NEW YORK STATE: BUILDING A CASE FOR STANDARDS
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A new era for New York State began on July 3rd, 2002. Overshadowed by media coverage being given to the decline in the stock market and the cry to industry leaders to follow standard accounting procedures [amidst the Enron, Arthur Anderson, and WorldCom collapses], New York State adopted a new generation of standards for the built environment. The purpose of this paper is to address the how the new standards for New York are expected to result in a healthier economy and safer environment.

The standards I am referring to in the broad sense include the International Code Council's (ICC) International Family of Codes that New York State used as the base document for its new generation of building standards. These base documents include almost 1,200 individual reference standards promulgated by 88 reference standards organizations of private industry and governmental agencies.

The argument for standardization is compelling. The history of the benefits of standardization is irrefutable. Order and prosperity in a civilized society has a strong correlation with a system of standards and predictable expectations. Whether we look at fire protection systems standards for a building, or the accessibility standards for persons with disabilities, the message is clear. Standards do foster a healthier and more prosperous society. The message of this paper is not to convince the reader of the importance of building standards in a general manner, but rather I am presenting the messages of industry leaders who make the case that future building development in New York State looks very promising due to the adoption of a new generation of codes and standards. Furthermore, since building codes represent given expectations for performance, as do individual private industry or governmental standards, I will be referring to codes and standards simply by using the term **standards.**

This paper gives you a glance at a milestone achieved by New York State. As a society we cry out for adherence to standards since we believe they will improve our quality of life and economic security. In New York, tools for measuring the future performance of building systems take the form of national and international compliance standards.

Several years ago you may remember the commercial whose catch phrase was " Where's the Beef? Well, the beef, or maybe better said in New York's case is, what was the motivation for making a change? The answer in New York State to that question was supported by private industry and government agencies. It had as much to do with life-safety as it did with economic benefits. This paper takes a glance at a sampling of the information gathered that supports the assertion that Standards Do Mean Business.

COSTS & BENEFITS

The actions of adopting a new generation of standards bring New York into closer alignment with those standards used by surrounding states. For nearly 50 years New York State maintained its own code. This resulted in New York State being isolation from the rest of the nation and international body of thought. New York was out of the mainstream of national thought expressed by other regional building codes and standards. This became particularly evident when researching the thoughts of national developers.

Based upon data gathered, it is anticipated that regulated parties will recognize building development savings in the range of 5% to 15%. This is the result of performance requirements that provide regulated parties more alternatives to arrive at the most cost-effective solution while, at the same time, protecting the occupants and users of the building.

The new generation of codes and standards significantly reduces residential and commercial construction costs in New York State. Many corporations that build across the United States, most notably the May Company, Ace Hardware, Georgia Pacific, McDonald's, Target, and State Farm, were contacted to

compare construction costs in New York to states that use a model building code. While the range of savings varies (in buildings that are used by more people, multi-storied, etc., the savings are greater), we chose for our rough analysis an unweighted average savings of 10%. Based on the dollar volume of construction that would be affected, it was projected that New Yorkers could save approximately $350 million of commercial construction each year.

There is also a considerable amount of savings to be realized in residential construction (single family and multi-family). The Builder's Association estimates that there is approximately $3 billion in annual residential construction. Depending on the type of single family home built, industry estimates the average savings will be approximately 13%. Multi-family housing construction stands to save approximately 6%.

The following information reflects conversations and correspondence with nationally recognized developers and code consultants. This information is presented to illustrate how the design and construction industry will be impacted by the recent adoption of new standards.

A. Statement of a Large Developer of Department Stores

A representative of a large developer of department stores states that the median cost to build a department store under the a model code [the current New York State Uniform Fire Prevention and Building Code adopted July 3rd, 2002 reflects the performance requirements of a model code] will be approximately $1,750,000 less than if the same building were built under the former New York State Uniform Fire Prevention & Building Code. This representative further commented that antiquated requirements imposed by the former code did not provide an additional level of safety.

B. Statement of the U.S. Department of Energy

New York remains at the forefront of energy-efficient construction practices by adopting one of the most progressive state energy codes.

The New York Energy Conservation Construction Code (ECCC) capitalizes on recent advances in energy efficient technologies and building practices. With the adoption of these standards, it is expected that New Yorkers will save up to $80 million per year in energy costs. It will protect New York's air quality by reducing carbon dioxide emissions by 517,000 tons per year and acid rain-causing sulfur dioxide by 493 tons per year.

Under the direction of the New York State Department of State, the agency responsible for reviewing and adopting state building codes, the ECCC was developed under an extensive multi-group partnership. The collaborative process involved the New York State Department of State (DOS), the New York State EnergyResearch and Development Authority (NYSERDA), the New York Energy Code Technical Subcommittee,the U.S. Department of Energy (DOE), Pacific Northwest National Laboratory (PNNL), the Building Codes Assistance Project (BCAP), design and building professionals, and other stakeholders. This group crafted a code that will benefit taxpayers, businesses, building owners, and renters for years to come.
The ECCC requires minimum standards of energy efficiency in new residential and commercial buildings. And, as outlined by New York law, the incremental cost of the ECCC demonstrates a 10-year simple payback when compared to the previous energy code that was adopted in 1979 and last updated in 1992.

C. Statement of a National Chain of Retail Outlet Stores

The head of the Design and Construction group of a national chain of retail outlet stores based in Minneapolis stated that the former requirements of the New York Code [prior to July 3, 2002] resulted in additional costs of $319,000 to $355,000 per outlet store built in New York. These costs are eliminated as a result of the New York's new standards. These costs occurred because of the former requirements for:

(1) 3 hour rated walls between sales floor and storage rooms depending upon the storage occupancy classification, (2) vestibules or corridors to be the means of accessing a stair, (3) taking all stairs to the roof, (4) draft barriers above all ceilings, (5) 2 hour walls between parking ramps and stores and signs requiring restricted use of elevators. The head of this Design and Construction group recommended that New York adopt nationally accepted standards in order to remain competitive at the national level.

D. Statement of a National Code Consulting Firm

A principal for a national Code consulting firm stated that he was not aware of any cost analysis that had been done that compared the cost of doing work in New York to the cost of doing work in other states. Based on his experience in working with the New York building standards, he said he would expect cost savings if a building code based on a model code were adopted in New York, since this would create a more predictable environment for construction development and lessen regional barriers (state to state) as well as barriers within the state.

E. Statement From a National Fire Protection and Engineering Firm

The president of a national fire protection and engineering firm compared construction costs under the former New York State Uniform Fire Prevention & Building Code to costs under model building codes. This firm has served on dozens of projects involving the construction of retail department stores in New York State. These types of buildings are commonly two or three levels in height and approximately 150,000-250,000 square feet in gross floor area. The following code issues are among the many issues which must be addressed in constructing these buildings: degree of fireproofing of structural members, protection of escalator openings, construction of separation wall between department store and adjacent mall, protection of openings in firewalls, communication to parking levels, ventilation of stairs and shafts, construction of stock room and receiving area walls, fire stopping of noncombustible plenum spaces, and need for standpipes. It is very common for a project of two or three stories in height equaling approximately 200,000 square foot in area to have to deal with 60-80% of the listed items. Based on the construction cost for a department store ranging from $45 to $60 per square foot, the cost related to the listed items will be in a range of $4 to $12 per square foot. When utilizing a 200,000 square foot building, this range represents a cost to the project of $800,000 to over $2,400,000. Therefore, assuming a medium range for these numbers, for a 200,000 square foot building that would normally cost $11,000,000 to construct, the construction penalty to build under the New York State Uniform Fire Protection and Building Code equates to $1,600,000. The president of this national fire protection and engineering firm further stated that in his opinion, complying with the former New York State Uniform Fire Prevention & Building Code does not provide an additional level of safety. He further stated that many of the requirements contained in this code have long been removed from model Codes as well as other nationally recognized standards because they are unnecessary and their removal does not result in increased fire losses. In addition, these requirements are not deemed necessary by major insurers that pay for fire losses. The President of this firm further stated that the current technologies provided in the model codes do ensure an amount of safety equal to the New York's former code. However, the model code methods are now recognized as "state of the art" and are much more compatible with the construction techniques utilized today as well as more respectful of operational aspects of these types of buildings. He concludes that although his analysis only concerned one type of building, similar type of savings are achievable for many types of buildings.

F. Statement of a Subsidiary Company of a National Real Estate Development Firm

The president of a subsidiary company of a national real estate development firm, which has been developing rental apartment communities across the country for over twenty years, supports adoption of a new standards based on the International Family of Building Codes. This company develops an average of 8,000 apartment units each year under the various building code jurisdictions in America. It has previously developed 494 apartment units in the state of New York, and has begun construction of 549

apartment units in Brookhaven, NY.

The president of this company states that the former New York State Uniform Fire Prevention & Building Code is a prescriptive code that prevents the flexibility found in performance based codes, such as the International Codes. He states that performance based codes allow the use of modern materials and assemblies that perform in a manner that protects the general health, safety, and welfare of the population while at the same time providing economic feasibility for development. The President stated that the former New York State Uniform Fire Prevention & Building Code provides less public protection and negatively affects the economic feasibility of development. He further stated that his company has passed on many development opportunities in New York State because complying with the former New York State Uniform Fire Prevention & Building Code is cost prohibitive.

The president then summarized what he viewed as the three most onerous requirements related to residential, multi-family construction found in the Uniform Code. These are issues relate to wood frame construction, plumbing materials, and fire limits.

Wood frame construction is not allowed over two stories under the former New York State Uniform Fire Prevention & Building Code. The International Building Code (IBC) allows wood frame construction up to four stories. Residential buildings in New York over two stories must be constructed of masonry or other non-combustible construction. This adds $8.00 to $10.00 per square foot to the cost of an apartment. The average size of a modern apartment is 1,000 square feet and the minimum number of apartments in a typical development is 200. The extra cost to build a typical development under the Uniform Code is therefore from $1.6 to $2.0 million.

The president stated that the former New York State Uniform Fire Prevention & Building Code prescribes the type of pipe for plumbing materials in contrast to the IBC, which would allow plastic pipe for water, sewer and drainage so long as it meets certain performance requirements. The President states that metal water piping and metal sewers from buildings to the main sewer can add $200 to $400 to the cost of an apartment, and that multiplied by the number of apartments in a community could result in a large sum. He further stated that plastic pipe performs better than metal or iron piping, and that the smooth, non-porous bore, plastic composition and chemically welded joints significantly reduce clogged lines and sediment buildup, as well as preventing bacteria buildup, oxidation, rusting and leaks. He believes that plastic piping is a better material than metal and costs less to install.
Wood frame construction is not permitted within fire limits under the provisions of the former New York State Uniform Fire Prevention & Building Code. Within fire limits, all buildings must be of masonry or non-combustible construction. Fire limits go back to the days when fire sprinklers were in their infancy and only firemen and their equipment controlled fires. Fire limits were established when firehouses were remotely located or poor planning had resulted in inadequate access to the fire sites. Modern building and zoning codes have provisions that make the restrictions related to new construction and fire limits obsolete. Model codes do not recognize the concept of fire limits.

The President of this company concluded that its market studies indicated that there is pent up demand for new rental housing in the State of New York, but the former New York State Uniform Fire Prevention and Building Code in conjunction with restrictive local laws makes the development of new rental housing in New York unfeasible in many cases.

G. Statement of Senior Vice President of a Publicly Traded Real Estate Company

The senior vice president of a publicly traded real estate company stated that the cost added (no value added) in designing and constructing under the former New York State Uniform Fire Prevention & Building Code is real and definable. Of the nearly 4,000 apartment homes his company has completed in New York, the cost of construction in New York State is higher by $9.00 per square foot or 16% on the average. He believes that the safety of structures constructed under model codes is uncompromised.

Records of his company indicate that it has experienced only three fires in its apartment houses in the past three years, all of which were resident induced and accidental. No loss of life or injury resulted from these fires. The vast majority of his company's apartment homes have been constructed under the umbrella of model codes. The senior vice president concluded that New York State should adopt a building code which is model code based. He stated that the record shows that doing so would not result in degradation of quality or life safety and that the benefits of doing so would be many, including reduced cost, timely and concise decisions regarding Code questions, and an excellent safety record already proven.

H. Statement of the Regional Vice President of the Third Largest Multi-Family Builder in the United States

The regional vice president of the third largest multi-family builder in the United States states that the former New York State Uniform Fire Prevention & Building Code adds cost without benefit of value. He believes that the most restrictive requirements in the Code are: (1) the two story height limitation on type 5a (wood frame) construction, (2) the prohibition of CPVC and PVC water and sanitary drainage piping, and (3) the ½" drywall overlay on corewall required to meet the NY State "hose stream test". He notes that these requirements do not relate to nationally accepted model building codes and therefore multiply the costs associated with construction. He calculated increased costs on a typical 20 million-dollar project to be in the neighborhood of 8-10%, which would add approximately $6,000 to $8,000 per apartment unit depending on the community's size. He notes that over the course of the last 5 years, his company has only developed one community in the state of New York, due, in large part, to the economic burden of the former New York State Uniform Fire Prevention & Building Code. He stated that the adoption of a building code based on a model building code would lower the cost burden of multi-family construction, **resulting in increased feasibility to build within the state of New York.**

Renovation of Downtown Properties for Villages, Towns, and Cities

There is overwhelming support for these standards from village, town and city development corporations, all of whom have hundreds of thousands of undeveloped square feet space in their downtown business districts. For example, the city of Syracuse has reported 674,720 square feet of space in 42 downtown buildings that cannot be utilized due to older standards. Buffalo reports that 40%, approximately 214,698 square feet, of their downtown upper story space suitable for residential development cannot be used because of the standards. White Plains has approximately 2 million square feet currently undeveloped, the highest amount in the country. While a number of factors influence the ability to use this space, the most frequently cited obstacle to redevelopment is the older standards. The adoption of new standards on July 3rd is expected to encourage development of vacant space.

Reduction in New Homeowner and Business Owner Insurance Premiums

In addition to reduced construction costs, there are also significant reductions that will be seen in insurance premium costs. The insurance industry had completed a preliminary analysis of the former New York State Uniform Fire Prevention & Building Code and found it is not comparable to many areas of the various national model codes. The industry informed New York that unless it adopted new standards, it is likely that no New York municipality will receive a rating better than an 8 or 9 (on a scale of 1-10, with 10 representing no recognized protection). However, if New York were to adopt a model code, its rating would be significantly lower, resulting in lower new homeowner and business owner insurance premiums. Using similar states premium reduction as models, the Insurance Department estimates new homeowner and business owner premiums could be reduced by as much as 10%. This savings represents a total statewide savings of approximately $3.5 million per year.

Summary:

Governmental and industry leaders throughout the nation provided information that supports the

expectation that the standards New York State adopted on July 3, 2002 will lead to a healthier economy and more vibrant business environment throughout the state. Speaking of the former New York State Uniform Fire Prevention & Building Code, New York State's Governor George Pataki said: "Our current building code has become outdated, holding back development and construction throughout the State and placing New York at a competitive disadvantage with neighboring states. A model building code and energy code will bolster construction and create new jobs across the state while ensuring our homes and workplaces are safe." New York State's Secretary of State Randy A. Daniels, added that the adoption of the new standards for New York "reflects current technology, products and safety standards. The code will encourage both new development and rehabilitation of existing buildings, which is key to revitalizing our downtowns."

Standards are living documents that change as advances in technology proceed. New York State is committed to the continued progress and development of standards. New York [The Empire State] recognizes that progressive standards promote at the local, regional, national, and global levels a more vibrant economy. But most importantly, for the built environment, progressive standards safeguard the health safety and welfare of occupants and users of structures.