

# THE SCIENCE OF A DEMOLITION

Demolitions are highly specialized processes. Here is the science that goes into safely and efficiently demolishing a building.



## Pre-demolition Process



### Building Survey

Study the materials, construction method, and physical conditions.



### Hazardous Materials

Remove flammable and contaminated materials from the site.



### Demolition Plan

Outline the demolition method, equipment needed, debris and material cleanup.



### Safety Measures

Advise site workers of hazards, secure permits, and block off areas.

## Building Demolition Types

### Implosion

**Demolition Method:** Explosives  
**Used For:** Larger urban structures

#### Prepare The Site

Crews remove non-load-bearing walls and weaken support columns.



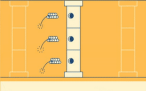
#### Determine Explosives

Dynamite is used for concrete structures while cyclonite, an organic compound, is used to cut through steel.



#### Load Explosives

Explosives are drilled into lower level columns and a few upper stories to make for an easier breakdown.



#### Time Sequencing

Blasters use a mix of fast- and slow-burning substances to time the explosives.



#### Detonate Building

An electrical current sets off the explosives and causes the building to collapse inward.



### Excavator

**Demolition Method:** Construction equipment  
**Used For:** Homes and buildings up to 300 feet



#### Determine Boom Size

Consider height against the weight.

#### Remove Large Pieces

An excavator equipped with shears, crushers, and hammers breaks the structure from the top down.



#### Break Down Materials

Ground workers use sledgehammers and crushers to reduce the pieces.

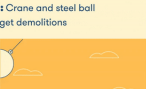


### Wrecking Ball

**Demolition Method:** Crane and steel ball  
**Used For:** Budget demolitions

#### Building Momentum

A wrecking ball reaches its highest velocity at the bottom point of the pendulum arc.



#### Release The Ball

To build up momentum, the operator releases the ball from a high point and creates the right amount of force.



### Selective Demolition

**Demolition Method:** Construction equipment, manual labor  
**Used For:** Building remodels and maintaining structures

#### Prepare The Site

The construction crew cuts off utilities, adds temporary lighting, and installs trash chutes.



#### Strip Out Windows, Doors, and Fixtures

The nonstructural pieces of the building are removed, leaving behind the building shell.



#### Add Temporary Supports and Remove Sections

Temporary supports stabilize the building while workers demolish the desired beams, walls, and floor slabs.



#### Sort Into Debris

Deconstructed materials are placed into recycle, reuse, sell, or donate bins for new construction.

