

# Sustainable Engineering Solutions In Developing Communities

Civil Engineering/Geomatics Engineering/Mechanical Engineering  
Electrical & Computer Engineering/Construction Management(select one)

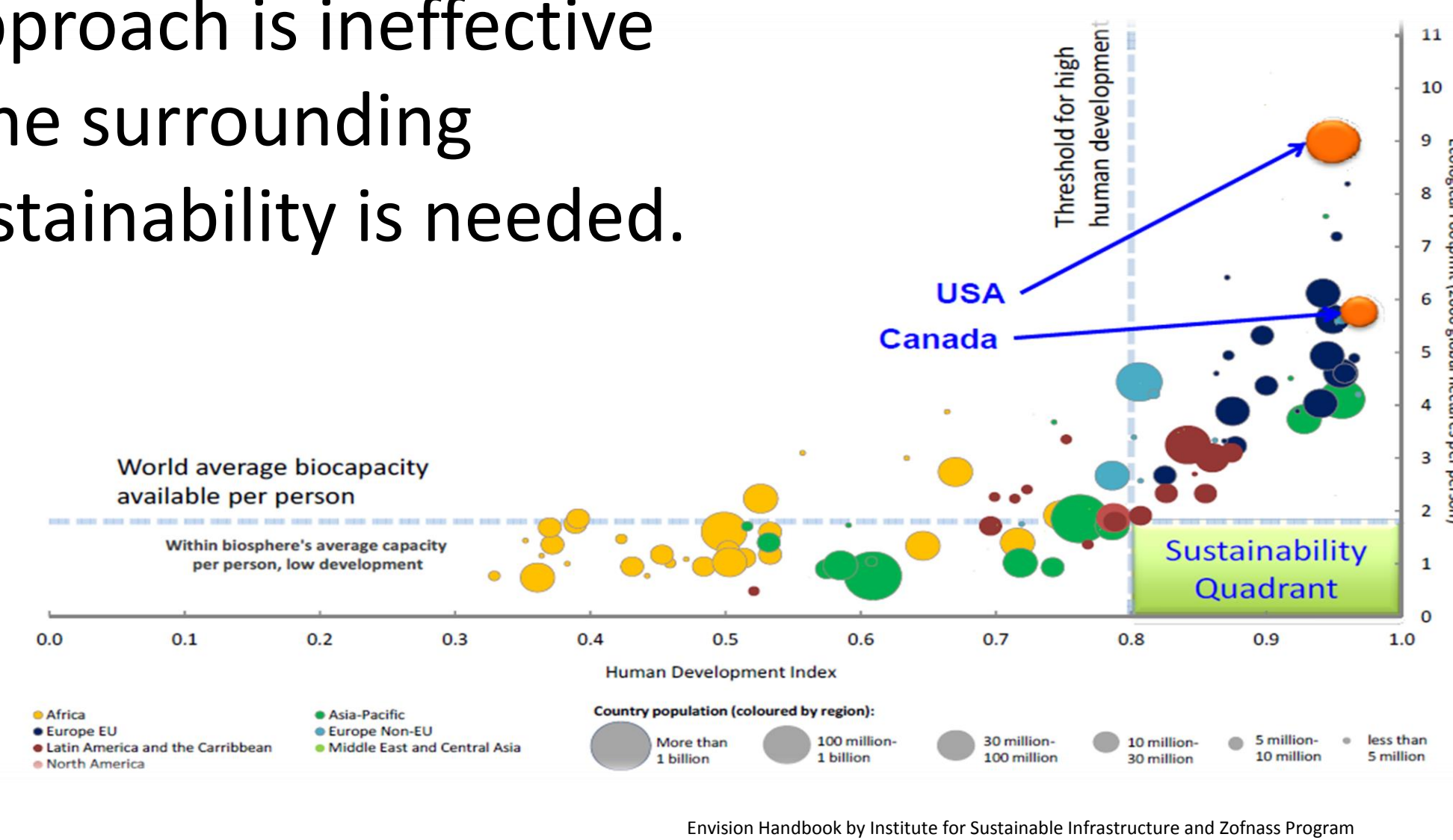
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## Abstract

The purpose of this research is to provide a step by step guidance manual to implement sustainable engineering solutions in developing communities. The scope of this research is to define a sustainable solution and address its significance and importance, review current rating on sustainability, research literature and case studies on sustainable solutions on developing communities , and provide a guideline to help civil engineers utilize resources on sustainability.

## Existing Problem

Developing communities are trying to expand and are exploiting resources at a high rate. This approach is ineffective and harmful to the surrounding environment Sustainability is needed.



## Envision Sustainability Categories

Quality Of Life

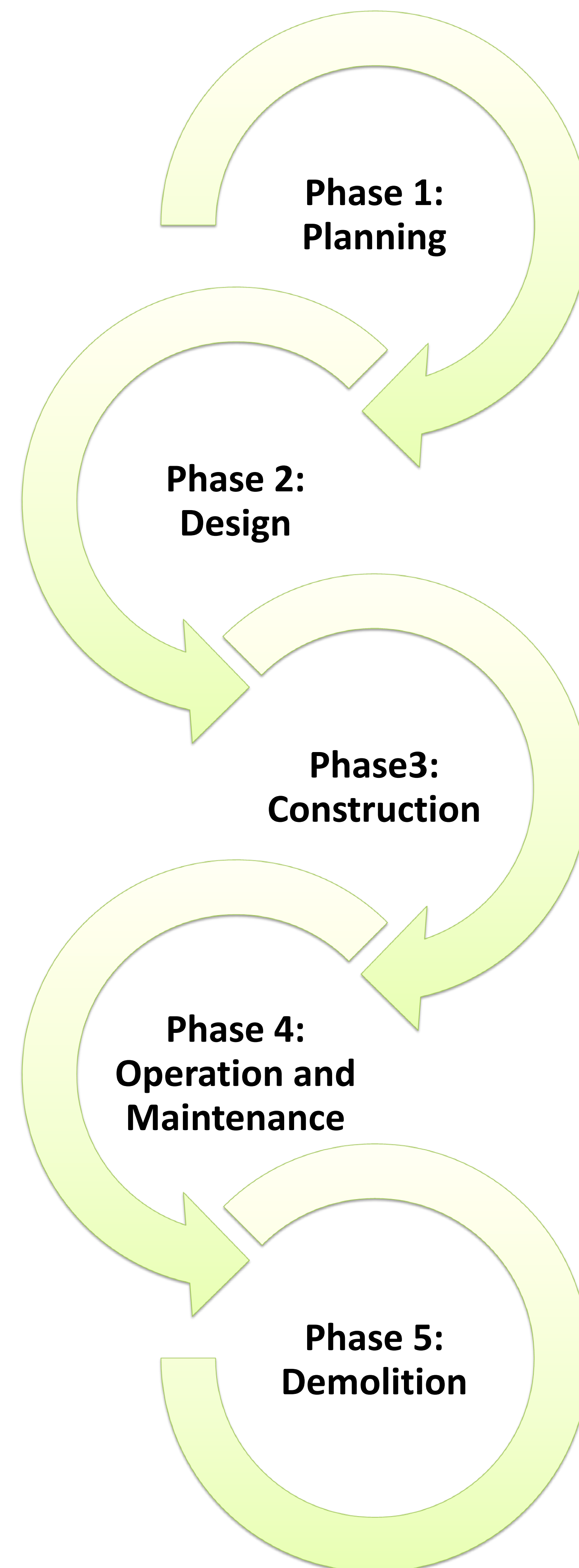
Leadership

Resource Allocation

Natural World

Climate and Risk

## Guideline Project Phases



## Case Study #1

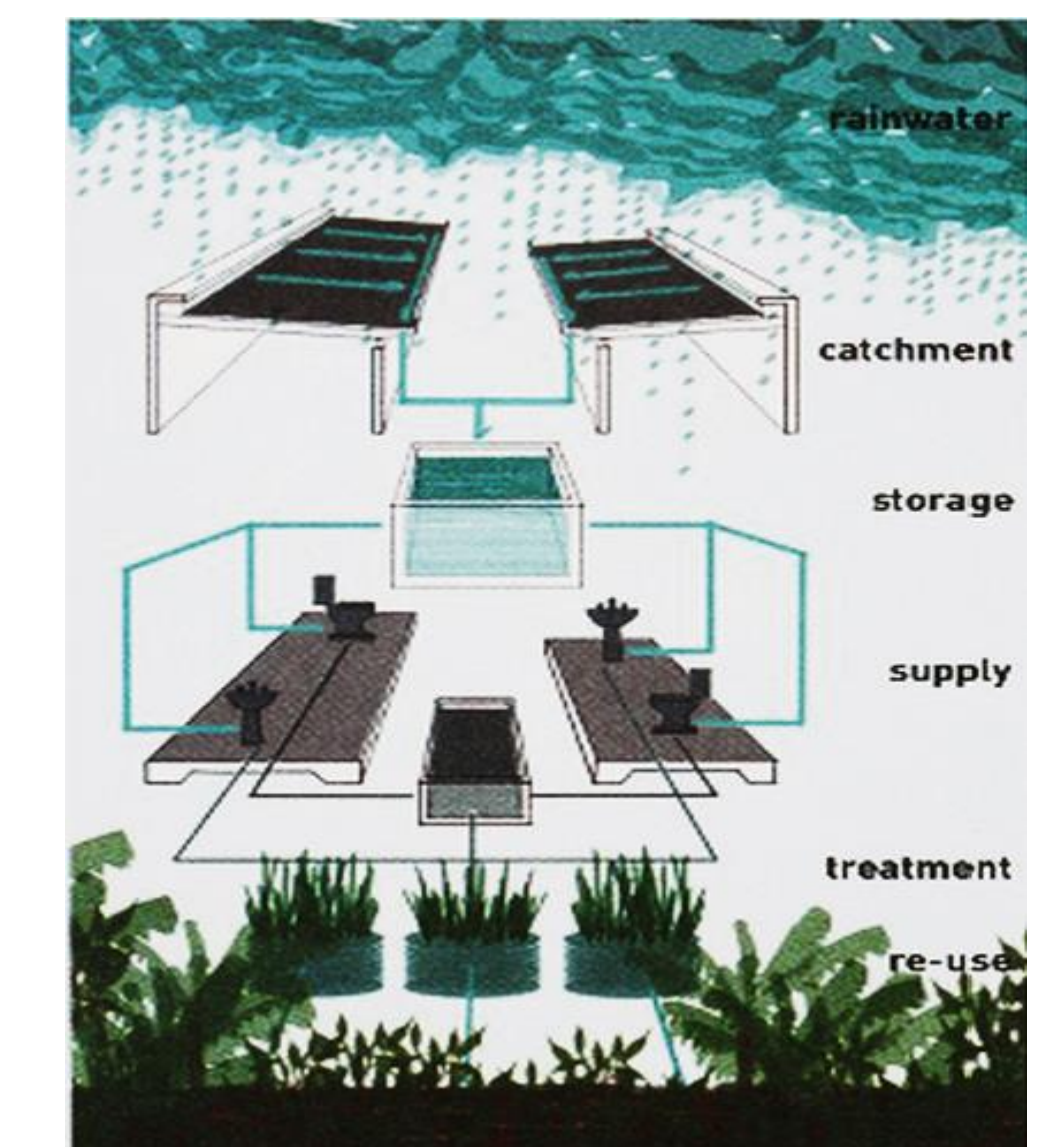
**Thin shell concrete roofs and shelter by ICATIS:** a low-cost, easily constructed and durable shelter design



**Sustainability Category:** Quality of Life, Leadership, and Resource Allocation

## Case Study #2

**Living Machine by BASIC Initiative:** a self sustaining natural system to safely treat wastewater on-site



**Sustainability Category:** Quality of Life, Leadership, Resource Allocation, Natural World, and Climate and Risk

## Case Study #3

**Hot recycling of asphalt mixture:** used in development of sustainable road construction



<http://dailyreporter.com/2010/11/17/roof-to-road-might-be-the-way-to-go/>

**Sustainability Category:** Quality of Life, Leadership, Resource Allocation, and Natural World