

# [treat]

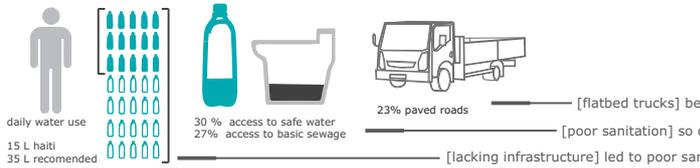
TREAT PEOPLE TREAT WATER

A LONG TERM SOLUTION FOR CHOLERA IN HAITI



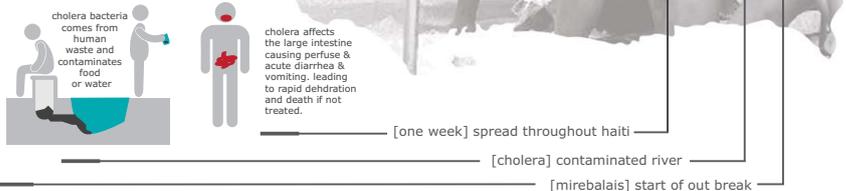
## [context]

At the root of the Cholera problem in Haiti is water. People do not have access to safe water nor do they have a place to dispose of waste and waste water. If provided with these things the Haitian people would greatly decrease their chances of getting Cholera. This design is a mobile waste and water purifier in addition to facilities to treat Cholera.



47% of world cholera is diagnosed in haiti

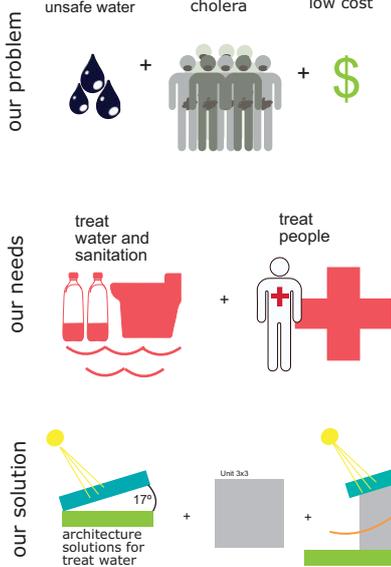
689,448 people sickened  
8,448 people dead  
since 2010



[haiti] 9.9 million people  
80% live in poverty



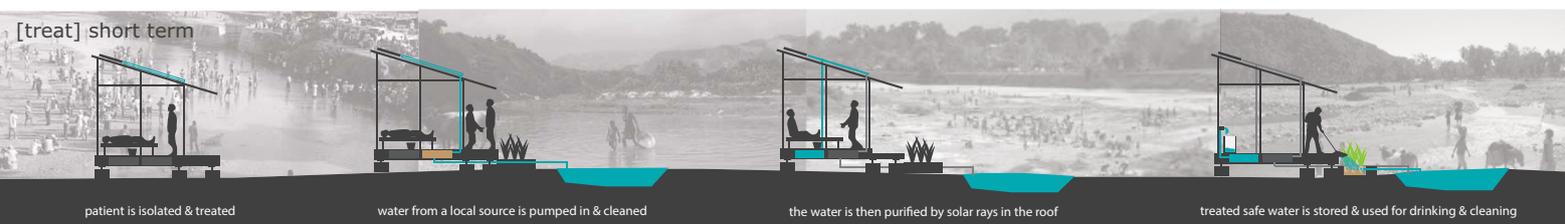
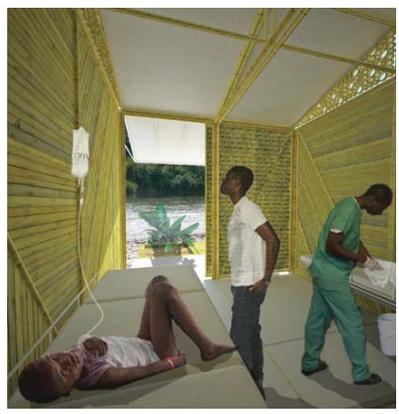
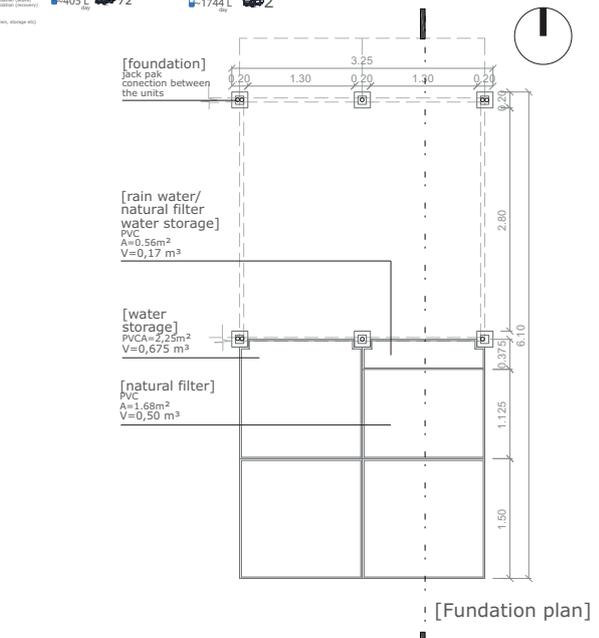
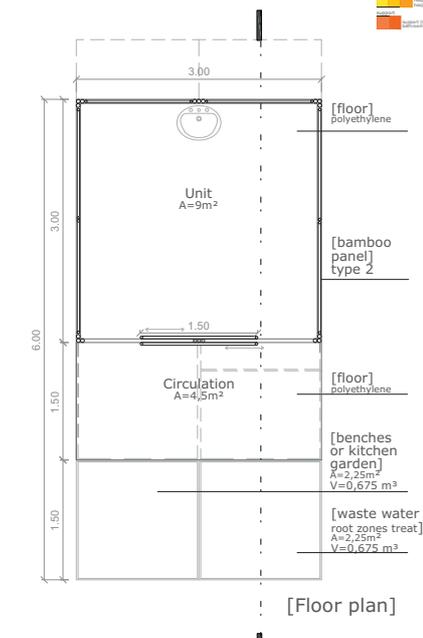
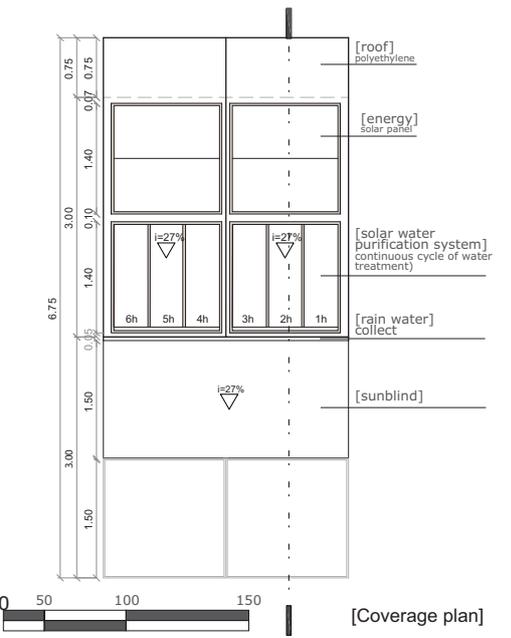
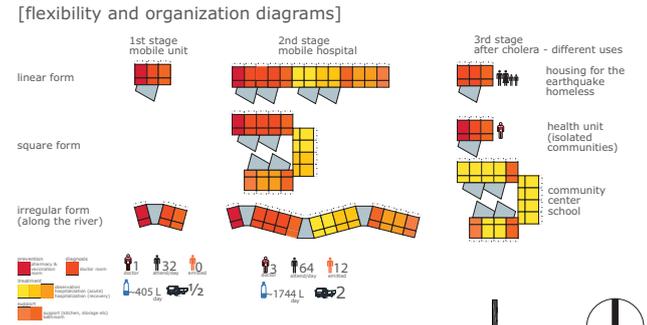
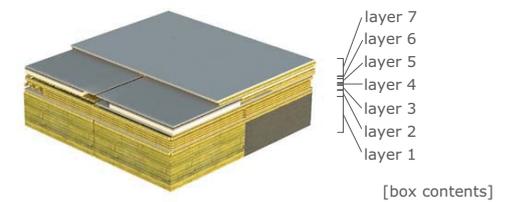
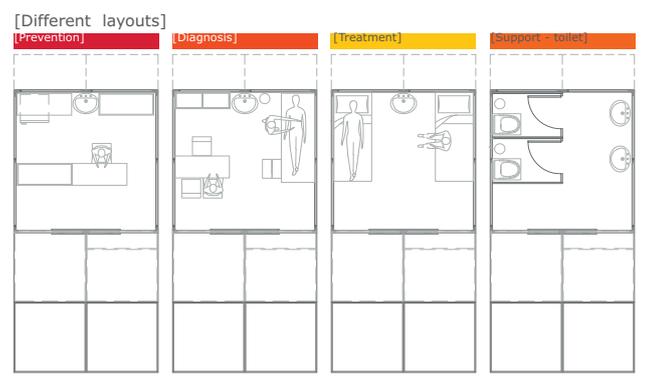
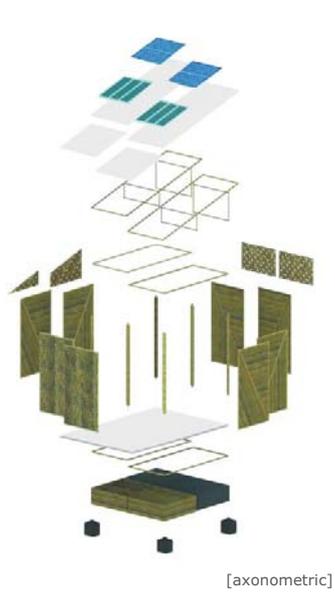
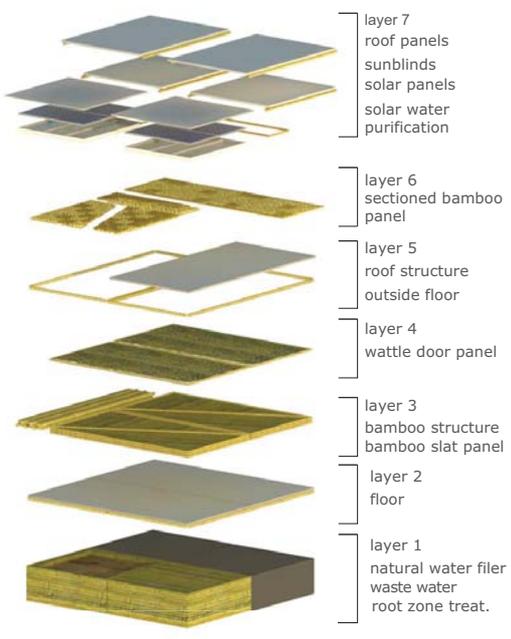
## [concept]



## [deploy] in a day



6 units per truck    moved by 2 people    placed on jackpad foundation    unpack    separate pieces from base    erect pieces on base



## [bamboo a long term resource]

- low cost
- sustainable
- locally sourced
- earthquake safety material
- encourage local bamboo plantation jobs
- be beneficial to the environment
- resolve some big problems in haiti, such as erosion, deforestation
- flexible



[sunblind]  
polyester membrane with acrylic coating, fastened on the bamboo structure.

[rain water] collect

[solar water] purification  
the system uses UV rays and heat supplied by the sun, to purify and to kill microbes, viruses and bacteria. the process takes about six hours. the container works like a bin, inside is coated aluminum and is covered with a glass panel.

[energy] solar panel daylighting

energy is a big problem in haiti, only 33% of the population has access to electricity, the unit needs to have a independent energy system.

[roof] pvc polyethylene  
light, sturdy and weather resistant

[ventilation]  
cool air from the river enters and warm air leaves. good patient and wet areas for cleaning

[water pipe] type 2  
cleaned but still unsafe water is pumped up to solar water purification

[floor] polyethylene  
covered by rubber textured mat. durable and easy to wash

[foundation] jack pad  
portable reusable foundation that very height by stacking, good alternative to concrete.

[water pipe] type 3  
pvc purified safe cholera free water to storage area under the floor

[bamboo panel] type 1  
selected bamboo. this panel can make possible the daylighting and natural ventilation.

[bamboo panel] type 2  
panels made with treated bamboo slats

[bamboo structure]  
bamboo pieces (5cm diameter)

[wattle door panel]  
local and typical housing material

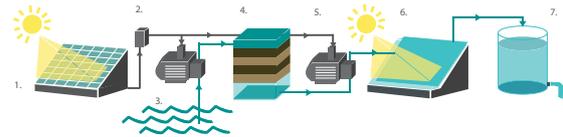
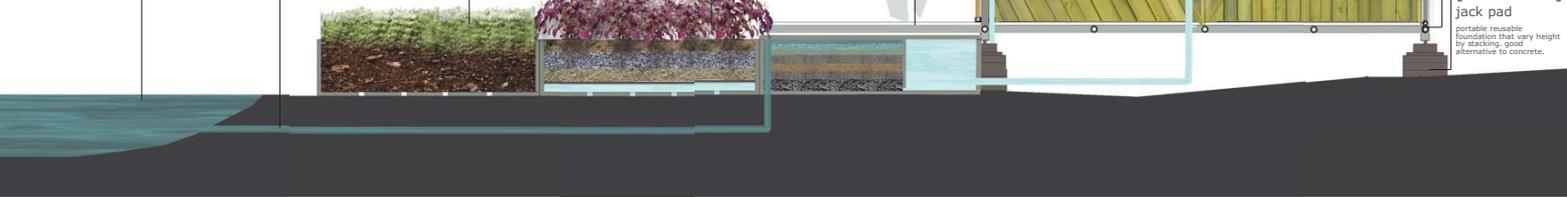
[unsafe water]  
local natural water sources are of an unknown water quality, this water is contaminated with cholera

[water pipe] type 1  
unsafe water is pumped into the natural water filter where is processed and is cleaned but not purified

[kitchen garden]  
using the compost poop as fertilizer, can produce food for the community, can be a community kitchen garden

[waste water] root zones treatment  
water used for cleaning can be treated by the root system and then returned to the soil and the river.

[natural water filter]  
the natural filter contains stones, sand and coal layers. it is responsible to remove trash and the chemical components such as smell, color and taste. after this process, the water is carried to the purification system.



**safe water**  
1. Solar Rays charge Solar Panel creating Energy 2. Pump Controller takes solar energy and Powers Pumps 3. A Pump Takes Water Out of Local Water Source & Deposits Into The Rock Filtration System 4. The Rock Filtration System purifies the local water taking out the Dirt But Not the Cholera 5. A second pump moves the "Clean" water to The Solar Purification 6. The Solar Purification Kills the Cholera bacteria with UV rays 7. Clean Cholera free water is now Ready to Drink



**waste water**  
1. Patient area is washed down with Chlorine Water killing the Cholera 2. The Waste Water is pushed into the Waste Water Chemical Filtration System 3. The Waste Water runs through the system of layered rocks, dirt, sand and roots which passively clean the Waste Water



**waste**  
1. EcoSan Toilets are provided. Solid Waste is covered with Sod and Liquid Waste is separated 2. Remove buckets of Waste and Sod every week 3. SOIL Truck picks up containers and Transports them to the SOIL Waste Facility 4. SOIL Waste Facility Processes Waste & turns it into Cholera Free Fertilizer over 5 months. 5. Fertilizer is then used to Improve Haiti's Soil for Growing Food



[revitalize] long term

