ENAC Project PENS-495

Mobile clinic for humanitarian action

Location: EPFL

Duration: 14 weeks (from 18/09/2018 until 21/12/2018)

Credits: 4

Number of students: 2-3 from ENAC architecture and environmental engineering sections

Hosting structure: EPFL (FAR lab, architecture) & EPFL (environmental engineering section and CODEV)

Academic supervisors: Dr. Riccardo Vannucci and Dr. André Ullal (main supervisors) and Dr. Silvia Hostettler, Deputy Director CODEV, (ENAC- SIE section) (co-supervisor).

Context

The provision of emergency health services is an important aspect of humanitarian action. Various international humanitarian organizations provide health services in post-disaster, conflict, and other emergency situations. The services provided by these organizations span the gamut of medical services, including: basic medical consultation, maternal health, medical diagnostics, vaccination and nutrition programs, surgery and outpatient treatment. These services are provided in the absence of permanent infrastructure – shelter, electricity, water and sanitation – that typically support medical treatment. A range of temporary shelter systems are commercially available to support humanitarian medical services such as: pneumatic tents, rigid-frame tents, prefabricated containers etc. However, these generic solutions fail to accommodate specific requirements of particular emergency settings, particular organizations, and particular types of medical assistance.

Project description

The purpose of this semester project is to develop a mobile clinic – a system that supports the provision of emergency medical services – that satisfies the requirements of a particular humanitarian organisation. The specific requirements of the organisation and the system will be outlined at the beginning of the project. In general, the system should be:

- **suitable** - for basic consultation, medication dispensary, nutrition and vaccination programs, and outpatient treatment;
- **portable** – able to be packed, carried by hand, and transported by plane;
- **comprehensive** – considers furniture, equipment and potential integration of systems for electricity, water, sanitation, waste disposal etc.;
- **adaptable** – supports multiple configurations to suit particular situations and services;
- **robust** – can be assembled and repaired without special skills, equipment, or parts;
- **economical** – reflects budgetary constraints of a humanitarian organisation.

The development process will include a survey of emergency medical systems that are already available and consider the extent to which existing systems could be adapted and incorporated. It will also include consideration of the socio-cultural, economic, and physical contexts in which the mobile clinic is expected to be deployed.
Specific research questions:

The research questions that will be addressed in undertaking this semester project are:

1. What shelter systems are currently available to support the provision of basic medical services (consultation, nutrition, vaccination and outpatient treatment) in emergency situations and to what extent do these systems meet requirements of humanitarian organisations?
2. How should a mobile clinic that provides humanitarian medical services be designed in order to be portable, comprehensive, adaptable, robust and economic?

Required skills:

- Interest for the humanitarian field.
- Ability and interest for interdisciplinary team work.
- Experience in doing online research and excellent analytical skills.
- Good writing skills in English.
- Good graphic presentation skills.

Deliverables:

- Table of contents: 15.10.2018
- Draft report: 15.11.2018
- Final written report: 10.12.2018
- Oral presentation between 17.12 - 21.12.2018

Grading

Grade based on a final written report (75%) and an oral presentation (25%).