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Design/Lift: An Extra Concrete Beam in a Park

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Design/Lift: An Extra Concrete Beam in a Park

 Federico Garcia Lammers

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Abstract

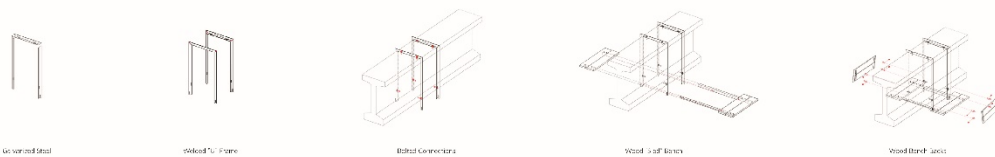
According to the Department of Transportation, a commercial truck can drive at a maximum speed of sixty miles per-hour while carrying a sixty-foot-long precast concrete beam on a state highway. The beam in question is headed to a town of 1,800 people to be installed as part of a student-driven, faculty 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 was financially supported by a national grant from the Precast Concrete Institute in collaboration with Gage Brothers Concrete. Industry Collaborators: Clark Engineering, Pro-growth Construction, Northeast Excavation, B&B Contracting, and Soil Technologies. Community Collaborators: Webster School Board and Webster Area Development Corporation. Student Team: Ethan Millar (Graduate Teaching Assistant), John Angulu, Cody Blevins, Ji Cao, Guillermo Gonzalez Cebrian, Aspen Greene, Nicholas Kummer, Ted LaCoursiere, Megan Leebens, Jared Mulder, Cassie Pospishil, Jacob Ricke, Sharon Sanchez Ordonez, Kaitlyn Walker, and Megan Welbig.



Design/Lift

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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.

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