

NASA RENOVATES ICONIC BUILDING WITH HELP FROM MADGETECH



BACKGROUND

The Vehicle Assembly Building (VAB) at NASA's Kennedy Space Center is located in Merritt Island, Florida. Constructed in 1963 for the assembly of the Apollo/Saturn V moon rocket, VAB is one of the largest buildings in the world by area.

For 30 years, the iconic facility also served as the final assembly point for space shuttles to external fuel tanks and solid rocket boosters.


CHALLENGE

The agency planned to alter the VAB to house a Space Launch System and multi-purpose crew vehicles. In order to properly execute these modifications, NASA needed to create a 3-D volume characterization focusing on the temperature and humidity profile of the building to ensure the Space Launch System would be plausible.

For more information on the RHTemp101A or to find the right data logging solution for your needs:

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SOLUTION

To obtain an accurate overview of the internal environment, 17 of Madgetech's **RHTemp101A** humidity and temperature data loggers were strategically placed around the building. The loggers were set up to take readings every ten minutes continuously for one year to show any temperature differentials that could impact the launch of the spacecraft.

Surrounding the VAB are three wind towers that supplied NASA with temperature readings. By comparing the wind tower readings with those from the RHTemp101A data loggers, the team was able to determine what, if any, temperature differentials occurred between the outside environment compared to the inside the VAB.

After the yearlong study, the data proved that the VAB was acting as a thermal filter which caused the external atmosphere to have reduced thermal oscillation. NASA also noticed that the closer the loggers were to ground level, the more temperature differentials there were. They concluded this was caused by the constant opening and closing of doors which causes increased airflow.

Read the full report on [NASA's website](#).

UPDATE

Since the study, NASA renovated the VAB to support the Space Launch System (SLS) and Orion spacecraft, which resulted in the ability to process multiple launch vehicle types. The VAB now serves as the central hub of NASA's premier multi-user spaceport, capable of hosting several different kinds of rockets and spacecraft at the same time.