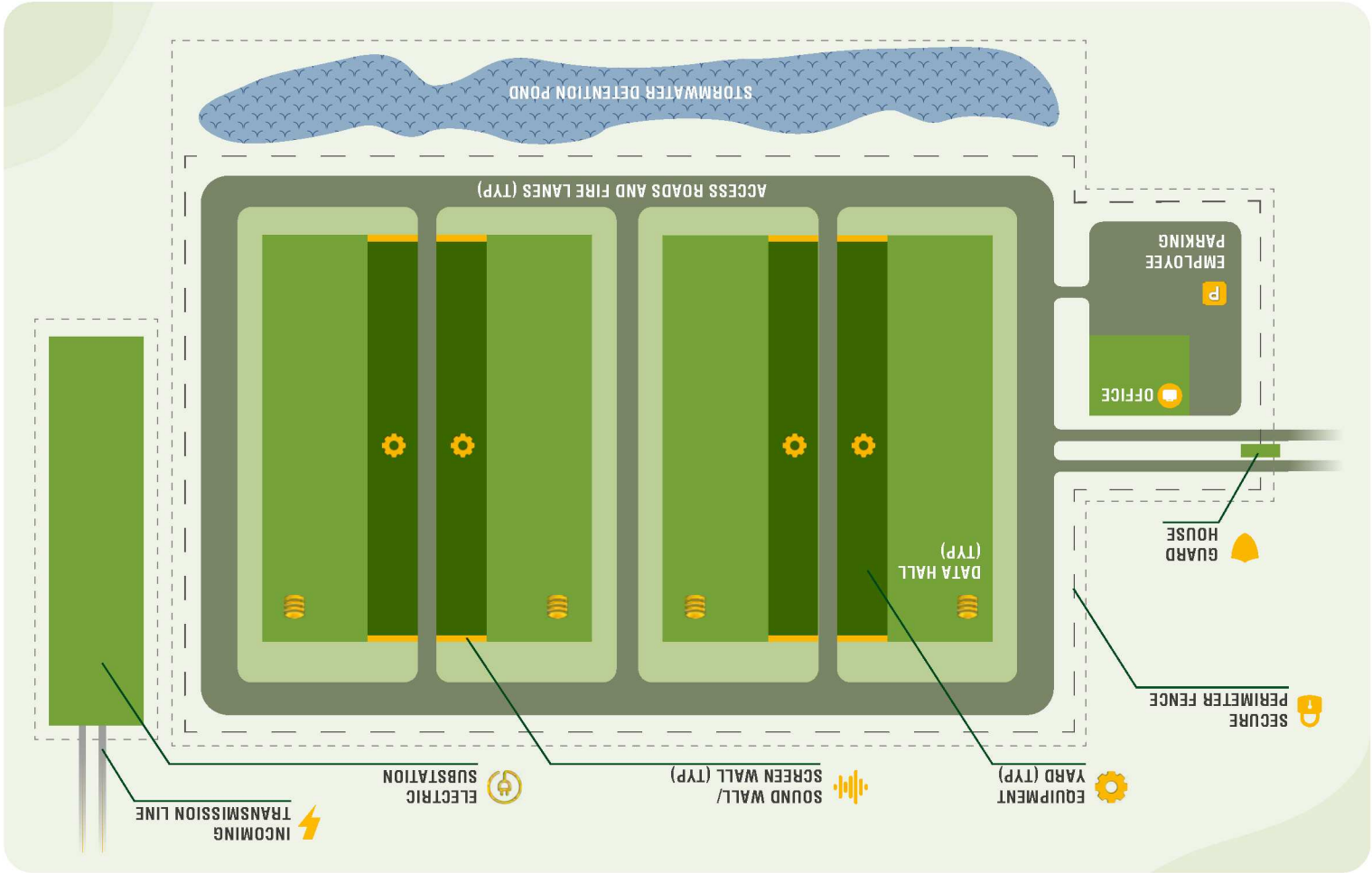


Let's tour a hyperscale data center campus



Most of the data centers developed today are hyperscale data centers—typically within campuses. We tour one below.

Approaching the campus

As you approach a hyperscale data center campus, you are likely to encounter a fence or gate—often with a gatehouse—beyond which you may be able to see equipment yards and cooling equipment in the distance.

Security

Data center campuses have extensive security measures and strict protocols for employees and visitors. Infrared surveillance cameras and tall, anti-climb security fences that detect movement surround the property. A guard at the gatehouse checks guests' credentials outside. If you make it past this point—few people do—you will find another security checkpoint at the entrance to the data center building itself, where additional security personnel check badges.

Equipment yards
Before heading inside, let's first follow the winding campus driveway and stop at the mechanical and electrical equipment yards.

Electrical yards

In the electrical yards, you'll hear the low hum of static if you stand directly under the transmission lines. A nearby **utility substation transformer** receives this power and converts it down to the lower voltage needed for use inside. The medium-voltage power feeds into **switchgear** in the electrical yard—another type of power distribution equipment that similarly dispenses electrical power throughout the data center.

Alongside the switchgear, you will see multiple generators that provide emergency power in case of an electrical utility outage. If they look like they aren't running, it's because they are usually turned off. Except during emergency outages, they are turned on only for monthly maintenance tests for a mere 30 minutes² and are quiet while running due to sound-attenuated enclosures.

2 GeneratorSource, "Data Center Generator Maintenance," GeneratorSource, January 2024, <https://www.generatorsource.com/blog/january-2024/Data-Center-Generator-Maintenance.aspx>.