re power `em

REST in Urban Agriculture & S.E.E.C. Home
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http://www.kimgerly.com/projects/urbanAg+SEEK.pdf
The problems:

- Resource scarcity e.g. energy, potable & drinkable water
- Access to jobs
- Access to affordable housing
- Access to nutritious, fresh produce
the solution

A holistic solution incorporating renewable energy systems technology [REST] engineering and sustainable development that addresses:

- Resource scarcity
- Jobs access
- Affordable housing access
- Nutritious, fresh produce access
Area: ~0.583 acre
Owner: City of Oakland
Current Tenants: Western Service Workers Association (WSWA)
the solution

Tumbleweed House - Mica
Length: 20'
Square Feet: 172
An agile, adaptable mobile home/shelter that is S.E.E.C.:

NB: S.E.E.C. pronounced 'seek'

- (S)ustainable
- (E)nergy (E)fficient
- (C)omfortable

...because space is the final frontier—at least it is in the SF Bay Area.
the solution (net zero)

Energy Efficient (E.E.) & Conservation (C.)

- Thin film rooftop (PV) + awning + façade + ...
- Two-person capacity
- 20' (length) x 8'6" (deep) x 13'6" (high)
- Sustainable (S.) building envelope [E.E. building materials, lighting (LED, daylighting), passive heating/cooling, solar thermal]
- Manage waste stream (compostable toilet, food compost -> repurpose CH₄ gas for stove)
- Energy storage (Mobi Battery)
- Comfort & Conservation on wheels
the solution

raised 4' x 4' garden bed
benefits

↑ Economic viability & empowerment
↑ Job opportunities
↑ Healthy communities
↑ Healthy, nutritious, fresh food access
↑ Resilience

↓ Homelessnesses
↓ Dependency on social services agencies
↓ GHG emissions e.g. locally grown produce
the proposition

- Pilot project
- ~0.25 acre for garden produce w/raised beds if soil toxicology unfavorable
- ~0.1 acre for compost, chickens, goats
- ~0.25 acre for Tumbleweed Houses w/compostable toilets
- Atmospheric water generation for drip irrigation
Pilot project REST offerings:

• Produce compost for biowaste management
• Biofuel/gas generation from waste stream using anaerobic digestion (AD)
• PV and solar thermal for electricity and hot water
• Condensing $\text{H}_2\text{O}$ vapor in the air for water management (IP)
  • No ground water drilling
  • No surface water pumping
Issues addressed

• Resource (water) scarcity, energy access, waste & resource management
  • Use REST to extract water vapor from the air for drip irrigation
  • Use REST for solar (PV, thermal), anaerobic digestion (AD)
  • Compostable toilets
• Improve skills set to obtain more job access
  • Transferrable skills gained by raising food locally
• Affordable housing access
  • Tumbleweed Houses for shelter to manage urban farm plots
• Nutritious, fresh food access
  • Urban Adamah repurposed materials, raised garden, moveable beds model to grow food in W. Oakland
We need to put waste to work to better manage scarcity.

We need to S.E.E.C. out everyday brilliance for disaster resilience.