Spring 2019 Course Description
ARCH 573 Graduate Design Studio

THE SEED BANK AT CAHOKIA MOUNDS: ARCHITECTURE OF THE LAND & SUN

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ARCH 573 Course Catalog Description
Design studio investigations of buildings and systems focusing on structure, enclosure, technology and performance. Integration of building materials, components and systems and their impact on the design, construction, and sustainability of buildings. 6 credit hours. Prerequisite: Graduate standing in Architecture.

Studio Challenge
In this studio, students will be challenged to design architecture that engages with the land and the sun in pursuit of a high-performance building for botanical research. We will study different strategies for integrating a building with its landscape and for designing with the sun to maximize daylighting and reduce energy consumption. In addition to these quantitative performance criteria, we will study how engagement with landscape and sunlight can enhance the qualitative experience of architecture and lead to new, innovative design approaches. The project will also be informed by the study of a unique site with historical importance: Cahokia Mounds.

Project Site: Cahokia Mounds
Approximately 1,000 years ago, near the Mississippi River in what is now southern Illinois, the Native American metropolis known as Cahokia was a thriving center of commerce, politics, religion, and art. At the time, the city covered more than six square miles, with a population larger than London’s. It included a central plaza, residential neighborhoods, and more than 100 massive earth mounds – pyramid-like ceremonial structures built from compacted soil, the largest of which was as tall as a ten-story building. Archaeologists believe that the city of Cahokia was laid out according to a “celestial blueprint” based on the path of the sun. Today, at the Cahokia Mounds Historic Site, all that remains of the great city are about 70 of the earth mounds along with a recreation of “Woodhenge,” a large ring of cedar posts used as a solar calendar to mark the summer and winter solstices (similar to Stonehenge). Cahokia Mounds is now a National Historic Landmark and a UNESCO World Heritage Site. Taking inspiration from what we learn about the design of ancient Cahokia, students will be challenged to develop a project that engages earth (landscape) and sky (sun) in ways meaningful for the 21st century.

Studio Project & Process
Following initial research on site, climate, and precedents, students will complete one semester-long design project: The Seed Bank & Research Center at Cahokia Mounds, located in southern Illinois.

The Seed Bank & Research Center will provide facilities for long-term storage and study of seeds, for both agricultural research and preservation of indigenous plant species and biodiversity. It will also include laboratory and office spaces for researchers, as well as spaces for public engagement, including an exhibition gallery and auditorium.

The studio will emphasize mastery of technical principles in combination with more intangible qualities such as spatial experience and the creation of unique architectural character, while also integrating comprehensive design principles of accessibility and sustainability. Projects will be developed and presented in multiple media: detailed plans and sections, digital 3D modeling, physical models at a range of scales, and diagrams and details of structure and enclosure systems. In order to enable a high level of depth and detail and to develop collaboration skills, students will work on this project in teams of two. Throughout the process, students will work with a range of design tools, including software such as Sefaira for energy analysis and Rhino/Grasshopper/DIVA for solar studies. A studio field trip to the Cahokia Mounds Historic Site (near St. Louis) is planned during the first month of the semester.

More information will be provided at the Studio Topic presentations on January 14, 2019.