

architecture

BRIGHT GREEN MACHINE

Genzyme has occupied its sustainable headquarters for two years, but does the new building live up to expectations?

by Mimi Zeiger

photographs by Anton Grassl

When the biotechnology company Genzyme Corporation moved into its new headquarters in Cambridge, Massachusetts, more than two years ago, expectations were high. Behnisch Architects' design promised a revitalized office environment: Integrated into the building are a diverse range of sustainable systems—from the vegetative roof to low-emitting paint to waterless urinals. But would these technologies (some products used for the first time in the United States) actually affect the company's workforce?

The project's success comes in the form of a bright atrium. Dotted with interior gardens, seating areas, and cafés, this central space visually unites the work areas and provides places that resonate with employees. "I have one particular garden on the 11th floor where I like to have my meetings. It is right up there near the sky," says Joan Wood, senior vice president of leadership and organization development. "It is a beautiful space to work in. There are some sculptures and the natural light is gorgeous."

Christof Jantzen, a partner at Behnisch Architects, describes the atrium atmosphere: "There are all these views. It is communicative. You can wave to your colleague two floors down and across the central space. It is not so much about the details . . . it is a combination of how the elements come together as a whole."

Holistic and ecological, but granola free, the project incorporates both intuitive and high-tech practices. The Genzyme Center (February 2004, page 58) recently received a Platinum LEED rating. For the team—Genzyme Corporation, developer Lyme Properties, Behnisch Architects, and engineers Buro Happold—the award galvanizes its commitment to the future of green design. "LEED is a very rigorous system. They challenged us throughout the process," recalls engineer Byron Stigge of Buro Happold. "It was really difficult going through it, but at the end of the day it gave us faith in the building and faith in the industry."

There is an openness to the Genzyme Center that counters conventional, gray flannel office buildings; spaces are bright, transparent, and well ventilated. Daylight fills the 12-story atrium and illuminates the offices with the help of heliostats—large mirrors that mechanically rotate to catch the sun—mounted on the roof. The system, designed by lighting consultants Bartenbach LichtLabor, directs rays through the atrium skylight onto an array of prismatic louvers. From there, light bounces off reflective surfaces on the sides of the central volume and glints off a large mobile.

Recently, Wood conducted a post-occupancy survey to see how employees were adjusting to their new workspaces. The study linked natural light directly to productivity, with 72 percent of the staff reporting increased output.

"It feels fresher and brighter than being outside the building. The light



enhancement reduces the glare. Generally, there are certain times of days when you get groggy. But in this building you don't get that afternoon sleepy feeling," explains Rick Mattila who, as director of environmental affairs at Genzyme, was responsible for guiding the project through LEED certification.

Critical to this freshness is the atrium's role in the building's heating and cooling system. Air from the offices passively flows into the central space, warms, and rises to the top of the atrium, where it returns to the air handlers.

A computerized building management system monitors the climate inside the offices and kicks in when it senses stuffiness, while individual thermostats allow occupants to adjust their personal environments. "The ability to control the temperature creates a sense of comfort," says Wood. Those user stations when combined with an efficient double-glazed façade and motorized blinds allow the company to save energy. Genzyme estimates the center's energy costs to be 42 percent lower than traditional offices of its size.

Wood was surprised when she found that not only does the new design increase worker productivity, it reduces employee turnover. "We had an intuitive sense that it would be a nice place to work, but we didn't think about those returns in investment. We've had a 5 percent lower sick rate and 88 percent of our employees have noted an improved sense of well-being."

Jantzen is modest when he explains the synergy between the user's everyday experience and the architecture. "It is about asking the right questions and making sure that the individual is centered within the design process," he offers.

For all of the building's accomplishments, there have been a few minor hiccups. For example, the

manufacturer replaced malfunctioning motors in the mechanical blinds soon after the center opened. And, it is difficult to get accurate readings off the overly large steam meter specified by public utility standards, but this glitch has been attributed to energy efficiency, since the readings are on the low end of the scale.

The engineers at Buro Happold continue to scrutinize the center's mechanical system, using it as a case study for other sustainable projects. "It takes a lot of time to learn from these buildings," explains Stigge. "When designing systems we make a lot of code-based assumptions and I love going back to see how accurate they are. It gives us an idea of when we can push the hard calcs."

The green example set by Genzyme Corporation's headquarters is changing how the company develops future projects. Mattila has since registered two—a science center and a commercial structure—with the U.S. Green Building Council. Sustainable methods, such as waste management and indoor air quality during construction, are now standard to Genzyme's specifications. "It made such common sense," says Mattila. "We wanted to show that it could be done, so that others can do it as well."

For Jantzen, the design of healthy, ecologically savvy workspaces comes with implications that go beyond any one building. It is about having a vision and an integrated team—from developer to building department to engineer. "True sustainability comes from economics and environmental factors. This has to be understood in order to create a living environment for our time and for the next generation," he states. "It is the responsibility of every individual, architect, and politician, but on the whole it is the responsibility of society." ▢

IN OCTOBER 2005 GENZYME CORPORATION SURVEYED ITS STAFF CONCERNING THE NEW WORKPLACE. THE RESULTS FOLLOW: 75 PERCENT—THE BUILDING'S CLEAR GLASS DESIGN ENCOURAGES CONNECTION BETWEEN COLLEAGUES; 88 PERCENT—DIRECT VIEWS AND ACCESS TO THE INTERIOR GARDENS IMPROVES EMPLOYEES' SENSE OF WELL BEING; 72 PERCENT—LIGHTING FEATURES IN THE BUILDING BOOSTS ALERTNESS AND PRODUCTIVITY; 66 PERCENT—THE WORK AREA FLOOR PLAN INCREASES COLLABORATION; 64 PERCENT—INFORMAL MEETING SPACES FACILITATE COLLABORATION; 58 PERCENT—ABILITY TO INDIVIDUALLY CONTROL THE TEMPERATURE IMPROVES THE QUALITY OF THE WORK ENVIRONMENT; 74 PERCENT—A CAFETERIA IN THE BUILDING SAVES EMPLOYEES AT LEAST AN HOUR PER WEEK; 68 PERCENT—THE PROXIMITY OF A COFFEE STATION ON EACH FLOOR GIVES WORKERS AN EXTRA HOUR PER WEEK.

