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Facebook Prineville Data Center / Sheehan Partners

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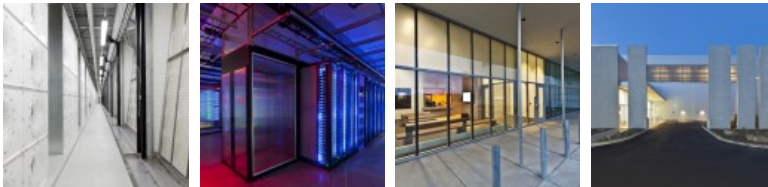
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Architects: [Sheehan Partners](#)
 Location: [Prineville, Oregon, USA](#)
 Year: 2011
 Area: 332,390 sq ft
 Photographs: [Jonnu Singleton](#)



Facebook Prineville Project Synopsis

When Facebook users post photos or status updates, data seemingly drifts into the “cloud,” which is not exactly an ethereal place, but rather a complex data center housing racks of servers using as much energy as a small town. Defying this energy-draining typology, the Facebook Prineville Data Center in central Oregon has achieved LEED Gold status through advanced technologies, including an innovative mechanical equipment penthouse and evaporative cooling system, all while keeping data flowing and providing pleasant workspaces.

Due to security requirements, data centers are typically fortress-like. For Facebook, a company that prides itself on openness, the architects created a prominent building that harmonizes with its high desert landscape. The permeable yet secure perimeter is clad in warm-toned precast concrete panels, corrugated steel and layered glazing. “People spaces,” including conference rooms and workspaces, open onto an interior courtyard. In



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fact, every employee enjoys views and natural light from at least two directions.



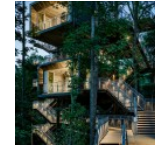
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The facility expends zero energy towards mechanical cooling. Computer equipment rooms and the mechanical penthouse together function as an occupied air handler. Fan walls pull in dry desert air from outside, and then misters inject moisture and drop the temperature several degrees to keep servers functioning properly. The Facebook Prineville Data Center is a little cloud-like, after all.

Sustainability

To reach the status as one of the world's most energy efficient data centers, not to mention rigorous LEED Gold requirements, the designers of the Facebook Prineville Data Center had to rethink every part of a data center's building, mechanical, electrical, and computing systems and remove everything that didn't directly benefit efficiency. The remaining system elements had to operate in concert, from processors to fan walls to evaporative misters to damper controls.

Power usage was cut at every opportunity, resulting in a building that runs 38% more efficiently than other state-of-the-art data centers yet cost 24% less to construct. A data center's efficiency is determined by its power usage effectiveness ratio (PUE), which measures the total energy consumption divided by the consumption for the computer equipment. An ideal ratio is 1.0, and the EPA-defined industry state-of-the-art rating is 1.5.



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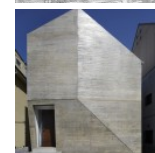
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Based on the results of preliminary tests, the Prineville facility has achieved a near-perfect score of 1.07 PUE.



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In addition to the impressive statistics documenting the energy efficiency of the Facebook Prineville Data Center, other sustainable features include the incorporation of low-VOC materials, solar panel arrays, and a rainwater storage tank within the interior courtyard that satisfies irrigation needs and supplies water for toilets.



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