Note from author:
This project is designed to be Ukrainian owned and operated, eventually a business industry with global potential.

The author’s work should change to roles such as:
• consultant/advisor
• instructor
• quality control supervisor
• liaison/spokesperson to the international English-speaking community.

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Last updated: 4/19/2023
## Prototype Heating System Designs

To Be Developed for both Military and Civilian Uses

Prototype to be built in Kharkiv by mid February

### Criteria:
- Portability
- Quick & simple construction

<table>
<thead>
<tr>
<th>Sample</th>
<th>Materials</th>
<th>Pros &amp; Cons</th>
<th>Build Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pocket Rocket</td>
<td>5-gallon metal bucket with lid</td>
<td>Portable</td>
<td>30 minutes</td>
</tr>
<tr>
<td></td>
<td>Stove or similar pipe - diameter to fit</td>
<td>Can be constructed in freezing temperatures</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 to 4 ratio length</td>
<td>Fastest deployment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mud or clay</td>
<td>One simple tool (tin snips, tire iron...)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bad designs can cause failures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produces some smoke</td>
<td></td>
</tr>
<tr>
<td>Cube Rocket Movable Heat</td>
<td>Recycled ammunition holder Metal sheeting, hardware, appliance parts Exhaust extension pipes Heat Resistant adhesive Glass fiber rope Bolts, nuts, washers, corner brackets</td>
<td>No welding</td>
<td>A few hours</td>
</tr>
<tr>
<td>Rumford</td>
<td>Shovel, digging tool</td>
<td>Recycles the many army ammunition holders and general metal &amp; appliance rubble in frontlines</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can be dug into wall metal sheeting or Raw stone or cob/clay for better burn surface</td>
<td>lots of Improvising possibilities for tools, materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check out some great comments below video</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thermal adhesive likely needs to be purchased</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some may not be applied in freezing temperatures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some workshop tools needed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produces some smoke</td>
<td></td>
</tr>
</tbody>
</table>

[Awaiting video from consultants Ernie & Erica Wisner](https://www.youtube.com/watch?v=cBF2M13s_0E)


[ awaiting video from consultants Ernie & Erica Wisner](https://www.youtube.com/watch?v=vmdr-gAfZT0)

[Professional version: https://www.youtube.com/watch?v=zu4gWITEInY&t=135s](https://www.youtube.com/watch?v=zu4gWITEInY&t=135s)
Frontline Research & Development (R&D) Laboratory/Training Center/Showroom for Heating Systems

Rocket Heating Technology and Rumford Systems for Heating, Cooking, and Drying applications to meet the urgent needs of both military & civilians near the frontlines and liberated areas.

At the request of the Ukrainian army -- and with consulting help from one of the world’s leading experts on fire science and Rocket heating technology, Ernie Wisner -- we are currently adapting this technology and Rumford systems especially for trench warfare.

In early February, operations moved to Kharkiv where a small prototype test site was established. The first prototypes have been developed and will now be written up with instructions for Do-It-Yourself (DIY) construction.

These will soon be available on the website: RoadmapToLife.org and our social media platform.

At that point, we will take the tech to the troops and civilians in greatest need of heat along the eastern front. Simultaneously, we train civilians who can share these life-saving techniques locally to develop needed systems for their own use.
3. Rocket Heat System (outdoor test model)

Build time: <1 hour for test burn model

Materials:
60 bricks – firebrick throughout unless short test burns
Fireproof base at least .5 meters beyond build perimeter
Outdoor use only. Exhaust ducting needed for indoors

Usage:
Self-stoking rocket design using small, burnable items (for firewood, use twigs, NOT big logs)

Comments:
- Use twigs, thin pieces of wood, NOT big firewood logs.
- Can be adapted many different ways for cooking, oven baking, water/sauna/hotub//greenhouse/drying uses and more.
- Meant for permanent installations.
- Add cob bench for thermal battery to store heat 1-4 days AFTER fire goes out. Can weigh several tons!
- With a cob bench this becomes a massive, permanent heat source and furniture in a house, work room, capable of heating a tiny house or large room.
- NEEDED: LOGISTICS PERSON familiar with how & where to secure salvaged/empty containers and other items as well as permission to work on missile debris sites. Metal barrels/other suitable tubing for heat riser. VERY DIFFICULT TO FIND METAL BARRELS/BUCKETS/TANKS.
- NEEDED: TRANSPORTATION for delivering materials to site while working in Kharkiv City. This problem resolved when we can start building centers on location of debris fields.
Infographics, like those shown here, are clickable links to websites, YouTube videos, and PDFs for details on best of the web, Do-It-Yourself (DIY) projects, most using recycled materials readily available in war-torn areas. A few in Ukrainian or Russian. Other social media platforms being developed as time permits. For rapid dissemination, flyers and digital connections will be shared with NGOs, government and military traveling to areas in need.

RoadMapToLife.org

A compendium of off-grid survival skills and technologies to build resilience for both civilians and defenders. Designed to aid Ukraine, these skills have global applications to safeguard people everywhere.
Innovation: from survival to rebuilding better for the future

*Beyond Rocket Heating Systems:*
Independence from the Public Grid
Tiny Homes, Sustainability, Permaculture,
Eco-Friendly Business Potential
In Liberated Communities

- Recycle destruction in war-torn areas
- Warm homes/centers with Rocket Mass Heating Systems
- Speed up recovery: recycle-builds, DIY projects for all
- Build new businesses: jobs & local economy growth
- Grow green industries = EU compliant & grant potential
- Reduce or eliminate reliance on massive infrastructure

It Takes a Village – Mighty Hubs of Tiny Homes

- Permanent - not temporary solutions
- Minimalism encouraged & taught in community
- Off-the-grid power, sewer, water, winter heat
- Permaculture methods for food, self-sufficiency
- Income source: convert easily to Airbnbs, rentals
- Recycled materials as primary building materials
- Recycling industry to boost the local economy

At the heart of the vision

It Takes a Village – Mighty Hubs of Tiny Homes

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- Permaculture methods for food, self-sufficiency
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The Heart of a Resilient Village Center Starts with Heat

Developing a sense of community, watching out for the needs of all, is essential. This center--for all villagers and guests to visit and use--may contain dining, meeting, business incubator spaces as desired. Several RMH systems may be included in a large structure for cooking, drying, sleeping or sitting. A central hub similar to or combined with Invincibility Centers will be designed to bring off-grid warmth and functionality.

Serving as a Thermal Battery the cob bench can store heat for several days, radiating it out slowly, AFTER THE FIRE GOES OUT! These are examples of the many styles that RMH systems could be molded into very easily.
A “village within a village” or urban community

Sample Resilient Village Layout

Debris Field
Sorted material
Outdoor construction, demo, & training

Common Area Potential Uses:
- recreation
- playground
- campground
- pet area
- outdoor large kitchen
- public bathrooms

Street Entrance

Village Center

Village Center Potential Uses:
- first housing
- administrative office
- construction warehouse
- training center
- business incubator
- storefront for businesses
- visitor center
- guest lodging
- computer center
- conference/classrooms
- theater
- logistical supplies
- security/emergency response
- communications center
- sustainability innovation lab
- emergency shelter

Needed: A location close to a rubble field with resilient residents nearby willing to help and learn survival skills

Initial site: from damaged large building to small farm with room to expand

First work starts near debris field. Eventually, a village center building (new or repaired) is hub for Research & Development (R&D) Center to include whatever other services the village wants to add over time. New tiny homes or renovated housing creates resilient community of villagers working for common good. Eventually the Village could have multiple community centers serving different purposes. Most of these would be for income-generating businesses to make the village financially self-sustaining.
Inspiration for Concept: A Successful Village for the Homeless in America

https://mlf.org/
https://www.youtube.com/watch?v=Ife7WbkJYM
Off-Grid Electricity
Researching and Developing Innovations
- Permaculture energy storage
- DIY battery systems
- passive solar
- Wind power
- Water wheel
- micro-hydro systems
- Earth Battery P-MFC
- Micro-CHP

Direct partnering with permaculture experts around the globe.

Urban Infrastructure INDEPENDENCE!
Training and experimenting in:
- Off-the-grid living
- Permaculture & sustainability
- minimalist lifestyle

Our First Priority: Winter Heat
Work is currently underway to implement this personalized, off-grid solution in a liberated small town without power.
Developed material is now being circulated and is available on our website: RoadMaptoLife.org
Spread the word!

Possibilities for Self-Reliant Sustainability

Off-Grid Septic Systems
https://yourwebsite.com/sepachoice... 
https://off grid home guide to offset systems/

Compost Toilet Designs

Glass-less Windows for Winter Warmth

Water Harvesting and Purification Systems

Information Material on Off-Grid Heating
Now Available in English & Ukrainian

Off-Grid Heating & Cooking
for homeowners or military on the move

Rubble Wanted!

Rocket Mass Heating (RMH) Systems

Costs:

Some Online Resources

- 23% less wood consumption (clothing and wood stove)
- The homeowner enjoys the benefits of:
  - independent, home power grid
  - resource from secondary fuel
  - ability to meet your needs
  - autonomous
  - easy to build

We Are in Europe!

Rocket Mass Stove Heater

Make Your Home A Cozy and Clean Affair!
Simply Make Your Own Electricity

Generating & Storing Electricity with Simple, Rugged, Readily-Available Material
NRGcycle.com
https://www.youtube.com/watch?v=2tflMaWtLpE

Apr 2, 2014
A way to build your own wind turbine for generating electricity using a bicycle wheel simply and with easily available parts. more... http://NRGcycle.com/ (plans) Have fun reinventing the wheel.

Samples of Other Off-Grid Technologies for future R&D as needs dictate

Tiny Homes for Free from Rubble
For safe interim housing with potential for contractor or tourism housing in the future using platforms like Airbnb.

Sanitation Technologies in Emergencies

“Together with the Global WASH Cluster partners and under the leadership of German WASH Network, Eawag and the Sustainable Sanitation Alliance, the creation of this publication has been an amazing collaborative effort with contributions from a multitude of international sector experts and organisations – striving to present the whole spectrum of sanitation technologies and systems, being as unbiased to single technical solutions as possible.”

Sample pages:
Resilience Begins with Each Citizen
Partnering & Communications:
Critical at All Levels, at All Times
Who Builds Community Resilience?
EVERYONE!

Pillars on a Strong Foundation
Examples from America’s Civilian Volunteer Force

- Situational awareness + continual vigilance: Detect changes & adapt before problems develop
- Community over individuality: Personal responsibility + cooperative effort, no one left behind
- Communication is key: Communication ↔ Communication All emergency responders interrelated
- Examples from America: CERT, CitizenCorps, VOAD, United Way, NGOs/CSOs at all levels of society

Emergencies, disasters, large events in America come under the Incident Command System (ICS) All major responder agencies know & work within this flexible structure. Much of this training is FREE online! Potential to access trainers, build networks.

Beyond war: To respond to natural as well as man-made disasters Ukraine needs a flexible framework for civilian response that meshes at all levels:
- Civilians - often first on the scene
- Local, regional, state government
- CSOs and community entities

Civilian Pillars for Disaster Response:

Country | Community | Citizenry
--- | --- | ---
Responsive Government + Community Resilience + Pro-Active Citizens
National VOAD is a coalition of 70+ national organizations (faith-based, community-based and other NGOs) plus 56 State/Territory VOADs, which represent Local/Regional VOADs and hundreds of other organizations throughout the country.

211 is a 24/7 phone number - a lifeline to anyone with personal needs. Operated by America’s umbrella for all major nonprofits, 211 tracks most services available to people in need locally.

TR - begun by military veterans to use their skills to heal, not fight:

In partnership with the US federal government. FEMA website: The Community Emergency Response Team (CERT) program educates volunteers about disaster preparedness for the hazards that may occur where they live. CERT trains volunteers in basic disaster response skills, such as:
- Fire safety
- Light search and rescue
- Team organization
- Disaster medical operations

Examples from Volunteerism In America and around the World

A small sample of the many nonprofits active in all areas of disaster response

The author worked with most of these featured.

Aga Khan Development Network

An avalanche occurred recently in Zingerya, a remote village in the Badakhshan province. In response, the Aga Khan Agency for Habitat has trained over 702 Community Emergency Response Teams and 187 Avalanche Preparedness Teams comprising over 18,000 volunteers in order to encourage villagers to be self-reliant and prepared.
Resilient Villages

Project Expansion Needs
Needs for Project Expansion

Personnel & Translation

• It's important to work with the villagers as much as possible. However, a translator who could ideally serve in other roles to understand the project better will likely be needed at various times. Key roles that would also be useful: videographer, operations manager, logistics specialist, frontline driver with vehicle.

• Translator/IT specialist for website development, media platform, dissemination of information. These translations are critical early in the project to spread the information around the nation quickly.

Funding

There are no funds to pay salaries. While we currently have a small volunteer team with money to purchase prototypes and supplies for initial work, the workers required as the project grows beyond the current work must be addressed as soon as possible. Also, the work listed above will likely not be volunteer efforts or donations. A source of income for taking the project to the next level.

Business Development

Investors are needed to expand the scope of this project, especially to develop the Resilient Village concept for the rebuilding of the nation and EU compliance for the foreseeable future. As we complete the prototype phase by mid February, business personnel (administrative, financial, etc.) will be needed to expand operations. The extent of the army’s role at this point is unknown.
Principle *Pro Bono* Developers
Ukraine: Leslie L Wilson
American Consultants: Ernie & Erica Wisner
Ernie and Erica Wisner are a couple from Tonasket, Washington, United States, best known for their innovative rocket mass heater designs. They are often referred to as the worldwide leaders and trainers in rocket stove technology. They have made over 700 rocket stoves all over the world.

Ernie and Erica now spend their time touring the world teaching workshops on how to build these energy-efficient, natural heaters. They are also working to design and build a stove that will get an Underwriters Laboratory (UL (safety organization)) listing, which would eliminate insurance issues.

The Wisners helped write the building code for Portland.

Ernie has also given permission for a Ukrainian version of their highly respected handbook The Rocket Mass Heater Builder's Guide to be translated into Ukrainian, adapting this innovative technology even more for the current global needs.

Ernie, along with his wife Erica, are providing personal consultation pro bono to insure the success of the RMH systems and related innovative, off-grid technologies being developed for the citizens and military of Ukraine. A US army veteran with combat experience in trench warefare, Ernie is adapting designs especially for use in the current combat situations as we work with the Ukrainian army to provide warmth and safety in dugouts and trenches along the frontlines.

The Wisners have written two books, The Art of Fire and The Rocket Mass Heater Builder's Guide. In 2017, both were instructors for an Appropriate Technology Course hosted by Paul Wheaton. The course was recorded and is available as a streaming video.
About the Author and Potential Roles

Since 2005, Leslie L Wilson’s careers, passion, and volunteer work have centered around emergency management, vulnerable population assistance, disaster response and recovery. Nearly 10,000 hours of field work began with the American Red Cross, soon becoming Disaster Response Coordinator in the Washington DC region. Later she deployed for months at a time, with 12- to 48- hour notice, as a reservist for the Federal Emergency Management Agency (FEMA) responding to many large-scale national disasters. She’s volunteered with nearly a dozen humanitarian organizations for post-disaster household emergency needs, housing repair & rebuilds, shelter work & management, logistics, Billy Graham chaplain, and volunteer EMT with county Fire & Rescue, among other roles. For over a decade, Ms. Wilson was an unofficial spokesperson and liaison for rural interests in Tajikistan. A visionary with practical skills rooted in permaculture, forged in disaster response, and tempered by her emergency management background, Ms. Wilson’s hope is to remain in Ukraine, to help make these resilience plans a successful reality spanning the many years of recovery ahead.

Potential roles:
• Planning, quality control, construction, liaison work
• Social media platform development
• Communications:
  • Spokesperson
  • English translation editing
  • Grant proposals, crowd sourcing
  • Freelance writing: travel, lifestyle, emergency management, permaculture, current events
• Teaching /facilitating training:
  • Volunteer development/management
  • Free conversational English classes on “Resilient Village” skills at locations as they develop
  • Proponent at large for community-level emergency management, permaculture, sustainable living, recycling, home education

Leslie L. Wilson currently bases her work out of Kharkiv Oblast, traveling wherever needed throughout Ukraine.