
THE REACH, THE KENNEDY CENTER FOR THE PERFORMING ARTS, WASHINGTON D.C., USA.

CAST-IN-PLACE CONCRETE APPLICATION: AALBORG WHITE CEM I 52,5 SR5 (Portland Type I)



PROJECT DESCRIPTION

The Reach, John F. Kennedy Center for the Performing Arts, expansion project, designed by Steven Holl Architects adds 72,000 sq. ft (6,700 Sq. meters) of award-winning interior space dedicated to the performing arts. Five different types of concrete were used to achieve the stunning architectural, aesthetic, acoustic and structural design.

Early in the schematic design process the design team determined the project's main structures: The Welcome, Skylight, and River Pavilions should be constructed with white cast-in-place concrete. The pavilions feature complex geometry demanding high strength performance with the added requirement of exacting finishes to create a dazzling addition to this living memorial to President John F. Kennedy. AALBORG WHITE® cement was selected for the highly visible white concrete elements fulfilling both structural and architectural roles.

Seen from a distance the walls of The REACH's pavilions appear smooth, rising transcendent above the Kennedy Center's south lawn. Up close where they are designed to be experienced, visitors appreciate the touch of natural wood grain from authentic Douglas fir form linings which provide texture and transform the structures surface.

Special attention has been given to The REACH's interior to guarantee excellent sound quality and control so multiple events can occur simultaneously without disturbing one another. Some 11,570 square feet of vertical wall space employs a custom "Crinkle Concrete" texture that features 3" deep sound diffusing, flutter echo mitigating random folds and surface angles to break up sound waves and avoid reverberation between parallel walls. This unique form pattern came from the Architect physically bending sheets of metal to create an irregular pleated texture which was then transferred to elastomeric form liners used to site-cast the interior performance space concrete walls. The walls thus treated serve as an interior decorative wall and as the primary structure support for that portion of the building. The designer's skill is seen in how different forms, finishes, and textures are used in combination with the physical layout to set apart the many functional spaces, all while delivering a harmonized inspirational visitor experience.

AALBORG WHITE[®] APPLICATION IN READY MIX CONCRETE

AALBORG WHITE[®] portland cement's chemistry is ideally suited to efficiently interact with concrete admixtures to provide excellent fluidity and predictable results. This fluidity enables the concrete to faithfully reflect complex shapes and different form textures such as the smooth texture of metal folds or the rough texture of wood grain. Varying these concrete finishes yield different expressive intentions; this duality results in more interesting and attractive architectural details.

To achieve the brilliant white exposed concrete finish for the pavilion walls AALBORG WHITE[®] cement was intermixed with white sand, light-colored aggregates, and titanium dioxide. An expert's understanding of concrete materials, forming, and finish is evident in Steven Holl Architects' completed project. White cement when combined with different pigments and aggregates allows concrete to express rich colors and surfaces. In this way it can be made to match the architect's vision and capture the desired aesthetic.

PROJECT INFORMATION

Year:2019

Location: Washington D.C. USA

AALBORG WHITE[®] Cement Application: Cast-In-Situ Concrete structure

Architects: Steven Holl Architects

Associate architects: BNIM Architects

Civil engineer: Langan Engineering & Environmental Services

Preconstruction manager: James G. Davis Construction Corporation

Concrete consultant: Reg Hough Associates

Acoustic/AV/IT/security consultant: Harvey Marshall Berling Associates

Concrete contractor: The Lane Construction Corporation

Façade consultant: Thornton Tomasetti

General contractor: Whiting-Turner

Landscape architect: Edmund D Hollander Landscape Architects Design

Project manager: Paratus Group

Ready mix concrete producer: Vulcan Materials Company

Structural engineers: Silman

AALBORG WHITE® wants to express its gratitude to Steven Holl Architects for their assistance in preparing this Case Study.