Welcome to Austin

- Capital of Texas
- University of Texas
- Highland Lakes
- Live Music Venues
- Wildflowers Should Be Abundant
- Innovative, Livable City
Fire Service Issues

- Response Time Impacts
- Turning Radii
- Phased Development, street continuity
- Movement of equipment beside/past deployed apparatus, parking
- Room for Equipment Deployment
- Biological vs Clinical Death – Time Critical EMS Issues
- Fire Development Scenarios, Flashover, Exposures
### TowerMax 104'

| Elevation:  | -12° to 75° |
| Reach:      | 97' @ 0° (horizontal) |
|            | 104' @ 75° |

#### Ladder Widths
- Base: 39"
- Lower mid: 32"
- Upper mid: 27"
- Fly: 22"

#### Handrail Heights
- 28"
- 23"
- 19"
- 15"

Note: 480” = 40’

(Dimensions can vary based on final specifications)

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Specifications for a Seagrave Tractor Drawn Aerial, Images Used With Permission http://www.seagrave.com/index.cfm, Copyright Seagrave Fire Apparatus Company

Note: 360”=30’
39' 1/4"

~30'
OUTRAIGGER JACKS
(TO PROVIDE
STABLE SUPPORT)

LENGTH (USUALLY ± 100 FT.)

SIDEWALK

H
Worcester Fire - Dec99
Burnout - 6 story unbraced walls
Illegal remodel - URM collapse
22 story S-2 Collapse - Weak Column
Typical Front & Parapet Collapse
Heavy Wall Collapse Patterns
Concrete Tilt-Up & RM Walls

if wall falls it will project it’s full height away from the building face

roof may hang from one end
interior cols
long span roof beams
partly failed connection

Typical Failure of Roof to Wall Conn.
(large wall & roof sections collapse)
Overturned Collapse - Taiwan 99 E.Q.
Overturned Collapse - Taiwan 99 E.Q.
Precast Conc Collapse Patterns

main problems are connections & diaphragm strength

collapse pattern varied & difficult to predict since poorly connected parts separate & fall due to gravity & collisions w/other parts.
Hurricane Andrew
Typical wood house damage

1.3-87
Centennial Condominium Fire
Friday December 13, 1996
STATION NIGHTCLUB FIRE
Ways Designers Can Impact Fire & Life Safety

Consider the abilities and resources of firefighting and rescue personnel near your projects and be realistic.
Kinney Court Subdivision, Kinney Oaks CT, Austin, Texas
Life & Death Timelines

• Clinical death is simply when a person has stopped breathing. This results in oxygen not entering the body. Clinical death eventually results in the death of body tissues and cardiac arrest.

• Brain Damage Timeline
  – Within 4-6 minutes of clinical death, some brain damage is possible.
  – Within 6-10 minutes of clinical death, brain damage is likely.
  – After 10 minutes of clinical death, irreversible brain damage is certain.
  – Under special circumstances, such as severe hypothermia, biological death may be delayed.
  – Never assume someone is beyond help. Never stop your rescue attempts until paramedics arrive and they tell you to stop.

Pronouncing someone dead can only be done by a medical doctor or coroner.
A small fire starts in your home.

Smoke reaches the smoke detector.

Ceiling temperature reaches 165 degrees. Smoke begins to layer down.

Ceiling temperature reaches 1,000 degrees. Visibility is reduced to zero.

Ceiling temperature reaches 1,400 degrees. Flashover occurs, engulfing all contents of the fire room and extending fire throughout the home.

The fire room and all contents are completely destroyed. Heat damage extends throughout the entire house, burning or melting all items within 5 feet of the ceiling. Smoke has blackened all contents of the house. Windows and roof vent holes must be boarded up. All drywall will need to be replaced and all contents replaced or restored. Extensive water damage exists from firefighting efforts. Average time of displacement...6 months to a year.

0 1 2 3 4 5 10 15 20
TIME LINE (MINUTES)

You are awakened by the smoke detector.

You investigate and find a fire.

You awaken other family members and go to a neighbor to call 911.

You give the 911 operator the information and the fire department is notified.

The fire department responds.

The fire department arrives, assesses the situation and applies 250 gpm to fire areas. Windows are broken and holes are cut in the roof to vent fire gases and smoke.

CHULA VISTA FIRE SCENARIO
National Institute of Standards and Technology
Technology Administration
U.S. Department of Commerce