

Cornell University's Forest Home Parking Garage Earns Green Garage Certification

Summary

Among the first parking structures to earn Green Garage Certification in the United States, the Forest Home Garage, constructed in 2009, is a perfect example of how sustainable innovation can be achieved through retrofitting an existing facility. Located at the north end of the Cornell University campus in Ithaca, N.Y., the garage plays an important role in a 10,000-space parking system that serves 30,000 students and 10,000 faculty members. The 254-space, three-level garage is built into the hillside, with a stone façade designed to blend into the natural surroundings. As the base for the LEED Platinum-certified Human Ecology Building, the garage serves students, staff, and visitors, with extra spaces for the ever-densifying central campus.

The cast-in-place garage provides a much-needed amenity and sustainable component for the university's ambitious and forward-thinking green initiatives. It contributes to a campus-wide initiative to reach carbon neutrality by 2035, with six spaces dedicated to low-emitting, fuel-efficient, and alternative-fuel vehicles, and three AC Level II electric-vehicle charging stations. Ample bike rack areas and tire-inflation stations encourage bicycle commuting. Its green space, open courtyards, and benches make it an ideal venue for many annual events. It was recognized by the Green Parking Council (GPC) as the first U.S. university garage to achieve Green Garage Certification, based on 48 elements of garage operation, programs, and technology.

Issues addressed/problems solved:

- Sustainable design.
- Innovation.
- Community involvement.

Project goals:

- Energy conservation.
- Contribute to the university's carbon-neutrality initiative.
- Preserve the physical character of the campus.
- Achieve Green Garage Certification.



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Approximate cost or budget:

- \$50,000, including physical building materials, installation, consulting, and GPC application fees.

Management team:

- Bart Smith, Parking Specialist.
- DESMAN (consultant).
- Cornell University and City of Ithaca.

Metrics used to track project's progress:

- The GPC's Green Garage Certification metrics.
- Its contribution to a campus-wide initiative to reach carbon neutrality by 2035.

Challenges/obstacles overcome:

The university had a clear goal to make their entire parking and transportation system sustainable. The task is ongoing, but required evaluation of each parking garage component within the system to gain Green Parking Certification. The Forest Home Garage initially fell short of the needed measures. To guarantee the certification goals, the university was guided to make changes, modifications, and sustainable building retrofit items to be recognized as a Green Certified Garage.

Sustainability investment/features:

The original building design contained many positive sustainable features upon completion, but the university took it beyond the original intent by investing in technology and features that would benefit the campus population. The items included:

- Permit system with rapid access and reduced exit idling.
- Free tire-inflation station available within the garage.
- Landscaped areas populated with water-efficient plantings.
- Highly efficient dimmable LED lighting system controlled by timers and photo sensors.
- Demand-controlled ventilation system equipped with carbon monoxide (CO) detection and schedule controls.

Innovative/creative solutions or processes developed that may help others in the industry:

The university is highly motivated to obtain green certification for its entire parking and transportation system. Based on its certification of one facility, DESMAN and the university plan to use the knowledge gained in this pioneering process as a valuable beta test to help establish evaluation methods and measures for a campus-wide certification program.

**Program highlights:**

- Public spaces created with green space, open courtyards, and benches provide a venue for hosting annual events.
- Garage serves a nearby bus stop serviced by university, City of Ithaca, and multiple out-of-county bus lines.
- Financial incentives for ride-share patrons.
- Bike commuting is encouraged with 30 bike-parking spaces (12 percent of facility parking space count); restrooms, showers, and fountains; and an extensive, campus-wide bike sharing program is integrated into garage marketing and operations.
- More than 50 percent of fleet vehicles are powered by alternative fuels.
- Recycling receptacles are provided at every level and integrated with the university's campus-wide, single-stream recycling program.
- ASHRAE Building Systems Commissioning.

Project manager:

Stephen J. Rebora, president, DESMAN

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