

# Houston Area Buildings Prepare For 21<sup>st</sup> Century Disasters

by Curtis Massey

## *Is technology outpacing the fire service?*

Until recently, Houston lagged behind the nation in disaster preparedness. Although possessing a world-class fire department, the real estate industry had put minimal attention towards the vital effort of positioning its assets to deal with large scale emergencies. Critical elements that were necessary to allow the local buildings to react effectively in the event of a large fire or any other significant emergency had been mostly overlooked. Buildings possessed life safety/evacuation plans, but little data that was of any use to emergency responders. There are 3 key areas that must be covered in order to truly be ready for a catastrophe – advanced staff training, tenant training & drills and fire department emergency resource pre-plans. These items comprise what I commonly refer to as “The Critical Triangle”. For the most part, the first two were being taken care of. However, the third element was largely ignored. Not unlike their counterparts in other large cities, Houston property managers felt like this was not an important area of concern. It was believed by many that the fire department knew their buildings, did annual inspections and occasional drills, and with blue prints on file with the city, all their bases were covered. The truth is the fire department does not know your building anywhere near as well as you might think.

Today’s high-rise office buildings are much more complex and challenging than they were back in the 60s and 70s when most high-rise firefighting SOPs (standard operating procedures) were written. With the introduction of raised floors; data cable distribution networks; special fire suppression systems; high tech security systems; state-of-the-art elevator systems; petroleum-based fire loads (combustibles) such as plastic modular furniture and PCs; redundant power supplies; and rooftop microwave transmitting dishes and antennae arrays, it has become quite evident that technology has exceeded the capabilities of the American fire service. The harsh, cold reality is that the average fire chief does not understand most of these items mentioned, nor the dangers and problems they pose to the crews that he or she commands. These are NOT the same buildings firefighters “cut their teeth on” many years ago. For instance, now they need to be aware of special equipment on certain floors that can have as many as 4 separate power feeds with electricity demands far greater than the typical office occupancy. Before a fire can even be approached in some areas, they may have to get power shut down from primary and secondary electrical feeds coming into the building off separate grids, then emergency generators and battery UPS (Uninterruptible Power Supply) systems have to be isolated. The fire department thinks they can kill power on the fire floor in the electrical rooms and then attack the fire (if they are even aware of what is in the fire area). We all know this is not the case. Some tenants do not want to lose power for

anything shy of a nuclear strike. Firefighters do not comprehend what they are up against in these settings. The missing component in this equation is the lack of a properly prepared emergency resource manual for first responders.

### ***The need for fire department pre-plans:***

Bank One Center and Wells Fargo Plaza were the first Houston area office towers to recognize the necessity, not luxury, of providing key building data to fire personnel responding to their buildings. Realizing that this type of “pre-plan” must not be mixed in with their existing tenant life safety plan (which is irrelevant data to the fire chief), they embarked upon adopting a nationally accepted disaster/pre-fire planning program. These plans were strongly supported by the Houston Fire Department. Soon after, First City Tower, then Chevron Texaco Heritage Plaza came on board. Crescent Real Estate Equities then made a very bold move by deciding to implement these plans into all the high-rise buildings in their portfolio, beginning with their Houston, Denver and Austin properties. Regional V.P., Property Management Jim Wilson and V.P. Property Management, Houston Center Frank Staats studied the benefit versus cost ratio of implementing a program that was relatively expensive, but the only disaster planning program fully supported by every major fire department in North America – the Massey Disaster Plan. Discovering that the system protected the vast majority of the tallest and highest profile buildings in the U.S. and Canada, yet was not required by code anywhere, they agreed to apply the concept to the assets they had hundreds of millions of dollars invested in. When the plans are complete, they will be among the safest buildings in the world in which to occupy. Tenants are very appreciative of these kinds of initiatives. So is the Houston Fire Department. A quote released in letter form in 1999 from the Office of the Fire Chief reads: “After reviewing the Massey Disaster Plan, I am convinced this type of private initiative will produce safer buildings for occupants and owners. A program mirroring the Massey Disaster Plan should become part of our city’s fire codes.”

### ***What is a disaster/pre-plan?***

A disaster plan is a multi-emergency resource plan strictly dedicated to the emergency services that would be responsible for mitigating any type of event requiring their response and intervention. It must cover fires, gas leaks/explosions, hazardous materials accidents, high-angle rescues, elevator entrapments, natural disasters, police SWAT operations and all forms of terrorism – bomb detonations, aerial assaults and chemical/biological attacks. The plan has to be in a format that can provide all the key building data to the incident commander in a matter of seconds...how to get around, how to cut things off and how to interface with primary

building systems and utilities.

In addition to essential riser diagrams, site plan and floor plans, the plan must also contain important structural information, including a “Collapse Rescue Grid” for specialized urban search and rescue (known as USAR) teams displaying all the support columns at the base of the building, along with a structural riser diagram. This would be vital to coordinated search efforts in the event of a partial or total collapse of a high-rise building. These very drawings were created by the author’s firm during the first few days of the World Trade Center collapse in New York City for local and national USAR teams searching the sub-grade levels of the twin towers.

In addition to the master copy of the pre-plan for the incident commander, there are two extra sets of floor plans for fire department stairwell support teams – one set for the “attack stair” and the other set for the “search and rescue stair”. These are absolutely necessary to firefighters going up into the building. Extra copies of the master plan are stored in the manager and engineer’s offices in each building. The main plan and extra floor plan booklets are kept in the fire control room in a high-security steel vault “Knox Box”. It is always wise to store one more copy off-site in the event of a major catastrophe occurring at the property. These type of first responder emergency resource plans can “make or break” a serious incident as it unfolds. It can also reduce a manager/owner’s liability exposure, due to the fact that it exceeds code in all cities. It can prove itself to be an invaluable leasing tool as well, by showing existing and prospective tenants that the building goes beyond local ordinances and is safer than the law dictates.

### ***Remember the Critical Triangle!***

Make a concerted effort in preparing your assets for both small and large-scale events by staying up on tenant training and drills; have your security, engineering and management staffs properly trained in emergency response procedures and how to work with first responders on various incidents; and pre-plan your building in a manner that is conducive to accepted incident command practices and methodology. Although we live in very uncertain times, with the ever-present shroud of terrorism hanging over us, one thing is and always will remain certain – the best prepared buildings always fare better than ones that are ill-prepared. Always plan for the worst, yet hope for the best. Remember, knowledge is power.

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