

FAQs

Q. Why did OHSU decide to build a new data center?

The data center that handles OHSU's clinical, research and business operations is in downtown Portland. But that data center—which has over 1,300 computer servers handling 3,000 terabytes of data—is reaching its limits. Meanwhile, the use of data in health care and medical research continues to expand, along with hopes that computer technologies will increasingly help scientists cure disease—by being able to quickly analyze reams of data related to a specific person's genetic profile. For all of those reasons, OHSU leaders decided they wanted to expand OHSU computing capabilities to be a leader among academic health centers in the U.S.

OHSU's new data center—built on OHSU's West Campus in Beaverton—will provide those capabilities and also provide redundancy and backup for data as the downtown data center will continue to operate in concert with the new data center.

Q. What makes the new data center different/unique?

OHSU's new data center, a patent-pending and copyrighted plan, was actually designed by OHSU's own Perry Gliessman, director of technology services for the OHSU Information Technology Group. It's unusual looking—a round building covered by a geodesic dome.

But the insides of the center are unusual as well. With large air intakes toward the bottom of the building and large air vents toward the top, the center is designed to operate predominantly using ambient air for cooling. The need for electricity for heating and cooling is almost entirely eliminated.

And within the data center, the “pods” of computer servers are arranged, like a large wagon wheel, in a hub-spoke-and-wheel design. That helps with air distribution and the “shortest path route” for cooling air and for fiber optic and power distribution. The design and high ceilings will also allow for easily adding computer servers and stacking them high, meaning the data center's capacity can be easily expanded.

Q. Why is the new data center covered with a dome?

The building shape and dome mean the center is especially ready for natural disasters; the building design is especially resistant to earthquakes and the dome roof will help the building easily shed snow and volcanic ash fallout (in the unlikely event of an eruption).

The building's round structure and dome also allow for easy airflow, helping the building cool itself with ambient air.



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Q. How will the data center save energy and how much energy will it save?

The data center design has a number of features that make it exceptionally efficient. Foremost are the building design features that allow ambient air to do most of the cooling needed for the center. The center is also surrounded by vegetation, which provides some filtering and some cooling of the air brought into the center from the lower intake vents. Other energy-saving features include lights that are only turn on when a person is nearby. The energy efficiencies mean that data center will likely use about 60 percent of the electricity that a similarly sized traditional data center would use.

Q. Why is the new data center located where it is?

The West Campus site provides a couple of strategic advantages.

The 13 miles between the West Campus and the downtown data center means that localized disaster that affected downtown might not affect the West Campus. The West Campus location is historically less susceptible to earthquakes and isn't part of some of the known earthquake faults that run near or under downtown Portland. The West Campus area is also served by a different electricity supplier than downtown Portland. That means a major electricity outage that affects downtown is less likely to affect West Campus.

Q. What does the new data center mean for OHSU and for Oregon?

The new data center will mean OHSU will immediately have backup data storage and computing abilities it doesn't now have—which could be especially important in the event of a major natural disaster. The increased computing power will immediately reap benefits for OHSU health care and research. But the new center also will give OHSU the ability to easily increase its computing capacity for years to come.

That advanced computing capacity will help OHSU doctors as they employ new ways to treat and cure patients and as OHSU continues to increasingly use telemedicine to help treat patients at distant hospitals. It will help OHSU researchers as they continue to search for treatments and cures for disease. And it will help Oregon as a whole as OHSU continues to be a leader in medical care and research.