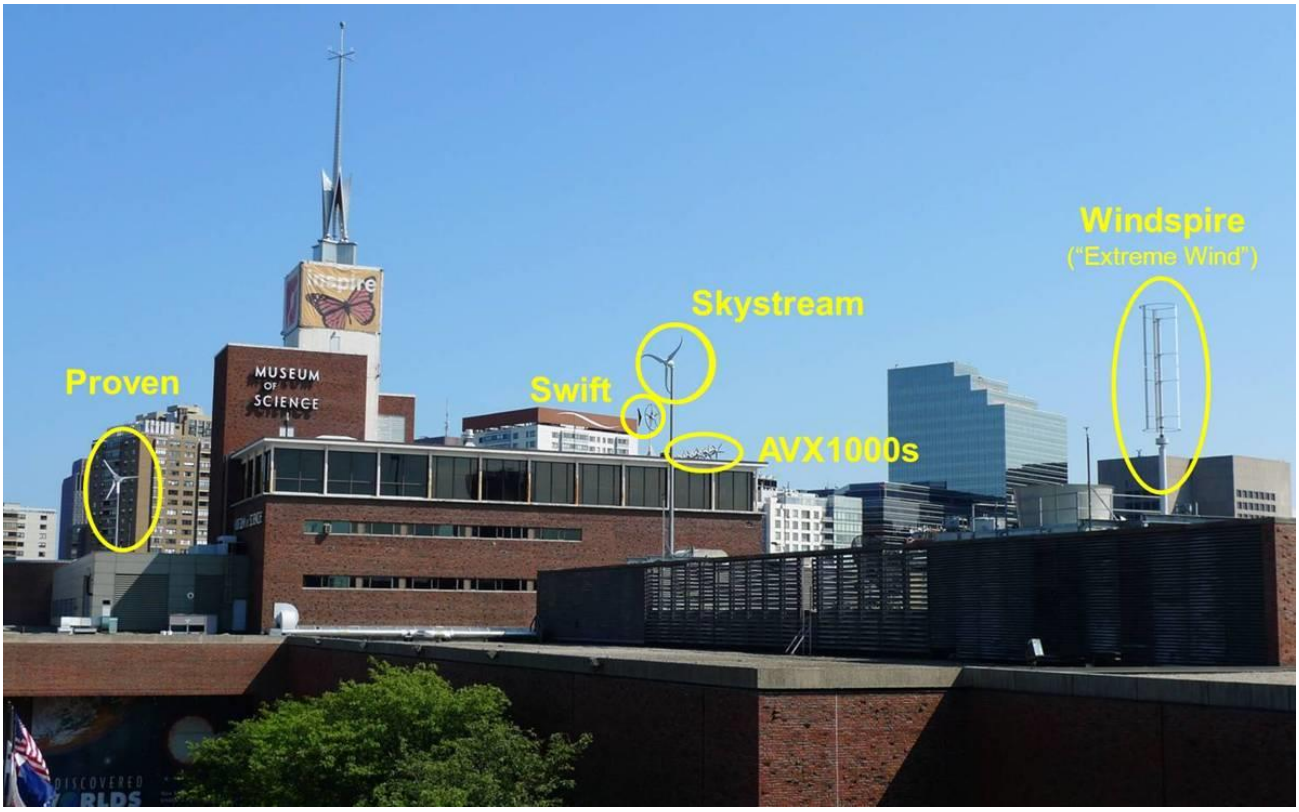
Guide to the
Museum of Science Wind Turbine Lab

www.mos.org/WindTurbineLab



View from the parking garage roof

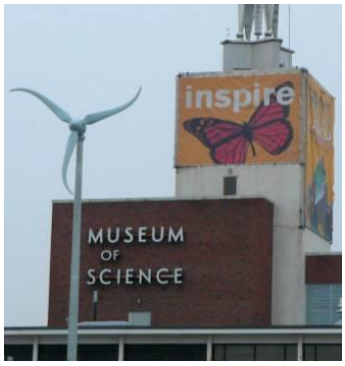
In 2009, the Museum of Science, Boston installed a rooftop Wind Turbine Lab with five different types of small-scale wind turbines to expand its Green Initiative, a commitment to reducing its environmental footprint.

- Wind energy, a form of solar energy, is clean, renewable, free, and available world-wide.
- Wind turbines generate electricity without creating any pollution.
- The MOS Wind Turbine Lab has experienced no issues with noise, vibration, ice throw, flickering shadows, bats, or other environmental problems, and just two bird strikes in its five-year history. Our neighbors like them, too.

The lab provides data for the *Catching the Wind* exhibit, where visitors learn about our wind turbines and energy technology. The lab is also an independent, real-world test facility for these small-scale wind turbines in an urban environment, providing solid data and project experience for professionals, universities, government, and consumers. As such, it is not scaled to power a significant fraction of the Museum's electrical load; however, the turbines are grid-connected and the Museum does use their energy on-site. Annually these wind turbines produce about 4,200 kWh of clean energy, more than half of the electricity needs of an average Massachusetts home. This avoids the release of over 5,100 lbs. of carbon dioxide into the atmosphere each year.

(LEFT) Shown here on the Blue Wing roof, Windspire Energy's 1.2 kW @13m/s vertical-axis turbine is 7 meters high, including the 4 meter rotor. This Extreme Wind model replaced the Standard model in July 2011.

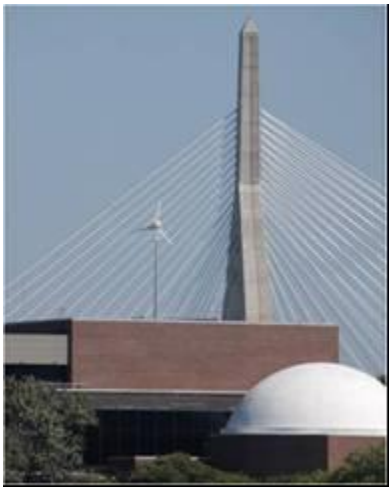
(RIGHT) Southwest Windpower's Skystream 3.7, also on the Blue Wing roof, is a downwind, horizontal-axis 2.4 kW @ 13m/s design with a rotor diameter of 3.7 meters, mounted on a 10 meter tower.



(BELOW) A bank of five AeroVironment AVX1000 upwind turbines, a highly directional design for building parapets intended to take advantage of wind rushing up and over buildings. These are mounted at the edge of the central building, overlooking the river. Each 1.8 meter diameter unit is rated at 1kW@13m/s.

(LEFT) The Swift, manufactured in the U.S. by Cascade Engineering, is a 1.0 kW @ 11m/s, upwind, horizontal axis design with a 2.1 meter diameter. It features unique rotor and tail designs, and is mounted on the center building roof.

(RIGHT) The Proven 6 by Proven Energy, a 6kW @ 12m/s, downwind, horizontal axis design, has a rotor diameter of 5.5 meters and is mounted over the Omni Theater on a 9 meter tower.



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