**COURSE / PROJECT DESCRIPTION:**

*Concrete Workshop: Parametric Precast* is a two semester research based project focused on developing next generation precast concrete buildings and construction systems. The fall workshop will serve as a technical preparatory course for a R+D Studio in the spring that will be focused on developing adaptable buildings that can change based on shifting urban patterns using precast technology. Students that are interested in taking the spring studio are highly encouraged to enroll in the workshop as it will provide the technical basis for the design exercise in the spring.

Working in groups, the students in the course will develop state-of-the-art variable precast wall systems and will work with US Formliner and Gate Precast to cast full scale prototypes to be installed in the School of Architecture. The workshop will focus on issues of Aesthetics (pattern and composition), Performance (thermal and structural), Process (from forming to erection), Material (cement based steel reinforced structures), and Economics (efficiencies of material and construction). The course will engage the Digital Fabrication Lab where students will be expected to push the limits of computational design and digital fabrication within the context of precast concrete design and construction.

Students will learn advanced geometry, parametric modeling, and CNC fabrication in the first part of the workshop in order to advance their research and design projects in precast. Fundamentals of reinforced concrete design, connection design, formwork design, casting / finishing procedures, and erection process will be covered in the workshop. At the same time students will be asked to speculate on new and novel methods of designing and building in precast concrete.

**FIELD TRIPS:**

The workshop will organize field trips to two precast plants (one in Atlanta and one in Nashville) and one formliner plant (Athens, Ga).

**DELIVERABLES:**

The final deliverable will be the design, documentation and full scale prototype of a precast concrete cladding panel, designed and produced in groups.

**PROJECT SPONSORS:**

The project is sponsored by the Precast Concrete Institute (PCI) and multiple precast industry partners in the Southeast.