



**Long Beach Fire Department
and
Department of Planning and Building**

FIRE SPRINKLER AND FIRE ALERTING REPORT

**David W. Ellis
Fire Chief**

Hank Teran, Fire Marshal

Larry Brugger, Building Official

January 30, 2007



Paradise Gardens Apartment Fire December 8, 2006

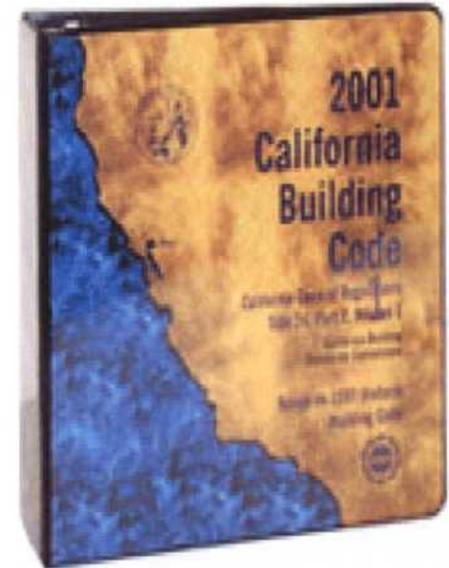




Historic Overview



- Fire Code and Building Code adoption
- Code progression
- No Retrofit Ordinance
- High-rise





High-Rise



- Buildings >75'
- Over 70 in the City
- Only 54% fire sprinklered
- Cooper Arms fire 1999





Fire Sprinkler Data



- Residential fire problem represents approximately 80% of all fire deaths and 76% of the injuries to civilians
- Fire Sprinklers are 96% effective in the control of fire
- Safer environment for one's family, protection of investment and irreplaceable family possessions and, in some instances, lowers insurance rates 5 to 20%
- Property damage losses are 85% less in residences with fire sprinklers

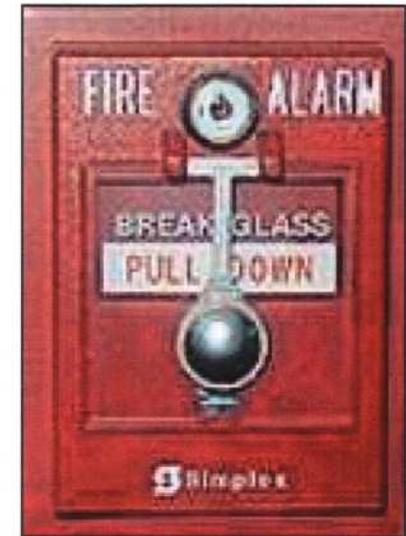




Fire Alerting Data



- Designed to provide early notification to occupants of smoke or fire within an area or occupancy.
- The systems are not designed to extinguish a fire, but simply notify the occupants that a fire condition exists.
- One of the problematic areas with existing fire alarm systems is a significant number of these systems do not meet current standards for audibility, visual notification and smoke detector locations.





Jurisdictional Comparison



Over 30 cities have adopted fire sprinkler ordinances that are more restrictive than the model codes.

The City of Glendale adopted a fire sprinkler ordinance in 1989 requiring all new construction to be fire sprinklered. In 1989, they also adopted a retrofit fire sprinkler ordinance for existing residential and non-residential occupancies when building modifications are made.

In regards to fire alarm systems, the City of Los Angeles requires buildings with existing fire alarm systems to be upgraded to comply with current code requirements throughout the building when the fire alarm panels are outdated and require replacement.



Estimated Cost

The estimated cost of installing fire sprinklers will vary between new and existing construction. The following cost estimates for fire sprinklers in new construction projects are as follows:

New single/two family	\$2.50 to \$3.00 per square foot
New multi-family residential	\$3.00 to \$4.00 per square foot
New non-residential	\$4.00 to \$5.00 per square foot

The following cost estimates for fire sprinklers in existing occupancies are as follows:

Existing single/two family	\$3.00 to \$4.00 per square foot
Existing multi-family residential	\$4.00 to \$5.00 per square foot
Existing high-rise	\$5.00 to \$6.00 per square foot

Estimated cost example: Retrofitting a three story 12-unit apartment building would cost approximately \$48,000-\$60,000.



Code Revision Challenges



In **existing** buildings, owners and tenants may argue against the additional cost and disruptions associated with the retrofit installation of fire sprinklers and fire alarm systems.

Logistical issues include:

- Access to occupied tenant areas
- Possible tenant relocation
- Possible asbestos abatement
- Noise disruptions

It is essential that a reasonable time frame be established that takes into consideration the financial and logistical problems associated with the retrofitting of buildings for existing occupancies. An extended time frame will enable the owner of an existing building to budget the cost associated with fire sprinkler installations.

Fire Demonstration



Fire Demonstration Fire Sprinklers





Recommendations



- New Construction – Fire Sprinklers
- Existing Construction – Fire Sprinklers
- Existing Construction – Fire Alarms



Recommendations New Construction – Fire Sprinklers



1. Require all ***new multi-family (3 or more units) residential, hotels, motels*** and similar buildings to be protected by fire sprinkler systems in accordance with applicable National Fire Protection Association standards. (Current code requires fire sprinklers at 5 or more units)
2. Require all ***new single-family dwellings and duplexes*** greater than 4,000 sq. ft. or more than 2 stories in height to be protected by fire sprinkler systems in accordance with applicable National Fire Protection Association standards.
3. Require all ***new commercial, industrial and non-residential*** buildings that require 2 or more exits or that are greater than 3,000 sq. ft. to be protected by fire sprinkler systems in accordance with applicable National Fire Protection Association standards.



Recommendations

Existing Construction - Fire Sprinklers



4. Require all **existing multi-family residential, hotels, motels** and similar buildings containing 50 or more units to be retrofitted with fire sprinkler systems in accordance with applicable National Fire Protection Association standards, **within a period not to exceed 5 years.**

Require all **existing multi-family (3 or more units) residential, hotels, motels** and similar buildings less than 50 units to be retrofitted with fire sprinkler systems in accordance with applicable National Fire Protection Association standards **only when** (1) any addition is equal to or greater than 5,000 sq. ft. or, 25% of the existing square footage of the building or (2) or when any alteration, repair, rehabilitation is equal to or greater than 25% of the replacement cost of the building, over a period of three years.

5. Require all **existing single-family dwellings and duplexes**, when additions are made and the total sq. ft. is greater than 4,000 sq. ft. or more than 2 stories in height, to be protected by fire sprinkler systems in accordance with applicable National Fire Protection Association standards except when the increase in square footage of the building is 10% or less over a period of three years.
6. Require all **existing high-rise** (over 75 feet) buildings as defined by the California Building Code to be retrofitted with fire sprinklers in accordance with applicable National Fire Protection Association standards, **within a period not to exceed 10 years.**



Recommendations Existing Construction - Fire Alarms



7. Require all **existing multi-family (3 or more units) residential, hotels, motels,** and similar buildings to be retrofitted with a fire alarm system in accordance with applicable National Fire Protection Association standards. The requirement to upgrade the existing fire alarm system to current code will be required at the time of replacement of the existing non-functioning fire alarm control panel.

8. Require all **existing high-rise** (over 75 feet) buildings as defined by the California Building Code to be retrofitted with a fire alarm system in accordance with applicable National Fire Protection Association standards. The requirement to upgrade the existing fire alarm system to current code will be required at the time of replacement of the existing non-functioning fire alarm control panel.

Staff proposes that the above recommendations be implemented by January 1, 2008.



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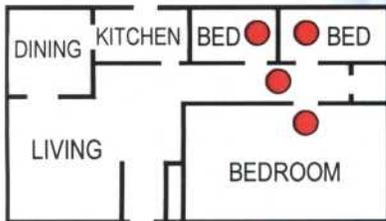
Larry Brugger, Building Official

January 30, 2007



Smoke detectors act as an early warning device to alert occupants of a fire, by sounding an alarm when a fire is in its beginning stages. While smoke detectors have proven to be effective lifesavers, they can be limited in operation when batteries are old, removed, or installed incorrectly. The Long Beach Fire Department is reaching out to the community to advise regular testing and maintenance of home smoke detectors. **Regular testing, maintenance, and practicing a home fire escape plan** can prevent a tragedy in a fire, as it may be dark and you may only have a few minutes to escape.

Practice two ways out . . .



IN CASE OF FIRE

1. **GET OUT**
2. **STAY OUT**
3. **CALL 9-1-1**

REMEMBER TO STAY LOW & GO

(clean air will be down around your knees)

Smoke Detector Installation

DO's

- Install smoke detectors on every level of your home, including the basement, making sure that there is an alarm inside every bedroom and outside every sleeping area.
- Hard-wired smoke detectors operate on your household electrical current. They can be interconnected so that every alarm sounds regardless of the fire's location. **Alarms that are hard-wired need to have battery backups in case of a power outage, and need to be installed by a qualified electrician.**
- If you sleep with bedroom doors closed, have a qualified electrician install interconnected smoke detectors in each room so that when one alarm sounds, they all sound.
- If you, or someone in your home is deaf or hard of hearing, consider installing an alarm that combines flashing lights, vibration and/or sound.
- Mount smoke detectors high on walls or ceilings (**remember, smoke rises**). **Ceiling mounted alarms need to be installed at least four inches away from the nearest wall; wall-mounted alarms need to be installed four to 12 inches away from the ceiling.**
- If you have ceilings that are pitched, install the alarm near the ceiling's highest point.

www.longbeach.gov/fire

DON'Ts

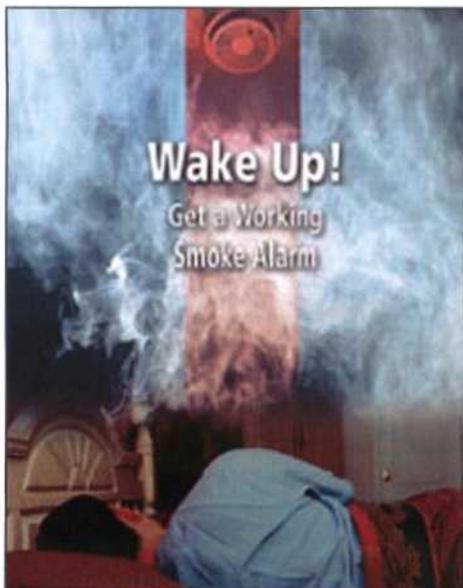
- Don't install smoke detectors near windows, doors, or ducts where drafts might interfere with their operation.
- Never paint smoke detectors. Paint, stickers, or other decorations could keep the alarms from working.

Check your smoke detectors regularly

- Test your smoke detectors once a month, following the manufacturer's safe instructions.
- Replace the batteries in your smoke detector at least twice a year, such as when resetting clocks in the fall and spring.
- **Never "borrow" a battery from a smoke detector.** Smoke detectors can't alert you of fire if the batteries are missing or have been disconnected.
- Don't disable smoke detectors even temporarily. If your smoke detector is sounding "nuisance alarms," try relocating it farther from kitchens or bathrooms, where cooking fumes and steam are less likely to cause the alarm to sound.
- Regularly vacuuming or dusting your smoke detectors, following the manufacturer's instructions, helps keep them working properly.
- **Replace your smoke detector every 10 years.** Smoke detectors don't last forever. If you can't remember how old the alarm is, then it's probably time for a new one.
- **Plan regular fire drills to ensure that everyone knows exactly what to do when the smoke detector sounds.** Hold a drill at night to make sure that sleeping family members awaken at the sound of the alarm. Some studies have shown that some children may not awaken to the sound of the smoke detector. *Be sure to designate a family meeting place.*

Change Your Clocks 🕒 Change Your Batteries!

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Long Beach Fire Department

... more than fighting fires

Residential Smoke Detectors