

PROJECT DETAILS

Location:

Carnegie Science Center,
Education
Pittsburgh, PA

Product:

PureDri Sanitizing
Hand Dryer



PureDri
Sanitizing Hand Dryer

The Great Return: Hygiene Solutions for Indoor Family-Friendly Activities

Detailed test results from BobrickPure Hygiene Solutions early adopters

As vaccines continue to roll out for young children, museums and other indoor educational centers remain a concern for families. Especially with young kids, proper hand washing, mask wearing and social distancing is hard to enforce, causing some hesitancy among parents to visit indoor learning and play spaces.

In addition to these challenges, the national labor shortage has taken a toll on museums. According to a survey by the American Alliance of Museums, almost half of museum directors listed “labor and skills shortage” as one of the biggest potential disruptors to their business strategies.

In Pittsburgh, a popular science center has experienced many of these issues. Almost two years after the start of the pandemic, the Carnegie Science Center closed its doors for nearly a week. The organization shared in a press release, “Like many other organizations, Carnegie Science Center is managing staff shortages. This short period of closure will allow the Science Center to reallocate staff and reopen with the stellar level of service our visitors have come to know.”

In 2022, Bobrick partnered with the Carnegie Science Center to install and assess innovative hygiene solutions that address the proper sanitization of indoor air and surfaces.

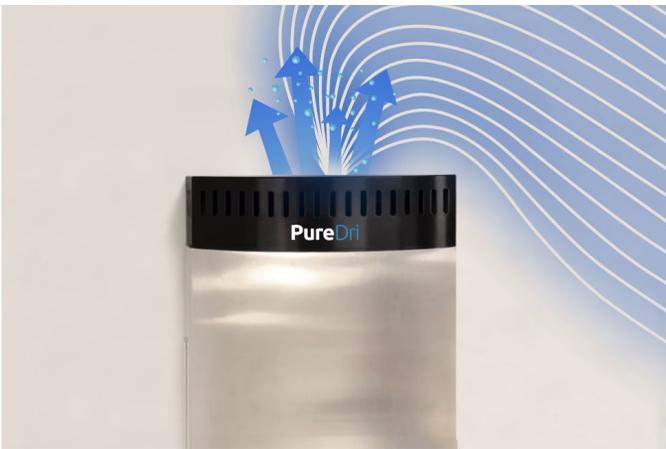
This case study shares test results from BobrickPure Hygiene Solutions installed at three business locations in the Pittsburgh area, including the Carnegie Science Center.

A Breakthrough Combination of Pathogen-Destroying Technologies

Bobrick developed two new products to help minimize the spread of infection – PureDri Sanitizing Hand Dryer and PureSphere Air Sanitizer – which eliminate 99% of bacteria, viruses, mold and fungi in fewer than 10 minutes, as proven in a Leeds University research study.

PureDri and PureSphere technology works by destroying existing microorganisms from bacteria and viruses in the air and on surfaces through continuous sanitization.

The PureDri Sanitizing Hand Dryer is a restroom device that protects hands with a blast of super-concentrated ionized air following the drying cycle, while providing continuous sanitization in rooms up to 215 square feet.



Designed for high-traffic restrooms, lounges and other gathering spaces up to 323 square feet, the PureSphere Air Sanitizer purifies the air continuously using an internal UV lamp and ionic processes. In addition, the unit provides odor control so rooms feel fresh and smell clean.

PureDri and PureSphere employ three distinct scientific processes working together:

1. Eliminates viruses and bacteria via a germicidal UV lamp that inactivates all microorganisms
2. Neutralizes viral particles through strong oxidizing agents as air passes through the chamber
3. Superoxide ions that neutralize airborne particles, causing them to drop to surfaces below

Methodology

To ensure proper testing protocols, Bobrick's Hygiene, Health & Wellness Advisory Board – which includes experts in infection prevention, facility management, healthy design and manufacturing — worked with Allynt Solutions, a facility safety and infection prevention consulting firm in the Philadelphia area.

Testing was conducted before and after installation and focused on measuring air quality and the soil loads on surfaces and hands. Soil load measurements indicate how well that surface supports the growth of bacteria.

The Findings: Air Quality Test

Before and after installation, Bobrick measured the cleanliness of the air in every room containing PureDri and PureSphere units with an air quality meter. At the Carnegie Science Center, this included two PureDri units placed in the men's and women's restrooms adjacent to the cafeteria.

This meter recorded the presence of particles at or below 2.5 microns in the air before Bobrick's continuous air purification products were installed. After installation, the same measurement was recorded multiple times daily for 30 days. All data points were recorded and compared.

Air quality is considered fresh if the particulate matter greater than 2.5 microns (PM2.5) counts are less than 35. If PM2.5 is between 35 and 150, the air quality is considered unqualified, meaning air is not fresh, but not considered hazardous pollution. When PM2.5 is greater than 150, the air quality is considered very unhealthy and not safe for prolonged exposure.

Results:

The PM2.5 measurement showed the indoor air quality was categorized as fresh as it measured fewer than 35 particles. The use of the BobrickPure system reduced the presence of particles at or below 2.5 microns by up to 33%.

The Findings: Surface Test

BobrickPure Hygiene Solutions were created to fight both viruses and bacteria living on surfaces. Pathogens such as Staphylococcus aureus (including the MRSA strain), E. coli, and tuberculosis are all examples of bacteria that grow and thrive within soil loads. For this testing, results were interpreted through the following scoring system: 0 - 100 = extremely clean; 101 - 500 = clean; 501 - 2500 = needs attention.



An ATP meter was used to measure the soil load of surfaces such as counter tops, handles and flushers. This measurement indicates how well the surface supports the growth of bacteria, with lower measurements being cleaner. These measurements were taken before and after

installation and the same measurement was recorded multiple times daily for 30 days. Again, all data points were recorded and compared.

Results:

Initial testing shows a 40% to 55% reduction of surface contamination on counter tops, handles and flushers.

The Findings: Hand Test

Another ATP meter was used to measure the soil load on individuals' hands at each phase of hand washing: before washing, after washing and drying with a paper towel, and after washing and drying with a PureDri Sanitizing Hand Dryer.

Results:

The regular hand washing process with a paper towel generally brought the soil count down significantly. Using the PureDri unit's two-step drying/sanitization process brought the soil count down by an additional 15% to 20% on average.

With BobrickPure Hygiene Solutions, the Carnegie Science Center was able to create a comfortable environment in their restrooms used by both employees and visitors.

To learn more about BobrickPure Hygiene Solutions, visit www.bobrickpure.com



Interested in knowing more about how it works?

Check out this white paper, [The Science Behind BobrickPure Hygiene Solutions](#), or contact your Bobrick representative.