

FAQs

1. **What is Architectural Wind?**
2. **How does Architectural Wind work?**
3. **How much wind is necessary to operate the system?**
4. **What types of buildings are best suited for Architectural Wind?**
5. **Is Architectural Wind appropriate for home applications?**
6. **How do I buy an AVX1000?**
7. **Will installing wind turbines damage the building?**
8. **How much maintenance is required?**
9. **Should I be concerned about noise or vibration?**
10. **Do the optional canopies affect the performance of the wind turbines?**
11. **Are wind turbines dangerous to birds?**

1. **What is Architectural Wind?**

Architectural Wind is a new category of renewable energy that uses small, modular wind turbines specially designed for installation on buildings to take advantage of the buildings aerodynamics while simultaneously providing a publically visible aesthetic architectural element. AV has been granted 3 utility patents for Architectural Wind.

2. **How does Architectural Wind work?**

Wind striking a building wall creates a frontal resistance to the wind. This “chimney effect” creates a zone of accelerated air flow that can be significant when the length of the wall is five or more times the height of the wall. For example, a 15% increase in the wind’s velocity results in 50% more available power.

3. **How much wind is necessary to operate the system?**

The AVX1000 operates at wind speeds as low as 4 mph (2.2 m/s) and can withstand wind gusts of 120 mph (54 m/s). Depending on specific conditions of the building’s location, such as orientation, prevailing wind conditions, obstructions such as surrounding buildings or geography, and electric rates, a Class 3 or Class 4 wind resource (see below) will typically justify consideration of Architectural Wind.
www.eere.energy.gov/windandhydro/windpoweringamerica/wind_maps.asp

4. **What types of buildings are best suited for Architectural Wind?**

Low aspect ratio buildings with wall length approximately 5 or more times the height of the building, such as most concrete tilt-up buildings, are good candidates. Examples include distribution centers, low rise office buildings, big box stores and factories.

5. **Is Architectural Wind appropriate for home applications?**

Unfortunately Architectural Wind is not currently available for house-type structures.

- 6. How do I buy an AVX1000?**
Customers interested in purchasing an Architectural Wind system consisting of a minimum of 10 each AVX1000 turbines can contact AV directly via wind@avinc.com or one of its authorized local distributors. AV's turnkey approach includes working with the owner on engineering, permitting and installation of the system.
- 7. Will installing wind turbines damage the building?**
The AVX1000 is designed for quick and easy installation onto the wall's parapet. The low profile wind turbines avoid the need for roof penetrations and eliminate the support tower common to conventional wind turbine designs. Each AVX1000 only weighs 130 pounds (60 kg) so special structural reinforcement is not needed. Additionally, an engineering review is completed before any installation is undertaken.
- 8. How much maintenance is required?**
The AVX1000 runs unattended once it is installed. Operating data is automatically collected and can be either retrieved via an electronic download or tied into a building's existing energy management system. A periodic inspection of the system and status display is typically all that is necessary.
- 9. Should I be concerned about noise or vibration?**
The AVX1000 is designed to be quiet. The blades are balance tested before each installation to minimize vibration, while the selected generators are direct drive, brushless units with no gear reduction to further minimize noise. The noise level of the turbine is confined to the roof and is approximately 50 decibels. For comparison, the noise level in a typical office environment is approximately 60 – 70 decibels. The small size and distributed placement of the units in relationship to the overall mass of the building makes vibration a non-issue.
- 10. Do the optional canopies affect the performance of the wind turbines?**
The canopies provide an additional aesthetic enhancement while providing avian protection. They do not, however, increase or decrease the power output of the wind turbines.
- 11. Are wind turbines dangerous to birds?**
A number of studies over the past 20 years have concluded wind turbines do not present a significant threat to birds. The National Wind Coordinating Committee (www.nationalwind.org) determined that wind turbines represent the smallest number of avian fatalities attributable to man-made structures. Similar findings were made by the consulting firm Curry & Kerlinger (www.currykerlinger.com). For more information, see American Wind Energy Association for their report, *Wind Energy and Wildlife: Frequently Asked Questions*.