# The Institution of **StructuralEngineers**



Please Note: These resources are highlighted to the reader for their potential value/interest. Further resources are available via the IStructE Humanitarian and International Development Panel webpage, as well as new resources published since the last update to the resource map. Some have been produced by third parties. The Institution of Structural Engineers does not necessarily endorse (nor is it responsible for) any statement or opinion expressed within these

**Short Reads** 

Housing, Land, and Property in Shelter Programs (Cornerstone OnDemand Foundation)

Longer Reads

### 2022 State of Humanitarian

Systems report (ALNAP) The State of the Humanitarian System report assesses the size, shape and The State of the humanitarian system report assesses the size, snape and performance of the humanitarian system against key criteria over time. It is independent and based on evidence from on-the-ground practitioners, crisis affected populations, academics, policy-makers and donors.

Integrating Housing, Land and Property Issues into Key Humanitarian, Transitional and Development Planning Processes (International Organization for Migration)



**10.** Commercial and legal



## 9. Management and Training

### Websites

Disaster Ready - free, online humanitarian and development training (Disaster Readv) Over 1.500 Resources for Humanitarian Aid and onmont Professio

Kava - free, online humanitarian training (Kaya) an Leadership Academ



# 7. Construction & 8. Health, safety and risk management

### Websites

RedR Hostile Environment Awareness Training

### Longer Reads

GSC Construction Good Practices (Global Shelter Cluster)

### Longer Reads

Short Reads

A personal perspective

for Conservation Agriculture.

decarbonisation? (IStructE)

Building Materials and The Climate: constructing a new future Outlines principles to reduce environmental impact of construction and transition to low carbon construction in a global context

Greening Shelter Response (Global Shelter Cluster (GSC))

Nature-based solutions for climate resilience in humanitarian action (Sphere)

How can structural engineers contribute towards disaster mitigation? (IStructE) In his Kenneth Severn 2013 Award-winning paper, Joshua Macabuag advocates the adoption of a systems approach to the delivery of resilient buildings and infrastructure.

6. Sustainability

RICA – climate-positive design using locally sourced materials (IStructE)

Engineering climate justice: how can we contribute to equitable global

This article describes the climate-positive design for the campus of the Rwanda Institute

# **Career Profiles**

**Development and humanitarian** 

concepts and practices

CCCM cluster (Camp Coordination

Engineering in Emergencies (RedR)

**11.** Other resources

Pinheiro Principles 2005 (Shelter Cluster)

Settlements approaches in urban areas (Global

UNHCR shelter, camp and settlement guidelines

CARE Emergency Toolkit

and Camp Management)

Shelter self-recovery

Longer Reads

Shelter Cluster

(UNHCR)

Websites

The New Humanitarian

Local culture, customs and etiquett

people-centred housing

reconstruction at scale

development: FAQs

OCHA Humanitarian Response

Building Back Better: Delivering

Humanitarian and international

Commisceo Global

Websites

Websites Career Profiles (IStructE)

Contextual awareness and appropriate interventions When working in different countries and contexts it is important to check and validate that the sources, information and design principles still apply. It is helpful to think about the differences from what you are reading and the project you are working on. The resources below explore this concept in more depth.

Short Reads

(CRAterre)

Shelter response profiles

Putting People at the Centre of

Reconstruction (Practical Action)

Community engagement in disaster response: 2015 Gorkha, Nepal (IStructE)

### **Global agendas and frameworks** Websites

Longer Reads

Lessons from Aceh: Key

considerations in post-

disaster reconstruction

(Arup and Disasters Emergency Committee)

Shelter After Disaster

(IFRC and OCHA)

The Grand Bargain (IASC) UN Sustainable Development Goals (UN) Global Shelter Cluster

Humanitarian Standards Partnership

Websites

Core Humanitarian Standards Alliance (CHS Alliance) Short Reads

# Working in the humanitarian or

development sectors (IStructE) This article provides a realistic overview of the practical and ethical considerations when seeking to work in the sector.

Humanitarian and international development competencies framework (IStructE) This framework, developed by the Institution's Humanitarian and International Development Panel, is designed to illustrate the types of skills that structural engineers will require to be successful in the development sector.

# 1. Professional standards and engineering responsibility

Video

Starting from 11mins:

Appropriate structural

contexts (UCL / Arup)

engineering in humanitarian

and international development



Websites

**Longer Reads** REDi rating (Arup)

# **Short Reads**



# 5. Materials

## Masonry

## Longer Reads

How to Build Safer Houses with Confined Masonry (Practical Action) Short book on confined masonry and detailing

Constructing Low-rise Confined Masonry Buildings Book on low-rise confined mas

### Longer Reads

Humanitarian Civil Engineering: Practical solutions for an interdisciplinary approach (ICE) This book allows you to understand the significance of humanitarian civil engineering and how to develop sustainable solutions that integrate social, environmental, cultural, and economic systems

The Sphere Handbook (Sphere)

### Websites

The Shelter Compendium (Global Shelter Cluster) Is a database in reviewed Information, Education, and Communication (IEC) materials to support faster development of common technical messaging in crisis responses for shelter and settlements.



## 2. Communication



# 3. Concept creation and design 4. Analysis and sizing

ThinkHazard (World Bank GFDRR)

Is rigorous structural engineering possible in a humanitarian context? (IStructE) This case study examines assessing and improving the wind resistance of bamboo emergency shelters in the Rohingya refugee camps.

### **Timber and Bamboo** Videos

Sustainable bamboo housing (IStructE) A vernacular-improved affordable, sustainable

and seismically-resilient bamboo hou technology for Latin America and beyond.

### Short Reads

11 recommended reads on using timber and bamboo (IStructE)

### Longer Reads

Timber as a construction material in humanitarian operations (UNOCHA-IFRC-CARE)

Humanitarian Bamboo Guidelines (Humanitarian Bamboo)

### Wattle & Daub Longer Reads

Wattle & Daub: Anti-seismic construction Handbook (CRATerre-EAG)

Design Guide for Engineered Bahareque Housing (INBAR) . Modern engineered wattle and daub

