



# Jules Verne Climatic Wind Tunnel

**TEST YOUR INNOVATIONS  
AGAINST EXTREME WEATHER CONDITIONS**

## **For industrial companies, manufacturers, developers, architects, consulting firms, operators and others**

Environmental challenges and requirements for safety, comfort and durability have a real impact on the design of your product, system or project. You have to anticipate its behavior in extreme weather conditions.

# Your needs Your requirements

# 1

**TESTING, ASSESSING**  
aerodynamic resistance,  
durability and noise pollution  
in real-life conditions

# 2

**IMPROVING**  
the design,  
making a difference  
on the market

# 3

**GUARANTEEING**  
users' safety  
and comfort

### For all sectors



Buildings /  
Building  
Components



Civil Engineering  
Structures



Renewable  
Energy



Automotive



Rail  
Transportation



Industrial  
Machinery  
and Equipment



Defense



6000sq.m  
COVERING

5 test  
sections

ATMOSPHERIC  
AEROACOUSTIC  
AERODYNAMIC  
AIRFLOW  
THERMAL



# AT YOUR SIDE, EVERY STEP OF YOUR PROJECT



## THE JULES VERNE CLIMATIC WIND TUNNEL A UNIQUE FACILITY

### A multidisciplinary approach to testing

The wind tunnel has been modernized, making it the only one in the world that offers testing of building components and civil engineering structures, motor vehicles, trains, wind turbines and industrial machinery and equipment, in the harshest and most extreme weather conditions.

The Jules Verne wind tunnel can reproduce severe cold at  $-32^{\circ}\text{C}$ , or extreme heat at  $+55^{\circ}\text{C}$ , snow, rain, sleet, fog, windstorms and sandstorms and wind or hurricanes up to 300 km/h.

Testing in a wind tunnel makes it possible to **simulate and analyze the behavior** of structures, systems, vehicles and any other equipment at **full scale, in weather events**, and of civil engineering test specimens at a reduced scale.

### Turning your ideas into sustainable projects

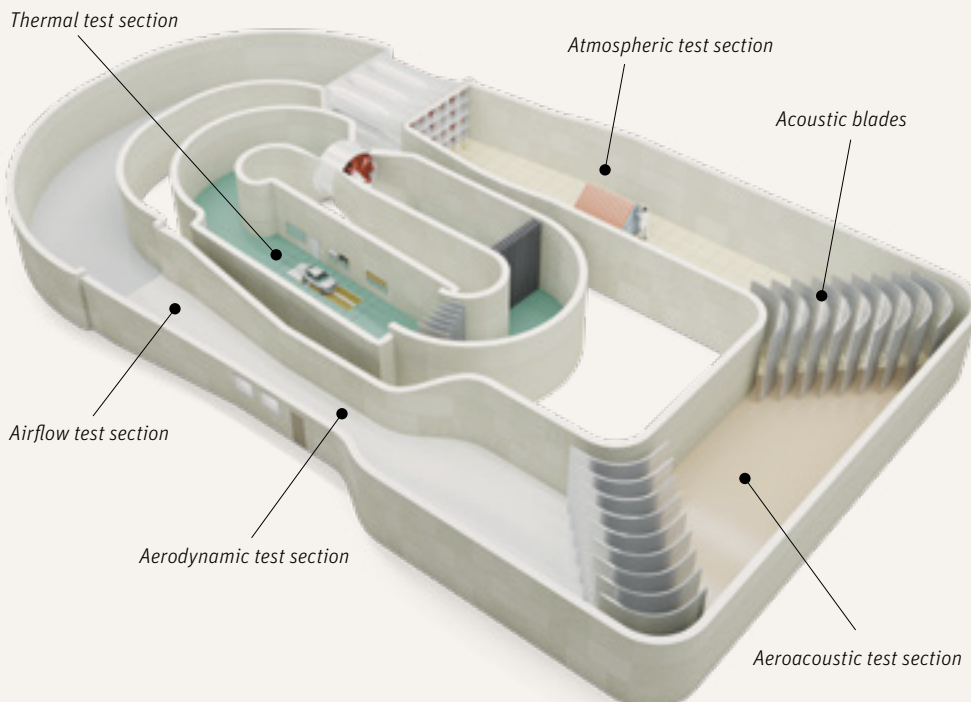
The CSTB is open to any public or private R&D partners and local or international corporations, SMEs / VSEs / startups. Testing in the Jules Verne wind tunnel is carried out as part of research partnerships or contract research.

<http://recherche.cstb.fr/en/>

### Fostering your innovation, in total safety

The CSTB provides you with unique resources to test your product.

[evaluation.cstb.fr/en/](http://evaluation.cstb.fr/en/)



## WHY CHOOSE US?

### **A wide range of tests, all conducted in one place**

The Jules Verne wind tunnel can reproduce all types of weather.

### **Synergy between experimental and digital approaches**

for optimal accuracy and real-time appropriation of the results.

### **Renowned climatological expertise for more than 25 years**

Implementation, ability to develop customized protocols, etc.

*"In a completely updated environment - with improved comfort, facilitated collaboration and direct access to the most advanced know-how and technologies - our clients and partners can keep maximizing the potential of this facility, which is unlike any other in the world."*

**Maxime ROGER** | Director of CSTB Nantes



## Synergy between physical and digital modeling

Thanks to the CSTB, you can combine physical modeling results, obtained in the wind tunnel, with digital simulation results.

The augmented reality application, CSTB Xperience, developed by the CSTB, allows remote viewing of testing conducted in the wind tunnel.

Accessible, educational and intuitive, CSTB Xperience facilitates exchanges between teams working on projects.

### GOT A QUESTION ABOUT THE JULES VERNE CLIMATIC WIND TUNNEL? ASK US!

cape@cstb.fr

+33 (0)2 40 37 20 00

### ALL THE EXPERTISE OF THE CSTB, AT YOUR SERVICE

- Life cycle assessment
- Solar energy
- Energy management
- Sustainable water management
- Energy performance
- Energy renovation
- Acoustics and vibration
- Lighting and electromagnetism
- Indoor air quality
- Aerodynamics
- Climatology
- Fire safety
- Earthquakes
- Economy
- Sustainable urban development

#### SCIENTIFIC AND TECHNICAL CENTER FOR BUILDING

11, rue Henri Picherit - 44323 Nantes - Cedex 3 - France

Tel.: +33 (0)2 40 37 20 00 - [www.cstb.fr](http://www.cstb.fr)

Headquarters > 84 avenue Jean Jaurès - Champs-sur-Marne - 77447 Marne-la-Vallée cedex 2  
MARNE-LA-VALLÉE / GRENOBLE / NANTES / SOPHIA ANTIPOLIS

**CSTB**  
le futur en construction