6-2019

Design/Lift: An Extra Concrete Beam in a Park

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

Follow this and additional works at: https://scholarworks.umass.edu/btes

Part of the Architectural Technology Commons, Construction Engineering and Management Commons, Engineering Education Commons, and the Structural Engineering Commons

Design/Lift: An Extra Concrete Beam in a Park

ⓘD Federico Garcia Lammers

South Dakota State University, Department of Architecture (DoArch)
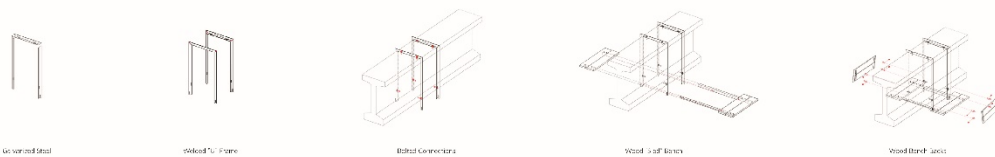
Abstract

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

Acknowledgements

Design/Lift
An Extra Concrete Beam in a Park

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

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 was imagined for this site, but made for it. It is a lost or extra piece of material produced by the precast concrete industry. 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 across the state.

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.