In their article, “The Internet of People for a Post-Oil World,” Christian Nold and Rob van Kranenburg discuss how societies across the globe will be forced to reinvent themselves after our oil resources reach their inevitable, gradual depletion. They argue that without affordable fossil fuels, products and services will be much less globally accessible. Construction machinery will likely shrink drastically in size, materials manufacturing will simplify, and economies and cultures will become conveniently (and perhaps hauntingly) nostalgic and localized. Although these changes appear radical and alarming, they hold an exciting and opportunistic future just waiting to be grappled with by us, the next generation of designers. In order to take hold of these opportunities, we must rebrand ourselves as more than craftsmen, or tool-wielders, but as tool-makers. Designers must become versatile “urban blacksmiths,” providing methods, systems, and technologies to the people, empowering them to make meaningful, contextual, and invested change for themselves. “A space can only be made into a place by its occupants. The best that a designer can do is put the tools into their hands.” - “Re-place-ing Space” by Steve Harrison and Paul Dourish. When and how then do these bold ideas hit the ground in the form of applicable tools today?

About a year ago, a graduate student in a landscape construction class presented some brief information on one such tool: rammed earth. Since that time, we have been pondering its sparse existence in the Midwest. Rammed earth walls are essentially a modernized version of one of the world’s earliest construction methods: compressed soil or adobe. They are weather, insect, and fire resistant, often utilize local materials, require very little water and fossil fuels to construct, and are aesthetically timeless. Although the involved construction process yields high labor costs, it is generally offset by low material cost. And yet, due to low awareness and therefore low demand, rammed earth has remained absent in the Midwest. If awareness and demand are created, we believe rammed earth could have profound impacts on the sustainable practices we use in building our future.

During initial research, the team studied existing companies such as SIREWALL (rammed earth walls) and DWELLEARTH (rammed earth blocks). The latter company is based in Texas and is fairly young. The former company is based in Vancouver, Canada and is considered the global leader inrammed earth technology. Early this spring, the team contacted the owner of SIREWALL Scholarship fund and others, these three improvements to the technology system will allow rammed earth construction to claim a permanent and pervasive presence in sustainable building practices in the Midwest. However, it is apparent to us that for rammed earth to be successful, we must first gradually educate the public about its application. Rammed earth must start small, at a scale much less than that of a building.

After returning from a trip to tour some of SIREWALL’s built works and participate in their week-long rammed earth training course, two to three weeks will be spent testing rammed earth systems on our native Iowan soil types. The tests will work to simplify SIREWALL’s systems and will be applied to three built units: the brick paver, the building block, and the bench. These units will be constructed experimentally with a variety of soil mixtures and compression methods. Conclusions will be compiled into a final packet documenting the entire process and informing potential business endeavors following the experimentation.

http://www.reclamationadministration.com/category/in-regards-to-leed/

and discussed the history of rammed earth and the its potential in the midwestern United States. Although this company is highly successful, it is apparent that their product is too complex, too expensive, and too broadly sourced to effect pervasive change across cultures and socio-economic sectors, particularly in the Midwest. In order to beget this change, we are developing a business plan for a company that will be devoted to the research and development of a more affordable, simple, and truly local rammed earth technology system. With financial assistance from the Barbara King

https://watershedmaterials.com
Pending the potential award of a residency with CyStarters, Iowa State’s post graduate business incubator program, one or both members of the team will be spending the summer months following graduation continuing to research, test, and market rammed earth technologies in the Midwest. If the outcomes are promising, the team plans to further develop the product and advocate for its use in built projects throughout the Midwest, creating awareness and eventually demand for rammed earth in the form of units, walls, and potentially even boutique retail products such as indoor furniture or kitchenware.

We believe rammed earth technologies has the potential to fit the bill for a future marked by truly local economies and affordable and simple technologies. With the help of the Barbara King Scholarship, we can begin to apply rammed earth systems to the Midwest and see its potential realized. Thank you!

**Budget**

**SIREWALL course fee for two** $2,000

**Roundtrip airfare from Des Moines, Iowa to Seattle, Washington for two** $1,000

Rental car in Washington ($60/day)
9 days x $60 = $540

Approx. daily parking ($25/day)
9 days x $25 = $225

Food for two ($50/day)
11 days x 50 = $550

Camping fee ($30/night)
10 nights x $30 = $300

Tamper rental (per week) $300

Formwork and supplies $400

Soil materials $200

**Grand Total:** $5,515

**Schedule**

**March 22 - May 6**
Continue research on Rammed Earth.

**May 17 - 21**
Travel to Washington state
Take SIREWALL course.

**May 22 - 27**
Tour SIREWALL work in Washington state and Southwest Canada.

**May 28 - June 15**
Return to Ames. Develop and test brick, block, and bench units.

**June 16 - July 1**
Compile a packet documenting successes, failures, constraints, and opportunities.