

# Architect makes bricks using cattle blood

October 26 2012, by Bob Yirka

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Credit: Wikipedia

(Phys.org)—A recent graduate from the University of Westminster in London, architect Jack Munro has developed a process that uses cattle blood as a binding ingredient in making bricks for use in building construction.

A single cow produces up to eight gallons of blood at slaughter (which is

typically thrown away), and blood naturally coagulates. Given these facts, Munro, while still a student, conceived the idea of using this blood to facilitate the formation and solidification of bricks. He began testing various mixtures, and eventually landed on the current formula—blood, an antibacterial agent, an anticoagulant, sand, and water. The result is a crimson brick that is strong enough to be used as a [building material](#). It's waterproof, too, which means it could be used in resource-scarce places such as parts of the Middle East that currently rely on mud bricks for constructing homes and other buildings.

For his thesis, Munro described how a brick-making operation might work in the community of Siwa, Egypt. He selected that community because it is typical of those that have been adversely impacted by changes in the Saharan desert—where the arid desert conditions are encroaching on previously arable lands. His idea entails creating a manufacturing building by laying a blood-glue mixture over a sand dune. The dune is then allowed to blow away, leaving a hollow shelter behind. In that shelter, the bricks would be made by mixing the anticoagulant EDTA with a quantity of blood to slow thickening. That would be followed by a dose of sodium azide to stop fungal and bacterial growth, and then the addition of sand and water. The final mixture is stirred and then poured into a form, and baked at 70° C for an hour. The result is a brick suitable for use in erecting simple buildings.

Munro concedes that the bricks are not nearly as strong as traditional bricks made using clay, but suggests they are at least as strong as the mud bricks currently in use. The advantage that bricks made from cattle blood have over mud-based [bricks](#) is they require far less water—a definite plus in water-deprived parts of the world.

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