



Ball State University Muncie, IN **Student Individual**



Common/Living Spaces Southern Exposure



BEAUTIFUL BOX

Using innovative and well designed wall cavities, high efficiency glazing, and a well insulated envelope, this home strives for a high energy efficiency to reduce the energy load and diminish utility bills. The simplistic design and rectangular shape allows for optimum efficiency and for simple roof pitches and elements to assist in blending into the community while still making a prominent statement. Burrowing the structure into the sloping landscape insulates the home and requires concrete walls on the main level. Wood construction and a double stud wall system is used on the upper level and the remaining walls of the home. Large fenestrations are used to bring in heat from the sun during the winter which is absorbed by the concrete floor that stores the heat and releases it at night. An operable louvre system is used to shade the interior from direct solar radiation during the summer months. This system allows the home owner to adjust each individual louvre system for the desired amount of light and heat needed in the different spaces. Living spaces are organized in a fashion that has the most used spaces to the south and the lesser used spaces to the north. In addition, spaces that have uses which assists in producing heat are placed in the cooler zones of the home. All plumbing and HVAC ducts are kept within the interior confines of the envelope to allow for maximum efficiency. The overall combination of layout, technological systems, and a thick, efficient wall system combine to produce a home that works as an efficient machine to provide optimum performance.

HAMMER & HAND







Context



Terrain Carving









DEFFOR RUSEDESIGN COMPETITION



The Louvre system blocks direct solar radiation during the warm summer months and day time. This blocks excess heat from entering the home while still allowing views outside.



The Louvre system opens during the winter months or when needed to allow direct solar radiation and passive heating. The heat is then stored in the concrete floor and released at night.



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HAMMER & HAND