The large number of steel pieces that were recovered by PANYNJ, but not "catalogued" by NIST and thus excluded from having at least a chance to be examined, is not mentioned by NIST. There are several statements in NIST's report that are likely to misguide any reader who misses the small paragraph about the steel in hangar 17 into believing that only the 236 "catalogued" pieces were saved. See the above quotes, or, as another example, NIST's statement: "Due to the small number of samples, statistical data of the various damage features and failure modes would be irrelevant."[73]

NIST would have needed to write "Extensive failure analysis of the recovered *truss connectors from identified panels, and of two core columns, and of [about] 15 out of 153 "catalogued" perimeter columns* was conducted …" and add something about the number of unexamined pieces in hangar 17 at JFK airport, in order to have a statement that is not gravely misleading.

NIST's published report is not clear about how other steel parts (other than core columns and perimeter panels) like core channels and trusses were screened systematically regarding as to whether they experienced high temperatures. In NIST 1-3C it is explicitly stated: "Visual inspection for the fire effects on recovered steel was conducted solely on the perimeter panels and core columns, as they were the only structural elements with known as-built locations." Based on this one would conclude that NIST did not examine pieces other than core columns and perimeter panels (i.e., those with known as-built locations in the impact and fire areas, see above) for their possible exposure to high temperatures.[74] But NIST lists in Chapter 6.3.4, "Unique

[73] See NIST NCSTAR 1-3C, chapter 4.1 "Core Columns." (see screenshot above)

[74] In the case of the "catalogued" core channel pieces, NIST published a list of failure modes, but did not mention exposure to high temperatures in this list, and did not mention in the published report that the channels were examined systematically for high temperatures exposure. NIST also does not mention any results of a systematic

Cases of Damage Possibly related to Elevated Temperatures," two thinned truss rods among the five pieces that "were identified from visual inspection as having unique physical damage that may have been related to elevated temperature exposure."[75]

The visual examination of the other three pieces, referred to in the first paragraph of Chapter 6.3.4, was solely paint-based (as far as NIST's reported examination is concerned, one column is included because of Appendix C of the FEMA/BPAT report), but for NIST's visual examination of the truss rods the common method must have been used.[76] The two rods are the only two

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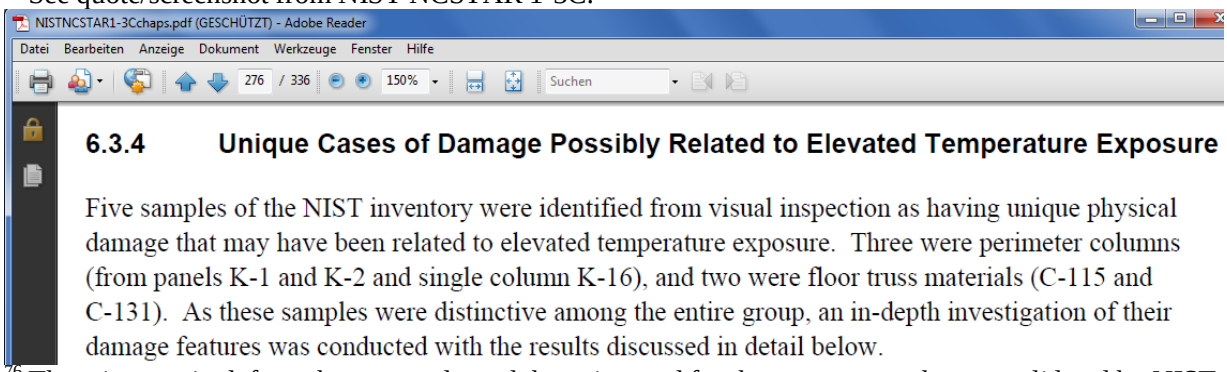
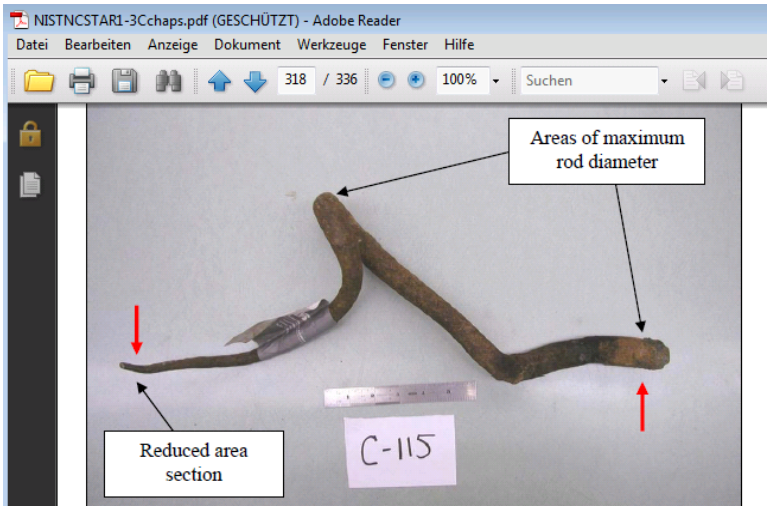
screening of the "catalogued" trusses and the few remaining other "catalogued" pieces for high temperature exposure.

[75] See quote/screenshot from NIST NCSTAR 1-3C.



[76] There is no paint left on the truss rods, and the paint used for the trusses was also not validated by NIST for a possible mud-cracking effect. See photograph/screenshot from NIST NCSTAR 1-3C that shows one of the truss rods.



pieces mentioned in NIST's report where the common method was used to determine which pieces might have been possibly exposed to high temperatures. It is gratifying that NIST used the common method at least on two of the many hundreds of recovered pieces of saved WTC steel, thus acknowledging implicitly its awarness of the usefulness of the common method. But NIST's explanations in Chapter 6.3.4 also have the effect that NIST's systematic exclusion of the common method of visual examination (when examining the core columns and the perimeter panels) and NIST's non-examination of the other pieces for their possible exposure to high temperatures will not be obvious to those readers that choose to read only some selected parts of NIST's published report. The systematic exclusion of the common method of visual examination when the steel was examined for possible exposure to high temperatures is also less apparent as one would expect in a report written by scientists and engineers because NIST uses the term "visual examination" for both the common unaided visual examination[77] and for its microscope aided, paint-based visual examination, without explaining that they use the term for two different methods.

NIST not only excluded most of the physical evidence steel from being adequately examined for their failure modes, and went to great lengths to get rid of the common method of unaided visual examination (and the data that the use of this method might have yielded), but NIST also employs misleading statements to hide these two facts as well as possible.

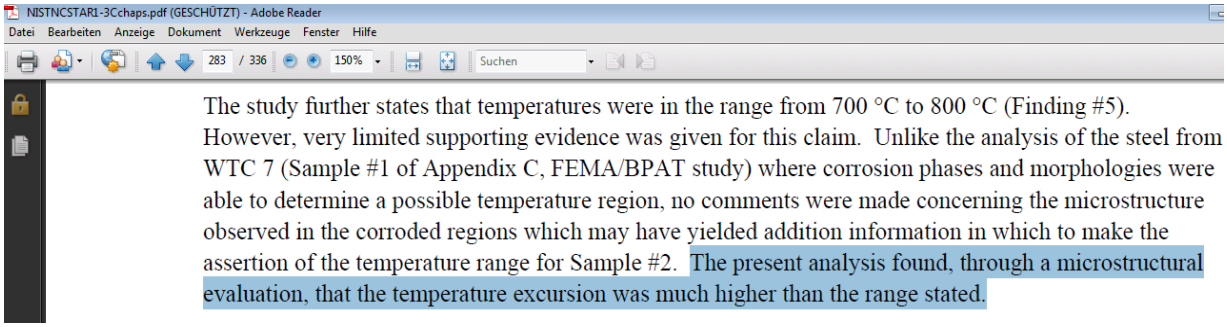
[77] I.e. unaided visual examination regarding questions not related to the examination of steel for possible high temperature exposure, except the statement that relates also to the truss rods in Chapter 6.3.4

(VI) Further Problems

The two samples from Appendix C of the FEMA/BPAT study

NIST was not able to apply its exclusionary tactics in the case of two pieces that were described already in Appendix C of the FEMA/ BPAT report that called for a more detailed study of its two samples.[78]

The Appendix C sample (2), a heavily corroded perimeter column, was examined by NIST (referred to by NIST as K-16), with the result that NIST concluded that it must have been exposed to even "much higher temperatures" than the 700 to 800ºC assumed in Appendix C.[79] See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.



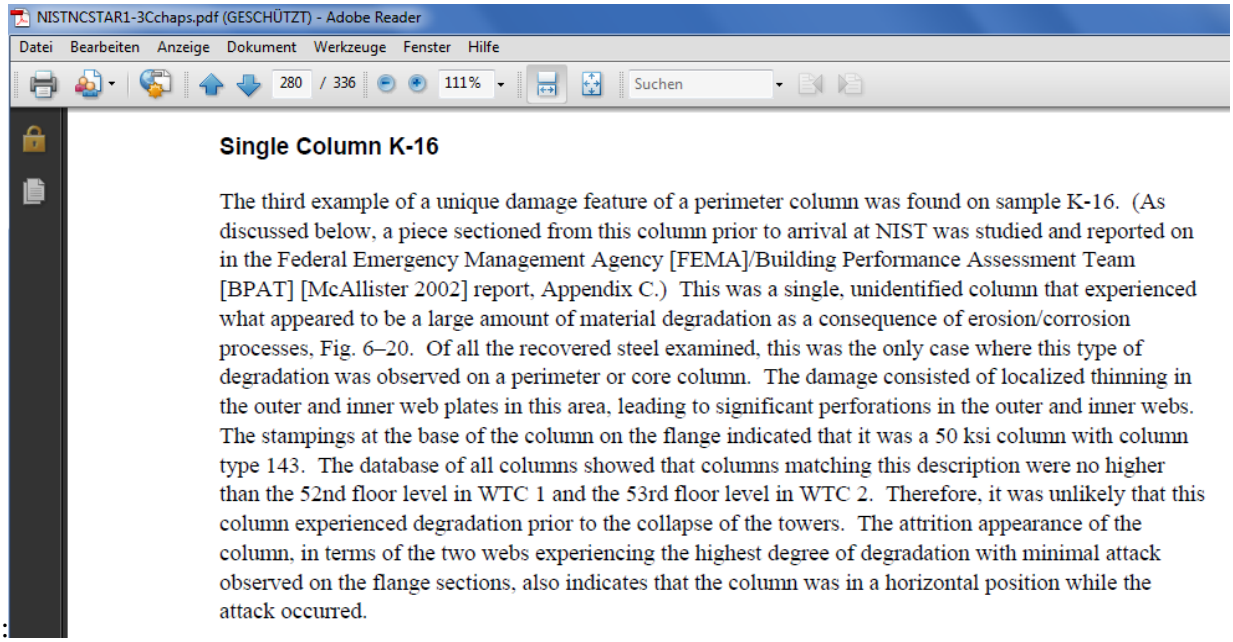
By this NIST acknowledges that a piece with an as-built location far below the impact and fire area must have been at temperatures that were much higher[80] than the range of 700 to 800ºC, either while it was still part of the building, or after the destruction.

Even had there been office fires next to K-16, they would not have had much of an effect on it, because its fireproofing cannot have been damaged by the airplane impact. NIST assumes that K-16 was affected by the high

[78] See above, footnote # 15.
[79] The term "[t]he study" refers to Appendix C "Limited Metallurgical Examination" (see above).
[80] NIST gives only an indirect statement regarding the temperatures reached. The minimum temperature must have been above 830ºC. See NIST NCSTAR 1-3C, pages 231f (PDF-pages 281f)

temperatures in the piles.[81] But a mix of unburnable construction materials and dust covered, shredded office contents cannot sustain fires that burn hot enough to explain the high temperature exposure of K-16[82]. By assuming that the high temperature corrosion process happened in the piles, NIST needed to acknowledge implicitly the high temperature phenomena evident in the piles.[83] But NIST does not do this in their published report. Instead NIST declares the data obtained based on its examination of K-16 as not relevant for its WTC investigation (arguing that the "degradation phenomenon had no bearing on the weakening of the steel structure or the collapse of the

[81] NIST states that the possibility that the steel was exposed to the high temperatures while part of a building was "unlikely." This "unlikely" but not ruled out option is not further discussed by NIST. NIST assumes that the steel was corroded while it was in the piles because of the fact that areas of the two web-plates of the column were corroded heavily by a high temperature attack, while the flanges of the column in the same area were not much affected, concluding that the piece must have been in a horizontal position during the corrosion process. See quote/screenshot from NIST NCSTAR 1-3C:

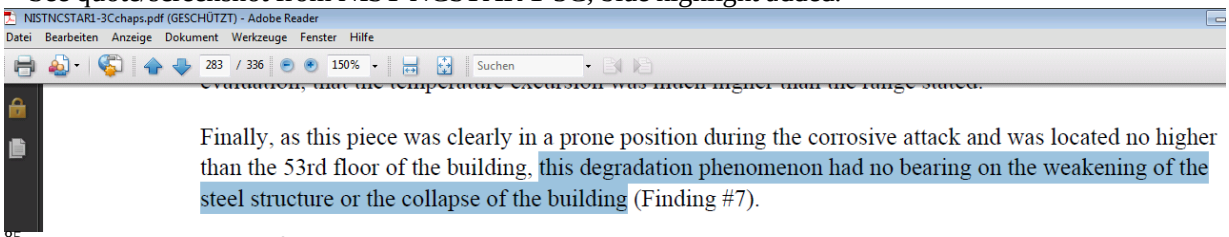


[82] K-16 has also an unusual corrosion scale. Quote: "The darker gray phases in the scale interior appeared to be iron oxides containing high levels of Ca, as well as minor quantities of Cl, Si, and S. The bulk gold-colored phases, as well as the majority of phases in the grain boundaries, were iron sulfides." NIST NCSTAR 1-3C, page 230 (PDF-page 280).

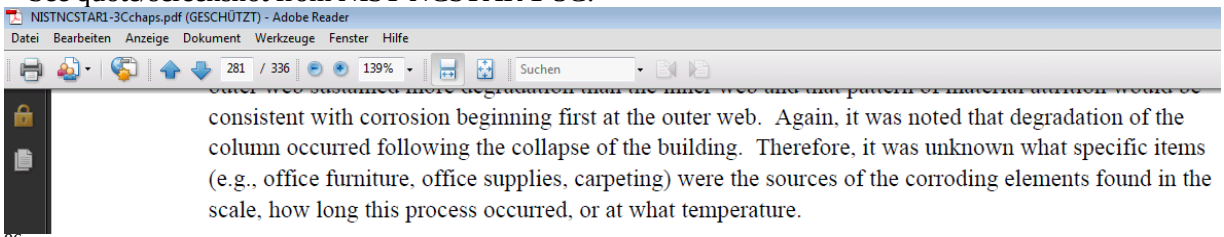
[83] The high temperatures in the piles are documented by many different sources. For some sources see Dreger, A.: "Sources related to exceptionally high temperatures, and/or to persistent heat at Ground Zero. Disinformation regarding the phenomena of "molten steel"/exceptionally high temperatures/ persistent heat at Ground Zero. Pre-collapse pressure pulses" http://911research.wtc7.net/papers/dreger/GroundZeroHeat2008_07_10.pdf.

building")[84] and distracts from the relevant problem that K-16 proves the use of heat sources other than mere fires (either in the building or in the pile) with the statement that it was "unknown at what temperature" the corrosion process occurred.[85] But by determining that the process happened at temperatures well above the range stated in FEMA's Appendix C, NIST provides relevant data regarding the temperatures at which the corrosion process occurred, namely data that show that the corrosion process occurred at temperatures that are much higher than those that fires in dust covered and oxygen starved "collapse piles" can possible produce.[86] By not addressing or discussing this problem, NIST implicitly declares the "incident scene" as not relevant for its investigation of the "incident."[87] But all available data – including all data from the incident scene,[88] – are supposed to be collected and discussed, a fact which is certainly known by NIST, which cooperates closely with the NFPA,

[84] See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.



[85] See quote/screenshot from NIST NCSTAR 1-3C:



[86] It is also very far-fetched that fire (as assumed by NIST) can affect the two web-plates heavily, but has only minor effects on the flanges.

[87] NIST explicitly declared the "incident scene" as not relevant in their 2006 FAQ's (quote): "The condition of the steel in the wreckage of the WTC towers (i.e., whether it was in a molten state or not) was irrelevant to the investigation of the collapse since it does not provide any conclusive information on the condition of the steel when the WTC towers were standing." http://wtc.nist.gov/pubs/factsheets/faqs_8_2006.htm

[88] The term "crime scene" was more appropriate, but NIST's spokespersons underline in interviews that NIST did not conducted a criminal investigation. See, for example, the statement S. Sunder (Lead Investigator of NIST's WTC investigation) gave in a radio interview in 2008: "This is a technical investigation, it's not a criminal investigation." http://noliesradio.org/archives/Nist%20Dr%20Sunder%20Interview_080821_widmusic-web.mp3

and participates in the Technical Committee that develops the statements in the NFPA 921.

NIST did not examine sample (1) from Appendix C. NIST leaves it to the reader to choose whether NIST wants to justify this because the metallurgical examination documented in NIST NCSTAR 1-3C was done only for recovered Twin Tower steel, or because sample (1) was not unambiguously identified as being from WTC 7. NIST's statements vary.[89] In favor of the first option, NIST fails to analyze sample (1) as part of their WTC 7 investigation; for the second, NIST fails to discuss the possible provenance of sample (1). Just stating that no steel "was unambiguously identified as being from WTC 7" is not an adequate substitute for an analysis of the provenance of sample (1). For both options, NIST fails to give any discussion regarding the failure modes of sample (1), and fails to show how the failure mode of this piece was - independently from its as-built location - possibly explicable in line with NIST's premise.[90]

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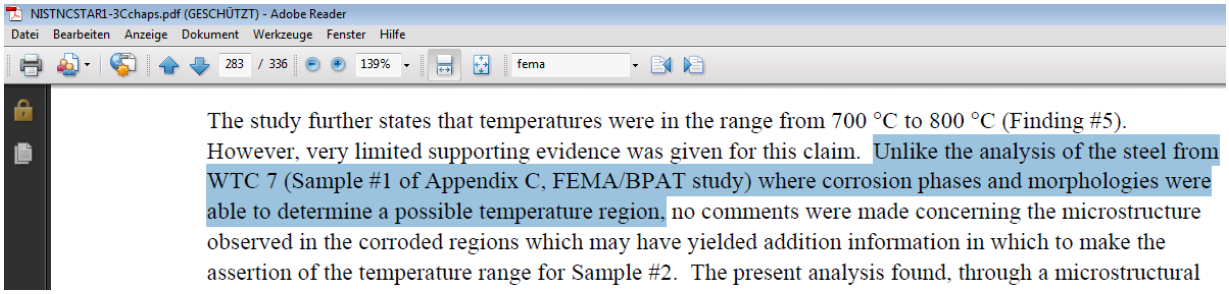
[89] On one hand, NIST NCSTAR 1-3C, "Damage and Failure Modes of Structural Steel Components," mentions sample (1) in one sentence as a WTC 7 sample. See quote/screenshot from NIST NCSTAR 1-3C, blue highlight added.

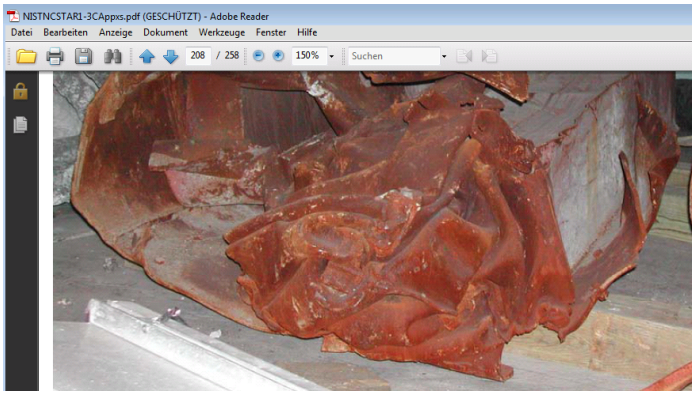


That sample (1) is not examined by them is then explained indirectly with the statement "WTC 7 steel was not evaluated in this study of the tower damage and failure modes." [sic!] (quoted from NIST NCSTAR 1-3C, page xliii, PDF-page 45; similar page 2, PDF-page 53). By this the examination of sample (1) can be understood as just being postponed because it is a WTC 7 and not a Twin Tower steel sample (but the 2008 WTC 7 report gives no discussion of sample (1) either.) On the other hand, NIST states in NIST NCSTAR 1-3 that "no steel was recovered from WTC 7 and in NIST NCSTAR 1-3C that "no pieces could be unambiguously identified as being from WTC 7" (NIST NCSTAR 1-3, pages iii and xliv, PDF-pages 5 and 46, similar on other pages; NIST NCSTAR 1-3C, page 5, PDF-page 55 and similar in NIST NCSTAR 1-3D, page 273, PDF-page 307.)

[90] It might have been justified to omit further discussion of sample (1) if it was shown that the sample was most likely not from WTC 1, WTC 2 or WTC 7. But this was not shown by NIST.

Perimeter panel K-1

A part of the perimeter column 280 from panel K-1 was examined by NIST further for its possible exposure to high temperatures; WJE singled it out as a "unique" piece, and suggested that it might have been fire affected. [91] The "accordion-like collapsed part" of the crushed part of the column "remains in general concentric alignment with the lower portion of the same column, which is relatively undistorted even after salvage and recovery operations."[92] One photograph (cropped) showing column 280[93].



NIST took just one sample and concluded, based on the metallurgical examination of this one sample that the whole crushed part of the column did not experience temperatures above 500ºC. But steel does not conduct heat readily, and the crushed part was at least approximately 2.5 meters high, web and flange plates were approximately 35cm wide. That different areas of the column can have been differently affected is underlined by NIST's description of the different conditions of the surface of the column in the 98th story part:

[91] The crushed part of column 280 was not affected by NIST's "review" because NIST found paint at the crushed part. NIST's statement in NIST NCSTAR 1-3C is not clear whether they found the mud-cracking pattern: "However, there were a few localized areas of remaining paint available that indicated mud cracking did occur as shown in Appendix E." (The table in Appendix E does not "show" anything, but lists the result that mud-cracking was observed.) NIST might have chosen to follow-up on K-1 for the reason that WJE documented it already on photographs in its report.

[92] NIST NCSTAR 1-3C, page 470 (PDF-page 184 in NISTNCSTAR1-3CAppdx.pdf)

[93] Source of photograph (cropped): Figure 22 in WJE's report, NIST NCSTAR 1-3C, page Fig-493 (PDF-page 207 in NISTNCSTAR1-3Appxs.pdf). The part to the left hand side is the spandrel plate. There are further photographs of K-1 in WJE's report and in NIST NCSTAR 1-3 and 1-3C.

"a majority of the paint was missing, with a fair amount of corrosion product on the surface […] However, there were a few localized areas of remaining paint available …" NIST observed on the one examined sample an oxide scale that was "somewhat dense and continuous, but non-uniform in thickness," with the "latter characteristic" due to "localized scale penetration into the flange material …"[94] NIST, which does agree that the damage was sustained in the building,[95] should have been interested in a more throughout examination of column 280 – story 98 was the story where the "collapse" of WTC 1 according to NIST most likely started, and the failure mode of column 280 is indeed unusual (it is so unusual that WJE's report has an extra paragraph about K-1 in its "Discussion" part[96]). Box-columns affected by temperatures of approximately 500ºC and loaded do not typically look afterwards like a piece of fabric that was folded just under its own weight.

Writer's note: I want to say thank you to Richard Zehnle from the AE911Truth Writing Team, who helped correcting English grammar and style.

[94] NIST NCSTAR 1-3C, page 228 (PDF-page 278)
NIST declared the scale observed on the sample from the crushed area as "similar in nature to those formed by ambient processes." (NIST NCSTAR 1-3C, page 228, PDF-page 278)
[95] NIST NCSTAR 1-3C, page 226 (PDF-page 276) The lower part is almost undamaged. See NISTNCSTAR 1-3C, page 227 (PDF-page 277)
[96] NIST NCSTAR 1-3C, page 470 (PDF-page 184 in NISTNCSTAR1-3CAppxs.pdf)

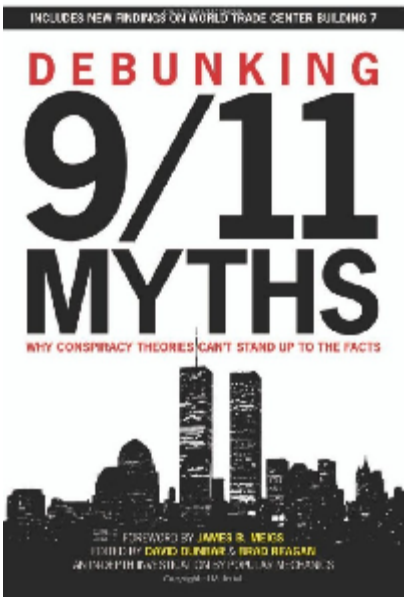
Debunking the Real 9/11 Myths:
Why Popular Mechanics Can't Face up to Reality - Part 1

Written by Adam Taylor; Wednesday, 15 February 2012 20:41

Editor's note: This is Part 1 of an extensive report by researcher Adam Taylor that exposes the fallacies and flaws in the arguments made by Popular Mechanics in the latest edition of Debunking 9/11 Myths. We encourage you to submit your own reviews of the book at Amazon.com and other places where it is sold.

INTRODUCTION

A decade has passed since the tragic events of September 11, 2001, and many people feel that we have still not had a real investigation into what really happened that day. Many believe that the investigations into the destruction of the three WTC skyscrapers by the National Institute for Standards and Technology (NIST) were either fraudulent or incomplete, and have joined the 1600+ architects and engineers at AE911Truth in calling for a real, independent investigation into the attacks. However, Popular Mechanics (PM) has been the primary cheerleader in the mainstream media in defense of the NIST reports ever since its book, *Debunking 9/11 Myths: Why Conspiracy Theories Can't Stand Up To the Facts*, was published in 2006.



The revised version of Popular Mechanics' book Debunking 9/11 Myths continues to defend myths that are scientifically impossible

For the ten-year anniversary of 9/11, PM put out a second version of its book, which was updated in an attempt to dismiss new findings that corroborate the controlled demolition hypothesis. The main sections of the book that were revised are on the collapse of the Twin Towers and World Trade Center 7.

This report demonstrates that PM has still not adequately explained the numerous anomalies surrounding the collapse of these three buildings that prove they were destroyed with explosives.

(*Quotes from Popular Mechanics' book are shown in red and with page numbers*.)

World Trade Center Towers 1 & 2

The introduction to PM's chapter on the collapse of the Twin Towers briefly discusses the main theory put forward by members of the 9/11 Truth movement regarding the Towers' destruction: "The buildings were brought down intentionally—not by hijacked airplanes, but by government-planted bombs or a controlled demolition" (pg. 28). PM then goes on to give a few examples of people promoting this theory. One of the people they cite is a Danish writer named Henrik Melvang, who, according to PM, "markets his book and video claiming the Apollo moon landings were a hoax" (pg. 28). This is obviously an attempt on PM's part to portray those who question the collapse of the Towers as conspiracy theorists who have irrational beliefs. PM also cites Morgan Reynolds, the former

chief economist at the U.S. Department of Labor during President George Bush's first term, as someone who believes that the Towers were destroyed through controlled demolition.

We must ask ourselves why PM would choose to cite these people as examples of those who question the collapse of the Towers. Why didn't they cite anyone with experience in the fields of engineering and building construction? According to PM, it's because the 9/11 Truth movement doesn't have any technical credentials. In their 2011 book, they state that:

Though Reynolds and a handful of other skeptics cite academic credentials to lend credence to their views, not one of the leading conspiracy theorists has a background in engineering, construction, or related fields. (pg. 28-29)

The debate over the airplane crash at the Empire State Building is irrelevant because the design of the Twin Towers was far more robust than that of older high-rises

This statement is by far one of the most remarkable passages in PM's book. One need only look at what most consider the lead organization in the 9/11truth community, Architects & Engineers for 9/11 Truth, to see that there are currently over 1600 professional architects and engineers with backgrounds in engineering, architecture and building construction who question the destruction of the three WTC high-rise buildings. How can PM possibly have omitted over a thousand experts who agree that the Twin Towers and WTC7 were brought down with explosives? In PM's entire 216 page book, there is not a single mention made of AE911Truth or its founder, architect Richard Gage, AIA.

When one looks back at their 2006 book, we can see that this exact same statement appears on the exact same pages.

This fact shows how PM has decided to structure their new book: i.e., update it only where it benefits them. As we will see, this tactic is used more than once in PM's grossly flawed book.

Popular Mechanics did a poor job of updating their book, leaving in claims from their 2006 version (excerpt shown above) that no leaders of the 9/11 Truth movement have backgrounds in engineering. They completely ignore the hundreds of engineers at AE911Truth who have examined the WTC evidence and are demanding a real investigation

1.1 The Empire State Building Accident

PM discusses the incident in 1945 where a B-25 bomber lost in the fog crashed into the side of the Empire state building. They claim that "some conspiracy theorists point to [this incident] as proof that commercial planes hitting the World Trade Center could not bring down the towers" (pg. 29). To counter this assertion, PM discusses the construction of the Towers compared to the construction of the Empire State Building and how the Towers' structures "were in some ways more fragile" (pg. 30). They also quote structural engineer Jon Magnusson as saying that "These structures look massive, but they're mostly air. They *are* air, punctuated with thin layers of concrete and steel" (pg. 30). While it is true that the Towers were mostly empty space by volume, this is true of any large skyscraper. The idea that the Towers were in some way less structurally sound than the Empire State Building is

contradicted by a variety of technical sources, including this telegram written by Richard Roth, partner at Emery Roth & Sons, which was the architectural firm that designed the Twin Towers:

THE STRUCTURAL ANALYSIS CARRIED OUT BY THE FIRM OF WORTHINGTON, SKILLING, HELLE & JACKSON IS THE MOST COMPLETE AND DETAILED OF ANY EVER MADE FOR ANY BUILDING STRUCTURE. THE PRELIMINARY CALCULATIONS ALONE COVER 1,200 PAGES AND INVOLVE OVER 100 DETAILED DRAWINGS.

BECAUSE OF ITS CONFIGURATION, WHICH IS ESSENTIALLY THAT OF A STEEL BEAM 209' DEEP, **THE TOWERS ARE ACTUALLY FAR LESS DARING STRUCTURALLY THAN A CONVENTIONAL BUILDING SUCH AS THE EMPIRE STATE BUILDING** WHERE THE SPINE OR BRACED AREA OF THE BUILDING IS FAR SMALLER IN RELATION TO ITS HEIGHT.

THE BUILDING AS DESIGNED IS SIXTEEN TIMES STIFFER THAN A CONVENTIONAL STRUCTURE. THE DESIGN CONCEPT IS SO SOUND THAT THE STRUCTURAL ENGINEER HAS BEEN ABLE TO BE ULTRA-CONSERVATIVE IN HIS DESIGN WITHOUT ADVERSELY AFFECTING THE ECONOMICS OF THE STRUCTURE

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It is quite apparent that the Towers were extremely well built, and may have been even more structurally sound than the Empire State Building. Even those supporting the official conspiracy theory praise the buildings' structural integrity as designed, such as Thomas Eager:

"The towers withstood the initial impact of the aircraft… the buildings had more than 1,000 times the mass of the aircraft… This ability to withstand the initial impact is hardly surprising." - Eagar and Musso, JOM, 53 (12) (2001), pp. 8-11

PM next quotes WTC assistant structural engineer Leslie Robertson as stating that the Towers were only designed to take the impact of a Boeing 707, but did not take into consideration the fires that would be produced by the jet fuel.

After 9/11, Robertson stated, "I don't know if we considered the fire damage that would cause" (pg. 31). However, someone evidently did consider that problem, and that someone was John Skilling, the original WTC lead engineer. When interviewed in 1993, Skilling told the Seattle Times that:

"We looked at every possible thing we could think of that could happen to the buildings, even to the extent of an airplane hitting the side… Our analysis indicated the biggest problem would be the fact that all the fuel (from the airplane) would dump into the building. There would be a horrendous fire. A lot of people would be killed. [But] the building structure would still be there."[ii]

Although PM mentions John Skilling briefly in their book, they make no mention of this statement. Apparently, PM felt no need to quote the lead WTC engineer on his views about the structural stability of the Towers.

Although the B-25 bomber is not a very good comparison to the planes that hit the Towers, the evidence strongly indicates that the Towers should not have collapsed due to the plane impacts and the ensuing fires. PM quotes a few sources who stated after 9/11 that the Towers were doomed once the planes impacted the buildings, but virtually every engineering source that was quoted before 9/11 says the opposite.

1.2 Widespread Damage

The next section of PM's book deals mainly with the damage to the lobby floors of the Towers and how many in the 9/11 Truth movement have asserted that this is evidence of explosives being planted in the buildings. The argument PM puts forward is that the jet fuel from the planes traveled down through the elevator shafts and caused explosions that damaged the lobby.

The walls and trees in the lobby of one of the Twin Towers show no evidence of being burned by a jet fuel fireball, which Popular Mechanics claims was the cause of an earlier explosion

Although viewpoints differ in the 9/11 Truth movement[iv] regarding the cause of these explosions, some features of the lobby damage indicate that they were not due to a fireball explosion from the jet fuel. For example, the white marble walls show no signs of being exposed to fire, and the plants next to the blown out windows show no signs of burning either.

And at least one explosives expert has stated that he does not believe the damage was caused by the jet fuel traveling down the elevator shafts,

based on the appearance of the lobby.[v] Whether or not the lobby damage is indicative of explosives, however, is essentially irrelevant to the discussion of the Towers' demolitions, as the collapse sequence started above the plane impact zone, not at the lower levels. The lobby damage is not necessary to prove the Twin Towers were destroyed by controlled demolition, as there are far more obvious indicators of demolition that will be discussed later in this report. The fact that PM claims that the jet fuel travelled down the elevator shafts is actually more damaging to their case, as it shows that not all of the fuel from the planes contributed to the fires that allegedly brought the Towers down.

This section of PM's book also discusses the testimony of firefighter Louie Cacchioli, one of over one hundred first responders who said that there were bombs in the WTC. PM counters this by asserting that members of the 9/11 Truth movement have taken his quotes out of context. Though Caccholi himself does not believe explosives were placed in the buildings, the numerous quotes from firefighters and first responders strongly indicate that explosives were placed in the buildings.

In Part 2 of this monthly series, Taylor will refute the false explanations that Popular Mechanics has provided for the molten metal that was discovered at Ground Zero. Look for Part 2 in the March edition of the Blueprint newsletter.

Psychology Experts Speak Out: "Why is the 9/11 Evidence Difficult for Some to Accept?"

Thursday, 19 July 2012 18:04

It's often difficult for people who are aware of the evidence for the controlled demolition of the WTC skyscrapers to understand why so many Americans are unwilling to rationally discuss this vital information. For over ten years now, 9/11 Truth advocates have been trying to get relatives, friends, and strangers to listen to the undeniable facts that point to the need for a real 9/11 investigation. We often encounter emotional resistance, which poses the question: "Why is the evidence so difficult for so many people to accept?" In the new documentary, "9/11 Explosive Evidence – *Experts Speak Out*," AE911Truth petition signers with psychological expertise step forward with answers.

Psychologist Robert Hopper, Ph.D., suggests that fear and anxiety are common responses when dealing with the evidence presented by AE911Truth

Licensed clinical psychologist Robert Hopper, Ph.D., explains: "9/11 Truth challenges some of our most fundamental beliefs about our government and about our country. When beliefs are challenged or when two beliefs are inconsistent, cognitive dissonance is created. 9/11 Truth challenges [our] beliefs that our country protects and keeps us safe and that America is the 'good guy.' When this happens, fear and anxiety are created. In response, our psychological defenses kick in [to] protect us from these emotions. Denial, which is probably the most primitive psychological defense, is the one most likely to kick in when our beliefs are challenged."

Psychologist Fran Shure, M.A., has investigated the disturbing implications of 9/11 for many years, and provides insightful analysis in Experts Speak Out

As underscored in the film, sometimes the expression of denial includes raw incredulity, as when people make statements like, "I refuse to believe," or "I don't want to know the truth." Others respond, "I'm not sure I want to know. If this is true, down would be up, up would be down, [and] my life would never be the same." Or, "I refuse to believe that many Americans could be that treasonous."

"Whenever we say, 'I refuse to believe,' we can be sure that the evidence that's coming our way is not bearable, and that it's conflicting with our worldview," observes Fran Shure, M.A., a 20-year licensed professional counselor and psychotherapist. As she thought about all of the most common "closed" responses to an invitation to engage with the 9/11 evidence, she realized that "what is common to every one of them is the emotion of fear. People are afraid of being ostracized, they're afraid of being alienated, they're afraid of being shunned. They're afraid of feeling helpless and vulnerable, and they're afraid that they won't be able to handle the feelings that are coming up. They're afraid of their lives being inconvenienced…of being confused… [and] of psychological deterioration. They're afraid of feeling helpless and vulnerable."

"*People are afraid of being ostracized, they're afraid of being alienated, they're afraid of being shunned. They're afraid of feeling helpless and vulnerable, and they're afraid that they won't be able to handle the feelings that are coming up*"

To begin to accept the possibility that other groups were involved in 9/11 "is like opening Pandora's box," states Robert Hopper. "If you open the lid [and] peek in a little bit, it's going to challenge some of your fundamental beliefs about the world."

Most people do not welcome such dramatic challenges to their worldview. "If we can think of our worldview as being sort of our mental and emotional home, I think all of us will do just about anything to defend our homes [and] to defend our families," says Dorothy Lorig, M.A., a counselor with a 16-year practice in re-evaluation counseling.

Lorig saw that within herself when her brother initially tried to talk to her about 9/11 Truth. Her response: "Don't mess with me. Don't mess with my home, don't mess with my comfort [level]." But about a week later she read a "well-researched article" by Dr. David Ray Griffin, Ph.D., on the evidence indicating why the official account of 9/11 cannot be true. What was Lorig's reaction?

"*I was in my office at the time. I sat there and felt my stomach churning. I thought maybe I was going to be sick. I leaped out of my chair, ran out the door, and took a long walk around the block – around several blocks – and just broke down. I understand now. What was happening was my worldview about my government being in some way my protector – almost like a parent – had been dashed, and it was like being cast out into the wilderness. I think [that this] is the closest way to describe that feeling. I sobbed and I sobbed…and I knew, at some point during the walk, that I was going to have to become active in educating other people about this. For me to retain any sense of integrity, I was going to have to take some action. I couldn't just let something like this go.*"

It was difficult for psychologist Dorothy Lorig to come to terms with 9/11 Truth, but when she did, she made the decision to take action by educating others

Many 9/11 activists know David Ray Griffin as the pre-eminent author on 9/11, having written ten books on the topic and edited others. Griffin is Professor of Philosophy, Emeritus, at the Claremont School of Theology. He analyzes people's varied reactions to 9/11 Truth as follows: "You have empirical people who will simply say, 'Look at the evidence; if it's convincing, I will change my mind.' Other people have a paradigm. They say, 'This is the way the world works, and I'm convinced this is the right way…. 9/11 [Truth] doesn't fit into that paradigm, so I don't need to look at the evidence…

Griffin also described a third type of people who engage in what he calls "wishful and fearful thinking…. [T]hey simply will not believe something that they fear to be the truth. I've found that may be the most powerful factor [for] people [who reject] 9/11 Truth and not even entertain the evidence."

Part of the reason why people are so fearful is the nature of the event itself. "The horrors of what happened on 9/11 were televised all over the world, and they were in fact televised live," explains Marti Hopper, Ph.D., a licensed clinical psychologist and trauma victim specialist. "We witnessed the

deaths of almost 3,000 of our fellow Americans. We know this had a very severe and traumatic impact on a large majority of the population."

" *We were confident [before 9/11], we felt secure, and all of a sudden that security collapsed. People started to be fearful. People didn't know what to think, and it's a very, very uncomfortable state to be in*."

As a trauma victim specialist, Danielle Duperret, Ph.D., provides a unique perspective on the dramatic impact that 9/11 had on the American psyche

Trauma specialist Danielle Duperret, Ph.D., concurs with Hopper. "We were confident [before 9/11], we felt secure, and all of a sudden that security collapsed," she said. People started to be fearful. People didn't know what to think, and it's a very, very uncomfortable state to be in. Just like when a computer is overloaded, our minds get overloaded, we can't handle it anymore, and we shut down. It's easier to deny it and move on with our lives."

"What some of us will tend to do," Shure adds, "is deny the evidence that's coming our way and stick to the original story – the official story – and to try to regain our equilibrium in that way."

Shure offers a better alternative: "Another thing we can do is decide to look at the conflicting evidence, be sincere, be open-minded, look at both sides of the issue, and then make up our own minds about what reality is."

However, that can be a difficult task for those who see America as infallible. As psychologist Robert Griffin notes, "To be the kind of country that we think we are, we have to face some of the things that are *not* as we think they are. Thinking that we're above such things – that it could happen in other countries but it couldn't happen here – that's a lack of humility and excessive pride. Not being able to see our dark side or our weaknesses is the most dangerous thing."

"It doesn't work to challenge people's beliefs or merely tell them, 'I know the truth about 9/11.' But a good way is to ask open-ended questions and lead them into a dialogue and a discussion about it [with] gentle dialogue and gentle questioning."

Psychologist Robert Griffin examines the emotional problems people have with accepting the truth of 9/11 and the solutions activists can use to overcome these issues

David Ray Griffin (no relation to Robert Griffin) adds, "The observation that pride is one of the basic human flaws is absolutely correct. A feature of American history that makes us particularly liable to this pride is this notion called 'exceptionalism,' that America is the exceptional nation…that our leaders are free from the sins that other nations have been troubled by. This has made 9/11 [Truth] particularly difficult for Americans [to understand]."

John Freedom, a personal development counselor with masters-level certification, observes that "It doesn't work to challenge people's beliefs or merely tell them, 'I know the truth about 9/11.' But a good way is to ask open-ended questions and lead them into a dialogue and a discussion about it [with] gentle dialogue and gentle questioning."

" Healing comes through facing the truth, experiencing it, allowing the feelings to come in."–*William Woodward, Ph.D.*

Philosophy professor and theologian David Ray Griffin, Ph.D., speaks from his experience as one of the foremost experts on 9/11

Robert Hopper agrees, saying, "The first thing is to meet people where they're at."

Experimental psychology professor William Woodward, Ph.D., stresses the need "to work together to expose what happened regardless of where the evidence takes us. That's what we expect in our state government [and] law enforcement. I think that, by putting science together with the law, we will have a psychological healing around the 'impossible' cognition that has been produced [about 9/11]."

In contrast to George W. Bush's infamous warning to never question the official story of 9/11, Robert Griffin states, "We need to understand that questioning is patriotic. Questioning is what we're supposed to do as citizens. That's our duty."

In fact, as Woodward advises, "Healing comes through *facing the truth*, experiencing it, allowing the feelings to come in. So if there are feelings of fear that perhaps these events were caused by something that we haven't thought about yet – dark elements within our society for example – we'll let that come in and explore it. Let the light shine on whatever happened. This will be the most healing process." Woodward also explains that "reconciliation through the truth is… a deep path to psychological recovery from the myths and lies around which this historic event has been cloaked in the official view."

Reflecting the view of many 9/11 Truth advocates, John Freedom came to the following conclusion: "One thing that has become important for me personally is to educate myself…to take responsibility. There's that wonderful quote from Mahatma Gandhi where he said that 'We must be the change that we wish to see in the world.'"

Clearly, Gandhi's pragmatic philosophy is being reflected here at AE911Truth. If you haven't done so already, get your copy of 9/11: Explosive Evidence – *Experts Speak Out* and take action!

Why Do Good People Become Silent-or Worse-About 9/11?

Written by Frances T. Shure, Sunday, 24 November 2013 03:51

Editor's Note: Frances Shure, M.A., L.P.C., has performed an in-depth analysis addressing a key issue of our time: "Why Do Good People Become Silent—or Worse—About 9/11?" The resulting essay, to be presented here as a series, is comprised of a synthesis of reports on academic research as well as clinical observations.

Ms. Shure's analysis begins with recognition of the observation made by the psychology professionals interviewed in the documentary "9/11: Explosive Evidence – Experts Speak Out" by Architects and Engineers for 9/11 Truth, who cite our human tendencies toward denial in order to avoid the discomfort of cognitive dissonance. Indeed, resistance to information that substantially challenges our worldview is the rule rather than the exception, Ms. Shure explains. This is so because fear is the emotion that underlies most of the negative reactions toward 9/11 skeptics' information. Ms. Shure addresses the many types of fear that are involved, and how they tie into the "sacred myth" of American exceptionalism.

Through the lenses of anthropology and social psychology, Ms. Shure focuses on diffusion of innovations; obeying and believing authority; doublethink; cognitive dissonance; conformity; groupthink; terror management theory; systems justification theory; signal detection theory; and prior knowledge of state crimes against democracy and deep politics. Through the lens of clinical psychology, Ms. Shure explores viewpoints described in the sections on learned helplessness; the abuse syndrome; dissociation; and excessive identification with the United States government. Two sections on brain research provide astonishing insights into our human nature.

Finally, the sections entitled "American Exceptionalism," "Governmental Manipulation and the 'Big Lie,'" and Those Who Lack Conscience and Empathy" contain valuable information from an amalgam of the disciplines of history, social psychology, clinical psychology, and brain research. The final sections address how we can communicate about 9/11 evidence more effectively, and our human need for awareness and healing. Ms. Shure concludes by quoting poet Langston Hughes in an inspiring epilogue, which asks: "Is America Possible?"

This month's installment begins with Ms. Shure's Preface and Introduction. Succeeding segments will continue the journey that explores contributions of Western psychology in answering the pressing question, "Why Do Good People Become Silent—or Worse—about 9/11?"

Preface

The following essay is not meant to persuade anyone of the theory that elements within our government were responsible for the devastating attacks of September 11, 2001. Rather, this paper is

addressed primarily to the 45% of Americans1—and those people in other parts of the world—who already believe a new investigation is needed, as well as those who simply have had their doubts about the official account of 9/11 but have not explored the issue further. This paper is also addressed to psychology professionals and social scientists who may wish to consider the question in the title in greater depth.

Furthermore, this essay should be helpful to anyone who encounters resistance to any paradigm-shifting idea about which he or she may be communicating, since the same dynamics and research would apply in all such cases.

This work was not crafted entirely alone. I am grateful to the Writing Team of Architects and Engineers for 9/11 Truth who suggested I write an article in the first place—thus the seed was planted. Once the seed began germinating, it was nurtured by substantial suggestions from Marti Hopper, Ph.D., Sheila Fabricant Linn, M.Div., Dennis Linn, M.Div., Daniel K. Sage, Ph.D., Dorothy Lorig, M.A., Earl Staelin, J.D., Joseph Lam, Gregg Roberts, John Freedom, C.E.H.P., Danielle Duperret, Ph.D., Paul Rea, Ph.D., Tim Gale, Sonia Skakich-Scrima, M.A., and by the care taken by proofreaders Nancy Hall and Dennis McMahon. I am profoundly indebted and grateful for their enthusiastic help.

In addition, this work could not have been written without contributions from the people named and quoted in the document. I have drawn from wherever I found research, credible observations, or inspiration that seemed to apply. I hope others will become inspired to add to this synthesis of research and observation to further help answer the question, "Why Do Good People Become Silent—or Worse—About 9/11?"

Introduction

"If what you are saying is true, I don't want to know!" exclaimed a young male visitor at our 9/11 Truth booth at the Denver People's Fair. He was referring to the evidence of controlled demolition of the three World Trade Center (WTC) skyscrapers on September 11, 2001.

"Why?" I asked.

"Because if what you are saying is true, I would become very negative. Psychologically, I would go downhill."

With gratitude, I responded "Thank you!"

Surprised, he asked, "Why are you thanking me?"

"Because it's rare to hear such raw truth. Thank you for being so honest."

Softened by our exchange, the young man chatted with me a while longer before taking his leave. I have never forgotten him; he has likely never forgotten me. We both felt it. Paradoxically, deep truth had been shared.

We who work to educate the public about 9/11, and about false flag operations,2 are puzzled by the often forceful resistance from our listeners. Yet, many of us in the 9/11 Truth Movement also once vigorously resisted this challenging evidence. We have our own stories to document this. What drives those negative reactions?

Before continuing, I would like to clarify that people who continue to resist the evidence that indicates 9/11 was a false flag operation are no more mentally healthy or unhealthy than those of us who question the official account. Both groups consist of folks who span the mental health spectrum.

So, there is no need to pathologize those who currently do not see what is now so clear to us, just as those of us in the 9/11 Truth Movement should not be dismissed and maligned as "conspiracy theorists"—the latter being an obvious defense and a not so obvious offense.3

The psychology professionals interviewed in the documentary 9/11: Explosive Evidence - Experts Speak Out by Architects and Engineers for 9/11 Truth clearly speak about our human tendencies toward denial in order to avoid the discomfort of cognitive dissonance. They speak compassionately about all of us. There is no sophisticated name-calling (diagnosing) as can sometimes be popular among the members of this profession. This is indeed refreshing.

In this spirit, and in the spirit of beginning a conversation—for we humans are complicated creatures—I will share my thinking as to why some of us defend ourselves from information that is troubling.

History tells us that to determine reality, even scientists, whom we stereotypically view as objectively and open-mindedly looking at data, rather than at belief, often vigorously resist paradigm shifts. Gregor Mendel's experiments and resulting theory of genetic inheritance, for example, was resisted by scientists from the time of its announcement in 1865, and was only rediscovered in 1900 by three other European scientists. Resistance to information that substantially challenges our worldview, we find, is the rule rather than the exception.4 Fortunately, change does occur, consensus reality does shift, sometimes rapidly, sometimes excruciatingly slowly.

To reiterate what I said in the film 9/11: Experts Speak Out, fear is the emotion that underlies most of the negative reactions toward 9/11 skeptics' information: fear of receiving information that will turn our world upside down, fear of being overwhelmed by our own emotions, fear of psychological deterioration, fear our life will have to change, fear we'll discover that the world is not a safe place, fear that our reputation will be tarnished or that we'll lose our jobs, fear of being shunned or banished by friends and family, and fear of looking like a fool because we bought the official account so thoroughly.

This last reason may be true especially for intellectuals who often identify strongly with their intellect. None of us, however, like to feel bamboozled, as this often threatens our very identity and brings us very close to feeling betrayed.Carl Sagan knew this when he said,

One of the saddest lessons of history is this: If we've been bamboozled long enough, we tend to reject any evidence of the bamboozle. We're no longer interested in finding out the truth. The bamboozle has

captured us. It's simply too painful to acknowledge, even to ourselves, that we've been taken. Once you give a charlatan power over you, you almost never get it back.5

Social psychologist and scholar Laurie Manwell tells us that one of her professors said that he could sum up human behavior with this statement: "People liked to be liked, they like to be right, and they like to be free—in that order." Thus, most people will give up their need to be right or free if their need to be liked is threatened.6 Why is this?

The fear of banishment is surely among the greatest fears we humans harbor, albeit often unconsciously.7 We are social creatures. We need others in order to survive, and we need to have a sense of belonging. To have some sense of wholeness and well-being, we need to feel connected to others, to love and to be loved. This is the reason that ridicule and shaming are such potent strategies used—consciously or unconsciously—to censor those with views that diverge from a culture's sacred mythology.

A "sacred myth" is a special story, found in every culture, whether true, untrue, or partially true, that tells us who we are and why we are doing what we are doing.8

What is our American sacred myth? It goes something like this:

We are a truly exceptional nation with exceptional forefathers. We rebelled against tyranny and established a democratic republic, a model that the world has largely accepted and imitated. Our country is the purveyor of democracy and freedom around the world and our interventions in other countries are benevolent actions. On September 11, 2001, we were caught off-guard when al Qaeda terrorists in a sneak attack, similar to that at Pearl Harbor, succeeded in flying commercial airplanes into the World Trade Center and the Pentagon, the most significant wound to our homeland to date. However, true to the American spirit, we immediately rose to the challenge to militarily smite the world of terrorists who hate us because of our freedoms. This is why we have an unending Global War on Terror.

If we can set aside this belief in our sacred myth, look at the evidence, and recognize that 9/11 was a false flag operation, then we may also fear severe repercussions from corrupt authorities if we should speak out. As one person told me, "I appreciate everything you all are doing with this 9/11 issue, but I hope you understand, I have children; I can't get involved with this."

Fear is an integral part of the human condition; and yet, if we are committed to psycho-spiritual growth, we do not let fear dictate what we do—or do not do. We can be aware of the fear while not letting it rule our lives.

Most of us were traumatized9 by watching the horrifying destruction of the Twin Towers, knowing there were thousands of our fellow humans beings killed in that moment. Some of us were again deeply shaken when we discovered evidence indicating that 9/11 might be a false flag operation.

Why do some of us embrace the evidence and its implications and get active, while others feel powerless in the face of this evidence or react with apathy? And why do others get defensive and stay defensive—sometimes vehemently? Why, indeed, upon hearing the evidence that contradicts the official account of 9/11, do good people become silent, or worse?

What is the difference? How, for example, can some people watch World Trade Center Building 7 (WTC7)10 implode and collapse into its own footprint and not see what is right in front of them—even when they know about its free fall acceleration and the other characteristics of controlled demolition? These people may feel compelled to intensify their resistance with intellectually contorted measures to convince themselves and others that this was not controlled demolition. Others will content themselves with shaming anyone who wants to investigate the 9/11 evidence that contradicts the official sacred myth.

There is a worldview that is being seriously challenged. What is it? In essence, it was described well by words from a journalist whom I met at a street action: "I am aware that our government does bad things, but not this! Not those towers! They would not be that evil."

So we assume our government—which is supposed to protect us but sometimes does bad things—would never commit acts this heinous. A man said to me during a public presentation, "I find your statement that our government orchestrated 9/11 very disturbing and offensive."

"I believe I said the evidence trail leads to elements within our government, not the government," I replied.

He retorted, with great seriousness, "It makes no difference. There is no way you can state this that is going to make me feel any better!"

Many of us unconsciously relate to our governmental leaders as parental figures on whom we project our (often unmet) needs for a protective parent. We even agree culturally to the term "our founding fathers."

The disciplines of Western psychology and anthropology have much to offer toward understanding human behavior, but we must remember that these disciplines, as impressive as they are, are ultimately disciplines that belong to our Western culture only. In the East and in some tribal societies, for example, people may use the philosophy of the transmigration of souls to explain human behavior; and the Sufis, the mystical branch of Islam, use the nine personality types of the Enneagram to explain our disparate human propensities.

Remember the proverbial five blind men, each touching one part of an elephant? Each man draws a conclusion as to what the object is, depending on which part he is touching. The result? Five partial and laughably inaccurate descriptions of reality.

The more lenses we look through, therefore, the greater is our capacity to see a clearer—a more dimensional—picture of our human tendencies. Nonetheless, within the overlapping viewpoints of the rich disciplines of Western psychology, anthropology, brain research, and history, we can find several

lenses that shed much light on the conundrum of why information that contradicts our worldview is so difficult for us to receive.

Through the lenses of anthropology and social psychology we will find helpful information in the sections below entitled Diffusion of Innovations; Obeying and Believing Authority; Doublethink; Cognitive Dissonance; Conformity; Groupthink; Terror Management Theory; Systems Justification Theory; Signal Detection Theory; and Prior Knowledge of State Crimes Against Democracy and Deep Politics.

Through the lens of clinical psychology we will explore viewpoints described in the sections on Learned Helplessness; The Abuse Syndrome; Dissociation; and Excessive Identification with the U.S.A.

The two sections on Brain Research provide us with astonishing insights into our human nature.

Finally, the sections entitled American Exceptionalism; Governmental Manipulation and the Big Lie; and Those Who Lack Conscience and Empathy, contain valuable information from an amalgam of the disciplines of history, social psychology, clinical psychology, and brain research.

Let me emphasize that this paper will be a synthesis of reports on academic research as well as clinical observations. None of the sections will fall neatly into one category or another, but they will overlap each other, as any rich and complicated subject will tend to do.

Let's begin our journey with an anthropological study…

The 9/11 Truth Movement: The Top Conspiracy Theory, a Decade Later

By Dave Thomas in the *Skeptical Inquirer* Volume 35.4, July/August 2011

http://www.csicop.org/si/show/the_9_11_truth_movement_the_top_conspiracy_theory_a_decade_later

We are familiar with Dave Thomas and his one-sided skepticism. He uses the term "conspiracy theory" as a pejorative — despite believing and staunchly defending the *official* conspiracy theory. This indicates that he does not know what the legal term "conspiracy" means. Thomas uses straw man arguments. As we know, a straw man argument exaggerates and misrepresents an opponent's argument to make it easier to attack.

— Claim #1: "The Twin Towers collapsed at free-fall accelerations through the path of greatest resistance."
— AE911Truth does not make this claim. David Chandler measured the fall of the North Tower for the four seconds that it can be seen and it fell at about 64% of free fall acceleration. Thomas admits that AE911Truth says *nearly* free-fall acceleration.

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— ". . . intense fires (started by jet fuel and fed by office contents and high winds) . . ."
— False. There were no high winds. Just a breeze.

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— ". . . eventually caused floor trusses to sag, pulling the perimeter walls inward until they finally snapped."
— Steel does not "snap" like twigs. The exterior columns were sections of three columns wide and three stories tall, staggered like bricks so that the splices of adjoining sections were on different floors. The splices could snap, but the other two sections would just bend, not snap.

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— "At this instant, the entire upper section of each tower fell the height of one floor, . . ."
— For the upper portion to "fall" the height of one floor, all the remaining core columns and all the *undamaged* columns on the east and west sides, including all four corners, would have to more than bend and "snap" at the same time — they would have to instantly disappear before bending at all.

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— ". . . initiating an inevitable, progressive, and utterly catastrophic collapse of each of the structures."
— That's what NIST claims, but "inevitable" is a baseless assumption. Furthermore, the collapse did not start on the 95th floor, where *some* of the exterior columns bowed inward a maximum 55 inches.

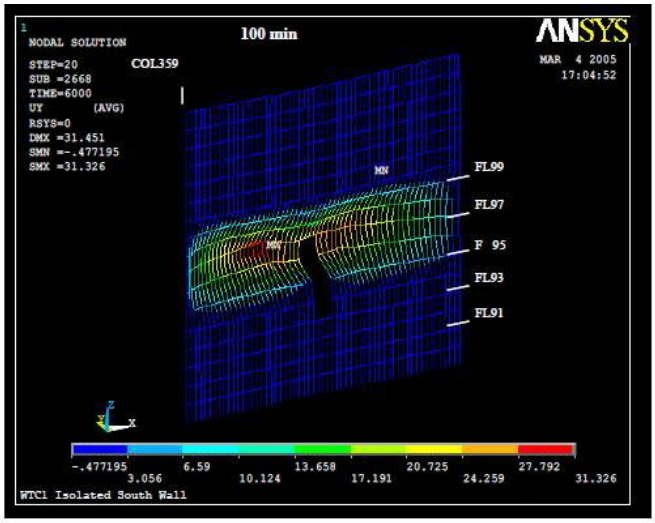

Figure 7–32. Inward displacement of the WTC 1 south wall at 100 min of the Case B temperatures with floor disconnections and 6 kip pull-in forces over five floors.

Rather, the collapse began on the 98th floor, above where the plane hit, so there was no dislodging of fireproofing. (See NIST's NCSTAR 1-6, p. 163 [PDF p. 245].)

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— "Truthers then insist that free fall acceleration indicates a complete lack of resistance, proving that the structures were demolished with explosives."
— This is true in the case of WTC 7, which *did* fall at free fall acceleration for about 81 feet in some 2.25 seconds.

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— "How *could* the buildings fall so quickly? It's been explained very well in the technical literature by Northwestern's Zdenek Bazant, PhD."
— Zdeněk Bažant published his theory two days after 9/11/01, without any data whatsoever. Why the rush to judgment? He has since updated his theory several times.

There are many problems with his theory, but the most glaring is the requirement that the upper portion fall at free-fall acceleration for that first story. That would require explosives to remove all the supporting structure. Bending steel columns requires energy, which precludes free fall. So his theory is actually a confirmation of controlled demolition.

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— ". . . over 420 billion joules of energy, or the equivalent of 100 tons of TNT per tower."
— Others have refuted Thomas's assumptions of the mass and the total potential energy.

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— "Truthers often compare such expulsions of air and debris, visible several floors below the collapse fronts, to 'squibs,' explosive devices often used in demolitions. However, they are readily explained by pressure changes as the towers, acting like a gigantic bicycle pump being compressed, collapsed."
— The squibs are sometimes 30 floors below the "collapse." Falling debris is chaotic and not airtight. That is, it's not like a piston in a cylinder. It is not solid, so it will allow air to pass through it rather than build up pressure below. There was no possibility of air pressure buildup 30 floors below. The bicycle pump analogy is an absurd and impossible comparison. Furthermore, there was a lot of solid matter in the squibs; air pressure cannot account for that.

— "The Twin Towers used a 'tube within a tube' architectural design."
— False. The core area was a grid of 47 columns all tied together with girders.

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— "When the towers began to collapse, large parts of the inner cores (called 'the Spires' in 9/11 Truth circles) were actually left standing, briefly, before they, too, toppled over."
— False. They did not "topple over." They fell straight down, which means that something *removed* the bottom portion.

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— "Between the outer perimeter and the inner core, the weight of the upper sections plowed through one floor after another, breaking the floor connection brackets and support columns, pulverizing concrete decks, and gaining momentum and mass with each additional floor failure."
— Other qualified engineers and physicists have argued that there was not enough kinetic energy to pulverize the concrete to a fine powder and do all the other damage.

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— Claim #2: "Nano-thermite and military-grade explosives were found in dust from the towers. Tons of melted steel were found in tower debris."
— Claim #2 is incorrect. Nano-thermite, a military-grade explosive, was found in dust from the towers.

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— ". . . (the characteristic "boom-boom-boom-boom" sounds and the flashes of high explosives) were completely absent in Manhattan on the morning of September 11, 2001."
— False. There were over 100 first responders and dozens of other witnesses who heard explosions and saw flashes of light.

Watch https://www.youtube.com/watch?v=cZ4dVo5QgYg
Watch https://www.youtube.com/watch?v=wUXGhLrDqb0

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— "Richard Gage insists that high explosives *must* have been used to bring down the Twin Towers, as they say this is the only process that can possibly explain the 'ejection of debris hundreds of feet from the towers.' However, they simultaneously insist that thermite or a derivative (thermate, nanothermite, etc.) was used *instead*, so as to topple the towers *quietly*."
— This is a straw man argument. AE911Truth says that a combination of nano-thermite, thermate, *and* explosives were probably used.

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— "Thermite is simply not practical for carrying out a controlled demolition."
— Uninformed and wrong. Here is a patent issued in 1994 for a nano-thermite demolition device: "A plasma arc can be employed to demolish a concrete structure at a high efficiency, while preventing a secondary problem due to noise, flying dust and chips, and the like, . . . directing the plasma arc at the surface of the concrete structure, and controlling the rate of supply of the thermite powder": http://www.google.com/patents/US5532449

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— ". . . unfortunately, with no chain of custody for the dust."
— False. Harrit et al. *did* establish a legal chain of custody.

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— "However, the presence of rust and aluminum does not prove the use of thermite, because iron oxide and aluminum are found in *many* common items that existed in the towers."
— Another straw man. It wasn't *just* the presence of iron oxide and aluminum; it was nano particles of these elements of uniform size, intimately mixed and formed into red/gray chips. This could not possibly happen during the collapse, as Thomas suggests. In fact, the idea is so preposterous that anyone suggesting that this could happen loses all credibility.

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— ". . . the supposed thermitic material showed results at about 450 degrees C *below* the temperature at which normal thermite reacts."
— That's because it wasn't regular thermite. It was nano-thermite, mixed with organic material. When the red/gray chips ignited at about 450 degrees C, they produced iron spheres, which proves that there was a thermite reaction.

Read http://www2.ae911truth.org/downloads/Full_Thermite_paper.pdf.

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— ". . . the scan of the red side of the 'thermitic material' of Harrit/Jones is a dead-on match to material Jones himself identified as 'WTC Steel Primer Paint' in his Hard Evidence Down Under Tour in November of 2009."

Source: http://www.internationalskeptics.com/forums/showpost.php?p=6959549

— The video is no longer available, so it cannot be evaluated. From the nano-thermite paper: "Red/gray chips were soaked in methyl ethyl ketone (MEK) for 55 hours with frequent agitation and subsequently dried in air over several days. The chips showed significant swelling of the red layer, but with no apparent dissolution. In marked contrast, paint chips softened and partly dissolved when similarly soaked in MEK."

In other words, they were different.

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— "Suggesting that the samples show partially reacted thermite is preposterous."
— They didn't simply "suggest." They showed pictures of the spheres that they had analyzed and found to be iron.

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— ". . . the editor-in-chief of the *Bentham Journal* that featured Jones's article, Marie-Paule Pileni, resigned in protest."
— The reference Thomas makes above is to this:

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— "The editor of the *Open Chemical Physics Journal*, Professor Marie Paule Pileni, said that the article is **'not about physical chemistry or chemical physics'** and that **'the topic is outside her expertise.'**"
— Both of the above statements are false. A thermetic reaction involves chemistry and physics. Marie-Paule Pileni is a chemistry professor with a **specialty in nanomaterials** at the renowned Université Pierre et Marie Curie in France.

See http://screwloosechange.blogspot.com/2009/04/bentham-editor-resigns-over-steven.html.

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— "Thermitic demolition should have created copious pools of melted steel at Ground Zero, but nothing remotely like this was ever found."
— False. Numerous structural engineers, clean-up specialists, firefighters, and others describe seeing molten steel.

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— "Truthers say iron microspheres found in the rubble indicate thermite; since hot fires and spot-welding do produce very tiny spheres of iron, though, these 'microspheres' are not unexpected."
— These are alternatives that "skeptics" cite, but they could not produce the amount of iron spheres found in the dust (5.87% by weight). The RJ Lee group studied the dust from the WTC and determined that "iron melted during the WTC event, producing spherical metallic particles." That requires 2,800°F, a thousand degrees above what jet fuel or office fires can attain. They also determined that lead vaporized during the collapse (3,182°F).

See http://911encyclopedia.com/wiki/index.php/RJ_Lee_World_Trade_Center_Dust_Study

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— "Pictures of cranes holding red-hot materials in the rubble are said to show molten steel. Had this been the case, however, the crane rigs would have immediately seized up."
— Not so. Heavy equipment is not delicate. Here is a photo of a crab-claw picking up some semi-solid molten metal dripping from the bottom:

Mark Loizeaux, founder of Controlled Demolition Inc., said, "There are both video tape and still photos of the molten steel being "dipped" out by the buckets of excavators."

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— "No reports of 'molten steel' in the tower basements have ever been credibly verified."
— That's an excuse to ignore all the credible reports by structural engineers, demolition experts, clean-up specialists, firefighters, and others. It's extremely unlikely that they're all wrong.

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— "... sulfur, released from burned drywall, corroded the steel as it stewed in the pile for weeks."
— This is another absurd, baseless assumption, with no precedent or science to back it up. The sulfur in drywall is locked up in a chemical bond that is not broken in a fire. Drywall is used for fireproofing, but it could not be if the sulfur were released in a fire and thus adding to the intensity of a fire.

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— Claim #3: "Tower 7, which wasn't hit by a plane, collapsed neatly into its own footprint."

— "In particular, Truthers point to a brief period of freefall (2.25 seconds) that was confirmed by NIST in its WTC 7 final report (Sunder 2008; NIST 2010) as proving that the building was purposely imploded. However, WTC 7, too, fails to prove 9/11 was an 'inside job' . . . ."
— Note that Thomas does not dispute that 2.25 seconds of free fall proves that WTC was a controlled demolition. He just skips over that little detail and says that it doesn't prove 9/11 was an "inside job."

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— "What is often conveniently left out of the story are actual reports from NYFD firefighters at the scene, which describe huge, raging, unfought fires on many floors at once."
— Using the photos and videos, NIST confirms that they were *not* huge raging fires; they were normal office fires.

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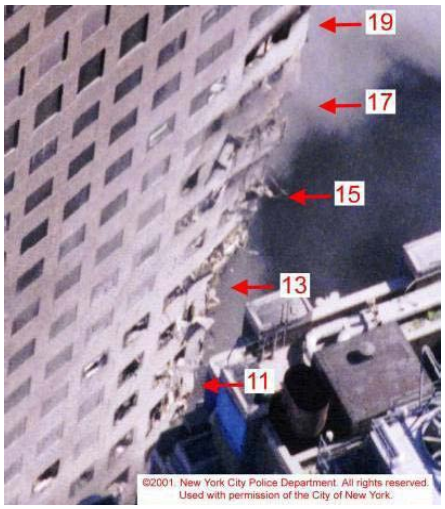
— ". . . and visible deformations and creaking. . ."
— The supposed "bulge" in the southwest corner — where Floor 10 to Floor 13 was apparently missing due to debris damage — even if it *did* exist, had nothing to do with the "collapse" that started at the other end of the building.



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— "NIST determined that this column was crucial to the building and could even be considered a design flaw. Its failure would have collapsed the building even without the other structural damage from WTC 1's collapse and the fires."
— That is what NIST says, but it's a bit farfetched to claim that the failure of a single column could cause a modern skyscraper to collapse completely in a matter of seconds.

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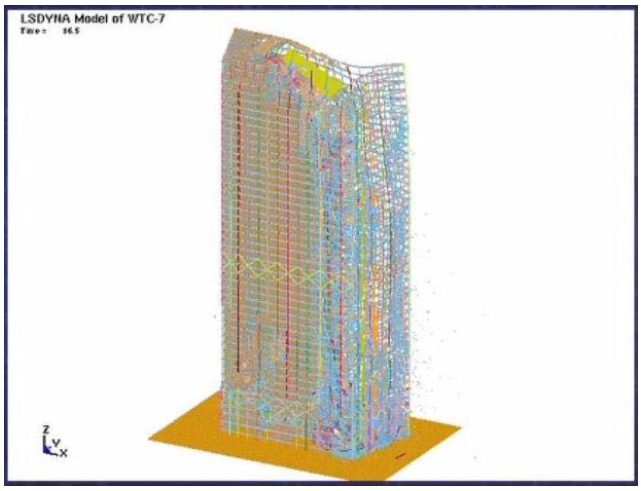
— "NIST found the collapse occurred in *three* stages. The first stage, which lasted 1.75 seconds, is when the fifty-eight perimeter columns were buckled; during this interval, the rooftop actually fell only about seven feet. In the second stage, which lasted 2.25 seconds, the already-buckled columns provided negligible support, and the north face of the structure free-fell about eight stories."
— NIST used a camera looking up at the building, so the inward movement of the north wall would register as a downward movement using the method of counting light-colored pixels to determine the skyline. The point NIST chose, a little to the west of center, is where its computer model has an inward bow, so NIST had to have known that its claim of a seven-foot drop was fraudulent.



The video cameras that aim roughly level with the roofline show a slight downward movement of all but the northwest corner, just before the entire roofline goes into free fall. There was no bending of the exterior columns on the west end (right side) of the building before onset of free fall.

The NIST model (below) shows the exterior framework still bending after about 34 feet of descent, *well* into the free-fall portion of the collapse. In free fall, all the energy is being converted into motion, but bending steel requires energy, so the NIST model is *not* falling at free fall.

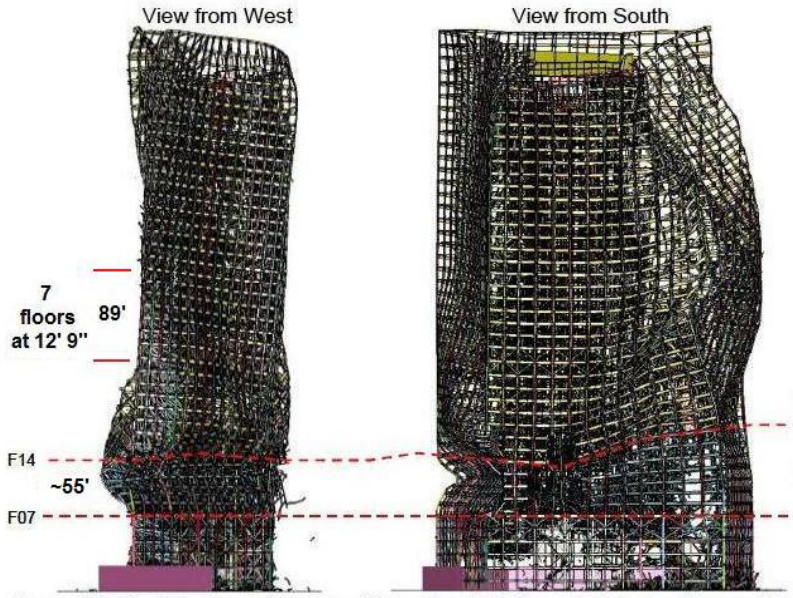


Figure 12–62. Exterior column buckling after initiation of global collapse with debris impact and fire-induced damage (slabs removed from view).

In Stage 1, ... the north face had descended approximately 2.2 m (7 ft)
In Stage 2, the north face descended at gravitational acceleration NCSTAR 1A p. 45

Global collapse occurred as the entire building above the buckled region moved downward as a single unit. NCSTAR 1A p. 48

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— "(Try taking a plastic drinking straw and buckling it by folding it over and then pushing down on the bent straw with your hand. The crimped straw provides almost no resistance to vertical forces, and neither did the buckled columns of WTC 7.)"
— This analysis is absurd. Steel columns weighing 500 to 1,000 pounds per lineal foot, which were designed to hold up three times the design load and were tied together with 3-foot-high steel beams on every floor, do not fold up like straws.

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— "The other half of the equation is that WTC 7 resembles a 'classic controlled demolition' because it supposedly 'imploded, collapsing completely, and landed in its own footprint.'"
— There was damage to two of the five surrounding buildings, but the majority of the debris landed within the footprint of the building.

"Loss of strength due to the transfer trusses could explain why the building imploded." (See FEMA, Chap. 5, p. 31: http://www.fema.gov/pdf/library/fema403_ch5.pdf.)

"The debris of WTC 7 was mostly contained within the original footprint of the building." (See NIST 2004 Progress Report, Appendix L, p. 33: http://www.nist.gov/manuscript-publication-search.cfm?pub_id=860567.)

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— "Many 'serious' groups such as AE911Truth quietly champion 'no-planers' such as former pilot Dwain Deets, engineer Anders Bjorkman . . . ."
— False. AE911Truth has never taken a position on MIHOP/LIHOP or "no-planes" issues at WTC. Although some individuals who are members of AE911Truth have taken a position on these and other issues, the organization AE911Truth has so far confined its research and comments to the demolition of the three towers.

Extremely High Temperatures and Molten Metal Evidence at WTC

R J Lee Group Report — Damage Assessment — 130 Liberty Street Property (2003)

— "[**I**]**ron . . . melted** during the WTC event."

— Figure 21 and Figure 22 show a spherical iron particle resulting from **the melting of iron (or steel)**. — See page 17 [PDF page 21] [Temperatures were at least **2800°F**.]

— "The presence of lead oxides on the surface of mineral wool indicates the exposure of high temperatures at which **lead** would have undergone **vaporization**" — See page 24 [PDF page 28] [Temperatures were at least **3180°F**.] http://web.archive.org/web/20060114124849/http://www.nyenvirolaw.org/WTC/130%20Liberty%20Street/Mike%20Davis%20LMDC%20130%20Liberty%20Documents/Signature%20of%20WTC%20dust/WTC%20Dust%20Signature.Composition%20and%20Morphology.Final.pdf

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RJ Lee Group Report — Signature Assessment — 130 Liberty Street Property (2004)

"The presence of lead oxide on the surface of mineral wool indicate the existence of **extremely high temperatures *during the collapse*** **which caused metallic lead to volatilize** *(vaporize)*, oxidize, and finally condense on the surface of the mineral wool." — See page 12 [PDF page 13] [Temperatures were at least **3180°F**.] http://web.archive.org/web/20060114130443/http://www.nyenvirolaw.org/WTC/130%20Liberty%20Street/Mike%20Davis%20LMDC%20130%20Liberty%20Documents/Signature%20of%20WTC%20dust/WTCDustSignature_ExpertReport.051304.1646.mp.pdf

* * * * *

"A combination of an uncontrolled fire and the structural damage might have been able to bring the building down, some engineers said. But that would not explain **steel** members in the debris pile that appear to have been **partly evaporated** in extraordinarily high temperatures, [Worcester Polytechnic Institute professor of fire protection engineering] Dr. [Jonathan] Barnett said." — James Glanz, writer for *The New York Times* [See page 2 of his article] http://www.nytimes.com/2001/11/29/nyregion/nation-challenged-site-engineers-have-culprit-strange-collapse-7-world-trade.html

* * * * *

"I saw melting of girders at World Trade Center." — Dr. Abolhassan Astaneh-Asl, professor of structural engineering, University of California at Berkeley https://www.youtube.com/watch?v=syXpA6B85Ek

"One piece Dr. [Abolhassan] Astaneh-Asl saw was a charred horizontal I-beam from 7 World Trade Center, a 47-story skyscraper that collapsed from fire eight hours after the attacks. **The beam**, so named because its cross-section looks like a capital I, had clearly endured searing temperatures. Parts of the flat top of the I, once five-eighths of an inch thick, had **vaporized.**" — Kenneth Chang, writer for *The New York Times* http://www.nytimes.com/2001/10/02/science/scarred-steel-holds-clues-and-remedies.html

* * * * *

Bart Voorsanger described the "meteorite" as "**molten steel and concrete** and all these things all fused by the heat into one single element." See http://www.youtube.com/watch?v=jAakGoHLUZI

* * * * *

"The intense fire in the northeast corner opening of the 81st floor . . . a very bright white flame, as opposed to the typical yellow and orange surrounding flames, which generated a plume of white smoke, stands out. The intensity of this flame is considerably brighter than normal flames. . . . The brightness of the flame, along with the white smoke, suggests that **some type of metal is burning**." — NCSTAR 1-5A, Chapter 9, Appendix C, Figure 9-44, page 344 [PDF page 48] http://www.nist.gov/customcf/get_pdf.cfm?pub_id=101030

* * * * *

"The debris pile at Ground Zero was always tremendously hot. Thermal measurements taken by helicopter each day showed underground temperatures ranging from 400ºF to **more than 2,800°F**." — *SH&E At Ground Zero* [See PDF page 7] http://web.archive.org/web/20030623013242/http://www.asse.org/ps0502vincoli.pdf

* * * * *

"Fire temperatures were so intense that **concrete melted** like lava around everything in its path." [Approximately **3300-4500°F**, depending on the aggregate used.] — The NYPD Museum (now closed) http://www.archive.org/details/NewYorkPoliceMuseumWtcGunsMelted (this link no longer works)

* * * * *

NYCPM Home page http://www.nycpm.org (now closed)
Home > Exhibitions > 9/11 Remembered http://www.nycpm.org/exhibitions/911/index.html
NY Police museum melted guns http://www.archive.org/details/NewYorkPoliceMuseumWtcGunsMelted
Case http://ia600303.us.archive.org/3/items/NewYorkPoliceMuseumWtcGunsMelted/DSC_7411_color_corrected.png
Now closed: New York City Police Museum 100 Old Slip, New York, NY 10005-3539 Phone (212) 480-3100
The museum has been closed and all the links no longer work, but you can see the saved screenshots below.

Firefox

New York City Police Museum

www.nycpm.org

Google

MUSEUM

THE NEW YORK CITY POLICE MUSEUM

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- 9/11: A Uniform Response
- The Irish Whales
- The NYPD Motorcycle Squad
- Junior Officers Discovery Zone
- Policing a Changed City
- 9.11 Remembered
- Hall of Heroes

MOTORCYCLE SQUAD

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A fun interactive learning exhibition for children.

Click here to view an article & video from NY1

New York City Polic... | Metorite | Melted concrete - cr... | NY Police museum ... | 3:09 AM

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MUSEUM

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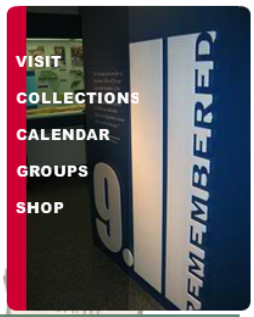
Exhibitions

9.11 Remembered

A- A+

PERMANENT

The New York City Police Museum has opened a permanent multi-media exhibit that chronicles the extraordinary role the NYPD played in response to September 11, 2001. Through exclusive on-camera interviews, striking photographs, and numerous Ground Zero artifacts, the exhibit tells the dramatic and remarkable story of New York's Finest, through their eyes and in their own words.



Home > Exhibitions > 9.11 Remembered

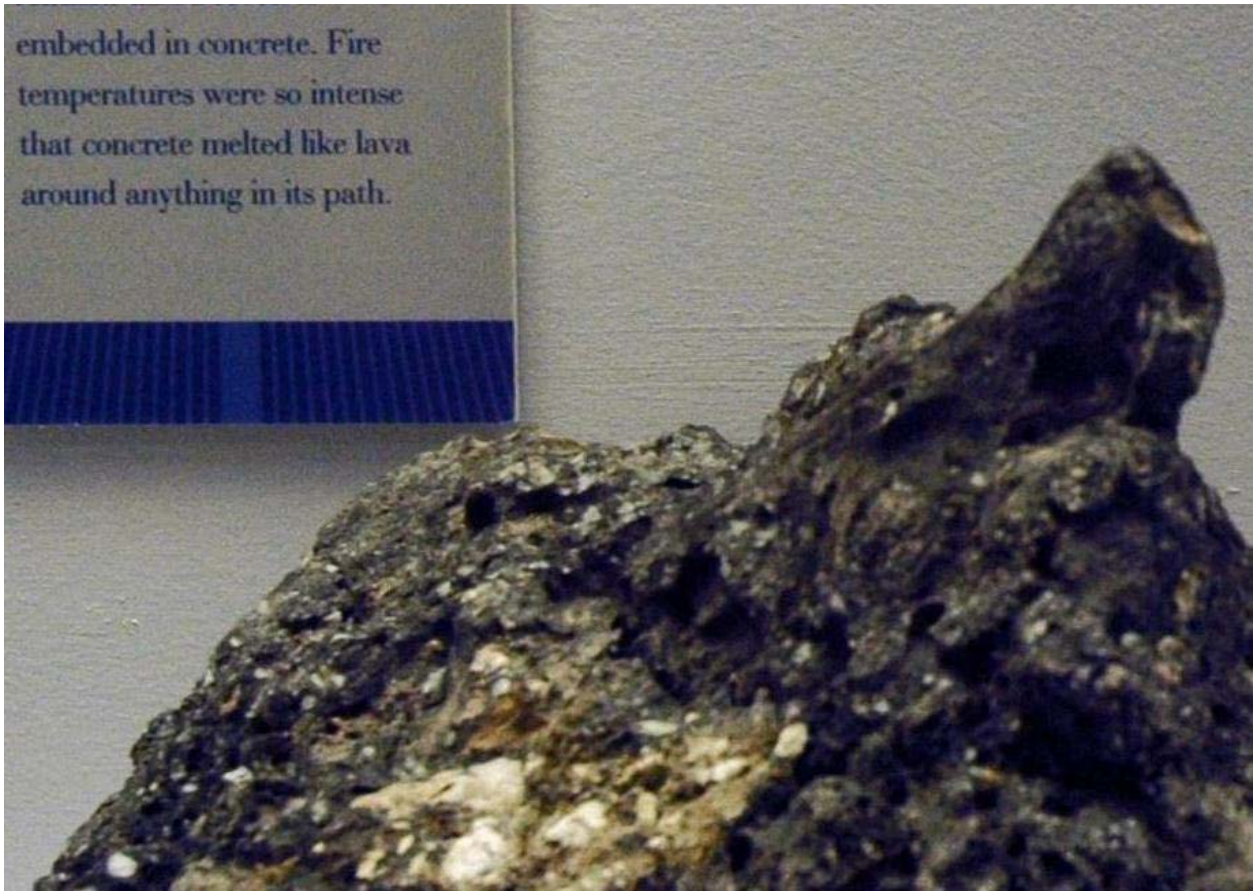
The New York City Police Museum

100 Old Slip
New York, NY 10005
T: (212) 480-3100
F: (212) 480-9757

Monday through Saturday
10:00 AM to 5:00 PM

Sunday
12:00 PM to 5:00 PM

The New York City ... | Metorite | NY Police museum ... | 3:01 AM


embedded in concrete. Fire
temperatures were so intense
that concrete melted like lava
around anything in its path.

CONTROLLED DEMOLITIONS of STEEL-FRAMED HIGH-RISES

1977 — Biltmore Hotel, Oklahoma City, Oklahoma. 28 stories. When it was imploded by Controlled Demolition, Inc. (CDI) in October 1977, the 245-foot-tall structure became the tallest steel-framed building to be demolished with explosives. See http://www.controlled-demolition.com/biltmore-hotel.

1988 — Traveler's Insurance Building, Boston, Massachusetts. 18 stories. 450,000 square feet. See http://www.controlled-demolition.com/travelers-building

1997 — 500 Wood Street Building, Pittsburgh, Pennsylvania. 27 stories. CDI's May 1997 implosion of the 344.5-foot-tall office building eclipsed the world record for the explosives demolition of urban steel buildings, which CDI set when it demolished the Biltmore Hotel (above). See http://www.controlled-demolition.com/500-wood-street-building

1998 — J.L. Hudson Department Store, Detroit, Michigan. 33 levels. October 1998. Hudson's was the tallest department store in the country and was second in square footage only to Macy's anchor store in NYC. It had two retail basements and 23 above-grade retail floors (meaning the stores on these floors were at least 50% above ground level), including mezzanines. Two additional basements and six upper stories in a tower provided storage and mechanical support for the 2.2 million square foot building. See http://www.controlled-demolition.com/jl-hudson-department-store

2012 — Red Road flats, Glasgow, Scotland. Eight tower blocks each 292 feet high. When these apartments were built in the mid-1960s, they were the tallest residential buildings in Europe. The first of these blocks, which consisted of three adjoining towers, was demolished in June 2012 as part of the Glasgow Housing Association's renewal program. The other seven will be brought down in 2017. According to William Sinclair, managing director of demolition contractor Safedem, Ltd., "The Red Road flats have presented a unique series of challenges ranging from the size of the buildings to the steel-frame structure." Indeed, because of that structure, the contractor planned for the bottom stories to remain undisturbed by the blowdown; they were later demolished using machines. About 275 kilos of explosives were used to bring down the triple block. Watch the demolition here: http://www.bbc.com/news/uk-scotland-glasgow-west-18385434

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."

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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):

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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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Major Fires in Steel-Framed High-rise Buildings

1970 — 1 New York Plaza is a 50-story skyscraper in New York City that suffered a severe fire and explosion on August 5, 1970. The fire started around 6:00 PM on the 33rd and 34th floors and burned for more than six hours. It caused shear connections to fail and beams to drop onto girder flanges, resulting in a partial collapse of the 34th floor. The rest of the steel structure remained standing. See http://911research.wtc7.net/wtc/analysis/compare/fires.html and https://www.wpi.edu/Pubs/ETD/Available/etd-050406-105306/unrestricted/rnacewicz.pdf

1975 — World Trade Center North Tower, otherwise known as WTC 1, was still a 110-story skyscraper when its 11th floor suffered a fire from an unknown cause on February 13, 1975. The fire started shortly before midnight in a furnished office on the 11th floor and spread through some 65% of the floor (the core plus half the office area). By the time firefighters arrived, flames were also spreading vertically via telephone cable openings in the floor slab, causing subsidiary fires from the 9th to the 19th floors. The fire lasted more than three hours and did an estimated $2 million worth of damage. Cleaning and service personnel were evacuated without any fatalities. However, of the 150 firefighters at the scene, 28 sustained injuries from the intense heat and smoke. According to Captain Harold Kull of Engine Co. 6, "It was like fighting a blow torch. Flames could be seen pouring out of 11th floor windows on the east side of the building." The structural steel trusses, undamaged, did not need to be replaced. See http://bellaciao.org/en/article.php3?id_article=10613

1988 — First Interstate Bank is a 62-story skyscraper in Los Angeles that suffered the worst high-rise fire in the city's history. From the late evening of May 4, 1988, through the early morning of the next day, 64 fire companies battled the blaze, which lasted for 3 1/2 hours and caused an estimated $200 million of property damage. Of that fire, the U.S. Fire Administration wrote: "In spite of the total burnout of four and a half floors, there was no damage to the main structural members and only minor damage to one secondary beam and a small number of floor pans." See http://www.usfa.fema.gov/downloads/pdf/publications/tr-022.pdf (p. 21) and http://911research.wtc7.net/wtc/analysis/compare/fires.html

1990 — Broadgate was a partially completed 14-story building in London, England, when a fire began in a first-floor contractor's hut on June 23, 1990. Since the fire detection and sprinkler systems were not yet in operation during off-work hours, smoke and flames spread undetected throughout the building. Neither during nor after the 4½-hour fire—which for two hours exceeded 1,800° F—did any columns, beams, or floors collapse, despite large deflections in the structural steel exposed to fire. See http://guardian.150m.com/fire/small/cardington.htm

1991 — One Meridian Plaza is a 38-floor skyscraper in Philadelphia, Pennsylvania, that suffered a severe fire on February 23, 1991. The fire started on the 22nd floor and raged for 18 hours, gutting eight floors, causing an estimated $100 million in direct property loss, and killing three firefighters. Despite the severity and duration of the fire, as evidenced by the damage the building sustained, no part of the building collapsed. Fire and safety officials said later that it was in no danger of collapsing, as had been feared. See http://www.nytimes.com/1991/02/26/us/philadelphia-fire-officials-rule-out-collapse-of-tower.html and http://911research.wtc7.net/wtc/analysis/compare/fires.html

2001 — World Trade Center 5, a nine-story building, was engulfed in fires on September 11, 2001, after sustaining heavy damage from falling debris. The fires were much more severe and widespread than those in the 47-story World Trade Center 7. Though there were some partial interior collapses in WTC 5, the overall structure remained standing. See http://911research.wtc7.net/wtc/attack/wtc5.html

2004 — East Parque Central is a 56-story, 730-foot office tower in Caracas, Venezuela, that went up in flames just before midnight on Saturday, October 16, 2004, on the 34th floor. By Sunday afternoon, it had burned for more 17 hours and spread over 26 floors, reaching the roof. Only two floors and some staircases in the building collapsed. Afterwards, engineers inspected the building and found it "very solid," according to Caracas Fire Chief Rodolfo Briceno. See http://www.cbsnews.com/news/towering-inferno-in-caracas

2005 — The Windsor Tower is a 28-story skyscraper in Madrid, Spain, that was being fireproofed when fire broke out on February 12, 2005. The not-yet-fireproofed upper 10 floors partially collapsed in stages over a period of more than two hours. Although flames spread down as low as the third floor and lasted up to 20 hours, the already-fireproofed lower 17 floors did not collapse. See http://www.mace.manchester.ac.uk/project/research/structures/strucfire/CaseStudy/HistoricFires/BuildingFires/default.htm

2007 — Deutsche Bank Building was originally a 41-story skyscraper, but in 2007 it was being dismantled because of massive damage incurred when debris was hurled into it from World Trade Center 2's explosion on September 11, 2001. On August 18, 2007, at 3:40 PM, a seven-alarm fire, started by workers' smoking, broke out on the 17th floor of the by-then-26-story structure. The fire burned for seven hours and heavily damaged 10 floors above and below its point of origin. Two firefighters died of smoke inhalation. The steel structure did not collapse. See https://en.wikipedia.org/wiki/Deutsche_Bank_Building

2009 — Mandarin Oriental Hotel/Beijing Television Cultural Center in Beijing, China, was a not-yet-completed 44-story, 522-foot skyscraper that was totally engulfed in flames for more than three hours on February 9, 2009. The cause of the fire was said to be an unauthorized fireworks display during the Lunar New Year celebration. One firefighter died fighting the blaze. The structure, built with 140,000 tons of steel, did not collapse. It was later rebuilt. See https://www.youtube.com/watch?v=3B1OnhSucP8 and https://en.wikipedia.org/wiki/Beijing_Television_Cultural_Center_fire and http://www.nytimes.com/2009/02/10/world/asia/10beijing.html

2010 — A Shanghai, China, high-rise apartment building that was undergoing renovation broke out in a fire on November 15, 2010, that destroyed all 28 stories. The fire, started by sparks that ignited the scaffolding from welding work being done by unlicensed welders, burned for several hours and required more than 80 fire engines to contain it. It killed at least 58 people and injured more than 70 others. Firefighters on the ground were unable to hose water on the top of the 279-foot building. The steel structure did not collapse. See https://en.wikipedia.org/wiki/2010_Shanghai_fire

2012 — The Dubai Tamweel is a 34-story residential tower in the United Arab Emirates' most populous city, Dubai. It was partially gutted by fire on November 18, 2012. The blaze started at 1:30 AM, shot flames to every single floor, and was put out more than seven hours later—at around 8:20 AM. All residents were evacuated to safety. The steel-framed structure did not collapse. See http://www.emirates247.com/news-in-images/pre-dawn-fire-guts-jlt-s-tamweel-tower-2012-11-19-1.483797 and http://gulfnews.com/news/uae/emergencies/fire-breaks-out-at-tamweel-tower-in-jumeirah-lake-towers-1.1106387

Witnesses of Molten Steel at Ground Zero

Leslie Robertson, structural engineer for the design of the World Trade Center: "[T]hey pulled out the big block of concrete and there was like **a little river of steel flowing."**
@ 0:49 http://www.youtube.com/watch?v=rjmHqES_lto

Peter Tully, president of Tully Construction of Flushing, N.Y., told AFP that he saw pools of "**literally molten steel**" at the World Trade Center.
http://web.archive.org/web/20020905195530/http:/www.americanfreepress.net/09_03_02/NEW_SEISMIC_/new_seismic_.html

Richard Riggs, debris removal specialist, quoted in The History Channel's "World Trade Center: Rise and Fall of an American Icon": "The fires got very intense down there and actually **melted beams** where it was **molten steel** that was being dug up."
@ 0:36 http://www.youtube.com/watch?v=3Ogrupgt4mI&feature=related

Abolhassan Astaneh, professor of civil engineering at the University of California, Berkeley, was one of the leading structural engineers who studied the collapse of the World Trade Center on 9/11: "I saw **melting of girders** in World Trade Center."
http://www.pbs.org/newshour/bb/science-jan-june07-overpass_05-10

Mark Loizeaux, founder of Controlled Demolition, Inc.: "There are both video tape and still photos of the **molten steel** being 'dipped' out by the buckets of excavators."
http://libertypost.org/cgi-bin/readart.cgi?ArtNum=30926&Disp=4#C4
Link to page: http://www.libertypost.org/cgi-bin/readart.cgi?ArtNum=30926

Capt. Philip Ruvolo, FDNY: "You get down below and you'd see **molten steel—molten steel** running down the channel rail, like you're in a foundry, like lava."
@ 0:11 http://www.youtube.com/watch?v=afZaK8zVbUw&feature=related

Joe O'Toole, firefighter: "Underground fires raged for months. O'Toole remembers in February seeing a crane lift a steel beam vertically from deep within the catacombs of Ground Zero. 'It was dripping from the **molten steel**,' he said."
http://911research.wtc7.net/cache/wtc/evidence/messengerinquirer_recoveryworker.html

Greg Fuchek, vice president of sales for LinksPoint, Inc.: "In the first few weeks, sometimes when a worker would pull a steel beam from the wreckage, the end of the beam would be dripping **molten steel**."
http://gcn.com/articles/2002/09/09/handheld-app-eased-recovery-tasks.aspx

Richard Garlock, a structural engineer for LERA: "Going below, it was smoky and really hot. . . . The debris past the columns was red-hot, **molten**, **running**."
http://www.pbs.org/americarebuilds/engineering/engineering_debris_06.html

James Glanz, writer for *The New York Times*: "A three-foot **stalagmite of steel**, which looks for all the world like a drip candle, sits next to one of the immense steel columns that held up the north face of the tower."
http://www.nytimes.com/2001/11/15/nyregion/a-nation-challenged-the-site-below-rubble-a-tour-of-a-still-burning-hell.html

Lee Turner, paramedic: Turner himself crawled through an opening and down crumpled stairwells to the subway, five levels below ground. He remembers seeing in the darkness a distant, pinkish glow — **molten metal dripping** from a beam.
http://web.archive.org/web/20140106090807/http://www.usnews.com/usnews/9_11/articles/911memories.htm

William Langewiesche, journalist: "In the early days, the **streams of molten metal** that leaked from the hot cores and flowed down broken walls inside the foundation hole."
http://www.amazon.com/exec/obidos/ASIN/0865476756/centerforcoop-20 (pp. 31-32)

Ron Burger, public health advisor at the CDC: "Feeling the heat, seeing the **molten steel**, the layers upon layers of ash, like lava, it reminded me of Mt. St. Helen's and the thousands who fled that disaster." http://www.brazoshealth.org/sites/all/themes/health/images/pdfs/messages_in_the_dust.pdf

Mike Donoho, interim Bryan Fire Department chief: "What you had were large columns of steel that were just stuck into massive amounts of **molten steel** and **other metals**." http://web.archive.org/web/20021104073017/http://www.theeagle.com/septanniv/091102firefighter.htm

Tom Hickey, union ironworker: With no special protective gear, he worked within a few feet of still burning fires, [which were] "like a volcano," hot enough that **molten steel** could be seen dripping down. "My boots melted every night," he recalled. "You just didn't stand in one place too long." http://www.riverreporter.com/issues/02-09-05/wtc.htm

David Long, of Ottawa, was in New York on 9/11, working at Merrill Lynch: "I went outside and saw a large hole in the left-hand tower, approximately 80 stories up. There was smoke coming out, but not a lot of fire. I could also see **streams of molten metal** coming from undamaged areas of the building, in three different places." http://www.abc.net.au/news/2011-09-09/eyewitness-accounts-of-september-11/2866958

Lee Turner, Boone County Firefighters: "He remembers seeing in the darkness a distant, pinkish glow—**molten metal** dripping from a beam—but found no signs of life." https://web.archive.org/web/20020913065755/http://www.usnews.com/usnews/9_11/articles/911memories.htm

Reports from Hearsay Witnesses

Ken Holden, who was involved with the organizing of demolition, excavation, and debris removal operations at Ground Zero, later told the 9/11 Commission: "Underground, it was still so hot that **molten metal** dripped down the sides of the wall from [WTC] Building 6." http://www.historycommons.org/entity.jsp?entity=ken_holden

Alison Geyh, Ph.D., John Hopkins Bloomberg School of Public Health: "Fires are still actively burning and the smoke is very intense," reports Alison Geyh, Ph.D. "In some pockets now being uncovered, they are finding **molten steel**." http://www.jhsph.edu/Publications/Special/Welch.htm

Herb Trimpe, chaplain: "I talked to many contractors and they said they actually saw **molten metal** trapped, beams had just totally had been melted because of the heat." http://web.archive.org/web/20021006003613/http:/www.recordonline.com/adayinseptember/trimpe.htm

Kathy Dawkins, New York Department of Sanitation (DSNY) spokeswoman: "For about two and a half months after the attacks, in addition to its regular duties, DSNY played a major role in debris removal — everything from **molten steel** beams to human remains." http://waste360.com/mag/waste_dday_ny_sanitation

Sarah Atlas, New Jersey Task Force One Urban Search and Rescue: "Fires burned and **molten steel** flowed in the pile of ruins still settling beneath her feet." http://www.sas.upenn.edu/sasalum/newsltr/summer2002/k911.html

Ben Johnson, first responder: "The workers go through three pairs of rubber boots a day because they melt in the three-week-old fire of **molten metal** and jet fuel." https://web.archive.org/web/20100225015212/http://www.illusiongenius.com/articles/11-01.html

ARCHITECTS & ENGINEERS for 9/11 TRUTH

2,750+ ARCHITECTS & ENGINEERS CALL FOR NEW INVESTIGATION OF DESTRUCTION OF THE 3 WORLD TRADE CENTER SKYSCRAPERS ON 9/11/2001

The AE911Truth Petition

TO THE MEMBERS OF THE HOUSE OF REPRESENTATIVES AND OF THE SENATE OF THE UNITED STATES OF AMERICA

Please take notice that:

On Behalf of the People of the United States of America, the undersigned Architects & Engineers for 9/11 Truth and affiliates hereby petition for, and demand, a truly independent investigation with subpoena power in order to uncover the full truth surrounding the events of 9/11/01 – specifically the collapse of the World Trade Center Towers and Building 7. We believe there is sufficient doubt about the official story to justify re-opening the 9/11 investigation. The new investigation must include a full inquiry into the possible use of explosives that might have been the actual cause of the destruction of the World Trade Center Twin Towers and Building 7.

Sincerely,

The Undersigned

Architects (Degreed & Licensed – Active & Retired)

FAIA Architects

Patrick Ahearn
FAIA
M. Architecture
Syracuse University
Boston, MA US

Daniel Barnum
FAIA
B. Arch., Rice University
Houston, TX, US

Eason Cross
FAIA
BA, Harvard, M. Arch. HGSD
Alexandria, VA, US

David Helpern
FAIA
NY, NY, US

Kevin Kelly
FAIA
Austin, TX, US

David Metzger
FAIA, FCSI
B. Arch, Univ. of Michigan
M.S. Architectural Science,
Cornell University
Bethesda, MD, US

John Miller
FAIA
M. Arch, Harvard University
Graduate School of Design
Cambridge, MA, US

Paul Oles
FAIA
M. Architecture, Yale
Santa Fe, NM, US

Harry Robinson III
FAIA
B. Arch., MCP Harvard
MCPUD, Harvard
Washington, DC, US

Louis Sirianni
FAIA NCARB LEED
B. Arch., Carnegie-Mellon
University of Fine Arts
M. Arch. (Urban Design),
Harvard University
Boston, MA, US

LeRoy S. Troyer
FAIA
B.A. Architecture
Notre Dame University
South Bend, IN, US

AIA Architects

Paul Adams
AIA, LEED AP
M. Arch., Colorado Univ.
Denver, CO, US

Christopher Allen
AIA
Ann Arbor, MI, US

Sven Alstrom
AIA, NCARB
BGS University of Kansas
Lawrence, KS, US

Dante Amato
AIA, NCARB, LEED AP
BA Environmental Des/Arch,
UC Berkeley
Las Vegas, NV, US

Mark Baker
AIA
M.A. Architecture
Denver, CO, US

Stephen Barasch
AIA, APA, NCARB
B. Arch., Univ of Arizona
M. Arch., Rice Univ.
San Luis Obispo, CA, US

Dan Bartlett
AIA
B. Architecture
Keene, NH, US

Timothy Becher
AIA
B. Architecture
San Luis Obispo, CA, US

Kent Beirne
AIA
Hooksett, NH, US

Judy Bennett
AIA, LEED AP
B. Architecture
Boston Arch. Center
Wayland, MA, US

John Benson
AIA
B. Architecture
University of Arizona
Boston, MA, US

Gary Blanchard
AIA
B. Architecture
Univ. of Louisiana
Conyers, GA, US

Michael Blutt
AIA
B. Architecture
Univ. of Oregon
Milton, MA, US

Bertie Bonner
AIA
M. Architecture
Media, PA, US

Robert Braddock
AIA
B. Arch., Virginia Tech.
Arlington, VA, US

Stewart Brecher
AIA, NCARB
B. Architecture
Rhode Island School of Design
Bar Harbor, ME, US

Berton Bremer
AIA, NCARB
B. Architecture
Boston Arch. College
Cambridge, MA, US

Joseph Bridy
AIA
B. Architecture, Temple Univ.
Philadelphia, PA, US

Daniel Brogan
AIA
B.S. Fire Protection Eng.
MBA
San Diego, CA, US

Michael Burke
AIA
M. Arch., Univ. of Texas
Redlands, CA, US

Sam Callaway
AIA
B.A. Arch., Yale Univ.
M.A. Arch., Yale Univ.
Gaylordsville, CT, US

Roger Carrillo
AIA
M. Architecture,
Texas A&M University
San Antonio, TX, US

Gregory Cashman
AIA, NCARB
B. Arch., Iowa State Univ.
Sun Prairie, WI, US

Thomas Chamberlain
AIA
San Jose, CA, US

Michael Chelednik
AIA
B.S. Architecture
Temple University
Redding, CT, US

James Cirino
AIA, NCARB
Boston Architectural Center
Lynnfield, MA, US

George Clower
AIA
B.A., B.S. Architecture
Corpus Christi, TX, US

Michael Coffey
AIA
New York, NY, US

Michael Coleman
AIA
B. Architecture, UC Berkeley
Oakland, CA, US

Kevin Connors
P.E., AIA
B.S. Civil Eng., M. Arch.
Buöalo, NY, US

Richard Curtis
AIA
B. Architecture
Cornell University
Portland, ME, US

Claude R Cuvier
AIA
B. Architecture
New York Inst. of Tech.
Coram, NY, US

Elaine Dabrowski
AIA
B. Architecture
Portland, OR, US

Timothy Davis
AIA
M. Arch., Univ. of Penn
B.A., Stanford Univ.
Austin, TX, US

Paul Dibos
AIA
M. Architecture
Univ. of California
Baltimore, MD, US

Robert Diericks
AIA
B. Architecture
Illinois Institute of Tech.
Naples, FL, US

Nancy Dingman
AIA
M. Architecture
Harvard Univ. Graduate
School of Design
Cambridge, MA, US

Alice Dodson
AIA
Asheville, NC, US

Tim Duffy
AIA
B. Architecture
Roseville, CA, US

Steven Dye
AIA
B.S. ARET
Bluefield State College
Beckley, WV, US

J. Scott Eddy
AIA, NCARB, CSI
B. Architecture
Univ. of Southwestern LA
Jackson, MS, US

Ted Elden
AIA (Ret.)
B. Architecture
Charleston, WV, US

Jerry Erbach
Architect AIA
B.A., B. Architecture
Univ. of Notre Dame
Chevy Chase, MD, US

Diane Evers
AIA
Rehoboth, MA, US

Rob Farr
AIA
B. Architecture
University of Arizona
Jackson, MS, US

Jacques Fauteux
AIA
B. Arch., Oklahoma Univ.
Hubbardston, MA, US

Deborah Fein-Brug
AIA NCARB
B. Architecture
University of Detroit
Hopkinton, MA, US

John Ferrera
AIA
Master of Architecture
Norwich University
Fitchburg, MA, US

Stephen Flickenschild
Architect, AIA, NCARB
B. Arch., Univ. of Arkansas
Walden, NY, US

Bob Foreman
AIA
University of Florida
Norcross, GA, US

Richard Fort
AIA
Asheville, NC, US

William Franz
AIA, NCARB
B.S. Architecture
University of Texas
Fort Worth, TX, US

AIA Architects

Richard Gage
AIA
B. Architecture
Berkeley, CA, US

Theodore George
AIA
Belmont, MA, US

Fred Gleason
AIA
Boston, MA, US

William Green
AIA
B. Arch., Univ. of Illinois
JD Loyola
Roselle, IL, US

Kathi Gregory
CSI, AIA Intern Architect
Univ. Tennessee
Nashville, TN, US

John Guenther
AIA
University of Kansas
Wildwood, MO, US

Christopher Hanlon
AIA
Swampscott, MA, US

Milena Haskovec
AIA NCARB LEED AP
M. Arch., Charles Univ., Prague
Cambridge, MA, US

Scott Hatfeld
AIA, Chairman of the Board
Iowa State University
Des Moines, IA, US

Patrick Hickox
AIA
Boston, MA, US

Cynthia Howard
AIA
M. Arch., MIT and Harvard
Biddeford Pool, ME, US

Brian Hromadka
AIA
M. Architecture
Boston Arch. College
Newburyport, MA, US

Michael Johnson
AIA, LEED AP BD&C
B. Architecture
Baltimore, MD, US

David Joiner
AIA
B. Architecture
Overland Park, KS, US

Andy Jordan
AIA
Pratt Institute
Brooklyn, NY, US

Steven Karr
AIA, President
B. Architecture
Rockville, MD, US

Jon Keiser
Architect, AIA, LEED AP
B.S. Environ. Design
Ball State University
Frederick, CO, US

Majed Khater
AIA
B.S. Arch. Eng.
Jami'at Al-Yarmouk, Jordan
Las Vegas, NV, US

Larry Kleinkemper
AIA
B. Architecture
Austin, TX, US

Bret Kudlicki
AIA, LEED AP
M. Arch., Univ. of Colorado
Denver, CO, US

Mike Kwon
AIA
B.S. Architecture
B.S. Bldg. Construction
Atlanta, GA, US

David Lawson
AIA
B. Architecture
Oklahoma State Univ.
Tampa, FL, US

Nina Le Baron
Architect AIA
B.A. Interior Architecture
RI School of Design
Sausalito, CA, US

Anne Lee
AIA
M. Architecture
Boston, MA, US

Patrick Lee
AIA
B. Arch., Virginia Tech
Denver, CO, US

Jim Lencioni
AIA LEED
B.A., Architectural Design
University of Illinois
Oak Park, IL, US

Robert Livermore
AIA, LEED AP
M. Arch., Harvard University
Waltham, MA, US

Michael LoBuglio
AIA
Newtown, CT, US

Kevin McDonough
AIA, Architect
B.S. Architecture
Anderson, SC, US

Patrick McFadden
AIA, NCARB, CBI, BCO
B.S. Architecture
Chester Heights, PA, US
Architect, AIA, LEED AP

John McKittrick
B. Arch., M. Arch.
Helena, MT, US

Gary Mendoza
AIA LEED
B. Architecture,
Boston Architecture College
Dorchester, MA, US

George Metzger
AIA
M. Arch., Harvard Univ.
Cambridge, MA, US

Martin Michaelis
AIA
Amherst, NH, US

Paula Milan
AIA NCARB
B. Architecture
Roger Williams University
Seekonk, MA, US

Murray Miller
AIA
B. Architecture
Kansas State University
Wilkes Barre, PA, US

Uzma Mirza
Architect AIA, NCARB,
LEED AP
B. Arch., Carleton Univ.
Ottawa Ontario, Canada
Fort Wayne, IN, US

Derek Molenaar
AIA
M. Architecture
Univ. of Pennsylvania
Philadelphia, PA, US

Scott Mullen
AIA, LEED AP BD + C
San Francisco, CA, US

James Myers
AIA
M. Architecture,
State Univ. of NY, Buffalo
Rochester, NY, US

Christian Mungenast
AIA
Architect
Arlington, MA, US

Crystal Nanney
AIA
B. Architecture
University of Detroit
Savannah, GA, US

Daniel Ocasio
AIA, NCARB
M. Architecture
Columbia University
Boston, MA, US

George Owen
AIA
B. Architecture, MIT
Wallingford, PA, US

Neil Pinney
AIA
Architect, MAUD
Prescott, AZ, US

Robert Plichta
AIA, NCARB
B. Architecture
Aurora, IL, US

Oliver Purcell
AIA, Emeritus
B. Architecture
Edmond, OK, US

Maria Puternicki
AIA
New York, NY, US

Raymond Rebilas
AIA
B. Arch., Drexel University
Collingswood, NJ, US

Lionel Recio
AIA
MA
San Francisco, CA, US

Daniel Roach
AIA
B. Arch., Drury University
Salem, OR, US

Ron Ronconi
AIA
Mountain View, CA, US

Sam Rue
AIA
University of Louisiana
Lafayette, LA, US

Michael Ryan
AIA
B. Architecture
San Francisco, CA, US

AIA Architects

Deane Rykerson
AIA NCARB LEED AP
B. Arch., Boston
AC M. Des., Harvard
Cambridge, MA, US

Boleslav Ryzinski
AIA
New York, NY, US

Robert Saladoff
AIA
M. Arch., Univ. of Maryland
Ashland, OR, US

Jeffry Shelden
AIA
B. Architecture
Lewistown, MT, US

Damon Smith
AIA
BA, Carnegie Mellon Univ.
Orlando, FL, US

James Smith
AIA
M. Architecture
Denver, CO, US

Rob Smith
AIA
M. Arch., Iowa State Univ.
Des Moines, IA, US

Douglas Snider
AIA
B. Arch., Univ. of Notre Dame
Medford, OR, US

Cary Spiegel
AIA
B. Arch., City College, NY
Plainfield, NJ, US

James Stafford
AIA
B. Architecture
Mississippi St. Univ., S/ARC
Hendersonville, NC, US

Michael Stoker
AIA
M. Arch., Univ. of Utah
Park City, UT, US

Ray Strang
AIA
B. Architecture
MD, US

James Stutzman
AIA
B. Architecture, CAP
Ball State University
Carmel, IN, US

Jessica Sulprizio
AIA, NCARB
M. Architecture
Wentworth Inst. of Tech.
Boston, MA, US

Dohn Swedberg
AIA
B. Architecture
Washington State Univ.
Tacoma, WA, US

Jim Swords
AIA
B. Architecture
University of Kansas
Boston, MA, US

David Techau
AIA
B. Arch., AZ State
MSC, Cornell University
Kula, HI, US

George Thomas
AIA
Master of Architecture
Virginia Polytechnic Inst.
& State Univ.
Baltimore, MD, US

John Titus
AIA LEED AP
B. Architecture
University of Minnesota
Boston, MA, US

Matthias Troitzsch
AIA
M. Architecture
San Francisco, CA, US

Thomas Urtz
AIA, LEED AP
B. Architecture
Syracuse University
Boston, MA, US

James Vignola
AIA
M. Architecture, Univ. of FL
Gainesville, FL, US

John Vivier
AIA
Architect-Engineer
EES Engineer
Dipl. Paris University
Las Vegas, NV, US

Henry Weinberg
AIA LEED AP BD&C
B. Architecture
Carnegie Mellon Univ.
Melrose, MA, US

Helen Wilkes
AIA
M. Architecture
Kensington, MD, US

Brad Will
AIA, LEED AP
B. Architecture
Woodstock, NY, US

Katherine Williams
AIA NOMA
B.A. Architecture
Howard University
Washington, DC, US

Robert Winovitch
AIA
B.S. Architecture
Texas A&M University
Austin, TX, US

Andrew Wolff
AIA, LEED
M. Arch., Yale University
Los Angeles, CA, US

Architects

John Acosta
ARA, Licensed Architect
Big Bear Lake, CA, US

Leslie Allen
M. Architecture
University of New Mexico
Mill Valley, CA, US

Randy Allen
B. Arch., Texas Tech Univ.
Lubbock, TX, US

Bassam Altwal
VP Architecture
M. Architecture
Concord, CA, US

Alan Anderson Jr.
Architect
B.S. Arch., Cal Poly SLO
Fair Oaks, CA, US

Glenn Anderson
Consultant
B.S. Architectural Eng.
Univ. of Texas at Austin
Dallas, TX, US

Reginald Anz
B.S. Architectural Studies
University of Texas
Dallas, TX, US

Mario Arbore
Viera, FL, US

Jeff Arnold
Architect
Orinda, CA, US

Dave Arnoth
NCARB
M. Architecture
University of New Mexico
Los Angeles, CA, US

Paul Asaro
Architect
B.A. Architecture
Fair Oaks, CA, US

Ronald Avery
Architect
Seguin, TX, US

Douglas Baker
Architect
M. Architecture
Hamden, CT, US

George Baker
Victor, NY, US

Michael Balay
Architect
Fishers, IN, US

Christine Balint
Architect
B Arch
Aberdeen, NJ, US

Laurie Barlow
M. Architecture
Cal Poly, San Luis Obispo
South Pasadena, CA, US

Paul Barnard
Architect
B. Arch., M. Arch. (UD)
Laguna Beach, CA, US

Tor Barstad
Architect
B. Arch., M.S. Arch.
Phoenix, AZ, US

Justin Barth
B. Arch.
Univ. of California, Berkeley
Los Alamitos, CA, US

Architects

Ronaldo Bassini
B.S. Mech. Eng., M. Arch.
B.S. Yale College, M. Arch.
Columbia University
Santa Rosa, CA, US

Sami Basuhail
Architect
B.S. Architecture, MSIS
Fairfax, VA, US

Mike BeDell
Licensed Architect
B. Arch. Cal Poly, Pomona
Tucson, AZ, US

Jim Bedinghaus
Architect
M. Architecture
St. Petersburg, FL, US

James Beglinger
Architect
B.S. Arch., Heald Eng. College
San Francisco, CA, US

Fariba Beighlie
Architect, NCARB, MS
Architecture, LEED AP
BD+C
M. Architecture
Seal Beach, CA, US

Marc Beique
Architect
BFA, B. Arch., Rice Univ.
Monterey, CA, US
Austin, TX, US

Rob Belles
Architect
M. Arch., MS Civil, UIUC
Rockford, IL, US

James Bell
Architect
B.S., Architecture,
University. of Cincinnati
Madison, WI, US

Joe Bellows
Architect
Martinez, CA, US

Tom Bender
Architect
M. Architecture
Univ. of Pennsylvania
Nehalem, OR, US

Ralph Bennett
Architect
B. Arch., Princeton Univ.
MFA Arch., Princeton Univ.
Silver Spring, MD, US
Boston, MA, US

Howard Berglund
Architect
M. Architecture
Seattle, WA, US

Fred Betz
Architect
B.S. Arch., Univ. of Cincinnati
Cincinnati, OH, US

William Beutel
Registered Architect-LEED AP
R.I.S.D.; B. Architecture
Apo, AE, US

Paul Bilgen
B.S. Civil Engineering
Michigan Tech. Univ.
Hanover, NH, US

Jerry Bischoff
(Ret.) Architect
B. Arch, Univ. of Illinois
San Diego, CA, US

Ken Blevins
Architect
M. Arch., Texas A&M Univ.
Austin, TX, US

Mark Blomquist
Master of Architecture
University of Michigan
Iron Mountain, MI, US

Michael Boardway
B.S. Architecture
Cal Poly, Pomona
Lake Arrowhead, CA, US

Thomas Bohlen
Chief Tech. Officer, MECSD
B. Arch., Univ. of Illinois
Fountain Hills, AZ, US

Tab Bonidy
NCARB
B. Arch., Univ. of Miami
M. Environ. Planning,
AZ State University
Edwards, CO, US

Earl Booth
Architect
Bachelor of Fine Arts
and Architecture
Salt Lake City, UT, US

Richard Bouchard
Registered Architect
B. Arch., Kent State, Ohio
Franklin Lakes, NJ, US

Stephen Bourne
Architect
B. Arch., Univ. of Cincinnati
Seattle, WA, US

Andus Brandt
Architect
B.A. Architecture
Berkeley, CA, US

Robert Briggs
Masters of Architecture,
University of Oregon
Pullman, WA, US

William Brinnier
Architect
B. Architecture
Kingston, NY, US

Paul Broches
M. Arch., Columbia Univ. Grad.
School. of Arch. and Planning
New York, NY, US

Thomas Burnham
Architect
M. Architecture
San Francisco, CA, US

Robert Cain
B.A. Architecture
Auburn University
Charlotte, NC, US

Robert Calhoun
Architect
B. Arch., AZ State
Scottsdale, AZ, US

Gary Canner
M. Arch., Architecture &
Historic Preservation,
Univ. of Michigan College
of Arch. & Urban Planning
Marblehead, MA, US

Richard Caragol
Architect
M. Arch., Univ. of Oregon
Walnut Creek, CA, US

James Carruthers
Architect
B. Architecture
Richardson, TX, US

Arpsd Chabafy
Architect
Dipl. Arch., ETH Polytechnic
University Zurich
Tustin, CA, US

Mark Chavez
Architect
BSAS, Architecture
University of Nebraska
Omaha, NE, US

Dartmond Cherk
Architect
B. Arch., UC Berkeley
Mill Valley, CA, US

Josh Chesnik
Architect
M. Architecture, UNLV
Las Vegas, NV, US

Brandon Chouinard
Architect
B. Architecture
Oklahoma City, OK, US

Douglas Clark
M. Architecture
New School of Arch.
And Design, San Diego
Grants Pass, OR, US

Tom Clifford
Notre Dame
Boston, MA, US

Doug Clower
B. Architecture
Texas Tech. University
Irving, TX, US

John Cole
Architect
Walnut Creek, CA, US

D. Michael Collins
M. Architecture
Univ. of Colorado, Denver
Natick, MA, US

Deborah Collins
University of Kentucky
Boston, MA, US

Raymond Conley
Architect, Emeritus
B. Architecture
Houston, TX, US

Conrad Cortellini
BFA, Indiana University
Indianapolis, IN, US

Alicia Crothers
B. Architecture
Cornell University
Cambridge, MA, US

Reginald Cude
Architect
Arlington, VA, US

James Cyr
Architect
B. Arch., B.A., Urban Studies
Boston, MA, US

Architects

Mark Davis
Architect
Carson City, NV, US

John de Lalla
LEED AP
Boston Arch. College
Acton, MA, US

Fred De Santo
Architect
B.A. Univ. of Kentucky
Ukiah, CA, US

J. DeRienzo
Architect
B.S. Architecture
Washington University,
St. Louis, MO
Florence, SC, US

Jerome Diepenbrock
Architect
B. Architecture
Seattle, WA, US

Neil Dixon
NCARB
B.A. Architecture,
Boston Architectural Center
Worcester, MA, US

Larry Dodge
Architect
B. Architecture
Univ. of Minnesota
Minneapolis, MN, US

Russel Donohue
Portland, OR, US

Alexander Dority
Architect
B.A. Arch., Stanford Univ.
Santa Fe, NM, US

Skip Doughty
Architect
Woodside, CA, US

Eric Douglas
Architect
Howard Beach, NY, US

Joseph Duda
Architect, NCARB
M. Arch. I, UCLA
Santa Fe, NM, US

Ladd Ehlinger
B. Architecture
Louisiana State University
Metairie, LA, US

John Eisenhart
Architect
San Diego, CA, US

Charles Ekstedt Sr.
B. Architecture
University of Minnesota
Saint Paul, MN, US

Thomas Epps
B. Architecture & Design
Kansas State University
Kirbyville, MO, US

Laurie Erickson
Architect
Independent B.A.
Arch. & Engineering
Petaluma, CA, US

Herb Everett
B. Architecture
Boston Arch. College
Framingham, MA, US

Mike Fairchild
Architect
B. Arch., University of Idaho
Middleton, ID, US

Michael Feeney
B. Architecture
Roger Williams College
Amston, CT, US

Robert Ferenc
Architect
B. Arch., M. Arch.
University of Colorado
Longmont, CO, US

Michael Fiebig
Architect
M. Architecture
University of Colorado
Littleton, CO, US

William Fields
South Hamilton, MA, US

William Firschein
Architect
M. Arch., UCLA
Los Angeles, CA, US

Lyle Fishell
Arch. Eng. and Architecture,
Norwalk St. Tech. College
Stamford, CT, US

Mark Fitzgerald
Architect
M. Environmental Design
Grand Prairie, TX, US

Robert Fitzgerald
B. Environmental Design
Texas A & M College of Arch.
Houston, TX, US

Peter Foxley
Architect
B Arch., Univ. of Houston
Pearland, TX, US

Christopher Free
Architect
M. Arch., Univ. of Illinois
Brighton, MI, US

William Freund
Registered Architect
B.S. Architecture, UVA
Sewell, NJ, US

Lafaye Frédéric
Architect DPLG
Bordeaux, France

Michael Gaddis
Architect
San Rafael, CA, US

Mark Gannon
Architect
Masters
Canton, MI, US

Jaime Garrido
Architect
B. Urban Architecture,
Madrid University
Madrid, ES

Don Gibbons
Architect
Pleasant Hill, CA, US

Jody Gibbs
Architect
M. Architecture
Tucson, AZ, US

John Gillies
Architect
B. Arch., UC Berkeley
Del Mar, CA, US

Jim Gleeson
B. Arch., Univ. of Florida
Charlotte, NC, US

Michael Goldfinger
B. Architecture
Rockville, MD, US

Abby Goodman
Professional Architect
B.S. Psychology

Jan Gorlach
Architect
MA, Krakow, Poland
Brooklyn, NY, US

Ken Gorski
B. Arch. Professional Degree
University of Kansas
El Paso, TX, US

William Gravely
Architect
M. Arch., Harvard University
Crawfordville, FL, US

John Gresko
M Arch, MS Civil Engineering,
Univ. of Illinois Urbana-
Champaign
Elk Grove Village, IL, US

James Grier
Registered Architect, PA
ABA Wharton, UOP
Philadelphia, PA, US

Randy Hafer
B.A. Arch., Stanford Univ.
M. of Arch., Yale Univ.
Billings, MT, US

Gary Hall
B. Architecture
Ball State University
South Bend, IN, US

Robert Hart
Architect
B.S. Architectural Studies,
Univ. of Illinois
Naperville, IL, US

Kenneth Hattan
Architect
B. Architecture
University of Oregon
Vancouver, WA, US

Alan Haymond
Architect
B. Architecture
Rensselaer Polytechnic
Greenwich, NY, US

John Heflebower
B. Arch,
California St. Univ., Fresno
Fresno, CA, US

Peter Hendrickson
Architect
Santa Rosa, CA, US

C. Henry, Sr.
President
B. Architecture
Newport News, VA, US

James Hernandez
Licensed Architect
San Marcos, CA, US

Architects

Phillip Hesketh
NCARB
B.A. Architecture
Boston Architectural College
Sanford, ME, US

Karen Hisata
Bachelor of Arts, Arch.
Univ. of California, Berkeley
Portola Valley, CA, US

Larz Hitchcock
Architect
Anchorage, AK, US

Gregory Holah
Architect
B. Arch., Univ. of OR;
M. Arch., Wash. Univ., St. Louis
Portland, OR, US

Dennis Holloway
Architect
B. Arch., Univ. of Michigan,
MAUD, Harvard
Rio Rancho, NM, US

Arlene Hopkins
Architect & Educator
M. Arch., M.A. Education
Santa Monica, CA, US

John Howland
Architect
Walnut Creek, CA, US

Michael Hudson
Architect
M. Architecture, Clemson
Mesa, AZ, US

Patrick Huff
B.S. Environmental Eng.
B.S., M.S. Architecture
Oklahoma University
Woodland Hills, CA, US

Sonne Idelshon
Architect, (Ret.)
B.A. Arch., Cal Poly Univ.,
Pomona; USC
Pomona, CA, US

Rex Ingram
Architect
M. Architecture,
University of Pennsylvania
Salem, MA, US

Toshiro Isa
Architect
B. Architecture
University of Nebraska
Gardena, CA, US

Ernest Terry Jakel
Architect
B. Architecture
Orange, CA, US

Ugljesa Janjic
Bachelor of Arts
Emphasis on Architecture
University of Washington
Longmont, CO, US

Jon Jenson
Project Manager
M. Architecture
Madison, WI, US

Joseph Jimenez
B. Architecture
Kansas State University
Kansas City, MO, US

Frederick Johnson
Architect
West Haven, CT, US

Nelson Johnson
Architect & Civil Engineer
M. Architecture
Columbia University
San Francisco, CA, US

Kenneth Howe Jones
M. Architecture
University of Illinois
Hansville, WA, US

James Jorgensen
Architect
B. Architecture
Healdsburg, CA, US

Jeffrey Kadlowec
B. Architecture
Kent State University
Las Vegas, NV, US

Olga Kahn
Architect
M. Architecture
M.I.T. Cambridge, MA
Wellfleet, MA, US

Robert Kahn
M. Arch., California State
Polytechnic University
Portland, ME, US

Shashank Kamat
Architect
B.A.
Andover, CT, US

Alan Kato
Architect
B.S.
Morton Grove, IL, US

Donald Ketner
Architect, CCS
Architecture, Penn State
Anchorage, AK, US

Saeed Khorshid
Architect
B. Architecture
Vienna, VA, US

Jon Kinsella
Architect
Castle Rock, CO, US

Tanner Kirchoff
Architect
Kansas State University
San Antonio, TX, US

Allen Kitselman
Architect
B.A. Architecture
Berryville, VA, US

Fred Klein
Architect
B. Architecture
Cornell University
Eastsound, WA, US

John Klingman
Architect
M. Arch., Univ. Oregon
BSCE, Tufts University
New Orleans, LA, US

Barry Koren
Architect
B. Architecture
City College of New York
Oak Park, IL, US

Timothy Krebs
Architect
Englewood, FL, US

S. Kay Kuhne
Architect
M. Architecture AS
M.I.T., Cambridge, MA
Tallahassee, FL, US

Gary Kuhstoss
Architect
Phoenix, AZ, US

Daniel La Pan
Executive Director,
Facility Services
B.S. M. Architecture
Saginaw, MI, US

William Lamar
Architect
B. Architecture
Little Rock, AR, US

Lamont Langworthy
Architect
B. Architecture
University of Washington
Graton, CA, US

Jeffrey Latham
Architect
Nogales, AZ, US

Jeff Laur
Architect
B. Architecture
Oklahoma State University
Harrison, AR, US

David Lawson
AIA
B. Architecture
Oklahoma State University
Tampa, FL, US

Hondo Layes
Architect
B.S.
Olympia, WA, US

Edward Leftwich
Architecture
University of Natal SA
Smyrna, GA, US

James Leritz
Architect
B. Arch., Univ. IL
M. Arch., GSD
San Francisco, CA, US

Michael Leventhal
Master of Architecture
Univ. of California, Berkeley
Clearlake Park, CA, US

Jeff Lewis
B. Arch. and M. Arch.
Tulane University
Columbia, SC, US

John Link
Architect
M. Architecture
Berkeley, CA, US

Dennis Lippert
Architect
Montana State University
Missoula, MT, US

Victor Lopes
Architect
B. Arch. UC Berkeley
Ukiah, CA, US

Kenneth Loretto
Architect
M. Architecture
Berkeley, CA, US

Architects

William Lowry
Architect
M. Architecture
Davis, CA, US

Frank Lucatelli
B.A. Environment Studies
and Architecture
University of Detroit
Kalamazoo, MI, US

Irwin Luckman
Architect (Ret.)
B. Architecture
Oakland, CA, US

Henry MacLean
B. Architecture
Boston Architectural College
Milton, MA, US

Steve MacMillan
Architect
Univ. of Michigan, Ann Arbor
San Mateo, CA, US

Michael Mangino
Architect
B.S., Arizona State University
Phoenix, AZ, US

Bradley Marczuk
Architect
B. Arch., Univ. of Oregon
M. Arch., Univ. of Washington
Boise, ID, US

Patrick Matthews
B. Arch. and M.A. Structural
Engineering Architecture
Univ. of Illinois
Chicago, IL, US

Marc Maurer
Architect
M. Architecture
Arizona State University
Grand Junction, CO, US

Bruce Maxwell
Architect
M. Architecture
Oakland, CA, US

Ross Maxwell
Architect
B.S. Architecture
Cal Poly SLO
Costa Mesa, CA, US

Kerry McCarthy
Architect
B. Architecture
University of Oregon
Grand Ronde, OR, US

Steve McCormick
M. Architecture
University of New Mexico
Santa Fe, NM, US

Robert McCoy
Architect
B. Architecture
UC Berkeley
La Canada, CA, US

Madeline McDowell
Architect
B. Arch., Cornell University
Cambridge, MA, US

John McKeen
Architect
B. Arch., Univ. of MN
Saint Paul, MN, US

Edward McMillen
B. Arch., Ohio State Univ.
Santa Fe, NM, US

Charles Mears
B.A. Architecture,
University of Minnesota
Minneapolis, MN, US

Joseph Mello Jr.
BS Architecture,
Wentworth Inst. of Tech.
Norton, MA, US

Nathan Menard
B. Architecture
Louisiana Tech. Univ.
Santa Ana, CA, US

Forrest Mertz
M. Architectural Engineering
Oklahoma State University
New York, NY, US

Duncan Milne
M. Architecture
University of Pennsylvania
Durham, CT, US

MW Montgomery
Williamstown, MA, US

James Morgan
New York, NY, US

Stephen Moylan
B. Architecture
University of Notre Dame
Libertyville, IL, US

Kurt Mueller
Architect
AA, Liberal Arts
Orange Coast College
Costa Mesa, CA, US

Darryl Muir
BED, University of Colorado
Colorado Springs, CO, US

Michael Mullin
Architect
B. Architecture
Carnegie Mellon
San Francisco, CA, US

Jonathan Murray
Wentworth Inst. of Technology
South Berwick, ME, US

Kim Murray
B. Architecture
Montana State University
San Francisco, CA, US

Ralph Mursinna
Architect
B. Architecture
San Diego, CA, US

Richard Neel
B. Industrial Arts
Southwest Texas State
Houston, TX, US

Scott Nelson
Architect
B. Architecture, WSU
Bremerton, WA, US

Frederic Newcomer
Architect (Ret.)
Arch. Penn State University
Columbia Falls, ME, US

Barry NewDelman
Architect, ALA, NCARB
B. Arch., University of Illinois
Portland, OR, US

Marc Nightwine
Senior Associate
Austin, TX, US

David Noble
B. Architecture,
Univ. of California, Berkeley
Seal Beach, CA, US

James Nordlie
Architect
M.A. Architecture
University. of Colorado
Denver, CO, US

Josh Oqueli
M Architecture
University of Colorado
Denver, CO, US

April Palencia
Architect
B. Arch., University of Miami
Santa Barbara, CA, US

David Parker
B. Architecture,
Pennsylvania State University
Sewickley, PA, US

David Parry
M Arch. in Urban Design,
Harvard University
Southborough, MA, US

David Peabody
M. Architecture
Yale School of Architecture
Alexandria, VA, US

Joseph Peavey
Architect
M. Architecture
University of Idaho
Boise, ID, US

James Pelsor
Architect
M. Architecture
University of Wisconsin
Augusta, ME, US

Juan Perez
Architectural Consultant
B. Architecture, UNPHU
Staten Island, NY, US

John Pesa
B. Architecture
Roger Williams University
Halifax, MA, US

Steven Petitpas
B. Architecture
Boston Architectural Center
Boston, MA, US

Willie Pettus
Architect
Berkeley, CA, US

Thomas Piatt
Boston Architectural Center
Milton, MA, US

Ronald Plakus
Architect
B.A. Architecture
Kansas State University
Beltsville, MD, US

Angelo Poblete
B. Architecture
Univ. of Saint Thomas, PH
Poway, CA, US

Architects

Dale Port
Architect
Waterloo, IA, US

James Poulson
M. Architecture
University of Nebraska
Kansas City, MO, US

William Prevatel
B. Architecture, Syracuse Univ.
M.S. Architecture & Urban
Design, Columbia University
North Miami, FL, US

Mickey Propadovich
Architect
B. Architecture
IIT, Chicago, IL
Chicago, IL, US

Howard Quaintance
B. Architecture
Pennsylvania State University
Reading, PA, US

Michael Quiana
Architect
B. Architecture
Beacon, NY, US

John Raposo
Architect
B. Architecture
Worcester, MA, US

James Rasmussen
Architect
Arch. & Geography Degs.
Rohnert Park, CA, US

Ronald Ray
B. Architecture
Kansas State University
Kansas City, MO, US

Karen Renick
Masters in Architecture
Austin, TX, US

Eve Reynolds
Architect
M. Architecture
North Hollywood, CA, US

Douglas Rhodes
Architect
B.S. Architecture
Whitefish, MT, US

C.J. Richards
R.A., B. Architecture
University of Minnesota
Milwaukee, WI, US

Leland Roberts
Master of Architecture
State University of New York
Carmichael, CA, US

John Rogers
Architect
M. Architecture, Pratt Institute
Hartford, CT, US

Alexandra Romanova
B. Architecture
Illinois Institute of Tech.
Chicago, IL, US

Mike Rosen
Temple University
Bala Cynwyd, PA, US

Zachary Rose
M. Architecture
University of Michigan
Brooklyn, NY, US

Bill Roslansky
Massachusetts Inst. of Tech.
Woods Hole, MA, US

Mark Rudolf
Registered Architect
B. Architecture, Virginia Tech
Basalt, CO, US

Ingrid and John Russell
Prof. Emer. Landscape Arch.
Grad. Dipl. Urban
& Reg. Plng. AA London
Bloomington, IN, US

William Russell
Architect, Structural Engineer
B. Arc., M.S. Arch. Eng.
University of IL, Urbana
Atlanta, GA, US

Jim Rymsza
Architect
M. Architecure
Seattle, WA, US

Andrew Salkin
M. Architecure
University of Washington
Seattle, WA, US

Richard Salman
Architect
B.A.
Las Vegas, NV, US

Grazyna Samborska
Architect
M. Architecture
Polytechnic Univ., Gdansk
Cherry Hill, NJ, US

Cheryl Sanchez
Long Beach, CA, US

Peter Scaglione
Architect
B.A. Architecture
New York, NY, US

Kian Shamloo
Architect
MA, UNL
Annandale, VA, US

Daniel Shea
Architect
Architecture, Univ. of Penn.
New Haven, CT, US

M. Victoria Shipley
B.S. Architecture
University of Maryland
Norcross, GA, US

Alan Shulman
Architect
B. Architecture
New London, NH, US

Leslie Simons
San Rafael, CA, US

Scott Small
B Architecture
Kent State University
North Branford, CT, US

Kenneth Smith
Architect
B. Architecture
Forestville, CA, US

Derick Snare
M. Architecture
Harvard University Graduate
School of Design
Somerville, MA, US

Jamsheed Sobhani
Architect, NCARB
M. Architecture
Northridge, CA, US

David Solomon
Architect
B. Architecture
Denver, CO, US

George Somers
Architect
B. Architecture
Catholic Univ. of America
Stafford, VA, US

Richard Speer
Architect
B. Architecture
Boerne, TX, US

Thomas Spendiarian
B Arch., Univ. of Arizona
Tucson, AZ, US

Rory Stevens
São Paulo, BR

Peter Stone
Architect
M. Arch., B. Civil Eng.
Tallahassee, FL, US

Alan Stump
B. Arch.
Cal Poly San Luis Obispo
Rancho Santa Margarita,
CA,US

Jessica Sulprizio
AIA, NCARB
M. Architecture
Wentworth Inst. of Tech.
Boston, MA, US

John Swanson
Architect
B.A., St. Olaf College
Bismarck, ND, US

Kathy Sweeten
Architect
M. Sci., Univ. of Louisville
Louisville, KY, US

Howard Switzer
Architect
Linden, TN, US

Brien Tal-Baker
M. Architecture
Boston Architecture College
Boston, MA, US

C Matthew Taylor
Architect
B.A. Architecture
Hilton Head Island, SC, US

Jerome Taylor
Architect
B. Arch., Penn State Univ.
Tardley, PA, US

Dennis Teske
Architect
Foster City, CA, US

Jon Thogmartin
Architect NCARB
B. Arch., Univ. of Kansas
Colton, CA, US

James Tomlin
Architect
B. Architecture
Cal Poly, San Luis Obispo
Fresno, CA, US

Architects

Charles Traylor
Architect
B. Architecture, Texas Tech.
Dallas, TX, US

Vassilios Valaes
B. Architecture
Illinois Institute of Tech.
Cambridge, MA, US

Peter Van Erp
Architect
B. Architecture
Providence, RI, US

Roger VanFrank
Architect
Salt Lake City, UT, US

Richard Wallace
M. Arch & Urban Design
Washington Univ., St. Louis
Chicago, IL, US

Neil Warren
Master's in Architecture
and Building Engineering
Tokyo Institute of Tech.
Tokyo, JP

Jeffrey Way
R.A.
B. Architecture
Washington, DC, US

Peter Wells
Architect
M. Architecture, Harvard Univ.
Peterborough, NH, US

Frederick Wepfer
Licensed Landscape Architect,
Building Designer, Env. Design
Lacey, WA, US

Bryan Westgate
Architect
M. Architecture
Cleveland, OH, US

Maureen Westrick
RIBA, Architect
B. Arch., Ball State University
Intervale, NH, US

Dale Williams
Landscape Architect
M.S. Land Architecture
San Diego, CA, US

Glenn Williams
NCARB
B. Arch., Univ. of S. California
Venice, CA, US

LaVerne Williams
B.S. Arch., Univ. of Houston
Houston, TX, US

Walter Wilson
Principal Architect
Architectural Engineering,
Architectural Design
Milwaukee, WI, US

Mark Wonner
California State, SLO
Cardiff, CA, US

Joseph Wythe
B. Architecture
University of Oklahoma
Sandpoint, ID, US

Leslie Young
Architect
B. Architecture
San Francisco, CA, US

Alan Zorthian
B. Architecture
New School of Architecture
Altadena, CA, US

Architectural Professionals (Degreed Only)

Edward Anastas
Designer
B. Arch., MS AUD
Santa Monica, CA, US

Sultan Anibaba
Architect
Rochester, GB

Mahesa Arifin
B. Architecture
Univ. Pelita Harapan
Denpasar, ID

Victoria Ashley
Psychology Researcher
B. Architecture
Alameda, CA, US

Elizabeth Atly
M. Arch., Univ. of Washington
Newport, OR, US

Jonathan Baczewski
Intern Architect
B. Arch., NJIT SOA
Mount Tabor, NJ, US

Daniel Barrett
B. Architecture
Designer/Project Manager
B.A. University of Florida
Winter Park, FL, US

Jason Borland
B. Architecture
Lawrenceville, GA, US

Julian Boswell
M. Architecture
Cal State Polytechnic Univ.
St. Charles, MO, US

Travis Brasch
Assoc. AIA, Design Principal
San Francisco, CA, US

Gene Brault
Contractor/Industrial Designer
B.S. Industrial Design
Los Angeles, CA, US

De Lane Bredvik
Cascade, CO, US

James Broadbent
Project Manager/Designer
M. Arch., Univ. of Oregon
Jackson, WY, US

Brita Brookes
M. Architecture
Ferndale, MI, US

Brian Brooks
B. Architecture
Cornell University
Winchester, VA, US

Laura Brunik
M. Architecture
North Dakota State Univ.
Ham Lake, MN, US

Alek Buriak
B. Architecture
Oklahoma State University
Edmond, OK, US

Ian Carney
CA, US

Adam Caulfield
B. Architectural Technology
Rochester, NY, US

Wendall Chin
B. Architecture
Boston Architectural College
Cambridge, MA, US

Arman Chowdhury
Architectural Staff
M. Architecture, U Penn
B. Architecture, BUET
Philadelphia, PA, US

Eric Cibelli
Intern Architect
B. Arch., New York Institute
Lake Ronkonkoma, NY, US

Oscar Cisnero
Architectural Professional
Antioch, CA, US

Joshua Clark
B. Architecture
Cornell University
Pittsburgh, PA, US

Deborah Cohen
B. Architecture
Southern California Institute
of Architecture
Los Angeles, CA, US

Ian Colburn
Architect
B. Architecture, Virginia Tech.
New York, NY, US

John Court
Intern Architect
B.S. Architectural Studies
University of Wisconsin
Seattle, WA, US

Adam Cramm
BSD, M. Architcture
Cedar Rapids, IA, US

Daniel Csank
Intern Architect
M. Arch., Tulane University
New York, NY, US

Greg Demchak
Designer
M. Architecture
Cambridge, MA, US

Tyler Doherty
B. Architecture,
Rensselaer Polytechnic Inst.
White Plains, NY, US

Architectural Professionals

George Eddins, III
George Eddins Associates – Architectural Consultant
B. Architecture
UNC Charlotte, AA CPCC
Charlotte, NC, US

Daniel Fairchild
Architectural Consultant
B. Architecture
Spokane, WA, US

Esat Farman
Architectural Consultant
B.A. Engineering
FH Hamburg, Germany
Baghdad, IQ

Justin Feider
Intern Architect
Denver, CO, US

Jason Ferrier
Architectural Designer
B.S. Arch., UT Arlington
Washougal, WA, US

Kristin Flurry
M. Architecture
University of New Mexico
Albuquerque, NM, US

Cordelia Fox Waelle
B. Architecture, SIA
Arlesheim, Baselland
Switzerland

Shawn Fullington
Designer
B. Architecture
Asheville, NC, US

M G
Consultant/Architect
M. Sci., Architecture
Richmond, VA, US

Lukasz Gala
Architect
Vienna Univ. of Technology
Vienna, AT

Brian Gatewood
Intern/Staff Architect
M. Arch, B. Arch,
University Of New Mexico
Albuquerque, NM, US

Alan Glassman
M. Arch., Associate AIA, CSI, SA, Architectural
B. Arch., USC; M Arch, UC Berkeley
Lancaster, PA, US

Marcio Gomes Da Cruz
B. Architecture, B.S. Geography
UNCC
Miami, FL, US

Karlene Gullone
B. Architecture
San Francisco, CA, US

Rob Hansen
Autocad Operator/Designer
Assoc. of Occupational Sci.
CAD
Anchorage, AK, US

Brian Heagney
M. Architecture
Arch. Services Provider
M. Architecture, Pratt Institute
Greensboro, NC, US

Peter Heer
Designer
B. Architecture
Clearwater, FL, US

Joshua Higginbotham
M. Architecture
Ball State University
Mishawaka, IN, US

Kevin Hoelscher
M. Architecture
Berkeley, CA, US

Jim Holcomb
B. Architecture
University of Kentucky
Lebanon, TN, US

Nick Hubof
AIT, M Arch, LEED A.P.,
Iraq War Veteran
M. Arch., University of Idaho
Boise, ID, US

Ken Hutchinson
B. Architecture
Eugene, OR, US

Chloe Ingram
Associate AIA
BSAS, UT Austin;
M. Architecture, UT, Arlington
Fort Worth, TX, US

Jessica Irey
B. Landscape Architecture
University of Rhode Island
Warwick, RI, US

Joseph Irion
B. Landscape Architecture
Cal Poly San Luis Obispo
San Diego, CA, US

Cheriel Jensen
M. Architecture
UC Berkeley
Saratoga, CA, US

David Johnson
Dr., FAICP, Ph.D.
B.A. Arch. & MCP, Yale
Ph.D., Cornell
Asheville, NC, US

Chad Jones
B. Architecture
B.S., Science, Major in Arch.
WUSTL
S. Petersburg, FL, US

Todd Jordan
Dir., Principal Arch., Pres.
B. Architecture
Austin, TX, US

Chris Jung
B. Architecture
Berkeley, CA, US

Robert Kauffman
AIA
B. Architecture
University of Oregon
Atlanta, GA, US

Kristen Kepner-Coleman
B. Architecture
Auburn University
Atlanta, GA, US

Mona Kirkpatrick
Intern Architect
B.A. in Architecture
Des Moines, IA, US

Donald Koberg
(Ret.) Architect
Professor Emeritus, M. Arch
San Luis Obispo, CA, US

James Kobrynich
Project Manager
B.S., Architectural Tech.
NYIT
Dalton, PA, US

Joseph D Kunz
B. Architecture
University of Texas
Austin, TX, US

Dylan Lamar
Architecture Student,
Engineering Intern
BSCE, Univ. of Arkansas
Eugene, OR, US

Jan Leits
B. Architecture
Berkeley, CA, US

Kevin Likins
M. Architecture
Savannah College
of Art and Design
Falls of Rough, KY, US

Christopher Lynch
Architect
B. Arch. Philadelphia Univ.
Whitney Point, NY, US

David Mack
AAIA, MBA
B. Arch., Univ. of Notre Dame
Orlando, FL, US

Cameron Madison
B.S. Architecture
Texas Tech. University
Lubbock, TX, US

Timothy Mason
CEO
B. Architecture
Melville, NY, US

Keenan May
Intern Architect
B. Architecture
Seattle, WA, US

Brian McAlexander
Architectural Professional
B. Architecture
Cincinnati, OH, US

Andrew McClure
B. Architecture, VPI & SU
Raleigh, NC, US

Jason Medina
B.S. Arch., Univ. of Texas
Austin, TX, US

Joel Miller
B. Arch., Temple University
Bethel, VT, US

Phillip Miller
M. Architecture
Texas Tech. University
Seagoville, TX, US

Richard Morris
LEED AP
B. Architecture
San Juan, PA, US

Gary Neville
Architectural Professional
Urban Designer
B.S. Architecture, RPI
Venice, CA, US

Aysar Odeh
Intern Architect
M. Architecture
Ellicott City, MD, US

Architectural Professionals

Scott Page
M. Architecture/Designer
Berkeley, CA, US

Marcela Pena
Principal
B.S. Architecture
Portland State University
Portland, OR, US

Francisco Planes
Arch. Consultant, Assoc., A.I.A.
B.S. Architecture, CCNY-CUNY
Bloomfield, NJ, US

James Plasterer
B. Architecture
Grant, FL, US

Frank Plucinski
B. Architecture
University of Houston
Jonesboro, AR, US

Jason Pratt
S.M.E., Arch. Consultant
B.S. Arch., Univ. Texas
Austin, TX, US

Imran Qamar
Architect
Masters in Architecture
Concord, CA, US

Suzy Rainey
Graduate Architect
B. Arch., UC Berkeley, CA
Hayward, CA, US

Kent Rattan
M. Architecture
Univ. of Texas at Austin
Buena Vista, VA, US

Michael Reuter
Architectural Professional
Berkeley, CA, US

Guillermo Rodriguez
Master of Architecture
Miami, FL, US

Rafael Rodriguez
Intern Architect
B. Arch., Univ. of Miami
Miami, FL, US

Andres Rozo
Architectural Consultant
Architecture
Miami, FL, US

Mojgan Saberi
B.S. Architecture
Designer
Oakland, CA, US

Holly Sanchez
B. Architecture, Pratt Institute
Tacoma, WA, US

Arturo Santos-Martin
Architectural Consultant
B. Architecture, NJIT
Jersey City, NJ, US

Will Schenck
Intern Architect, Assoc. AIA
B. Architecture, BS ARCE
St. Louis, MO, US

Michael Seaman
Associate Member, AIA
B. Arch., UC Berkeley
Sacramento, CA, US

German Serrano
Architect
B.A. Architecture
Lafayette, CA, US

Reed Simpson
M. Architecture, Assoc. AIA
University of Kansas
Overland Park, KS, US

Wendy Sitler
Designer
B. Architecture
Berkeley, CA, US

Philip "Blake" Smith
B. Architecture,
Oxford School of Architecture
Master of Arch., Texas A&M
Dallas, TX, US

Thomas Spellman
Urban Activist
Lake Geneva, WI, US

Mathew Stackpole
B. Arch., Arch. Consultant
B.A., Arch. & Planning
Boulder, CO, US

Walton Stowell
M. Architecture
Savannah College of
Art and Design
Harpers Ferry, WV, US

Rex Sucaldito
B.S. Arch./Designer
B. Architecture
Lake Worth, FL, US

Bill Sullivan
B.A. Architecture
University of Oregon
Portland, OR, US

Jeffrey Tam
B. Architecture
Oakland, CA, US

Brandon Tec
B. Architecture
S. California Inst. of Arch.
Hacienda Heights, CA, US

William Tickell
Architectural Staff
B.A. Architecture,
Cal Poly SLO
San Luis Obispo, CA, US

Justin Touchstone
Project Manager
B.A.
Boise, ID, US

Estevan Trujillo
Principal, B. Architecture
Santa Fe, NM, US

Edward Tsimerman
M.A. Architecture
Saint Louis, MO, US

Henri Tso
B. Architecture
Walnut Creek, CA, US

Svea Tullberg
B. Architecture
University of Virginia
Rockland, ME, US

Lawrence Turner
Contractor & Designer
B.A. Architecture
Cal Poly SLO
Glendora, CA, US

Jessica Ungos
Assoc. AIA
B. Architecture
Los Angeles, CA, US

Luigi Vaccaro
Marano di Napoli, IT

Azin Valy
Partner, Architecture
New York, NY, US

Gabriella Velardi Ward
B. Architecture
Pratt Institute
Staten Island, NY, US

Andrea Walhof-Grisham
Designer
B.S. Architecture
Truckee, CA, US

Reuben Walters
LEED GA, Assoc. AIA
B. Architecture
Fort Worth, TX, US

Nathan Watkins
Intern Architect, Assoc. AIA
B. Architecture
University of Houston
Houston, TX, US

Daniel Whitman
Masters of Architecture
Illinois Institute of Technology
Chicago, IL, US

Jason Wilkinson
LEED AP
B. Architecture
University of Oregon
Berkeley, CA, US

Thomas Winterer
B.A. Architecture
University of Minnesota
Excelsior, MN, US

Elwin Wong
B. Architecture
Univ. of Cal., Berkeley
Oakland, CA, US

Gregg Workman
B.S. Architecture
Ball State University
Muncie, IN, US

Kurt Worthington
Urban Planner
M. Architecture
San Francisco, CA, US

Christopher Wright
Architectural Consultant
B.S., B.A. Architecture
Ben Lomond, CA, US

Engineers (Degreed & Licensed – Active and Retired)

Philip Abbate
P.E.
B.S. ET
Cal Poly Pomona
Duluth, GA, US

Tarif Abboushi
P.E.
M.S. Engineering, Economics
Stanford University
Houston, TX, US

James Adams
P.E., M.B.A., C.E.M.
B.S.M.E.
Jacksonville, FL, US

Lynn Affleck
P.E.
B.S. Civil Engineering
University of Utah
Las Vegas, NV, US

John Ahn
P.E.
B.S. Architecture, Engineering
Cal Poly, SLO
San Francisco, CA, US

Fadhil Al-Kazily
Engineer P.E.
Ph.D. UC Berkeley
Davis, CA, US

Ahmad Alkhayyat
P.E.
Senior Civil Engineer
B.S. Engineering
Iowa S.U. & MBA U.L.V.
Madera, CA, US

Melissa Allin
P.E.
B.S.A.E.
Comanche, OK, US

Bart Anderson
B.S. Mechanical Engineering
University of Minnesota
Blaine, MN, US

Gary Anderson
Registered P.E.
M.S. Civil Eng, Duke Univ.
B.S. Mechanical Engineering
WPI Massachusetts
Lakewood, CO, US

Gerald Anderson
B.S. Eng., Ph.D., Geog.
Univ. Minnesota
Colorado Springs, CO, US

Paul Anderson
P.E.
B.S. Civil Engineering
University of Illinois
Baraboo, WI, US

Raymond Andraka
M.S. Electrical Engineering
Univ. of Mass., Lowell
North Kingstown, RI, US

Christopher Andrassy
P.E.
B.S. University of Akron
M.E. Texas A&M
Bay Village, OH, US

Roland Angle
Civil Engineer
B.S. UC. Berkeley
Alameda, CA, US

Antonio Arthay
P.E.
M.S., S.E., Illinois
West Palm Beach, FL, US

J. Ayres
P.E.,
Mechanical Engineer
B.S.M.E.
Santa Monica, CA, US

Brian Baker
B.S. Civil Engineering
Oklahoma St. University
Bethany, OK, US

John Baker
P.E., Ph.D.
Las Vegas, NV, US

Lester Baker
Consulting Professional
Civil Engineer
BSCE Utah State University
Ogden, UT, US

H. Barton Bales
P.E.
M.S. Mech. Engineering
University of Massachusetts
Greenfield, MA, US

Jeffrey Barker
P.E.
B.S., Arch. Engineering
M.S. Math, Cal Poly
Cayucos, CA, US

Richard Barnes
Bachelor of Civil Engineering
Montana St. University
Helena, MT, US

Alton Barrett
M.S. Chemical Engineering
La Tech University
Katy, TX, US

Jason Barrick
P.E., BSME
University of Arkansas
Sedona, AZ, US

Mark Batten
B.S. Architectural Engineering
Kansas State University
San Diego, CA, US

W. Z. Baumgartner, Jr.
P.E.
B.E., Civil Engineering
Vanderbilt University
Franklin, TN, US

Gene Baxter
P.E.
BSME University of Idaho
MSAE Syracuse University
Ph.D. M.E. Syracuse University
Mesa, AZ, US

Stanley Beattie
P.E.
B.S. Physics
College of the Holy Cross
Farmington Hills, MI, US

Jeffrey Becker
P.E.
B.S. Welding Engineering
Ohio State University
Inwood, WV, US

Roger Beecroft
P.E.
B.S. Civil Engineer, ASU
Gilbert, AZ, US

Abbas Behnambakhsh
Professional Engineer
B.S. C.E. NJ Inst. of Tech.
New York, NY, US

Michael Benefield
Mechanical Engineer
B.S. Mechanical Engineering
San Anselmo, CA, US

Christopher Bergier
B.S. Aerospace Engineering
Boston University, MA
Worcester, MA, US

Kyle Bickler
B.S. and M.S. Civil and
Environmental Engineering
Univ. Cal., Davis
Roseville, CA, US

Roger Blair
P.E.
B.S. Humboldt St. University
Nevada City, CA, US

Robert Blanton
Avionics System Des. Engineer
BSEE, U.T., Arlington, TX,
Green Valley, AZ, US

Larry Blilie
B.S. Agricultural Engineering
N. Dakota State University
Fort Worth, TX, US

Timothy Blunt
Operations Distribution Eng.
B.S.E.E. USC
Grover Beach, CA, US

Dan Bolke
P.E.
M.S. Civil Engineering
Utah State
American Fork, UT, US

Chell Bosson
P.E., B.S. ME,
University of Minnesota
Laguna Hills, CA, US

Bruce Bowman
PLS
Chebeague Island, ME, US

Greg Boyd
P.E.
B.S. & M.S. Civil Engineering
University of Maryland
Bethesda, MD, US

Christopher Bradbury
Licensed Structural Engineer
BSCE & M. Eng., Civ. Eng.,
Clarkson University
San Jose, CA, US

Thomas Brake
P.E.
M.S. Civil Engineering
NM State University
Silver City, NM, US

Jeanne Brantingham
P.E.
B.S. Chemical Engineering
University of Arkansas
Groveland, FL, US

Shawn Bratt
P.E.
B.S. Mechanical Engineering
Cal Poly SLO
San Ramon, CA, US

Melanie Brethauer
P.E.
B.S. Civil Engineering
University of Florida
Asheville, NC, US

Murray Brill
P.E., C.E., M.E.
BAE Engineering
Rensselaer Polytechnic Inst.
Los Angeles, CA, US

Engineers

Bob Briscoe
P.E.
B.S. Engineering, UCLA
Santa Rosa, CA, US

Ronald Brookman
Structural Engineer
B.S. & M.S. Engineering
UC Davis
Novato, CA, US

Larry Brotherton
P.E.
Civil Engineer,
University of Cincinnati
Cincinnati, OH, US

Harry Brown
Project Scientist
M.S., ME,
Carnegie Mellon University
Pittsburgh, PA, US

Richard Browning
BSME,
Washington University
St. Louis, Pacific, MO, US

John Brundage
P.E.
B.S.E. Eng. Physics
University of Michigan
Ann Arbor, MI, US

James Bruner
Major, USAF (Ret.)
B.S. ASE
University. of Texas
M.S. ASE, AFIT
Oak Harbor, WA, US

Enrique Bruque
B.S. Civil Engineering
Oregon State University
Fresno, CA, US

George Bullwinkle
P.E.
B. Mechanical Engineering
Villanova University
King of Prussia, PA, US

Douglas Burke
Subject Matter Expert for
Concrete Materials
M.S. Test & Evaluation Eng.
Ventura, CA, US

Daniel Burns
P.E., BSCE
Palm Beach Gardens, FL, US

James Busby
P.E.
BSME Mechanical Engineering
Brandon, MS, US

Donal Butterfield
R.A. & P.E.
B.A., BCE, MUD
New York, NY, US

Jesse Bzura
P.E.
B.S. Arch. Engineering
University of Texas, Austin
North Port, FL, US

Richard Cabot
Ph.D., P.E.
Ph.D. EE, M.S. Mechanics
Rensselaer Polytechnic Inst.
Lake Oswego, OR, US

Greg Campbell
P.E.
B.S. Civil Engineering
Culver City, CA, US

Robert Cannon
Sr. Project Engineer
BSME U, CO, MS Mfg. Sys.
University of Wisconsin
Peoria, IL, US

Joao Cardoso
Engineer
M.S. Eng., Columbia Univ.
Palo Alto, CA, US

Ronald Cardwell
P.E.
B.S. Civil Engineering
WA State University
Oklahoma City, OK, US

Brent Carlson
P.E.
B.S.M.E: U of Idaho
MBA, Utah State
Ogden, UT, US

Arthur Carran
P.E.
B.S. Aerospace Eng. Tech.
Fairfield, OH, US

André Carrington
B.A. Sci.,
Systems Design Engineer
University of Waterloo
Thornhill, ON, CA

James Carr
Ph.D., P.E.
Professor, Geo. Engineering
Reno, NV, US

Jim Carucci
M.S. Mechanical Engineering
Rensselaer Polytechnic Inst.
New Hartford, NY, US

David Cassel
P.E.
B.S. Mechanical Engineering
Oldtown, ID, US

Jay Castino
P.E.
BSMET CWU
Bend, OR, US

Kevin Champney
Brandon, MS, US

Farook Chandiwala
B.S. Structural Engineering
University of New Mexico
Hoover, AL, US

C. Charles
Engineer
NY, NY, US

Jim Charles
P.E.
B.S. Geological Engineering
Michigan Tech
Grand Rapids, MI, US

Gary Cheek
P.E., DSA
B.S. Arch./Eng., BA Arch,
Cal Poly San Luis Obispo
Los Angeles, CA, US

Carroll Childers
P.E.
Mechanical Engineer,
School of Engineering,
Louisiana Tech.
Partlow, VA, US

James Chilton
B.S. Civil Engineering
San Francisco State University
Richmond, CA, US

David Christmas
P.E.
B.S. Civil Engineering,
Rose-Hulman Inst. of Tech.
Evansville, IN, US

John Christopher
P.E., Esq.
B.S. E. E.
Santa Monica, CA, US

Matthew Clarke
P.E., PLS
B.S., Civil Engineering
Cal Poly SLO
Chico, CA, US

Jerry Clasby
B.S. Mechanical Engineering
University of Washington
Enumclaw, WA, US

Kers Clausen
Structural Engineer
M.S. Engineering, UC Berkeley
Emeryville, CA, US

Oliver Clemons, Jr.
P.E.
B.S. Civil Engineering
University of Maryland
Timonium, MD, US

Mark Codispoti
B.S. Architectural Engineering
Cal Poly St. Univ., SLO
Tacoma, WA, US

Attilio Colangelo
M.S. Mech. Engineering
State Univ. of New York
North Tonawanda, NY, US

Jonathan Cole
P.E.
B.S. Civil Engineering
University Connecticut
Englewood, FL, US

Sean Colligan
Engineer (EIT)
B.S. Electrical Engineering
Pullman, WA, US

Preston Collins
P.E.
BSEE Electrical Power
Systems NCSU
Yelm, WA, US

Russell Connors
Registered Civil Engineer
B.S., U C Berkeley
Santa Maria, CA, US

Ben Coomes
P.E.
B. Civil Engineering
Georgia Tech
North Port, FL, US

Larry Cooper
P.E.
M.S., Structural Engineer
University of Illinois
Plymouth, MI, US

Wayne Coste
Engineer
B.S. Electrical Engineering
Tariffville, CT, US

Lawrence Coudriet
BSME, MSME
Carnegie Mellon University
Sewickley, PA, US

William Cox
P.E.
B.S. Mechanical Engineering
University of Kentucky
Lexington, KY, US

Mark Crane
B.S. Civil Engineering,
Purdue University
M.S. Civil Engineering,
University of California
Elk Grove, CA, US

Engineers

Kurt Criss
B.S. Mining Engineering
Colorado School of Mines
Elko, NV, US

George Crook
P.E., M.S.
Little Rock, AR, US

Brian Crutchfield
P.E.
B.S. Civil Engineering
Virginia Polytechnic
Inst. & State University
Charlotte, NC, US

Kevin Cubinski
B.S. Environ. Engineering
University of Florida
Gainesville, FL, US

Frank Cullinan
P.E. Civil Engineer
B.S. Civil Engineering
McKinleyville, CA, US

Robert Cummings
M.S. Civil Engineering
Northeaster University
Murrieta, CA, US

William Cundiff
P.E., BSCE
Whitinsville, MA, US

Gil Danila
B.S. Civil Engineering
Mapua Institute of Technology
Castaic, CA, US

David Dartford
B.A. Engineering Science
Dartmouth College
B. Engineering
Thayer School of Engineering
Houston, TX, US

Gary Davis
Civil Engineer
B.S. Engineering
University of Georgia
Fayetteville, AR, US

Philip Day
P.E.
BSCE, Virginia Tech.
Kirkland, WA, US

Jonathan Denman
B.S. Electrical Engineering
Oregon State University
Denver, CO, US

Paul DePew
P.E.
B.S. Civil Engineering
University of Wyoming
Cheyenne, WY, US

Gerald DeVito
P.E., B.S.C.E.
Wilmington, NC, US

Matthew Di Lorenzo
P.E.
M.E. Mechanical Engineering
Rensselaer Polytechnic Inst.
Weatherford, TX, US

Juan Diaz
Professional Engineer
B.S. Civil Engineering
University of Florida
Gainesville, FL, US

Thomas Dickerman
Civil Engineer
B.S., Civil Engineering
Daly City, CA, US

Richard Dickey
Electrical Engineer
Ph.D., EE, Univ. of California
San Luis Obispo, CA, US

Vincent DiLeonardo
P.E., BME,
University of Delaware
Tampa, FL, US

Michael DiMercurio
P.E.
M.S., Mech. Eng., MIT
Newtown, PA, US

J. Steve Dodds
P.E.
BSEE, Oregon State University
McMinnville, OR, US

Mark Dodds
P.E.
M.S. Civil Engineering
Kirkland, WA, US

David Dorau
P.E.
B.S. Iowa State University
M.S. Massachusetts
Institute of Technology
Lenexa, KS, US

Cristian Dragomir
B.S. Civil Engineering
University of California
Arroyo Grande, CA, US

Michael Drinkwater
P.E.
B.S. Civil Engineering
Reno, NV, US

David Dudley
P.E.
B.S. Civil Engineer
Sacramento, CA, US

William Dumper
BEE and MEE,
Polytechnic Institute of Brooklyn
Amityville, NY, US

Dr. Mohibullah Durrani
D. Eng. Sci. & Prof. Degree
Mech. Eng., Columbia Univ.
B. Sc. Eng. (Honors)
Aligarh, Muslim University
Germantown, MD, US

Khalid Durrani
Senior Civil Engineer, P.E.
M.S. Civil Engineering
Tulane University
Cincinnati, OH, US

Steven Dusterwald
Structural Engineer
BSCE Cooper Union, NYC
Las Vegas, NV, US

John Dwyer
P.E., Civil Engineer
B.S. Watershed Sciences
Lakewood, CO, US

Lorenz Eber
P.E. Civil Engineering, WA
B.S. Civil, M.S. Aeronaut. Eng.
Stafford, VA, US

Henry Edwardo
B.S. Civil Engineering
Penn State University
Pittsburgh, PA, US

Ryan Eggers
EIT
B.S.E. Civil Engineering
Walla Walla University
West Covina, CA, US

Hantz Elalami
P.E.
B.S. Research, Struct. Analyst
Denver, CO, US

Larry Elliott
P.E., BSEE,
University of Idaho
Moscow, ID, US

Ghada Ellithy
Senior Geotechnical Engineer
Ph.D., WVU
Seattle, WA, US

Todd Engle
B.S. Civil Engineering
University of Minnesota
Culver City, CA, US

Alfredo Esguerra
P.E.
B.S. Electrical Engineering
Denver, CO, US

Mikos Fabersunne
P.E.
B.S. Chemical Engineering
Univ.Cal., Davis
Davis, CA, US

James Fajcz
P.E. CMRP
Civil Engineering
Brunswick, GA, US

Steven Faseler
P.E.
M. Eng., Civil Engineering
Texas A&M
Bergheim, TX, US

Peter Feneht
P.E.
B.S. Civil Engineering
U Wisconsin, Milwaukee
Madison, WI, US

Kenneth Fiallos
P.E., BSE
Seffner, FL, US

Michael Fillion
Sharon, MA, US

Dennis Fischer
Engineering Consultant
MSCE, BSCE
Naperville, IL, US

Mark Flamer
Ukiah, CA, US

James Flikkema
Engineer (Ret.)
B.S. Chemical Engineering
Iowa State University
Evansville, IN, US

Richard Florentino
P.E.
B.S Civil Engineering
Columbia University,
M.S. Environmental Eng.
University of Illinois
Staten Island, NY, US

Edward Floyd
P.E.
B.S. Civil Engineering,
Worcester Polytechnic Inst.
Ludlow, VT, US

Edmond Forbes
P.E. New Hampshire (Ret.)
BSci. EE
Lyndeborough, NH, US

Rick Fowlkes
P.E.
BSCE & MBA
Mesa, AZ, US

Engineers

Jim Fox
P.E. Civil Engineer
B.S. Civil Engineering
University of Maryland
Bellingham, WA, US

Gary Fox
P.E.
B.S. Electrical Engineering
Purdue University
Scottsboro, AL, US

Pat Fox
Engineering
Beaverton, OR, US

Enoch French, Jr.
P.E., P.L.S.
B.S. LA Tech. University
Bossier City, LA, US

Robert Frias
P.E.
Mech., Elec. Engineer
Frias Engineering
Mech./Elec., Univ. of Texas
Arlington, TX, US

Gary Friend
BSME, University of Iowa
MSME, University of Illinois
Lawson, MO, US

Nick Funston
P.E.
B.S. Engineering
Sir George Williams University
Brevard, NC, US

Gustavo Garcia
B.S. Civil Engineering
Polytech. Univ. of Puerto Rico
San Juan, PR, US

Kelly Gardner
Owensboro, KY, US

John Garner
P.E.
B.S. Civil Engineering
Arizona State University
Fort Collins, CO, US

Chester Gearhart
P.E. (Ret.)
B.S. Civil Engineering
University of Missouri
Kansas City, MO, US

Lester Germanio
Structural Engineer
B.S. Civil Engineering
B. of Architecture, LSU
Austin, TX, US

Samuel Glasser
B.S. Petroleum Engineering
UC Berkeley CA
Bishop, CA, US

Luke Gmazel
B. Civil/Environmental Eng.
Lincoln City, OR, US

Paul Gogulski
President
BSCE
Beaufort, SC, US

Robert Goldberg
(Ret.) Engineer/Teacher
BEE, MSEE
Jericho, NY, US

Misael Gonzalez
EIT
Engineering
Carolina, PR, US

Mark Goretsky
Plainview, NY, US

Chris Graf
EIT
B.S. Civil Engineering
Louisville, KY, US

Steven Grage
Account. Mgr., Tech. Sales
B.S. Mechanical Eng., UIC
Gurnee, IL, US

Scott Grainger
P.E.
Forensic Fire Protection Eng.
B.S. Civil Engineering
Mesa, AZ, US

Spencer Graves
BS Aerospace Engineering
University CO, Boulder
MS Industrial Engineering
University of Pittsburgh
Overland Park, KS, US

Alan Gray
P.E.
B.A. Mech. Eng., SDSMT
Omaha, NE, US

John Gregel
Owner, JJG Eng. Services
B.S.M.E.
Bainbridge Township, OH, US

Jason Griffin
P.E.
B.S. Civil Engineering
Washington, DC, US

Jill Hacker
Engineer
M.S. Civil Engineering
Reston, VA, US

Christopher Hahn
Engineering Consultant
Mechanical Engineer
Decatur, IL, US

David Hajicek
P.E. in M.E. and E.E.
B.S. Electrical Engineering
Minnetonka, MN, US

Darrell Hambley
P.E.
BSEE UMC, Columbia Mo.
Monroe, WA, US

Fisal Hammouda
P.E.
B.S., M.S. Aerospace
Glen Ellyn, IL, US

Chuck Hanna-Myrick
B.S., M.S. Electronics Eng.
Montana State University
Bothell, WA, US

Harvey Hansen
P.E.
B.S.C.E.
S. Dakota School of Mines
Ketchikan, AK, US

Kevin Harold
P.E.
Portland, OR, US

Michael Haughey
P.E.
B.S. Mechanical Engineering
Westminster, CO, US

Gregory Haylock
P.E.
B.S. Civil Engineering
San Francisco St. University
Manhattan Beach, CA, US

Almond Hays
Consulting Environmental
& Chemical Engineer
B.S. Chemical Eng.
Ph.D. Environmental
Kingsbury, TX, US

Allyn Hector
Fort Worth, TX, US

Mark Helsten
London, ON, CA

Dennis Henry
P.E.
B.S. Civil Engineering
University of Missouri
Kansas City, MO, US

Robert Hentschel
B.M.E. Georgia Tech.
Sugar Land, TX, US

Matt Hepp
P.E., B.S.M.E.
Ridgeway, CO, US

Chris Herron
Charlotte, NC, US

Richard Herschlag
P.E.
B.S. Civil Engineering
Princeton University
Easton, PA, US

Michael Herzig
Civil Engineer (Ret.)
B.S. Civil Engineering
UC Boulder, Colorado
Fort Collins, CO, US

Richard Hibbard
P.E.
BS Civil Engineering
St. Martin's College
Olympia, WA, US

Erin Hibbard
Engineer Intern
B.S. Mech. Engineer, USF
Tampa, FL, US

James Hicks
P. E.
B.S. Chemistry
Montgomery, TX, US

Richard Hodel
B.S. Chemical Engineering
University of Missouri
Port Charlotte, FL, US

Jeffrey Hoffman
Ph.D., M.S., B.S., P.E.,
Mechanical Engineering
U. of Wisconsin, Madison
Anchorage, AK, US

Brian Holdeman
P.E., B.S.M.E.
Broken Arrow, OK, US

Babak Honaryar
M.S. Mechanical Engineering
University of Mass., Lowell
Orinda, CA, US

James Horne
P.E., Structural Engineer
B.S. Civil Engineering,
University of Toledo
MS Civil Engineering,
University of Illinois
Denver, CO, US

Bryan Houle
P.E., Principal
Mechanical Engineer
Edwards, CO, US

James Houle
B.S. Chemical Engineering
Purdue University
Redwood Valley, CA, US

Engineers

Andrew Hoy
P.E.
BSMET
Milwaukee School of Engineering
Milwaukee, WI, US

David Huebner
P.E., BSCE
Auburn Hills, MI, US

Richard Humenn
P.E. Electrical Engineer
Licensed NY, NJ, CT, D.C.
New Jersey, NJ, US

Mohammad Imran
MSME Mech. Eng.
Ringwood, NJ, US

Rob Jackson
P.E.
B.S. Environmental Engineering
Colorado St. University
Boston, MA, US

Peter Jamtgaard
S.E.
B.S. Civil, Environ. Engineering
Marquette University
Professional Master in Structural
Engineering, Illinois Inst. of Tech.
Honolulu, HI, US

Richard Jarrett
P.E.
BSME, MIT,
MSME, Northeastern University
Limington, ME, US

J Neil Jednoralski
P.E., NSPE, SAME
B.S. Ag. Engineering
UICC, Urbana, IL
Salina, KS, US

Philip Johnson
P.E.
Consulting Engineer
A.S. Engineering
University of Cincinnati
Phoenix, AZ, US

Brandon Johnson
P.E., BSME
Minneapolis, MN, US

Grant Johnson
Engineer
B.S. Civil Engineering
Cal. State Tech.
Fair Oaks, CA, US

Robert Johnson
P.E., BSME
Bellevue, WA, US

Orin Johnston III
Oklahoma City, OK, US

Michael Jones
P.E., BSME
Cal State Poly, Pomona
Boise, ID, US

Murl Jones
P.E.
B.S., M.S. Civil Engineering
Univ. of Washington, Seattle
Vancouver, WA, US

Ralph Jordan
P.E.
B.S. Civil Engineering
Univ. of Alaska, Fairbanks
Anchorage, AK, US

Ed Jucevic
Engineer of Mines
Colorado School of Mines
M.S. Univ. of Nevada at Reno
Sparks, NV, US

Alex Kade
Engineer
M.S., Wayne State
Grosse Pointe Woods, MI, US

Robert Kadera
P.E.
B.S. EEE
Lake Villa, IL, US

Thomas Kahler
P.E.
Bachelor of Engineering
Drexel University
Columbia, PA, US

Jeffrey Keileh
M. Structural Engineering
UC Berkeley
San Francisco, CA, US

Kenneth Keil
P.E.
M.S. Civil Engineering
Loveland, CO, US

Stephen Keith
P. E.
M.S. Stanford University
Centennial, CO, US

Jack Keller
Ph.D., P.E.
Logan, UT, US

John Kennedy
B.S. Mechanical Engineering
CA St. University, Chico
M.S. Engineering
San Francisco State University
Santa Rosa, CA, US

Ahmad Khammash
P.E.
MSCE University of Texas
Arlington, TX, US

Masood Khan
M.S. Newark College of Eng.
New Jersey Inst. of Tech.
Churchville, PA, US

Dilip Khatri
Ph.D.
Univ. of Southern California
Pasadena, CA, US

Ross King
Bachelor of Civil Engineer
Univ. of Wisconsin, Madison
Waco, TX, US

Adam Klein
Engineer
B.S. Civil Engineering
UC Davis
Redwood City, CA, US

Edward Knesl
P.E., S.E.
M.S. Engineering
Phoenix, AZ, US

Christopher Koch
P.E.
B.S. EEAP
Case Western Reserve Univ.
Lima, OH, US

Nick Kolev
P.E.
Transportation Eng., Range
Ph.D., Civil, Material Sci.
U of St. Petersburg, Russia
Bellflower, CA, US

Bruce Kolinski
P.E.
B.S. in Civil & Environ. Eng.
Phoenix, AZ

Dennis Kollar
P.E., Structural Engineer
B.S. & Graduate Coursework
West Bend, WI, US

Peter Kosmoski
P.E.
B.S.C.E.
Engineering Consultant
Spring, TX, US

Wiley Krapf
Gills Rock, WI, US

Dr. Adrain Krieg
Certified Manufacturing Eng.
Bradenton, FL, US

Thomas Lackey
P.E. Engineer
B.S.C.E., UVM
Stowe, VT, US

Ronald Lawson
Engineering Consultant
BSCE Akron University
Dacula, GA, US

Ron LeBlanc
P.E. Engineer
Firestone, CO, US

Lawrence LePere
P.E.
B.S. Civil Engineering
Union Coll., Schenectady, NY
Brewster, NY, US

Blake Lettenmaier
Garibaldi, OR, US

John Lewelling
P.E.S.E.
B.S. Aerospace
Georgia Tech.
Longmont, CO, US

Brian Lewis
P.E.
B.S. Civil Eng., Univ. of IL
Louisville, IL, US

Samuel Lewis
P.E., P.S.
B.A. Structural Engineering
Montgomery, OH, US

Esteban Llop
MS Civil Engineering
University of Puerto Rico
San Juan, PR, US

Nathan Lomba
P.E., S.E., M.ASCE
B.S. Civil Engineering
Univ. of Colorado
Eureka, CA, US

Brandon Long
Structural Engineer
Civil Engineering
Greenville, SC, US

Ismael Lopez-Lara
M.S. Mechanical Engineering
Univ. Pontificia Comillas
(ICAI) Madrid, Spain
Missouri City, TX, US

Alfred Lopez
Structural Engineer
B.S. Arch. Engineer
Lawrence Tech. University
Holly, MI, US

Engineers

Dianne Lopez
P.E.
M.S. Computer Engineering
UPR Mayaguez
Bayamon, PR, US

Richard Lopez
Mining Engineer, EIT,
Engineering Consultant
B.Sci., Mining Engineering
Montana Tech.
Cool, CA, US

Timothy Lorencz
B.S. Mechanical Engineering
Michigan Tech. University
Ellicott City, MD, US

Frank Lovelady
Civil Engineer
BSCE
Albuquerque, NM, US

John Lovrovich
P.E.
M.S. Civil Engineering
Moses Lake, WA, US

Ken Lucas
B.S. Civil Engineering
University of Connecticut
Underwood, WA, US

Christopher Lund
P.E.
B.S., Civil & Environmental
UW, Madison
Woodbridge, VA, US

Anthony Lusich
P.E.
B.S. Civil Eng.
Univ. of Southern California
San Jose, CA, US

Christopher Lyon
Mech. & Elec. Engineer
BSME & MSEE
Bellingham, WA, US

David MacKnight
P.E.
B.S. Engineering
LeTourneau University
Greenville, TX, US

Donald MacMillan
P.E.
B.S. Civil Eng.,
Northeastern University
Middletown, CT, US

Mike Maguire
P.E.
MS, Mech./Aerospace Eng.
UC Davis
Livermore, CA, US

Javed Malik
Houston, TX, US

Samuel Malinowsky
Engineer
B.S. Civil Engineering
University of Kansas
Manhattan, KS, US

Walter Mamak
B.S. Civil Engineering
Illinois Inst. of Technology
Sarasota, FL, US

Robert Marceau
P.E., Structural
M.S. Univ. Las Vegas
B.S. Univ. of Connecticut
Kalispell, MT, US

Ben Marshall
Senior Engineer, P.E.
M.S. Chemical Engineering
Jacksonville, FL, US

Charles Marshall
PE, MSCE
M.S., Civil Engineering, USC
San Gabriel, CA, US

John Mason
Engineer
Ph.D. Elec. Eng., Michigan
Portage, MI, US

Richard Mathis
P.E.
B.S. Elect. & Computer Eng.
Oegon State Univ.
Santa Cruz, CA, US

Dan May
B.S. Civil Engineering
Marquette University
Racine, WI, US

James May
P.E.
M.S. Environmental Eng.
Tulsa, OK, US

Kenny Mayle
P.E.
B.S. Electrical Engineering
University of Michigan
Chicago, IL, US

David Mazzei
P.E.
M.E. Civil Engineering
Mass. Institute of Technology
Cumberland, RI, US

Rich McCampbell
B.S. Chem.
Milton, MA, US

Allan McClure
P.E.
B. Mechanical Engineering
Rockledge, FL, US

William McDermott
B.S. Engineering
CMA, Vallejo, CA
Las Vegas, NV, US

Mike McDonald
Engineer
B. Eng. Hons, Engineering
Royal Naval Engineer
New York, NY, US

Thomas Mclaughlin
P.E. Consulting Engineer
B.S.C.E. Univ. Florida
Seffner, FL, US

Allen McLemore
P.E.
B.S. Civil Engineering
Auburn University
Springville, AL, US

Patrick Mcmahon
MSBE MSN ANP
M.S. Engineer
Polytechnic Univ. NY
Harriman, NY, US

Jeffrey McNabb
P.E. Engineering Consultant
B.S., M.S. Civil Engineering
University of Minnesota
Bozeman, MT, US

Charles Mencke
Composite Design Engineer
B.S. Mechanical Engineer
Univ. of Idaho
Seattle, WA, US

Steven Merritt
P.E.
M.S. Structural Engineering
UC San Diego
San Diego, CA, US

Donald Meserlian
P.E.
M.S.M.E.
N Caldwell, NJ, US

Bill Metcalf
P.E.
B.S. Eng. Texas A&M
Athens, TX, US

Daniel Metz
P.E.
B.S. Civil Engineering
Oviedo, FL, US

Tom Mifflin
EIT
Idaho State University
Antigo, WI, US

Andrew Miller
P.E.
Bach. of Civil Engineering
Georgia Institute of Tech.
Melbourne, FL, US

Barry Miller
P.E.
Mechanical Engineer
Hinsdale, NY, US

Joseph Miller
P.E., B.S.M.E.
Manchester, MO, US

Robert Miller
P.E.
B S Engineering
Northern Arizona University
Mercury, NV, US

Matthew Millias
P.E.
B.S. Civil Engineering
Syracuse University
North Syracuse, NY, US

Andrew Mills
Principal Engineer, M.S. Eng.
Lower Gwynedd, PA, US

Dan Mills
AIA, PE
B.S. Architectural Engineering
Lake Ozark, MO, US

Jesse Milonovich
Engineer
B.S. Civil & Envion. Eng.
Clarkson Univ.
Round Rock, TX, US

Chuck Minne
P.E.
Chemical Engineering
UC Berkeley
Danville, IL, US

Edward Misch
B.S. Engineering
Purdue University
Munster, IN, US

John V Mizzi
P.E., B.E.E.
Poughkeepsie, NY, US

Ronald Molik
Senior Engineer (Ret.)
UCLA M.S. Engineering
Rancho Palos Verdes, CA, US

Michael Moore
P.E.
BS Civil Eng. Tech,
MSU, Northern
Havre, MT, US

Engineers

Peter Morse
P.E., Mechanical Engineer
B.S., Mech. Engineering
B.A., Journalism
Tucson, AZ, US

Charles Mortenson
P.E. (Ret.)
Engineering (EE), U of Wis.
Iron River, WI, US

Tyrone Morton
P.E.
B.S. Electrical Engineering
Univ. of New Orleans
New Orleans, LA, US

Keith Moser
P.E.
M.S. Geotechnical Engineering
VA Tech.
Fairfax, VA, US

David Motto
Engineer, Patent Agent
B.S. Marine Eng., USMMA
Ellington, CT, US

Charles Moulton
M.S. Engineering
University of Tennessee
Knoxville, TN, US

Robert Moyer
P. E.
B.S. Engineering
Penn State
Rochester, NY, US

Brian Mullin
P.E., B.S., Civil Engineering
UNF
Jacksonville, FL, US

Edward Munyak
P.E., BSME
Catholic Univ. of America
Los Altos Hills, CA, US

Michael Nagy
B.S. Civil Engineering
Rutgers University
Staten Island, NY, US

Alex Nelson
B.S. Civil Engineering
Montana State University
Bozeman, MT, US

Arthur Nelson
P.E.
M. Sci., Structural Eng.
Northeastern University
Seekonk, MA, US

Jason Nelson
P.E.
M.S. Civil Engineering
W. Virginia University
Bridgeport, WV, US

Kent Nelson
P.E.
Battle Ground, WA, US

Robert Nelson
P.E.
BSME, UC Berkeley
Canyon, CA, US

Sean Neprud
P.E.
B.S. Engineering
UC Berkeley
San Francisco, CA, US

Fred Nguyen
P.E.
M.S. Mechanical Engineering
Stevens Inst. of Technology
Maplewood, NJ, US

Lee Niems
P.E. (Ret.)
BSME, IIT
Henderson, NV, US

Chris Nubbe
P.E.
M. Civil Engineering
Olympia, WA, US

William Nugent
P.E.
BEE, Polytechnic University
Eastham, MA, US

Richard Nutt
Structural Engineer
M.S. Structural Engineering
CSUS
Orangevale, CA, US

Kathleen O'Brien
P.E., BSCET
Simi Valley, CA, US

Kamal Obeid
S.E., P.E.
MSCE, UC Berkeley
Fremont, CA, US

William Odell
P.E.
BS Mech. Eng. Tech.
Surprise, AZ, US

Shane Oden
B.S. Environmental Eng.
Oregon St. University
Marysville, WA, US

Gerald Olson
P.E.
Mechanical Engineer
University of Cincinnati
Waltham, MA, US

Basil Orechwa
Senior Design Engineer
Beaver Dam, WI, US

Ali Oskoorvouchi
Ph.D.
Prof. Geotechnical Engineering
San Jose, CA, US

Calvin Overdorff
P. E.
B.S. Civil Engineering
Windber, PA, US

James Overstreet
P.E.
B.S. Electrical
Mississippi State
Diamondhead, MS, US

Joe Palen
Senior Research Engineer
BSCE, UC Davis
Davis, CA, US

Curtiss Palin
P.E.
M.S. Engineering
Fort Collins, CO, US

Randy Palmer
Mechanical Engineer
BSME
Duvall, WA, US

Mo Palmowski
P.E.
B.S. Mechanical and
Industrial Engineering
Clarkson University
Tolleson, AZ, US

Pedro Panzardi
M.E. Environmental Eng.
Rensselaer Polytechnic Inst.
Gurabo, PR, US

Kirk Pape
P.E., P.L.S.
Surveying Engineering
Iowa State University
Rochester, MN, US

Ramon Parchment
EIT
B.S. Civil Engineering
New York University
Tandon School of Engineering
NY, NY, US

James Parker
P.E.
B.S. Civil Engineering
Carnegie Mellon University
Oceanside, CA, US

Robert Parma
BSME
University of Texas, Austin
Dallas, TX, US

Mario Parra
P.E.
B.S. Civil Engineering, UK
Tampa, FL, US

Frederic Parrish
P.E.
BSME
Cave Creek, AZ, US

Hamendra Patel
P.E.
Marietta, GA, US

Raymond Pate
P.E.
B.S. Civil Engineering
N. Carolina State
Kill Devil Hills, NC, US

Charles Pegelow
P.E., Civil Engineer
Houston, TX, US

Barton Peters
P.E.
B.S. EE, BA Poli. Sci.
San Gabriel, CA, US

Dennis Peyton
P.E., B.S.
Sanger, CA, US

Marshall Pfeiffer
B.S. Civil Engineering
Notre Dame University
San Diego, CA, US

Joseph Phelan
P.E.
Mechanical Engineering
Inwood, NY, US

Bruce Phillips
P.E.
M.S. Engineering
University of Tennessee
Austin, TX, US

Mark Phillips
Mechanical Engineer (Ret.)
BSME, Cal Poly, SLO
Santa Rosa, CA, US

Norman Poire
Senior Aerospace Engineer
BSME
Denver, CO, US

Martin Poole
P.E., B.S.C.E.,
MO Univ. of Sci. & Tech.
Kennesaw, GA, US

Engineers

Gerald Poore
Engineer
BSEE
Miami, FL, US

Tim Potyraj
Plano, TX, US

William Preston
B.S. Civil Engineering
Georgia Institute of Technology
Guaynabo, PR, US

Michael Prinz
P.E.
B.S. Env. Resources Eng.
Humboldt State University
Santa Rosa, CA, US

John Pryor
Structural Engineer
M.S.S.E., U.C. Berkeley
Emeryville, CA, US

L. Pyeatt
P.E., BSCE
Malibu, CA, US

Guillermo Ramos
M.S. Ind. and Management Eng.
Rensselaer Polytechnic Inst.
M Eng. in Trans. Eng., RPI
Albany, NY, US

George Rand
P. E.
B.S. University of Vermont
Rochester Hills, MI, US

James Randall
Engineer
B.S. Electrical Engineering
Vancouver, WA, US

Robert Randall
P.E.
B.S Nav. Arch & Marine Eng.
MIT
Mohegan Lake, NY, US

Steven Rathbun
P.E. & L.S.
B.S. Mining Engineering,
SDSM&T
Salt Lake City, UT, US

Ryan Rayda
P.E.
M.S. Civil Engineering
University of Wyoming
Bismarck, ND, US

Robert Regl
Ph.D. Engineer
Lehigh University
Hattiesburg, MS, US

Thomas Rehm
P.E.
Ph.D. Chemical Engineering
Humble, TX, US

Steven Reiser
Chemical Engineer
Westminster, CO, US

Oswald Rendon-Herrero
Engineering Consultant
AAS, BS, MS,
Ph.D., Civil Engineer
Starkville, MS, US

Ephraim Resnick
B.S. Electrical Engineering
New York University
New York, NY, US

Cres Reyes
P.E.
B.S. Civil Engineering
University of the East
Chino Hills, CA, US

John Rice
P.E. (Ret.)
MEE, M. Civil Engineering
Penn State
Manassas, VA, US

William Rice
P.E.
M.S. Civil Engineering
Cornell University
Randolph Center, VT, US

Daniel Richard
P.E., LS (Ret.)
B.S. Chemical Engineering
Eagar, AZ, US

Mike Riley
Engineer
B.S. Civil Engineering
University of Maine
Orono, ME, US

Bret Rinehart
P.E.
B.S. Civil Engineering
University of Utah
Eureka, CA, US

David Roberts
P.E.
Engineer and General Contractor
M.S.C.E. CSU Long Beach
Fountain Valley, CA, US

Philip Roberts
B.S. Mechanical Engineering
Magna Cum Laude,
Michigan State University
Southfield, MI, US

Thomas Robertson
B.C.E.
Georgia Institute of Technology
Augusta, GA, US

Andrew Rodriguez
B.S. Mechanical Engineering
University of Texas
San Antonio, TX, US

Daniel Rogers
Engineering Consultant
Mechanical Engineering
Fairfax, VA, US

Richard Rogers
Mechanical Engineering
E. Northport, NY, US

Thomas Rogers
P.E.
B.S.C.E., University of Florida
Oviedo, FL, US

Tim Rohach
P.E.
Mechanical Eng. MSME
Sugar Land, TX, US

Richard Rollo
P.E.
B.S. Civil Engineering
M. Engineering
Englewood, FL, US

Gerald Romero
Structural Engineer (Ret.)
B.S. Engineering
New Mexico State University
Dallas, TX, US

Robert Rooks
P.E., Principal Engineer
B.S., M.S. Civil Engineering
Kailua, HI, US

Robert Rosa
P.E., Electrical Engineer,
Computer Scientist
BSEE, BS Comp. Sci.
Edmond, OK, US

Jim Rose
P.E.
B.S., M.S. Engineering
Dothan, AL, US

Reza Salami
Ph.D.
Prof. of Civil & Env. Eng.
Ph.D. University of Arizona
Greensboro, NC, US

Sam Sallome
P.E., Engineer
BSEE Rochester Inst. of Tech.
Richmond, VA, US

Sarah Scarborough
Atlanta, GA, US

John Schaefer
Consulting Engineer
Ph.D. Stanford
M.S. San Jose State
B.S. MIT
Arcata, CA, US

Fred Schaejbe
Civil Engineer
M.S. Structural Engineer
University of Illinois
West Bend, WI, US

Robert Schasse
P.E.
BSME Univ. of Wisconsin
Danville, VA, US

Norman Scheaffer
M.S. Chemical Engineering
Cornell University
Bellingham, WA, US

Derek Schenavar
P.E., Principal Engineer
BSCE Univ. Central Florida
West Palm Beach, FL, US

Steven Schennum
P.E., Ph. D.
Spokane, WA, US

Steven Scheye
Principal Engineer
B.S., Chem. Eng., NCSU
Martinez, CA, US

Joshua Schmidt
P.E.
B.S. Mechanical Engineering
Texas A&M
Fort Worth, TX, US

Rich Schnoor
Engineer, MSME
Jupiter, FL, US

Kurt Schoch
Engineer
B.S. Mechanical Engineering
Amarillo, TX, US

John Schofield
P.E.
B.S. Environmental Eng.
Penn State
Lexington, VA, US

George Schroeder
P.E.
B.S. Electrical Engineering
Oregon State University
Sherwood, OR, US

Engineers

Robert Schuerger
B.S. Electrical Engineering
University of Akron
Los Angeles, CA, US

Mary Schuler
Engineer
Engineering Technician
Metallurgy & Mech. Design
Virginia Beach, VA, US

Ronald Schultz
B.S. Electrical Engineering
Wayne State University
Detroit, MI, US

Mark Sebesta
P.E.
B.S. Civil Engineering
Las Vegas, NV, US

Patricia Seitz
P.E.
Arch. Eng., Structural
Lititz, PA, US

John Shanahan
P.E., Electrical Engineer
Rancho Cucamonga, CA, US

Michael Sherber
P.E.
B.S. Civil Engineering
Princeton University
M.S. Mechanical Engineering
Georgia Tech.
Avon, CT, US

Richard Sheridan
P.E.
Civil Engineering
New York, NY, US

Christopher Sherman
Senior Engineer
B.S. Engineering
University of Florida
Auburn, CA, US

Daniel Shields
B.S. Electrical Eng. Tech.
Southern Polytechnic St. Univ.
Marietta, GA, US

John Shively
Engineer
B. of M.E.
Berkeley, CA, US

Andrea Shuman
P.E.
B. Architectural Engineering
Penn State University
Teaneck, NJ, US

Dale Silbernagel
Engineer
B. Chemical Engineering
Greenwood Village, CO, US

Clayton Simmons
P.E., Associate Engineer
B.S.C.E.,
Brigham Young University
Santa Rosa, CA, US

John Simon
P.E.
B.S. Agricultural Engineering
University of Maine
Hampden, ME, US

Roger Simpson
P.E.
Santee, CA, US

John Sinerchio
B.S. Electrical Engineering
California State University
Fresno, CA, US

Amit Singh
Ph.D., Esq.
Ph.D. Electrical Engineering
North Andover, MA, US

Pete Slocum
S.E.
M.S. Engineering
San Jose State University
Eugene, OR, US

Edwin Smith
Engineer, Land Surveyor
M. Architecture
Morgan State University
Baltimore, MD, US

Marvin Smitherman
P.E., Civil Engineer
B.S. Civil Engineering
UC Berkeley
Fremont, CA, US

Jacob Smith
B.S. Civil Engineering
Michigan Tech. University
Apex, NC, US

Monica Smith
P.E.
B.S. Civil Engineering,
University of Iowa,
Master of Engineering,
Water Resources Eng.,
Colorado State University
Independence, IA, US

Jonathan Smolens
P.E.
B.S. CU Boulder
Boulder, CO, US

Richard Snider
P.E., BSEE
University of Texas, Austin
Dallas, TX, US

Robert Sogge
P.E., Civil Engineer
Ph.D. Civil Engineering
University of Arizona
Tucson, AZ, US

Ahmad Solomon
P.E.
Petroleum Consultant (Ret.)
B.S. Petroleum Eng., TU
Houston, TX, US

Ronald Southard
P.E.
B. Arch. E. & B.S. E.
Ops-Const.; ISU
Buena Vista, CO, US

John Sparnicht
P.E.
Civil Engineer
Dayton, NV, US

James Speedie
Engineer
BSCE, MSCE,
Wayne State Univ., Detroit
Phoenix, AZ, US

Mitchell Stein
P.E.
M.S. Civil Engineering
University of Texas, Austin
Austin, TX, US

Michael Stephens
P.E.
B.S. Geological Engineering
Welling, OK, US

Christopher Stevens
P.E., BSCE
Roseville, CA, US

James Stiady
Ph.D., P.E.
San Diego, CA, US

John Stoltenberg
P.E., BSME
Elkhart Lake, WI, US

Muriel Strand
P.E., B.S. SJSU, M.S. UCB
Mechanical Engineering
Sacramento, CA, US

Frank Stratton
Engineer, Ph.D., BCEE
Civil Engineering, Ph.D.,
Stanford University
Eastsound, WA, US

Bernard Stroh
B.S. Civil/Structural Eng.
North Dakota State University
Kula, HI, US

Peter Stutz
Electrical Eng. (Ret.)
BSEE, TWU Switzerland
Chelan, WA, US

Bill Sublette
P.E.
Ph.D. Civil Engineering
University of Arizona
Las Vegas, NV, US

Roy Svensson
B.S. Civil Engineering
Clarkson College of Tech.
Tonawanda, NY, US

James Symanski
B.S. Civil Engineering
U.S. Military Academy
M.S. Civil Engineering
University of Missouri
Alexandria, VA, US

Brandon Taylor
B.S. Biological Engineering
Louisiana State University
Baton Rouge, LA, US

Joseph Testa
P.E., Civil Engineer
BSCE, RPI
Thousand Oaks, CA, US

Peter Theodorakakos
Mechanical Engineer
B.S. and M.S.
Camden, AR, US

Paul Thomas
P.E.
M.Arch., Structural Eng.
Tucson, AZ, US

Robert Thomas
BS Civil Engineering
Texas A&M
Charlotte, NC, US

Steve Thomas
P.E., S.E., B.S.C.E.
Pampa, TX, US

Mark Thomey
P.E.
BSCE University of Arkansas
Arab, AL, US

Allen Thompson
P.E.
B.S. Civil Engineering
The Citadel, The Military
College of S. Carolina
Miami, FL, US

Nicholaus Thompson
B.S. Mechanical Engineering
Boise State University
Kuna, ID, US

Engineers

Alexander Thorp
P.E., P.L.S.
B.S. Civil Engineering WPI
Great Barrington, MA, US

Richard Thurmond
BSEE, MSCENG,
University of So. California
Cobb, CA, US

Brian Timmins
M.S. Environmental Eng.
Oregon State University
Washougal, WA, US

Craig Tiras
P.E.
B.S. Engineering
Univiversity of Texas, Austin
Houston, TX, US

Irfan Toor
Ph.D. Chemical Engineering
University of Florida
Plano, TX, US

David Topete
S.E.
B.S. Civil Engineering,
Santa Clara University
San Francisco, CA, US

Bogos Torikian
Registered Geotechnical Eng.
Masters
Forest Knolls, CA, US

Clark Townsend
Civil Engineer, BSCE CSU
Fort Collins, Colorado
Sacramento, CA, US

Dianne Treichler
CA-Licensed Civil Engineer
BSE, University of Michigan
Loleta, CA, US

Paul Trousdale
Structural Engineer
M.S.S.E., U.C. Berkeley
Emeryville, CA, US

Leslie Tyson
P.E.
M.S. Engineering
Michigan State University
Denver, CO, US

Frank Ulisse
P.E
B.S. Electrical Engineering
Rutgers University
Egg Harbor Township, NJ, US

Harry Utti
P.E.
B.S. Earth Sciences
Oregon State University
Seaside, OR, US

Michael Vail
P.E., Engineering Consultant
B.S. Civil Engineering
Springfield, IL, US

Thomas Valentino
P.E.
BME Georgia Tech.
MME Univ. of Houston
Richland, WA, US

Rocky Van Asten
P.E.
BSNE UW-Madison
Madison, WI, US

James Van Langen
P.E., Mechanical Eng., PA
B.S. US Merch. Marine Acad.
Doral, FL, US

Ryan Van Leuven
Eng. Intern, Grad. Student
B.S. Civil Engineering
Boise State
Logan, UT, US

Jeffrey Vandiver
P.E.
B.S. Civil Eng. Technician
Southern Polytechnic St. Univ.
Atlanta, GA, US

Brian Vaughn
P.E.
B.S. Electrical Engineering,
MO Univ. of Science & Tech.
M.S. Eng. Management
Northwestern University
Barrington, RI, US

J Kevin Vogel
B.S. Mechanical Engineering
University of Santa Clara
Post Falls, ID, US

John Wagner
P.E., Elec. Eng. (Retired)
B.S. Math, Grad. School E.E.,
Univ. of Kentucky
Sun City, AZ, US

Charles Walker
P.E.
BSME Texas A&M U
Rosharon, TX, US

Daniel Walsh
P.E.
B.S. Chemical Engineering
SUNY Buffalo
Rochester, NY, US

Robert Walter
B.S. Civil Engineering
Old Dominion University
Vienna, VA, US

Robert Waser
P.E. (Ret.)
BSME Duke University
MSME Maryland University
Washington, DC, US

David Weimer
P.E.
B.S. Electrical Engineering
Des Moines, IA, US

John Westmoreland
P.E.
B.S. Electrical Engineering
Lamar University
San Jose, CA, US

Jon-Eric White
P.E.
B.S. Civil Eng., Const. Mgt.
University of Massachusettes
Newburyport, MA, US

Michael White
B.S. Civil Engineering
Portland State University
Vancouver, WA, US

Terry White
Mechanical Engineer
BSME, Rose-Hulman
Floyds Knobs, IN, US

William Whitney
Bachelor of Science,
Queen's Univ. at Kingston
Ontario, Canada
St. Albert, AB, CA

Andy Wickerson
P.E.
M.S. Oregon State University
Englewood, FL, US

Thomas Wilczek
P.E.
BSCE, UC Davis
Portland, OR, US

Paul Wilkerson
Engineer
New Mexico State
San Angelo, TX, US

Susan Williams
Engineer
M.S. Civil Engineering
California State University
Huntington Beach, CA, US

Bill Wilson
Birmingham, AL, US

Kenneth Wilson
P.E.
BSCE, US Coast Guard Acad.
Carmel, IN, US

Rhett Winter
P.E., LEED AP
B.S. Civil Engineering
Oregon Tech.
Bellingham, WA, US

Jenny Wong
P.E.
B.S., C.E. Portland State Univ.
Clovis, CA, US

Douglas Woolf
Chonhassen, MN, US

Don Wornock
P.E., BSEE & BSCE
University of Arkansas
Texarkana, AR, US

Kenneth Wrenn
P.E.
B.S. Civil Engineering NCSU
Durham, NC, US

Travis Wren
P.E.
Bachelor, Master's Degrees
University of Missouri
Civil, Structural Engineering
Carmel, IN, US

Donald Wright
P.E.
B.S. Electrical Engineer
Houston, TX, US

Richard Yale
Engineer
B.E. Civil Engineering USC
Desert Hot Springs, CA, US

Carlos Yermoli
M.S. Civil Engineering MIT
Miami, FL, US

Wayne Young
P. E.
Civil Engineering
Arvada, CO, US

Gregory Yust
P.E., B.S. Aero Engineering
Univ. of Notre Dame
Glastonbury, CT, US

Steven Zelvin
P.E.
M Civil Engineering,
Rice University
Dallas, TX, US

Jue "Joanna" Zhang
P.E., S.E. UC Berkeley
San Francisco, CA, US

David Zuniga
P.E., B.A. Arch. Engineering
Univ. of Texas
San Antonio, TX, US

Engineering Professionals (Degreed Only)

Anthony Acocella
Mechanical Engineer
Masters in Mech. Eng
Marlton, NJ, US

Ken Adam
Senior Mfg. Eng.
B.S. Ceramic Eng.
Chanhassen, MN, US

Fred Aeilts
BSEE
Phoenix, AZ, US

Mohamed Ahmad
Logic Design Eng.
M. in Elec., Comp. Eng.
Folsom, CA, US

Mohammad N. Ahmed
Civil Engineer
Biotech Eng.
JNT Univ., India
Dubai, UAE

Saba Ahmed
Eng. at Intel Corp.
B.Sci. Engineering,
Portland St. Univ. OR
Portland, OR, US

Matthew Akers
B.S. Mat. Sci. and Eng.,
North Carolina St. Univ.
Wellford, SC, US

Monojir Ali
B.S. Comp. Eng., Math.
Paterson, NJ, US

Michael Aliotta
B.S. Elec. Eng.
Fort Pierce, FL, US

Mark Allen
Ph.D. Eng.,
Univ. of Penn.
San Diego, CA, US

Brad Andersen
BS Mech. Eng.
Madison, WI, US

Ed Anderson
Eng. Consultant
B.S. Engineering
Los Gatos, CA, US

John Anderson
Ph.D. Professor
Ph.D. Astronautics, M.I.T.
Minneapolis, MN, US

John Anderson
Doctoral Candidate
BSE, MS, Eng.,
Univ. of Michigan
Okemos, MI, US

Malcolm Anderson
B.S. Mech. Eng.,
CA St. Polytechnic
Univ. at Pomona
Wildomar, CA, US

Michael Anderson
Mining Engineering
Fairbanks, AK, US

Scott Anderson
M.S. Electrical Eng.
Meridian, ID, US

Sean Anderson
B Engineering,
Stevens Inst. of Tech.
Jersey City, NJ, US

Tikisa Anderson
Eng. Senior Staff
BSEE MSE,
UC San Jose
MB, Univ. Phoenix
Union City, CA, US

James Andrews
B.S. Aerospace Eng.
Jarrell, TX, US

Ben Andrus
B.S. Mech. Eng. Tech.
Arizona St. Univ.
Tempe Arizona
Glendale, MT, US

Kurt Angel
Member Tech. Staff
BSEE
Bryson City, NC, US

Ron Angell
Civil Eng. B.S.C.E
Univ. of Michigan,
Ann Arbor, MI
Fort Myers Shores, FL, US

Scott Anstey
Engineering Staff,
B.S. Engineering
Clemson Univ.
Catawba, SC, US

Andreas Apostolopoulos
BE Civil Engineering
City College of NY
Erie, PA, US

Arman Arashvand
BSEE, Univ. of TX Dallas
Dallas, TX, US

Rod Armstrong
B. Eng. (Australia)
Cupertino, CA, US

Juan Arroyo
BS Elec. Eng.
Capitol Tech. Univ.
Portland, OR, US

Joshua Ashenberg
Ph.D.
Aerospace Scientist
Chelmsford, MA, US

Gilbert Asher
BS Elec. Eng.
Oklahoma St. Univ.
Erie, PA, US

Aaron Ashkinazy
Dr. of Comp. Science
Roosevelt, NJ, US

Heidi Ashwell
B.S. Aeronautical Eng.
Mech. Eng., Rensselaer
Polytechnic Institute
Las Vegas, NV, US

Steven Asimow
Aerospace Str. Eng. (Ret.)
BSME, CA State Univ., LA
Glendale, CA, US

Hani Atassi
B.S. Chem. Eng.
Univ. of Texas
Darien, IL, US

Marc Auville
Eng. Consultant
Masters in Telecom.
Arvada, CO, US

David Avina
Engineer, BSME
Bay St. Louis, MS, US

Ram Avtar
Bach. of Tech.
Mech. Engineering
Indian Inst. of Tech.,
Kharagpur, India
Norcross, GA, US

Basel Azzam
Engineer
MSEE, NYU Polytech
Old Tappan, NJ, US

Jesse Babb
EIT, LEED AP, BSEE
Univ. of Oklahoma
Norman, OK, US

Taurug Baca
B.S., Comp. Eng., UF
St. Augustine, FL, US

Christopher Backus
Senior Engineer
B.S. Mech. Eng., MSOE
Bothell, WA, US

Robert Baeyen
B.S. Metall. Eng.
Univ.of Missouri
Sonoma, CA, US

Phil Bales
Aerospace Reliability,
Life Cycle Engineer,
B.S., Aerospace Eng.
St. Louis Univ.
Columbus, IN, US

Matthew Barchman
B.S., Const. Eng., ISU
Denver, CO, US

Michael Barg
ME. Aerospace
Cornell Univ.
Lexington, MA, US

Jack Barke
B.S. Mech. Eng.
Univ. of Minnesota
Everett, WA, US

Adam Barlow
B.S. Computer Eng.
Redmond, WA, US

William Barry
Engineer (Ret.)
BSPE
Tulsa, OK, US

Dik Bartholomew
B.S. Mech. Eng.
Sedona, AZ, US

Mark Basile
B.S. Chem. Eng.
Hollis, NH, US

Robert Bass
P.G.
MS Env. Eng.,
Univ. of Florida
Hobe Sound, FL, US

Mark Baumann
Dir. of Eng.
M.S. Aerospace Eng.
Georgia Tech
La Mirada, CA, US

Matthew Beale
Financial Risk Mngr.
B.S., M.S., Ind. Eng.
Stanford
Brooklyn, NY, US

Norman Bean
B.S. Mech. Eng.
Univ. of Maryland,
Baltimore County
California, MD, US

Engineering Professionals

Jon Beasley
B.S. Chem. Eng.
Univ. of Washington
Casper, WY, US

Dan Beausoleil
D.E.E, Elec. Eng.
Univ. of Utah
Dover, NH, US

Martin Beck
Aerospace Engineer
B.S. Electrical Eng.
Albuquerque, NM, US

Christine Begley
E.I.T.
BSCE Manhattan,
MCE Villanova
Mahwah, NJ, US

Robert Bell
B.S. Mech. Eng., UH
Seattle, WA, US

Mark Bennett
B.S. Mech. Eng.
Bonney Lake, WA, US

Kent Beus
MS Elec. Eng.
Brigham Young Univ.
Washington, UT, US

Katherine Bewersdorf
Boeing Eng.
M.S. Aerospace Eng.,
Washington Univ.
Denver, CO, US

Bharat Bhatia
Eng. MEE
Program Manager
San Jose, CA, US

Prasad Bhatt
President
Certaire Tech. Servs.
Masters in Mech. Eng.
Arlington Heights, IL, US

Scott Biba
Sr. Mech. Eng.
BSME, GMI Eng. &
Management Inst.
Waunakee, WI, US

Peter Bick
B.S. and M.S.
Elec. Engineering
Univ. of NH
Tega Cay, SC, US

Karel Bielstein
Professor
B.S., M.S. Geo. Eng.
SDSM&T
Rapid City, SD, US

Brent Bill
B.S., Ind. Eng.
Nashville, TN, US

Derick Bingman
BSEE,
Univ. of Utah
Salt Lake City, UT, US

Jeffrey Bishop
B.S. Civil Engineering
University of Texas
Austin, TX, US

Steve Bishop
Senior System Adm.
B.S. Elec., Comp. Eng.
Boise, ID, US

Joe Blackett
B.S. Marine Eng.
Oakland, CA, US

Brian Blair
B.S. Eng. CWRU
Peninsula, OH, US

William Blanch
B. Engineer
B.S. Aerospace Eng.
San Jose St. Univ., CA
Hayward, CA, US

Erich Blohm
Eng. Consultant
M.S. Mech. Eng.
Columbia Univ.
Rhinebeck, NY, US

Raymond Blohm
Aerospace Eng.
B.S., M.S.
Aerospace Eng.
VA Tech
Shady Cove, OR, US

Eric Blomgren
B.S. Civil Eng.
Iowa State Univ. of
Science and Tech.
Mankato, MN, US

Alvin Bloom
Eng. Consultant
B.S., MS, Ph.D.
Aerospace Eng.
San Antonio, TX, US

John Boardman
Life Member,
ASME, IEEE
B.S. Eng. USNA
Madison, MS, US

Nicholas Bogdanos
Manufacturing Eng.
B.A. Mech. Eng., TU
Fort Worth, TX, US

Cesar Bogino
Engineering Staff
AE & MSAE,
USNPGS, BSME,
Univ. of Peru
Yucaipa, CA, US

Vlad Bondarev
Systems Support Eng.
M.S. in Mech. Eng.
Burlingame, CA, US

Kristopher Borer
M.S. Engineering
Philadelphia, PA, US

Philippe Bossard
MSEE ETH, MBA,
U of San Francisco
Miami, FL, US

William Bowie
BSME
Clarksburg, WV, US

Robert Bowman
Dr., Lt. Col., USAF, (Ret.)
Eng. Manager
Ph.D., Aeronautics,
Nuclear Eng., Caltech
Melbourne, FL, US

Lawrence Boyer
Asst. Professor of
Aerospace & Mech. Eng.
Master of Science
St. Louis Univ.
Saint Louis, MO, US

Steven Boyer
B.S. Chem. Eng.
B.S. Biochemistry,
Univ. of Minn.
Saint Paul, MN, US

George Brady
B.S.
Mining/Minerals Eng.
Boardman, OH, US

Jason Brandenburg
B.S. Mech. Eng.
Michigan Tech. Univ.
Portage, MI, US

Peter Brand
B.S. Mech. Eng.
Univ. of Florida
Louisville, KY, US

George Brandt
Computer Consultant,
CEO of Systems Res.
B.S.E.E.
Univ. of Colorado
Broomfield, CO, US

Jim Braun
B.S. Civil Eng., CSU
Cleveland, OH, US

Peter Bray
Masters,
Mech. Eng. Design
Benicia, CA, US

Laurence Breaker
B.S.M.E.,
Bucknell Univ.
Santa Cruz, CA, US

Cliff Breazeale
BSME
Univ. of S. Carolina
Greenwood, SC, US

Jeff Bremer
B.S.M.E,
Univ. of Michigan
Livonia, MI, US

Paul Briggs
Mech. Eng.
Quindaro Plant
B.S. Mech. Eng.
Kansas St.
Kansas City, KS, US

James Bronke
Eng. Consultant
BSEE, CSUN
Cassopolis, MI, US

Paul Browning
Eng. Staff
B.S. Aerospace Eng.
NCSU, MS OR Stanford
Atlanta, GA, US

Larry Brownstein
B.S., Elec. Eng.
Culver City, CA, US

Alex Bruder
B.S. Mech. Eng.
East. Wash. Univ.
Seattle, WA, US

Travis Bruehl
B.S. Elec. Eng.
Milwaukee School
of Engineering
Ocoee, FL, US

Jason Bryant
B.S. Electrical Eng.
Stanford Univ.
Santa Cruz, CA, US

Nathan Bryant
B.S. Mat. Sci. and Eng.
Wright State Univ.
Fairborn, OH, US

Lisa Bueno
B.S., Aerospace Eng.
Georgia Tech.
Albuquerque, NM, US

Bruce Burdick
Eng. & Patent Atty.
B.S. Eng., Stevens Inst.
Alton, IL, US

Engineering Professionals

David Buren
B Elec. Eng.
Univ. of Detroit,
Peterborough, NH, US

Sylvester Burford
B.S. Mech. Eng.
Florida Intl. Univ.
Lewisburg, WV, US

Edward Burniski
Licensed Contr., Inventor
B.S., Elec. Eng. Tech.
Wilkes-Barre, MA, US

Taylour Burton
B.S.
Petroleum Eng.
Montana Tech.
Houston, TX, US

Tariq Butt
Tech. Project Mngr.
BSC Eng., MBA
Raleigh, NC, US

Chris Byers
B.S. Elec. Eng.
College Station, TX, US

Michael Byrne
B..S Chem. Eng.
Penn State Univ.
Jupiter, FL, US

Harold Cadman
BSEE, MBA
Hollis, NH, US

John Caiazza
Lead Stress Eng.
Spirit Aerosystems
BSAE
Embry Riddle Aero. Univ.
Wichita, KS, US

Christian Calderon
BE Civil Eng.
City College of NY
Miami, FL, US

Wilson Callan
B.S. Elec. Eng.
Univ. of Conn.
Sandwich, MA, US

Joseph Camera
B.S. Mech Eng.
Florida Inst. of Tech.
Lompoc, CA, US

Matthew Camilli
Power Systems Eng.
B.S., Elec. Eng.
SUNY IT
Oneida, NY, US

Guillermo Cancio
Eng. Staff (Ret.)
Mech. Eng., FAU
Hollywood, FL, US

Ronald Cao
Sr. Elec. Eng.
BSEE, MSEE
Stanton, CA, US

Carlos Caridad
Masters in Elec. Eng.
Argentinean Nat. Tech.
Univ. Cordoba
Torrance, CA, US

Thomas Carter
Eng. Staff, Optics
San Diego, CA, US

Don Cassidy
B.S. Elec. Eng.
Colorado State Univ.
Monument, CO, US

Luis Castano
B.S. Eng.
Arizona State Univ.
Allentown, PA, US

Bruce Caswell
M.S. Engineering
Univ. of Michigan
Dearborn, MI, US

James Catterall
Senior Engineer
B.S. in Eng.
Casco, MI, US

Eric Catuccio
B.S. Chem. Eng.
M.S. Polymer Science
Westfield, MA, US

Bruce Cepas
B.S., Elec. Eng.
Mount Laurel, NJ, US

Michael Cerasiello
Eng. Consult. Emeritus
B.S.I.E.T.
S. Polytechnic St. Univ.
Kennesaw, GA, US

Peter Chan
B.S. Mech. Eng.
Univ. of IL, Chicago
San Diego, CA, US

Robin Chase
Engineering Staff
Univ. of Maryland
Tucson, AZ, US

David Chen
Ph.D. EE
Univ. of Illinois
Irvine, CA, US

Dane Christie
B. Eng., Chem. Eng.
City College of NY
Princeton, NJ, US

Daniel Clark
Engineering Staff
M.S., Mech. Eng.
UW-Madison
Auburn, NY, US

Christian Clausen
Reg. Prof. Land Surveyor
B.S., Surveying Eng.
NMSU
El Paso, TX, US

Dave Clifford
B.S. Aerospace Eng.
Cal Poly SLO
San Luis Obispo, CA, US

Ronald Coddington
B.S. Mech. Eng.
Syracuse Univ.
Willow Spring, NC, US

Steven Cohn
Engineer
B.S. Engineering,
Univ. of Arkansas
Tempe, AZ, US

Robert Coleman
Dallas, TX, US

Chad Coles
B.S.E.E.T.
Purdue Univ.
Indianapolis, IN, US

Alfred Collins
B.S. Elec. Eng.
Univ. of Houston
Houston, TX, US

Michael Collins
BS, MS, Mech. Eng.
Florida State Univ.
Jacksonville, FL, US

Moises Colon
Eng., Energy Auditor
Elec. Engineer
Carolina, PR, US

Avery Colter
Energy Effic. Analyst
EIT, LEED-AP, B.S.
Bay Point, CA, US

Wilfredo Colón-Santiago
Chemical Engineer
B.S. ChE
Tampa, FL, US

Michael Connor
B.S. Mech. Eng.
Univ. of Maine
Box Elder, SD, US

Victor Connor
IBM Eng. (Ret.)
M.S. Elec., Comp. Eng.
Normal, IL, US

Leif Cook
Mech. Eng.
B.S. Mech. Eng.
Boulder, CO, US

Travis Cook
Engineer Intern
BSEE; BSCPE
Elkins, WV, US

Robert Cooper
B.S. Ch.E, Penn St.
Hoover, AL, US

Pablo Corbella
B.S. Elec. Eng.
Drexel Univ.,
Philadelphia, PA, US

Michael Corey
Eng. Consultant
Master in Elec. Eng.
Austin, TX, US

James Cornwell
Student
Chem. Eng., Minn.
Saint Paul, MN, US

Stephen Cottrell
B. of Chem. Eng.
Univ. of Delaware
Landenberg, DE, US

Gregory Covington
B.S. CNSM
KS St. College of Eng.
Manhattan, KS, US

David Cox
BSEE
Univ. of Colorado
Palisade, CO, US

Tom Cox
B.S. Mech. Eng.
New Mexico St. Univ.
Reno, NV, US

Nate Craine
B.S. Mech. Eng.
Ohio State Univ.
Columbus, OH, US

John Crawford
B.S. Eng.
Eng. Consultant
Opelika, AL, US

Engineering Professionals

Terri Creech
B.S.M.E.
B.S. Mech. Eng.
Oklahoma City, OK, US

Walter Crompton
Sr. Quality Engineer
MS Elec. Eng.
Certified Quality Eng.
San Mateo, CA, US

George Cubas
B.S. Chem. Eng.
The Univ. Houston
Houston, TX, US

Kevin Cullinan
Engineering Staff
B.S. Eng., UC Davis
Sacramento, CA, US

Dana Curtis
Mech. Eng.
Bachelor Mech. Eng.
Starksboro, VT, US

Kenneth Curtis
B.S., M.S., Met.E.
Polytechnic U. of NYU
Boynton Beach, FL, US

Ronald Cutburth
Dr., Ph.D
Mng. of Eng. Sci. Ops.
Greeneville, TN, US

Matthew Cutter
Engineer
B.S., MS Eng.
Tampa, FL, US

Christopher D'Andrea
B.S. Aerospace Eng.
Buffalo, NY, US

Mark Dabney
Technician
BSMET
Tucker, GA, US

Kevin Dale
B.S. Elec. Eng.
Purdue Univ.
Greenwood, IN, US

Noah Dalton
Engineer
B.S. Mech. Eng.
Colorado St. Univ.
Fort Collins, CO, US

Brandon Davis
B.S. Mech. Eng.
LeTourneau Univ.
Longview, TX, US

Howard Davis
EE, Elec. Eng. Cons.
BSEE
Brooklyn, NY, US

Janna Davis
IOE
B.S. Eng., Michigan
Chicago, IL, US

Malcolm Davis
B.S. Aerospace Eng.
Univ. of Texas, Austin
Dallas, TX, US

Michael Davis
B.S. Eng. Tech.
Cal. St. Univ.
Sacramento
Auburn, CA, US

Michael Davis
B.S. Chem. Eng.
Cal. State Univ.
Long Beach
M.S. Eng., CSULB
Aurora, IL, US

Paul Davis
B. Eng. Science
Georgia Inst. of Tech.
Marietta, GA, US

Rudy Davis
B.S. Elec. Eng.
Dallas, TX, US

Stephen Davis
Engineer
B.S., M.E.,
Texas Tech. Univ.
Carrollton, TX, US

Donald Dawson
B. Mech. Eng.
Manhattan College
Ithaca, NY, US

Doug de la Torre
B.S. Elec. Eng., WSU
Renton, WA, US

Norman De Silva
Master of Eng.
Howard Univ.
Randallstown, MD, US

Kenneth DeAlmeida
B.S.M.E.
Boscawen, NH, US

Joseph DeClue
B.S. EE M.I.T.
Santa Ana, CA, US

Dwain Deets
Flight Res. Eng. (Ret.)
M.S. Physics, SDSU,
M.E. UCLA
Encinitas, CA, US

John Deliberto
Transportation Eng.
B.S. Civil Eng., U. Conn.
Vernon, CT, US

Vincent DeLuca
B.S.E.E.
Great Falls, VA, US

Michael Deming
Mech. Eng.
Golden, CO, US

Benjamin Dermer
EIT
BSME, NCSU
Raleigh, NC, US

Dave DeSimone
B.S. Civil Eng.
Univ. of Rhode Island
Knoxville, TN, US

Gunthar Detches
BS, CEM,
Long Beach St. Univ.
Aliso Viejo, CA, US

Paul Dewey
Mech. Eng.
B.S. M.E.
San Diego St. Univ.
Poway, CA, US

Kurt DeWitt
Managing Consult.
B.S. Elec. Eng.
UAL, Huntsville
Dallas, GA, US

Maurizio Di Pierro
Ph.D., Student
MS Aerospace Eng.
Politecnico di Torino
Royal Oak, MI, US

Brett Diggins
BS Arch. Eng.,
MS Struct. Eng.
Milwaukee Sch. of Eng.
Chicago, IL, US

Justin Dillman
B.S. Mech. Eng.
Lexington, KY, US

David Dillner
BAS, Elec. Eng. Tech.
ITT Tech. Inst.
Crawfordsville, IN, US

John DiNatale
CEO, Karina Aerospace Inc.
Mech. Eng./Math.
CSI-NY
Parlin, NJ, US

Thomas Dolan
Aerospace Eng. (Ret.)
BSME-IIT, MSAE-USC,
MSEA-TCEA (NATO)
Nipomo, CA, US

Daniel Donahue
B.S. Mech. Eng.
Lawrence Tech. Univ.
St. Clair Shores, MI, US

Bob Donjacour
Elec. Eng.
B.S. Elec. Eng.
Cornell
San Francisco, CA, US

Craig Dostie
J.O.A.T.M.O.N.
BA, Communications,
BSEE, Univ. of Michigan
Truckee, CA, US

Tad Dougherty
Elec. Eng.
B.S. Elec.
Univ. of California,
Santa Barbara
Goleta, CA, US

John Doughty
B.S. Elec. Eng.
Kansas State Univ.
M.S. Eng. Mgnt.
Univ. of Kansas
Overland Park, KS, US

Roy Dudley
B.S. Mech. Eng.
Oakland Univ.
Daly City, CA, US

Brian Dugay
Digital Forensic Analyst
B.S., Eng., Univ. of Mass
San Jose, CA, US

William Dumke
M.S. Elec. Eng.
Univ. of WI, Madison
Green Bay, WI, US

Harold Duncan
B.S. Elec. Eng.
Iowa State Univ.
Palmdale, CA, US

David DuPaul
Engineer
B.S. Mech. Eng., Physics
Trinity College
East Haven, CT, US

William Durfey
MS Syst. Eng.
Univ. of Arizona,
Gallina, NM, US

Roger Dwyer
B.S. Mech. Eng.
Univ. of New Haven
Kila, MT, US

Jack Edling
B.S. Ind. Eng.
Purdue University
Fenton, MI, US

Engineering Professionals

Larry Edwards
B.S. Aeronautical Eng.
B.S. Mech. Eng.
Sitka, AK, US

Jesse Elliott
Safety & Quality Officer
B.S. Mech. Eng.
San Luis Obispo, CA, US

Marsha Elliott
Env. Consultant
M.S., Env. Eng., USC
Walnut Creek, CA, US

Paul Elliott
B.S. Metall. Eng.
Univ. of Missouri
Eureka, MO, US

Timothy Ellison
Ph.D., Phys. and Eng.
Ph.D. Physics I.U.
B.S. Eng. Univ. of ND
Nashville, IN, US

Roger Ellman
M.S. Elec. Eng.
Stanford University
Santa Rosa, CA, US

Mohamed Eltarkawe
B. Eng., Mech. Eng.
Omar Al Mukhtar Univ.
MS Mech.Eng.
Univ. of Colorado
Boulder, CO, US

Irucka Embry
B.S.C.E.,
Eng.-in-Training
B.S. Civ. Eng.,
Minor Env. Eng.
Murfreesboro, TN, US

Obiora Embry
E.I.T., B.S. Eng.
Univ. of Tennesee
Lexington, KY, US

Brad Epperson
Test Engineer
BSEET
Troy, MI, US

Robert Epperson
E.I.T.
BS Civil Eng.
Texas Tech Univ.
Fort Worth, TX, US

Erk Erginer
Dr., Ph.D. Metall. Eng.
Brown Univ.
Winston-Salem, NC, US

Larry Erickson
Res. Eng. (NASA Ret.)
Ph.D., VA Polytechnic
Institute & SU
Pismo Beach, CA, US

Donald Ericson
B.S. E.E., Elec.
MI State Univ.
Santa Clara, CA, US

Benjamin Erwin
B.S. Engineering,
B.S. Aerospace Eng.
M.I.T.
Cambridge, MA, US

Jon Eulette
B.S. Civil Eng.
CA Polytech Univ.
Banning, CA, US

Arthur Evans
Clackamas, OR, US

George Everett
B.S., USCGA; BSEE, MIT.
Edmonds, WA, US

Edwin Faber Jr.
Mech. Eng.
B.M.E. Cornell Univ.
Grad Program
Rhinebeck, NY, US

Charles Faddis
Bainbridge Island
WA, US

Christopher Fagan
BSEE, Fmr. Eng.
Molalla, OR, US

Phillip Falardeau
Staff Engineer
B.S., Civil Eng.
Marietta, GA, US

Chach Fallgatter
B.S., General. Eng.
Cal Poly SLO
Guerneville, CA, US

Frankret Farmer
BS/ME SMU, Navy Pilot
Ash Fork, AZ, US

Chris Farnworth
Controls Engineer
B.S. Elec. Eng.
Arvada, CO, US

Luis Feliu
Mech. Engineer
B.S., Mech. Eng.
UPRM
Kearneysville, WV, US

Russell Felt
B.ChE, JD
Univ. of Minn.
St. Paul, MN, US

Joseph Ferguson
Engineering Staff
Bach. Comp. Eng.
Auburn Univ.
Menlo Park, CA, US

Michael Figa
Senior Process Eng.
Biomedical Eng., M.S.
Cambridge, MA, US

Robert Firmature
B.S., M.S.E, Mech. Eng.
Univ. of Iowa
Thornton, CO, US

Timothy Fishel
Engineering Staff
BSME, Bradley Univ.,
Peoria, IL
Chillicothe, IL, US

Jonathan Fishman
B.S. Civil Eng.
UC Davis
Arnold, CA, US

Thomas Fitzgerald
B Mech. Eng.
Stony Brook Univ.
Manorville, NY, US

Daniel Fleege
EIT Eng. Staff
M.S. Civil Eng.
w/ Env. Emphasis
Oakland, CA, US

Keith Fleming
Engineering Staff
B.S. Mech. Eng.
Auburn, GA, US

William Fleming
Eng. Consultant
BSME, Univ. of Texas
Asheville, NC, US

Gary Flomenhoft
B.S. Mech. Eng.
Tufts Univ.
Burlington, VT, US

Daniel Flynn
Student
B.S. Elec. Eng.
CSULB
Newport Beach, CA, US

Juan Fonseca
M. Sci.
M.S. Eng. Mgt., USC
Dallas, TX, US

Edwin Force
Ph.D. (Ret.)
Ph.D. Chem. Eng.
UC Berkeley
Berkeley, CA, US

Michael Ford
B.S. Radiological Eng.
Texas A&M Univ.
Amarillo, TX, US

Paul Forrest
Birkenhead, GB

Yehia Fouad
Engineer
B.S. Chem. Eng.
Purdue Univ.
Indianapolis, IN, US

George Foushi
Business Owner
B.S. Aeronautical Eng.
Oro Valley, AZ, US

Alex Fouss
Engineer
Boulder, CO, US

Skip Fralick
Energy Engineer
BSME
San Diego, CA, US

Michael Fraser
Mech. Eng.
Crosslake, MN, US

Bo Fredricsson
MSEE
Pittsburgh, PA, US

Jerome Freedman
B.S. Chem. Eng.
Purdue Univ.
Greenbrae, CA, US

Marc Frey
Engineer
B.S., Mech. Eng., RPI
Schenectady, NY, US

Robert Fritzius
Elec. Eng. (Ret.)
B.S. Elec. Eng.
Purdue Univ.
Lafayette IN
Starkville, MS, US

William "Clay" Fulk
Charleston, SC, US

David Fura
Ph.D. Elec. Eng.
Univ. of Washington
Portland, OR, US

Patrick Gallagher
BSME
Albuquerque, NM, US

Adrianna Galletta
Eng. Consultant
BSEE
Fishkill, NY, US

Albert Gearing
BSEE
Electronics Option
Univ. of Illinios
Burleson, TX, US

Engineering Professionals

Arthur Geldres
B.S. Engineering
Univ. of Michigan
Saint Clair, MI, US

Thomas Gentilo
Eng. Staff, EIT, CWI
BA Geol., B.S. Gen. Eng.
Univ. of Montana
Port Angeles, WA, US

Stan Gentry
Software Eng.
B.S. Eng., Physics
Univ. Oklahoma
Reeds Spring, MO, US

Mark Gergely
BSEE, PSU
Ebensburg, PA, US

Mark M. Giese
B. Met. Eng.
Racine, WI, US

John Gilmore
Civil Engineer
BS, CE, Purdue Univ.
Norcross, GA, US

Gian Girardi
B.S. Civil Eng.
Catholic Univ. of
Santiago, Chile
Glendale, CA, US

Filson Glanz
Ph.D. EE
Durham, NH, US

Sean Glazier
Lead Engineer
BSEE
Queen Creek, AZ, US

Robert Goddard
B.S. Elec. Eng.
Univ. of Colorado
Boulder, CO, US

Lester Goodger
Engineer
B.S.E.E,
W. Michigan Univ.
Cassopolis, MI, US

Srinivas Gopal Krishna
BE Mech., SCSVMU
Tamil Nadu, India,
Ph.D. Mech. Eng.
Louisiana State Univ.
Houston, TX, US

Charles Goyette
Engineering Staff
B.S.M.E., B.S.E.E.,
M. Ed, Math
Austin, TX, US

Joseph Grab
B.S. Elec. Eng.
Penn State Univ.
Killeen, TX, US

Michael Graham
BSEE
Kenosha, WI, US

Anton Grambihler
B.S. Mech. Eng.
SDSM&T
Richland, WA, US

Diana Grauer
Ph.D. Mech. Eng.
Kansas State Univ.
Cypress, TX, US

Lathan Gravelle
B.S. Arch. Eng. Tech.
Vermont Tech. College
Richmond/Jericho, VT, US

Terry Gray
DDS, BSEE,
B.S. Biomed. Eng.
Wichita, KS, US

David Gregg
Ph.D., Chem. Eng.
Moraga, CA, US

Juergen Greve
B.S. Mech. Eng.
Kansas State Univ.
Topeka, KS, US

David Griffin
B.A. Mech. Eng.
Cape Technikon
Royal Oak, MI, US

Andrew Griffith
B.S. Chem. Eng.
Seattle, WA, US

Peter Grosch
B.S. Mech. Eng.
Worcester Polytech. Inst.
Winston-Salem, NC, US

Warren (xiang) Guan
VP of Engineering
B.S. Comp. Science
& Engineering
Univ. of California
San Francisco, CA, US

James Guenes
Elec. and Systs. Eng.
B.S. Elec. Eng. Tech.
Cincinnati, OH, US

Christopher Guida
B.S. Elec., Comp. Eng.
Carnegie Mellon Univ.
Denver, CO, US

Timothy Guiles
B.S., B. Eng.
Dartmouth College,
Thayer School
Brandon, VT, US

Adam Gumul
Professional Eng.
BSME, Oakland Univ.
Shelby Township, MI, US

Mark Gunderson
B.S. Mech. Eng.
Portland State Univ.
Portland, OR, US

Tyson Gustus
Eng. Consultant
M.S.M.E., UC Berkeley
San Diego, CA, US

Eric-Scott Guthrie
B.S. Elec. Eng.
Univ. of N. Carolina
Carrboro, NC, US

Bruce Haas
Project Manager
BSCE
Bellingham, WA, US

Ryan Haas
B.S. Civil Eng.
PSU
Austin, TX, US

Rodney Hagel
B.S. Mech. Eng.
Washington St. Univ.
Spokane, WA, US

Roque Haines
Eng. Tech. Manager
BSME
West Virginia Univ.
Maplewood, MN, US

Alan Halbert
Mech./Project Eng.
BASEET & CMBA
Bluffdale, UT, US

Denise Hall
B.S., Mfg. Eng.
Bradley Univ.
Memphis, TN, US

Ralph Hallmark
MS Mech. Eng.
Fairleigh Dickinson Univ.
Teaneck New Jersey,
Keyport, NJ, US

Peter Hall
MS, EE, MIT
South Wellfleet, MA, US

Donald Hammen
Mech. Eng., M.S.M.E.
Rochester, NY, US

Sherman Handberg
B. Mech. Eng.
Duluth, MN, US

Kai Hankinson
MBA, CEO
B.S. Eng.,
Cornell Univ.
Carlsbad, CA, US

Charles Hanna
Eng. Consultant
Bach.of Civil Eng.
Georgia Tech
Denville, NJ, US

Richard Hansel
B.S. Chem. Eng.
UW, Madison
Washington, WV, US

John Harle
B.Sc. Aero Eng.
Imperial College
Seattle, WA, US

Ken Harp
B.S. Mech. Eng.
UC San Diego
Kirkland, WA, US

Benjamin Harrison
B.S. Aerospace Eng.
MS Eng. Mech.
Univ. Texas, Austin
Austin, TX, US

Howard Hartman
B.S.M.E.
Univ. of Colorado
Broomfield, CO, US

Maurice Hartman
Eng. Consultant
M.S. Eng. Math
Univ. of Tulsa
Placentia, CA, US

Hans Gregory Hartmann
B.S. Mech. Eng.
Montana State Univ.
Bunnell, FL, US

Zachary Hart
B.S. Engineering
Purdue University
Hermosa Beach, CA, US

Syed Imran Hasan
B Eng.
Univ. Inst. of Tech.
Bhopal India
Pasadena, CA, US

Kristen Haskell
BSME, Univ. of Maine
Lovell, ME, US

Engineering Professionals

Richard Hatcher
B.S. Elec. Eng.
Univ. of Florida
Jeffersonville, IN, US

Todd Hathaway
B.S. Metall. Eng.
Atlanta, GA, US

James Hayhurst
Parachute Designer
& Test Jumper; Writer
B.S. USAF Academy
Bradfordwoods, PA, US

Stan Head
B.S. Mech. Eng.,
B.S. Math. Eng.
Univ. of Michigan
San Jose, CA, US

Colin Heidtman
B.S., M.E.
UMD College Park
Idaho Falls, ID, US

William Helbig
LSIT
B.S. Surveying AS EE
Marietta, GA, US

William Helgeson
Eng. Staff
B.S. Civil Eng.
U of Minn.
Edina, MN, US

Shelton Hendriex
B.I.E., Eng.
Georgia Tech
Cincinnati, OH, US

Robert Henson
Engineer
B.S. Mech., Nuclear Eng.
Winter Park, FL, US

Tony Hepp
Design Engineer
B.S. Mech. Eng.
Univ. of AR
Spring, TX, US

Rodger Herbst
Engineering Staff
BAAE, ME
Ohio State Univ.
Snohomish, WA, US

Eric Heredia
Elec. Engineer
B.S. Elec. Eng.
Vancouver, WA, US

Richard Hermann
BSEE
Long Beach, CA, US

Eric Hermanson
B.S. Eng. Physics,
M.S. Nuclear Eng.
Detroit, MI, US

Melvin Hernandez
Manufacturing Eng.
B.S. Mech. Eng., NJIT
Jersey City, NJ, US

Henry Herskovitz
Mech. Eng. (Ret.)
BSME
Ann Arbor, MI, US

John Hesson
B.S. Petrol. Eng. Tech.
Little Rock, AR, US

Josh Higgins
Engineer
Corvallis, OR, US

T. Mark Hightower
B.S., MS, Chem. Eng.
San Jose State
Univ. California
San Jose, CA, US

James Hillabrand
Civil Eng. Grad. Student
B.S. Civil Eng.
Univ. of Arkansas
Columbus, MS, US

Brendan Hill
Engineer
B.S. Mech. Eng.
W. Michigan Univ.
Kalamazoo, MI, US

Chris Hills
Sr. Ultrasonic Eng.
B.S.E.E.
Univ. of Utah
Syracuse, UT, US

William J. Hindelang
Certified Quality Eng.
B.S. Metall. Eng.
Michigan Tech
Troy, MI, US

Joel Hirschhorn
Ph.D., Fmr. Full Prof.
of Engineering
Ph.D. Mat. Eng., RPI
Chevy Chase, MD, US

Christine Hoeflich
B.S.
Materials Scientist
and Engineer
Campbell, CA, US

Bill Hoff
B.S. Mech. Eng.
Arizona St. Univ.
Suisun City, CA, US

Phil Hoff
Professor
Ph.D. Elec. Eng.
UC-Berkeley
Chico, CA, US

Brett Hoffstadt
Aerospace Eng.
B.S.AAE, M.S.AE
San Antonio, TX, US

Barrett Hoines
B.S. Elec. Eng.
SD School
Phoenix, AZ, US

William Holmes
Eng. Consultant
Aeronautical Eng.
Lancaster, CA, US

Nellie Horakhsh
Eng. Consultant
B.S., Civil Eng., SJSU
San Jose, CA, US

Norma Hostetler
B.S. Mech. Eng.
Cal State Polytechnic
Univ., Pomona
Torrance, CA, US

Kevin Hotton
MS Mech. Eng.
Univ. of Florida
Arvada, CO, US

Larry Howe-Kerr
B.S. Eng.
Miss. St. Univ.
Louisville, KY, US

Rich Howe
Eng. Consultant
B.S. Elec. Eng.
Atascadero, CA, US

Paul Howes
Eng. Staff
B.S.E.E., Electronics
Boulder, CO, US

Larry Hoy
B.S.
Aeronautical Eng.
Wichita St. Univ.
Wichita, KS, US

Bret Hughes
B.S. Aero. Eng.
Cal Poly
Santa Barbara, CA, US

Ralph Hughes
B.S. Mech. Eng.
Mesa, AZ, US

Kenneth Hulet
Eng. Consultant
B.S., Eng. Mgmt.
Univ. of Ill., Chicago
Homewood, IL, US

Adam Hunt
Engineer
B.S. Mech. Eng.
Bucknell Univ.
Brooktondale, NY, US

Ted Huntington
B.S. Computer Eng.
Clarkson Univ.
Irvine, CA, US

John Huntzinger
B.S. Agri. Eng.
Purdue Univ.
Indianapolis, IN, US

David Hyer
B.S. Chem. Eng.
NCSU
Novato, CA, US

Paul Hylander
M.S. Elec. Eng.
Wash. St. Univ.
Plano, TX, US

Eliezer Ihejirika
Engineering Staff
B.S. Elec. Eng.
San Diego, CA, US

Robert Ireland
B.S. Chem. Eng.
Beaverton, OR, US

Ahmet Iscen
Software Engineer
B.S. Computer Eng.
Seattle, WA, US

David Isham
M.S. Computer Sci.
Cal Poly SLO
San Rafael, CA, US

Mohamad Ishwait
B.S.E.E.
Anaheim, CA, US

Jonathan Iungerich
BSME Mech. Eng.
San Diego, CA, US

Leigh Jackson
B.S. Mech. Eng.
Melbourne, FL, US

Patrick Jacobs
Electrical, Nuclear
Eng. (Ret.)
MSEE, Oregon St. Univ.
Longmont, CO, US

Engineering Professionals

Hiram Jacques
BSEE, MSEE
Univ. of Texas, Austin
Sweetwater, TX, US

Anila Jahangiri
Ph.D., BSEE,
MS Biomedical Eng.
Charlottesville, VA, US

John Jaksch
Design Engineer
BSME, Univ. of Ill.
Glenview, IL, US

Martin Jalovec
Engineering Staff
B.S. Mech. Eng.
Southern Illinois Univ.
Carbondale, Ill.
Huntsville, AL, US

Patrick James
B.S. Plastics Eng. Tech.
Ferris State Univ.
Brier, WA, US

Roy Jarl
B.S. Eng. USB
San Francisco, CA, US

James Jasiewicz
B.S. Mech. Eng.
Purdue University
Torrance, CA, US

Marshall Jeffus
Sr. Mech. Eng.
B.E.S.M. Georgia Tech.
Bastrop, TX, US

Bruce Jenkins
Aeronautical Eng.
B.S., Northrop Univ.
Sunnyvale, CA, US

Ken Jenkins
B.S. Carnegie Mellon
Elec. Engineering
Oakland, CA, US

Dan Jensen
B.S. Mech. Eng.
Iowa State Univ.
Rochester, MN, US

Shawn Jensen
M.S. Eng. Staff
M.S. Eng. Mgt. BSME
New Mexico St. Univ.
Madison, AL, US

Karl Joerger
Mech. Design Eng.
BSME, UT Austin
Austin, TX, US

Eric Johanson
B.S. Civil Eng.
Polytechnic Inst. of Brooklyn
Moab, UT, US

Jonathan Johns
BSEE
Racine, WI, US

Christine Johnson
MSEE, MES
M.S., Elec. Eng., Drexel
Corvallis, OR, US

Derek Johnson
E.I.T., C.W.I.
B.S. Mech. Eng.
Marlin, TX, US

Eugene Johnson
B.S. Mech. Eng.
SD School of Mines
and Technology
Allen, TX, US

James Johnson
M.E. Environ. Eng.
Univ. of Florida
Ft. White, FL, US

Nils Johnson
Alva, FL, US

Philip Johnson
Sr. Principal Syst. Eng.
M.S. Eng. Physics
Durham, NH, US

Tracy Johns
Engineering Staff
B.S.E.E.T., Elec.
Wash. St. Univ.
Ogden, UT, US

Curtis Jones
Ph.D. Elec. Eng.
Purdue Univ.
San Jose, CA, US

James Jones
Civil Eng. Asst.
B.S. Metall. Eng.
Univ. of TX, El Paso
Tucson, AZ, US

Mark Jones
BEE
Huntsville, AL, US

Paul Jones
Maitland, FL, US

Steven Jones
Prof. of Physics
Emeritus, Sr. Eng.
Ph.D., Physics,
Vanderbilt Univ.
Spring City, UT, US

John Kabitzke
Telecom. Manager
B.S Ch. E.
Des Moines, IA, US

Gordon Kallenberg
M.S. Materials Eng.
Drexel University,
Katy, TX, US

Laurence Kaplan
B.S. Civil Eng.
CU Boulder
Bethlehem, NH, US

Jay Kappraff
Assoc. Prof. of Math.
Ph.D, M.S., M.A.,
B. Chemical Eng.
South Orange, NJ, US

Anthony Kassel
B.S. Elec. Eng.
Lawrence Inst. of Tech.
Hilo, HI, US

Charles Kauffman
Ph.D. Aerospace Eng.
Univ. of Michigan
Whitmore Lake, MI, US

Omid Kayvan
Project Engineer
B.S. Civil Eng.
Arizona State Univ.
Rancho Palos Verdes,
CA, US

Alan Keefe
B.S. Mech. Eng.
Bradley Univ.
Broomfield, CO, US

Doug Keenan
BSEE
Rose-Hulman Inst.
of Technology
Indianapolis, IN, US

Dean Kehoe
B.S. Mech. Eng., RPI
Arlington, MA, US

John Kelly
B.S. Mech. Eng.
Univ. of Notre Dame
East Lake, FL, US

Steven Kennedy
M.S. Mech. Eng.
Clarkson Univ.
Niskayuna, NY, US

Paul Kenyon
Eng. Consultant
BSME
Bridport, VT, US

Michael Kerner
B.S. Elec. Eng.
NYU Polytechnic
Lenexa, KS, US

Matthew Kern
Chem. Eng.
Wilton, CT, US

Dane Ketner
Physical Sci. Spec.
Elec. Engineering
Anchorage, AK, US

Arash Keyashian
B.S. E.E., UC Davis
Sacramento, CA, US

Edward Key
B.S. Mech. Eng.
Wash. St. Univ.
Royal City, WA, US

Ed Kideys
Elec. Eng.
B.S. Elec. Eng.
Sayreville, NJ, US

Charlie Kienzle
Eng. Consultant
B.S. Ind. & Syst. Eng.
Atlanta, GA, US

Jesse Kineman
Nuclear Engineer
MS Nuclear Eng.,
B.S. Physics
Seattle, WA, US

Paul Kinzelman
B.S. Elec. Eng.
Carnegie-Mellon Univ.
Peralta, NM, US

Ken Kious
Elec. Engineer
Walnut Creek, CA, US

Mark Kirchenbauer
BSEE
Walnut Creek, CA, US

Ted Kircher
M.S. Elec. Eng.
Univ. of Penn.
Honey Brook, PA, US

Michael Kirk
Staff Engineer
MSEE, Eng.
Univ. of Michigan
Mount Prospect, IL, US

Nathan Kleffman
BA Elec. Eng.
Univ. of Iowa
Chicago, IL, US

Ben Kleiman
B.S. Elec. Eng.
Austin, TX, US

Barry Klein
M.S. Computer Sci.
USC School of Eng.
St. Louis, MO, US

Engineering Professionals

Eric Klein
Eng. Consultant
M.S. Computer Eng.
Santa Clara Univ.
San Francisco, CA, US

Rolando Klein
B Ind. Civil Eng.
Univ. of Chile
Palm Springs, CA, US

Richard Knight
B.S. Eng. Physics
Rochester, NH, US

Tanya Knoop
B.S. Elec. Eng.
Oakland, CA, US

James Knowles
D. Eng., Mech. Design
UC Berkeley
Moss Beach, CA, US

David Koester
B.S. Eng. Science
Univ. of Texas, Austin
Warwick, MA, US

Siegmund Kosik
B.S.M.E.T.
Penn State Univ.
Andover, OH, US

Benjamin Kowalewski
B.S. Mech. Eng.
Magna Cum Laude,
Univ. at Buffalo, SUNY
West Seneca, NY, US

David Kowalsky
B.S. Civil Eng.
Georgia Inst. of Tech.
Asheville, NC, US

Mark Koziol
B.S. Elec. Eng.
Univ. of Illinois
Woodstock, IL, US

Denis Krasnov
M.S. Equivalent
Moscow Physics
and Technic Inst.
New York, NY, US

Jonathan Krompegal
B.S. Arch. Eng.
Univ. of Hartford
Cromwell, CT, US

Jason Kwa
B.S. Mech. Eng.
Tufts University
San Francisco, CA, US

Tom Lacey
Aeronautical Eng. (Ret.)
B.S. Aeronautical Eng.
Purdue Univ.
Weldon Spring, MO, US

Joe Lackie
Fmr. Eng. Consultant
M.S. Mech. Eng.
SUNY at Buffalo
Amherst, NY, US

James Lake
BSEET
Saint Louis, MO, US

Bat Lang
M.S. Elec. Eng.
Oklahoma St. Univ.
Kyle, TX, US

Joshua Lange
Facilities Engineer
BA Eng.
Mass Maritime Acad.
Pawtucket, RI, US

Richard Lange
Sr. Fire Alarm Tech.,
SET, CT
B.T., Elec. Eng. SUNY
Winston Salem, NC, US

John LaRandeau
Omaha, NE, US

Jeffrey Larkin
B.S. Civil Eng.
Univ. of Arizona
West Chester, PA, US

David Lasich
Project Manager
B.S. Aerospace Eng.
Carmichael, CA, US

Jeffrey Latas
Engineer
Aerospace & Mech.
University or AZ
Tucson, AZ, US

Daniel Lawton
B.S. Information
Systems Eng.
US Military Acad.
Dothan, AL, US

P. Jerry Lee
B.S. Eng. Tech.
Florida Agricultural
and Mech. Univ.
Orlando, FL, US

Hans Lentz
B.S. Mech. &
Manufact. Eng. Tech.
N. Kentucky Univ.
Alexandria, KY, US

Peter Leonard
B. Eng.
B.S., Mech. Eng.
WPI, Worcester, MA
Conway, NH, US

Daren Lester
BSEE
B.S., Eng.
Widener Univ.
Miami, FL, US

Trinh "Todd" Le
B.S. Mech. Eng.
Univ. of Illinois
San Diego, CA, US

Steven Lewis
MSEE,
Electromagnetics
& Optics, AFIT
Colorado Springs, CO, US

Jerome Liebler
EE (Ret.)
BSEE, Wayne State, MI
Science Hill, KY, US

Nicholas Liguori
Engineer
B.A., Civil Eng.
Colorado St. Univ.
Winston-Salem, NC, US

Richard Linza
I.E., B.S. Elec. Eng.
OSU
Oklahoma City, OK, US

Matthew Litwin
B.S. Computer Eng.
Tufts University
San Francisco, CA, US

Edward Liu
Arch. Engineer
Arch./Civil Eng.
Drexel Univ.
Philadelphia, PA, US

Jerry Lobdill
B.S. Ch.E.
Texas Tech.
Fort Worth, TX, US

Art Long
BSME
Palatine, IL, US

David Longino
B.S. Chem. Eng.
Univ. of Mass.
Brushton, NY, US

Joe Lopes
CGC
Civil Engineering
Danbury, CT, US

Leonard Losapio
BSME, Univ of Fla.
M.S. Eng. Mgmt.,
Fla. Tech
Melbourne, FL, US

William Loucks
BSEE & BSCS
Chillicothe, OH, US

Carolyn Lovin
B.S. Mech. Eng.
Portland, OR, US

Charles Lownes
Physician
B.S. EE, MD
Greensboro, NC, US

David Lowry
Shedd, OR, US

Gershon Luria
M.S. Ind. Eng.
Ben Gurion Univ.
San Lorenzo, CA, US

Christopher Lynch
B.S., M.S. Civil Eng.
Boulder, CO, US

Dale Lynn
BSEE, MSEE
Freehold, NJ, US

Chris Machado
Factory Manager
B.S. Manufacturing
Engineering, OSU
Medford, OR, US

John Machado
BSEE Univ. of Mass.
North Versailles, PA, US

Douglas Mackenzie
BSEE
Tollhouse, CA, US

Eugene Madsen
BSEE MBA
Fort Collins, CO, US

Nicida Maerefat
Ph.D., Dr., Res. Scientist
Sugar Land, TX, US

Matthew Maillet
E.I.T.
B.S., Mech. Eng.
Univ. of Mass.
New Bedford, MA, US

Nick Maniatis
Eng. Consultant
BSIE Arizona St. Univ.
Portland, OR, US

Randall Manyen
Mech. Engineer
BSME
Houston, TX, US

Engineering Professionals

Vicki Marburger
Engineer
B.S. Elec. Eng.
Corona, CA, US

Paul Marcantoni
Engineering Staff
B.S. Cert. Eng.
Alfred; MS Civ/
Env. Eng., GWU
Fairfax, VA, US

Jay Marchetti
Eng. Consultant
M.S. Elec. Eng.
Pittsburgh, PA, US

William Marsden
B.S. Elec. Eng.
Saint Louis, MO, US

Todd Marshall
(Ret.) BSEE
Bradley Univ.; Peoria
Plantersville, TX, US

Ernest Marth
B.S. Civil Eng.
Indiana Inst.Tech.
Fresno, CA, US

Charles Martin III
E.I.T., Const. Insp.
B.S. Env. Eng.
SUNY ESF
Lancaster, PA, US

Larry Martines
B.S. Applied Physics
Hofstra Univ. NY
Hobe Sound, FL, US

Gilbert Martinez
Eng., Elec. NMSU
Phoenix, AZ, US

Jon Martinez
EIT
B.A. Eng. & Econ.
CO School of Mines
Colorado Springs, CO, US

Christopher Martini
BSME, B.S. Eng.
Lawrenceburg, IN, US

Nicholas Martino
M.S., Civil Struct. Eng.
Cornell, Univ.
Marina Del Rey, CA, US

Steven Martinson
B.S. Mech. Eng. Tech.
Montana State Univ.
Idaho Falls, ID, US

Dana Mason
B.S. Engineering
Arizona St. Univ.
Kiowa, CO, US

Enver Masud
Eng. Mgmt. Cons.
M.S. Ind. Eng.
Arlington, VA, US

Craig Maxwell
BSEE/Computer Sci.
UCLA
Groveland, CA, US

Peter May-Ostendorp
Ph.D. Civil Eng.
Univ. of Colorado
Durango, CO, US

Lawrence Mayka
B.S.E.E.
B.S., Eng., UIC
Aurora, IL, US

Randolph Mayley
Engineer
Bachelors, E.E. &
Chem. E., LSU
Easley, SC, US

Nikolay Mayyak
M.S. Mech. Eng.,
Helicopters
Denver, CO, US

Chris McCleary
M.B.A, B.S., Gen. Eng.
USAF Academy
Las Vegas, NV, US

Christopher McCommons
B.S. Mech. Eng.
Southern Pines, NC, US

Jeremiah McCoy
Eng. Consultant
B.A., Engineering
Harvey Mudd College
Redondo Beach, CA, US

Travis McCoy
Design Engineer
B.S. Civil Eng.,
M.S. Structural Eng.
Cincinnati, OH, US

Richard McCracken
B.S. Computer Eng.
Univ. of New Mexico
Arroyo Hondo, NM, US

Thomas McCranie
Engineer (Ret.)
B.S., Engineering
Louisiana Tech
Irvine, CA, US

Ryan McDonald
E.I.T., BSEE
Minneapolis, MN, US

Peter McDowell
Senior Design Engineer
B.S., Engineering,
Univ. of Oklahoma
Oklahoma City, OK, US

Dan McFarland
Principal Elec. Eng.
BSEE
Holden, MA, US

Shawn Mcgarrah
B.S. Civil Eng.
San Francisco St. Univ.
Petaluma, CA, US

Jeff McGary
B.S. Chem. E.
Georgia Tech
New York, NY, US

Bob McGhee
B.S. Elec. Eng.
Virginia Tech
Lynchburg, VA, US

Kathy McGrade
Engineer
B.S. Materials Eng.
NMIMT
La Honda, CA, US

Donald McGrath
B.S. Metallurgy, MIT
Fallbrook, CA, US

Hugh McInnish
B.S. in EE, Univ. of AL
MA in Math, UAH
Huntsville, AL, US

Robert McNamara
B.S. Ceramics Eng.
Missouri School Mines
Arvada, CO, US

Brian McNiff
Engineer
B.S. Mech. Eng.
Drexel Univ.
Elkridge, MD, US

Barry Mead
Electronics Eng.
B.S. Elec. Eng. Tech.
Tempe, AZ, US

Steve Meadows
Software Engineer
M.S., E. Engineering,
Texas Tech Univ.
Houston, TX, US

Jack Meagher
Quality Engineer
B.S. in Nuclear Eng.
Lunenburg, MA, US

Joseph Mellon
Eng. Graduate
B.S. Engineering
Millikin Univ., Decatur, IL
Alpharetta, GA, US

Toby Menard
B.S. Mech. Eng.
Univ. of LA, Lafayette
Lafayette, LA, US

Billy Mendoza
B.S. Industrial Eng.
Las Cruces, NM, US

John Merry
E.I.T.
B.A., EET
Univ. of Maine
Weare, NH, US

David Metzger
B.S. Const. Eng.
Purdue Univ.
Mill Valley, CA, US

Eli Meyer
Arch./Eng. Staff
B.S. Aeronaut. Eng.
Kings Beach, CA, US

Jonah Meyer
B.S. Mech. Eng.
Grove City College,
Cambridge Springs, PA, US

Mike Meyer
Mechanical Eng.
Tempe, AZ, US

Nathan Meyers
B.S. Computer Eng.
Purdue University
San Francisco, CA, US

Barbara Michalec
Prof. Engineer
BSEE San Diego St. Univ.
San Diego, CA, US

Phillip Middlebrooks
Sr. Mech. Eng.
B.S. Ceramic Eng.
Clemson Univ.
Knoxville, TN, US

Bill Miller
(Ret.) B.S. Mining Eng. CSM
Fort Collins, CO, US

Douglas Miller
Engineering Staff
M.S. Materials Sci.
Ohio State Univ.
Bellevue, WA, US

Jeffrey Miller
B.S. Mat. Science,
Metall. Engineering
Albertville, MN, US

Engineering Professionals

Mark Miller
Eng. Manager
BSEE, Penn State
Fulton, MD, US

Todd Miller
Electrical/Controls
Engineer & Designer
B.S.E.E.T
Columbus, OH, US

Andrew Millikin
Eng. Consultant
Elec. Engineering
Laurel, MD, US

Mike Mintz
Engineer
ECE
Carnegie-Mellon Univ.
Harvard, MA, US

Benjamin Mize
B.S. Mech. Eng.
Auburn University
Decatur, AL, US

Kyle Mohney
B.S. Engineering
Western Michigan Univ.
at Kalamazoo
Kalamazoo, MI, US

Jose Molina-Navarro
Mechanical Engineer
B.A. Mech. Eng.
College Station, TX, US

Aidan Monaghan
Engineering Staff
B.S. Elec. Eng.
Las Vegas, NV, US

Mark Montgomery
Engineering Staff
B.S., Arch. Eng., MSOE
Phoenix, AZ, US

Fernando Morales
B. Comp. S.
Rancho Viejo, TX, US

Christopher Moran
B.S. Civil Eng.
Univ. Mass., Amherst
Jackson, WY, US

Carl Morgan
Engineering Staff
B.S. Elec. Eng.
Univ. of Arizona
Tucson, AZ, US

Stephen Moroney
B.S.M.E.
Drexel University
Monaca, PA, US

Horacio Moronta
Elec. Eng., Intern Arch.
B.S. Elec. Eng.
NJ Inst. of Tech.
Lusby, MD, US

Zachary Morris
B.S. Civil Eng.
Montana St. Univ.
Bozeman, MT, US

Jamal Mouline
Eng. Consultant
B.S. Mech. Eng.
ENSEM France
Durham, NC, US

Michael Moussa
EIT
BSME
Dallas, TX, US

Jamal Mubarak
MD
M.S., Engineering
Univ. of Michigan
Denton, TX, US

Carl Muehlenbeck
Mechanical Engineer
MSME
Univ. of N. Dakota
Peoria, AZ, US

Ted & Nelisse Muga
Civil Engineer
B.S. Civil Eng.
S. Methodist Univ.
San Diego, CA, US

Ross Muir
B.S. Arch. Eng.
Univ. of Colorado
New York, NY, US

Apekshit Mulay
Failure Analysis Eng.
M.S. Elec. Eng.
Texas Tech
Richardson, TX, US

John Muller
B.S. Civil Eng.
Syracuse Univ.
Bloomington, IN, US

Paul Muller
Engineering Staff
BSME
St. Petersburg, FL, US

Kyle Mullikin
Structural Eng., EIT
B.S. Civil/Struct. Eng.
Salt Lake City, UT, US

Marc Murawski
Engineer
B.S.E Aerospace
Univ. of Michigan
Ann Arbor, MI, US

Esteban Murillo
B.S. Syst. Eng.
US Naval Academy
Manhattan Beach, CA, US

Brendan Murphy
B.S. Fire Protection Eng.
Univ. of Maryland
Arlington, VA, US

Robert Murphy
B.S. Elec. Eng.
Univ. of Utah
Fort Worth, TX, US

Christopher Murtland
Manufact. Process Eng.
B.S. Mech. Eng.
Carnegie Mellon
Los Angeles, CA, US

Muhammad Nadeem
M.S. Civil Eng.
San Jose State Univ.
Little Ferry, NJ, US

Alan Nakamura
BSME, BSCE
Gardena, CA, US

Robert Nanninga
BSME, Univ. of NM
San Luis Obispo, CA, US

Carroll Nast
BSEE
Colfax, CA, US

Branden Neal
BS Aerospace Eng.
Univ. of Texas
Arlington, TX, US

Bart Neeb
Electrical Engineer
B.S., Elec. Eng.
Univ. of Cincinatti
Farmington Hills, MI, US

Jose Negrete
Eng. of Digital Music Prod.
Monterrey Inst. of Tech.
and Higher Education
Mexico City, MX

Dan Netko
B.S. Civil Eng.
Univ. of Minnesota
Big Lake, MN, US

Don Neuschwander
Eng. of Mines
CO School of Mines
Livermore, CA, US

John Nevin
B.E.E., M.S.
Brooklyn, NY, US

Jonathan Newell
Professor Emeritus,
Research Engineer
M. S. Elect. Eng.,
Rensselaer Polytechnic
Slingerlands, NY, US

Tod Nguyen
B.S. Engineering/
Computer Science
Parker, CO, US

David Nicholson
Windhunter Corp. Pres.
BSME, Ohio State Univ.
Columbus, Ohio
Sun City Center, FL, US

Andy Nihem
B.S. Eng.
Oakland Univ.
Farmington, MI, US

Michael Niles
BSEE, MS Elec. Eng.
and Comp. Sci.
Mass. Inst. of Tech.
Belmont, CA, US

Kyle Nilsen
Eng. and Project Mngr.
M.S. Mech. Eng.
Wichita, KS, US

Jeff Nixon
B.S., Mech. Eng.
Colorado Univ., Boulder
Chicago, IL, US

Kyle Nobes
B.S. Ind. Eng.
W. New England Univ.
Granby, MA, US

Daniel Noel
Electromechanical/
Electronic Engineer
MSEME
Costa Mesa, CA, US

Paul Nolan
Sr. Mech. Eng.
BSME
Santa Barbara, CA, US

Peter Noll
B.S. Elec. Eng.
Mankato, MN, US

Robert Nordberg
Engineer
B. Eng. Mathematics
Univ. of Minnesota
Richfield, MN, US

Keith Noren
Chief Scientist
Missile Def. Agency Targets
M.S., Elec. Eng.
Stanford Univ.
Huntsville, AL, US

Engineering Professionals

Kenneth Norton
M.S. Mat. Sci. and Eng.
Stanford Univ.
Santa Rosa, CA, US

Richard Norton
MA-PGDip BA
IOPP, Eng.
Ind. and Mat. Eng.
Dallas, TX, US

Zack Norwood
M.S. Elec. Eng. Syst.
Univ. of Michigan
Berkeley, CA, US

Christopher Noyes
B.S. Mech. Eng.
Cornell Univ.
Tempe, AZ, US

William Nunn
Engineer
Casper, WY, US

Amy O'Brien
Dr.
D.Sci., Elec. Eng.
GWU
Alexandria, VA, US

John O'Dowd
B. Eng.
Nat. Univ. of Ireland
Conroe, TX, US

Tom O'Reilly
B.S. Metall. Eng.
Lafayette
Pearl River, NY, US

Jim Oberg
(Ret)
B.S. Mech. Eng.
Oregon State Univ.
Wilsonville, OR, US

Charles Ogsbury
B.S. Civil Eng.
Univ. of CO, Boulder
Boulder, CO, US

Jason Okerman
Eng. Grad. Student
B.S. Elec. Eng.
GCC, PA
Atlanta, GA, US

Benjamin Opp
B.S. Biomedical Eng.
Robert Morris Univ.
Allison Park, PA, US

Mary Orazem
M.S. Engineering
NCSU
Raleigh, NC, US

William Osborne Jr.
M.S. Elec. Eng.
Univ. of Arkansas
Fayetteville
Raleigh, NC, US

David Owens
Mech. Engineer
B.S.M.E., Union College
McAlester, OK, US

David Pacheco
Civil Engineer
BSCE
Albuquerque, NM, US

Anup Pandey
M.S. Env., Resource Eng.
SUNY at Syracuse
Austin, TX, US

Bernardo Paratore
MSEE, Cons. & Patent Agnt.
MSEE, Univ. of Maryland
Doylestown, PA, US

William Parker
Engineer (Ret.)
Louisville, KY, US

Matthew Parsons
B.S. Mech. Eng.
Georgia Inst. of Tech.
Austin, TX, US

Richard Pasco
Ph.D. Elec. Eng.
Stanford Univ.
San Jose, CA, US

Kathryn Pate
B.S. Ch.E.
Univ. of Alabama
Augusta, GA, US

Bradley Pattee
Engineering Staff
BSEE
RIT, Rochester, NY
Rochester, NY, US

Sam Patterson
B.S. Mech. Eng.
De Leon Springs, FL, US

Susan Paulson
B.S. Mech. Eng.
Univ. of Michigan
Lafayette, CO, US

Don Paulus
Chemical Operator
Paper Sci. and Eng.
Muskegon, MI, US

Gaspar Paya
B.D. Ind. Design Eng.
UPV, Spain
Woodside, NY, US

Michael Peck
M.S. Eng. Sci.
UC Berkeley
Santa Cruz, CA, US

Andreina Pena-Isea
B.S. Civil Eng. (Honors)
Katy, TX, US

Ruben Pena
B.S., MS Mech. Eng.
NJ Inst. of Tech.
Jersey City, NJ, US

Jason Penkethman
B. Engineering
Aliso Viejo, CA, US

Waldemar Perez
Master of Engineering
Widener Univ.
Chester PA
Portland, OR, US

Amanda Pernet
B.S. Mech. Eng.
Univ. of Washington
Pocatello, ID, US

Sarah Perry
B.S. Civil Eng.
B.S. Mining Eng.
Mount Vernon, IN, US

John Pershe
Engineering Staff
M.S Elec. Eng.
Purdue St. College,
Pennsylvania, PA, US

Matthew Petering
Ph.D. Engineering
Univ. of Michigan
Shorewood, WI, US

David Petersen
M.S. Civil Eng.
Portland State Univ.
Tigard, OR, US

Peter Petersen
Pres./Eng. Consultant
B.S. Aeronautical Eng.
San Diego, CA, US

Terry Petersen
B.S.E. Elec. Eng.
Chandler, AZ, US

Richard Peters
B.S. MET
E. Washington Univ.
Moscow, ID, US

Kyle Petlock
B.S. Env. Eng.
West Hills, CA, US

Vincent Petrini-Poli
Professor
M.S. Univ. of Paris, FRA
Lisle, IL, US

Mats Pettersson
M.Sc. EE, Chalmers
Univ. of Tech., SWE
Gdansk, PL

Mike Phillipps
Electrical Engineer
BSEE, WPI
Lincoln, MA, US

Thomas Phillips
B.S. Chem. Eng.
UW, Seattle
Palisade, CO, US

William Phillips
M.S., Eng., SMU
West Paterson, NJ, US

Derick Pickle
B.S. Mech. Eng.
Oklahoma St. Univ.
Broken Arrow, OK, US

Elizabeth Pinckney
B.S. Mech. Eng.
N. Carolina St. Univ.
Saluda, NC, US

J. Pinheiro
Engineer
Tampa, FL, US

Stan Pique
Univ. of Tech.
Compiégne, FRA
B.S Chem. Eng.
New York, NY, US

Donald Pitts
M.S. Agriculture Eng.
Univ. of Arkansas
Dr. of Philosophy in
Eng., Univ. of Arkansas
Laguna Woods, CA, US

Carl Pivonka
Staff Engineer
B.S. Civil Eng.
Texas A&M
Billings, MT, US

John Ploss
B.S.
Cal State, Hayward
Oceanside, CA, US

Walter Pogue, Jr.
B.S. Civil Eng.
Va. Polytechnic Inst.
Lancaster, PA, US

Robert Polk
BSEE
Phoenix, AZ, US

Engineering Professionals

Robert Poltz
Reliablity Eng. Cons.
MSE/BSE Syst. Eng.
Palo Alto, CA, US

Alex Pope
B.S. Elec. Eng.
Christian Brothers
College, Memphis
Lakeland, TN, US

Eugene Poplawski
B.S. Engineering
Univ. of Pennsylvania
Salt Lake City, UT, US

Nolan Posey
Sr. Member of Tech. Staff
M.S. Elec. Eng.
UT Dallas
Austin, TX, US

Michael Posluszny
AASEET, AASSA
Cambria, CA, US

Eli Powell
B.S. Mech. Eng.
Univ. of Nebraska
Boulder, CO, US

Stephanie Powers
B.S. Mech. Eng.
Univ. of Florida
Baltimore, MD, US

Charles Pracna
B.S. E.E.
Va. Tech. & State Univ.
Rainier, WA, US

David Pressman
Patent Lawyer
B.S.E.E., J.D.
San Francisco, CA, US

Fred Price
B.S. Eng.
El Paso, TX, US

Sam Price
M.S. Aerospace Eng.
Univ. of Missouri
St. Louis, MO, US

Chris Prima
B.S. Industrial Eng.
Applegate, CA, US

Greg Prinz
Mech. Eng.
B.S.M.E.
Texas A&M Univ.
Oceanside, CA, US

Joseph Prudell
Sr. Res. & Dev. Eng.
M.S. Engineering
Oregon State Univ.
Corvallis, OR, US

Sheldon Pryll
Project Manager
B.S., Ceramic Eng.
Alfred Univ.
Brunswick, ME, US

Paul Quillen
B.S. Elec. Eng.
Va. Military Inst.
Cartersville, GA, US

Jacqueline Quirke
BSME, Univ. of Conn.
Flagstaff, AZ, US

Konstantin Radtchenko
Candidate of Tech. Sci.
(Equiv. of US Ph.D.)
Jersey City, NJ, US

Jon Rafto
Frmr. US Naval Facil.
Construction Mgr.
B.S. Arch. Eng
Univ. of Colorado
Palomar Mountain, CA, US

Warren Raftshol
Engineering Staff
MSCE
Northwestern Univ.
Suttons Bay, MI, US

Raghwendra Raghwendra
Bach. of Tech.
Elec. Eng.
Motilal Nehru Nat. Inst.
of Tech., Allahabad India
Tempe, AZ, US

Scott Ragsdill
B.S. Mech. Eng.
Rockwall, TX, US

James Raines
Eng. Staff (Ret.)
B.S. Eng., UCLA
Tarzana, CA, US

Steven Ramsey
Author, Publisher,
Filmmaker
B.S. Civil Eng.
B.S. Microbiology
Austin, TX, US

Amir Rana
Mech. Engineer
Engineering Staff
B. Sci. Mech. Eng.
Lafayette, LA, US

Barb Randall
MSEE
Rochester, MN, US

Bruce Randall
Manufacturing Eng.
B.S. M.E., Univ. Mass.
Longmeadow, MA, US

Timothy Rapp
B.S. Petroleum Eng.
Louisiana State Univ.
Reno, NV, US

Andrew Rasmussen
B.S. Engineering
Harvey Mudd College
Los Angeles, CA, US

Robert Rathbun
Eng. Consultant
B.S. Arch. Eng.
Denver, CO, US

Kenneth Raymond
BSEE
Northeastern Univ.
Tucson, AZ, US

Asif Raza
Mech. Eng.
B. Sci., Mech. Eng.
Minor, Statistics
Memphis, TN, US

Samuel Ready
BEE, Ga. Tech.
MSEE, USC
Chico, CA, US

Seth Ream
B.S.E., Biomed. Eng.
Iowa City, IA, US

Tom Rechin
B.S. Ind. Eng.
Purdue Univ.
Cleveland, OH, US

Lori Redhair
B.S. Mech. Eng.
Ca. Polytech. St. Univ.
Los Osos, CA, US

Dave Redick
Pres.
BSE-ME
Univ. of Michigan
Madison, WI, US

John Redman
B.S. Elec. Eng.
Univ. of Conn.
Grafton, NH, US

William Reed
Engineering Staff
B.S. Chem. Eng.
Northwestern Univ.
Grayslake, IL, US

Martin Regelsberger
Engineer
Gleisdorf, Styria, AUT

Joel Regen
Engineer
BSEE
Austin, TX, US

Alan Reich
Elec. Eng.
B.S. Gen. Eng. ISU
La Center, WA, US

Shaun Reinert
B.S. Elec. Eng. Tech.
Penn State Univ.
Wetumpka, AL, US

David Remington
Elec. Eng./Mathematician
BSEE, MSEE,
M.S. Math, Univ. of Colo.
Boulder, CO, US

Michael Remington
Composite Design Eng.
Aerospace Engineering
Folsom, CA, US

Attila Revesz
Sr. Member, IEEE
Sr. Member, AIAA
MSEE, Tech. Univ.
of Budapest, Hungary
Los Angeles, CA, US

John Rexroat
Mfr. Engineer
Walnut Creek, CA, US

Temilade Rhodes-Vivour
B.S. Elec. Eng.
North Carolina A&T Univ.
Alexandria, VA, US

Scott Richardson
Numerical Analysis Eng.
B.S., M.S. Eng. Mech.
Albuquerque, NM, US

Greg Richter
Engineer
BSEE, Georgia Tech.
Ellijay, GA, US

Nicholas Riedel
Aerospace Eng. Staff
B.S., Mech. Eng., BYU
Middletown, CT, US

Patrick Riley
Electrical Engineer
BSEE, U of MN IT
Minneapolis, MN, US

Scott Ring
Engineering Staff
B.S. Marine Syst. Eng.
Harpswell, ME, US

Engineering Professionals

William Rion
B.S. Chem. Eng.
Clemson Univ.
Hollywood, FL, US

Kyle Ritter
Ph.D., MSE
Univ. of Illinois
Boise, ID, US

Brian Rittermann
Software Engineer
B.S. Engineering
Case Western Reserve
Honolulu, HI, US

Luis Rivera
M.S. Chem. Eng.
Univ. of South Florida
Media, PA, US

Jonathan Rivin
Ph.D. Engineering
N. Carolina State Univ.
Stevens Point, WI, US

Alexandre Robert de Massy
Engineering Consultant
B.A. Eng., U of Sherbrooke
Montreal, QC, CA

Barbara Roberts
M.S. Elec. Eng.
Worcester Poly. Inst.
Worcester, MA, US

Jeff Roberts
B. Mech. Eng.
Georgia Tech.
Santa Maria, CA, US

Matthew Roberts
E.I.T.
B.S. Env. Eng.
Flagstaff, AZ, US

Gene Robinson
B.S. Ind. Eng.
Oklahoma Univ.
Savannah, GA, US

Mark Robinson
Mechanical Eng.
BSME
Wilsonville, OR, US

Stephen Roby
Electrical Project Eng.
BSEE, WV Univ.
Weirton, WV, US

Roland Rodriguez
Engineer
BSEE & MSEE,
Georgia Tech.
Keller, TX, US

Timothy Roebke
B.S. Mech. Eng.
UW at Madison
Mukwonago, WI, US

Douglas Rogers
BE CpE
Boston, MA, US

James Rogers
Mine Electrical Eng.
B.S.E.E., BYU
Lyman, WY, US

Janet Rogers
B.S. Civil Eng.
Danville, CA, US

Larry Rosenberg
B.S. Mech. Eng.
Syracuse Univ.
Tahoe City, CA, US

Tom Rose
B.S. Civil Eng.
San Luis Obispo, CA, US

Patrick Rossi
B.S. Chem. Eng.
Michigan Tech. Univ.
Lake Mary, FL, US

Vinnie Rossi
Electrical Engineer
B.S. in EE
SUNY Binghamton
Durham, CT, US

Matt Rowland
B.S. Mech. Eng.
Univ. of Missouri
St. Louis, MO, US

Rick Royer
Process Eng. Mngr.
MBA UOP, BSIE
Southern Ill. Univ.
Chandler, AZ, US

Henry Rozumski
Aerospace Eng./Analyst
M. Sci.
Aiea, HI, US

Daniel Ruffoni
B.S. Civil Eng.
Santa Clara Univ.
San Ramon, CA, US

Richard Ruggles
B.S. Eng.
Univ. of West Fla.
Davie, FL, US

Alan Rupp
Engineering Staff
M.S. Elec. Eng.
Ruskin, FL, US

David Russell
EIT, B.S. Civil Eng.
Univ. of Kentucky
Nashville, TN, US

Charles Rust
M.S. Civil Eng.,
B.S. Arch. Eng.
Univ. of Texas
Fort Worth, TX, US

Eric Ruston
B.S. Civil Eng.
Penn. State Univ.
San Francisco, CA, US

Paul Ruttencutter
Electronics Engineer
Portland, OR, US

Kevin Ryan
Laboratory Manager,
Co-Editor, 9/11 Journal
B.S. Chem.
Certified Quality Eng.
Bloomington, IN, US

Kris Rytlewski
Automotive Design
Release Engineer
B.S. Mech. Eng.
SVSU Mich.
Flint, MI, US

Neil Saaty
Sr. Software Eng.
B.S., Elec. Eng.
San Pedro, CA, US

Simon Saba
B.S. Engineering
San Jose, CA, US

Ronald Sabin
B.S. Chem. Eng.
Rensselaer Poly., NY
Boscawen, NH, US

Bert Sacks
B.S. Ind. & Elec. Eng.
Seattle, WA, US

William Sakowski
M.S. Civil Eng.
Stanford Univ.
Abiquiu, NM, US

Hussein Sakr
Design & Syst. Eng.
BSEE, Cal Poly
Diamond Bar, CA, US

Maziar Salehi
Eng. Consultant
B.S. Mech. Eng.
UC Santa Barbara
Redondo Beach, CA, US

Asher Salomon
Eng. In Training
Product Reliability
B.S. Mech. Eng., WNEC
Bethlehem, NH, US

Greg Salyards
B.S. Naval Eng.
US Naval Academy
Atlantic City, NJ, US

Vytautas Sanborn
BSEET
Oregon Inst. of Tech.
Yacolt, WA, US

Mario Sanjuan
BSME
Rensselaer Polytech.
Institute
Oswego, IL, US

Vincent Santaiti
B.S. Mech. Eng.
NJIT, NJ
Monroe, NY, US

Aejaz Sareshwala
Metall./Steel Const.
B.S., M.S.
Univ.of Baroda,
Metallurgy Eng.
Dublin, CA, US

Rob Sargent
BSME UNH,
MSCIM BYU
Chelmsford, MA, US

Meral Sarper
Mech. Engineer
B.S. Mech. Eng.
Univ. of Colorado
Pueblo West, CO, US

Kerry Sartain
Engineering Staff
BEE, Elec. Eng.
Georgia Tech.
Acworth, GA, US

Mark Savellano
Res. Asst. Prof., Ph.D.
Ph.D., Biomed. Eng.
Univ. of Michigan
Hanover, NH, US

Allen Saye
Const. Eng. Consultant
B.S. Civil Eng., MIT
Beaverton, OR, US

Saleh Sbenaty
Professor
Ph.D. Engineering
Murfreesboro, TN, US

Skylar Scaling
B.S. Elec. Eng.
Oklahoma State Univ.
Colorado Springs, CO, US

Engineering Professionals

Bryan Scarborough
B.S. Engineering
Duke University
Atlanta, GA, US

Dick & Jan Scar
BSAE
Buena Vista, CO, US

Frank Scavelli
B.S. Civil Eng. Tech.
Fairleigh Dickinson Univ.
Newfield, NJ, US

James Schaeffer
Engineering Staff
B.S. Mech. Eng.
Clarkson Univ.
Rosendale, NY, US

David Schanzle
P.E.
B.S. Chem. Eng.
Vanderbilt Univ.
Manor, TX, US

Daniel Schilling
Mech. Engineer
BSIE
Minneapolis, MN, US

Harriet Schmidt
M.S. Mech. Eng.
Portland St. Univ.
Hillsboro, OR, US

Michael Schmidt
BSGE, Project Mngr.
B.S. Eng., Univ. of Ill.
Oak Park, IL, US

Laura Schneider
Patent Agent
B.S. Mech. Eng.
Erie, CO, US

Benjamin Schultz
B.S. Civil Engineering
Marquette Univ.
Milwaukee, WI, US

Alan Scott
B.S. Elec. Eng.,
Univ. of Cincinatti
M.S. Eng., Catholic Univ.
Seattle, WA, US

Stephen Seccombe
Eng. Consultant
BS, MS, EE in Elect. Eng.
MIT
Foster City, CA, US

Andrew Sellars
B.S., M.S.
Aerospace Eng.
Univ. of Arizona
Mesa, AZ, US

Stanley Serwon
Chemical Eng.
B.S.
Akron, NY, US

Joseph Sessions
Mech. Eng.
Georgia Tech.
Sheridan, OR, US

Steve Settles
Systems Engineer
B.S. Physics, SHSU
B.S., EE, Texas A&M
Cedar Park, TX, US

James Seymour
Degreed Mech. Eng.
B.S. Eng. Sci.
Univ. of Cincinnati
Carrollton, TX, US

Jeffrey Shadley
B.S., M.S. Elec. Eng.
The Univ. of Tulsa
Tulsa, OK, US

Adam Shaffer
B.S.
Edwardsville, IL, US

Franklin Shaffer
B.S., M.S. Mech. Eng.
West Virginia Univ.
Pittsburgh, PA, US

Matthew Shaffer
Mech. Engineer
B.S.M.E. U of Akron
Engineering Intern
Hilliard, OH, US

Ashok Shah
Senior Staff Engineer
B.Sc. Elec. Eng.
M.Sc. BioMed Eng.
Gloucester City, NJ, US

Eddy Shalom
Aerospace Tech. Mngr.
BSEE, B.S. Physics
Santa Clarita, CA, US

Alexander Shankle
Digital Design Eng.
B.S. Elec. Eng., CTU
Louisville, KY, US

Frank Shap
Local Govt. Mngr.
Degreed Engineer
BSEE Univ. of Maryland
Swanton, MD, US

Steven Shap
B.S. Elec. Eng.
Univ. of Maryland
Fernandina Beach, FL, US

M. Anwar Shariff
Eden Prairie, MN, US

Mike Sharkey
B.S. Industrial Eng.
GMI Kettering Univ.
Park Rapids, MN, US

Blake Shatto
B.S. Civil Eng.
Florida St. Univ.
St Petersburg, FL, US

Larry Shelton
B.S. Mech. Eng.
Univ. of Illinois
Grand Blanc, MI, US

Jason Shem
B.S. Elec. Power
Eng. Technology
The Univ. of Houston
Saint Paul, MN, US

Mark Shepherd
Electrical Engineer
BSEE, SF State Univ.
Portland, OR, US

Manny Sherbiny
Electrical Engineer
B.S. Elec. Eng.
Univ. Alexandria, Egypt
Van Nuys, CA, US

Adam Sherman
Engineering Staff
B.S.M.E., UC Davis
Newark, CA, US

Kenneth Sherman
M.S. Elec. Engineering
Univ. of California
Austin, TX, US

Jeffrey Sherzer
B.S. Elec. Engineering
Lehigh Univ.
Highland Park, NJ, US

John Shinn
Ph.D., Chemical Eng.
Pleasant Hill, CA, US

Stuart Shively
B.S., ME
Univ. of Texas
Bethesda, MD, US

Dan Shockley
B.S. Elec. Eng.
Univ. of New Mexico
San Diego, CA, US

David Shore
Mech. Eng. Staff
M.S. Engineering
Univ. of Utah
Albuquerque, NM, US

Dave Shreeve
B.S. Electrical &
Electronics Eng.
Oregon St. Univ.
Seattle, WA, US

Brian Shriver
B.S. Mech. Eng.
Lehigh Univ.
Walpole, NH, US

Dennis Shuman
Engineering Scientist
Ph.D., Elec. Eng.
Univ. of Florida
Gainesville, FL, US

Daniel Sias
Elec. Eng., UCLA
West LA, CA, US

Richard Sieron
Eng. Consultant
BSEE
Milford, CT, US

Daniel Silin
B.S. Engineering
Mill Valley, CA, US

Daniel Silva
Software Eng. (Ret.)
M.S. Mech. Eng.
Stanford Univ.
San Rafael, CA, US

John Silva
Ph.D., Eng. Science
UC San Diego
San Diego, CA, US

David Simchock
B.S. Mech. Eng.
Rutgers Univ.
Titusville, NJ, US

Dave Simeone
B.S.E.E.
Univ. of Pittsburgh
Bradenton, FL, US

Michael Simister
B.S. Elec. Engineering
Dallas, TX, US

Colin Simmons
B.S. Eng. Physics
UCO Edmond, OK
Guthrie, OK, US

Raymond Simmons
B.S. Arch. Eng.
Univ. of Miami
Coral Gables, FL, US

Zachary Simmons
B.S. Mech. Eng.
Texas A&M Univ.
Dallas, TX, US

Engineering Professionals

William "Evan" Simon
M.S. Biosystems &
Agricultural Eng.
Univ. of Kentucky
Lexington, KY, US

Albert Skane
Systems Eng.
BSEE & B.S., MIT
MA Econ., Univ. of MD
Boston, MA, US

Mike Skarlupka
B.S. Mech. Eng.
Univ. of WI, Madison
Freeport, IL, US

James Smajstrla
B.S.M.E., Texas A&M
Round Rock, TX, US

Philip Smilgin
B.S. Elec. Eng.
Florida St. Univ.
Tucson, AZ, US

Austin Smith
B.S. Civil Eng.
Univ. of Wyoming
Bear River, WY, US

Don Smith
B.S. Mech. Eng.
Cal Poly, SLO
Arroyo Grande, CA, US

Marshall Smith
Eng. Consultant
BA Physics, BA Mech.
& BA Elec. Eng.
San Jose, CA, US

Michael Smith
B.S. Elec. Eng. Tech.
Atlanta, GA, US

Stephen Smith
B.S. Eng., UAB
Fort Payne, AL, US

Paul Smola
B.S. Eng., UMass
Bedford, NH, US

Todd Smutz
Project Manager,
The Kroger Company
B.S. Civil Engineering
Denver, CO, US

Kevin Snedeker
Engineering Staff
B.A. Civil Eng.
Univ. of Hartford
Bronx, NY, US

Chandler Sobel-
sörenson
B.S. Computer Eng.
Univ. of Arizona
Tucson, AZ, US

Sergei Sochava
M.S. Eng./Radiophysics
Leningrad Polytec Inst.
Sunnyvale, CA, US

Mauricio Solorzano
B.S. Electronic Syst. Eng.
El Instituto Tecnologico de
Monterrey Mexico
McKinney, TX, US

Steven Sorrell
Eng. Consultant
B.S. Nuclear Eng.
Iowa State Univ.
Idaho Falls, ID, US

John Sotelo
BSME, MD, Mech. Eng.
La Mes, CA, US

James Soto
B.E. Elec. Eng., CCNY
Haverstraw, NY, US

Sam Soubjaki
B.E. Mech. Eng.
Victoria Univ. at
Melbourne Australia
Huntington Woods, MI, US

John Speidel
Eng. Manager
B.S. Pet. Eng.
B.S. Mech. Eng.
Visalia, CA, US

Stephen Sprout
B.S. Elec. Eng.
Drexel Inst. of Tech.
Glenside, PA, US

Raghavendra Sridhar
Bach. of Eng., Elec.,
Comm. Engineer
Visveswaraiah Tech.
Univ. Belgaum,
Karnataka, India
Irvine, CA, US

Victoria St. Ives
B.S. Chem. Eng.
Lehigh University
Randolph, NJ, US

Sanfod Staab
EECS/Systems
UC Berkeley
Woodinville, WA, US

Robert Stahl
Engineering Staff
B.A. Engineering
Univ. of Alabama
Birmingham, AL, US

Michael Stathopoulos
Engineering Staff
BS Mfg. Eng.
C.I.M., Ball State
Round Rock, TX, US

Rick Stauf
B.S.M.E Cal Poly
Lancaster, CA, US

Jim Stearns
Engineering Staff
M.S. Chem. Eng.
USC, Columbia
San Francisco, CA, US

Rob Steinhofer
M.S. Mech. Eng.
UW Madison
Soldiers Grove, WI, US

William Steinmetz
Engineering Staff
M.S. Elec. Eng.
Univ. New Mexico
Walnut Creek, CA, US

Joseph Sterczala
B.S. Chem. Eng., WPI
Worcester, MA, US

Bruce Stevenson
Eng. Specialist
BSEE
Saint Charles, MO, US

William Stoddard III
Design Engineer
B.S. Eng. Tech.
Lawrence Tech. Univ.
Allen Park, MI, US

Gere Stokoe
B.S. Eng. Tech.
Cal Poly, SLO
Ormond Beach, FL, US

Stephen Stollmack
Ph.D. Mngt. Syst. Eng.
Ohio State University
Prescott, AZ, US

Geoffrey Stone
BSChE, Clarkson College
Black Mountain, NC, US

Jason Storer
B.S. Civil Eng.
Univ. of Oklahoma
Shady Point, OK, US

Jeffrey Strahl
Engineering Staff
B.E. Mech. Eng., CUNY
Berkeley, CA, US

Christopher Straka
B.S. Aerospace Eng.
Embry-Riddle Aero. Univ.
Littleton, CO, US

Mike Strasser
Eng. Consultant
Masters of Eng.
Stanford Univ.
San Francisco, CA, US

William Streety
Eng. Consultant
B.S. Mech. Eng.
College Station, TX, US

Eric Strid
Chief Tech. Officer
MSEE
Portland, OR, US

William Stubbeman
MD, BSE, Physician, Mech.
and Aerospace Engineer
MD, Columbia
BSE Eng. Princeton Univ.
Los Angeles, CA, US

Robert Stuemky
(Ret.)
BSME, OSU
Stillwater, OK
Rye, CO, US

David Sullivan
Eng. Consultant
B.S. Engineering
Vanderbilt Univ.
Sarasota, FL, US

Henry Sullivan
Bach. Civil Eng.
Georgia Tech
Cumming, GA, US

Shaun Sullivan
B.S. Civil Eng.
Groton, MA, US

Micheal Suominen
Melbourne, FL, US

Peter Swan
JD Law, B.S. Ind. Eng.
Stanford Univ.
Wilsonville, OR, US

Mike Swatek
Principal Engineer
B.S. Mech. Eng.
Univ. of Oklahoma
Claremore, OK, US

Chris Sweeney
B.S. Ind. Engineering
W. New England Univ.
Waltham, MA, US

John Sweet
Eng. Consultant
B.S. Civil Eng.
Manhattan College
Brooklyn, NY, US

Engineering Professionals

Garrett Swindlehurst
Student
B.S. Chem. Eng.
North Carolina SU
Saint Paul, MN, US

Martin Szakodyn
Electrical Engineer
B.S. Elec. Eng., SIUC
Naperville, IL, US

Anthony Szamboti
Mechanical Engineer
BSME
Blackwood, NJ, US

Leo Szczesny
Telecom Circuit Des.
B.E.E. Gannon Univ.
Coudersport, PA, US

Michael Tannel
B.S. Engineering
UW Milwaukee
Cudahy, WI, US

Sean Tasdemiroglu
Process Engineer
B.S. ChE, Texas Tech
Los Angeles, CA, US

William Tatro
B.S. Mech. Eng.
Univ. of Vermont
Winooski, VT, US

Amanda Taylor
M.S. Engineering
Univ. of Texas
Austin, TX, US

Edwin Taylor
E.I.T., Eng. Consultant
Hampton, VA, US

Mat Taylor
M.Arch, MS.CE,
M.Arch, Oregon,
MS.CE, Colorado
Niwot, CO, US

Philip Taylor
Eng. Professor
Ph.D. Systems Eng.
Indian Wells, CA, US

Roy Taylor
B.S. Mech. Eng.
Univ. of Rochester
Scottsville, NY, US

Sachin Terdalkar
Ph.D. Mech. Eng.
Univ. of Arkansas
Fayetteville, AR, US

Robert Terhune
B.S. Elec. Engineering
Univ. of Nevada
Sparks, NV, US

David Terpstra
B.S. Elec. Eng. Tech.
Purdue Calumet
Spring Green, WI, US

John Tharakan
Ph.D. Eng. Science
(Biochemical Eng.)
UC San Diego
Washington, DC, US

David Thomas
MSEE Elec. Eng.
Purdue University
Wellington, CO, US

Neil Thomas
B.S. and Ph.D.
Mech. Engineering,
Stanford Univ.
Los Angeles, CA, US

Michel Thomet
Ph.D. Electrical Eng.
Carnegie-Mellon
Lafayette, CA, US

George Thompson Jr.
Electrical Engineer
BSEE
Charlotte, NC, US

Jonathan Thompson
B.S. Engineering
Clemson University
Seattle, WA, US

Dave Thomson
Engineer
B.S. (w/honors)
Fremont, CA, US

Mark Thornley
B.S. Mech. Eng.
Michigan Tech. Univ.
Mukilteo, WA, US

Henry Tieleman
Prof. Emeritus ESM Dept.
Virginia Tech.
Ph.D. Civil Engineering
Riner, VA, US

Jan Tijmes
E.I.T.
Agri./ Civil Engineer
Houston, TX, US

Clara Ting
Engineering Staff
MS, MBA
Mountain View, CA, US

John Tobak
Electrical Engineer
M.S. Elec. Eng.
Stevens Tech.
Bernardsville, NJ, US

Joseph Urcinas
B. Engineering
Flemington, NJ, US

Todd Urick
B.S. Civil & Env. Eng.
UC Davis
Davis, CA, US

Juan Urreta
B.S. Civil Eng.
University of Texas
Irving, TX, US

Edward Ussery
EIT
BSME UCLA,
MMS Harvard Med. Sch.
Irvine, CA, US

Tapio Vahamaki
B.S. Elec. Eng. Tech.
DeVry Institute
San Diego, CA, US

Steven van Geldern
B.S. Mech. Eng,
W. New England Univ.
Norwalk, CT, US

Brian Van Roy
M.S. Engineering
Milwaukee, WI, US

Corey Van Sickle
B.S. Mech. Eng.
Ohio Northern Univ.
New Philadelphia, OH, US

Scott Van Sickle
B.S. Petroleum Eng.
Louisiana St. Univ.
Oklahoma City, OK, US

Peter Van Zant
M.S. Elec. Engineering
Stanford University
Bellevue, WA, US

Wilson Vargas
EIT
Civil Engineering
Weston, FL, US

George Vega
Engineer
BSE, Arizona St. Univ.
Santa Rosa, CA, US

Bob Vercler
B.S. Agricultural Eng.
Univ. of Illinois, UC
Cullom, IL, US

Augustine Verrengia
EIT
B.S. Civil Eng.
UT San Antonio
Austin, TX, US

Joseph Verrette
Nuclear Syst. Operator
Marine Eng. Operations
Chester, NH, US

Adrienne Via
B.S. Civil Eng.
Johns Hopkins Univ.
Columbia, MD, US

Timo Villgren
Engineer
Bachelor of Info. Tech.
Ruutana, FI

William Voegele
B.S. Mechanical Eng.
UC Berkeley
Pittsburgh, PA, US

James Vogt
Bach. of Electrical Eng.
Keene, NH, US

Derek Voll
BSME
Pueblo, CO, US

Steve Voras
B.S. Mech. Eng.
Univ. of South Florida
Clearwater, FL, US

Mitch Waite
B.S. Const. Eng. Tech.
Montana St. Univ.
Brighton, CO, US

Stephen Waite
B.S. Engineering
Duke University
Rutland, VT, US

Richard Walker
B.S. Eng. & Applied Sci.
California Inst. of Tech.
Palo Alto, CA, US

Robert Walker
Measurement Spec.
B.S. Engineering
Northrup Univ.
Rushville, IL, US

Sam Walker
B.S. Comp. Info. Sci.
College of Eng.,
Ohio State Univ.
Marietta, GA, US

Robert Walter
P.E.
SBME MIT
Rochester, NY, US

David Walton
B.S. Bus./Eng. Admin.
M.I.T
Monterey, CA, US

Engineering Professionals

Kerry Wang
B.S. Chemical Engineering
Rice University
Minneapolis, MN, US

Liyan Wan
B.S. Industrial Engineering
Chicago, IL, US

Andrew Ward
B.S. Chemical Engineering
Drexell University
Blackwood, NJ, US

Kathy Warnock
M.S. Environmental Engineering
University of Tennessee
Sacramento, CA, US

William Washburn
Project Manager (Ret.)
MSEE Univ. of Southern CA
Santa Maria, CA, US

Kent Watsen
Engineering
University of Virginia
Leesburg, VA, US

Derek Watson
Helensburgh, GB

Dennis Watts
Systems Engineer
BSEE
Torrance, CA, US

Dale Webb
Mechanical Eng.
B.S. Mech. Eng.
New Hartford, CT, US

Brad Weber
B.S. Electrical Eng.
Louisiana St. Univ.
Chandler, AZ, US

Doug Wehrly
Eng. Consultant
B.S. Eng. Tech.
Texas A&M
Austin, TX, US

Ralph Weiland
Dr., Company President
BASc., MA.Sc., Ph.D.
(Ch.E., Toronto)
Coalgate, OK, US

Greg Weinfurtner
Elec. Design Specialist,
Computer Admin.
AEE, Hocking College
BSS, Ohio Univ.
Albany, OH, US

Gary Weinstein
Ph.D. Civil Eng.
Polytechnic Univ.
Brooklyn, NY, US

Bruce Wells
BSEE
Albuquerque, NM, US

Ben Werner
B.S., M.S. Electrical Engineering
UC Santa Barbara
Santa Barbara, CA, US

Tom Westbrook
Engineering Staff
B.S. Electrical Engineering
Mesa, AZ, US

Ronny White
B.S. Engineering Technology
Austin, TX, US

Scott Wickershiem
B.S. Mechanical Engineering
Michigan Tech. University
Detroit, MI, US

Christopher Wilder
Mech. Design Engineer
B.S.M.E.
Cal Poly SLO
Cloverdale, CA, US

Joseph Wildhagen
Manufacturing Eng.
BSBA, Cert. in Manuf. Eng.
UCLA
Pearblossom, CA, US

John Willcutts
Engineering Staff
B.S. Electrical Engineering
M.E. Agricultural Engineering
Athens, GA, US

Matthew Williams
EIT
B.S. Geological Engineering
UW Madison
Madison, WI, US

Clark Willison
B.S. Electrical Eng.
UC at Santa Barbara
Atherton, CA, US

Paul Wills
B.S. Mechanical Eng.
CA Polytechnic St. Univ.
Santa Barbara, CA, US

David Wilmot
Industrial Eng. (Ret.)
B.S. Industrial Eng., R.I.T.
Bailey, NC, US

Alan Wilson
B.S. Civil Engineer
Rutgers University
Edgartown, MA, US

Nathaniel Wilson
BSMET Central Washington Univ.
West Richland, WA, US

Craig Winters
Engineer Technician
MSCE NM St. University
Las Cruces, NM, US

Larry Witham
Sr. Mechanical Engineer
BSME U.C. Berkeley
Las Vegas, NV, US

Nicholas Woebcke
Software Engineer
B.S.E.E., M.S.C.S. Tufts Univ.
Arlington, MA, US

Joel Wolensky
B.S. Electrical Engineering
Carnegie Mellon University
M.S. Electrical Engineering
George Washington University
Macungie, PA, US

Marshall Wolfe
BSCE
St. Augustine, FL, US

Scott Wolford
B.S. Aeronautical Engineering
Embry-Riddle Aeronautical Univ.
Grand Junction, CO, US

Frank Wolstencroft
Ph.D. Industrial Metallurgy
Mount Kisco, NY, US

Michael Wong
B.S. Mechanical Engineering
UC Davis
San Francisco, CA, US

Ben Woodason
B.S. Mechanical Engineering
N. Little Rock, AR, US

David Wood
Sr. Design Engineer
BSEE
Bothell, WA, US

David Wood
Mechanical Engineer
B.S. Mechanical Engineering
Univesity of Buffalo
Salem, MA, US

Thomas Wood
B.S. Electrical Engineering
University of Missouri
Columbia, MO, US

Frank Woolridge
B.S. Electrical Engineering
Univ. of Illinois
Escondido, CA, US

Michael Woon
Engineering Staff
M.S. Mech. Eng.
Univ. of Michigan
Ypsilanti, MI, US

Brian Wright
Author
BSME
Novi, MI, US

Edward Yang
Ph.D. Electrical Eng.
Univ. of Southern CA
San Jose, CA, US

Carl Young
Director
B.S. Eng., U of A
Edmonton, AB, CA

Mohammed Younis
B.S. Industrial Eng.
Univ. of South Florida
Tampa, FL, US

Stephen Yurasits
M.S. Engineering
Columbia Univ. NYC
Burlington, VT, US

Cedric Zabriskie
US ARMY LTC (Ret.)
MSEE Georgia Tech.
Curtis, WA, US

Jason Zaepfel
B.S. Mech. Eng. Tech.
Buffalo State College
Buffalo, NY, US

Theodore Zagurski Jr.
BSEE EMBA
Centennial, CO, US

Jorge Zavala
BSET, Cal Poly SLO
Alameda, CA, US

Jack Zeiger
B.S. Mechanical Eng.
Univ. of Washington
Olympia, WA, US

Joseph Zenner
Chemical Engineer
Houston, TX, US

Robert Zerbe
B.S. Plastics and
Polymer Eng.Tech.
PA College of Tech.
York, PA, US

Gene Zilberstein
B.S. Elec. Eng., MIT
M.S. Elec. Eng.,
Portland St. Univ.
Portland, OR, US

Bryan Zink
B.S. Electrical Eng.
Kenosha, WI, US

Non-U.S. Architects and Engineers and Architectural and Engineering Professionals

Björn Aadnöy
Field Engineer
Degree in Automatics
Stenungsund, SE

Chaãk Abdellaoui
M.Sci. Mech. Eng.
Ecole Polytechnique
Montreal, Canada
Lachine, QC, CA

El Mourabit Abdelwahad
IT Engineer
Paris, FR

Pavel Abdur-Rahman
Eng. Consultant
Eng., Univ. of Toronto
Toronto, ON, CA

Steve Abercrombie
Bach. of Applied Science
(Civil Engineering)
Lindsay, ON, CA

Rami Abu-Ayyash
Lon, ON, CA

Ronald Ackroyd
B.Sci. Agriculture Eng.
University. of Alberta
M.Sci. Civil Engineering
University of Alberta
Raymond, AB, CA

William Acri
Prof. Eng.
BA Sci.
Toronto, ON, CA

Aleem Adil
IT Engineer
M.B.A, B.E
Riyadh, SA

Pierre-Alain Adouane
Masters Mech. Eng.
Tokyo, JP

Amjed Afzal
Copenhagen, DK

Edgar Agda
B.S. C.E., M. Eng. Sci.
(Structural/Foundation)
Sydney, AW

David Aguirre
Architect
B. Archicture
USFQ, Ecuador
Quito, Pichincha, EC

Rodrigo Agüero
B.Sci. Electronics Eng.
Buenos Aires, AR

Mansoor Ahmad
Program Manager
M.S. Engineering
Ras Al Khaimah, UAE

Moin Ahmed
London, GB

Oulamine Ahmed
Architect
Essaouira, MA

Alvaro Aigneren
Mechanical Engineer
Valencia, ES

Hamzeh Al Garoud
Engineer
Bach. Biomedical Engineer
Amman, JO

Kays Al Rayes
Bach. of Architecture
Roger Williams Univ.
Bristol, Rhode Island
Kuwait, KW

Salam Al-Bizri
BSCE
Ph.D. Const. Management
Reading, UK

Pascal Alalinarde
Engineer
B. Engineering
Inst. National des Sciences
Appliquees de Renne France
Cholet, FR

Jorge Albuerne
Architect
Monterrey, MX

Py Alexandre
Eng. in French Caterpillar
Grenoble Metlab
Engineering
Grenoble, FR

Syed Taha Ali
M. in Eng. Telecom.
Bach. of Electrial Eng.
Newcastle upon Tyne, GB

Jacob Allderdice
Architect
B.A. Reed
M. Arch. Dalhousie
MUD University of Toronto
Toronto, ON, CA

Dardo Allen
Civil Engineer
M. Sc., Buenos Aires Univ.
Copenhagen, Glostrup, DK

Paul Allen
B.Arch. Designer
RIBA Pt. 3, UWCC, Cardiff
Paris, Île De France, FR

Harun Altay
M.S. in Computer Eng.
B.S. in Computer Sci.
Istanbul, TR

Mario Alvarez
Meco, ES

Edward Alves
A. Sci. Tech.
Mech. Eng. Technologist
White Rock, BC, CA

Thushara Alwis
Bach. Civil Eng., NTU
Singapore, SG

AlHassan Aly
B.A. Sci. Electrical Eng.
Univ. of Toronto
Toronto, ON, CA

Kyriakos Anatolitis
Mechanical Engineer
M. Eng., Imperial College
London, UK

David Andresen
B. Sci. Civil Engineering
UNSW Australia
Cherrybrook, AU

Toni Andriotis
Engineer
B. Eng. Electrical
Ottawa, ON, CA

Ziolkowski Andrzej
Warsaw, AZ, PL

Dietmar Ankermann
Dipl. Mech. Engineering
Cologne, DW

Elio Arcaro
Chemical Engineer
Chem. Eng., Padova, Italy
Ferrara, IT

Alessandro Argentini
Bach. Aeronautical Eng.
Pisa University
Rijswijk, NL

Frank Armbruster
Engineer
Dipl. Eng. Feinwerktechnik
Oöenburg, DE

Timothy Arnold
Engineer
B.S. Mechanical Eng.
Copenhagen, DK

John Arvidsson
Waste Water Engineer
B. Eng., Chemical
M. Eng., Environmental
Stockholm, SE

Gordon Ashby
B. Sci. Architecture
Univ. of Toronto, Canada
Bridgetown, BB

Christoph Ax
Engineer
Dipl. Engineering
Darmstadt, DE

Mochammad Baagil
Jakarta, AK, ID

Hichem Bachir Bouiadjra
Metallurgy Engineer
Algiers, AL

André Bacon
Engineer
B. Engineering
Montréal, QC, CA

Faris Bagaeen
CEO
University of Dundee
Aaman, JO

Michal Bahno
Master Dipl. Engineering
Trencin, SK

Krystin Bajado
B.S. Electrical Eng.
Manila, PH

Douglas Baker-Patch
B. Mechanical Engineering
Dundee, GB

Jonas Bakken
Master of Science
Oslo, NO

Martein Bakker
Software Architect
Ir., Information. Tech.
TU Eindhoven
Eindhoven, NB

Fahad Ballaho
Zamboanga, PH

Carlos Basauri
B. Sci. Industrial Eng.
Univ. of the Basque Country
Bilbao, ES

Humberto Bastidas-Ortiz
Aguascalientes, MX

Rory Batchilder
B. Engineering
Queen's Univ. Ontario
Kingston, ON, CA

Non-U.S. Architects and Engineers and A/E Professionals

Jeremy Beck
Victorian State Chairman
CEC Australia
B. Eng. Hons (Mech)
Hadfield, AU

William Belcher
B. Engineering
Univ. of Melbourne
Melbourne, Victoria, AU

Wim Belt
Bach. Electrical Eng.
Amsterdam, NL

Mourad Bendjennet
Intern Architect
B. Arch, M Sci. Project Mng.
Montreal, QC, CA

Andrew Bengston
Gateshead, GB

Gary Benner
Consulting Engineer
BA Science, Univ. of Toronto
Toronto, ON, CA

Wouter Berggren
Dipl. of Mech. Eng.
Higher Technical School,
Rotterdam, Netherlands
Heiloo, NL

Ray Bernard
P.Eng.
B.Sc.Eng.
Calgary, AB, CA

Hamza Bhutta
Engineer
B.S. Mechanical Eng.
Multan, Punjab, PK

Samuel Bigotte
Engineering Consultant
Production Engineering (French Title)
Issy Les Moulineaux, FR

Syed Bilgrami
FIAP, Architect
B.Arch
Karachi, Sindh, PK

Glen Bishop
Eng. Consultant
B.S. Civil Eng., Michigan St.
Bormes les Mimosas, FR

Anders Björkman
Naval Arch. & Marine Eng.
M.Sci.
Beausoleil, FR

Simon Black
B.E. (Hons), Univ. of Canterbury
Wellington City, NY, NZ

Bruce Blake
P. Eng., C.Eng., MRAeS.,
BE.Aero., AME
White Rock, BC, CA

Roger Blake
Mech. Engineer NZCE
Ngatea, North Island, NZ

Bill Boggia
Struct. Eng. Consultant
B. Mechanical Eng.
Ballater, Aberdeenshire, UK

James Boileau
Nanaimo, BC, CA

Felix Boller
B. Sci. Civil Engineering
MAS ETH
Zürich, CH

Bill Bolwell
Degree in Civil Eng.
Wheelers Hill, Victoria, AU

Jim Bomford
P. Eng.
B.A.Sc. Engineering, UBC
Cowichan Bay, BC, CA

Mike Bondi
P.Eng.
B.A.Sci., Engineering
Univ. of Waterloo
Stratford, ON, CA

Jaydis Borja Torres
Barranquilla, CO

Jerome Bouchard
Engineer
B.A. Engineering,
UQAC, Canada
Granby, QC, CA

Damien Bouchet
Engineer
Neuilly Sur Seine, FR

Martin Bourgault
B. Arch., Univ. de Montréal
Montréal, QC, CA

Faical Bouzid
Montreal, QC, CA

Ed Boyle
B. Sci. Architectural Tech.
Glasgow, Scotland, GB

Dylan Brady
Cork, IE

Robert Brand
M. Civil Engineering
Univ. of Nottingham, UK
Crewe, Cheshire, GB

Leendert Brouwer
B. Sci. Civil Engineering
Eindhoven, NL

Adrian Brunner
Dipl. Architecture, ETHZ
Zurich, SH

Carsten Bruns
Hannover, DE

Pedro Buccellato
B. Arch, Prof. of Arch.
SACAP
Johannesburg, ZA

Andy Buhler
Electromechanical Eng.
B.S. Engineering
Schaffhausen, CH

Thies Burema
Elec. Eng., TU Eindhoven
Eindhoven, NL

David Burger
B. Engineering
Sydney, AU

Charles Burke
Prof. Civil Engineer
B.S. Engineering, Cal St.
Burbank, CA, LV

James Burns
MCIBSE, C. Eng, B Sci. (Hons)
B. Sci. Physics
South Yorkshire, GB

John Bursill
Lic. Aircraft Maint. Eng.
Avionics
Sydney, AU

Werner Busenius
Director Global Sales
M.S. Mechanical Eng.
Munich, DE

Arnaud Bérard
IT Engineer
Paris, FR

Nikolaus Böhm
Engineer
Dipl. Eng. Univ.
Bau, TU München
Nördlingen, DE

Martín Caballero Pose
Electrical Engineer
B.A. Eng., Udelar Uruguay
Montevideo, UY

Patrick Calleja
Architect & Civil Engineer
Bach. of Eng. and Arch.
Gharghur, MT

Carlogiovanni Carli
Mech. Eng. Degree
Universita di Parma
Parma, IT

Lynn Caron
P. Eng.
B.A. Sci. Mech. Eng.
Univ. of Waterloo
Brampton, ON, CA

Xose Rodriguez
M.S. Civil Engineering
Member of MICE
Madrid, ES

Sebastien Carton
Ph.D. Candidate
Chem. Eng.
B. Eng., Aeronautical
M. Sci. A., Industrial
Montreal, QC, CA

Debora Cavalli
B. Architecture.
Univ. Católica do Parana
Curitiba, Parana, BR

Lindsay Caywood
Ph.D. Engineering
University of Utah
Edmonton, AB, CA

Robertas Cerskus
M. Architecture
Vilnius Gediminas Tech. Univ.
Kaunas, LT

Mateusz Chachaj
M. Arch.
Wroclaw, PL

Marc Chaloupy
Engineer
ESTACA
Munich, DE

Mark Chambers
Architect, MAAA, MAIBC,
MRAIC, M. Arch.
Calgary, AB, CA

Huan Chan
B. Arch.
Univ. of New South Wales
Kuala Lumpur, MY

Sarah Chaplin
Surbiton, GB

Jason Cheshire
P. Eng
B. Eng., Chemical Eng.
Niagara Falls, ON, CA

Gerard Chevrot
Engineer
INSA Lyon
Saint Sixt, FR

Non-U.S. Architects and Engineers and A/E Professionals

Adrian Christen
Architect
Bern Univ. of Applied Sci.
School of Eng. and Arch.
Burgdorf, Switzerland
Thun, CH

Christian Christensen
Kolding, DK

Riccardo Cireddu
M. Sci. Arch. Const.
Univ. of Cagliari, Italy
Carbonia, IT

Christophe Clement
INSA, Eng., Lyon, France
Manosque, FR

James Clinch
Ekero, SE

André Coelho
Engineer
Ph.D.
Lisbon, Portugal, PT

David Collins
Shrewsbury, GB

David Conner
I. Engineer MIET
Berlin, DE

Jairo Contreras
B.S. Mech. Eng.
Universidad Nacional
Experimental del Tachira
Ojeda, VE

Nick Coombe
London, GB

Sheridan Copley
Sheffield, GB

Richard Cordingley
Graduate Engineer
BEng (Hons)
London, Hertfordshire, UK

Andrea Croci
M. Sci. Engineering
Politecnico di Milano
Berlin, DE

Filipe Cunha
Ponta Delgada, PT

David Cyr
B. Electrical Eng.
Montreal, QC, CA

Mathieu Côté
Student
Sherbrooke, QC, CA

Enrico Miguel Dalistan
B.S. Civil Engineering
Far Eastern University
Manila, PH

Aonghus Daly
Engineer
Civil Engineering
Cork, IE

Lalit Das
B. Tech. Civil Engineering
IIT Kanpur
Delhi, IN

Miguel David
Mechanical Engineer
FH Dortmund
Selm, DE

Farrin de Fredrick
B. Civil Eng., UNSW
Sydney, AU

Erwin De Jong
M. Sci. Mech. & Struct. Eng.
NL

Jacob de Raadt
P. Eng.
B. Sci., Univ. of Pretoria
Langley, BC, CA

Geoffrey Dean
B.E. J.P.
B.E. Civil/Structural
Univ. of West Australia
Brisbane, AU

Steve Dearlove
Architect
B. Architecture
Toronto, ON, CA

Oliver Deeg
Dipl. Engineering
Product Engineering
Freiburg, DE

Giuseppe Degradi
Carnate, IT

Frank Deike
Dipl. Eng., Architect
Uberlingen, DE

Manuel Delgado
Engineer
BSME
Madrid, ES

Herwig Delvaux
M. Architecture
Temse, BE

Luc Demeyer
Architect
University of Brussels
Brussels, BE

Jean Marc Demoulin
Architect
DPLG, France
Abbeville, FR

Paul Denis
Engineer
Dr. Mechs. and Mats.
Loire, FR

Guy Denutte
Engineer
Engineering
Univ. of Gent, Belgium
Cali, CO

Sebastiano DePani
Bach. of Engineering
Montreal, QC, CA

Eugenio di Bello
Architecture
Univ. of Venice, Italy
Udine, IT

Francisco Di Biase
Engineer
Rio De Janeiro, BR

Alberto Di Segni
B. Mechanical Engineering
Univ. La Sapienza Roma
Roma, IT

Victor Diaz
Engineer
B.S. Civil Engineering
Universidad Ricardo,
Palma Peru
Lima, PE

Greg Dickson
Architect
B. Arch. DU Geelong AU
Melbourne, Victoria, AU

Daniele Digregorio
Casale Monferrato, IT

Roger Dixon
P.Eng., MPH, CIH (Ret.)
B. Sci.Tech. (Elec. Eng.)
Picton, ON, CA

Carole Doohan
Sebastopol, CA, UM

Stéphane Doutriaux
CEO
B. Engineering, MBA
Lausanne, CH

Gabriel Doyle
Electrical Engineer
Brasilia, DF, BR

Michelangelo Dragone
Architect
Alberobello, Bari, IT

Scott Drake
B. Architecture
University of Adelaide
Bangkok, TH

Edward Drennan
P. Eng.
B.A.Sci., Univ. of Waterloo
Oakville, ON, CA

Andrew Drummond
B. Eng.
Mechanical Eng.
Uni of Glasgow
Glasgow, Scotland, GB

Jean-Louis Duhenois
Mech. Eng. (Materials) U.T.C.
Strasbourg, Alsace, FR

Steve Duncan
P. Eng.
B. Sci. (Electrical)
Univ. of Manitoba
Kelowna, BC, CA

John Dunham
MAIBC, MRAIC
B.A., B. Ed., B. Arch.
Salt Spring Island, BC, CA

Vojtech Dvorak
Eng. Arch., CTU Prague
Prague, CZ

Tony Dyson
FI Chem. Eng.
B. Eng., Chem.
Univ. Adelaide
Ballarat, Victoria, AU

Guillaume Dérien
Engineering Staff
Aerospace System
Conception Engineer
Cannes, FR

Cameron Earl
Mechanical Engineer
B. Engineering
Melbourne, Victoria, AU

Hans-Joachim Ebel
Dipl. Eng. Architecture
Lueneburg, DE

Peter Edmunds
B. Sci. Electronic Eng.
DeMontfort Univ.
London, UK

Hernan Eguiguren
Architect
B.A. Architecture
Catholic U. Ecuador
Quito, EC

Ayman El-Fouly
Engineering Consultant
B.Sci.
Durham, NC, US

Non-U.S. Architects and Engineers and A/E Professionals

Nils El-Himoud
Dipl. Informatiker (FH)
FH Konstanz
Friedrichshafen, DE

Said El-Majdalawi
Biomedical Engineer
Medical Engineering,
Surrey University
Guildford, Surrey, UK

Gavin Ellis
Ganges, BC, CA

Ozkan Emlek
Dipl. Wirtsch. Eng.
FH-Ansbach
Böblingen, DE

Gaillot Eric
DPLG Architecture
Porto Vecchio, FR

John C. Ermel
Dipl. Architecture ETH/SIA
Dornach, CH

Alexandros Ermogenous
B. Sci. Motorsport Eng.
Brunel University, London
London, GB

Helmut Ernst
Mechanical Engineer
Dipl. Eng. Univ. of Munich
Oberursel, Hessen, DE

Guillermo Escalante
Engineer
Systems Engineer
UVM Mexico
Mexico City, MX

Yusuf Essop
Mechanical Engineer
B.S. Mech. Eng.
Wits Univ. Johannesburg
Johannesburg, ZA

Jim Evans
Dr. C. Eng. Mech. Eng.
B. Eng., M. Sci., Ph.D., Mech. Eng.
London, UK

Jean Evrard
M.S. Eng., Physics
Brussels, BE

Hussein Faizi
Engineer
BCE, Georgia Inst. of Tech.
London, UK

Jon Falzon
Prof. Mechanical Eng.
B. Mech. Eng.
Adelaide, SA, AU

Qazi Faraz
M.S. Aerospace Eng.
Univ. of Illinois
Champaign, IL, US

Nicolas Farges
Engineer
Eng. Dipl. Level 2. French CESI.
London, UK

Tryfon Farmakakis
Engineer
M. Sci. Elec. & Comp. Eng.
NTUA GR
Athens, Attiki, GR

Istvan Fazekas
Engineer
B.A. Engineering
TUB Budapest
Budapest, HU

Hans Peter Feddersen
Agricultural Engineer
Flensburg, DE

Robert Feely
Bromma, SE

Richard Fells
Dipl. Architecture
Birmingham Sch. of Arch.
Plymouth, GB

João Ferreira
Engineer
Lisbon, PT

Sandor Finta
Architect
M. Arch, BME Budapest
Budapest, Hungary

Konrad Fischer
Dipl. Eng. Architekt BYAK
Dipl. Eng. Univ. TU München
Hochstadt, DE

George Forsyth
B. Sci. Mech. Eng.
London, UK

Jean-Etienne Fraiture
Engineer IGLg
Industrial Engineer
IG Liège, Belgium
Jalhay, BE

Ruy Franco
Architect
Santos, SP, BR

Johan Frederiksen
Engineer
Engineering, Aalborg Univ.
Århus, DK

Bernard Fredette
Architect
B.A. Arch. Univ. of Montreal
Montreal, QC, CA

Stefan Frischauf
Architect
Dipl. Ing. FH
Duesseldorf, Germany
Kabul, AF

Andreas Frohlich
Syst. Eng., Computer Sci.
B. Sci.
Duisburg, DE

Henk Frouws
Bach. of Engineering
Higher Technical College
Nijmegen, NL

Markus Frutig
Dipl. Eng., Architecture
TU Stuttgart
Zurich, CH

Randall Fry
Cert. Eng. Technologist C.E.T.
Elec. Eng. Tech. SIAST
Pincher Creek, AB, CA

Roberto Furlan
Civil Engineering
Univ. of Padova, Italy
Piove Di Sacco, IT

Rob Furmanic
B. Sci. Mech. Eng.
Univ. of Saskatchewan
Saskatoon, SK, CA

Pierre Gallant
Grande-Digue, NB, CA

Nick Gallis
Master in Architecture
Antwerp, BE

Angel Garcia DE Vinuesa
Architect, M.Litt. MDI
Arch. and Town Planning. ETSAN
Madrid, ES

Silvia Garcia
MX

Freddy Gardiol
Engineer, Sc.D., Prof. (Ret.)
Physicist Engineer
Pully, Vaud, CH

Marek Gasiorek
Architect
Wolka Kozodawska, PL

Gerd Gaudray
Engineer
Dipl. Engineering
Langenau, DE

Guy Gauthier
Engineer
B. Eng., M. Applied Sci.
Ecole Polytechnique
Lachine, QC, CA

Alexandru Gavozdea
B. Sci. Architecture
The Ion Mincu University of
Architecture and Urbanism
Bucharest, Romania
Sibiu, RO

Bill Genitsaris
Consulting Struc. Eng. & Builder
BA Eng., Uni. of Melbourne
Melbourne, AU

Sean George
Kingston, ON, CA

Tiziana Geraci
Architect, Politecnico di Torino
Torino, IT

Francesca Gervasutti
Degree in Arch. Design
Politecnico of Milan
Milan, IT

Iman Ghaly
Architect
B. Sci. Architecture
Cairo, Zamalek, EG

Martin Giuffrida-Ruggeri
P. Engineering
BSME, Univ. Wisconsin
Blind Bay, BC, CA

Richard Golay
Engineer
M. Sci.
Pully, CG

Peter Goldschmidt
Nordhorn, DE

Marcos Gonzalez
M. Arch.
M. Sci. Arch., U of C
Colima, MX

Clemens Goselink
B. of Built Environment
Hogeschool Enschede, NL
Deventer, NL

Carl Goss
B. Sci. (Hons) Architecture,
M. Sci., MCIOB, MCIAT, MAPM
Leeds, W Yorks, UK

Non-U.S. Architects and Engineers and A/E Professionals

Rossella Gotti
Architect
London, UK

Piet Gouws
Pr. Arch., MI KZ-NIA
Durban, ZA

Manogran Govender
Prof. Eng, Civil Eng. Consultant
Prof. Eng, B. Eng., UDW
MBL, UNISA
Durban, ZA

Luigi Grandi
Dr. Architecture
Politecnico di Milano
Brescia, IT

Christopher Granger
Architect
B. Sci. (Hons), Dip. Arch
Bolton, UK

John Gray
BFA, B. Architecture
Melbourne, AU

Marc Graziani
P. Eng.
B. Eng. Aerospace
Carleton University
Guelph, ON, CA

Samuel Green
Bristol, GB

Christophe Guillouet
Paris, FR

Guven Guler
Engineering Consultant
B. Sci., Mining Engineering
Ankara, TR

Peter Gyurik
B. Mechanical Engineering
Växjö, Småland, SE

Tahar Haddad
Ph.D. Sci. and Tech. Info.
M. Sci. A., Elec. Eng,
B. Eng. Elec. Eng.
Ottawa, ON, CA

Adrian Hallam
M.I.A.
B. Architecture
Durban, ZA

David Hallier
Engineer
INSA Lyon
Saint Lager Bressac, FR

Stephen Hanneman
B. Sci. Architecture
Univ. of Toronto, Canada
Gibsons, BC, CA

Rasmus Hansen
Refinery, Team Leader
Marine Engineer
Aarhus, DK

David Haraldseid
M.S. Engineering
Aksdal, Rogaland, NO

Omar Harb
Architect
M. Architecture
Holy Spirit Univ. of Kaslik,
Jounieh, Lebanon
Beirut, LB

Reinhold Harder
Dipl. Engineering
Großwoltersdorf, DE

Neil Harmon
B. Engineering (Hons.)
Electrical & Electronic Eng.
Leeds, GB

Gerd Harms
Dr. Engineering
Burgdorf, DE

Muhammad Haseeb
B. Eng., Computer Sci.
Visvesvaraya Tech. Univ.
Karnataka, India
Tirur, IN

Chris Haughton
Registered Architect
B. Arch., Univ. of Liverpool UK
Sydney, AU

Chris Hazzard
Bach. of Civil Engineering
Kelmscott, AU

Andreas Hedqvist
Den Haag, NL

Frank Hellin
Electro-Mechanical Eng.
M.Eng., ElectroMechanics
KaHo Gent, Heule, West.
Flanders, BE

Kevin Henriksen
AEC Software Developer
B.S. Electrical Eng.
Univ. of Iowa
Brisbane, IA, AU

Anton Herciu-Ivascu
Cambridge, ON, CA

Peter Hermans
B. Architecture
Auckland University, NZ
Bangkok, TH

Yosvel Hernandez Suarez
Engineer
B. Engineering
ISPAJE, Havana, Cuba
Montego Bay, JM

Greg Hession
BA Sc. Civil Engineering
Univ. Ottawa, Ontario
Ottawa, ON, CA

Michael Him
Architect
Georgetown, MY

James Hoadley
B. Arch. Auckland
Auckland, NZ

James Hodgskiss
B.Eng (Hons)
Electronics & Communications
University of Liverpool
Holmfirth, GB

Alwin Hoff
Dipl. Eng. FH Architect
Mainz, DE

Norman Hoff
Tabanan, ID

Daniel Hofnung
Building Industry Eng.
Ivry Sur Seine, FR

Raymond Hogue
P. Engineering
BSC University of Toronto
Peterborough, ON, CA

Eivind Holden
Architecht
Brønnøysund, NO

Steen Holmgren
Architectural Consultant
MAA Royal Acad. of Fine Arts
Copenhagen, DK

Terje Holthe
Civil Engineer
B. Science, Civil Eng.
Drammen, NO

Benjamin Hornblow
Senior Engineer
Mech. Eng., B.A.Sc., UBC
Copenhagen, DK

Christian Hostettler
Sr. Electrical Automation Eng.
Univ. of Applied Sci., Rapperswil
Diamond Creek, AU

Cyrille Houdebine
Structural Engineer
Master
Lyon, FR

Tahar Houhou
Engineer
Rhone, FR

Jean Hudon
B. Engineering
Montréal, QC, CA

Nils Hulgaard
P.E.
M. Sci. Civil Engineering
Tech. Univ. of Denmark,
Copenhagen, Denmark
Ebberup, DK

Jan Hundseid
Engineer
M.S. Mechanical Eng.
Stavanger, NO

Ove Hundseid
Principal Engineer
M.S. Mech. Engineering
Sandnes, NO

Craig Hutchinson
M. Eng. Dist.
Canterbury Univ., NZ
Christchurch, NZ

Pierre Huyard
Architect
Ho Chi Minh Ville, VN

Jorge Huyer
Engineering Consultant
Structural Doctor
Toledo, Paraná, BR

Stefan Iacob
Vaslui, RO

Dmitry Ignatyev
Nizhny Novgorod, RU

Klaus Illum
Dr.
M. Sci. Civil Engineering
Fur, DH

David Incertis Jarillo
Valencia, ES

Buero Andreas
Gross GmbH
Engineer
Eng. FHS Wedel, Germany
Morgarten, CH

Graham Inman
Civil & Structural Eng.
London, UK

Non-U.S. Architects and Engineers and A/E Professionals

Claudio Irizarry
Chatillo, PR

Md Islam
M. Sci.
Edmonton, AB, CA

Bahiah Ismail
Subang Jaya, MY

Hadi Izadi
Ph.D., Student
M.A. Science
B.A. Sci. Electrical Eng.
Vancouver, BC, CA

Steve Jackson
B.A. Sci.
Brantford, ON, CA

Dennis Jacobs
Bach. Steel Engineering
Hoger Tech. Inst.
Driel, NL

Jackie Jankpwski
EIT Electrical
B.A. Sci. Univ. of Ottawa
Reno, NV, US

Lech Jaworski
Engineering Consultant
Master Of Science Food
Engineering, SGGW
Vancouver, BC, CA

Christian Jensen
Engineer
B.A., Electronics, DTU
Copenhagen, DK

Andrew Jensson
P. Electrical Engineering
Kamloops, BC, CA

Peter Jessen
Engineer
B.A., Engineering
Ballerup, DK

Robert Jessurun-Visser
Dr.Ing., M.Sc.
Dr. Ing. Aeronautical Sciences,
T.U. Delft, The Netherlands
Jardinga, Friesland, NL

Viktor Jindra
Bc., B.A., Architecture
VUT Brno
Brno, CZ

Robert Jirava
P.Eng., C.Eng., M.Struct.E
Struct. Eng, B.A.Sci.
Surrey, BC, CA

Arild Eugen Johansen
Civil Architect
MNAL/Ind. Designer MNID
Diploma in Architecture
Bekkestua, NO

Nils Johan Johansson
M. Sci. Engineering Physics
Karlskrona, Blekinge, SE

Christoffer Johnson
Surte, SE

Peter Johnstone
Engineer
B. Civil Eng., Newcastle
Brisbane, AU

Howard Johnston
Architect, BA(AS) Dip. Arch.
BA Architecture
PG Diploma Architecture
Wirral, GB

Matthew Johnston
Advanced Diploma Mech. Eng.
Hastings, NZ

Everhardus 'Hardy' Jonck
Bach. of Elec. Engineering
Univ. of Pretoria, South Africa
Cape Town, ZA

Byron "Doug" Jordan
M.S. Mechanical Eng.
University of Houston
Riyadh, SA

Benoit Josz
Industrial Engineer
Brussels, Belgium

Robert Jung
Engineer
BSME
Lenzburg, AG, CH

Boris Jäggi
Dipl. Ing. ETH
Master of Sience
Zürich, CH

Matthias Kahle
Dipl. Ing. (FH)
Mechanical Eng., THM
Gießen, DE

Nima Kalbasi
Mechanical Engineer
B.A of Applied Sci. & Eng.
Toronto, ON, CA

Peter Kalcev
Bach. Aeronautical Eng.
Bankstown NSW, AU

Peter Kalcev
Bach. Aeronautical Eng.
Bankstown NSW, AU

Razali Kamisan
B. Arch., Univ. of Miami
Tronoh, Perak, MY

Merlijn Kamps
B. Sci.
Mechanical Engineer
University of Suriname
Rotterdam, NL

Vaughan Keal
Beccles, GB

Kieran Kelly
B. Engineering
Electronic Eng.
G. Dipl. Comp. Eng.
Tralee, IE

Thomas Kelly
Dipl. Ing. (FH)
Communications Eng.
Karlsruhe, DE

Martin Kendall
B. Eng. (Hons)
Brisbane, AU

Trevor Kent
New Ross, IE

Reinhard Kern
Dipl. Engineering
Forchheim, DE

Abu Khan
IT Consultant
Electronics &
Communication Eng.
Delhi, IN

Faseel Khan
P.E.
M. Sci. Civil Engineering
Univ. of Eng. and Tech.
Lahore, Pakistan
Regina, SK, CA

Philip Kienholz
NWTAA, PMP, Architect
B. Architecture
Hay River, NT, CA

John Kiernan
B. Sci. Structural Eng.
Dublin Institute of
Technology, Ireland
Longford, IE

Ir Chan Kin Pooi
MIEM, P.Eng, MCIHT,
B. Sci. (Hons) Civil Eng.
Kuala Lumpur, MY

Adam Kingsnorth
Electronic Engineer
B.E.(Hons)
Electronics and Computer
Westcliff-on-Sea, UK

Márton Király
Budapest, HU

Gerhard Kleinke
Bach. Engineering
Univ. of Technology
Braunschweig, Germany
Bremen, DE

Stephen Knowles
M. Engineering
Yarker, ON, CA

Gert Koopman
Engineer
M.Sc., PDEng
Amstelveen, NL

Johan Koopman
M. Sci., M.E.
Delft Univ. of Technology
Heiloo, NL

Konsta Koppinen
Lecturer
Dr. Technology
Tampere, FI

Roman Korol
Engineer
B. Eng. (Electrical)
Montreal, QC, CA

Luke Kraynyk
Winnipeg, MB, CA

Christoph Kremin
Dr. Eng., Mech. Engineering
TU-Ilmenau
Hamburg, DE

Steve Kretschmann
B.Sci. Engineering (Computer)
Univ. Manitoba, MB, Canada
Winnipeg, MB, CA

John Kroll
Architect
Arch. School Royal
Academy of Fine Art
Kongens Lyngby, DK

Joel Kuhn
B.S. Mechanical Eng.
Toronto, ON, CA

Reinhard Kuhn
Engineer
Dipl. Engineering
B.A. Mosbach Germany
Ludwigsburg, DE

Non-U.S. Architects and Engineers and A/E Professionals

Gerard Kupfer
Architect
Dipl. Building Engineer
Techn. Univ., Delft
Den Haag, NL

Sukru Kurkcuoglu
Civil Engineer
M. Sc. Tech. Univ., Istanbul
Istanbul, TR

Lukas Kurmann
Dipl. El. Eng. FH, M.Sci. E.E.
M. Sci. Eng., Syracuse Univ.
Franken, FR

Heikki Kurttila
Safety Engineer
Doctor of Technology
Espoo, FI

Florian Kurz
Architect
Dipl.Ing. (FH)
GSO-Nuremberg
Nürnberg, Bavaria, DE

Susumu Kuwano
Architect
Tokyo, JP

Ioannis Kyriakou
M. Engineering
Thrace, GR

Kris La Rose
P. Engineering
Bach of Mechanical Eng.
Vancouver, BC, CA

Silvan Laan
Architectural Designer
B. Design, Arch. Design
Gerrit Rietveld Acad.
Amsterdam, NL

Jorge Labrador
Architecture, Universidad
Politécnica de Valencia
Valencia, ES

Alex Laflamme
Bach. of Electrical Eng.
Sherbrooke Univ., Quebec, CA
Gatineau, QC, CA

Robert LAllier
Engineer
Industrial Eng., Building Mgmt.
Montreal, QC, CA

John Lambert
B. Eng., Univ. of Melbourne
Wandana Heights, AU

John Larsen
M. Sci. Elec. Eng.
Technical Univ. of Denmark
Fejoe, DK

Knud Larsen
Professor Emeritus, Architect
M. Architecture, Copenhagen
Oslo, NO

Jason Launchbury
B. Eng. (hons) Engineer
B. Eng. (hons) Digital Systs.
Kaiapoi, NZ

Francisco Lebre
Structural Engineer
IST Lisbon Portugal
Lisbon, PT

Christophe Leclerc
Engineer
Saint Cyr, France
Bruxelles, BE

Stephen Lee
Architectural Designer
M. Arch., Univ. of Virginia
Paris, FR

David Leifer
Registered Architect
B. Sci., B. Arch., M. Ed., Ph.D.
Sydney, AU

Peter Liebold
Dipl. Engineering
Greiz, DE

Vincent Liegey
Mechanical Engineer
Masters Degree
Clermont Ferrand, FR

Vilis Lietuvietis
BES, Johns Hopkins Univ.
MSEE UCSB
Illurma, EE

Kenneth Lim
Chemical Engineering
Selangor, MY

Yan (Frank) Li
Sydney, AU

David Llewelyn
Fellow of the Institution
of Mechanical Engineers
Mechanical Eng., Bristol UK
Oslo, NO

Fiaz Lodi
Mechanical Engineer
Bach. of Mechanical Eng.
Dubai, AE

Gloria Lo
M. Arch. Hons
MA ARB RIBA RIAS
Architecture
Edinburgh, GB

Lise Longo
Architect
Universidade Federal
de Santa Catarina
Santa Catarina, BR

Victor Lopez-Rioboo Gil
Sustainable Architect
B.A. Architecture
A Coruña, ES

Otto Lund
Engineer IT
Trondheim, NO

Eric Luypaert
Engineer
B.A., Engineering, E.T.S.
Montreal, QC, CA

Svein Lysø
Bergen, NO

Andreas Lössl
Ph. D. Agricultural Eng.
Merching, DE

Peter Maas
B.S. General Eng. Sci.
Karlsruhe, DE

Ian Maclean
Professional Engineer
B.S. Mechanical Eng.
Winnipeg, MB, CA

Kasper Madsen
Engineer
Helsingoer, DK

Derek Mah
B. Architecture
Univ. of New South Wales
Sydney, AU

Frank Maly
B.E. Electrical Eng.
Univ. of New South Wales
Canyonleigh, AU

Eric Mandemaker
Engineering Consultant
B.Tech. Hon. Aero Eng.
B.Tech. Lougborough Univ. UK
Lier, Antwerp, BE

Zain Mankani
B. Arch., MS
B. Arch. IVSAA Karachi, PK
M.S. Const. Mngt. HTW, Berlin
Karachi, Sindh, PK

Taymoor Marar
B.S. Electrical Engineering
Univ. of Colorado, Boulder
Lyon, FR

Taymoor Marar
B.S. Electrical Engineering
Univ. of Colorado, Boulder
Lyon, FR

Pierre Marchand
Mechanical Engineer
Master Of Applied Science
Montreal, QC, CA

Martin Marchart
Engineer
Mech. & Electronics Eng.
Vienna, AT

François Marginean
Architectural Consultant
Collège du Vieux,
Montreal, Canada
Montreal, CA

Minor Martin
Architect
Anarquia Architecture
Costa Rica
San Jose, CR

Jan Marton
Engineer, Arch.
FA ČVUT Prague
Liberec, CZ

Bruno & Savino Masciandaro
Torino, IT

Paul Mason
Civil/Structural Engineer
Bachelor of Engineering
Melbourne, Vic, AU

Zahir Masters
Architect
B. Architecture
Pune, IN

Wesley Matthew
Engineer
B.E. Computer Science
Anna University
Trivandrum, IN

Darragh McConville
Software Engineer
B. Eng., Software Eng., UUJ
Belfast, N. IE

Michael McGill
C. Engineering MICE
B. Sci. (Hons)
Liverpool, UK

Geeoffrey McKee
Engineering Consultant
B.E. (Chemical),
Univ. Canterbury NZ
Sydney, AU

Non-U.S. Architects and Engineers and A/E Professionals

Geoff McMahon
B. E. Eng., MIE Australia
Bach. Degree of Electrical Eng.
Melbourne, AU

Alberto Medici
Electronic Engineer
Padova, IT

Mario Melhem
Eng. Geologist/Petrologist
Univ. de Sao Paulo (Master)
Melbourne, AU

Judith Meléndrez Bayardo
Arch. Degree, La Universidad National Autonoma de Mexico
México City, MX

Alexander Merker
Engineer
Dipl. Eng., Information Tech.
Hannover, DE

Joshua Miccoli
Dipl. Eng. Architect
Neuthard, DE

Alan Middleditch
Professor
B. Sci., M. Sci., M.S., Ph.D. Engineering
Uxbridge, GB

Kayser Milleliri
Architecture D.P.L.G.
Sartene, FX

Martina Minardi
Turin, IT

Ali Mohamad
Bach. of Aerospace Eng.
Royal Melbourne Inst. of Tech.
Melbourne, AU

Mohamed Mohideen
Planning Manager
B.E. Civil Engineering
Dammam, SA

Emilio Molinero
Master of Architecture
Polytechnic Univ. of Catalonia
Barcelona, ES

Giovanni Monaco
Master of Architecture, University of Palermo, Italy
Salemi, IT

John Moon
P. Eng.
BSE (EE), BSE (Eng. Physics), Univ. of Michigan
Skead, ON, CA

David Moore
Principal Architect, ARAIA
B. Arch Melb., M.Arch Melb.
Melbourne, Vic, AU

Arturo Moreno
B. Arch SCI-Arc
Suita-shi, Osaka, Japan

Pablo Morera Ballester
Architect
Univ. Politecnica de Valencia
Escuela Tecnica Superior de Arquitectura, Valencia Spain
Valencia, ES

Sébastien Morfouace
Architecte d.e.h.m.o.n.p.
Plestin-les-grèves, FR

Steven Morris
B.A. Engineering
Cardiff, Wales, GB

Renato Moscardini
Boncourt, CH

Dr. Robert Mote
Ph.D., Structural Eng.
B. Eng. (Hons)
Calgary, AB, CA

Sergio Mualim Celume
Atarfe, ES

Johannes Mueller
Dipl. Engineering
RWTH Aachen
Olching, DE

Urs Mueller
Ph.D. Student
M.S. Electrical Eng.
Eidgenössisch Technische Hochschule Zürich
Neuchâtel, CH

Kamel Mukharesh
Beirut, LB

Hamid Mumin
Ph.D. Univ. of W. Ontario
Brandon, MB, CA

Mujeeb Musavi
B.E. Civil
Toronto, ON, CA

Paola Mussini
Architect
B. Architecture
Restoration & Urban Planning
Politecnico of Milan Italy
Novara, IT

Juan Ignacio Muñoz
Mechanical Engineer
E.U.I.T.I Bilbao
Bilbao, ES

Christian Münkel
B. Sci.
Mech. & Process Eng.
Tech. Univ. of Darmstadt
Ober-Ramstadt, DE

Regine Naeckel
Graduate Engineer for Landscape & Environmental
Berlin, DE

Enrico Napolitano
Civil Engineer
Univ. Central de Venezuela
London, GB

Safder Nazir
B. Eng., M. Sci.
M. Sci. Ind. Eng.
Manchester, UK

Dave Nebezpecny
Eng. Arch. STU Bratislava
Bratislava, SK

Sam Nejad
Engineering Consultant
B. Sci. Engineering
Geraldton, AU

Ivan Nemec
Ass. Prof., M. Sci., Ph.D.
Ass. Prof. of Eng., Mech. T.U.
Brno, CZ

David Nicolea
Novo Hamburgo, BR

Edwin Nieuwenhuyse
M. Sci. Elec. Eng.
University of Technology, Eindhoven, Netherlands
Ouderkerk aan de Amstel, NL

Luutzen Nijdam
Engineering Consultant
B.A., Irrigation & Civil Eng.
Wageningen, NL

Eugene Nikitin
Engineering Consultant
Masters in CE, VSACU
Voronezh, RU

Nikolaos Nikolaidis
Engineer
B. Eng., M.Eng.
Thermi, GR

Gary R Nolen
Fatima, PT

Jim Norie
P.Eng., B.A.Sc. (Civil)
U.B.C., MEDes. (ES).
Victoria, BC, CA

Terry Norman
C Eng., B. Sci. Eng.,
M.I.M.C. Eng. Consultant
B. Sci. Mechanical, University of London
Wilmslow, GB

Anthony Novak
Managing Director
B.S.E.E.
Bangkok, TH

Sam O'Donnell
Student
Bach. of Building Sci.
Wellington, NZ

Karl Josef Oberländer
Port Grimaud, FR

Vida Ogorelec
B. Arch. MFA
B.A Eng., Univ. of Ljubljan
Dorking, UK

Janine OKeefe
B. Sci. Engineering
RMIT Univ., Melbourne, AU

Emmanuel Olatoye
Architect, Member Moscow Union of Architects
M.Sci. Architecture
Toronto, ON, CA

Marian Ontkoc
Humenne, SK

Jim Opfer
Architect
Dipl. Arch., RIBA, RIAS
Glasgow, Scotland, UK

Patricia Ormsby
B.S. Chem.E.
Univ. of Colorado
JP

Jorge Ortiz-Colom
Architect
M. Arch. Univ. of Puerto Rico
Guayama, PR, US

Shashank Padmanabhan
Software Programmer
B.E., Telecoms.
Bangalore, IN

Filippo Palazzolo
Architecture,
Univ. of Palermo, Italy
Cinisi, Palermo, IT

Non-U.S. Architects and Engineers and A/E Professionals

Ondrej Papes
Mechanical Engineer
Dipl. Masch. Eng. ETH
Bäch, CH

Julio Pardilla
Architect
Polytechnic Univ.
of Barcelona
Barcelona, ES

Yves Parent
P. Eng.
B.S. Elec. Engineering
Univ. of New Brunswick, CA
Saint John, NB, CA

Cameron Parkes
B. Sci. Chemical Eng.
Univ. of Calgary, Canada,
West Vancouver, BC, CA

Adam Parrott
B.S. Chemical Engineering
Montreal, QC, CA

Frank Pasquill
Prof. Engineer (Ret.)
B. Sci. Mech. Eng.
Univ. of Manitoba
Toronto, ON, CA

Howard Pasternack
B.A.Sci., P.Eng.
B.A.Sci. Civil Eng.
Univ. of Toronto
Toronto, ON, CA

Jan-Bernd Pauli
Engineer
Dipl. Eng. (FH)
University Werl,
N. Rhine Westphalia, DE

Thomas Pedersen
M. Sci. Civil Engineering
Tech. Univ. of Denmark
Lyngby, DK

Sarit Peer
B.E., Engineer
Mumbai, IN

Karl-Heinz Peil
Eng. in Building Tech.
Dipl. Eng. (Germany)
Frankfurt Am Main, DE

Stephen Peppin
Leighton Buzzard, GB

Bruno Peretti
Fartura, BR

Carlos Gustavo Perez
Master Engineer
Control and Automation
Pontificial Univ. of Peru
Lima, PE

Sebastien Perrault
Civil Engineer, ESTP, France
Paris, FR

David Pesten
B.E. M.B.A.
UTS, Sydney, Mechanical
St. Petersburg, RU

Jiri Peterka
Master of Engineering
Informatics and Automation,
Faculty of Mech. Engineering
of the Tech. Univ., Brno, CZ
Bzenec, CZ

Jean-Claude Pierrard
Architecte
ISA St-Luc Bruxelles
Robelmont/Meix-Dvt-Virton
Luxembourg, BE

Antanas Pikalovas
Bach. of Arch.,
Vilnius Gediminas Tech. Univ.
Vilnius, Lithuania
Vilnius, LT

Thomas Pittracher
Dipl. Arch ETH/SIA
Stuttgart, DE

Alain Plasschaert
Engineer
M. Sci., Mech. Eng. TU Delft
Den Bosch, NL

Doug Plumb
Toronto, ON, CA

Leonard Pomodoro
Engineer
M. Eng., EPFL Lausanne
Lausanne, CH

Andre Ponzo
Engineer
Elec. Power Engineering
Geneva, CH

Claudiu Pop
Site Manager
M. Sci. Industrial Eng.
Malmö, SE

Helena Potgieter
B.Arch., Prof. Arch., M.Arch.
University of Pretoria
Pretoria, ZA

René Poulsen
Scientist
B. Sci. Chemical Eng.
Lyngby, DK

Thomas Poulsen
M.Sc. Comp. Sci. Eng.
B. Sci. Energy Eng.
M.Sci. Engineering
Brovst, DK

Victor Prodanovic
Master of Elec. Eng.
School of Elec. Eng.
University of Belgrade,
SFR of Yugoslavia
Lane Cove, AU

Wadim Puhl
B. Engineering,
Univ. of Applied Science
(Fachhochschule), Germany
Ingolstadt, DE

Gemma Pérez Guerrero
Telecom Engineer
Ponferrada, León, ES

David Quinn
M. Arch., Intern Architect
Halifax, NS, CA

Maxine Raabe
BA Hons., Dip Arch.
BA Hons. South Bank,
Dip Arch. Canterbury
Whitstable, UK

Danny Rabinowitz
Montreal, QC, CA

Allan Racasa
Civil Engineer
B.S. Civil Engineering
DLSU Manila
Quezon City, MM, PH

Diego Rafael
Caracas, DC, VE

Aravind Ramasamy
Bach. of Engineering
Sydney, AU

Damien Rambaud
Electronic Engineer
ENSEEIHT
Toulouse, FR

Slava Rapoport
M. Engineering
M. Eng., Power Engineering
Gta, ON, CA

Frank Rasmussen
Mech. Engineer
B. Sci.
Silkeborg, DK

Ulrich Reiter
Master of Theatre Eng.
Baden-Wurttemberg
Cooperative State Univ.
Berlin, DE

Ali Rguichi
Engineer
Dipl. Engineering
Munich, DE

Rodrigo Riadi
Mechanical Engineer
Univ. Sao Paulo
Westminster, CO, US

Cliff Richard
P. Eng
Bach. of Mech. Eng.
Univ. of Alberta, Canada
Edmonton, AB, CA

Simon Richards
Engineering Graduate
B. Eng. (hons) Mech. Eng.
Stevenage, UK

Pierre Richelle
Consulting Engineer
M. Sci. Civil Engineering
Brussels, BE

Arnaud Riou
Engineer
B.A. Mechanical Eng.
Gaillac D´Aveyron, FR

Alejandro Ripstein
Engineer
BA Engineering ITESM
Monterrey, Mexico
Mexico City, MX

Puput Risanto
Engineer
B.Sci. Engineering
ITB Indonesia
Yogyakarta, ID

Adrian Rivera
B. Arch., Virginia Tech
Marbella, ES

Richard Robbins
Drilling Fluids Engineer
B. Eng. Geol. & Geotechnics
Coventry, UK

David Roberts
Amsterdam, NL

Hector Rodriguez
Mexico, DF, MX

Jason Rollin
B. Eng. Civil
London, UK

Mathias Rollot
France, FR

Willem Roos
Eindhoven, NL

Sven Rothfuss
Dipl. Engineering
M. Sci. Structural Eng.
West Sacramento, CA, US

Non-U.S. Architects and Engineers and A/E Professionals

Joe Rowling
Architectural Staff
London, UK

Jérôme Royer
Mechanical Engineer
Paris, FR

Gary Rozak
B. Sci. Mechanical Eng.
Calgary, AB, CA

Damien Rozand
Roquebrune Cap Martin,
FR

Sven Ruin
M. Sci. Vehicle Eng./
Applied Mechanics
Royal Inst. of Tech., Stockholm
Köping, SE

Demetrio Ruivo
Bucuresti, RO

Odette Rundle
B. Eng. in Metallurgy
Univ. of Pretoria, ZA
London, UK

Marc Salesse-Lavergne
Engineer
Marseille, FR

Jose Sancho
Bach. of Architecture,
Univ. of Chile, Santiago
Montreal, QC, CA

Enzo Saponara
Structural Engineer
Civil University of Florence
Roma, IT

Angelo Saracini
Architect
Facolta' Architettura
Roma Sapienza
Athens, GR

Mike Satten
P.E.
B. Sci. Engineering,
Lakehead Univ., Ontario,
Thunder Bay, ON, CA

Ovidio Sbrissa
Architect
B. Architecture
Ottawa, ON, CA

Mario Scarpone
P. Engineering
Bach. of Engineering
Waterloo, ON, CA

Dieter Schaub
Dipl. Eng. (Engineer)
Dipl. Eng. (FH)
Burscheid, DE

Ralf Scheffer
Dipl. Eng. Architekt
B. Arch., Trier Germany
Luzern, CH

Hans-Joachim Scheimer
Dipl. Eng., Hochbau Univ.
Berlin, DE

Christian Schimert
Dipl. Engineer of Arch.
Masters of Science
West Vancouver, BC, CA

Leslie Schlag
Erfurt, DE

Bernd Schmidt
Civil Engineer
Dipl. Engineering
Greifswald, MV, DE

Thilo Schmidt
Mechanical Engineer
Master of Engineer
Recife, PE, BR

Christian Schoenthaler
Dipl. Eng. Architect
Dipl. Eng. (FH), Arch., PBSA
Zuerich, CH

Richard Schooling
Bad Rodach, DE

Steven Schultz
B.A. Sci., Civil Eng.
U of Waterloo
Kitchener, KS, CA

David Scott
AMICE, C. Eng.,
MI Struct. Eng.
B. Engineering
Perth, GB

Scott Seedell
B. Sci. (Hons) IEng. MIET
B. Sci. (Hons), Eng., Plymouth UK
Plymouth, UK

Francisco Seixas Pereira
São Paulo, BR

Syed Shah
Architect
B.Arch NWFP
UET Peshawar
Mardan, PK

Allan Sharp
B. Sci., M. Sci., C. Eng.
Dundee C of T, Mech. Eng.
Aberdeen, Scotland, UK

Philip Shields
B. A. Architecture
Manchester, GB

Werner Simbeck
Bach. of Mech. Eng.
Victoria, BC, CA

Antonio Simões de Abreu
Engineer
Lisboa, PT

Ajay Singh
Software Developer
Bachelor of Engineering
Bangalore, IN

Patrik Skoch
Civil Engineer
Prague, CZ

Norm Slater
Sooke, BC, CA

Hendricus Johannes Smit
Engineering Consultant
B. Sci., Chem. Engineering
HHS & HR&O
Utrecht, NL

Lee Snethun
B. Sci. Petroleum Eng.
Montana Tech
Calgary, AB, CA

Gerhard Snyman
B. Eng., Mechanical
Sandton, ZA

Erik Soderlund
Chief Engineer
BS Marine Engineering
Hang Dong, Chiang Mai, Thailand

Kathryn Sole
Johannesburg, ZA

Zim Solo
Brisbane, AU

Monica Sortland
B. Sci. Engineering
Sogn og Fjordane Univ.
College, Norway
Floroe, NO

Dario Sosa
Engineer
Ph. D., Univ. of
Las Palmas de G.C.
Las Palmas De G.C., ES

Ibrahim Soudy
Ph. D., P.E., S.E.
Professional Engineer
B.S. M.S. Ph.D.
Univ. of Alberta Canada
Seattle, WA, US

Vichith So
Montreal, QC, CA

Matt Spruell
Design Engineer
B. Ind. Design
Univ. of New S. Wales
Sydney, AU

Nadine St-Laurent
Engineering Consultant
B.S. Civil Engineering
Laval Univ. at Québec
Quebec, QC, CA

Johan Stage
B. Eng., Civil Eng.
Univ. of S. Denmark
Maniitsoq, GL

Andreas Stanglmeir
Mintraching, DE

Matthew Starkey
M. Engineering
Wolverhampton, GB

Thomas Stjernkvist
Gothenburg, SE

Greg Strebel
Quesnel, BC, CA

Azman Sufat
B.S. Electrical Eng.
Univ. of New Haven
Shah Alam, MY

Franz Suppanz
Mechanical Engineer
Dipl. Ing., Tu Graz, Austria
Graz, AU

Willi Syben
Engineer
Dipl. Engineering
Erkelenz, DE

Lorillou Sylvain
M. Sci. Engineering
TP HCM, VN

Karim Tabbara
Architect
DPLG
Marzens, FR

Robert Tamaki
M.A. Sci., P.Eng., Civil Eng.
B.A. Sci., M.A. Sci.
Vancouver, BC, CA

James Tam
P. Engineering
M.A.Sci. Bio-Resource
UBC, Canada
Hong Kong, HK

John Taylor
Engineer
B. Sci., M.E.
University of Manitoba
Boquete, PA

Non-U.S. Architects and Engineers and A/E Professionals

Scott Taylor
Oakville, ON, CA

Vincent Tempelman
P.E.
B.S. Civil Eng.
UMass Amherst
Constanta, RO

Michel Tenart
Eng. Risk Mngt. Co.
Engineer
Pau, FR

Miryana Teneva-Harper
Architect
Soña, BG

Damon Thomas
Central Hawkes Bay, NZ

Lucky F. Thomas
Copenhagen, DK

Daniel Tinnelly
Vancouver, BC, CA

Johan Tivander
Research Engineer
M.Sci. Engineering
Gothenburg, SE

Angelo Tofalo
Engineer
Civil Engineer
Salerno, IT

Jasper Tomlinson
MA(Oxon) C. Env. MCIWEM
Environ. and Water Res.
London, London, UK

Andreas Torggler
Bach. of Civil Engineering
Univ. Innsbruck, Austria
Klausen (BZ), IT

Marc Torra Ferrer
Architect
ETSAB - Barcelona
Olot, Catalunya, ES

Juan Carlos Torrico
Santiago, CL

Sam Tripp
Yateley, GB

Luis Trivellini
Civil Engineer
Bahìa Blanca, AR

Thomas Troy
P.E
B. Eng. Electrical Power
McGill University
Maitland, ON, CA

Michael Ubrig
Architect
Dipl. Ing. FH
Zurich, CH

Borja Ugarte
San Sebastian, ES

Ulf Ullby
M. Sci. Engineering
Tech. Univ. of Denmark
Copenhagen, DK

Juergen Unser
Dipl. Eng. Architect
FH Wuerzburg Germany
Schweinfurt, DE

Thomas Utschig
Frankfurt am Main, DE

Kathrin Utz
Röttenbach, DE

Jan Utzon
Architect
Hellebaek, DK

Razvan Vacaru
Pesaro, IT

Simon Vaillancourt
Engineer
B. Sci. Eng., Mechanical
Montreal, QC, CA

Wico Valk
Architect
Ir., Architecture, TU Delft
Delft, NL

Jennifer Van Der Merwe
B. Eng. Industrial
Univ of Stellenbosch
Wellington, NZ

Kris Van Der Merwe
B. Eng. Industrial
B. Sci. Hons Mathematics
Wellington, NZ

Aike van der Nat
Ph.D. Candidate, Env. Eng.
M Sci. Envi. Sci. U Nijmegen
Nijmegen, NL

Hans van Os
Ferragudo, PT

Joop van Poll
Roosendaal, NL

Kim Arne Vang
B.S.E.E. Elec. Eng.
Aarhus Teknikum
Arhus, Jylland, DK

Edison Vasconcellos
Architect
Porto Alegre, BR

Ricardo Velozo
BA Eng., PUC-PR, Brazil
Curitiba, Paraná, BR

Daniel Verbeck
Architect
Brussels, BE

Coen Vermeeren
Engineer
Dr. Delft Univ. of Tech.
Delft, NL

Johnny Verplancken
Engineer
B. Sci. Engineering
Endinburgh University
Saint Laurent, FR

Roberto Vescio
Rome, IT

Sopterean Vicentiu
Architect
Paris, FR

Philippe Vidori
Engineering Consultant
M.A. Sci. - Machine Design
Montréal, QC, CA

Carlos Viles
Electrical Engineer
Barcelona, ES

Edgardo Villalobos Jaen
Panama, PA

Bernard Villien
Engineer
Mechanics, INSA Lyon
Chavanoz, FR

Fernando Vivero
Bogotá, CO

Boryan Vladimirov
Elec., Opto-electronical
and Laser Technics, Master
Gorna Oryahovica, BG

Gabrielle Von Bernstorff
Architecte SIA
M. Arch. Princeton Univ.
B.A. Columbia Univ.
Vevey, CH

Gerwin Voorsluijs
M.Sci. Engineering
Aerospace Eng., TU Delft
Delft, NL

Martin Voss-Jensen
Architect M.A.A.
Royal Danish School of Art
Architecture
Ringsted, Denmark

Darko Vujnovic
Engineer
B.S. Electrical Engineer
Zagreb, HR

Marc Walgenwitz
Engineering Staff
Geneva, CH

Richard Warden
B. Arch
B.A. Cooper Union
Simferopol, UA

Gery Warner
P. Engineering
B. Sci. Eng. Mechanical
Surrey, BC, CA

John Watt
Structural Engineer
C. Eng., M.I.C.E., M.I. Struct
B. Sci. Civil Engineering
Edinburgh, GB

Markus Weber Sutter
Dr. Sci. Techn.
Schaöhausen, CH

Donald Weekes
P.Eng.
B.A.Sc. Engineering
Univ. of Waterloo, ON
Hamilton, ON, CA

Hagen Wegner
M.S. Electrical Eng.
University of Stuttgart
Minane Bridge, IE

Eleanor White
P.Eng., retired
B.Sc. Mechanical Engineering,
UCONN
Elliot Lake, ON, CA

Siegfried Wiesmüller
Electrical Engineer
Heroldsbach, DE

Jean-Sébastien Williams
BFA, Tech. Deg., Mech. Eng.
Montréal, QC, CA

George Willis
Master in Engineering
Oxford Brookes Univ.
Oxford, GB

Non-U.S. Architects and Engineers and A/E Professionals

Scott Wolfe
Mech. Engineer
B.Eng. Lakehead Univ.
Port Colborne, ON, CA

Arnold Wolthers
Architect
Degree RMIT Australia
Southport, AU

Peter Wright
Principal
Fellowship Diploma of Arch.
Melbourne, AU

Ray Wright
B. Sci., Software Eng.
Peterborough, UK

Serif Yaltirik
B.S. Civil Engineering
Istanbul, TR

Sajid Yaqub
P.E.
B. Sci. Civil Engineering
National Univ. of Sciences
& Technology Pakistan; MBA
Project Management
Islamabad, PK

Mohamed Yehiya
Int'l. Assoc. AIA, M.Sci., Arch.
Architectural Consultant
Colombo, LK

Mathieu Yelle
Engineer
Mechanical Engineering
Ottawa, ON, CA

Yvonne Yip
B. Sci., B Architecture
M. Project Management
Wellington, NZ

Robert Young
P.E.
B. Eng., Mechanical
McGill University, CA

Matthias Zahn
Kiel, DE

Jorge Zambrana Jiménez
Civil, Structural Engineer
UMSA La Paz, BO

To view more detailed biographies, credentials, and the 9/11 staements of all the AE911Truth petition signatories, click the SIGN PETITION button at AE911Truth.org.

9/11 Whistleblower Rowley on Mueller's History of "Cover-up"

COLEEN ROWLEY, May 18, 2017

Rowley, a former FBI special agent and division counsel whose May 2002 memo to then-FBI Director Robert Mueller exposed some of the FBI's pre-9/11 failures, was named one of *TIME* magazine's "Persons of the Year" in 2002. She just appeared on The Real News report "Special Counsel Investigating Trump Campaign Has Deep Ties to the Deep State," about Mueller being appointed to investigate the Trump campaign's ties to Russia.

While Mueller has been widely described as being of impeccable character by much of official Washington, Rowley said today: "The truth is that Robert Mueller (and James Comey as deputy attorney general — see my *New York Times* op-ed on day of Comey's confirmation hearing) presided over a cover-up …"

In her interview, Rowley noted: "The FBI and all the other officials claimed that there were no clues, that they had no warning [about 9/11] etc., and that was not the case. There had been all kinds of memos and intelligence coming in. I actually had a chance to meet Director Mueller personally the night before I testified to the Senate Judiciary Committee … [he was] trying to get us on his side, on the FBI side, so that we wouldn't say anything terribly embarrassing. …

"When you had the lead-up to the Iraq War … Mueller and, of course, the CIA and all the other directors, saluted smartly and went along with what Bush wanted, which was to gin up the intelligence to make a pretext for the Iraq War. For instance, in the case of the FBI, they actually had a receipt, and other documentary proof, that one of the hijackers, Mohamed Atta, had not been in Prague, as Dick Cheney was alleging. And yet those directors more or less kept quiet. That included … CIA, FBI, Mueller, and it included also the deputy attorney general at the time, James Comey."

Rowley also noted that Mueller presided over "the 'post 9-11 round-up' of innocent immigrants, the anthrax investigation fiasco, as well as going along with a form of martial law (made possible via secret OLC [Office of Legal Counsel] memos written by John Yoo etc. predicated upon Yoo's theories of absolute 'imperial presidency' or 'war presidency' powers that the Bush administration was making [Attorney General John] Ashcroft sign off on)."

"While not the worst of the bunch, neither Comey nor Mueller deserve their Jimmy Stewart 'G-man' reputations for absolute integrity but have merely been, along the lines of George 'Slam Dunk' Tenet, capable and flexible politicized sycophants to power, that enmeshed them in numerous wrongful abuses of power along with presiding over plain official incompetence. It's sad that political partisanship is so blinding and that so few people remember the actual sordid history."

Russia-gate's Mythical 'Heroes'

By Coleen Rowley, June 6, 2017

The mainstream U.S. media sells the mythical integrity of fired FBI Director Comey and special Russia-gate prosecutor Mueller, but the truth is they have long histories as pliable political operatives, writes ex-FBI official Coleen Rowley.

Mainstream commentators display amnesia when they describe former FBI Directors Robert Mueller and James Comey as stellar and credible law enforcement figures. Perhaps if they included J. Edgar Hoover, such fulsome praise could be put into proper perspective.

Robert Mueller with President George W. Bush on July 5, 2001, as Bush nominated Mueller to be FBI Director. (White House photo)

Although these Hoover successors, now occupying center stage in the investigation of President Trump, have been hailed for their impeccable character by much of Official Washington, the truth is, as top law enforcement officials of the George W. Bush Administration (Mueller as FBI Director and James Comey as Deputy Attorney General), both presided over post-9/11 cover-ups and secret abuses of the Constitution, enabled Bush-Cheney fabrications used to launch wrongful wars, and exhibited plain vanilla incompetence.

TIME Magazine would probably have not called my own disclosures a "bombshell memo" to the Joint Intelligence Committee Inquiry in May 2002 if it had not been for Mueller's having so misled everyone after 9/11. Although he bore no personal responsibility for intelligence failures before the attack, since he only became FBI Director a week before, Mueller denied or downplayed the significance of warnings that had poured in yet were all ignored or mishandled during the Spring and Summer of 2001.

Bush Administration officials had circled the wagons and refused to publicly own up to what the 9/11 Commission eventually concluded, "that the system had been blinking red." Failures to read, share or act upon important intelligence, which a FBI agent witness termed "criminal negligence" in later trial testimony, were therefore not fixed in a timely manner. (Some failures were never fixed at all.)

Worse, Bush and Cheney used that post 9/11 period of obfuscation to "roll out" their misbegotten "war on terror," which only served to exponentially increase worldwide terrorism.

Unfulfilled Promise

I wanted to believe Director Mueller when he expressed some regret in our personal meeting the night before we both testified to the Senate Judiciary Committee. He told me he was seeking improvements and that I should not hesitate to contact him if I ever witnessed a similar situation to what was behind the FBI's pre 9/11 failures.

Some of the original detainees jailed at the Guantanamo Bay prison, as put on display by the U.S. military.

A few months later, when it appeared he was acceding to Bush-Cheney's ginning up intelligence to launch the unjustified, counterproductive and illegal war on Iraq, I took Mueller up on his offer, emailing him my concerns in late February 2003. Mueller knew, for instance, that Vice President Dick Cheney's claims connecting 9/11 to Iraq were bogus yet he remained quiet. He also never responded to my email.

Beyond ignoring politicized intelligence, Mueller bent to other political pressures. In the aftermath of the 9/11 attacks, Mueller directed the "post 9/11 round-up" of about 1,000 immigrants who mostly happened to be in the wrong place (the New York City area) at the wrong time. FBI Headquarters encouraged more and more detentions for what seemed to be essentially P.R. purposes. Field offices were required to report daily the number of detentions in order to supply grist for FBI press releases about FBI "progress" in fighting terrorism. Consequently, some of the detainees were brutalized and jailed for up to a year despite the fact that none turned out to be terrorists.

A History of Failure

Long before he became FBI Director, serious questions existed about Mueller's role as Acting U.S. Attorney in Boston in effectively enabling decades of corruption and covering up of the FBI's illicit deals with mobster Whitey Bulger and other "top echelon" informants who committed numerous murders and crimes. When the truth was finally uncovered through intrepid investigative reporting and persistent, honest judges, U.S. taxpayers footed a $100 million court award to the four men framed for murders committed by (the FBI-operated) Bulger gang.

Current media applause omits the fact that former FBI Director Mueller was the top official in charge of the Anthrax terror fiasco investigation into those 2001 murders, which targeted an innocent man (Steven Hatfill) whose lawsuit eventually forced the FBI to pay $5 million in compensation. Mueller's FBI was also severely criticized by Department of Justice Inspector Generals finding the FBI overstepped the law improperly serving hundreds of thousands of "national security letters" to obtain private (and irrelevant) metadata on citizens, and for infiltrating nonviolent anti-war groups under the guise of investigating "terrorism."

For his part, Deputy Attorney General James Comey, too, went along with the abuses of Bush and Cheney after 9/11 and signed off on a number of highly illegal programs including warrantless surveillance of Americans and torture of captives. Comey also defended the Bush Administration's three-year-long detention of an American citizen without charges or right to counsel.

Up to the March 2004 night in Attorney General John Ashcroft's hospital room, both Comey and Mueller were complicit with implementing a form of martial law, perpetrated via secret Office of Legal Counsel memos mainly written by John Yoo and predicated upon Yoo's singular theories of absolute "imperial" or "war presidency" powers, and requiring Ashcroft every 90 days to renew certification of a "state of emergency."

The Comey/Mueller Myth

What's not well understood is that Comey's and Mueller's joint intervention to stop Bush's men from forcing the sick Attorney General to sign the certification that night was a short-lived moment. A few days later, they all simply went back to the drawing board to draft new legal loopholes to continue the same (unconstitutional) surveillance of Americans.

Former FBI Director James Comey

The mythology of this episode, repeated endlessly throughout the press, is that Comey and Mueller did something significant and lasting in that hospital room. They didn't. Only the legal rationale for their unconstitutional actions was tweaked.

Mueller was even okay with the CIA conducting torture programs after his own agents warned against participation. Agents were simply instructed not to document such torture, and any "war crimes files" were made to disappear. Not only did "collect it all" surveillance and torture programs continue, but Mueller's (and then Comey's) FBI later worked to prosecute NSA and CIA whistleblowers who revealed these illegalities.

Neither Comey nor Mueller — who are reported to be "joined at the hip" — deserve their current lionization among politicians and mainstream media. Instead of Jimmy Stewart-like "G-men" with reputations for principled integrity, the two close confidants and collaborators merely proved themselves, along with former CIA Director George "Slam Dunk" Tenet, reliably politicized sycophants, enmeshing themselves in a series of wrongful abuses of power along with official incompetence.

It seems clear that based on his history and close "partnership" with Comey, called "one of the closest working relationships the top ranks of the Justice Department have ever seen," Mueller was chosen as Special Counsel not because he has integrity but because he will do what the powerful want him to do.

Mueller didn't speak the truth about a war he knew to be unjustified. He didn't speak out against torture. He didn't speak out against unconstitutional surveillance. And he didn't tell the truth about 9/11. He is just "their man."

Coleen Rowley, a retired FBI special agent and division legal counsel whose May 2002 memo to then-FBI Director Robert Mueller exposed some of the FBI's pre-9/11 failures, was named one of TIME magazine's "Persons of the Year" in 2002. Her 2003 letter to Robert Mueller in opposition to launching the Iraq War is archived in full text on the NYT and her 2013 op-ed entitled "Questions for the FBI Nominee" was published on the day of James Comey's confirmation hearing. This piece will also be cross-posted on Rowley's Huffington Post page.)

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FBI, Mueller Oversaw Post-9/11 Abuses

By Jonathan Marshall, June 21, 2017

Exclusive: The U.S. mainstream media gushes over Russia-gate special prosecutor Robert Mueller as an upright man of the Establishment, ignoring how he oversaw abuses of innocent Arabs after 9/11, reports Jonathan Marshall.

Robert Mueller III, the former FBI director who now heads the wide-ranging investigation into alleged misdeeds by President Trump and his associates, just dodged a major legal bullet himself. On Monday, the U.S. Supreme Court gave him and other former senior Bush administration officials legal immunity for the vicious abuses committed against more than 700 foreigners who were rounded up with little or no cause after the 9/11 attacks.

Robert Mueller with President George W. Bush on July 5, 2001, as Bush nominated Mueller to be FBI Director. (White House photo)

The court ruled 4-2, nearly 16 years after the fact, that "national security" trumps civil liberties and that however unfounded the arrests, or intolerable their treatment, the detainees had no right to sue senior federal officials for damages.

Punting to Congress, a branch of government rarely known for its defense of individual rights, the court declared, "The proper balance in situations like this, between deterring constitutional violations and freeing high officials to make the lawful decisions necessary to protect the Nation in times of great peril, is one for the Congress to undertake, not the Judiciary."

Although the climate of fear that followed 9/11 has eased a bit, the decision is highly relevant in the Trump era because the abused victims were all immigrants who had overstayed their visas. If the FBI had any question about the arrestees, it designated them "of interest" and ordered them held until cleared — in other words, guilty until proven innocent.

Dozens of the hapless victims were held at the Administrative Maximum Special Housing Unit in Brooklyn's Metropolitan Detention Center (MDC), which was the subject of two scathing reports by the Bush Justice Department's own Inspector General in 2003. Besides documenting a wide range of abuses, the reports concluded that staff members brazenly lied about the rough treatment they meted out.

Appalling Abuses

News accounts of the Supreme Court decision made only brief reference to that treatment. Yet the appalling story can be glimpsed from this summary of facts provided in 2013 by U.S. District Judge John Gleeson:

The World Trade Center's Twin Towers burning on 9/11. (Photo credit: National Park Service)

"The harsh confinement policy was expressly directed at Arab and Muslim noncitizens who had violated immigration laws . . . In other words, it was discriminatory on its face. . .

"They were confined in tiny cells for over 23 hours a day, provided with meager and barely edible food, and prohibited from moving around the unit . . . (or) keeping any property, including personal hygiene items like toilet paper and soap, in their cells. Whenever they left their cells, they were handcuffed and shackled. . . (D)etainees . . . were often physically abused along the way, and were sometimes left for hours in the cold recreation cell, over their protests, as a form of punishment. . . .

"Detainees also were denied sleep. Bright lights were kept on . . . for 24 hours a day . . . and staff at the MDC made a practice of banging on the MDC Detainees' cell doors and engaging in other conduct designed to keep them from sleeping. They also conducted inmate 'counts' at midnight, 3:00 a.m., and 5:00 a.m. . . . One of the officers walked by about every 15 minutes throughout the night, kicked the doors to wake up the detainees, and yelled things such as, 'Motherfuckers,' 'Assholes,' and 'Welcome to America.'

"The MDC Detainees also were subjected to frequent physical and verbal abuse . . . The physical abuse included slamming the MDC Detainees into walls; bending or twisting their arms, hands, wrists, and fingers; lifting them off the ground by their arms; pulling on their arms and handcuffs; stepping on their leg restraints; restraining them with handcuffs and/or shackles even while in their cells; and handling them in other rough and inappropriate ways. The use of such force was unnecessary because the MDC Detainees were always fully compliant with orders . . . The verbal abuse included referring to the MDC Detainees as 'terrorists' and other offensive names, threatening them with violence, cursing at them, (and) insulting their religion . . .

"(Detainees) . . . were subjected to unreasonable and punitive strip-searches. . . Female officers were often present during the strip-searches; the strip-searches were regularly videotaped in their entirety . . . and MDC officers routinely laughed and made inappropriate sexual comments during the strip-searches.

"Officers at the MDC . . . also interfered with the Detainees' ability to practice and observe their Muslim faith. . . In addition, most of the MDC Detainees were held incommunicado during the first weeks of their detention. MDC staff repeatedly turned away everyone, including lawyers and relatives, who came to the MDC looking for the MDC Detainees, and thus the MDC Detainees had neither legal nor social visits during this period."

An Abu Ghraib in Brooklyn

Though not at the level of brutality of water boarding and some of the beatings associated with secret CIA detention centers, these MDC abuses had some similarities to the humiliation and mistreatment of prisoners at Abu Ghraib in Iraq — and the abuses were taking place right in the heart of New York City. Plus, unlike some of the CIA's torture victims, these detainees had nothing to do with terrorist plots; some were never even questioned by the FBI after their arrest.

American military police pose with naked detainees at Abu Ghraib prison in Iraq.

Yet senior FBI and Justice Department officials were complicit in the abuse. The 2nd Circuit Court of Appeals, in a 2015 ruling that the lawsuit could proceed, cited evidence that two of the defendants, Attorney General John Ashcroft and FBI Director Mueller, "met regularly with a small group of government officials in Washington, D.C., and mapped out ways to exert maximum pressure on the individuals arrested in connection with the terrorism investigation."

They "discussed and decided upon a strategy to restrict the 9/11 detainees' ability to contact the outside world and delay their immigration hearings. The group also decided to spread the word among law enforcement personnel that the 9/11 detainees were suspected terrorists[] . . . and that they needed to be encouraged in any way possible to cooperate." And it was the FBI that recommended housing the detainees in the maximum security facility where their rights were sure to be abused.

Such official misconduct and brutality constitutes a stain on this nation's honor. Justice Anthony Kennedy, writing for the majority, said "Nothing in this opinion should be read to condone the treatment to which the (plaintiffs) contend they were subjected."

A Terrible Precedent

But the court's decision to protect high-level federal officials who made that treatment possible sets a terrible precedent. As the American Civil Liberties Union warned, it "would effectively immunize tens of thousands of federal officers . . . from damages, no matter how egregious the officers' conduct. Indeed, [it] would effectively immunize federal officers from damages liability even for torture, so long as the torture arises in a context involving national security or noncitizens."

U.S. Supreme Court

Citing such egregious precedents as the Alien and Sedition Acts, the wholesale suppression of civil liberties during World War I, and the internment of Japanese-American citizens during World War II, a dissenting Justice Stephen Breyer insisted that the Court had an obligation to defend "fundamental constitutional rights."

"History tells us of far too many instances where the Executive or Legislative Branch took actions during time of war that, on later examination, turned out unnecessarily and unreasonably to have deprived American citizens of basic constitutional rights," he wrote. With the latest court ruling, that dark history is sure to be repeated.

Good Agent, Bad Agent: Robert Mueller and 9-11

by James Ridgeway, June 21, 2017

Photo by Medill DC

Robert Mueller, the former FBI director named special counsel for the investigation into Russian interference in the presidential election, is depicted as an iconic G-man: serious, patrician, and totally incorruptible. But in reality, it's a little different. As with FBI Agent Dale Cooper in the latest iteration of "Twin Peaks," there is a Good Mueller and a Bad Mueller. We've heard a lot about the good-guy Mueller, but nothing much about his bad side. And there is a bad side–though it's not the one that Trump supporters would have us think.

The President's loyal minions, following a familiar pattern, have been busy building an advance smear campaign against Mueller, claiming that he has it out for the poor, innocent Donald and is determined to bring him down due to pre-existing biases. In fact, if Mueller is indeed biased, it is toward preserving the institutions of government, including the White House, as well as his beloved FBI, even at the expense of making public the full truth. At least, that's how he behaved the last time he was involved in a major national crisis–namely, the attacks of September 11, 2001.

Mueller, a Republican, was appointed by George W. Bush to head the FBI, and took the helm on September 4, 2001, one week before the terrorist attacks. So he can hardly be blamed for the failure of the FBI (along with the CIA and other U.S. and allied intelligence agencies) to detect and respond to numerous warning signs that the attacks were coming, including the arrival of many of the future perpetrators to the United States.

The same cannot be said for Mueller's role in the subsequent coverup of FBI and White House bungling during the run up to 9/11. Six months after the attacks, Congress convened the Joint Senate-House Inquiry into Intelligence Activities Before and After the Terrorist Attacks of September 11, 2001. Headed by Florida Democratic Senator Bob Graham, the inquiry was more thorough and penetrating than the later official 9/11 Commission would ever be.

Among other things, the Joint Inquiry learned of the involvement of a paid FBI informant with two of the future hijackers: Khalid Al Mindhar, who had fought for Al Qaeda in Bosnia and Chechnya and trained in Bin Laden's Afghan training camps, and Nawaf Al Hazmi, who had battle experience in Bosnia, Chechyna, and Afghanistan. According to the Joint Inquiry report, the NSA and CIA at the time had available enough information to connect the two men with Osama Bin Laden.

The CIA, however, failed to share its information with the FBI, and did not place the two men on any watch lists. So Al Mindhar and Al Hamzi flew to Los Angeles in early 2000 (shortly after attending an Al Qaeda summit in Malaysia), and were routinely admitted into the United States on tourist visas. They traveled to San Diego, where they got Social Security cards, credits cards, and driver licenses, and bought a car, as well as a season pass to Sea World. They soon began taking flight lessons. They also had contact with a radical imam and a local Saudi national who were both being watched by the

FBI. And they actually rented a room in the home of Abdusattar Shaikh, who was a retired English professor, a leader of the local mosque–and a paid informant for the FBI's San Diego office, charged with monitoring the city's Saudi community.

As the Joint Inquiry report would reveal, by mid-2001 U.S. intelligence agencies had ample evidence of possible terrorist plans to use hijacked airplanes as bombs, but had done little to act on this threat. In July 2001, the CIA had passed on the names of Al Mindhar and Al Hamzi to the FBI office in New York–though not the office in San Diego. Shaikh had apparently done nothing to warn the Bureau about any possible danger from his tenants. And no one had warned the airlines or the FAA not to let these men get on planes. So on the morning of September 11, Al Mindhar and Al Hamzi boarded American Airlines Flight 77 at Dulles Airport and helped crash it into the Pentagon.

While the San Diego scenario was the most extreme, there was other evidence of the FBI allowing future 9/11 perpetrators to slip through its fingers. By the time it issued its report, the Joint Inquiry had found that five of the hijackers "may have had contact with a total of 14 people who had come to the FBI's attention during counterterrorism or counterintelligence investigations prior to September 11, 2001. Four of those 14 were the focus of FBI investigations during the time that the hijackers were in the United States.… Despite their proximity to FBI targets and at least one FBI source, the future hijackers successfully eluded FBI attention."

Yet in testimony before the Joint Inquiry on June 18, 2002, FBI director Mueller said, that "while here [in America] the hijackers effectively operated without suspicion, triggering nothing that would have alerted law enforcement and doing nothing that exposed them to domestic coverage." There is no way of knowing whether Mueller was lying or just ignorant.

Subsequently, Senator Graham set out to subpoena the informant to testify before the Joint Inquiry. The FBI refused to cooperate, blocked the Inquiry's efforts to interview the informant, and it appears to have arranged for a private attorney to represent him. Despite insisting that the informant had done nothing wrong, the Bureau at one point suggested the Inquiry give him immunity, which Graham refused to do.

As Graham would later describe in is book *Intelligence Matters*, the FBI also "insisted that we could not, even in the most sanitized manner, tell the American people that an FBI informant had a relationship with two of the hijackers." The Bureau opposed public hearings on the subject and deleted any references to the situation from drafts of the Joint Inquiry's unclassified report. It took more than a year for the Bureau allow a version of the story to appear in the public report, and even then it was heavily redacted.

Only years later, Graham writes, did information provided by FBI staffers confirm what he had long suspected: that the FBI carried out its resistance and obfuscation on direct instructions from the White House. Whether Bush and Company were eager to downplay any further connections to their friends the Saudis, or just protect itself from the fallout of such an obvious intelligence failure, will likely never be known.

So much for Robert Mueller remaining above the political fray. And so much for the Bureau's supposed independence and incorruptibility. The latter, clearly, has always been a myth. From its earliest days it was a highly politicized–and relentlessly reactionary–agency, made all the more so by

the colossal power of J. Edgar Hoover. Its mission has always been at heart a deeply reactionary one, dedicated to protecting the republic from whatever it perceived as a threat, including all forms of dissent and unrest–from communists to civil rights leaders.

What does all this bode for the current moment? Normally, it would seem that Mueller's instinct would be to try to preserve some semblance of the current order, up to and including the presidency. But with Trump now locked in a knock down drag out struggle with the intelligence agencies–what some people like to call "the Deep State"–Mueller and his intelligence cronies may find it in the best interests of the status quo–and, of course, themselves–to throw the President under the bus and one way Mueller could do so is by cutting some sort of deal with Congress, specifically with the legislature's true power broker, Mitch McConnell, to turn on Trump and run him out of office.

As Agent Cooper said of his own famous investigation into the death of Laura Palmer, "I have no idea where this will lead us, but I have a definite feeling it will be a place both wonderful and strange."