

WHEN THE SKY IS NO LONGER THE LIMIT

LOFTY BUILDINGS THAT NUDGED THE CLOUDS WERE ONCE THE PRIDE OF URBAN ARCHITECTURE. BUT TODAY'S **CUTTING-EDGE DESIGNERS** ARE MORE CONCERNED WITH ON-SITE POWER GENERATION AND RECYCLED MATERIALS.

BY KATHERINE MILLETT

The future of the American skyscraper isn't taller. It's smarter. The contest to build the world's highest building has migrated overseas to Taiwan, where the Taipei 101 holds the record at 1,670 feet, and to the United Arab Emirates, where the Burj Dubai is rapidly climbing toward 2,313 feet. The Freedom Tower in New York City, when it's completed in 2009, will stand a symbolic 1,776 feet on the site of the former World Trade Center, but its wind turbines and solar panels will proclaim energy conservation a value greater than height.

Seventy-five years ago, speed and altitude were everything. New York's Chrysler and Manhattan Company Buildings vied with each other to become the world's tallest structure, to surpass the Eiffel Tower's 984 feet. Then along came the Empire State Building, which beat them both in a mere 11 months. The Manhattan Company at 40 Wall Street topped out at 927 feet; the Chrysler culminated at 1,046 feet; but the mighty Empire State, scene of King Kong's hair-raising encounter with Fay Wray, reached 1,250 feet and held the world record for more than 40 years.

Today on Sixth Avenue, just a few blocks north of the venerable landmark, a new kind of monolith is under construction. Heavy machinery clanks as passersby gawk at looming cranes. Plywood boards fence off a two-acre construction site. The foundation has been laid for the most ambitious green, or sustainable, building project in U.S. history. An icon is in the making—or so its developers claim.

One Bryant Park, due for completion in 2008, will be both different and dazzling. Computer-generated images show a 55-story, 945-foot skyscraper evoking a quartz crystal, with glass facets angled and folded into a geometric sculpture. A "curtain wall" of glass panels hung on brackets will provide windows and a surface that plays with light and color. The side that faces Bryant Park and the New York Public Library will have a double wall, but not for aesthetic reasons.

A second layer of high-performance glass placed on the southeast exposure promises to reduce the need for air-conditioning by insulating the building from the low-angled rays of sun that shine over the park in the morning.

Green architects get as much as they can for free—from sun, water, air, and earth. So the floor-to-ceiling windows will let in natural light, and automatic daylight dimmers will ration artificial lighting, which accounts for 22 percent of the electricity consumed in most skyscrapers. The plans call for a system that captures all the rain that falls on the building—48 inches in an average year—and uses it to irrigate a lush roof garden and to flush toilets. A geothermal source will provide groundwater at a constant temperature of 58 degrees Fahrenheit. Instead of blowing stale air and germs around the building, the under-floor ventilation system is designed to carry clean air to individual workspaces. From there, body heat and heat from electronic equipment cause the air to rise, returning it to central filters. After fiber-mesh filters remove 95 percent of the airborne particles (other buildings' filtration systems remove an average of 35 percent), a "gas phase" filter like those used in the hoods of chemistry labs will take out other pollutants.

Seventy-five years ago, consumption was a virtue. When the Empire State Building opened on May 1, 1931, its builders bragged about using 10 million bricks and enough materials to fill a train 57 miles long. Their colossus occupied a two-acre site and contained 2 million square feet of floor space—statistics it will share, coincidentally, with One Bryant Park.

Today consumption has become an embarrassment. Robert Fox, a founder of Cook+Fox Architects in New York, the design firm for the building, hopes to *disguise* the size of One Bryant Park, which he calls "absolutely staggering." His associate, Serge Appel, explains

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that the "massive, massive" building has been designed "to reduce the impact of its form on its neighbors. Otherwise, it would just dominate that area." In contrast with earlier builders, these architects boast that almost 40 percent of the structure will be made of recycled material mixed into the 130,000 tons of concrete needed to make the building's core, foundation, and floors.

This kind of forward-thinking architecture, however, is not cheap: the price tag for One Bryant Park is a staggering \$1.1 billion. That works out to \$525 per square foot, when the average cost of constructing a traditional Manhattan office high-rise is closer to \$200 per

SCHEDULED FOR COMPLETION IN 2008, ONE BRYANT PARK WILL HAVE:

**51 habitable floors (55 total),
and 2 million square feet of rentable space**

**A "green roof" permanently planted with sedums,
hardy cactus-like plants well-suited to rooftops**

Forty percent recycled materials

**An indoor urban garden with trees and a coffee bar,
open to the public**

**On-site power generation to make heat and 70
percent of the building's electricity**

Air filters to remove gases and 95% of particulates

**Carbon dioxide sensors to direct fresh air where
needed**

**Rainwater collected to cool the building, water the
gardens, and flush the toilets**

**Waterless urinals kept clean by a liquid, lighter than
urine, floating in each commode**

Daylight dimming to balance inside and outside light

**An onsite "anaerobic digester" to break down food
waste and shredded paper**

New tunnels to link two major subway stations

square foot. The Durst Organization, as developer, and the Bank of America, as the principal tenant, will jointly own the building, more than half of which will be financed by the sale of Liberty Bonds issued by the federal government to rebuild Manhattan after 9/11.

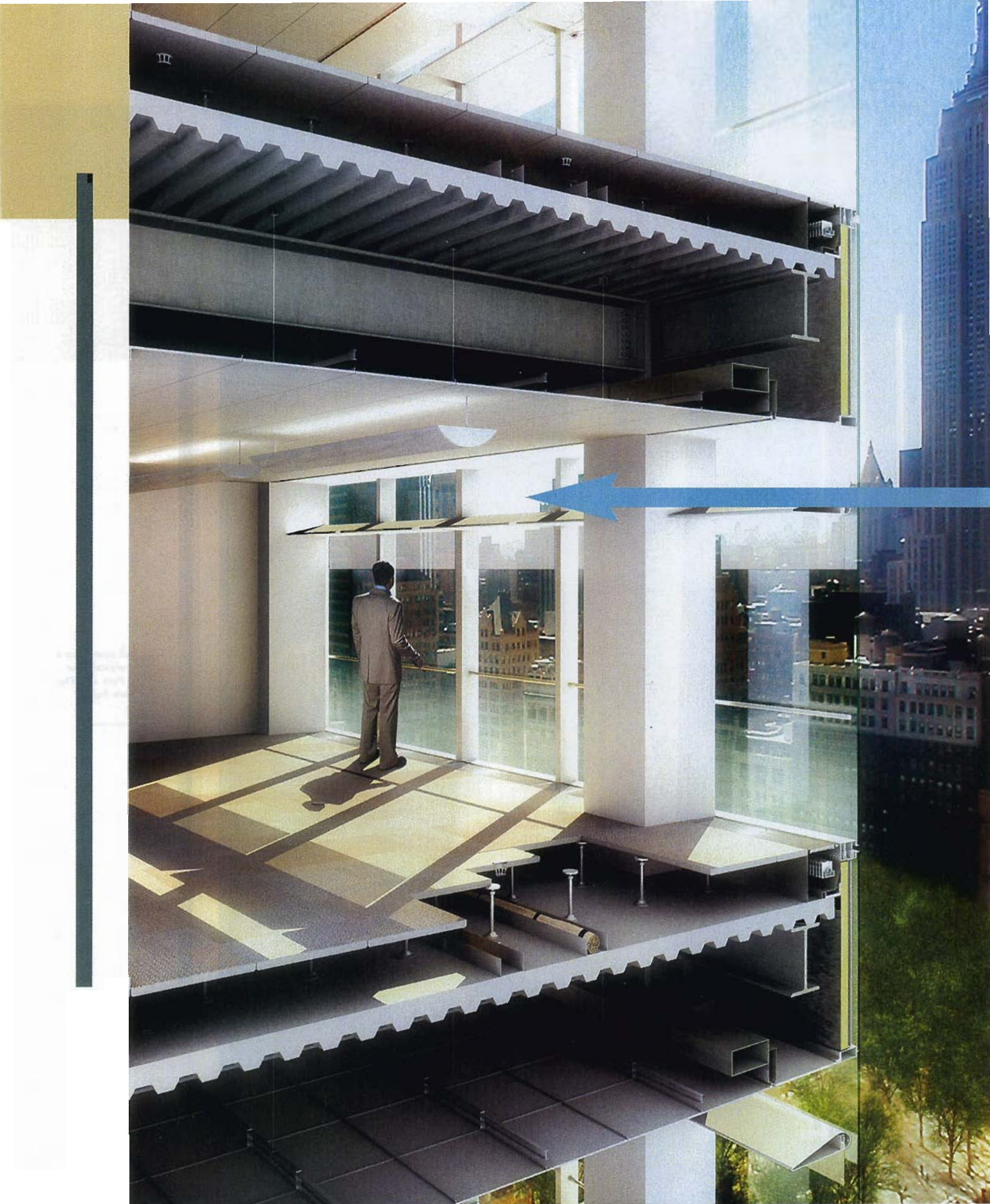
"It's a billion dollars well spent," claims Fox. "Everyone on the team wants to make the statement that this is the only way to build now. Think of the exponential rise in asthma. If we don't start making our interior environments healthy, we're going to be killing ourselves. This building might pay for itself just in increased productivity. Also," he continues, "buildings use half our natural resources. We have to become wiser stewards."

But are the benefits worth more than twice the price? Proponents of green architecture tend to practice a different sort of economics. Today's dollars are deceptive, says Tony McLaughlin, a partner in the London-based engineering firm Buro Happold, which consults worldwide on sustainable design, because they don't buy tomorrow's oil and gas. "If you believe there is going to be an energy crisis, that we are depleting our resources, then we in the design community have to resolve that," he says. "We have to be prepared for when things really kick out. It may not even be depletion of our resources. It may be that world affairs—certain political developments here and overseas—will make many resources unavailable."

But beyond the glitz there are green attributes innate to urban density that enter into the equation—the shared walls of large buildings, the efficiency of public transit, the reliance on one's own feet for transportation. All of these contribute to a more sustainable urban-scape. If One Bryant Park were divided up, says Fox, the building would equal 60 suburban office parks. Commuters would burn thousands of gallons of gasoline driving to work, and fertile land would be paved into parking lots. At One Bryant Park, the developers will build a tunnel to connect subway stations. As for parking spaces, Fox says there will be "none, zero."

The architects expect One Bryant Park to win a "platinum" rating, the top award for sustainable design from the U.S. Green Building Council. Ratings ascend from "certified" to "silver", "gold", and "platinum," based on a point system developed under the guidelines for Leadership in Energy and Environmental Design (LEED). Only ten buildings have qualified for the platinum rating so far, the tallest being the 25-story Environmental Protection Agency building in Sacramento, California, which won the platinum award from the USGBC in December.

The skyscraper no longer stands as a symbol of American dominance, a variation on the triumphal arch for the age of capitalism. Green architecture offers solutions for a different time, and One Bryant Park offers inspiration as well. Although daylight dimmers and super-clean air may not ignite the kind of excitement the height wars did 75 years ago, they signal an alternative way to think about how we live and work. Perhaps the ideas of One Bryant Park will catch on and define a new space in our collective imagination. If a giant quartz crystal can succeed in midtown Manhattan, there may yet be a sustainable future for our American cities. ■





OBP will stand like a quartz crystal over Bryant Park and The New York Public Library.
