

## Architecture & Engineering: Project of the Month

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### An American icon goes green, smells good too

- *Propel Biodiesel's Seattle station is an urban oasis. Filling up there can be a meditative experience.*

By [CLAIR ENLOW](#)  
Special to the Journal

If you're green at heart but still attached to your internal combustion engine, don't give up hope. If it's diesel you need, pull your Bug or your tractor-trailer into the South Lake Union station at Broad and Westlake and fill up. It's roughly the same price per gallon as regular diesel.

Propel Biodiesel, based in Seattle and Sacramento, Calif., is a startup dedicated to building a distribution network for alternative fuels, liquid and gas — any sustainable alternative to Big Oil.

“We are not going to replace petroleum with just one source,” said Jeff Stephens, who is in charge of fuel science and quality control for Propel. “We are an alternative fuel retailer.”

Light, sleek and very green in color, the Seattle station is an automotive oasis. It's unmanned and usable any time of the day or night. Even with the busy intersection nearby, filling the tank can be a meditative experience, thanks to the sunflowers, camelina and safflower — each an example of potential feedstocks for the fuel-stand — growing in planters on the corner.

The pumps glow softly with LED lighting, and the only sound is the faint trickle of water dripping down a lattice inset in the canopy stand. Best of all, there are no dangerous fumes. The faint smell of fries is not coming from any quickie-mart door, but from the liquid coming out of the pump.

Propel buys biodiesel from many sources, but places a high priority on regional producers with local feedstocks, according to Stephens. Each source is evaluated for its life cycle costs to the environment, or embodied energy. For instance, Seattle waste doughnut grease is much better than virgin Midwest soybeans.



Photo by Lara Swimmer [\[enlarge\]](#)

**The Propel Biodiesel station in South Lake Union glows in the LED lighting at dusk. Planter boxes hold sample feedstocks for the station, such as sunflowers and camelina.**

## Carbon neutral

The company now operates 11 stations. "All of our operations are carbon-neutral," said Chris LaPlante of Propel Biodiesel. The electricity used to power the LED lights in Seattle is offset with carbon credits.

Propel is planning to build 500 stations in the next five years, funded by a combination of private venture capital and California air quality management district grants. Federal initiatives also may help.

Propel found its architect, Atelier Jones, through "Internet chatter," LaPlante said. The firm designed VO Shed, an unbuilt project that won a citation award last fall from AIA Seattle. It's a prototype concept for a sleek, functional collector for waste cooking grease and oils in the urban environment.

"We knew that with the firm that designed this, there's a whole lot of education and explanation that you don't have to do," said LaPlante.

"It was a fantastic opportunity," said Atelier Jones founder Susan Jones. "We pride ourselves in working with very new systems and innovative people."

Jones, who teaches architecture as well as practicing it, said the first wave of excitement about designing filling stations was back in the 1920s. "(Finnish architect Eero) Saarinen designed filling stations," she said. "Mies (Van der Rohe) did one in Canada."

So the Propel stations are part of a long tradition that began with the auto age itself. With sustainable alternatives, it now continues in the age of global warming. "This is definitely the future of fueling," said Jones.

## New assumptions

The Propel station comes with a lot of standard parts, and yet the prototype is shaped according to a new set of assumptions about the planet, the customer and fuel itself.

The station strives to "educate, and tell a story," said LaPlante. "We had to change the whole experience of fueling, and redefine it." Form and function would come together in a new equation.

## Propel Biodiesel Station 609 Westlake Ave. N. Seattle

Architect

atelierjones llc

Susan Jones, Brian Gerich, Kristin Saunders

Owner

Propel Biodiesel

Size

Site area:

5,000 square feet

Fueling Canopy:

114 square feet

Completion

June 2008

Construction cost

Approximately \$190,000

(including canopy and site construction)

Structural engineer

JEP Consulting Structural Engineers

Geotechnical engineer

Associated Earth Sciences

Landscape architect

Morse Landscape Architecture

Civil engineer

Site Development Associates

Canopy fabricator

Bestworth-Rommel

General contractor

Sabyr Contractors

The design process started with some basic image questions — color and logo. But from the beginning, the design goals held more than one paradox. The owners wanted the station to be easily recognizable as a refueling stop, and intuitive to use. But it also needed to stand out as an alternative and a new choice.

And while stations in different neighborhoods should all reinforce the new brand, they should also present distinctive features that are sustainable for the climate and reflect the place.

Adding to these challenges was the goal of making the prototype adaptable, so that it could be deployed on leftover bits of urban land, like small parking lots, old filling station sites and even parking strips.

“A lot of what we do is looking at waste sites,” said LaPlante. The prototype had to be capable of conforming to multiple zoning regulations.

To these ends, the design team worked out a kit of parts for multiple stations, each of which would have its own minimal and sustainable footprint. There was a lot of flexibility. “There were no site standards except turning radii,” said project designer Kristin Saunders.

### Light on the land

The biodiesel market area is one of climate extremes, from rainy to desert. For wetter environments, a water catchment system inside the fueling canopy provides water for plantings.

At the South Lake Union station, the canopy itself has an internal rainwater cistern that collects enough to sustain ten large planter boxes. A built-in “water ladder” lies horizontally under the canopy, continuing vertically down to a catchment well beside the pumps. The ladder is designed to water climbing plants at eye-level with customers.



Photo by Clair Enlow [\[enlarge\]](#)

**Chris LaPlante, Susan Jones, Brian Gerich and Kristin Saunders**

For dryer areas with many days of sun, the architectural kit includes roof supports for photovoltaic panels to power lights and other systems. In another variation on the climate-adapting stations, compact, urban-scale wind turbines can be added for power generation.

The canopy is fabricated from recycled sheet metal, which wraps a structural-steel frame. Construction is based on pre-existing fabrication methods common to the ubiquitous gas station.

All are intended to disturb the ground as little as possible. Fuel tanks are set above ground. The canopy footing is wide and not deep, and the piping from tanks to pump is right below the surface.

The site, a former car lot held by Vulcan Real Estate, is on a flexible lease to Propel.

### Jury comments

Even the many plantings, both in boxes and on the

surface near the curb, stay close to the surface, using green roof technology.

The cistern is on top of the canopy, and the green roof technology is under the plantings on the ground. It's a little backwards, but it works for the site and its goals.

“We’re using the landscape to filter and slow the water as it flows off the pavement,” said project architect Brian Gerich, “before it goes into the storm drain.”

A typical Propel customer is Frogbox. The company offers reusable plastic moving boxes that are delivered to your door and picked up at your new address. The company devotes a cut of its profits to saving frog habitat.

Frogbox's green truck looks right at home under the similarly colored canopy of the station. Next to the minimal fuss and the lush plantings at the station, the best thing about refueling there, according to one driver, is the smell. Really, there isn't much, and it changes from fill up to fill up.

This time? “Sweet potato fries.”

***The Project of the Month is sponsored by the Seattle Daily Journal of Commerce and AIA Seattle. The July project was selected with the assistance of jurors, architect Leslie Bain, Arts Director Cath Brunner of 4Culture and architect Don Brubeck. Projects eligible for inclusion for the Project of the Month are those that were submitted to the AIA Seattle Honor Awards program. Contact Isla McKetta at AIA Seattle at (206) 448-4938 or [imcketta@aiaseattle.org](mailto:imcketta@aiaseattle.org) for more information.***

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*“This is a fantastic kit-of-parts project. The mix-and-matchable sustainable features seem especially smart, not only in reducing the footprint of the stations, but offering its green-minded customer base an education in eco-friendly building options. The sophisticated environmental graphics are definitely value-added.”*

*“Makes filling up fun and puts a good face on going green in the reconsideration of an American icon. The more real green (plantings) the better, as the prototype is inserted into different locations.”*