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Federico Garcia Lammers

South Dakota State University, federico.garcia-lammers@sdstate.edu

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Federico Garcia Lammers
South Dakota State University, Department of Architecture (DoArch)

Abstract

According to the Department of Transportation, a commercial truck can drive at a maximum speed of sixty miles per-hour while carrying a sixty-foot-long precast concrete beam on a state highway. The beam in question is headed to a town of 1,800 people to be installed as part of a student-driven, faculty led Public Works project in Webster, South Dakota. Design/Lift focuses on the choreography of lifting and positioning a large piece of concrete on a public site. The beam sits in a yard, unapproved to span highway bridges, but potentially ready to engage the public in unexpected ways. The project in this poster is part of three-year long collaboration that connects architecture students at South Dakota State University with local communities and building industry leaders. During the third year of this project, two sets of fifteen undergraduate students worked on one-to-one mock ups, participated in city council meetings, and discussed design ideas at community gatherings. Through close collaboration with structural engineers and precast concrete manufacturers, students worked on the construction of a public space at the entry to a new athletic field. Students and faculty designed the installation of the beam by working with local laborers and engineers to understand the transportation and airborne movement of a 42,000-pound piece of concrete, which was expected to rest on two columns cantilevering at least 10 feet on both ends. After choreographing the beam’s installation with certified 300-ton crane operators, students designed and fabricated a series of steel/wood “seating saddles” that connect the beam to a series of walking paths. The beam is a gallery wall, a long bench, a marker, and an unfinished monument. It appears to be a ruin that anticipates the construction of other things. It is in the process of becoming a mural for school children and the site of the annual chili cook-off. It is ready to bare any load that can balance on its slender profile. Design/Lift is part of the legacy of design/build pedagogy, presenting students and faculty with opportunities for on-going engagement with local expert labor.

Keywords: Design/Build, Pedagogy, Materials and Construction, Structures

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South Dakota State University
Department of Architecture (Dakota)

During the third year of the project, two sets of heroes led the design and construction of this concrete beam. The heroes were supported by a team of experts and a dedicated group of students who worked together to bring this project to life.

The beam is a gallery that is part of the park's infrastructure, designed to provide a unique experience for visitors. It is a structure that is both functional and visually striking, serving as a focal point for the park.

The beam is supported by a series of pilings, which are embedded in the concrete to provide stability. The design incorporates elements of both aesthetics and functionality, resulting in a structure that is both visually appealing and structurally sound.

The design of the beam was influenced by the natural landscape of the park, with its rolling hills and open spaces. The form of the beam was inspired by the patterns found in nature, creating a sense of harmony between the built environment and the surrounding environment.

The project was completed in collaboration with the local community and industry partners, ensuring a seamless integration of the beam into the park's existing infrastructure.

The beam is a testament to the power of collaboration and the importance of bringing together diverse groups to achieve a common goal. It is a symbol of the creativity and ingenuity that can be harnessed to create something truly unique and inspiring.