

The University of Maryland's 2017 entry, ReACT, is designed around a modular kit of parts where systems are controlled through smart automation. ReACT, which stands for resilient Adaptive Climate Technology - creates a new paradigm for sustainable design, a single family home that will work in partnership with Nature to not only enhance ecosystem quality but, to regenerate it, rather than merely degrading it more slowly.

Designed to be deployed as a kit of parts, ReACT is composed of five modules oriented around a glazed courtyard. The courtyard is employed to bring daylight and a sense of spaciousness to the interior, while operating as a solar collector, preheating air and water. ReACT boasts a panelized interior with living systems fully separated from structure allowing the home to easily adapt to its occupants changing needs.

React incorporates both new and existing green technologies to integrate the carbon and ecological cycle while aiming to lower the overall footprint of the house. This maximizes stability and creates a means of sustenance for the homeowners. A virtual house was created to run simulations to predict the performance and behavior of the design.

ReACT is exploring integrated technologies for reaching 'net-zero' water at a residential scale, recycling both rainwater and greywater for potable and non-potable uses."

ReACT combines state of the art PV and Li-ion battery systems to optimize energy balance with the local electric grid. We are using model-based predictive controls to manage resources for different weather scenarios.

Our target market is represented by a young Nanticoke Indian couple starting a family in Denver, CO. We found inspiration in a well defined market whose members are deeply tied to nature, whose values are ecologically grounded, and whose culture reveres Mother Earth.

Music: End of Summer by the 126ers (Copywrite Free YouTube Audio Library)

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