



Beneficial Use Case Study

ACAA Salt Lake City Main Library

Coal Combustion Product Type

Ultra-Fine Pozzolan Boral Micron3

Project Location

Salt Lake City, Utah

Project Participants

Moshe Safdie & Associates, Big-D Construction, Jack B. Parson Co., Boral Resources

Project Completion Date

2003

Project Summary

Salt Lake City's main library is a five-story-tall, 240,000 ft², wedge-shaped building. The structure incorporates 44,960 yd³ of concrete, 176,368 ft² of glass, and a five-story curved glass wall.

Project Description

The library had column and beam design strength requirements of 8000, 6000, and 5000 psi, together with 4000 psi lightweight slab concrete mixtures. Architects Moshe Safdie & Associates further stipulated that all finished concrete surfaces should be uniform in color and texture when viewed from a distance of 3 ft. Their specification called for color matching between the concrete mixtures of different strengths.

The project's ready-mix concrete supplier, Jack B. Parson Co., proposed Boral Micron3 among candidate designs for the 8000 psi concrete columns. The product has a mean particle diameter of 3 micrometers with 90% of the particles less than 7 micrometers. The fine particles lead to a high packing density and increased pozzolanic reactivity at an early age, which contribute to high strength and

durability—particularly with respect to corrosion, alkali-silica reaction, and sulfate attack.

Micron3 was effective not only in achieving 8000 psi but also in reducing the water and high-range water-reducing (HRWR) admixture demand and improving concrete workability. Micron3's light color further helped to provide color continuity between the columns and horizontal structural members that were cast from different strength mixtures.

The exposed concrete surfaces in the Salt Lake City Main Public Library project challenged suppliers and contractors to look past their previous concrete experience and consider every variable affecting interior and exterior concrete quality. Boral's ultra-fine pozzolan product proved ideal for meeting the stringent quality, strength, and durability standards.



Source: Salt Lake City Public Library



Source: Wikimedia Commons