**Understanding Ebola Outbreak**

### Symptoms

- Fever
- Headache
- Vomiting
- Muscle weakness
- Abdominal pain
- Hemorrhagic Liver/Hepatomegalia
- Kidney Failure
- Other signs and symptoms

Recovery from Ebola depends on good supportive care and the patient’s immune response. The following basic interventions, when used early, can significantly improve the chances of survival.

### Risk, Exposure, Incubation, Illness, Death, Recovery

#### Risk

- Contact with sick or dead cases
- Contact with sick or dead bats
- Contact with sick or dead antelope, gorilla, chimpanzee

#### Exposure

- Transmission
- Contact with infected bodily fluids

#### Incubation

- Symptoms appear 2 to 21 days after exposure

#### Illness

- Week 1-3: Symptoms occur
- Week 4-7: Severe symptoms appear
- Week 8-12: Viral shedding decreases

#### Death

- Week 3-7: Virus appears in urine and feces

### Sustainable Design for Survival Outcome

**Early Identification**

- Good surveillance to identify supplying companies and potential products

**Contact Tracing**

- Finding everyone who has come in direct contact with a sick Ebola patient

**Treatment & Management**

- Create environments to manage patients and support communities as well as implement effective systems of care that reduce Ebola transmission

**Sustainability Implementation**

- Design systems that deliver dignity, improve health and well-being, and have the greatest potential for impact on communities they serve

#### Sustainable Strategies

- **Reflections**
- **Outbreak containment measures**
- **Reducing transmission risk**
- **Education & Outreach**
- **Effective Implementation**
- **A Maximized Process**
A Village Assembly
Sustainable Roots, Adaptive Response, Effective Treatment,

Implementation Profile
Location:

Tropical, Sub-Saharan West Africa
Source Prevention, Treatment
Identification of potential risks, self-diagnostic services, waste isolation, risk minimization, and monitoring

Occupancy:
23 staff, 150 residents
Typical: 2 Confirmed Cases

This design is an example of a small camp residential to the east.

Spatial Program

1. Natural areas are noted and designed into the landscape to establish buffer zones between low and high-risk zones.
2. Open courtyards ensure ventilation and passive cooling, providing a buffer between zones.
3. Proposed areas are subdivided into separate zones for infection control and early detection.
4. Proposed areas are subdivided into separate zones for infection control and early detection.
5. Proposed areas are subdivided into separate zones for infection control and early detection.
6. Proposed areas are subdivided into separate zones for infection control and early detection.
7. Proposed areas are subdivided into separate zones for infection control and early detection.
8. Proposed areas are subdivided into separate zones for infection control and early detection.

Circulation & Movement
Patient, Staff, Waste Management and Environmental Systems

People

Materials

A Healing Village
Unit Design Concept
Flexible Modules, Sustainable Materials, Affordable Units

‘Cargo-itecture’
The use of shipping containers as architecture provides a sustainable response through:
- Easy Transport
- Abundant Availability
- Prefabrication
- Modular Size
- Inherent Structure
- Storage Capacity
- Minimal Labor
- Relative Low Cost
- Eco-friendly

"You have to change their mindset and encourage people by telling them: you may not die here - you may live." - Ibrahima Kemokai, Healthcare Worker Sierra Leone

Mobile Isolation Unit
Concept for Ebola Epidemic

Elements
- Solar Panel
- Rain Water Collection System
- Platform for Varied Topography & Waste Management

Ventilation
- Patient Unit Ventilation

Rapid Deployment
Quick Response, Multi-transit, Flexible Solution

Sources
1. WHO (Global Health Observatory) - Map Gallery (WHO) - Global Health Observatory - Map Gallery
2. Designing and Building Treatment Units, and Other Institutional Health Design Requirements
4. "The design and planning of isolation units in hospitals for patients with suspected or confirmed Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in hospitals by use of hospital corridors, indoor and outdoor environments." World Health Organization (2017), "Guidelines for the Prevention and Control of MERS-CoV Outbreaks in Hospitals"
5. "The design and planning of isolation units in hospitals for patients with suspected or confirmed Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in hospitals by use of hospital corridors, indoor and outdoor environments." World Health Organization (2017), "Guidelines for the Prevention and Control of MERS-CoV Outbreaks in Hospitals"
6. "The design and planning of isolation units in hospitals for patients with suspected or confirmed Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in hospitals by use of hospital corridors, indoor and outdoor environments." World Health Organization (2017), "Guidelines for the Prevention and Control of MERS-CoV Outbreaks in Hospitals"