Since 2000, the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) rating system has been providing a measurable reference for building projects that seek to lessen their environmental impact and conserve natural resources.

In the last few years, the LEED rating system has expanded to better serve the entire built environment. Currently, there are six types of LEED designations. Of these, four are fully functional: LEED for new construction (LEED-NC); LEED for existing buildings (LEED-EB); LEED for commercial interiors (LEED-CI); and LEED for core and shell (LEED-CS). The remaining two—LEED for homes (LEED-H) and LEED for neighborhood development (LEED-ND)—are in the pilot stage.

The most frequently used, and most widely established, program, with more than 45 million square feet certified and more than 2,000 projects registered, is LEED-NC, which many urban jurisdictions and state agencies require as a method of measuring and achieving their sustainability goals. For example, the city of Los Angeles, with more than $33 billion worth of public projects, requires all new projects to be LEED certified. Los Angeles is using neighborhood fire stations, libraries, police stations, and schools to demonstrate its commitment to green building, the environment, and the community. Today, when families visit their neighborhood fire stations to learn about fire safety, they also learn about sustainable building practices, such as native landscaping, natural daylighting, and building products made with recycled materials.

Private projects also are pursuing LEED certification, particularly since studies have shown that green building is good for business. By

Los Angeles is using neighborhood fire stations, libraries, police stations, and schools to demonstrate its commitment to green building, the environment, and the community. Nowadays, when families visit fire stations, like LA 77, one of the city’s first LEED-certified neighborhood fire stations (right), to learn about fire safety, they also learn about sustainable building practices.
integrating sustainable features, companies are able to increase productivity, reduce absenteeism, and capitalize on the visible proof of their commitment to the environment.

By itself, however, LEED-NC has one major limitation: it is geared toward new construction and major renovations. So what is a community full of existing buildings to do? The answer is to team LEED-NC with LEED-EB, which involves revitalizing existing buildings to meet LEED-EB standards.

LEED-EB, designed to promote buildings that are economically profitable, environmentally responsible, and healthy, productive places to live and work, is broken into five categories: site planning, water management, energy performance, materials used, and indoor environmental quality. But while LEED-NC is a one-time event, LEED-EB must be recertified every five years, creating a continuous process that produces long-term benefits in operations and maintenance, as demonstrated with the energy and water management credits.

Like LEED-NC, LEED-EB also delivers what communities and private owners both want: increased occupancy, lower operational costs, increased asset and shareholder value, increased tenant satisfaction and retention, improved worker productivity, and reduced absenteeism. In addition, there are cost benefits from reductions in energy use, water use, and waste generation. According to a USGBC case study, when Thomas Properties Group, a developer for the California Environmental Protection Agency Building in Sacramento, California, invested $500,000 in upgrades to equipment, operations, and employee practices, “the [LEED-EB] improvements paid for themselves in less than one year, generating $610,000 in annual savings.” Communities such as Portland, Oregon, and Albuquerque, New Mexico, recognize these potential savings and now require their public facilities to be brought up to LEED-EB standards.

University campuses are just one type of community benefiting from teaming LEED-NC with LEED-EB. While the University of California–Santa Barbara (UCSB) successfully certified one LEED-NC building—and is in the registration process with three more—it recognizes that because most of its building infrastructure was already in place, it can more widely improve campus sustainability by also embracing LEED-EB. “The LEED-EB system allows us to take the lead in the greening of our buildings and campus,” maintains Perrin Pellegrin, UCSB’s campus sustainability manager. “Many decisions, such as grounds-keeping techniques, cleaning procedures, and plumbing fixture modernization, can easily be made within existing maintenance and operational budgets.”

For Grieg Hall, UCSB’s first LEED-EB certified facility, the university installed waterless urinals, updated equipment controls and metering, and conducted waste audits resulting in an 80 percent diversion from landfill. With abundant positive feedback from the student body and faculty, the campus is now planning to use LEED-EB on its one LEED-NC facility (the Bren School of Environmental Science and Management) to ensure that energy targets and operational procedures from the initial certification continue to perform as intended.

Unfortunately, because LEED-EB still is fairly new, experience in implementing it is limited. However, as LEED-EB’s environmental and cost benefits are realized, as its program matures, as the economy shifts, and as corporations and cities look inward for methods of improving sustainability and reducing costs, LEED-EB’s use is expected to match and even far outnumber, that of LEED-NC. To attract new tenants and retain existing tenants, building owners need to start looking beyond physical upkeep and affordable rents—and offer tenants the kind of sustainability upgrades that will provide healthier living and working environments. (See “ULI Renovates Green,” page 50.)

While LEED-NC and LEED-EB implement green building design on a case-by-case basis, LEED-ND will broaden the LEED scope by implementing sustainability in whole communities, promoting many of the same goals as those of new urbanism and smart growth—such as compact design, proximity to transit, a mix of uses, a mix of housing typologies, and a pedestrian-friendly circulation network.

SCOTT MARTIN is an urban designer and FRANK THAXTER is a LEED project administrator and designer with RRM Design Group, based in San Luis Obispo, California.