

## High-Rise Size-Up Considerations Sheet

### Fire Engineering Simulation

**Building Size Up:** Some of this information would be common knowledge, based on your familiarity with the buildings in your area so make any changes needed to make this building match the ones in your district. For example, is there an alarm system and are there sprinklers? Do all stairs go to the roof? Is this a college dormitory or a halfway house for recovering addicts?

As instructor, you decide how much of the size up the student should be told and what he needs to discover for himself. A good reference on Building Size Up is Chief Michael A. Terpak's book [\*FIREGROUND SIZE-UP\*](#). Also, take a look at:

- **Positive Pressure Ventilation** by Steve Kerber  
<http://www.fire.gov/PPV/index.htm>
- **High-Rise Firefighting Perils: Veterans' Perspectives** by Jeff Crow  
(Fire Engineering subscription required)  
[http://www.fireengineering.com/display\\_article/342849/25/none/none/Feat/High-Rise-Firefighting-Perils:-Veterans%E2%80%99-Perspectives](http://www.fireengineering.com/display_article/342849/25/none/none/Feat/High-Rise-Firefighting-Perils:-Veterans%E2%80%99-Perspectives)
- **NIST: Positive-Pressure Ventilation, Firefighting Environment, and Electrical Products Primary Focus**  
<http://www.fireengineering-digital.com/fireengineering/200705/?pg=81>

**Occupancy:** This 9 story building houses college students in one room dwelling units. There is a security guard always stationed at the entrance door and he has a telephone with the phone numbers of all of the occupants. The occupants are not allowed to cook in their rooms, but everyone knows that many of them have hot plates and microwave ovens. There are two students per room and there are group bathrooms in each wing. The rooms are furnished with two beds, two desks, two dressers and most students have computers and TV's in their rooms.

**Apparatus & Staffing:** Base this on what you realistically will respond with. It will affect what you can do as well as how and when you do it.

**Life Hazard:** There are students in the building at all times. They can be found sleeping, studying or partying at all hours of the day. The security guard is supposed to make students sign in and out of the building but the list is often not up to date.

**Terrain:** There is a hill sloping from the B side of the building down towards the D side. As a result, there are 9 stories on the B side and 10 on the D side. There are trees near the building, but this should not greatly hamper aerial apparatus placement.

**Water Supply:** Use your own conditions for this factor. If you have hydrants, use them if not, do what you would normally do.

**Auxiliary Appliances:** The building is not equipped with a sprinkler but it is equipped with a standpipe. The standpipe connection is found on the B side of the building. There is an alarm system in the building, but it is only a local alarm.

**Street conditions:** The streets are dry, flat and there is no traffic due to the early hour.

Cars are parked around the building, but they do not impact on apparatus placement.

**Weather:** It is a cold, clear, dry day in April. There is a moderate wind blowing towards the B side.

**Exposures:** Exposures A, B, C and D are the street. The only exposure to consider here are fire spread inside and auto exposure from the window to the floor above.

**Area:** The building is 225' x 50'

**Location and extent of fire:** You can see smoke issuing from the 7<sup>th</sup> floor window on the A side of the building 4 windows from the A/D corner.

**Time:** If you want to have the building full of occupants, make the time 7 AM on a Saturday or Sunday morning with many of the students sleeping in. If you want less of a life hazard, make it 3 PM on a weekday with most of the students in class.

**Height:** The building is 9 or 10 stories high, depending on where you measure it. It might be more accurate to identify the location of the fire by stating that it is two floors below the top floor. On the A side of the building, that is the 7<sup>th</sup> floor and on the D side of the building that is the 8th floor.

**Special Considerations:**

- Students might not react to the internal fire alarm thinking it is just another false alarm. They might remain in their room until it is too late to get out.
- If you are using PPV to pressurize the attack stair, an open door below the fire stair will make the pressurization much less effective.

**Consider:**

- What do you report to your dispatch and what help do you ask for?
- Will you take the stairs or will you take the elevator. If you use the elevator, what floor do you get off at?
- Are you going to use positive pressure ventilation to pressurize the stairs?
  - Where do you place it?

- When do you start it?
- When do you shut it off?
- Will you vent the roof door of the attack stairs? If so, when?
- What size line will you stretch off of the standpipe?
  - How many lines will you need?
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### **What do you do first?**

- As Incident Commander do a 360 walk around or collect this size up information from others on the scene?
  - What info would you relay to the Incident Commander?
- Ladder the building?
  - Where do you place your ladders?
  - Do you use an aerial ladder or Platform?
- Force doors and vent windows?
  - Which ones need to be forced?
- Do you want to vent windows on the fire floor?
- Shut the utilities?
- What about a RIT team?
  - Where do they stage?

### **Necessary actions in no particular order:**

- Transmit a preliminary signal to dispatch.
- Transmit progress reports to dispatch.
- Request assistance if necessary.
- Position your apparatus.
- Establish a water supply.
- Place a PPV fan if you plan to pressurize the stairs.
- Find the fire apartment.
- Decide on hose line size and nozzle.
- Stretch and position as many hose lines as needed.
  - Locate, confine and then extinguish.
  - Protect exposure with life hazard
  - Protect exposure with most property value.
- Ladder the building as needed.
- Force entry to the building.
- Ventilate as needed
- Search for life.
  - What floors are contaminated by smoke?
  - Was anyone trapped in the stairway by the rising smoke and heat?
  - Check for victims in all of the elevators?
- Treat victims if there are any.
  - How do you get them to the street?
  - Will the EMS personnel go to the floor below the fire to treat them?
- Overhaul the fire area.
- Leave the fire scene safe for occupants and the public when you leave.

- Shut down utilities as needed.
- Relieve firefighters as needed.

Certainly there are other considerations. [Go to the forum](#)

(<http://community.fireengineering.com/group/usingfireengineeringsimulations>) and discuss them with others.