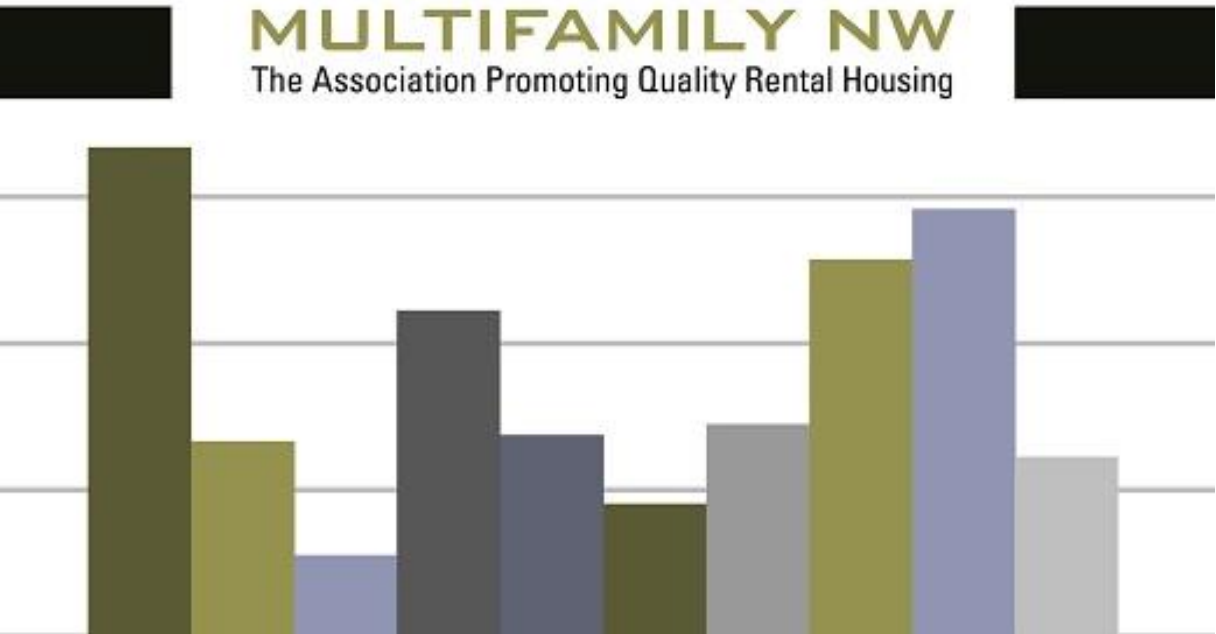




**MULTIFAMILY NW**  
The Association Promoting Quality Rental Housing



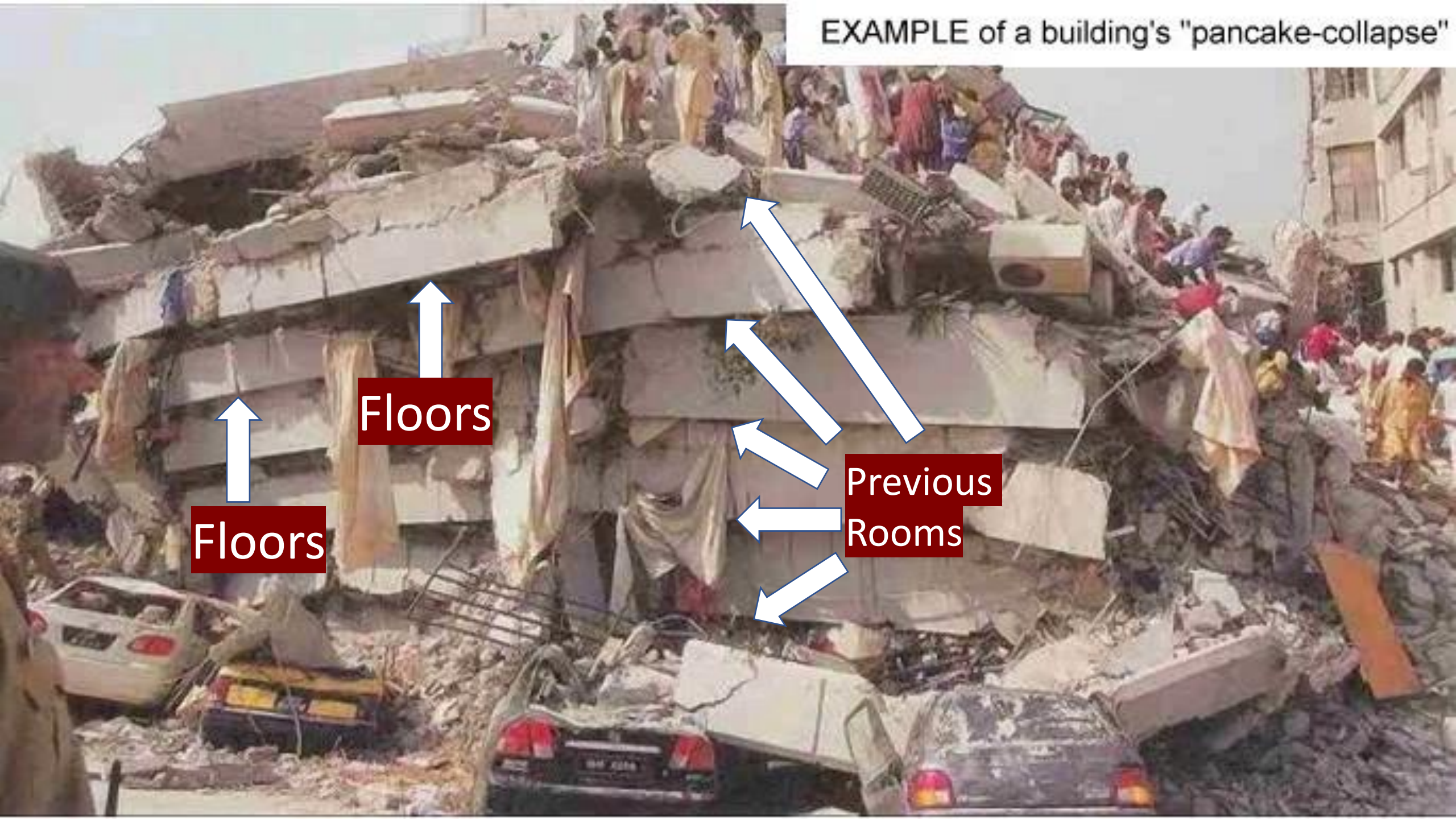
Welcome  
2019 Spring  
Apartment  
Report Panelist  
Rudy Munzel



**THE**

**Apartment Report**

EXAMPLE of a building's "pancake-collapse"



Floors

Floors

Previous Rooms

# Racked Building





X- Bracing

# System #1

Rebar



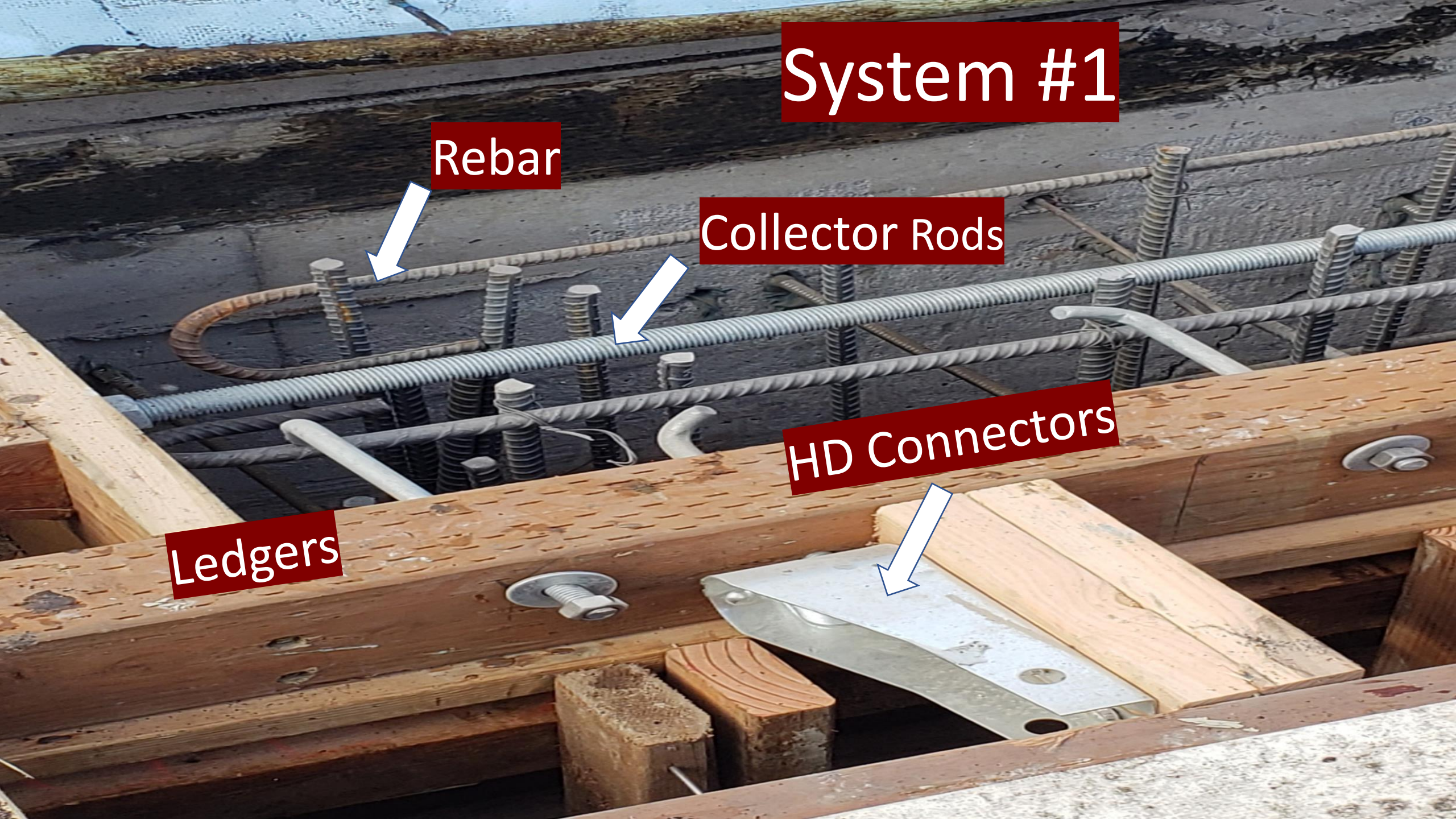
Collector Rods



HD Connectors



Ledgers

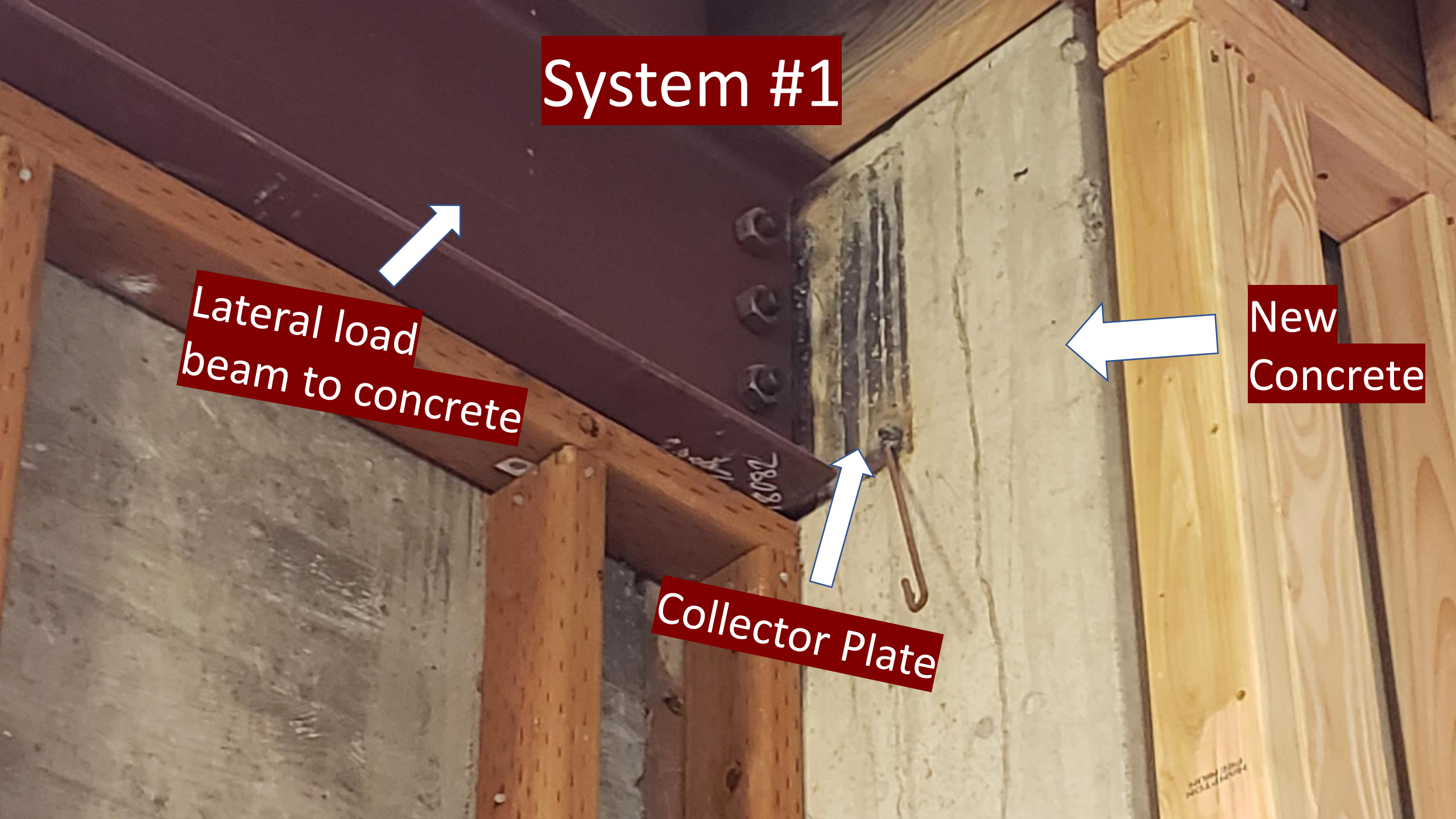


# System #1

Lateral load  
beam to concrete

New  
Concrete

Collector Plate





Ledgers

New Concrete Walls

Temporary Shoring

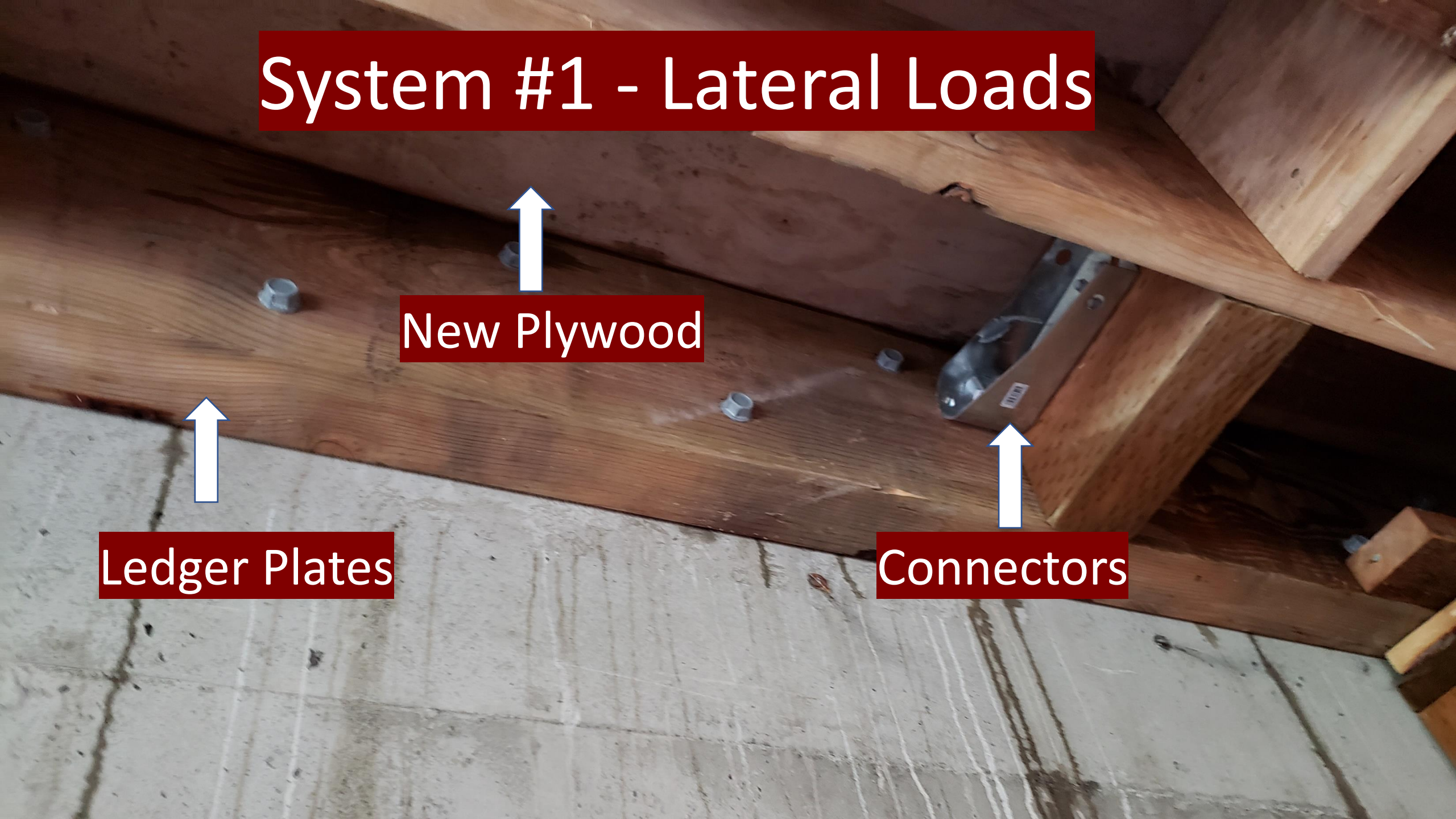
System #1 Lateral Loads

# System #1 - Lateral Loads

New Plywood

Ledger Plates

Connectors





# System #1 & #2

4x12  
ledgers

HP Connectors

New Concrete



# Gutting the Building



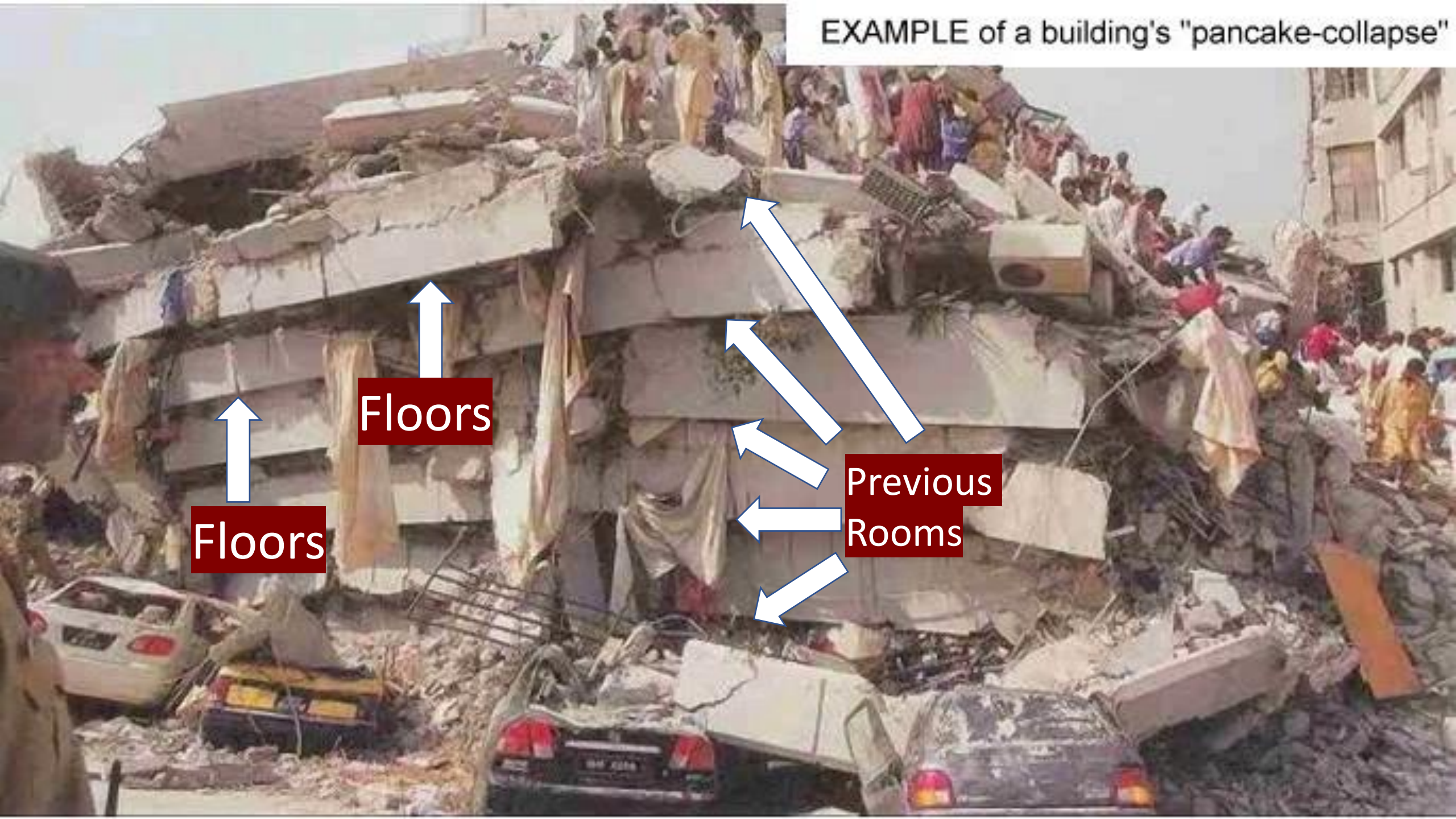
# Demo, Shoring, Safety



Guard rails

Holes

EXAMPLE of a building's "pancake-collapse"



Floors

Floors

Previous Rooms

# U.R.M. Buildings

Joists

Masonry





Joist Bearing on  
Masonry Wall

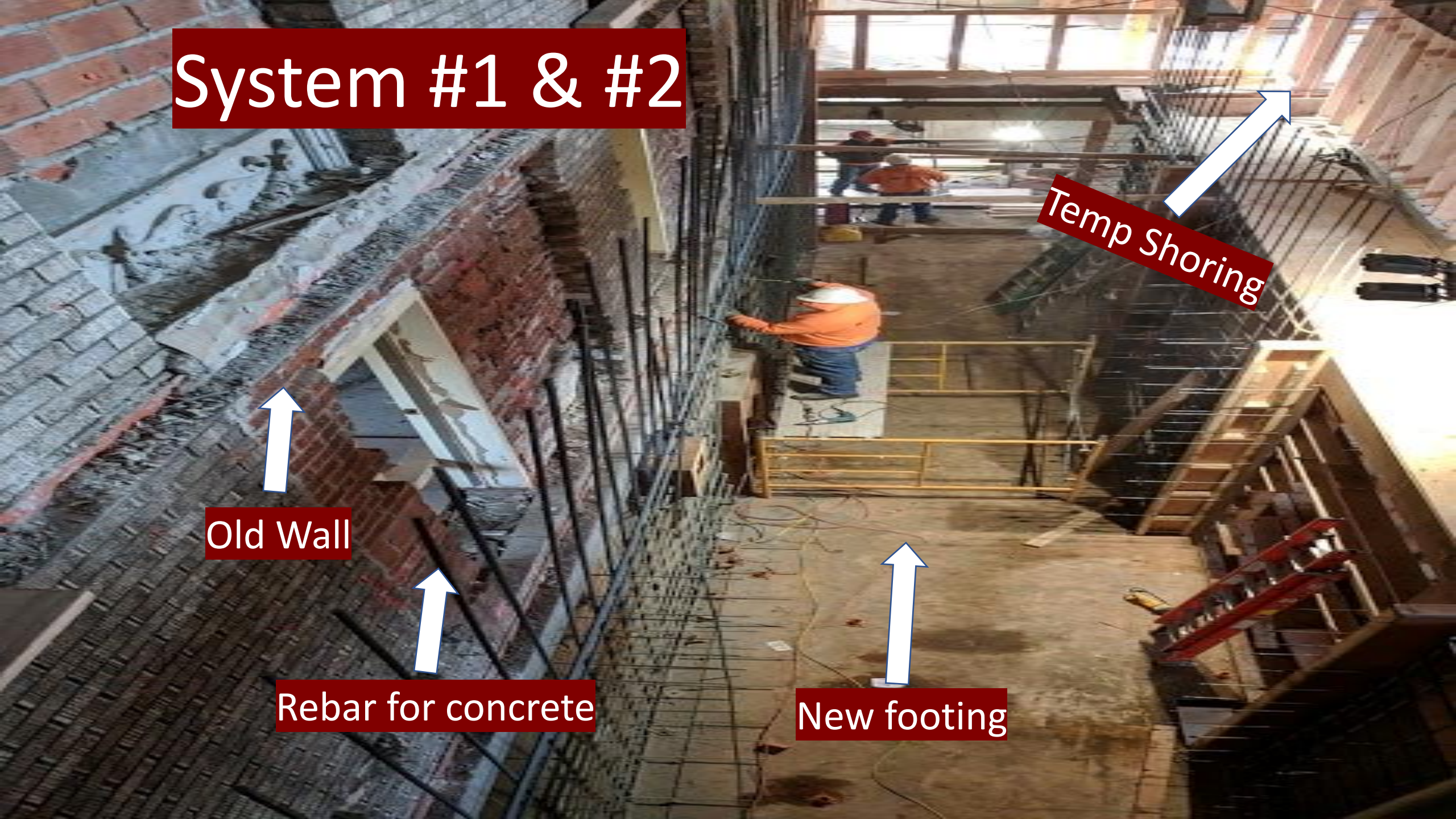
# System #1 & #2

Old Wall

Rebar for concrete

New footing

Temp Shoring





System #1 & #2

Lateral & Gravitational Loads





# System #2



New Concrete



16"



# System #2 Gravitational Loads

Temp Shoring

New Plumbing

New Footing



# System #3

Helical anchor  
Every 2' & 1'6"  
20,000 inch

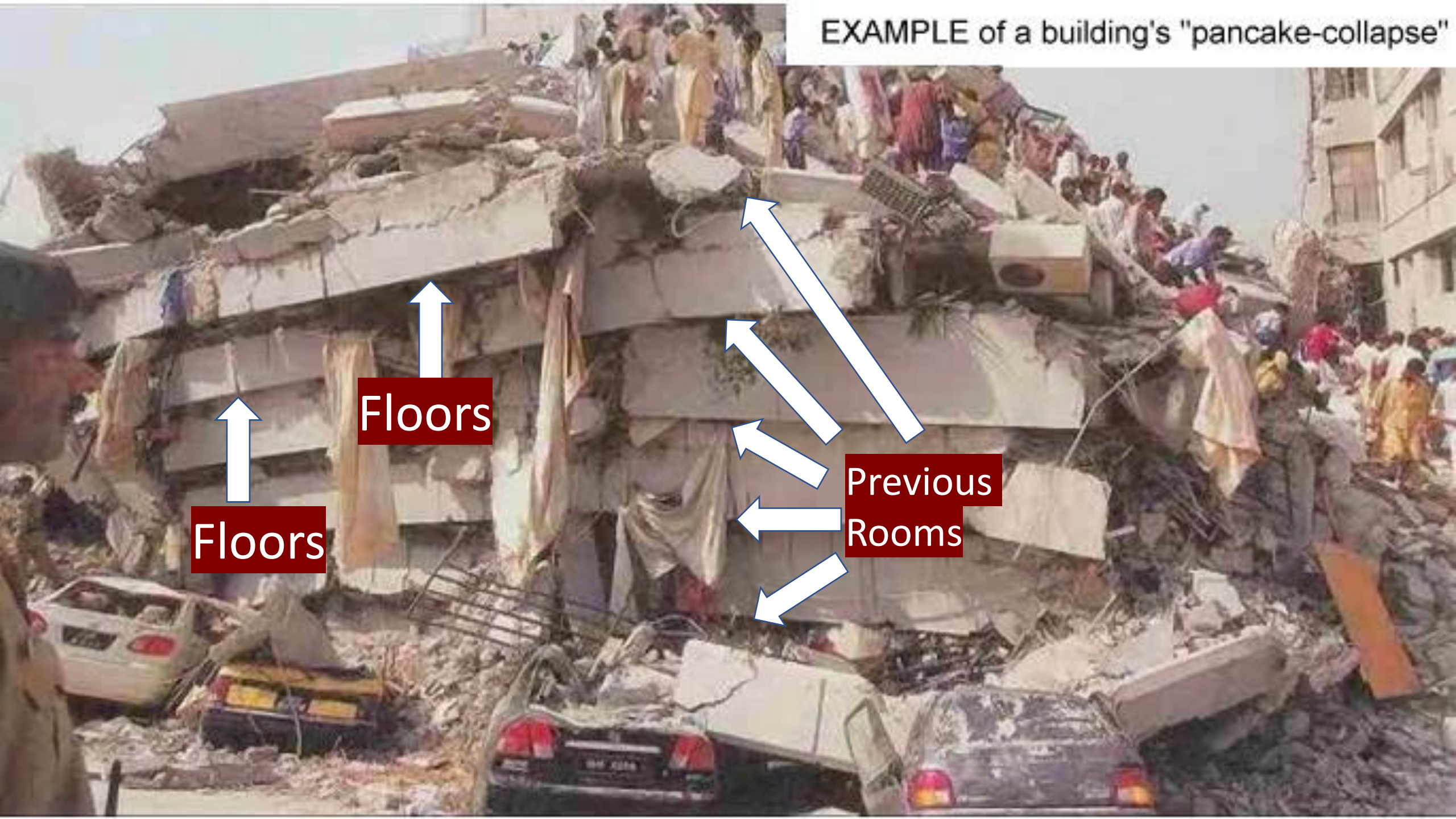


# System #3

Helical anchor  
(20,000 required)



EXAMPLE of a building's "pancake-collapse"



Floors

Floors

Previous Rooms