



The Cal Poly Center for Science and Mathematics was built to show respect for the environment, energy and natural resources which is demonstrated by its design, construction and selection of materials.

NEW CAL POLY CENTER USES EXPANDED CLAY AGGREGATE

The new Center for Science and Mathematics at California State University, better known as Cal Poly San Luis Obispo, is designed to be a distinctive landmark located in the geographic center of the campus. Under the specifications of the engineer, the concrete mix design for this new structure called for the use of HydroLite™.

Standing seven stories high, the 187,000 square foot facility will replace the current, but outdated science building and become the largest structure on university grounds. Funded by bonds and private donations, the \$132 million dollar building's design and construction are based on environmental features that include flexibility, sustainability and efficiency. The state-of-the-art structure will also allow students to monitor the actual resource utilization of the building through visual real-time displays.

Hanson Ready Mix, the concrete supplier, selected Arcosa Lightweight's Frazier Park HydroLite lightweight aggregate to meet the strength and unit weight requirements as well as comply with California fire, seismic and energy efficiency codes.

HydroLite is an expanded clay aggregate, with a lightweight ceramic shell and honeycomb core. Produced by firing natural clay to temperatures of 1100-1200°C in a rotating kiln, the rounded pellets are approximately 0-32mm with an average dry bulk density of approximately 350 kg/m³. The material is sieved into a number of different grades to suit the application.

The Center's construction called for 10,000 cubic yards of concrete which resulted in the use of an estimated 4,000 cubic yards of Frazier Park aggregates. The lightweight nature of the expanded clay pellets makes it an ideal solution for constructing over weak soil deposits or reducing the load behind old and susceptible structures. Highly permeable and very durable, the lightweight aggregate

provides excellent thermal resistance when used as under floor insulation within solid floor construction.

Environmentally-friendly Frazier Park HydroLite was a perfect fit for the sustainability minded Center since it is mostly composed of naturally occurring clay. Durable with a long life span, the aggregate is not susceptible to chemical attack, rot, or frost and may be used in a variety of applications that include the manufacture of lightweight blocks and in water filtration systems.