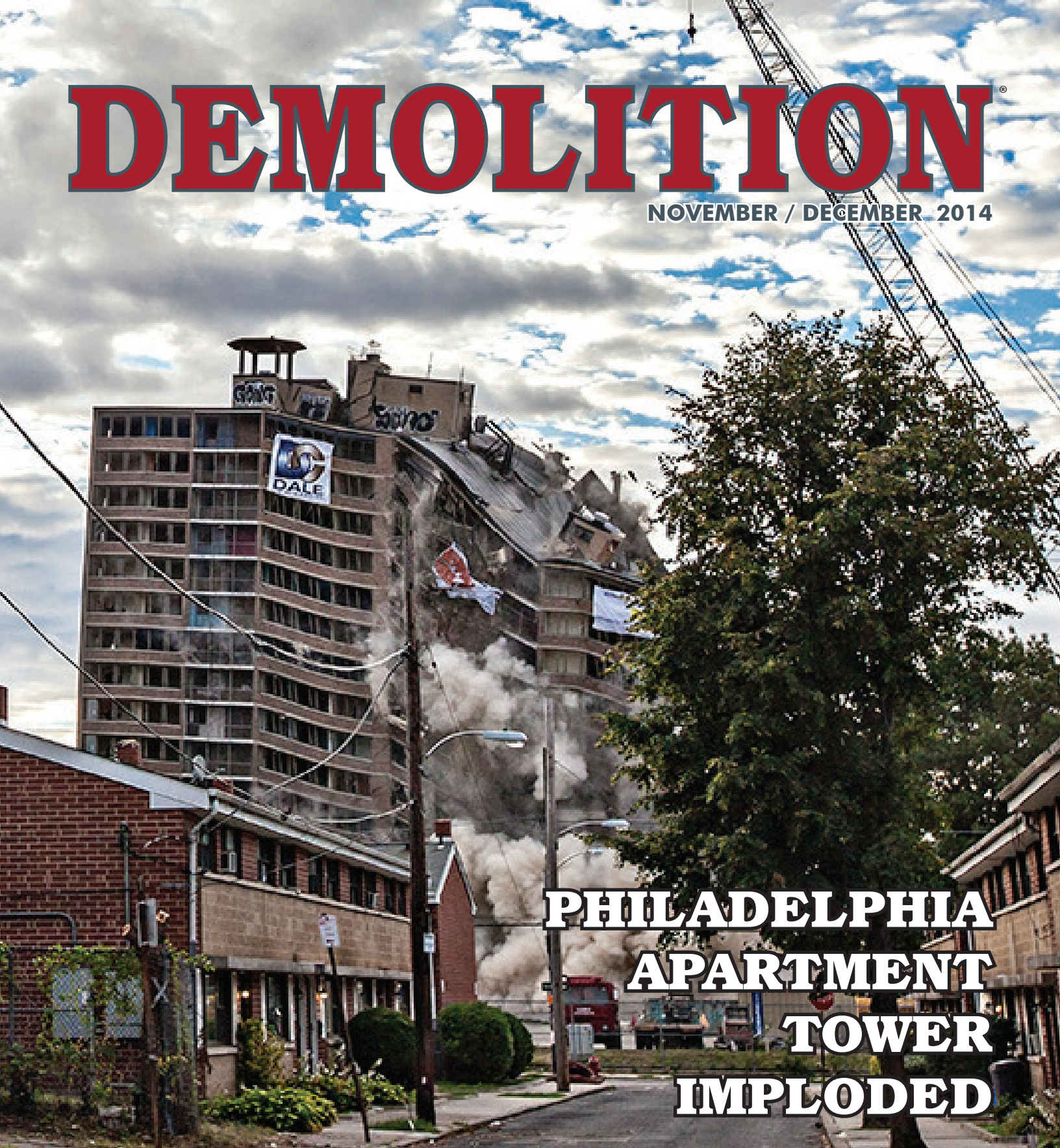


# DEMOLITION<sup>®</sup>

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## PHILADELPHIA APARTMENT TOWER IMPLODED



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# TOP 10 DIFFERENCES BETWEEN DEMOLITION –vs- CONSTRUCTION

By Daniel A Hoffman III

It was in West Lafayette, Indiana on September 22, 2005 that I stood in front of the first college class on demolition and began my campaign to try to explain the difference between the demolition process and the construction process.

I was offered the opportunity by what was then known as the National Association of Demolition Contractors (NADC), now known as the National Demolition Association (NDA), to be the first “industry” speaker for this brand new university level course on demolition. Purdue’s School of Construction Management and the NADC had worked together for several years to make this class and course a reality.

I had been ranting for years about General Contractors and Owners not “getting it” or even not wanting to know the problems precipitated by demolition being very different from the construction process. And before I go any further I will stipulate that the differences I am going to point out have nowhere near the impact on a simple demolition project. It just seems the difference becomes exponential the more difficult a demolition project is. Here are but a few of the differences:

## Difference # 10

### It Is ALL About NOTHING!

What is the end product of a Demolition Contract?

Nothing!

Vacant Space!

Something not there anymore!

A vacuum!

How do you compare one against the other, a vacuum is a vacuum?

Why should you accept any bid but the lowest?

***Because the Demolition Process is different than all of the other trades and a poorly executed demolition project can cost you lots of money, serious problems, and in all likelihood, a blown schedule.***

## Difference # 9

### Everyone thinks they can do Demolition Anyone can wreck things!

Most of this comes from believing that the demolition process is relatively simple, and it doesn’t take a lot of skill. There is no shortage of people or companies who think they can perform demolition work better than those Demo guys!

Also - it seems the more sophisticated the trade,

the more confident they are in understanding how their own special part of the construction world is put together, thus they know best how it should be taken apart.

***But their specialty is only one part of a much larger process and the fact is - - - who does get to do the work is determined in most cases by the almighty low bid -***

## Difference # 8

### Demolition is three businesses in one Contract Performance Business

The performance of the work requires a structure to disappear by reducing it to a manageable size for the material handling phase.

### Material Handling Business

Loading, transporting and legally disposing of all material after the structure has been reduced to a manageable size or sizes.

### Commodities Business

Executing the best disposal solution for the wide

range of materials generated by the demolition project by converting a disposal cost item into an asset.

- Ferrous & Non-Ferrous Scrap Sales .
- Useable Equipment - HVAC, Tanks, Motors, Pumps, Valves, etc.
- Re-usable Material - Brick , Lumber, Pipe, Beams etc.
- Concrete - Riprap for Erosion control, Crushed for road base, etc

## Difference # 7

### Does Not Work Well With Others

Unlike all of the other construction activities, where an electrician can be working alongside a plumber, or carpenter, when demolition is in progress, activity **MUST STOP** or be limited:

- **NO OTHER ACTIVITY** - - - when machine wrecking is in progress
- **LIMITED ACTIVITY** - - - - when hand methods are in progress

As a safety issue, when a structure is in the process of being demolished by a machine, that contractor must control the demolition area **EXCLUSIVELY!**

This is also true when demolition is being performed by hand, but if a limited amount of activity is absolutely necessary, the demolition work will be impacted and the cost will be more.

## Difference # 6

### Drawings

#### Details -vs- Nothing

**New Construction.** Every aspect of a structure under construction has been designed by a number of disciplines, engineered, reviewed and then provided to everyone via plans & Specifications.

**Demo of a New Structure.** If you are taking down a new structure it is probably because there was a failure so the drawings would be minimally useful.

**Demo of an old Structure.** The age of the building is probably not less than 20 years old and most likely it is more than 50 years old.

It is highly unlikely the as-built drawings are anywhere to be found, and even if they are, do they truly represent what is there?

***Have any modifications or renovations have been made in all the years since its original construction?***



New construction does not have support columns like this or beam flanges supported by bricks

## Difference # 5

### Material

#### Certainty -vs- Mystery

**New Construction.** All material in new construction has been engineered and documented by manufacturers & suppliers and subsequently identified in the plans & Specifications.

**Demolition.** Without destructive testing or core sampling, you have no certainty of what the material is or how strong it is.

Even then, you have to recognize you are now certain of the 4" diameter floor sample taken, but what about 2 feet away where they changed or replaced the floor? How much more testing is enough?

- Without testing you have no certainty of contamination.
- Without testing you have no certainty of

weather or chemical deterioration.

- Without testing you have no certainty of material strength, or weight.

**Demolition requires experienced investigation, experienced guesswork and experience to even know what to look for AND -** The more experience you have from past DEMOLITION projects, the more questions you will KNOW to ask!



Once exposed, a floor beam may look like this.

## Difference # 4 Quantities Calculable -vs- Guess

**New Construction.** Every item in new construction has been identified in the specifications and dimensioned on the drawings. Size and quantity is known..

**Demo of an old Structure.** Having no reliable drawings means:

- No dimensions or quantities are provided as in new construction
- The majority of material and what form it is in is usually obscured by insulation, fireproofing, or build outs.
- Load bearing issues are unknown so assumptions must be made.
- Measurements have to be made for every building component since it is highly unlikely the as-built drawings are anywhere to be found, do they truly represent what is there?

This lack of information makes it necessary for extensive field measuring and field investi-

gation to estimate quantities: (in other words - guess)

- Guess what material the building components are made of.
- Guess the strength of material the components are made of.
- Guess the condition of the material each building component is in.
- Guess the *fluff factor* for each type of material for haul-away & disposal.

Do YOU know what the "Fluff" Factors are for the various materials demolished?

- *This will be the subject of my next article*



Without drawings how do you calculate what this weighs?

## Difference # 3 Rigging

**Know Your Load -vs- Guess Your Load**  
(And Center of Gravity)                      (And Center of Gravity)

**New Construction** The weight, center of gravity, strength, and condition of all material in new construction is known because you have the information to determine these critical issues.

But even if the weight is more than expected, in new construction you can immediately set the load back down and fire the engineer that gave you wrong data.

**Demo of an old Structure. Rigging in demolition requires serious guess work – and once you cut it free, you own it!**

- Difference # 7 – is in large part caused by this difference.
- How many other trades should be working under and around a pick –EVEN WHEN YOU DO KNOW all of the information? –ZERO – No One!
- Difference # 6 – Means you have no known Dimensions of the pick
- Difference # 5 – Means you have no known weights or strengths
- Difference # 5 – Means you have no known

condition of the material

Remember those pictures in Difference # 5? I defy you to find an Engineer that will certify the structural integrity of those building components! And even though those were extreme examples, there is some degree of deterioration in every old structure and now you are lifting them down!

Demolition requires the cutting free and either dropping or lowering of structural components. Whether they are 20 or 200 feet in the air, **the moment they are cut free, there is no option but to be able to hold that load or it WILL fall! Sometimes that is exactly what we want, but if not - - -**

remember someone had to guess the weight of that load and no one knows how long ago it was designed & fabricated of that mystery material, nor do you know how much it has deteriorated.

What Do You Do When the Overweight Alarm Goes off Up Here?



Over this Operating Facility



Or this Hospital where directly under the 4TH floor roof were active operating rooms

*There Aren't Many Engineers I Would Trust to Make this Weight Calculation – Even With a 50% Margin!*



## Difference # 2

### Construction -vs- Las Vegas

**On Construction Projects** You have information not available on a demolition project. Details identifying structural design, materials and quantities are available. This allows *calculation of the odds*.

**Demo of an old Structure.** Is more like a high stakes game in Las Vegas, but without the *calculable odds* available on a construction project. This results in **no way to calculate the odds**.

Experience from previous projects is the only way to gain knowledge of the risks.

- Experienced demolition **project managers** know where the schedule risks are.
- Experienced demolition **estimators** know where the material variables are.
- Experienced demolition **supervisors** know

where the safety risks are.

- Experienced demolition **owners** know where the financial risks are.

Would you go to Las Vegas and play a high stakes game without knowing the game inside out?

It is no different in High Stakes Demolition – you can and will lose large if you don't know the business!



What if there is a surprise Inside the pipe you are cutting?

## Difference # 1

### Salvage

#### No Other Trade Will Ever Pay You for the Right to do your Project!

**On Construction Projects** When did you EVER hear of a **Contractor** paying an Owner to perform a contract?

**Demo of an old Structure.** More than likely a credit for salvageable materials was made on your last demolition project. Legitimate Demolition Contractors include a credit allowance in their bid price.

On projects where the demolition contractor has scrap or salvage, credits do offset performance costs and result in a lower bid price.

With a high scrap market, useable equipment sales, and recycling material instead of sending it to a landfill, some projects have enough revenue to "Pay" you for the project.

This is the biggest difference of all but beware of scoundrels, this is where they live, and their activities provide me with a lot of business in court as an "Expert Witness".

Which of these Detroit structures will cost the owner more to remove?



The picture on the right is of an Oxygen Plant. This plant was part of a larger facility we were actually being paid to remove. While we did make an allowance as a potential sale, we were fortunate to find someone to purchase and pay us, and at their own cost, dismantle the plant for their re-use.

So the answer is – the House was more costly for the owner to have removed. 📌

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