

Pennsylvania House Labor & Industry Committee and the House Urban Affairs Committee  
Joint public hearing on state legislation increasing demolition standards in Philadelphia and other municipalities

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I am sure I am here to today in part because of the views I expressed in my Op Ed, publish June 20, 2013 in the Philadelphia Inquirer. But before I start I want to thanks you for the opportunity to offer my views to the Committee on such an important issue.

We are all aware of the tragic event that occurred in Philadelphia on June 5<sup>th</sup> when a 4 story building under demolition collapsed onto an adjacent structure ending the lives of 6 people and injuring 14 more. I wish I could tell you that this type of occurrence was rare. But with our aging building infrastructure in urban cities and indiscriminate demolition practices there is a real and reoccurring threat to both persons and property. I applaud the Legislators for their willingness to tackling this vexing problem. It is not one that can be solved easily and will take some commitment and political courage as there are always those that are averse to change.

Demolition has been going on for thousands of years without much change. We find something bigger and heavier to knockdown something smaller and then cart away the rubble. It has always been treated as a task, often an undesirable task and certainly without glamour. Yes, we see large structure brought down using high explosive and it looks exciting and we are all in awe. But these demolition operations are performed by highly skilled practitioners with careful planning and choreographed to produce the desired outcome with extensive safeguards to protect the surrounding environment, the workers, and the public. Unfortunately, these events are the exception and the practices they employ to ensure the safe demolition of a structure are not the model for the industry. Instead we treat most demolitions as a task that requires some minimal supervision compared to a process that requires layers of planning and management. Demolition needs to be defined as a process requiring the collaboration and skills of a competent engineer/architect, a qualified contractor with the prerequisite skills, and municipal governments and their agencies to ensure the safety of the public.

I want to offer this Committee some concrete proposals which I believe will assist the Committee as it deliberates during the debate on House Bill 1591. But before I do that I want to tell you a little bit about myself and why I have such a passion for purpose and intent of Bill 1591.

I have been in the architectural/engineering/construction industry for all of my working life span more than 40 years, mostly designing and constructing buildings and yes, at times tearing them down. Even now as I have moved into academia, I am teaching courses of value to the AEC profession bringing both my education and industry experience to the classroom. I still find myself more comfortable in a hard hat and work boots than I am in a cap and gown.

But to the point of this hearing, what can we do? House Bill 1591 includes some important requirements that if implemented, will significantly improve how we approach demolition in the future. My comments:

**1. The requirement to submit building plans prepared by a licensed architect or professional engineer.** This is a necessary and welcomed first step. Only an architect or engineering has the training and experience to evaluate the complex variables that create stability in a structure and the measures necessary to ensure a controlled demolition.

**2. Provide a site safety plan.** This should be done in coordination with adjacent property owners, first responders, and municipal agencies to close of sidewalks and streets where safety considerations dictate.

**3. Maintain liability insurance in an appropriate amount.** I am reluctant to codify the \$1,000,000 currently in the bill, although I support a minimum amount. There are small structures that pose minimal risk during demolition due to their lack of proximity to adjacent structures. This amount might freeze smaller, qualified contractors, out of the market.

**4. Provide a cash deposit or bond by a surety authorized to do business in Pennsylvania.** This is the provision in the current draft of Bill 1591 that I offer the most comment. First, a minimum amount that will act as an incentive to cause the proper vetting of a contractor should be established. I am concerned that the current \$2 per square foot of property may not do this. There are a significant number of smaller structures in municipalities where the \$2 per square foot may yield less than \$10,000 and not provide the necessary incentive to properly vet a contractor. I am also uncomfortable with cash deposits. Cash deposits allow contractors to bypass the vetting by a surety. I have been a consultant to many sureties over the years and have formed the opinion that they are well equipped to evaluate a contractor organizational structure, experience, safety record, and financial resources. This is simply too critical to ensuring we have qualified contractors doing demolition to allow a pathway around.

**5. Provision for training and enforcement programs.** I will stay out of commenting on the fees portion of the bill as it pertains to training and enforcement since this is not my field. But, without a thorough and comprehensive review of the documents supporting the demolition plan and strict enforcement by experienced personnel, nothing hereinabove has meaning. I applaud the Committee for taking this step and it has my strongest support.

Before I close, I would like to add one more thought. ....the use of drugs that have the potential to impair a machine operator's reflexes or judgment. This should not simply be limited to the broad category of "recreational drugs", but also prescription drugs. I recognized the complexities of drug testing and it may be a bit of an overreach at this point in time, but it should not slip from the discussion. I feel ultimately we will need to address this issue.

In closing, I would like to again thank the Committee for this opportunity and wish to emphasize that my views are that of an individual who cares deeply about an industry. Architects, engineers, contractors, organized labor, municipal code enforcement official, and certainly the public through their elected officials should be heard.

# Making demolition safe



*Workers demolishing the rest of the thrift store crushed this month. (ALEJANDRO ALVAREZ / Staff)*  
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By Robert Brehm

A Philadelphia building collapses, people are killed, and the public demands reforms to prevent future tragedies. We have seen this sequence of events before.

There are lessons to be learned, but not new ones. Engineers already know the inherent dangers of demolition and the reasons for such failures. The questions have been asked 100 times and answered 101 times.

But the public outcry winds down, political will diminishes, and contractors complain that they are overregulated. As a result, nothing gets done.

It's time for architects, engineers, builders, and the public agencies that oversee them to stop looking in the rearview mirror. Given our aging infrastructure, it's imperative that we focus on the future and put our energies into developing national protocols for safe demolition.

Mayor Nutter has already started an important conversation about what needs to happen. I believe five main changes need to occur:

The permitting process should require applicants to demonstrate experience in demolition, including all projects undertaken in the past five years and the experience of key personnel. Previous safety citations should also be disclosed.

Applicants must provide a demolition plan that details precautions to ensure the safety of workers, the public, and adjacent structures. Plans must be reviewed and approved by a professional engineer with expertise in structural engineering.

There must be a review of permit applications by someone with experience in demolition. Unfortunately, most municipal agencies lack such expertise. One solution is to require a performance bond and adequate insurance. Sureties and insurers are in the business of evaluating risk and providing financial protection. They employ people with the expertise to evaluate contractor qualifications.

All equipment operators should be randomly tested for drugs that can impair their reflexes or judgment. This should include not only illegal drugs, but also prescription drugs that can impair performance.

Lastly, contractors should be required to provide a detailed schedule of demolition activities as well as timely notice to authorities to allow for reasonable oversight. This provision must be accompanied by strong sanctions for noncompliance.

This is not intended to be the last word, but rather the beginning of an important conversation among architects, engineers, contractors, labor, code enforcers, and certainly the public through its elected officials.

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***EDUCATION***

Bachelor of Civil Engineering, Georgia Institute of Technology  
Master of Science, Civil Engineering/Construction Management, Georgia Institute of Technology  
PhD, Civil Engineering, Drexel University

***PROFESSIONAL COMPETENCIES***

- Forensic Engineering
- Claims Analysis
- Expert Analysis & Testimony
- Developing Turnaround Strategies for Troubled Projects

***REGISTRATION***

Professional Engineer - New Jersey, New York  
Professional Planner - New Jersey

***AFFILIATIONS***

American Society of Civil Engineers – Life Member  
Construction Management Association of America  
American Arbitration Society, Arbitrator  
Tau Beta Pi Engineering Society – Eminent Engineer  
Order of the Engineers

***BACKGROUND***

Dr. Robert Brehm has been associated with over one billion dollars of construction including civic centers, correctional institutions, educational facilities, entertainment venues and government and commercial projects spanning over thirty-five years of construction activity. He has authored several articles on Project Scheduling and Claims Avoidance.

**Drexel University's College of Engineering** Dr. Brehm currently is an Associate Teaching Professor in Drexel University's Department of Civil, Architectural and Environmental Engineering and has served as a lecturer in Drexel University's Goodwin College of Professional Studies teaching courses in Construction Management. In addition, Professor Brehm serves as an adjunct faculty in Drexel's Engineering Management Graduate Program.

**New Jersey Sports and Exposition Authority (NJSEA)** For NJSEA, Dr. Brehm served as the Project Executive and Chief Administrator for all matters associated with the construction of the New Wildwoods Convention Center (\$70 million) and the renovation of The Atlantic City Historic Boardwalk Hall (\$100 million). His principal accountabilities included development of final budgets, oversight of design development and construction, establishment of cost accounting and quality control systems, management of construction related regulatory matters and management of the communication process associated with both projects.

**New Jersey Department of the Treasury** for the New Jersey Department of the Treasury, Dr. Brehm served as the Director of the Office of Design and Construction, where he oversaw the design and construction activities on over 550 State projects totaling \$660 million dollars with an annual operating budget of \$7.8 million dollars. Prior to being appointed Director, Mr. Brehm directed the design efforts on the State's single largest construction project in its history, the South Woods State Prison. Here he coordinated the activities of approximately 75 architects and engineers during the design development of the \$250 million prison facility to house over 3,000 inmates.

**Rutgers - The State University of New Jersey** While an Assistant Professor of Civil Engineering at Rutgers - The State University of New Jersey, Professor. Brehm developed a nationally accredited construction engineering and management program.

Dr. Brehm brings an in-depth understanding of the design and construction industry having begun his career as an engineering designer for Whitman Requardt and Associates in Baltimore, MD, serving as a Project Manager for Beers Construction Company in Atlanta, Georgia constructing commercial and industrial buildings, and as Chief Executive Officer of both construction and construction management firms.

His extensive construction background is complemented by his work in support of litigation where he has provided expert testimony in both State and Federal courts. Dr. Brehm has recently provided litigation support services as an expert on the Tropicana Casino Garage Collapse on standards of care for construction managers and general contractors; the Town of New Canaan, Connecticut on litigation over cost overruns on a \$65 millions high school renovation project; and the \$70 million RHAM Middle School and High School in Hebron, Connecticut on construction deficiencies. Dr. Brehm has extensive experience working with the Office of the New Jersey Attorney General on construction disputes arising under State construction contracts while serving as the Director of the Office of Design and Construction for the State.

### **TEACHING RESPONSIBILITIES**

CIVE 211 Engineering Measurements II  
CIVE 240 Engineering Economic Analysis  
CIVE 261 Materials and Structural Behavior I  
CIVE 262 Materials and Structural Behavior II  
CIVE 263 Materials and Structural Behavior III  
CIVE 250 Construction Materials  
CIVE 520 Advanced Concrete Technology

CMGT 361 Contracts and Specifications I  
CMGT 362 Contracts and Specifications II  
CMGT 371 Structural Aspects in Construction I  
CMGT 372 Structural Aspect in Construction II  
CMGT 465 Marketing Construction Services

CAE 491 Senior Design Project I  
CAE 492 Senior Design Project II  
CAE 493 Senior Design Project III

AE 390 Architectural Engineering Design I  
AE 391 Architectural Engineering Design II  
AE 544 Building Envelope Systems

**PUBLICATIONS**

"Making Scheduling Work," New Jersey Building Contractor, fall, 1984, pp 26 27.

"Liability: The Stakes Are Getting Higher," Buildings Design Journal, January 1985.

"How to Prepare a Construction Claim," Utility and Transportation Contractor, July/August 1985.

"CPM Scheduling," Buildings The Facilities Construction and Management Magazine,  
May 1986.

"Project Scheduling Techniques," Utility and Transportation Contractor, July/August 1985.

"Engineering of Rapidly Deployable Infrastructure for Catastrophic Recovery", PhD Dissertation