



## Fire Station Design

**Purpose:** Idea Fire Station design is to expose the student to the field of fire administration operations. This competition will provide the student with opportunities to integrate NFPA standards, International Building Codes, and ISO ratings.

**Description of Event:** This event will consist of two parts, a presentation of the design and an actual Designed Fire station containing all the items in the presentation using recommended guidelines from NFPA 13, NFPA 1500, NFPA 1710, NFPA 1851.

**Limit:** 3 teams of 2 from each fire chapter

**Dress Code:** Appropriate dress to include; chapter uniform class B or polo type shirt with BDUS or dress pants.

### Rules:

1. To be eligible for the competition a student must be enrolled in a secondary public service education program or a program completer as recognized by Florida Department of Education.
  2. Presentation: 15-minute limit
  3. Power point presentation to include:
    - a. NFPA standards that apply to your fire station design
    - b. International Building Codes that apply to your fire station design
    - c. ISO rating concerns that apply to your fire station design
    - d. How many crew members
    - e. What type of apparatuses will be housed in your fire station?
    - f. Special features added and why it adds to the functionality of the station.
    - g. How does your design accommodate future expansion of crew members and apparatuses?
- A blue print drawing of your fire station with measurements and details of the layout (i.e. decontamination room, bunker gear storage, day room, kitchen, etc...)
  - A model of the fire station
  - A hard copy of your power point



## References

NFPA 1500 Standard on Fire Department Occupational Safety, Health and Wellness Program- Impacts on fire station design that are of concern: cancer prevention; firefighter fitness; creating spaces for firefighters to unwind from the stresses of the job.

NFPA 1851 Standard that covers the maintenance and care of firefighter PPE- departments to have separate areas for contaminated PPE and uniforms, station clothing, and bedding. Areas of concern: laundry areas, waste water removal and airflow.

NFPA 1710 Standards for operations of career fire departments- station design and the impact on turn out times from all areas and activities within the station- (i.e. shower, sleeping quarters, workout area, day room, etc....).

NFPA 13 Standard for fire sprinkler installations and fire flows and designs. As required in the various locations in the station

ISO ratings- turn out times, station locations and accessibility

International Building Code- public facilities that are in zones where winds can reach 250 mph are required to have storm shelters, this includes fire and police stations.

Matthews, P. (2018 June, 26) *Station Design: Integrating NFPA Standards into your fire station*. Firehouse. Retrieved from:

<https://www.firehouse.com/station/architects/news/21011092/station-design-integrating-nfpa-standards-into-your-fire-station>

<https://www.firehouse.com/prevention-investigation/blog/10459487/building-fire-stations>

<http://www.wbdg.org/building-types/community-services/fire-station>

# Florida Public Service Association, Inc.



## Fire Station Design

### Scoring guidelines

Student Name \_\_\_\_\_ Final Score \_\_\_\_\_

Student Name \_\_\_\_\_

School Name \_\_\_\_\_

Team Number \_\_\_\_\_

Judge's Name \_\_\_\_\_

### Point Values

Excellent 20- 16

Superior 11-15

Good 6-10

Fair 1-5

Use of NFPA 13 recommendations \_\_\_\_\_

Use of NFPA 1500 recommendations \_\_\_\_\_

Use of NFPA 1710 recommendations \_\_\_\_\_

Use of NFPA 1851 recommendations \_\_\_\_\_

Use of ISO rating concerns \_\_\_\_\_

Use of International Building Codes \_\_\_\_\_

Functionality and ease of use for daily firefighter activities \_\_\_\_\_

Functionality and ease of use for apparatuses housed in station \_\_\_\_\_

Special features added and practicality for use in a fire station \_\_\_\_\_

Able to accommodate future expansion of crew members or apparatuses \_\_\_\_\_

Fire Station model made with creativity, functionality, details and labeled \_\_\_\_\_

Power point presentation includes all information above and how it pertains to your  
fire station design \_\_\_\_\_

Total \_\_\_\_\_



## Fire Station Design

### Judge's Winner Sheet

1st Place School \_\_\_\_\_

Team \_\_\_\_\_

2<sup>nd</sup> Place School \_\_\_\_\_

Team \_\_\_\_\_

3<sup>rd</sup> Place School \_\_\_\_\_

Team \_\_\_\_\_

4<sup>th</sup> Place School \_\_\_\_\_

Team \_\_\_\_\_

5<sup>th</sup> Place School \_\_\_\_\_

Team \_\_\_\_\_