

Laurie Wiegler reports on the emerging brand of 'green hotels' in the USA, where eco-friendly engineering is becoming a big business



a big

SAN FRANCISCO has had a certifiably green hotel, as has Napa Valley, but not the Big Apple – until now.

Greenhouse 26, named for its location at 132, 26th Street, is being made to look like an actual greenhouse. Designed by architect Arpad Baksa and team, it is being developed by Flatiron Real Estate and engineered by Dubinsky Consulting Engineers along with DNV Associates.

Nineteen storeys high and 5.79m across, this Chelsea district hotel will be as long and sleek as the supermodels who roam its environs.

According to the Baksa plan, Greenhouse 26 will sport myriad green goodies: an elevator that regenerates energy through its braking system; organic bath supplies and toiletries; an organic restaurant on the ground floor; linkage to a hybrid-car service; front bike racks for patrons and staff; bi-level lighting; water that recycles from sink to toilet and offers dual flush capabilities; and two 450m bores housing wells for a \$70,000 geothermal heating and cooling system.

The hotel will also feature a thermal barrier as insulation that will serve as a conduit of both heat and cooling for each of the building's terraces.

The hotel will have 28 rooms including four full-floor suites, and each will have its own balcony. Additionally, high-tech occupancy sensors – so sensitive that they can detect (heaven forbid) a dead body in the room – will be employed.

SUBWAY AS INSPIRATION

Asked about his influences, architect Arpad Baksa says he wasn't inspired by any other hotels, either in the US or abroad. But rather, the idea was

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green apple

born in classic New York fashion – on the subway.

After Flatiron approached Baksa about building on the site, the idea morphed from residential construction to a hotel site. At that point, the architects asked if the developers would consider an environmentally-forward option. Flatiron was excited at that prospect.

"Everyone of the developers is involved in this business, so they came to us and said 'look, can you design this hotel?' and we said 'yes, we've designed hotels in the past, no problem'," Baksa says, noting that they faced challenges for the top part in terms of its cable structures, where the building sets back.

Further, Baksa still hadn't a clear idea in mind for its design – until a fortuitous ride on the Number 2 subway line.

"We wanted to create the greenhouse part of the building so it would look like a greenhouse, but the 'greenhouse' name for the hotel is actually very clever: the developers came up with it. It used to be the old flower district over there," he explains.

IT'S NOT EASY GOING GREEN

Whether or not one calls Greenhouse 26 Manhattan's first green hotel – Klimpton Hotels, for example, has won awards for environmental practices at its 70 park avenue hotel – depends on whether one takes into account certification. To be designated truly green, a hotel must meet standards designated by the United States' Green Building Council's Leadership in Energy and Environmental Design – or LEED – programme.

Among other criteria, LEED certification means that a

building is environmentally responsible, profitable and equipped with energy-efficient measures. The first such hotel in the US: Marriot's Inn and Conference Center at the University of Maryland University College – was established in 2005.

According to a spokesperson for the USGBC, Ashley Katz, there are presently eight New York City hotels registered with the organisation to eventually earn LEED certification.

However, none has yet been certified, and Katz says she has no way of knowing if Greenhouse 26 will be the first.

"But if it is, it will be the first certified LEED hotel in New York," says Katz, who adds that about 90 per cent of registrants eventually become LEED certified. Nationally, there are 162 registered projects and seven certified LEED hotels.

Baksa seems confident that his hotel will be the next to achieve certification, adding that they are pursuing the gold – or highest – level of certification. He's been designing upscale residential properties and performing historical facelifts since 1984. However, he is not as entrenched in the hotel market even though he's won some high-profile contracts, such as the refurbishment of a Best Western at South Street Seaport, which was in embarrassingly bad shape before he was brought in.

Greenhouse 26 is arguably more precedent-setting for the architect and his team.

Unfortunately, no one will see it until it debuts in March of 2009, a one-year postponement that has obviously made the design and development team a little anxious. Asked about the delay, Baksa simply says, "It's

been delayed for many reasons; it's the process."

Flatiron's president, Steven Ancona, says: "We have a very narrow site that has made it difficult to pack in all of the systems a green hotel needs, and still make the rooms spacious. As one of the designers put it, it's been like designing a Swiss watch."

Of course, building in New York, even when not requiring green certification, is complex.

According to Baksa's staff architect Jason Holmes, structures in the city are only allowed to rise a certain number of stories in a specific zone before they must 'step' in away from the street, which in this case is at 14 storeys. He said the result "looks like a big birthday cake."

This is due to socioeconomics rather than concerns of structural integrity, with marked differences existing between residential and commercial areas of the city.

ENGINEERING BEHIND THE SCENES

Of course, one of the biggest challenges lies in the future hotel's backbone, which in this case involves intricate computer modelling.

Larsen Plano is the environmental consultant brought in to help plan the green aspects of the hotel's design.

While his background is in engineering, he explains that his present work – for a Long Island City, Queens group called Community Environmental Center – taps a variety of other skills.

He says that primarily, he's helping to oversee the proposed energy usage in the design.

"Creating an energy model and doing energy efficiency analysis is one of the critical ▶

green streets

HYBRID CAR SERVICE

As New York's first – and America's largest – eco-luxury car service, OZOcar has undoubtedly cornered the niche on environmentally-minded transportation in Manhattan. But what's behind the flash?

According to partner Roo Rogers, the business that began two and a half years ago has flourished from one to 96 luxury cars. Further, it has grown 10,000-fold, to what Rogers claims is 4,000 rides per week, since the 2005 launch.

"It was actually the brainchild of my business partner, Jordan Harris, who organised something called 'Green Car to the Red Carpet,'" says Rogers. "That was the initiative to get celebrities to go to the Oscars in a Prius rather than in a stretch limousine."

When a celebrity once said, 'oh I wish there was a hybrid car service,' the idea was born. "And then the rest is history."

But in a city such as New York – which includes the boroughs of Queens, Brooklyn, Staten Island, Manhattan and the Bronx – and its legendary traffic snarls, is it practical to ride in a hybrid car?

Rogers says yes, the cars are even more reliable than conventional automobiles. "We actually have fewer breakdowns than other car services because our cars are newer. When you get into a Lincoln Town car they tend to be anywhere from three to seven years old. Our cars are brand new.

"The way a hybrid car works is a combination of gas, conventional gas, and a battery. When the battery runs out of power the gas engine clicks in. So you're never running out of anything with the hybrid car."

While Rogers says at least three hotels have approached him in the past about partnering so far, none has inked the deal. If it all goes through with Greenhouse 26, whether with Ozo or another car service, it will be a first for Manhattan.

'I wasn't inspired by any other hotels, either in the US or abroad. The idea was born in classic New York fashion – on the subway.'

Arpad Baksa, architect



◀ things that CEC is doing to help make Greenhouse 26 a green building," Plano says. "Our engineers create ... a virtual version of the hotel ... and run it through a virtual year of operation, using climate data for New York City. The results of this simulation are total energy consumption figures for the year. We then compare these results for a 'typical' version of the same building."

Plano explained that such a comparison allows CEC's engineers to estimate how much energy Greenhouse 26 will save with respect to a typical building. They then work with the design team to optimise the building for maximum energy efficiency within the project parameters.

"As you can imagine, creating a virtual building is a

very complex operation involving hundreds of variables ranging from the number of people expected to be in the building at any given point in the year to assigning equipment efficiency parameters for each pump or fan in the building," Larsen says.

TWO KINDS OF GREEN

While such modelling is based on a number of variables – many of them unpredictable – the architects can take comfort in what they do know, and plan accordingly. One such area is how the building will recoup funds infused into the design – the cost of which is confidential, according to developer Ancona – through energy savings.

Baksa says that many such measures to be incorporated in the hotel will be "huge" cost savers, such as the elevator. "It works just like an electric car, like a Prius – when you slow

down it releases energy and then you convert that energy to electricity. It's that simple. It's in the braking process."

The geothermal heating system is also a saver. While upfront costs are enormous, Baksa said the saving in fuel is about 40 per cent, and the geothermal process enables the owner to make his money back in seven years.

And while the upfront cost of the actual building is about 30 to 40 per cent more than developer Flatiron would spend on a non-green boutique hotel, the benefit is that less raw material is actually going into the building. This, in turn, creates less landfill waste during construction and therefore fewer materials being fabricated, shipped to and installed at a site.

Ancona says: "Our designs also call for things like concrete floors instead of wood or carpet, minimal sheet rock, which

also translates into construction cost savings. The actual material we use may cost a bit more – I would say, 5 per cent – but the quantity of material and cost of the labour to install it is less."

Another Baksa design, a swank apartment complex called The Modern, also in the Chelsea, on 16th street near 8th Avenue, is green in many senses – such as touting geothermal heating – but is not green in the LEED certified sense. According to Baksa, that owner didn't want to go through what can be the arduous process of filing and completing paperwork.

An impromptu visit to the site on a typically arctic New York day in early February proved just how cosy and reliable the geothermal heat source is. The superintendent on hand claimed to have no complaints from tenants at the Modern.

However, it comes at a cost, and the Modern's owner had to recoup energy-related expenses by obtaining reimbursement from the state under its New York State Energy Research and Development Authority programme. Baksa says the authority will give money back for the cost of equipment and energy saving-measures.

BUT WILL IT FLY?

Another green hotelier, Stefan Muhle, general manager of San Francisco's Orchard Garden Hotel, says that his property went through the LEED process and obtained certification. Another property, Orchard Hotel, is registered but still undergoing LEED certification.

Therefore he knows, in full confidence, what challenges lie ahead for Baksa's enterprise. He says in Orchard's case, the developer has already built green structures, which was helpful, and their senior project manager was on the board of the USGBC, which also helped.

Asked what challenges Baksa faces, Muhle says: "New York is similar to San Francisco in that

The interior of the award-winning Klimpton's 70 park avenue hotel, New York



it is a very dense environment. San Francisco, of course, is on a much smaller scale. We are very lucky in San Francisco in that we have a Department of the Environment as part of the city government.

They have a green business certification programme... If New York has that it will be extremely helpful for the hotel to not only ensure that the structure is green, which is the LEED certification, but also to ensure that the operations of it will be consistent with the building, and that is being a green business."

He adds that, "It would be a shame to have a green structure but not operate it in a way that is consistent with the green lifestyle. Then you're just sending a mixed message."

In another part of the country, another green hospitality professional has a different take on what lies ahead.

Suzanne Fanch, owner of Devil's Thumb Ranch in Tabernash, says that the term 'green' varies from person to person and it's not just about being certified – in fact, the ranch is not. She says they've simply done their best "to be responsible to the surroundings" while also being "respectful of the 5,000 acres we sit on as well as to our local community."

That has meant recycling, of course, as well as using local products – be it rock, stone or other supplies – where they could, in addition to environmentally-friendly methods of heating and cooling. One of the highlights at the Ranch is a pool and Jacuzzi out-of-doors that are heated via the geothermal method.

Fanch also stresses that one doesn't negate their green goals by implementation of the process, such as the cost and fuel consumption incurred when shipping 'organic' products. "Shipping in ... more natural products, tourists and supplies can negate the environmentally-responsible initiative you set out to accomplish." ■

The view from the rooftop of The Orchard Garden Hotel, San Francisco



new york solutions

GEOHERMAL SYSTEMS

Carl Orio, chairman of Water Energy Distributors, based in Hampstead, NH, was part of a team called in to provide the geothermal heating and cooling system for Baksa's Greenhouse 26. The drilling, engineering services and green consulting are provided by other individuals. Geothermal removes or injects energy into the earth, and in New York's case, that energy's temperature runs between 51 and 58 degrees Fahrenheit (10.5 to 14.4°C).

The building's mechanical engineer, Valentin Antohi with DNV Associates in New York, points out that the geothermal process frees up space on the roof – since there are no condensers there, as with standard heating/cooling systems – which also makes the rooftops quieter.

"Here you inject the heat in the ground. If you don't then you have to put some piece of equipment on the roof and you take space for the cooling tower. So it's not just economics and energy, but also space and other considerations," Antohi says.

And Orio remarks that geothermal energy is ideal for a city like New York.

"Manhattan is a big rock," Orio says. "And that accounts for the fact of why there's a lot of skyscrapers. I can cross the East River and go into Brooklyn/Queens, and the bedrock dives down to greater than a thousand feet or more, so it's just earth on top that the buildings are standing in. So that's the reason Manhattan lends itself to very tall, very stable buildings." Asked why they have authorised drilling to 1,500 feet for Greenhouse 26, Orio says that's because it's been their benchmark for the past 30 years.

"We've been doing it that long so we know how they [the wells] work; how they respond. A gentleman by the name of Charles Baskerville, some years ago, carved out his place in history for having mapped out the underground of New York City."

■ To see one of Baskerville's maps, <http://store.usgs.gov/mod/images/i2003Ap.gif>