

ZRS Architekten Ingenieure

ADAPTIVE GEBÄUDEKONZEPTE IM GLOBALEN KONTEXT

Berliner Energietage 2019, 21.05.2019

Aktiv Plus e.V.

Prof. Eike Roswag-Klinge

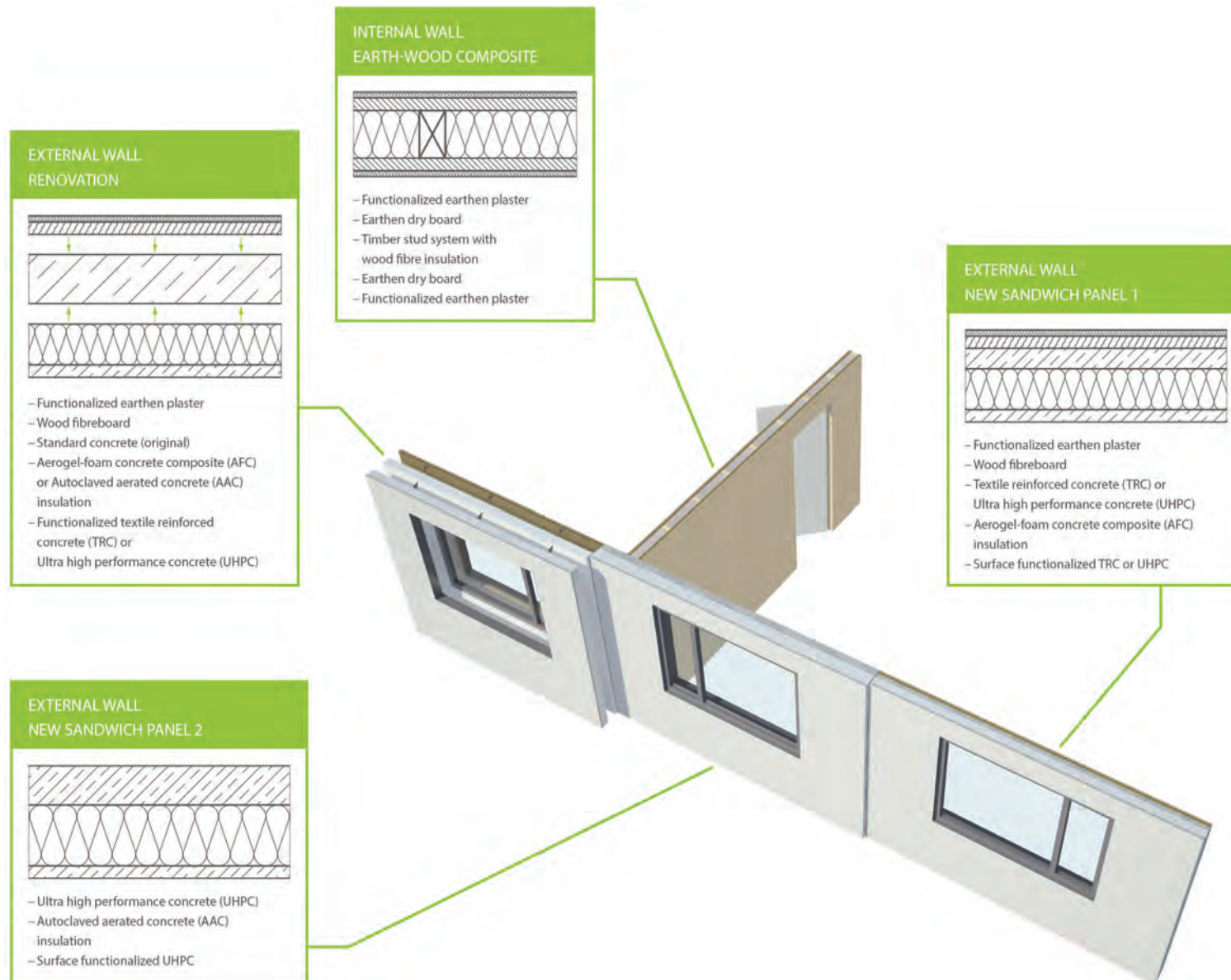
ZRS ARCHITEKTEN INGENIEURE

CREATING NATURAL CHANGE - RESEARCHING, DESIGNING, BUILDING
WITH EARTH, WOOD AND BAMBOO



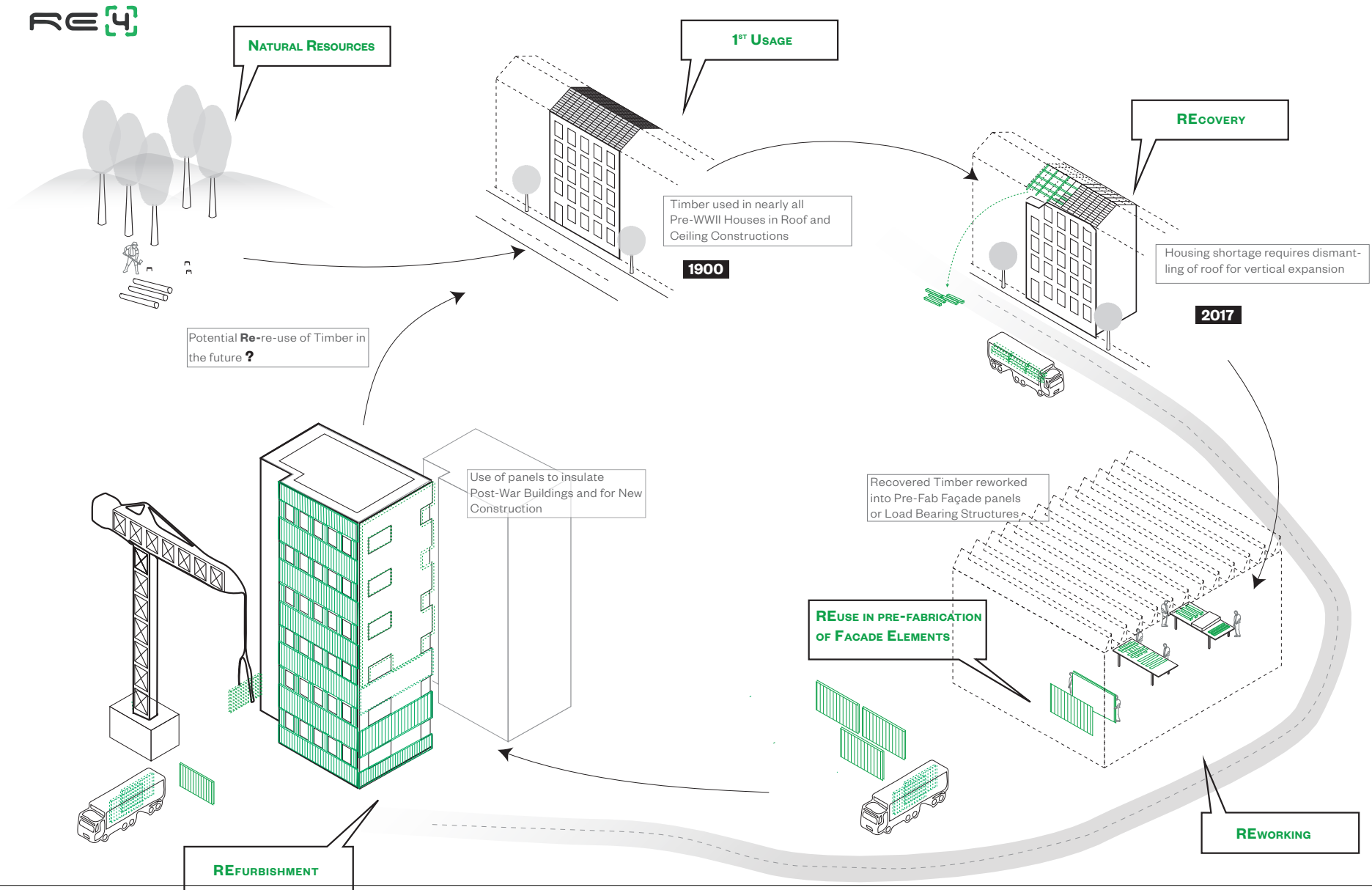
HEALTHY HOUSE, EU FP7 FRAMEWORK

RESEARCH ON HEALTHY INDOOR ENVIRONMENT



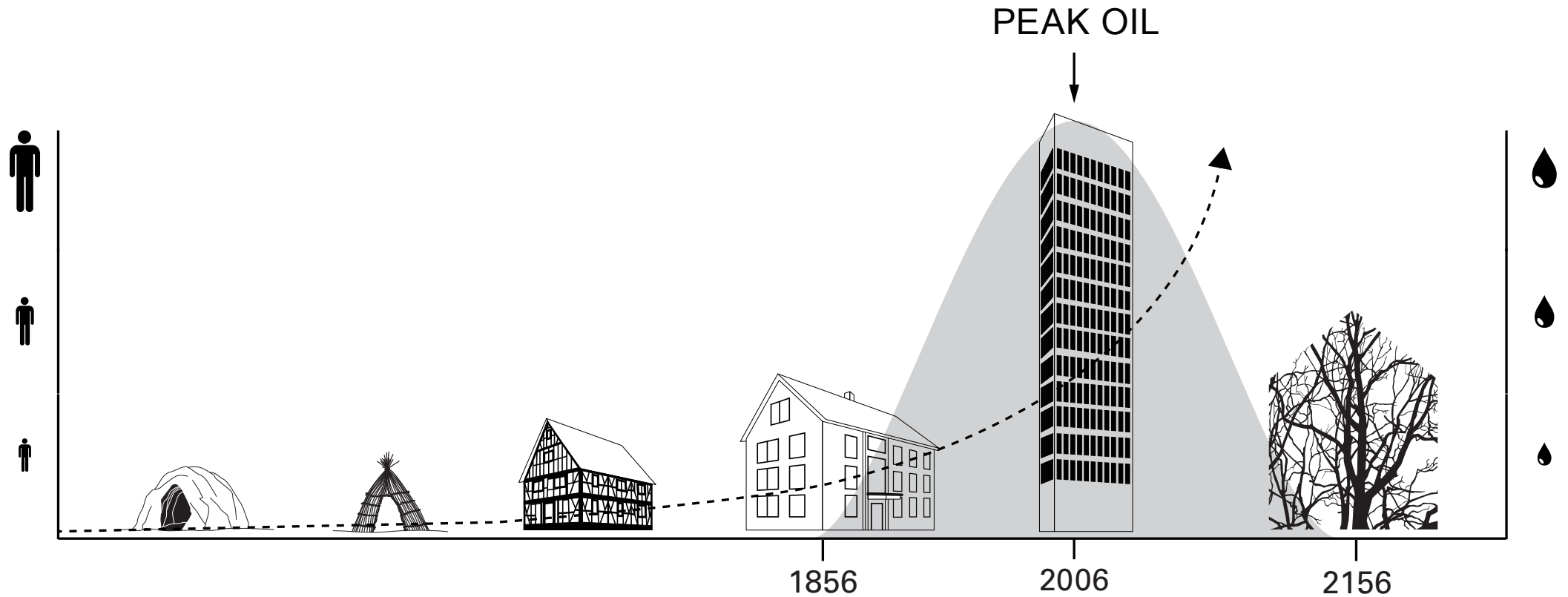
RE4, BUILDING FORM CONSTRUCTION WASTE

DEVELOPMENT OF CIRCULAR BUILDING SYSTEMS



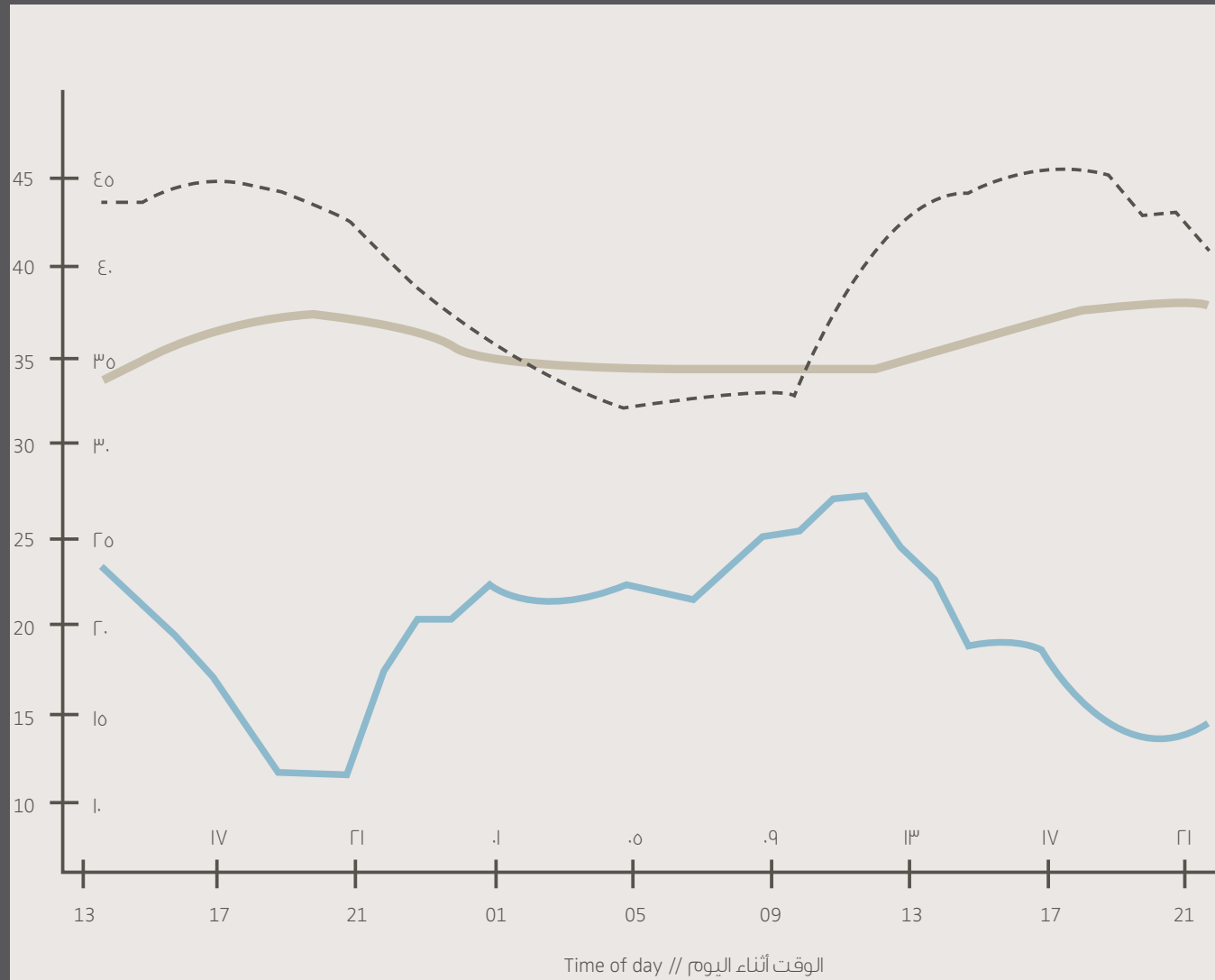
WHERE ARE WE TODAY?

WHERE STAND OUR SOCIETY AND OUR BUILD ENVIRONMENT?



MAJLIS AT MUWAIJI FORT, AL AIN, MAY 13th, 2009

Outside temperature and humidity, inside temperature May 13th, 2009



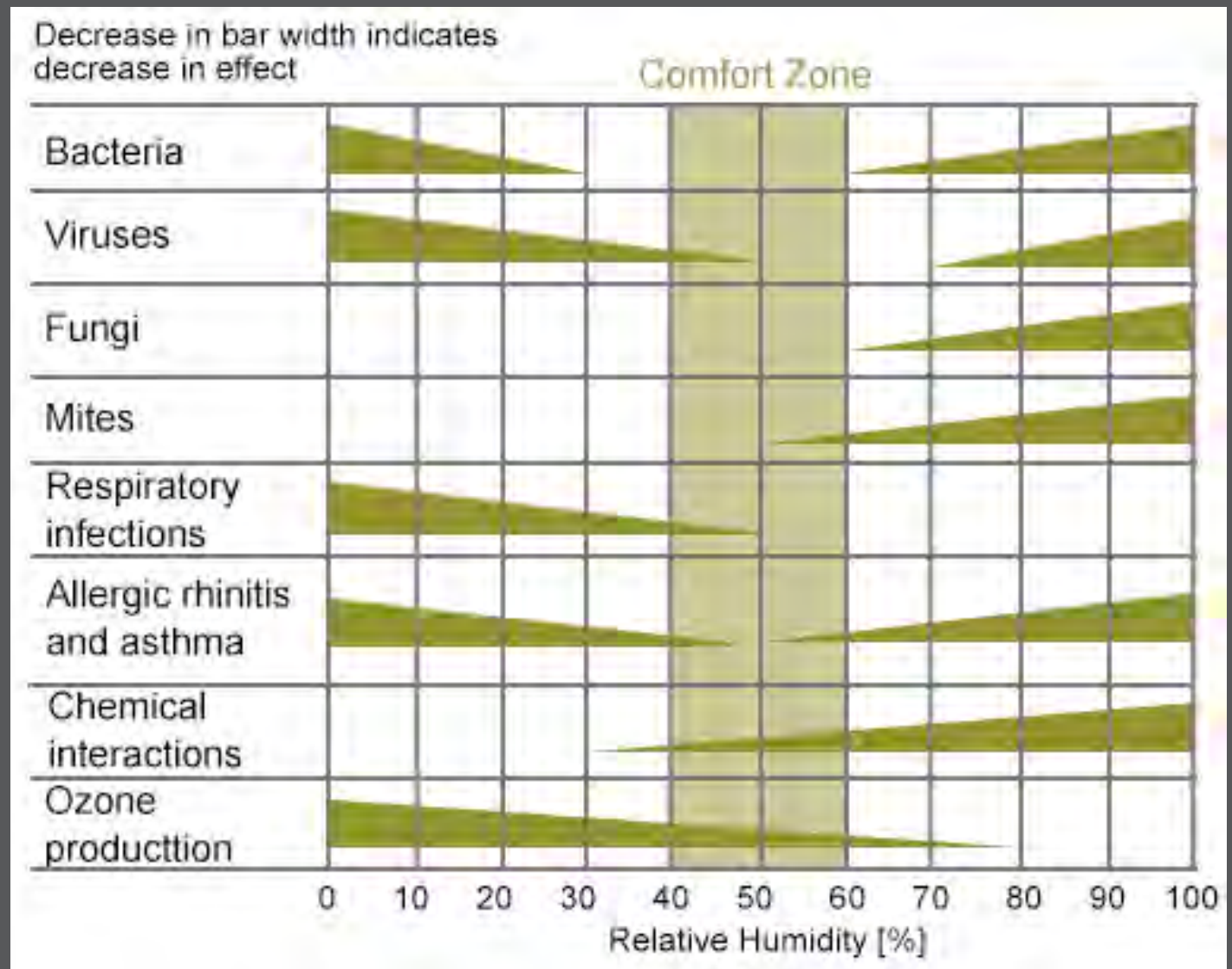
- درجة الحرارة بالخارج (مئوية)
Temperature outside (°C)
- درجة الحرارة بالداخل (مئوية)
Temperature indoor (°C)
- الرطوبة النسبية (%)
Humidity (%)

[H]-house - EU RESEARCH PROJECT

Improved indoor Environmental Quality - IEQ

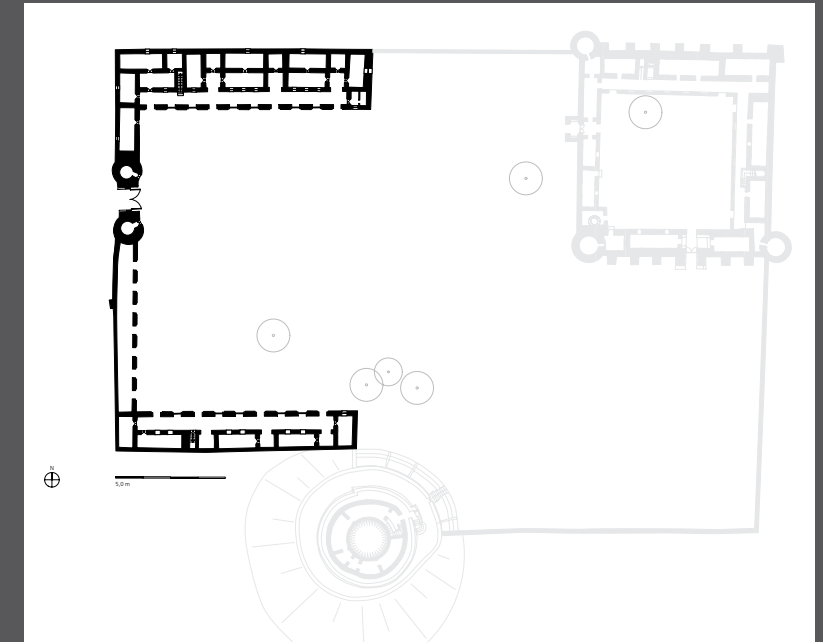
Scofield - Sterling Diagram

Comfort Zone, where activity of bacteria, viruses, fungi etc. is the lowest



JAHILI FORT, AL AIN - REHABILITATION

Historic Fort, parts of it are dating back to the early 19th century



JAHILI FORT, AL AIN - REHABILITATION

Partial Deconstruction for Termite Treatment - Storing and Rebuilding





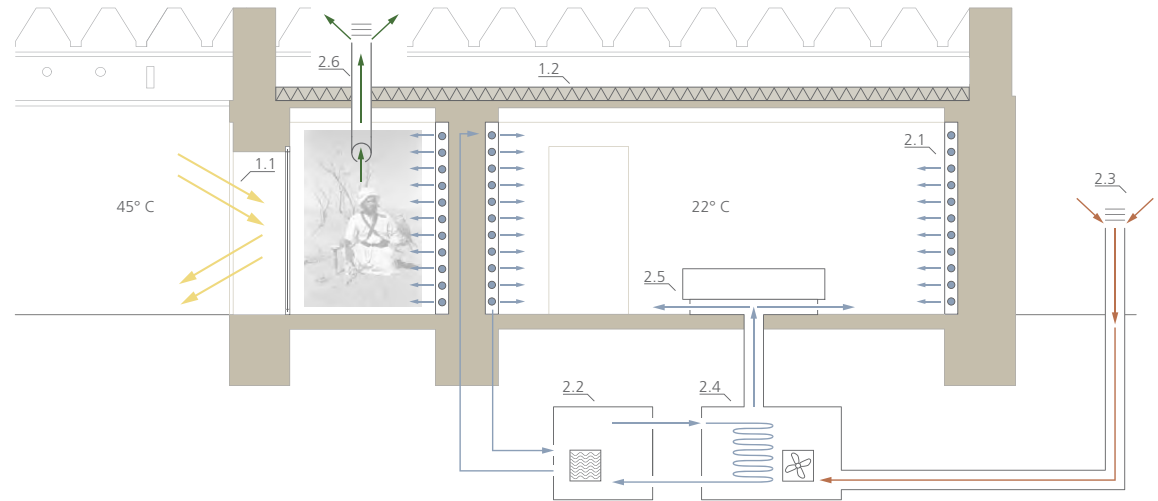




JAHILI FORT, AL AIN - REHABILITATION

Integration of a Comfortable Water Based Radiation Cooling System

- 1. construction
 - 1.1 sun filter glass
 - 1.2 thermal insulation
- 2. building technology
 - 2.1 wall cooling system
 - 2.2 central chiller unit
- temperature / cooling
 - 2.1 wall cooling system
 - 2.2 central chiller unit
- ventilation
 - 2.3 supply air intake
 - 2.4 air handling unit
 - 2.5 fresh air outlet in furniture
 - 2.6 waste air extract behind picture



JAHILI FORT, AL AIN - REHABILITATION

Permanent Exhibition - Wilfred Thesiger and the Freedom of the Desert



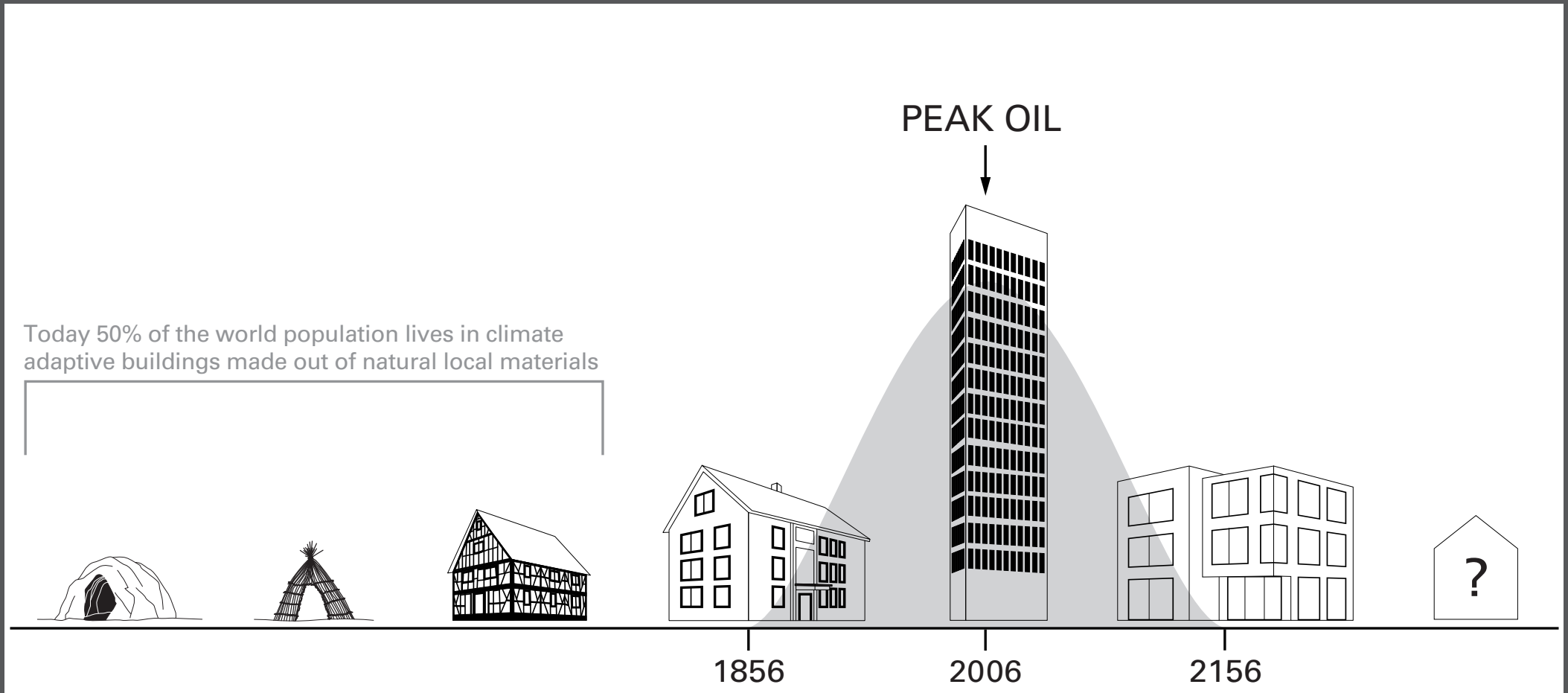
JAHILI FORT, AL AIN - REHABILITATION

Dry desert landscape surrounding as a buffer zone for the building



EVOLUTION OF THE ARCHITECTURE

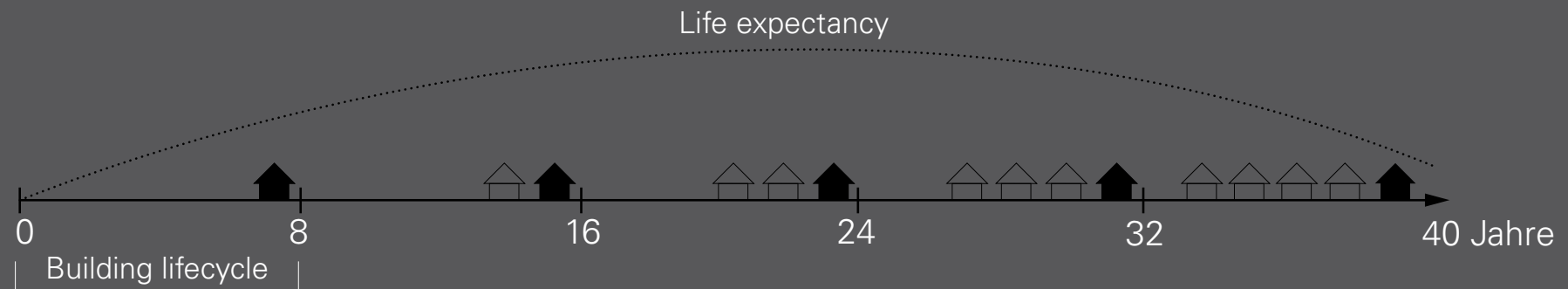
Half of the world population lives in very basic conditions



HABITAT INITIATIVE CABO DELGADO, MOZAMBIQUE

Building cycle / Housing conditions

- Life expectancy in Mozambique is 43 years
- Somebody needs to rebuild his house every 8 years
- People live in about 8 houses through their life

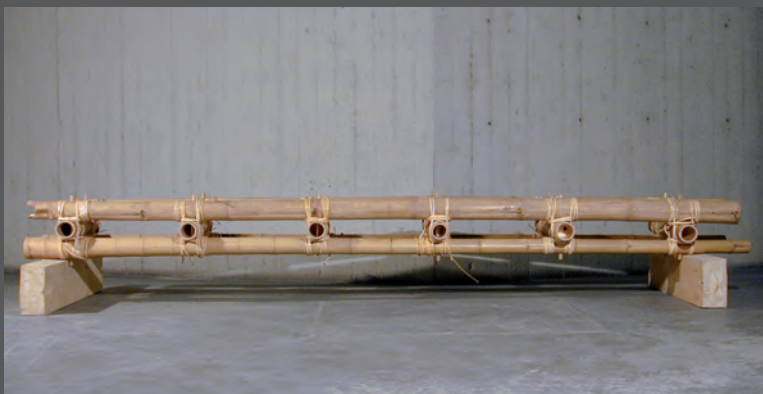


Comparison of peoples and building lifespan



SCHOOL HANDMADE IN BANGLADESH

1:1 sample development of a local load bearing bamboo construction, and a basic node



SCHOOL HANDMADE IN BANGLADESH

Prefabricated bamboo frames, fixed on the tipple layer bamboo ceiling



HABITAT INITIATIVE CABO DELGADO, MOZAMBIQUE

Weiterentwicklung des Bambusbündels zu einem dreilagigen Träger



SCHOOL HANDMADE IN BANGLADESH

Mud classroom and caves in the ground floor, bamboo class room in the first floor

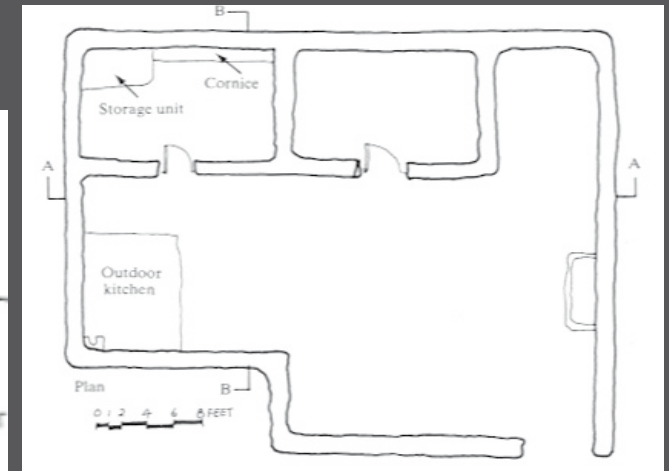




TIPU SULTAN MERKEZ - EARTHEN SCHOOL IN PAKISTAN

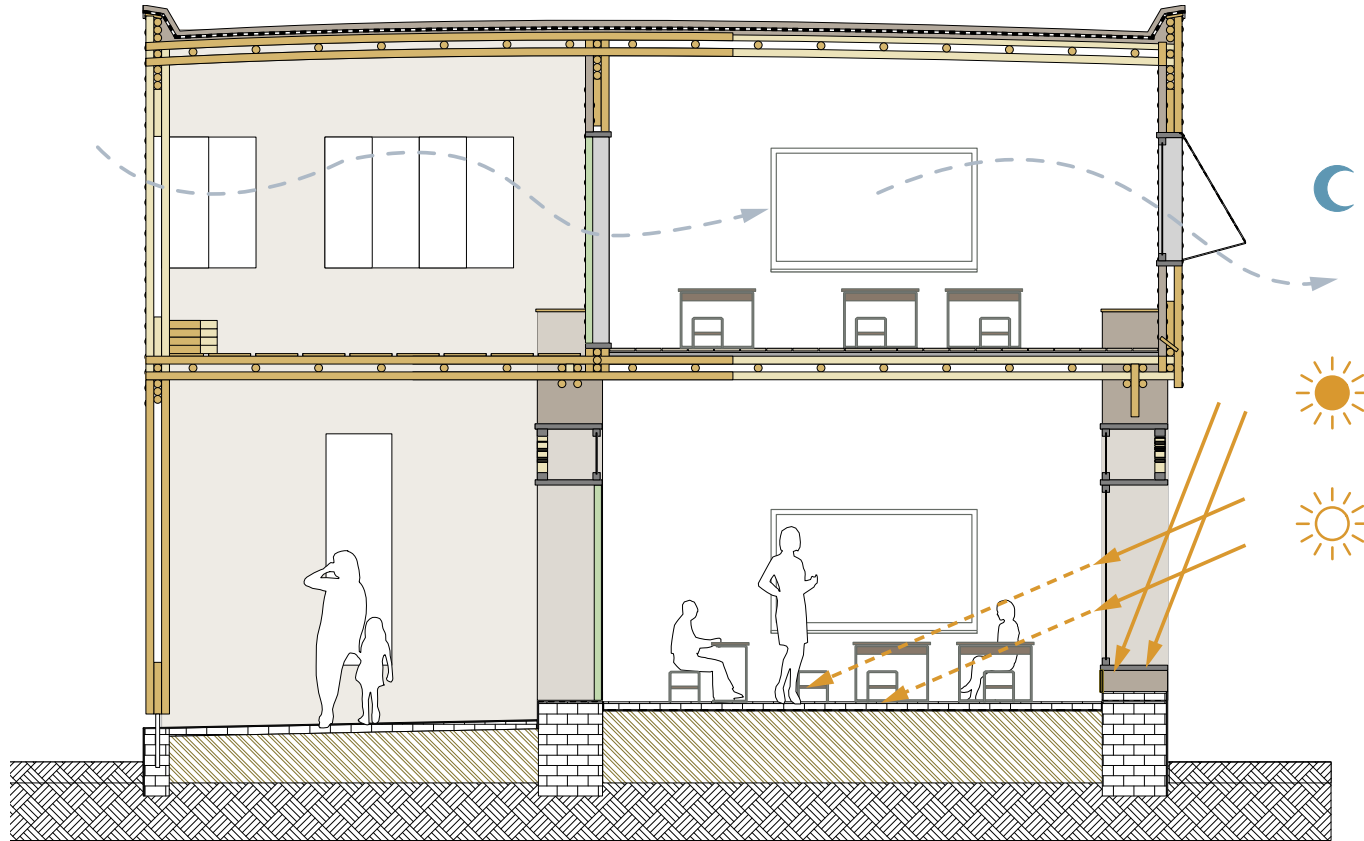
Research and analysis of the local building tradition

Typology - constructive issues and life cycle



TIPU SULTAN MERKEZ - EARTHEN SCHOOL IN PAKISTAN

Climate adapted design



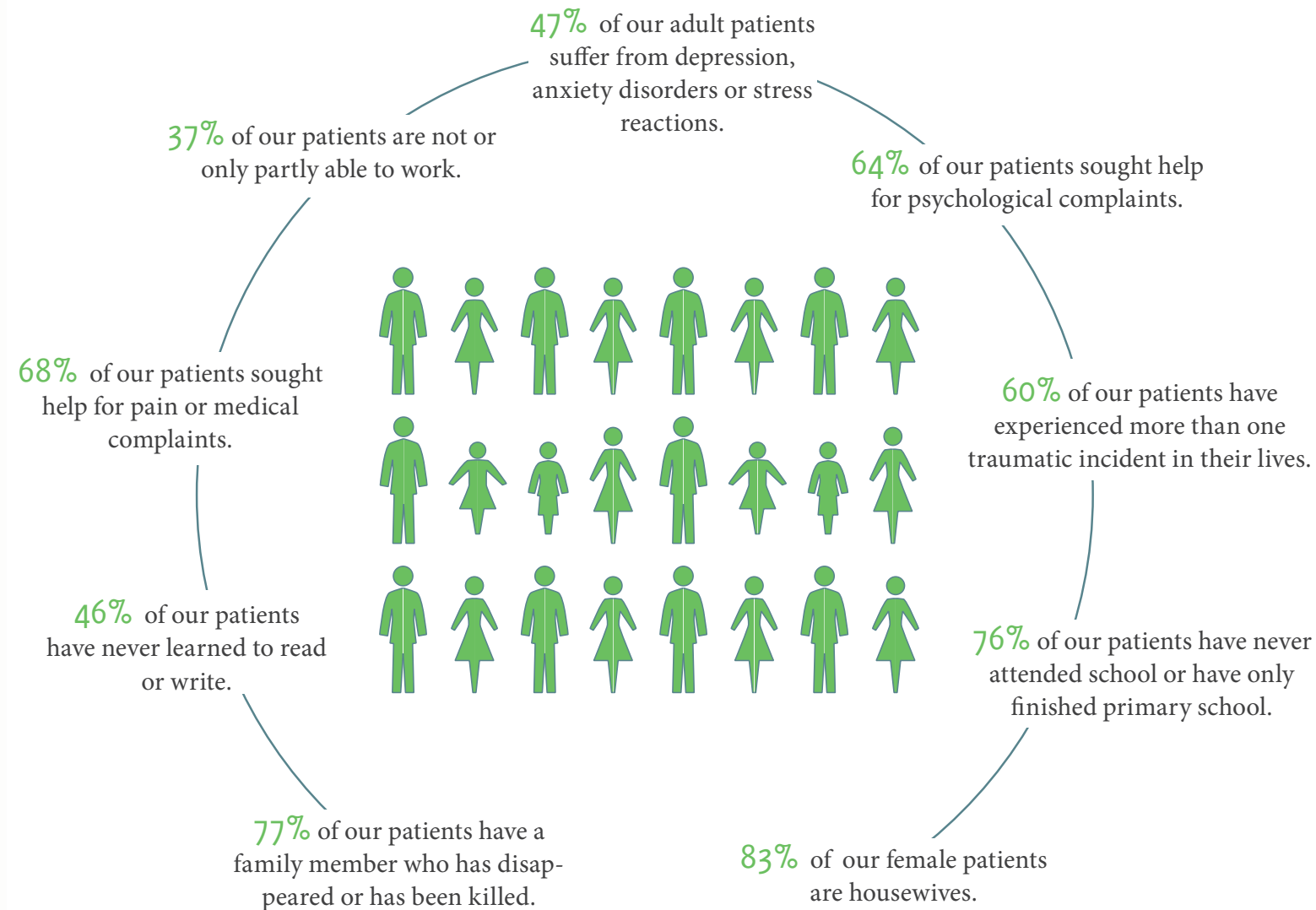




HEALING GARDEN CHAMCHAMAL, KURDISTAN IRAQ

JIYAN FOUNDATION FOR HUMAN RIGHTS

TRAUMA THERAPIES FOR WOMEN AND CHILDREN



ABBILDUNG

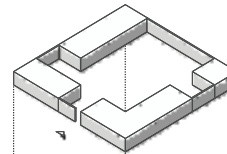
Übersicht PartientInnen
der Jiyan Foundation

HEALING GARDEN CHAMCHAMAL, KURDISTAN IRAQ

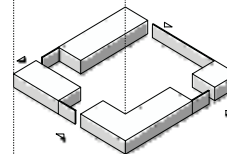
TRANSFORMATION OF THE LOCAL BUILDING TRADITION



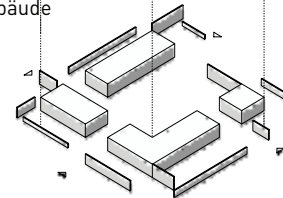
traditionelles Hof- Haus



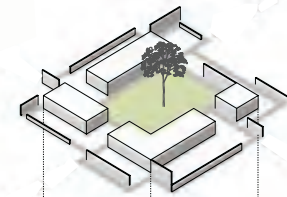
Durchbrüche und
Eingänge



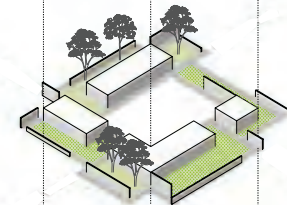
Mauer - Elemente
um das Gebäude
herum



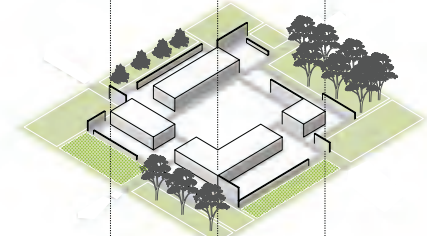
Zone 1: Hof



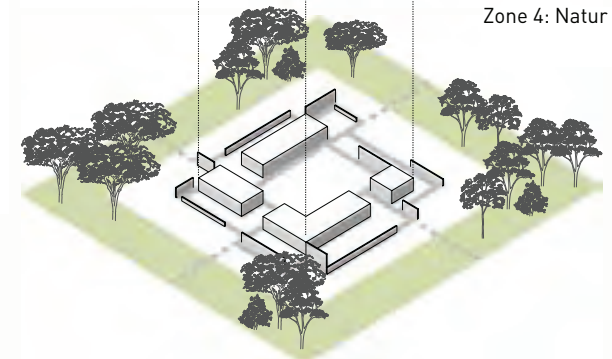
Zone 2: Garten



Zone 3: Landwirtschaft



Zone 4: Natur



HEALING GARDEN CHAMCHAMAL, KURDISTAN IRAQ

TRANSFORMATION OF THE LOCAL BUILDING TRADITION

1ST PHASE ANIMAL BASED THERAPY CENTRE









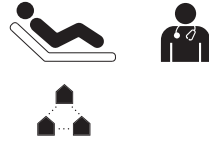




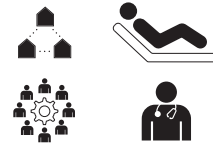
Seminar- und
Gästehaus



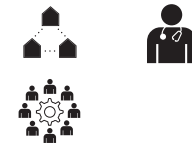
Nachbarschafts-
treff



tiergestützte
Therapie



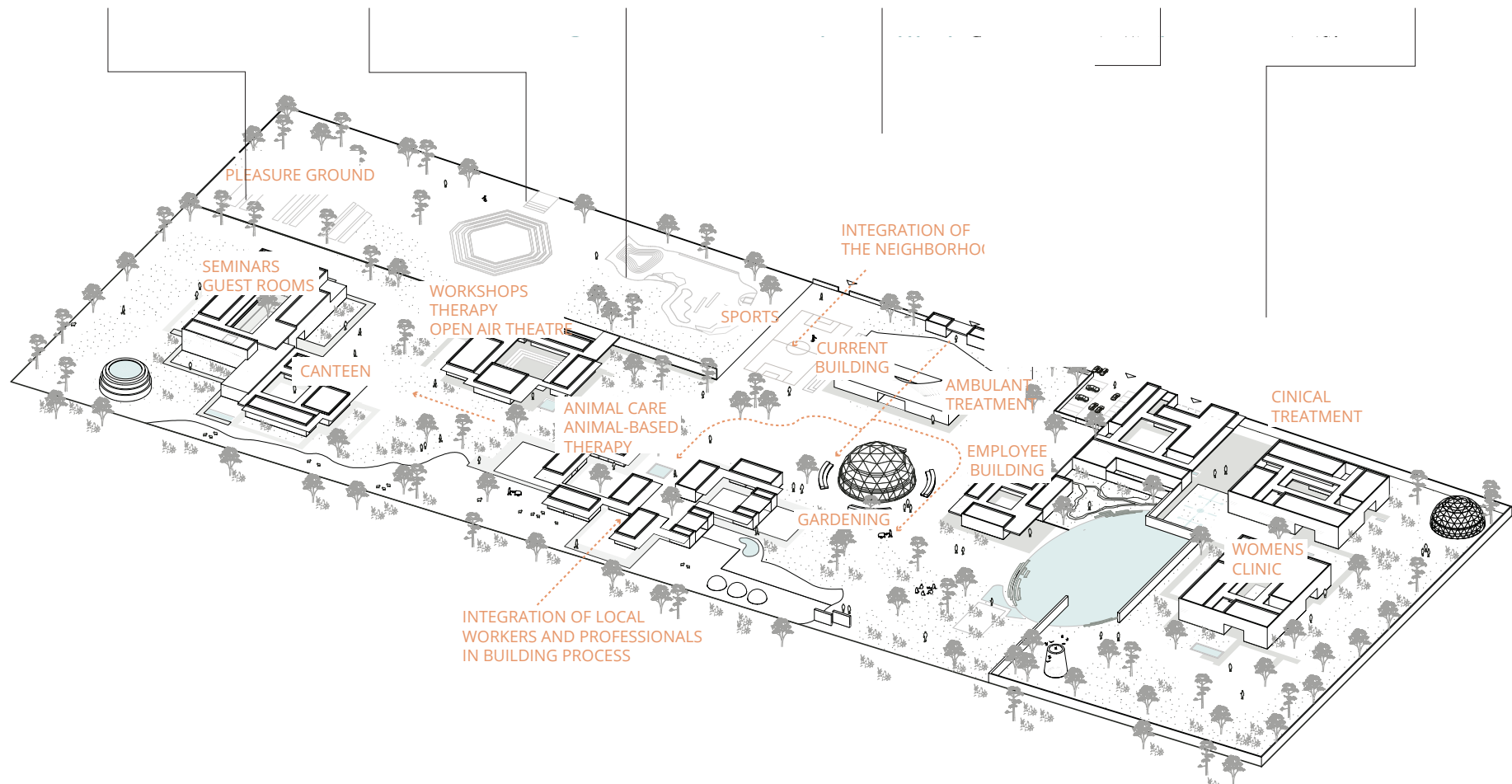
Empfang und medi-
zinische Versorgung



Gebäude f.
MitarbeiterInnen



stationäre
Frauenklinik









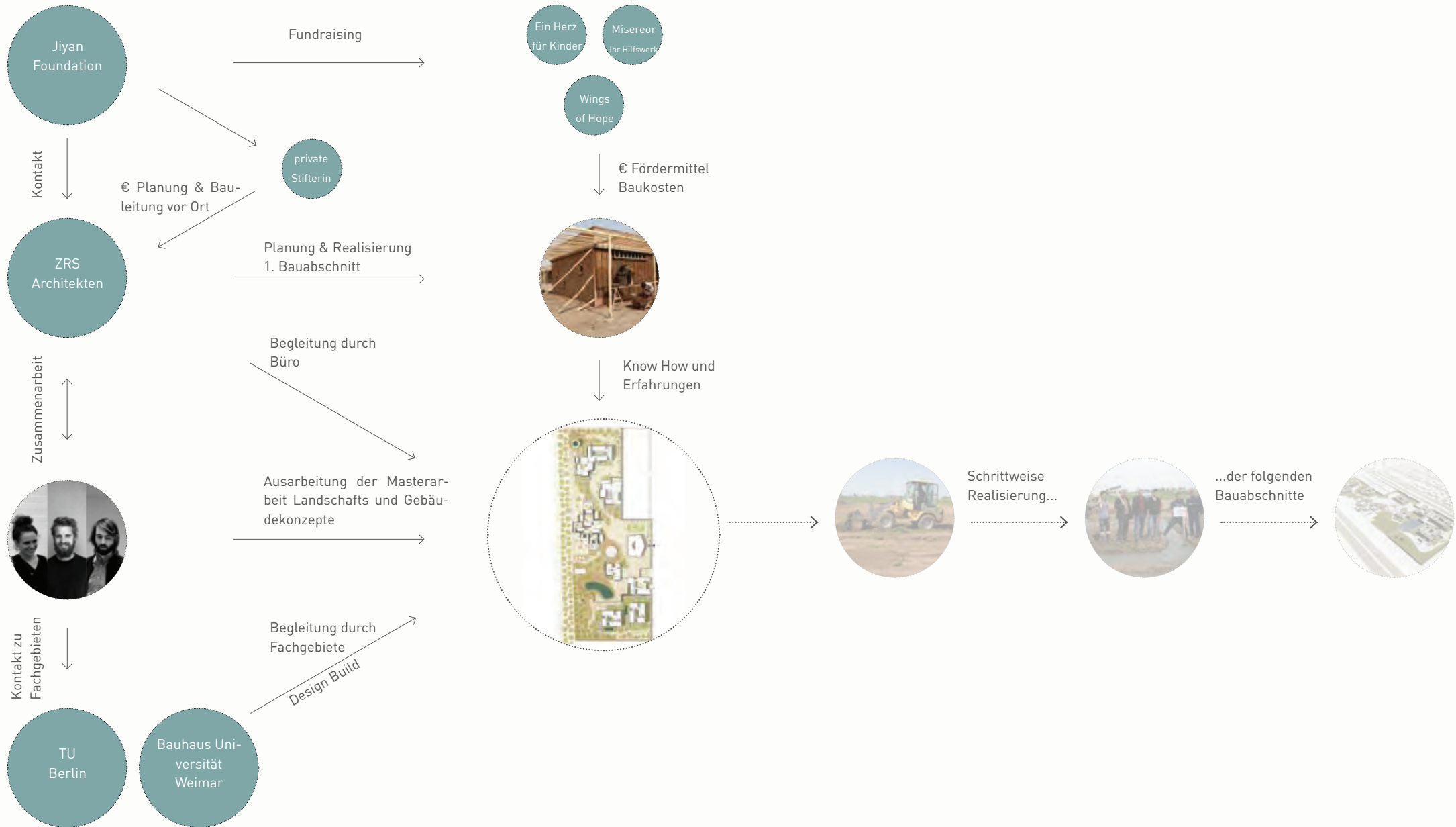




HEALING GARDEN CHAMCHAMAL, KURDISTAN IRAQ

TEAM AND NETWORK OF THE PROJECT

PRACTICE INTEGRATED INTERNATIONAL DESINGBUILD COLLABORATION





„We can approach together“

Kiran Vaghela, Stiritual Mentor, Hunnarshala Foundation 2011

