

# Sustainable Reuse of Suburban Brownfield Sites

## Small Business Wind Turbine Great Escape Restaurant, Schiller Park, IL



### Project Summary

The Great Escape on Irving, Inc. — a west suburban family restaurant, bar and banquet facility — spent two years and \$375,000 generating a clean energy success story. The restaurant's new 108-kilowatt wind turbine is capable of powering more than 100% of the facility's energy needs, with excess power going to the Commonwealth Edison public utility grid. It is the only turbine powering a private business in Cook County.

This project is remarkable for a number of reasons. It was constructed despite a lack of outside financing. It is located in a densely populated, blue-collar, industrial neighborhood. It utilizes previously used wind turbine components. It is maintained largely by the do-it-yourself restaurant owner, Brian Great. And it is located at a facility with deep Chicago roots — travelers hitched their horses outside in the late 1800s, silent movies were filmed there around 1900, Al Capone conducted business there in the 1920s, and since then the facility has been used as a general store, post office, gas station, barber shop, and pool hall.

Like most successful small businesses and small clean energy projects, this success story was made possible by the single-mindedness of the entrepreneur. Brian Great pursued this project because it benefits the environment, shows others it's possible, and saves money.

### Quick Facts

#### TIMELINE

- September 2007 — Initiation
- March 2008 — Contractor found
- April 2009 — Plans approved
- May 2009 — Foundation poured
- July 2009 — Tower raised
- October 2009 — Operations Begin

#### ENERGY OUTPUT

This 108-kilowatt turbine produces enough clean energy to power the restaurant as well as 20-30 homes annually.

#### POLLUTION SAVINGS

This single turbine prevents approximately 274 metric tons of CO2 pollution.

#### TURBINE SPECIFICATIONS

- Height: 112 feet
- Blade Length: 32 feet
- Foundation: 30 feet deep, 8-foot diameter

#### COST

\$375,000

#### PAYBACK

10 years

### Green Economy Opportunity

Because large wind projects are impractical in most urban areas, small-scale wind power systems like the Great Escape project are a logical approach to bringing the benefits of renewable energy to heavily populated areas. Environmentally, they prevent pollution that contributes to global warming. Economically, they create a payback for the owner, bring business to the community, and create local jobs for contractors, installers and maintenance workers as well as remote jobs in manufacturing and other sectors. Additionally, on-site renewable energy systems have the potential to reduce the impact of electricity price fluctuations, strengthen energy security, and provide greater stability to the electricity grid.

### Conditions for Success

Owner Brian Great was able to finance this project with a \$350,000 mortgage on his restaurant and has also applied for a Production Tax Credit from the federal government. This financial incentive is designed to help level the playing field for energy production. Mr. Great estimates that it will take approximately 10 years to recoup the capital costs.

Typically, federal and state incentives for renewable energy production are crucial to small and large wind developments alike. Local government can also provide support through low-cost land leases and appropriate zoning and building codes, including structure height restrictions that are not less than 60 feet. The Village of Schiller Park, though initially unsure of the wind turbine's potential benefits or drawbacks, has since supported the project, which was not in conflict with any of the local zoning or building ordinances.

## Risks & Challenges

- **Finances** — Owner Brian Great mortgaged his restaurant to pay for the project costs, two-thirds of which were for infrastructure. He was able to cut down on expenses by purchasing a used turbine through a contractor with European contacts.
- **Maintenance** — Most of the routine turbine maintenance, which involves lubrication and adjustments to the generator and blades, is performed by restaurant owner Brian Great. Adjustments to the generator could have been avoided if wind speed data had been collected prior to installation, which is typically required to secure financing for larger wind projects.
- **Politics** — The Great Escape's wind energy plans came under debate during a local election, when one candidate vowed to block the turbine's installation and another candidate supported the project. In the end, neither candidate seemed to affect the project's success.
- **Zoning** — Due to the turbine's proximity to O'Hare International Airport, concerns were raised about the potential impact the turbine might have on local air traffic. However, a brief study revealed that the turbine would not influence any air traffic patterns. The same study also illustrated that the wind energy project would not affect the local railyards or wildlife.
- **Community Concerns** — Initially, some local residents were concerned about the wind turbine's potential to disrupt the neighborhood through noise pollution or the "shutter effect" (flickering shadows from sunlight on the turbine blades). Both concerns have been assuaged. The noise is minimal, especially considering the restaurant's close proximity to local railyards, a major Interstate, and O'Hare International Airport (less than 5 miles away). And the shadows cast by the turbine have not disrupted nearby businesses or residents.

## Conclusion

Despite the challenges, demand for small-scale renewable energy is likely to grow as more corporations and institutions explore sustainability measures as a path to becoming more competitive. However, continued incentives will be important in the near future to create a more level playing field between fossil-fuel based power and renewable power.



Wind turbine components en route to the Great Escape restaurant, which purchased used parts to save costs. The wind turbine tower reaches roughly 11 stories into the sky.



Ground-breaking commences after restaurant owner Brian Great secures permits from the Village of Schiller Park and the Federal Aviation Administration.



Two-thirds of the project's costs were for infrastructure, including a 30-foot foundation.

Photos by Andrew Meindl, 2010.