

Burbank Water and Power (BWP) Eco-Campus Burbank, California, U.S.A.

Though the Burbank Water and Power (BWP) Magnolia Power Plant had been providing Burbank, California, with water and electricity for more than 100 years, its 23-acre facility was failing its employees and the environment. Also, the operating costs associated with maintaining the aging campus were high, resulting in increased utility rates for residents. As the existing infrastructure became obsolete, BWP saw an opportunity to repurpose on-site materials to protect California's scarce water and electricity supplies while providing employees with a more sustainable work environment.

The challenge was to design and build the sustainable campus at a working power plant, which was covered in large impervious surfaces with no existing vegetation. In fact, 79 percent of the site was impervious. The climate of Burbank also posed several challenges. The area is prone to high temperatures and infrequent cloud cover, so creating shade on the site became a necessity. Burbank also has low rates of precipitation, particularly in the summer, which limited the number of plant species that could survive on the site.

The new BWP EcoCampus transformed the power plant from an industrial complex into a green campus for employees. The 3.2-acre landscape for employees and visitors sits within the functioning electric power generating station surrounded by industrial facilities.

The Centennial Courtyard is the iconic feature of the campus. Created within the reclaimed structure of a decommissioned electrical substation, the space was transformed into a shaded outdoor meeting area covered with a giant trellis. The second life of this structure creates an interesting juxtaposition of industry and nature.

Sustainable rainwater conservation and filtration approaches were incorporated throughout the site. BWP implemented five different water filtration technologies, including infiltration, flow-through, detention, tree root cells, and rainwater capture. BWP also installed a recycled water treatment system within their on-site power plants. This system reduced the power plant's use of potable water by as much as 100,000 gallons a day, which is incredibly important in the dry, Southern California climate.

The new EcoCampus also absorbs all stormwater runoff. While the street side of the site was once characterized by vast expanses of impervious pavement, the campus now hosts one of the longest green streets in Southern California. The Lake Street green street exhibits techniques for stormwater treatment within a public right-of-way, including permeable pavers, manufactured bio-filters, filtration planters, silva cells, and planted infiltration bump-outs. The bump-outs and pavers filter runoff before it enters the campus' stormwater system, where it's then captured by the planters and trees set within silva cells, which are not only beneficial for managing stormwater but also allows the trees to grow taller.

Three green roofs absorb about 70 percent of the water that falls on them. Any excess water from the roofs and adjacent areas is diverted into two underground reservoirs that allow stormwater to slowly percolate into the ground. These technologies have helped ensure there is nearly zero stormwater run-off.

This project also improves energy conservation. Photovoltaic panels are used to generate electricity and provide shade within a constructed parking area. LED lighting has been installed throughout the site

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and a water feature runs on a solar-powered pump. Additionally, the green roofs save the facility more than \$14,000 annually in energy costs by reducing the urban heat island effect and decreasing the buildings' air-conditioning costs.

Three buildings have been certified LEED platinum. The landscape has been certified by the Sustainable Sites Initiative (SITES).

In addition to supporting environmental health and sustainability, the green spaces in the EcoCampus promote employee and community health. The new green campus provides BWP employees with outdoor opportunities for mental restoration and social interaction.

Project Resources

LANDSCAPE ARCHITECT

AHBE Landscape Architects

ARCHITECTURE

Tyler Gonzalez Architects

Leo A Daly

CIVIL ENGINEERING

Fuscoe Engineering

CLIENT

Burbank Water and Power