

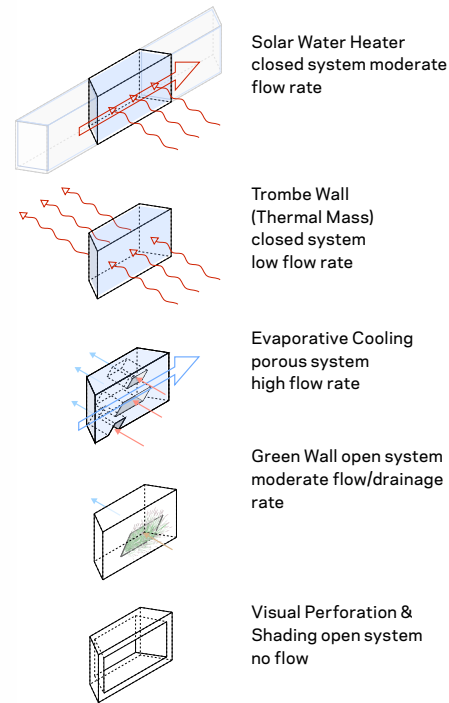
Slip Screen: Ceramic componentry as intelligent material skin

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Slip Screen is a component-based skin system designed to integrate historic glazed terra-cotta tile façade systems of the late 1800's with parametric performance-based, digitally fabricated slip-cast modules. While the historic ornamental tiles have become extinct due to their singular aesthetic function, the Slip Screen modules capitalize on the volumetric nature of slip-cast modules, creating a thickened membrane that regulates the environment. The various functions (evaporative cooling, trombe wall, gray water filtration, and more) of this skin inform its ornamental qualities.

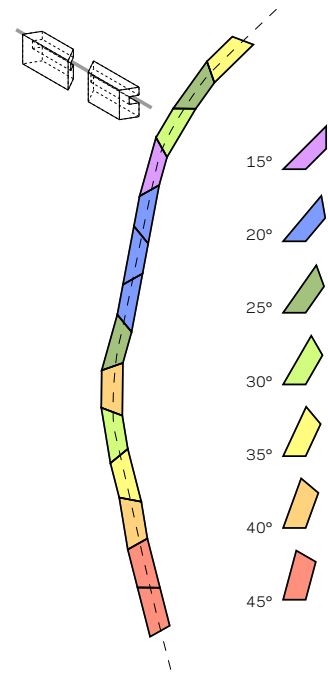


Intelligent Ceramic Componentry



Parametric Corbelling

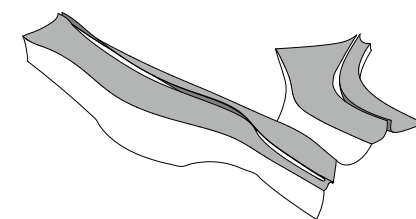
Rather than complex tiling, the population of modules across complex surfaces follows the tectonic language of masonry-like coursing/stacking. A set of seven base modules defined solely by the geometry of their interface allows modules to follow any two-dimensional curve. Modules therefore maintain tight geometric connections laterally to their neighbors while each course accommodates loose connections to its neighboring courses above and below.



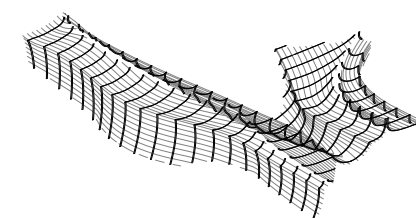
Massing Logic

Similar to historical terra-cotta tile systems, Slip Screen operates as a non-structural membrane that, together with a steel connective system, is "draped" over a more massive concrete structure.

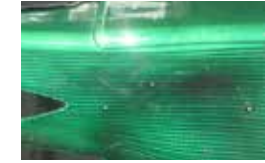
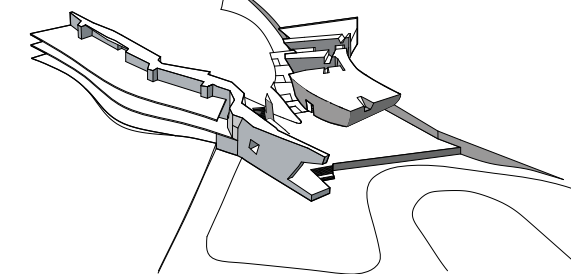
Slip Screen Ceramic Skin



Steel Secondary Structure



Concrete Massing



Module Population
Based on the necessities of each module performance type (sun for trombe wall, shade for evaporative cooling, etc.), modules are distributed across the "draped" surface according to the micro-climates created by the larger geometry of the massing envelope.



Module Design
The evaporative cooling module is designed to organize the transfer of heat energy between the two fluid systems of air and water. As water cascades diagonally through the modules, it saturates the porous clay body, evaporating and cooling air as it passes through the apertures.



Module Fabrication
The production of the modules hybridizes the repetitive efficiencies of mold/cast systems with the non-standard production made possible by CAD/CAM technology. Plaster molds halves are directly milled by a three-axis router. While one half is responsible for the geometry of connections to structure and neighboring modules, the other mold half embeds the performance aspects creating a component set.

