



WINDSTORM IMPACT, SCIENCE & ENGINEERING RESEARCH

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Our **state-of-art** open jet research facility is powerful for testing innovative solutions for the design and retrofitting of various types of infrastructure including low- & high-rise buildings, bridges, wind turbines, solar panels, etc.

- ✓ **Realistic simulation** of wind loads
- ✓ Capable of producing up to **category 3-4 hurricane** winds
- ✓ Capable of performing destructive wind tests
- ✓ Our optimized design can **reduce** total project cost
- ✓ Experimental validation of numerical models

Advantages Include:

- ✓ **Reducing the effects of scaling** – a major problem in many wind tunnels
- ✓ Our primary focus is research therefore testing would **cost less than other commercial facilities**
- ✓ We offer **practical solutions to unwanted wind induced vibrations** of structures using both experimental and computational methods
- ✓ **Conveniently located** for construction industries working in hurricane prone zone.



Problem to solve

- Industry is following the standard to estimate wind loads on buildings which is not fully reliable, due to scale issues.
- Blade and tower vibrations are a big concern when operating a wind farm. They can cause fatigue failure and reduce the uptime of the wind turbines. Also vibration in high-rise buildings is another concern (serviceability issues).

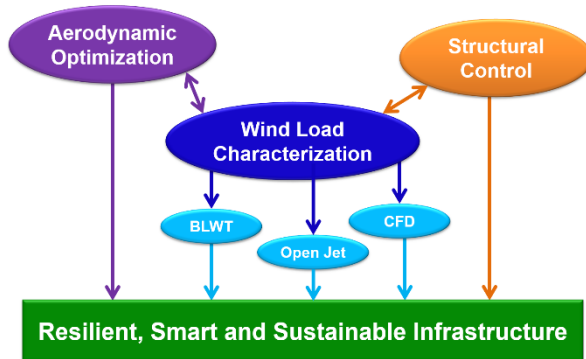
Value Delivered

- Accurate estimation of wind induced loads, yielding safe and economic design.
- By deploying control devices, vibration issues in wind turbines and high-rise buildings can be resolved, leading to reduced maintenance, extended life, and improved serviceability.

Standout feature

- The Open-Jet facility offers the capability of testing at high Reynolds number and realistic turbulence, leading to accurate wind load estimation, compared to wind tunnels.
- Our damping solutions consumes no to less energy and they are effective against a wide range of excitations.

Goal



Smart, Resilient and Sustainable Infrastructure



This research has the potential to expand knowledge and create science in the area of wind engineering and structural control, useful to achieve the ultimate goal of building resilient, smart and sustainable infrastructure to survive multi-hazards brought by natural disasters and other types of stressors. This will broadly impact the wind/structural engineering research field, and facilitate effective investments in the infrastructure industry that will result in more resilient and sustainable communities and contribute to economic growth, and improve the quality of life.