Weston Corporate Center Deep Water Source Cooling System

Boston Properties has designed a sustainable chilled water system using an abandoned quarry as a renewable source of chilled water for Weston Corporate Center, a new office development located in Weston, Massachusetts. This project has been certified as a USGBC LEED® Platinum property.

Completed in the summer of 2010, Weston Corporate Center will serve as Biogen Idec's new corporate headquarters. The creation of this deep water cooling system is an example of our Development Team working closely with our tenant, Biogen Idec, to design a building that will be energy efficient and environmentally friendly. Previous developers who controlled the property viewed the onsite quarries as a significant site constraint leading to proposals that included the re-filling of the abandoned mining quarries. But when Boston Properties acquired the site, we identified the potential to employ the quarries as a renewable resource.

The quarries cover 20 acres of the site and contain approximately 1 billion gallons of natural ground water reaching depths of 400 feet. Water temperature towards the bottom of each quarry is at a consistent 40 to 45 degrees—the perfect temperature for chilled water usage. The challenge came in designing a system that could reach the deep water while safely negotiating the dangerous side walls of the quarry. Boston Properties came up with an innovation we call the "bent straw." The system is designed to pump chilled quarry water to heat exchangers in the building and then return the water to the quarry. Meanwhile, a circulation system will pump chilled water from the heat exchangers to rooftop air handling units that will cool the building.

We, in partnership with our tenant, are able to take a significant site constraint and turn it into a one-of-a-kind sustainability feature that will help save Biogen Idec thousands of dollars per year in energy costs and reduce the carbon dioxide "greenhouse" gas emissions by an estimated 475,000 pounds per year.

Boston Properties