Research Summary: Malawi Community Center

Country information and descriptive research:

- Malawi ranked poorest country in the world ranked in order based on the GDP per capita (World Bank).
- Vegetation low, main natural resources: tobacco, coffee and sugarcane.
- Life expectancy: 59 years (indexmundi) Main causes of death: malaria, HIV/AIDS, tuberculosis, diarrheal diseases related to low levels of hygiene (WHO).
- Country is dominated by Lake Malawi, providing non-potable water.
- Malawi's worst floods in January 2015, affecting one million people and displacing 336,000 individuals (UNICEF).

Basic Research Community: Kapita community in South East Mzimba, Malawi.

- Demographics: 38 villages totaling 5,000 people in rural Malawi, at least 60km away from health and financial services.
- Main activity: agriculture (corn, coffee, tobacco).
- Source of food: Corn flour cooked with water, Pumpkin leaves.
- Source of water: no potable water on site. Water is harvested from three contaminated mud holes in the area. These are full of malaria-carrying mosquitoes. Snakes are frequent. Water holes dry out during dry summer season, leaving the community with little to no water.
- Local building methods and materials: Stick and mud construction, corrugated iron roofs where available. Wood-fired bricks used widely in a low vegetation area, affecting population and wildlife.

Community Needs:

- Stable source of water
- Community center for key services (e.g. pre-school) and development projects
- Adopt self-sustainable building and living practices to achieve independence from external aid.

Applied research and project implementation/solutions:

Biotecture Planet Earth developed the hypothesis that it could increase the quality of life by bringing self-sustainable building methods to the community and partnered with Earthship Biotecture in two phases to send an international crew of volunteers with the following objectives that have been met and completed:

- To construct a self-sustainable building that
  - collects and stores 5,000 liters of rainwater that can be used in the dry season.
  - uses solar energy for electricity (charging phones to improve communication) and light.
  - provides showers and toilets in order to promote hygiene and decrease the risk of diseases.
  - treats its own sewage in a contained and non-contaminating way.
  - waters an outside vegetable and fruit garden producing food for the community.
  - is cool inside even when the temperatures are extremely high.
  - provides a safe space for the community to live, store, trade, meet, educate their children (region's first pre-school) and exchange knowledge.
- to provide sufficient knowledge transfer to 40 members of the local community to continue and finish the building by themselves.
- to create an example for other communities to follow.

Findings and post-project:

- An important increase of community's quality of life and health can be achieved through implementation of project and constructing a self-sustainable building.
- Teaching alternative building methods created a change in the mindset, e.g., locally available materials used now for the construction of new buildings by the community (use of sun-dried mud instead of wood-fired bricks).
- Achievement of community's full self-sustainability to be expected for end of 2016 as external support is still necessary to provide tools to finish building by local community.

External research: Research thesis on the sociological impact of this project on the community was made and published by Lucerne University of Applied Sciences and Arts.