



nyrej

By William Gati: Architecture in New York City's post 9/11 world: New and improved building standards

October 07, 2011 - Spotlights

The destruction of the Twin Towers on the deadly morning of 9/11/2001 has left many questions unanswered but has led to many preventative goals being established. Americans collectively agreed that we should learn from that horrific experience and try our best to prevent a similar event from happening again. Architects and engineers have since met with code and government officials to revise and improve the way buildings in NYC are to be designed and built.

The resolve was to not only rebuild the towers, but to make them bigger, better and stronger than the previous towers. One World Trade Center has literally risen from the ashes to represent a resilient nation and the people who were not ready to let evil forces stop them from enjoying and expressing their God-given rights: the pursuit of freedom, happiness, liberty and justice.

The Freedom Tower will have many new features. Stairs will be wider with more exits than before. There will even be exclusive stairs for emergency personnel. Air will be supplied from outside the building to reduce the recirculation of smoke and allow the stairs to have clean air in case of fire. The mechanical system will have filters to clear the air of chemical or biological contaminations and protect the tenants from harm. The first 19 stories will be built of reinforced concrete protecting the structure from car bombs and other explosives. Subtle barriers will be used to prevent cars and trucks from driving close and crashing into the building; this will also deter attacks from the street level. Rain water will be captured and used for cooling the building saving money and protecting the environment. The building will be heated by steam and with very little oil or gas. This further creates self-reliance and environmental efficiency. The tower will also be further from the street giving it more protection by virtue of positioning on the site. It is an average of 90' away from the surrounding streets. This is much further than the 25' distance of the older towers.

The structure of the Freedom Tower will be mostly concrete with a glass shell. The glass will be stronger and shatter resistant with plastic reinforcement. This will further protect the tenants from missile and other attacks. The glass will not as easily fall and harm pedestrians on the street. Concrete will be used extensively to protect the stairs and mechanical system from attack and damage. The central structural core of the building will also be concrete giving it a stronger and more resilient form than before.

The new standard for building design also affects every other structure designed and built post 9/11. The New Building Code used in NYC and NYS is modeled after the International Building Code. This code has many different features from the 1968 NYC Code. The main difference has to do with life safety and energy conservation. New sprinkler and fire alarm regulations make structures more fire-resistant and aid in notifying the first responders in case of emergencies. The codes also make exiting and servicing buildings easier and safer. This will assist in allowing firemen to go up wider staircases and enter wider doors to facilitate two directional traffic flow. The NYC Energy Code now

requires insulation and air infiltration in most new buildings and alterations. It also requires energy efficient lighting, electrical and mechanical systems. This is a result of our desire to reduce our dependence on foreign energy. Calculations, specific materials and inspections are now necessary in order to get the authorities to approve plans and certify completion of structures.

All these extra requirements will certainly add cost to construction and professional fees and delay the project but will save fuel in the future and most importantly, may save lives. One would hope that the Freedom Towers does not only symbolize freedom from tyranny - it is 1776' high, but also freedom from reliance on foreign oil and the threat of terrorism. I was involved in the early stages of planning of the World Trade Center project and am happy to finally see the completion of the Memorial and progress is being made on the towers. Architecture after 9/11 is more energy conserving, humane, sensitive, intelligent and caring.

William Gati, AIA, is the president of Architecture Studio, Kew Gardens, N.Y.

New York Real Estate Journal - 17 Accord Park Drive #207, Norwell MA 02061 - (781) 878-4540