



OPERATING ECO SYSTEM 50 (OES-50)



Standardized Infrastructure Platform for Living Hubs

The **Operating Eco System 50 (OES-50)** is the standardized, next-generation infrastructure platform for *Humanity Thru Housing* Living Hubs. OES-50 is engineered to support **stable, resilient, and self-sustaining communities** for displaced individuals and families by integrating power, water, waste management, connectivity, and security into a single deployable ecosystem.

OES-50 supports rapid deployment, long-term operation, and scalable community growth—creating safe, functional environments that enable workforce development, community stabilization, and pathways from crisis to independence.



CORE SYSTEM CAPABILITIES

Each Living Hub powered by OES-50 includes a centralized **Engineered Environment** providing:

- Renewable and backup **power generation**
- **Potable and non-potable water** storage and distribution
- **Black and grey water** collection, treatment, and reuse
- **High-speed internet and communications**
- **Integrated security and access control**
- Centralized utility management for the entire housing complex

STANDARDIZED OES-50 SPECIFICATIONS

POWER GENERATION & STORAGE (50 kW SYSTEM)

Solar Power

- **Total Solar Capacity:** 50 kW
- **Solar Panels:**
 - Runergy Hyperion 565W Bifacial Panels
 - Quantity: **93 panels**
 - Total Output: ~52.5 kW DC

Inverter System

- **Hybrid Inverter:** 50 kW
- Grid-forming, battery-ready, generator-integrated

Battery Storage

- **Lithium Battery Storage:** 50 kWh
- Scalable for expanded capacity

Backup Power



- **Diesel Generator:** 40–50 kW industrial-grade
- Automatic transfer capability for peak demand and redundancy

Electrical Infrastructure

- Ground-mounted solar structure with reinforced curb stone foundation
- Complete DC and AC cabling system
- Earthing and surge protection
- Central distribution board

WATER SYSTEMS

Potable Water Storage

- **20,000-gallon double-lined potable water bladder**
- Drinking, cooking, and hygiene use

Non-Potable Water Storage

- **20,000-gallon double-lined non-potable water bladder**
- Irrigation, cleaning, and grey water reuse applications

Fuel Storage

- **3,000-gallon military-grade fuel bladder**
- Dedicated diesel generator supply

WASTE WATER MANAGEMENT

Black Water

- **10,000-gallon double-lined black water containment system**
- Secure, environmentally compliant storage



Grey Water

- **10,000-gallon double-lined grey water containment system**
- Integrated filtration and reuse capability

Treatment System

- Industrial grey water filtration and desalination system
- Enables water reuse for irrigation and non-potable purposes

INTERNET & COMMUNICATIONS

- High-speed broadband internet service
- TV and data distribution capability
- Supports:
 - Education and training
 - Telehealth
 - Case management
 - Workforce development
 - Administrative operations

SECURITY SYSTEMS

- Camera-based surveillance network
- Controlled access and entrance monitoring
- Centralized security oversight for the Living Hub

TRANSPORT & DEPLOYMENT

- **8.5 ft x 48 ft Aluminum Gooseneck Trailer**
- Supports transport of core OES-50 components



- Designed for rapid deployment, relocation, and expansion

DESIGN INTENT

The **OES-50** is the backbone of a scalable housing ecosystem—not simply a utility system. By centralizing essential services, Living Hubs can be deployed quickly, operated efficiently, and expanded as community needs grow.

OES-50 enables:

- Disaster response and emergency housing
- Transitional and long-term supportive housing
- Workforce training and reentry programs
- Sustainable, infrastructure-independent communities