Concrete is one of the most widely used construction materials in the world, and Portland Cement is the most commonly used cement in the industry. Manufacturing materials are dependent on research and industry specification standards. This report focuses on current innovations in concrete developments, with a specific emphasis on Aluminosilicate or ‘geopolymer’ cements and their possible implications on architecture in the United States.

Aluminosilicate cements are currently being researched worldwide and have been implemented in a couple of countries as a replacement for portland cement. It’s one of many sustainable cement solutions, but unlike others, provides enhanced characteristics while remaining in the same price range as ordinary portland cement mixtures. This technology uses no limestone or water thus eliminating the need for high amounts of energy use in the production of its initial ingredients.

Introducing new construction materials is challenging, especially to a well established concrete industry such as that of the United States. Precast concrete offers an ideal medium for new concrete materials and their introduction into common practice. More
sustainable and durable materials are becoming available, changing construction processes and have the possibility to affect the further evolution of architectural design. This report articulates these advancements and the importance of architectural involvement within the United States construction industry.