Advanced Explosives Demolition Inc - AED

Tripping / Implosion of the Former Con Agra Processing House, Head House and Silos

Huron, Ohio
As an internationally renowned explosives demolition company, Advanced Explosives Demolition Inc (AED) provides an alternative to conventional demolition. Combining over thirty years of "High and Hazardous" demolition and implosion experience; AED is world renowned for providing property owners and contractors the best "bang for the buck"! Explosives Engineer Eric J Kelly holds multiple world records and an impeccable thirty two year Safety record.
Eric J Kelly
The extensive 32 year history of Eric in the Demolition Industry includes conventional “Tripping” of buildings, an innovation Eric developed as an alternative to implosions. This Curriculum Vitae has allowed AED to be retained as an expert witness on some very high profile projects such as the Canterbury, Australia incident, the bombing of the Federal Murrah Towers in Oklahoma City, USA and the Khobar Towers in Saudi Arabia and other demo projects gone awry.
Mark, Eric & Lisa
On February 14, 2010, AED imploded the 2nd tallest structure ever demolished by explosives in the USA. The 1515 Flagler structure was 31 stories in height and sat perilously close to high value West Palm Beach, Florida real estate. The implosion was a resounding success for AED and the City of WPB. In 2010 AED won the World Explosive Demolition Award presented by the KHL Group in Amsterdam for the 1515 Flagler 31 story project.
Former Con Agra Processing House, Head House and Silos - Aerial
Schedule of Events

• 1. AED will begin physical demolition of the 3 story Mill Building starting the week of December 19, 2011.
• 2. EBC will hire a subcontractor to drill the appropriate columns in the 7 story Mill Building and the Head House.
• 3. The 3 story Mill building will be on the ground before the Implosion.
• 4. The Implosion of the 7 story Mill Building and the Head House is scheduled for January 8th.
• 5. The remaining silos will be broke down by conventional demolition the week of January 9th.
Processing House & Head House
Project Overview

The explosive demolition of the MB or PH & HH can be divided into four phases.

Phase I: PH & HH Preparation

As the GC, EBC will be responsible for the environmental remediation, necessary demolition / implosion permits and preparations of the PH & HH for explosive demolition. EBC will perform the basic construction jobsite preparations such as fencing, security, road closures, etc. The PH & HH will be disconnected from any utilities, soft stripped of all non load bearing items, pipes, miscellaneous materials and trash. EBC will remove AED-selected Interior and exterior non-load bearing walls, equipment, pipe, conduit, duct work, suspended ceilings, elevator cars/rails, etc. Remove resultant debris from soft strip, leaving clean exposed columns and reasonably clean floors. The weights of the elevators are expected to be lowered. On all levels EBC will punch a hole in the elevator shaft and torch cut the vertical rails to weaken the shaft or remove the rails completely.
Preparation for Implosion

In the second phase, EBC will perform specific preparations of the PH & HH for explosive placement by AED. During Phase I AED will mobilize for the design and engineering phase of the project. Eric Kelly will confer with EBC engineers and architects to design the patterns for drilling required.

During the second phase of the project all levels being blasted are cleaned and stripped of all non-loads bearing components. AED will be able to see from one end of the PH & HH to the other. It is imperative that the PH & HH is prepared completely and on time to maintain critical path on the project.
Processing House (PH):

It is the intention of AED to detonate explosives on two levels of the PH. Explosives will be placed on the 1st and 2nd levels. EBC will expose all columns on these two levels and scarf or burn the rebar to allow for drilling into each column.

EBC will drill approximately +/- 450 blast holes into the columns for explosives placement. Numbers may increase or decrease as conditions dictate. The blast holes will be drilled 1.5” in diameter and 70% of the depth of the columns. The blast holes will be evenly spaced vertically as designed and marked by AED. There will be 5 holes per column on the first and second levels as designed by Eric Kelly. A typical drilling diagram is contained in this Binder.
Head House (HH):

It is the intention of AED to detonate explosives on two levels of the PH. Explosives will be placed on the 1st, 2nd and 8th levels. EBC will expose all columns on these three levels and scarf or burn the rebar to allow for drilling into each column.

EBC will drill approximately +/- 150 blast holes into the columns for explosives placement. Numbers may increase or decrease as conditions dictate. The blast holes will be drilled 1.5” in diameter and 70% of the depth of the columns. The blast holes will be evenly spaced vertically as designed and marked by AED. There will be 5 holes per column on the first and second levels and three holes on the eighth level as designed by Eric Kelly. A typical drilling diagram is contained in this Binder.
Drilling
Drilling
Phase III: Explosives Placement by AED

Once the column drilling is completed, AED will mobilize for the implosion. All necessary materials for safety measures should be ordered and ready for delivery or delivered.

EBC will arrange for any necessary evacuations, pedestrian, vehicular and other traffic control, and furnish barricades, signage, guards and site security once the explosives are introduced to the site.

AED will inspect the drilling to ensure the depths and circumferences meet with standards for explosive placement. If the specifications are not met EBC will perform additional drilling. Once the quality is approved EBC can begin the placement of internal protection on the highest levels first.
Marked & Drilled Holes
INTERNAL PROTECTION:

EBC will furnish and place at-source of explosives protective cover on columns to be blasted, using a continuous triple wrap of chain link fence and a continuous triple wrap of non-woven geotextile fabric (or its technical equivalent acceptable to AED). The fence is wrapped first then the geotextile material is wrapped around the fencing. The chain link and the geotextile material are to be bound using zip ties fasteners. Labors are to take care to position the zip ties away from the areas drilled.
Chain Link & Geo Textile
Chain Link & Geotextile
Wrapped Columns & Loaded
EXTERNAL PROTECTION:

On the exterior of the PH & HH it will be necessary for EBC to erect a geotextile curtain on the levels to be shot. This curtain needs to be two layers of sixteen ounce geotextile materials. Each section or seam of the geotextile will be bound together using zip ties to ensure that the curtain remains closed during implosion.

The eighth level of the HH will be covered independently on the exterior. The geotextile can be placed from the interior using the ceiling and floor as support for attachment or the geotextile curtain can be dropped from the level above.

The lower two levels of the PH & HH can be one continuous curtain secured on the third level and the ground.
Geo Textile
External Protection
Explosive Loading

AED will continue loading procedures from highest to lowest levels. After each level is completed and loaded with explosives, AED will close off access to the level. At this point EBC will enforce strict security and NO unauthorized personnel will be allowed access to the PH & HH. EBC will provide 24 hour armed security once explosives are introduced to the PH & HH.
Explosive Loading
Explosive Loading
Explosive Loading
Geo Textile & Detonation Cord
Columns – Loaded & Inspected
Phase IV: Blast Day

Blasting day will require a public exclusion zone of 500’ / 1,000’ in diameter from the High House. These perimeters will be imposed by Coast Guard / Police / Fire authorities.

EBC will cover and protect the adjacent structures and utilities as designed by AED. Specific attention will be directed towards the East water line. EBC will place a flat bed barge along the shore of the HH if deemed necessary to protect rubble from falling into the water.

The 500’ zone will be for AED / EBC personnel only. There will be a command center to the South West established with representatives from AED / Fire / Police / Etc that will control security on the day of the implosion. Any celebratory or marketing ideas can be coordinated in this area prior to the implosion.
Blast Day

The 1000’ zone is for the exclusion of the general public. EBC / Police / Fire authorities will conduct street closures, PH & HH sweeps, and coordinate dust prevention and maintain citizen control for one hour prior to implosion.

EBC will coordinate a FAA no fly zone for 2,000’ vertical and 2,000’ horizontal above the High House for one hour or as deemed necessary. EBC will also coordinate all Coast Guard activities to implement a 1000’ no boating zone from the HH.

AED will consult on all public safety operations with local police and Fire departments proposed by Local or State authorities.
Blast Day

AED will coordinate all activities from the Command Center in coordination with local officials. There will be a “ten second siren” at 10, 5 and 1 minutes followed by a final countdown for 10 seconds prior to the detonation of explosives. During this countdown AED will be in communication with EBC / Fire / Police / Coast Guard through the Command Center. Any breach of security will result in a new sweep and re-establishment of a 10 minute countdown.

EBC will implement seismic and air overpressure monitoring and perform exterior pre- and post-implosion surveys of the immediately adjacent above-grade structures if required by City of Huron.
VIP Area (Sample)
Detonation

Once the button is pushed, the explosion will begin and last about 8 seconds. As designed the HH will fall slightly to the West upon implosion resulting in a rubble pile similar to the footprint of the PH & HH.

AED, Eric Kelly will then inspect the site for safety and confirm that the area is all clear of explosives.

Once an “All Clear” has been determined by Eric Kelly, EBC will coordinate the release of traffic flow and disperse the security. EBC will have a coordinated staff of local labor to clean the dust from the streets and neighboring structures post implosion.

Once the implosion is complete the PH & HH becomes a cleanup and recycle project for EBC. AED will schedule travels to consult with local officials and EBC engineers on the results of the implosion.
Eric Kelly – Final Prayer

Rochester NY

Crown Point, NY
Final Countdown
Typical Dust Dissipation
11 minutes from shot
Safety

• Eric J Kelly 32 years as Explosive Engineer
• Zero fatalities, Zero injuries, One accident
• Explosives Non Electric
• All explosives delivered and loaded into building same day – No On Site Storage
• All AED employees ATF approved
• All AED employees adhere to strict OSHA laws
Insurance

- AED standard coverage is 1 million
- Additional coverage can be acquired on an as needed basis, AAA+ coverage
Public Safety

- AED has suggested all neighbors leave 1000’ exclusion zone at 7am, sweep at 8, shoot at 9 am...TBD
- AED will impose a 100’ exclusion while explosives loaded on Thursday, Friday & Saturday with armed security
- 500’ exclusion allowing only AED personnel / VIP on shot day
- 1,000’ exclusion for general public
- 2,000’ no fly zone for 30 minutes
- 30 min, 10 min 1 min, 10 second siren’s
500’ Aerial
1,000’ Aerial / Recommended Street Closures
Neighborhood Disruption

• There will be dust.
• Heating intakes covered or turned off for 10 minutes.
• VIP area to be determined by size of crowd and Fire & Police.
Fall Out Area
Major Concerns

• Rubble in Water
• Dust
• Wrong direction – large load of explosives on fall side to create hinge point
• Terrorists
• Public Disruption
• Explosives – no storage, 24 hour surveillance
Contingency Plan – The 1%

• EBC will have machines on hand to pull down any part of the building that does not fall.
• EBC will have excavators on hand to remove any debris that falls wrong.
• AED will analyze any failed shot and shoot again 3 hours later.
Evidence of failed column shot
Silos
Silos (S):

Once the rubble from the PH & HH is cleared away from the Silos, AED will return to trip the silos. The silos will be dropped to the West. EBC will provide a flat bed barge for the East Coast line of the silos to prevent rubble from falling off the banks.

AED estimated time for Silos felling is 7 days.
The Demolition process of “tripping” has been around for decades and is often used for the felling of smoke stacks, water towers and antennas. During the past decade Eric Kelly and other Demolition Specialist have applied the process to both structural steel and reinforced concrete buildings.

By theory tripping is called a "controlled drop", during which a structure is weakened and pulled down on itself without the use of explosives." The effects of a tripped building will act like a building that has been imploded and can be a specified directional fall as needed. The use of tripping has become a valued alternative to high reach excavators due to the shortened time frame for feeling a structure.

In layman’s terms, on a steel structure AED will weaken the building using torches to cut steel beams. Once the structure has been weakened, AED will attach cables to the lower load bearing beams and pull the legs out from under the building using excavators.
Tripping (cont)

On a reinforced concrete structure AED will drop the building bay by bay. Starting at one end of the structure, AED will use an excavator to weaken the first two floors on the first bay. Once weakened, AED will trip the load bearing columns of the first bay, resulting in the fall of all levels of this bay. Once the fallen bay is removed AED repeats the process across the each bay of the building.

On smokestacks and silos AED will use a hoe ram to create a wedge in the directional fall side of the silos. This process, much like chopping down a tree, will trip the silo, resulting in a tree like fall.

This process can only be carried out by a very seasoned demolition expert who understands the composition of structures and the load bearing process. Since 2000, Eric has tripped several hospitals, dozens of silos, 14 story steel structures and most notably the roof of the Reunion Arena in Dallas, Texas.
Silo Tripping
Summary

• Safety is the most important aspect of the Implosion.
• AED will also accommodate any requests from City for pageantry under ATF rules
• All city personnel and invited guests will need VIP passes...AED will issue two levels: All Access for Emergency Team and ATF & VIP Area Only
Questions?

• AED Staff:
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• Thank you for your time & consideration!