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Facts About Chicago High-Rise Building Fire Protection

Orland Park, IL (October 6, 2004) – The Northern Illinois Fire Sprinkler Advisory Board (NIFSAB) offers relevant, factual information pertaining to the high-rise sprinkler retrofit ordinance issue now being implemented by the City of Chicago.

National Consensus Code Requirements: NFPA 101, *Life Safety Code*®, was adopted by the State of Illinois in January 2002. The *Life Safety Code*® is valid for new and existing buildings and is retroactive. High-rises would have the option of fire sprinklers or an engineered life safety system. Our recommendation of your association board to review the James Lee Witt Report.

The recently released James Lee Witt report on the Cook County Administration Building fire verified this fact and noted that the *Life Safety Code*® contains more stringent fire sprinkler requirements than the *Municipal Code of Chicago*. The Witt report recommends the City of Chicago “ensure compliance with the state code” and “require installation of automatic fire sprinkler systems in all high-rise buildings”.

The *Life Safety Code*®, which is used in every state and adopted statewide in 38 states, is developed and published by the non-profit National Fire Protection Association (NFPA). For more information, contact NFPA at 617-770-3000 or www.nfpa.org.

High-Rise Ordinance Building Committee Alderman Stone - Chairman

Mayor Daley’s Ordinance: Mayor Richard Daley’s ordinance requires all commercial high-rise buildings be retrofit with sprinklers. It gives commercial buildings until 2016 to comply. Daley’s ordinance excludes landmark and historical high-rise buildings and provides for the “Life Safety Evaluation” for residential buildings.

Life Safety Evaluation (LSE): The Life Safety Evaluation, as proposed under Mayor Daley’s ordinance, would be required for all non-sprinklered residential buildings. As developed, would reduce the credit for sprinklers as compared to National Model Building Code.*

Positive Points: Allows latest version of NFPA 13 and all its new technology
Sprinkler coverage increased from 225 sq. ft. to 400 sq. ft.
(Resulting in a possible 43% reduction of sprinklers in an open floor plan)
Alternative piping methods including CPVC (Chlorinated PolyVinyl Chloride)

Negative Point: *NIFSAB believes the Life Safety Evaluation to be inconsistent with NFPA 101, *Life Safety Code*®, and to be designed with the intention of avoiding fire sprinkler installations.

The following is a cost study conducted by Pro-Design Group at a Hyde Park High-rise:

Analysis of the “Life Safety Evaluation System for Business and Residential Buildings”

Total Cost of Ownership (ROI)

There are other considerations when considering life safety upgrades. These considerations include: direct and indirect costs, direct and indirect benefits of upgrades, potential liability of not upgrading, risks associated with not upgrading

▪ **Direct and Indirect Costs**

Direct costs are the costs associated with the installation, repair, or upgrade of the proposed life safety system.

For the subject building, the direct costs for the considered upgrades are as follows:

Fire Sprinkler System (From existing Standpipe)	\$586,000
(Optional Cosmetic Upgrades for upscale building)	<u>100,000</u>
Total Fire Sprinkler System Costs	\$686,000
Detection and Alarm System Complete	\$458,000
Two-Way Communications Systems	<u>326,000</u>
Total, if installed separately	\$784,000

Cost of Detection, Alarm and Communications	
If installed together by same contractor (Savings of \$104,000)	\$680,000

Upgrade Vertical Openings to 30-Minute Five Rating	
Elevator Shaft upgrade (Elevator Doors)	\$ 96,000
Telephone Shaft Upgrade (Fire Stopping)	<u>6,000</u>
Total Vertical Openings Upgrade	\$102,000

Indirect Costs are those associated with the financing and administration of the upgrades.

For the subject building these costs include:

- Interest and Fees for any financing of the proposed upgrades.
- Permits associated with the work
- Temporary Insurance needs during upgrades.
- Professional Services for Quality Control
- Maintenance and Service for New Systems

▪ **Direct and Indirect Benefits**

- Benefits of Sprinkler System Installed
 - Up to 60% reduction in rates for Association Insurance (Estimated current premium...\$35,000.00)

50% (Conservative)	\$17,500.00 (7 Year analysis)	\$ 6,125.00
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 - Up to 20% reduction in Individual Homeowner Insurance

18% conservative savings on 800.00 per year (7 years)	1,008.00
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 - Homestead Tax Exemption (IL SB 2466)

First year of Installation	2,500.00
\$100.00 every year thereafter (7 year analysis)	700,00
 - Fire Sprinkler Incentive Act (US HR 1824)

Accelerated Amortization of Ownership for income taxes (50% of cost as a deduction to individual tenants first year)	
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	\$17,150.00 deduction first year at 24% tax rate	4,116.00
▪	Total Direct Benefits of Sprinkler System Installation per Unit	\$14,449.00
	Total Direct Benefits for 20 units	\$288,980.00
○	Indirect Benefits of Sprinkler Systems Installation	
	▪ Increased Property Values (+/-5%)	
	▪ Increased Resale Advantage (Market Leverage)	
	▪ Decrease Liability exposure	
▪	Total Cost of Ownership (TCO) for Installing a Fire Sprinkler System	
○	Direct Costs (Installation)	\$686,000.00
○	Indirect Costs (Estimated \$2,000/yr over 7 years)	<u>14,000.00</u>
	Total Costs	\$700,000.00
○	Direct and Indirect Benefits	(\$288,980.00)
○	Total Cost of Ownership	<u>\$411,020.00</u>
▪	Cost per Square Foot (137,000 square feet)	\$3.00 per Square Foot
	Cost includes Cosmetic Upgrades	
	TCO for a 4,500 sq. ft. Apartment	\$13,500.00
▪	Cost per Square Foot without Cosmetic Upgrades	\$2.27 per Square Foot
	Represents Typical Building	
	TCO for Typical 1,200 sq. ft. Apartment	\$2,724.00

Using the Total Cost of Ownership as the ROI mode, the cost of owning a sprinkler system for the average apartment owner in the City of Chicago appears to be less than \$400.00 per year. We have contacted financial institutions that have indicated funds are available to Home Owner's Associations (HOA's) in the Chicago High-Rise Residential Market. The funds are available without collateral and are structured on HOA assessments. HOA's are presented with the hard choices of upgrading the Smoke Detection and Alarms Systems (including Communication Systems) or installing Fire Sprinkler Systems. If they do not install fire sprinkler systems, they must install detection and alarm systems to avoid being placed in the high-risk insurance rating pool. If there is a fire event in their building and there are no fire sprinkler present, they face the potential loss of any insurance coverage whatsoever.

Conclusion

The conclusion drawn from this report is that the NFPA model for determining Life Safety in any building should always be the preferred method. The model presented in the current proposal before the City will expose the City of Chicago to extensive liability when there is a loss of life in a high-rise fire. This loss of life is an inevitability whose probability would be reduced up to 91% by requiring the installation of Fire Sprinklers. The liability exposure for the City could be minimized by using the recommended practices of the NFPA as stated in NFPA 101, **The Life Safety Code**

Independent Call for Sprinklers: Four independent reports have been officially commissioned to review Chicago high-rise buildings and all have verified that sprinklers would have prevented the lives lost in the 69 W. Washington fire.

- ✚ Chicago High-Rise Commission (20 Year Recommendation)
- ✚ Tri-Data Study (6-10 year Recommendation)
- ✚ Cook County, Abner Mikva Commission
- ✚ State of Illinois, James Lee Witt & Associates

Federal Emergency Management Agency

United States Fire Administration (USFA) – Residential Fire Sprinkler Initiative: For more than 30 years, FEMA’s U.S. Fire Administration has advocated for the use of automatic fire sprinklers to save lives, reduce injuries and protect property. USFA’s National Residential Fire Sprinkler Initiative was undertaken to overcome “barriers inhibiting the acceptance and use of residential fire sprinklers to reduce life loss and injuries”.

America Burning Re-commissioned 1999: Fire sprinklers are singled out as the most effective fire loss prevention and reduction measure in this watershed report commissioned originally in 1973 by the President of the United States and in the two subsequent federally required reviews of the report since.

Solutions 2000 Report: This national symposium, convened to address fire safety concerns among young children, older adults and people with disabilities affirmed the need for automatic fire sprinkler systems to protect these high fire-risk groups. For more information visit www.usfa.fema.gov.

Financial Information

Basic Retrofit Cost: Reviews of sprinkler retrofit installation costs, including two representative Chicago high-rise buildings (6007 Sheridan Road and 3930 Pine Grove Drive) that had incurred fire deaths, provide an exemplar basic cost estimate: \$2.50 - 3.50 per square foot. (Based on conducting the work on a routine daytime basis, no overtime, double crews, or accelerated schedule.)

It should be noted that the underground water main supply, fire pump and standpipe risers are already in place in high-rise buildings and should not be included in cost estimates. Only the fire sprinkler cross main, branch line pipes, and sprinkler heads are needed in individual tenant and office spaces.

Tax Increment Financing (TIF): Commercial high-rise buildings within the 120 downtown TIF districts may be able to utilize Mayor Daley’s economic development program TIF funds for rehabilitation projects including sprinkler retrofit plans. For more information about TIF fund availability, contact Mayor Daley or www.cityofchicago.org.

Insurance Discounts: Insurance underwriters who write policies in Chicago report savings that range from 20% - 60% for buildings protected by sprinkler systems. The 3930 Pine Grove Building can experience an insurance savings of \$75,000 per year, with tenants and condo owners receiving an additional 5%-20% on individual renter’s or homeowner’s policies.

Pending State Legislation: Senate Bill 2466, introduced by State Senator Martinez (D-Chicago), provides for a one-time \$2,500 tax break for the year in which the fire sprinkler system is installed, with an additional \$100 exemption each year thereafter that the system remains in place, when the property is owned and used exclusively for a residential purpose. The bill is being held in committee and would need to be acted on in the upcoming veto session.

Pending Federal Legislation: Sen. Rick Santorum (R-PA) has introduced S2860, Fire Sprinkler Incentive Act of 2004, which calls for an amendment to the tax code to classify automatic fire sprinklers as a five-year property for purposes of depreciation as opposed to the current 27.5 or 39 year period for installations in residential or commercial properties. A similar House Bill, HR1824, Fire Sprinkler Tax Incentive Act (2003), has 130 co-sponsors. Among the Illinois delegation, only Congressmen Kirk and Hastert have not joined.

For more information visit www.firesprinklerassoc.org.