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Affordable green in affordable housing: The rise of clever, original and integrated design schemes

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Designing and constructing sustainable environmentally conscious buildings is becoming the norm rather than the exception. It seems that the first question asked at the inception of any new project is: "Will the building be green?" As of late, more often than not the answer is: Yes. Usually the next question asked is "Can we afford to go green?" This simple question, continues to give rise to a multitude of very clever, original and integrated design schemes.

Almost everyone agrees that providing environmentally respectful and energy conscious design is a goal that needs to be met. As green design has become prevalent, so has the notion that we are doing something good for people and for our world. While these ideas are satisfying, attaining the standards for "green design" is difficult.

At 1212 Martin Luther King Apartments (MLK) this challenge was met while meeting tight budget constraints for affordable housing. Through careful planning and analysis, strategies were estab-

lished to incorporate cost-effective energy efficiency measures, and the resulting 54-unit building was recently honored as the first ENERGY STAR labeled multi-family high-rise building in the country.

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The design team of SLCE Architects, led by Saky Yakas, partner in charge and Eric Ettinger, principal of Ettinger Engineering Associates, consulting Mechanical, Electrical and Plumbing and Fire Protection engineers, along with technical assistance from green building consultants Steven Winter Associates found affordable energy conservation opportunities and natural resource conserving equipment which will significantly reduce building energy consumption, respect the environment and improve operating efficiency.

The developer Martin Dunn founder and president of Dunn Development Corp. chose to provide an exceptionally tight and well insulated building envelope which included custom triple sash windows with low E, argon filled glass and a roof with an insulating valve

of R-37. To further reduce heat loss and heat gain the building's ventilation system included constant air flow regulators (CAR) in the bathrooms and janitors closets which carefully control exhaust quantities and reduce infiltration. Also, 87% high efficiency sealed combustion gas fired boilers were used along with high efficiency air conditioning equipment to serve heating and air conditioning for common areas.

Direct electrical usage is minimized by providing motion sensors on all lighting in common areas, corridors, stairwells and utility rooms. Also, ENERGY STAR rated or equivalent lighting and appliances were used throughout the building. Vertical transportation is provided by next-generation reduced horse power elevators which further cut demand and usage well below what would be experienced with conventional hydraulic elevators. Water conservation measures include low flow lavatories and shower heads.

1212 Martin Luther King Apartments (MLK) is the first building completed under a national pilot program which is administered by the United States Department of Environmental Protection and which was implemented locally by the New York State Energy Research and Development Authority (NYSERDA). Financial incentives were provided by

NYSERDA for improved energy efficiency. Grants were based upon both capital costs established for energy efficient construction and equipment and on the actual cost of energy conserved. To insure compliance, building energy budgets were verified by TREAT computer energy modeling protocols as developed by NYSERDA. After occupancy and to insure long term compliance, the expected gas, electric and water use reductions will be verified by an ongoing three year commissioning program.

At 1212 Martin Luther King (MLK), Dunn Development Corp's extensive experience in developing and providing affordable and supportive housing coupled with a desire to find ways to construct environmentally sensitive, sustainable and energy conscious buildings resulted in solutions to attain affordable housing with affordable green elements. Going forward Dunn Development Corp. plans to replicate this design for other quality affordable housing projects to provide living spaces which are respectful of our environment, provide comfort to their occupants and are on the leading edge of current green building design.

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