



# MASSACHUSETTS CLEAN TECHNOLOGY AWARDS

A Program from The Foresight Project Inc [www.theforesightproject.org](http://www.theforesightproject.org)



## Middle School Clean Tech Awards:

Region II: Central MA

Award Winner:

Jeremy Abend, Bancroft School,  
Worcester

*"Shapin' Up to the Wind: Building  
Designs for Wind Turbines in an  
Urban Environment"*

Jeremy Abend is a thirteen year boy in the 7<sup>th</sup> grade at the Bancroft School in Worcester, MA. He enjoys playing sports. His Little League teams have won the championships two years in a row. This year he won the Leadership Award on his basketball team. Jeremy was also on a Robotics team that won Botball, a high school robotics tournament, when he was eleven years old, and helped win Best Robot Performance at Robonautica, a middle school First Lego League Tournament, when he was twelve. Jeremy also likes music and loves to play the guitar.

### MY PROJECT:

My project is called "Shapin' Up To the Wind." In this experiment I wanted to find out if there was a practical way to harness wind energy in an urban environment. I studied how the shape and configuration of building models affect the speed of blowing wind. (The faster the wind blows, the more electricity a wind turbine can generate.)

In this experiment I tested eight different buildings shapes and eight different building configurations, using two of the same building shapes at a time. I found that triangular buildings created the highest wind speed. Then I tested how the direction of the wind affected the location of the highest wind speed. I found that wind blowing directly between triangular buildings had the highest speed. This experiment shows that it is possible to optimize energy generation from wind in an urban environment.

[Note from Editor: Jeremy's question is also being asked at the leading edge of architecture; his conclusion is consistent with the design of the new Bahrain World Trade Center, opened 2008: [www.bahrainwtc.com](http://www.bahrainwtc.com).]