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What works there, can work here: "Green" lessons from around the world



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Architects and engineers have figured out how to use photovoltaic slates in a Northamptonshire, UK development; save 94% on potable water demand at an office complex in Torrance, California; and integrate co-generation plants at hospitals in Singapore.

But with so many different measurement systems -BREEAM in the United Kingdom, LEED in the United States and BCA GreenMark in Singapore, for example - architects and engineers sometimes lose sight of the bigger picture by focusing too intently on individual programs. After all, many of the certification programs were created using others as benchmarks. Instead, architects should focus on some of the universal themes found to be successful abroad, pull appropriate concepts and apply those back home.

Here's how some of the unique solutions being incorporated elsewhere can be adapted to market sectors here in New York City:

A plan for the workplace

In St. Petersburg, Russia, our design of Okhta Centre, the controversial new headquarters for oil giant, Gazprom, offers a new take on the energy problem of heating a building in frigid temperatures. The external envelope of the twisting tower form consists of two double-glazed glass skins with an atrium between the inner and outer walls. The atrium acts as a buffer zone providing both thermal insulation and natural ventilation at different times of the year. The pentagram design of the tower maximizes access to daylight and allows for notable views without losing heat via exposed surface area.

Glass curtain wall schemes, like that incorporated into Okhta Centre, could play an even more important role here in New York, where there are more than 150 high-rise buildings under construction and another 150 proposed, according to Emporis. In fact, it's already proven possible. The new Bank of America Tower in midtown Manhattan utilizes a high-performance glass curtain wall designed to do just that - allow in maximum sunlight while keeping out unwanted heat.

Healthy housing strategies

Though it's lagged behind many other countries when it comes to sustainability, China is slowly pushing ahead. Plans are afoot to create the world's first sustainable city, to operate the largest geothermal heating/cooling system in a residential project and to halve energy use of buildings by 2010. Although much of the "green" impetus is coming from foreign architects, the Chinese government has instituted country-wide programs to implement green building and energy efficiency standards.

For example, in Shenzhen, China, our architects made public green space a priority when they designed Phase 2 of the Mont Orchid Riverlet development. By placing the 18,000 s/f clubhouse partially underground and directing vehicle traffic to basement-level drop-off points, more than 50% of the public space is designated as a "green area." Moreover, the apartment towers are all grounded by an unenclosed ground floor, allowing the green space to flow freely between complexes. Those towers that do reach the ground are clad in natural stone, mimicking the landscaped surroundings.

Imagine if the myriad of new residential developments springing up around the city gave greater priority to sustainability and the creation of public green space? Although implementation of green design lags in large scale residential construction in the New York metropolitan area, one notable exception is the Solaire in Battery Park, which was completed in 2003 and achieved a LEED Gold certification by incorporating systems for the reuse of grey water and stormwater and treating and reusing its black water for the building cooling system.

Healing power of green

As an island nation whose only significant natural resource is its people, Singapore has prioritized energy efficiency as a key element in its national defense strategy. The country has created its own version of LEED called GreenMark and the national government actively encourages developers and designers toward sustainable designs. The Khoo Teck Puat Hospital, a new 550-bed replacement hospital in northern Singapore designed by RMJM Hillier, will utilize natural ventilation in many of the patient wards and public spaces, green roof gardens to reduce heat gain, and corridors open to daylight and gardens.

While natural ventilation may not be feasible in more congested parts of Manhattan, gardens and green spaces interspersed throughout hospitals would not only help with air quality but also patient recovery time. (Studies have shown that hospital patients who are exposed to natural settings can have faster recovery times than others.)

As many parts of the globalized world become flatter and flatter, it makes sense to share tips and techniques in sustainable design. They may not translate seamlessly, but with a few adaptations it could be surprisingly easy to create an international web of eco-designs.

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