



**EARTH ARCHITECTURE
2020**

BUILDING TECHNOLOGY

BASICS (BA)

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BUILDING SITE MONITORING
CONSTRUCTION DRAWINGS
REUSE OF BUILDINGS STUDIO
LECTURE COURSE - REVITALIZE

EARTH ARCHITECTURE

ARCHITECT AS PRINCIPAL DESIGNER (FI)
SPECIAL PROJECTS

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FINAL THESIS

EARTH ARCHITECTURE

The aim of the course is to familiarize oneself with raw EARTH as a building material. We will study the traditions, present applications and future possibilities of earth through some theory and a design+build exercise. Participants should prepare themselves for

participating in contact sessions (theory+tutoring) on Mondays from 1pm to 5pm (remotely)

reflecting on the things learned in the contact sessions through thinking, reading, writing etc. (independently)

doing a design project independently for the first half of the course (tutoring available on Mondays) and building an installation together during the second half on campus.

The lectures are open for all. If you follow all lectures and write an essay, you will receive 1cr. Notify teacher in advance.

WORKLOAD

3cr, 3x27h=81h

1 study period = 7 weeks

7 contact sessions 4h/week = 28h

Reflection ratio 1:1 4h/week = 28h

Independent study approx. 4h/week = 25h

SCHEDULE

- | | | | |
|-------|--|--------|--|
| 7.9. | Intro lecture (Elina Koivisto+Paul Lynch)
Assignment

Independent work: history+sketching | 28.9. | Lecture (Stephanie Chaltiel)
Mid review + choosing (zoom)

Group work: Technical design |
| 14.9. | Student presentations on
History of Clay
Group tutoring (zoom)

Independent work: design | 5.10. | Site visit + workshop (Paul Lynch)

Group work: Building |
| 21.9. | Lecture (Mirja Salkinoja, N.N.)
Group tutoring (zoom)

Independent work: design | 12.10. | Building

Group work: Building |
| | | 19.10. | Final critique
Exhibition opening (TBC) |

Assignment 1

Form pairs

Study history of earth construction

Make a 20min presentation to others.

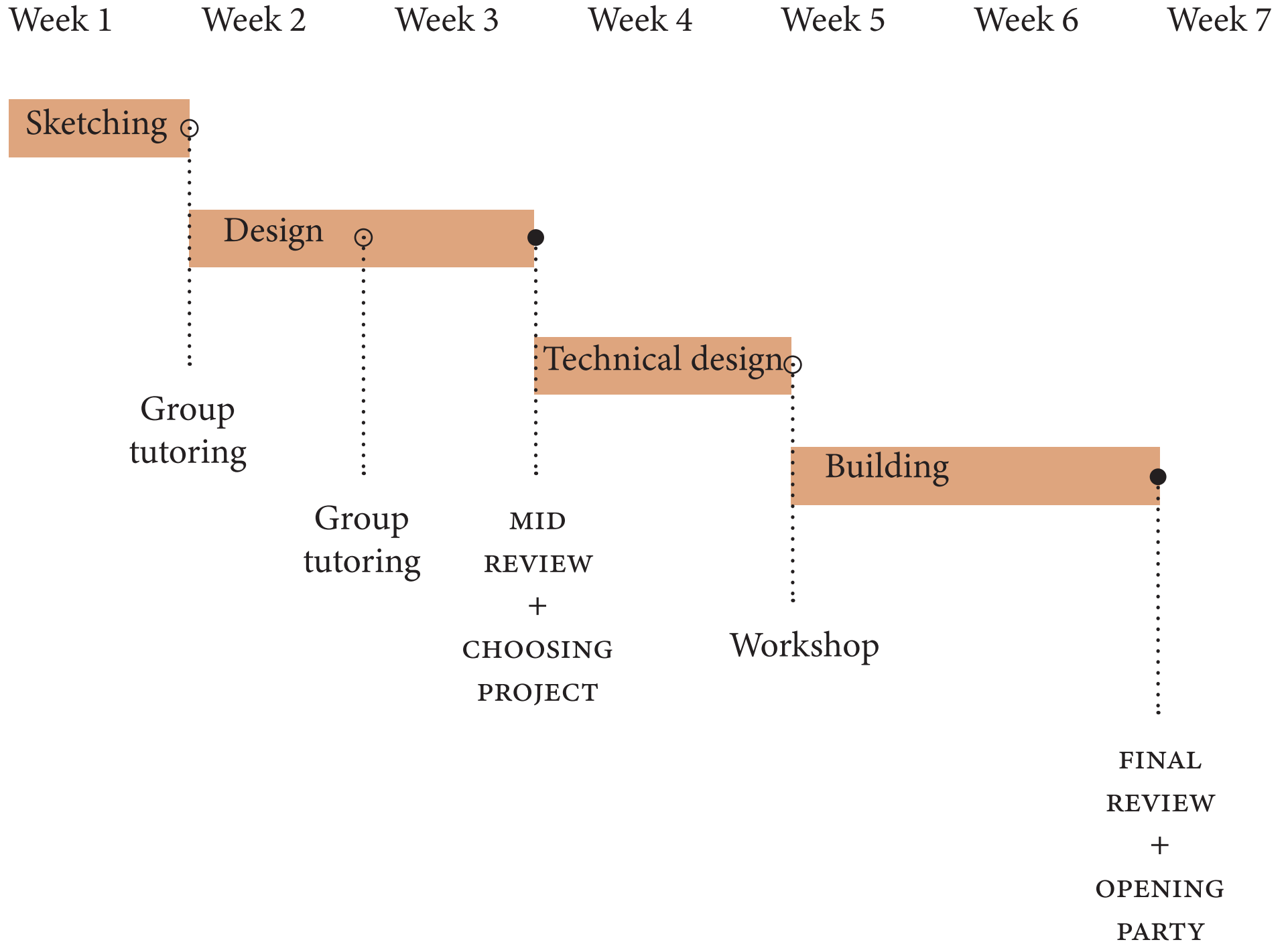
Subjects by continents

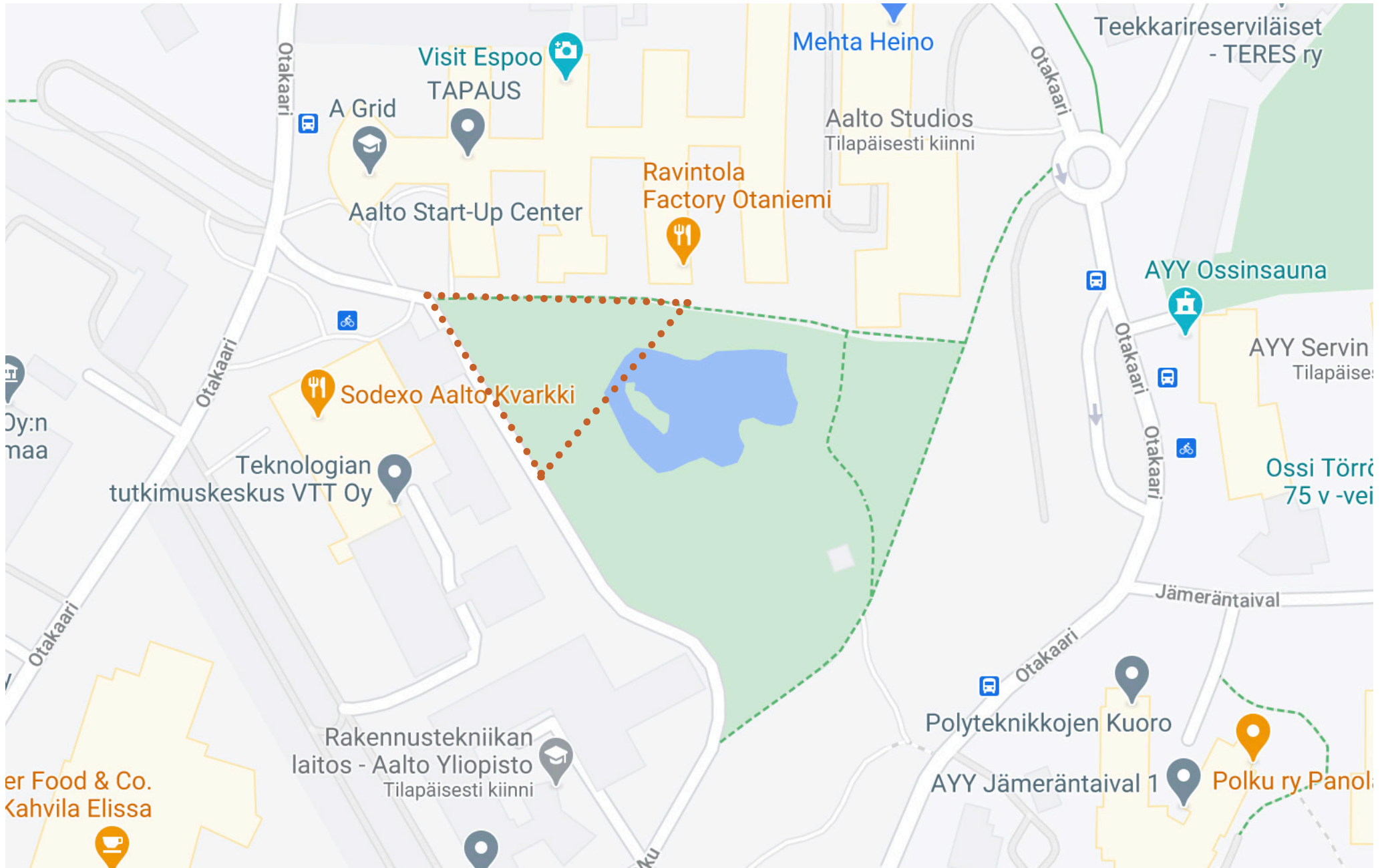
Europe, Africa, North America, South America, Middle East, Asia

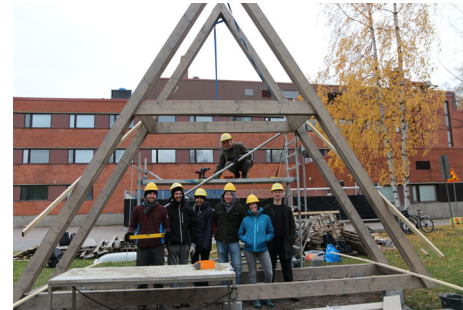
Assignment 2

CAMPUS HANGOUT

Design a new hangout spot for the Aalto community to the Ossinlampi test site using earth in your chosen form.







REQUIRED MATERIAL

Prepare vertical A1 panel(s).
There will be a physical exhibition.

Site plan

Floor plan, Sections, Elevations

Detail sketches

Scale model

Renderings or other views

Short project description text

EVALUATION CRITERIA

- overall architectural character
- relation to the surroundings
- innovation
- structural and technical consistency
- atmosphere and experientiality of the design
- design process, participation and time management
- presentation

Pass/fail



EARTH ARCHITECTURE
2020

Why are you here?
Previous experience with earth?

Why am I here?
Previous experience with earth?





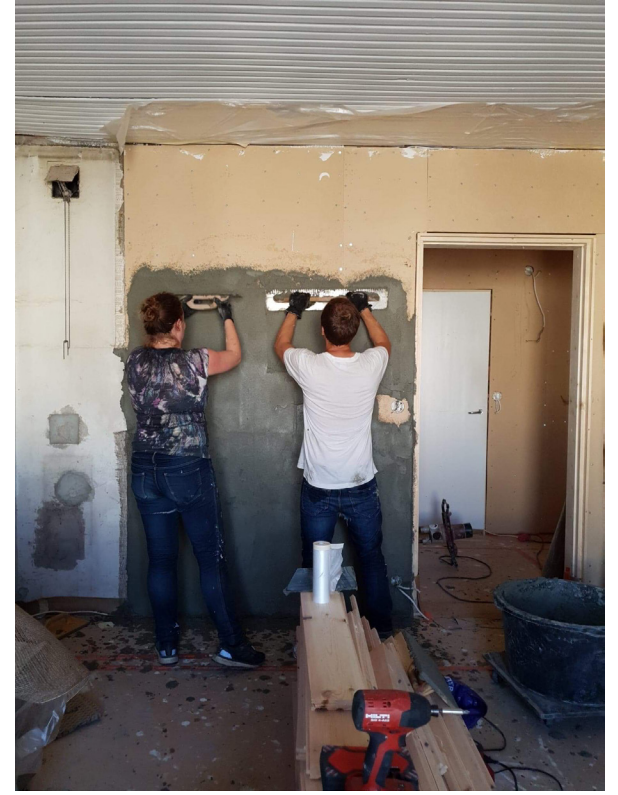






My home





WHY EARTH?

Sustainability

Technical qualities

WHY EARTH?

Esthetics

Tradition

Innovation

repairable

cradle to cradle

Sustainability

local

Technical qualities

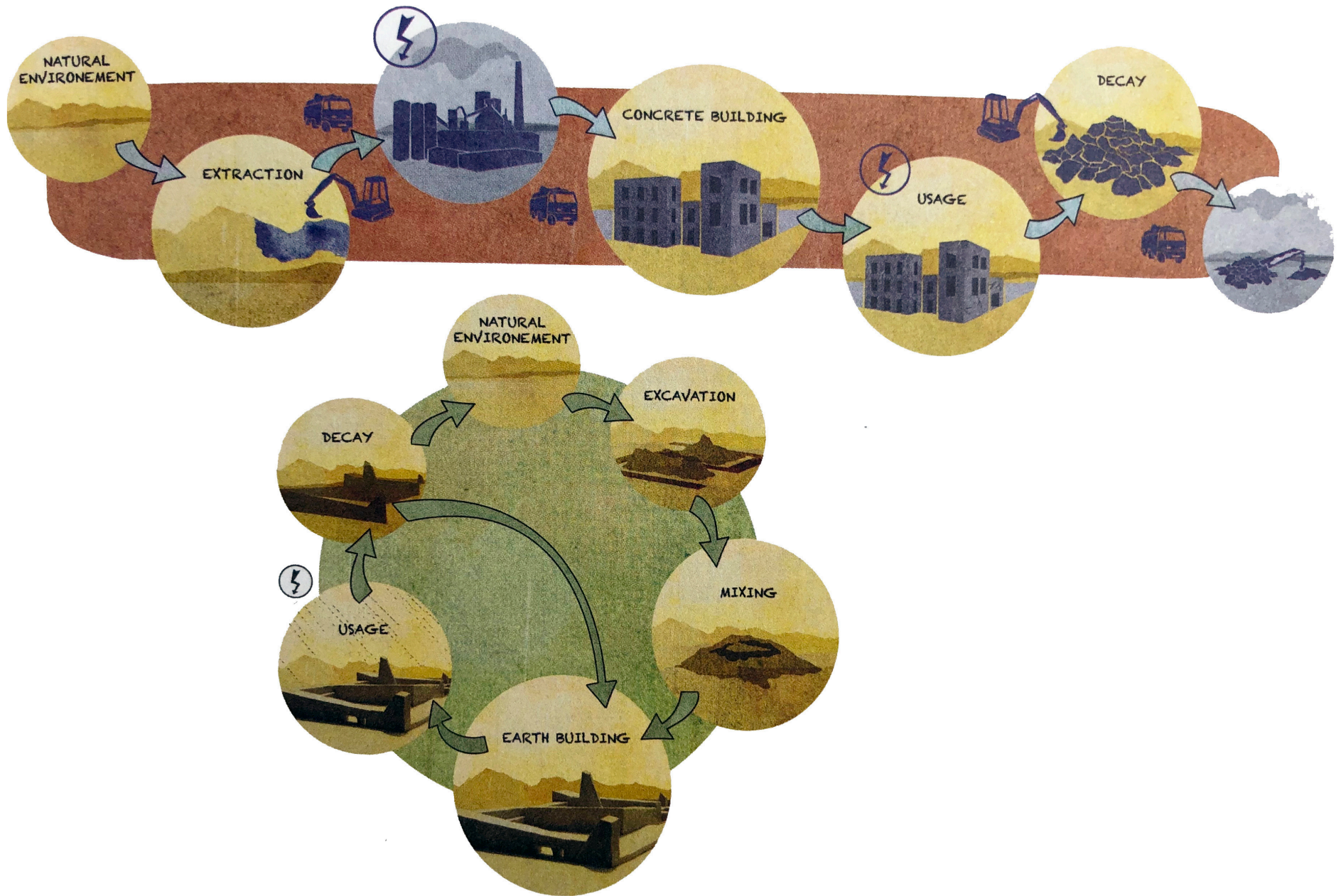
low carbon

WHY EARTH?

Esthetics

Tradition

Innovation



Source: CRAterre

Sustainability

Technical qualities

WHY EARTH?

oldest material

culture

Esthetics

Tradition

experience

Innovation



Katsura Imperial Villa, Japan



Ryoan-ji, Japan

Strömfors bruks logging
early 1800's



Stables 1908
South-West Finland

Sustainability

Technical qualities

WHY EARTH?

Esthetics

Tradition

high-rise

Innovation

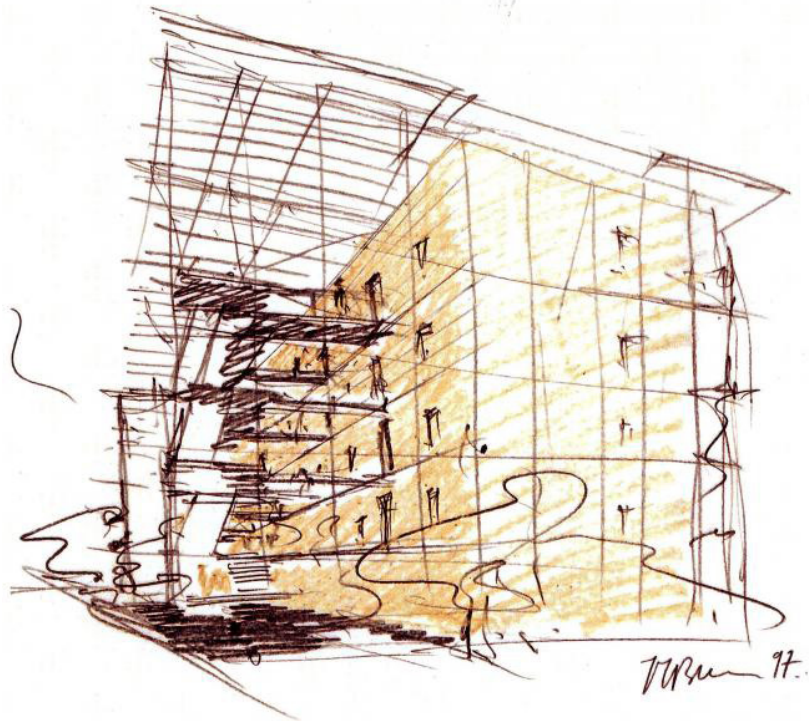
pre-fabrication

endurace

Ricola Kräuterzentrum
Herzog de Meuron
Switzerland 2014







Salvatierra housing
Jean-Yves Barrier
France 2007



Stephanie Chaltiel, MUDD - drones



ETH Zurich - vaulting with pre-fabricated rammed earth elements





Calum Armstrong
Cob 2



Sustainability

Technical qualities

WHY EARTH?

variety

Esthetics

Tradition

beauty

neuro science

Innovation



“Since the beginning of time, [people have] looked for certain patterns and a balance of space. . . . There is a deep-seated need for beauty and when that need is filled, a sense of safety and comfort is created.”

Donald H. Ruggles: Beauty, Neuroscience, and Architecture:
Timeless Patterns and Their Impact on Our Well-Being

Joelle Eyeson, HiveEarth, Ghana





Sustainability

simple

cleansing

air moisture

Technical qualities

thermal mass

acoustics

WHY EARTH?

Esthetics

Tradition

Innovation



Wormser Dom's sanctuary interiors
Studio Anna Heringer
Lehm Ton Erde - Martin Rauch
2018



WHY NOT EARTH?

Earth is for poor people.
Concrete = progress

Earth is not a modern enough

Earth isn't a Finnish tradition.
We only used to build log houses.

Earthen buildings
look too hippie

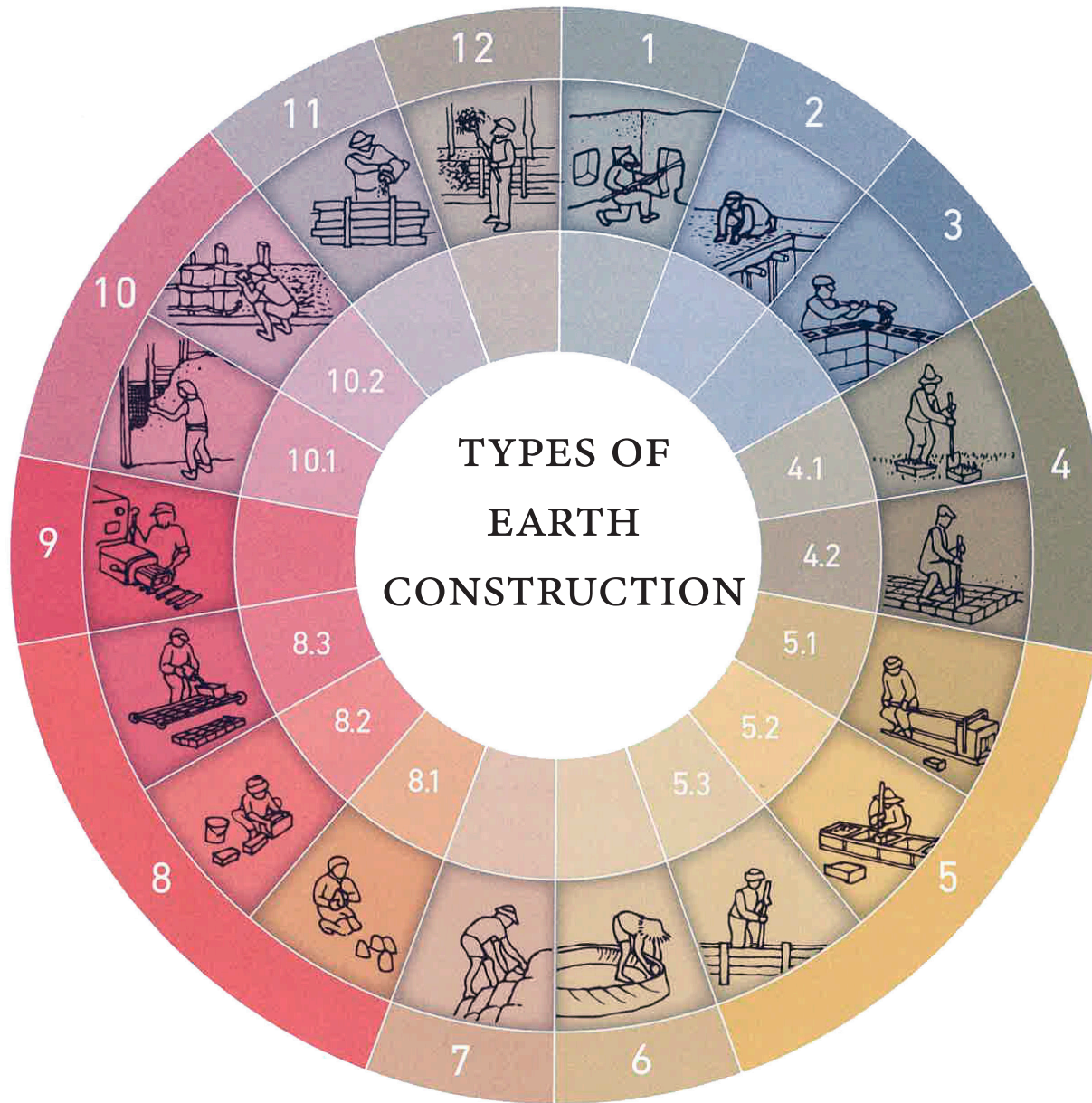
WHY NOT EARTH?

Earth is expensive

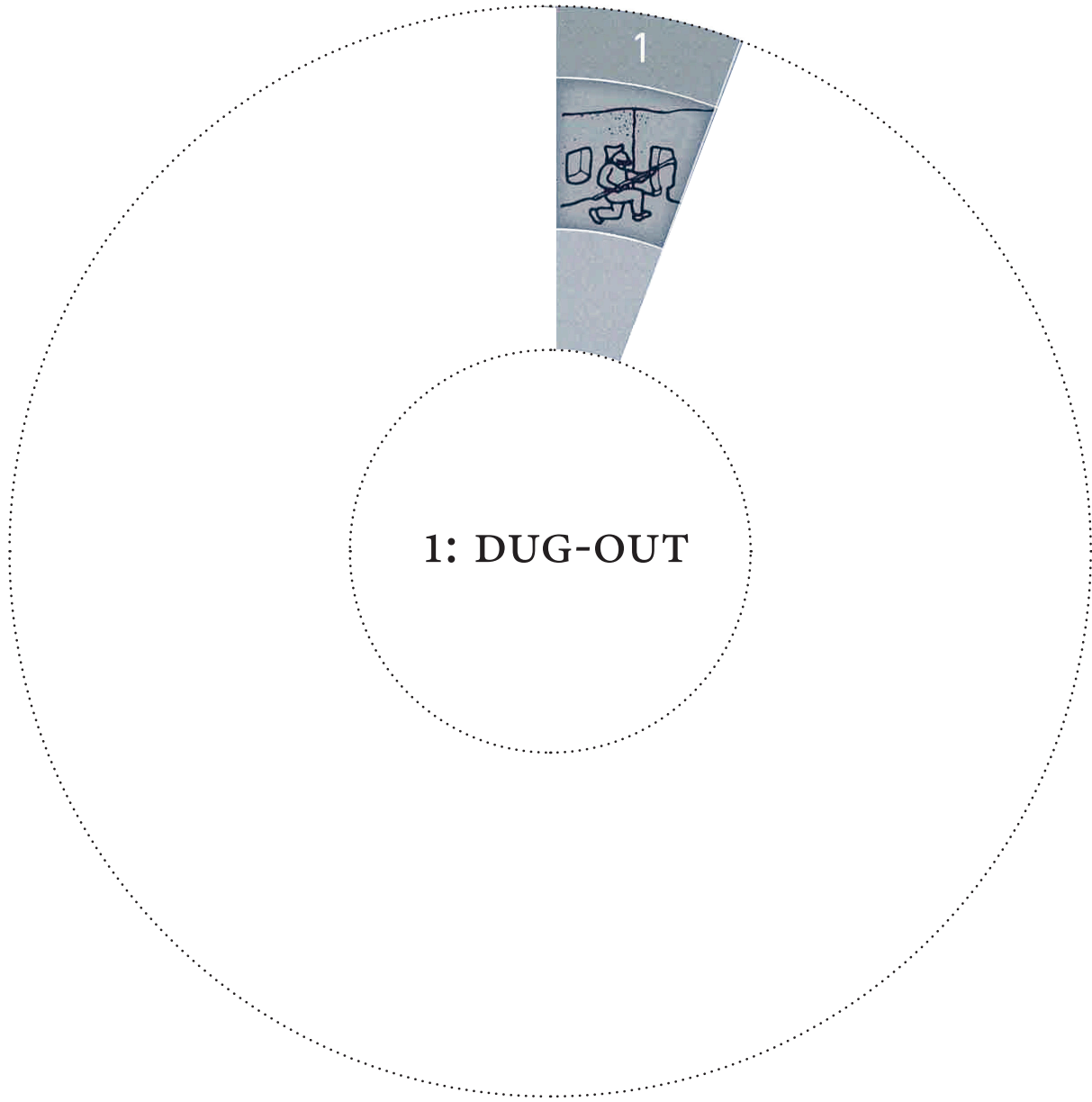
Earth is too simple and
can't be upscaled.

Earth is dirty.

Earth doesn't endure
frost or moisture

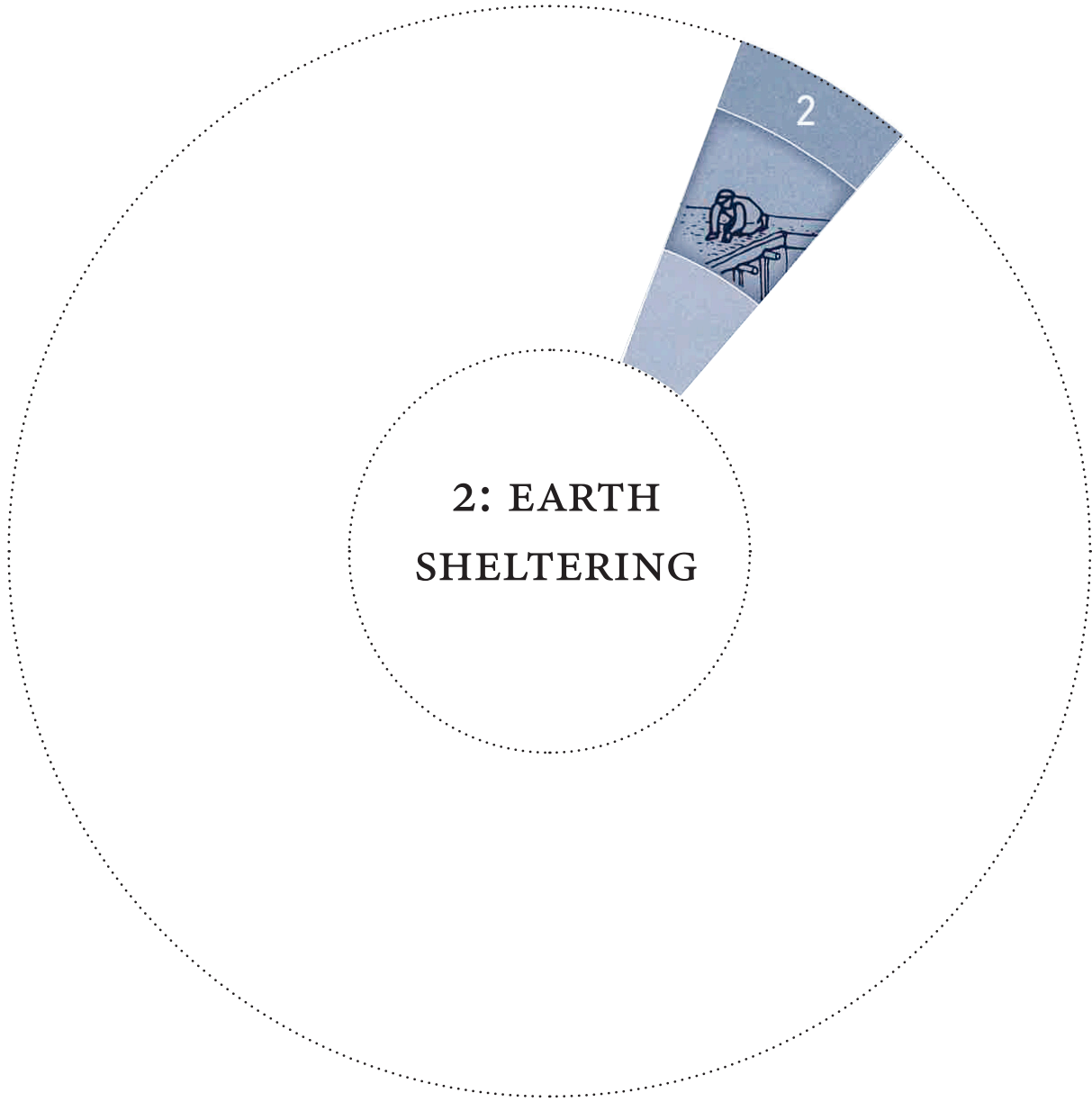


Source: CRAterre

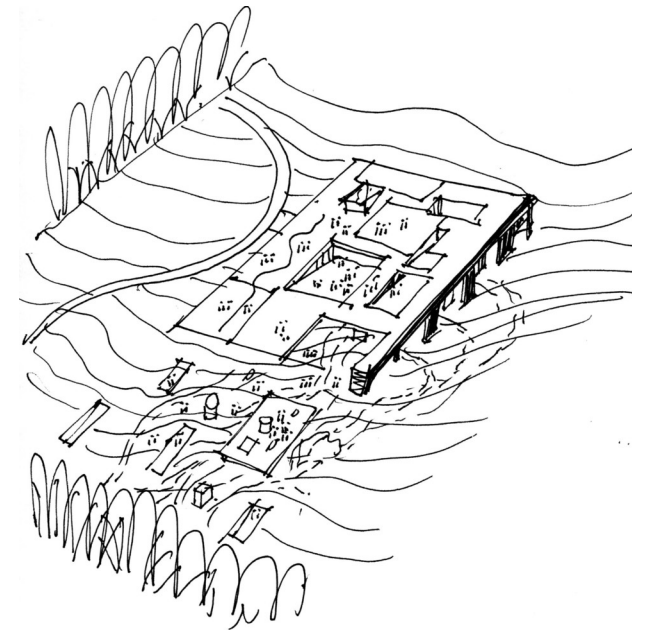


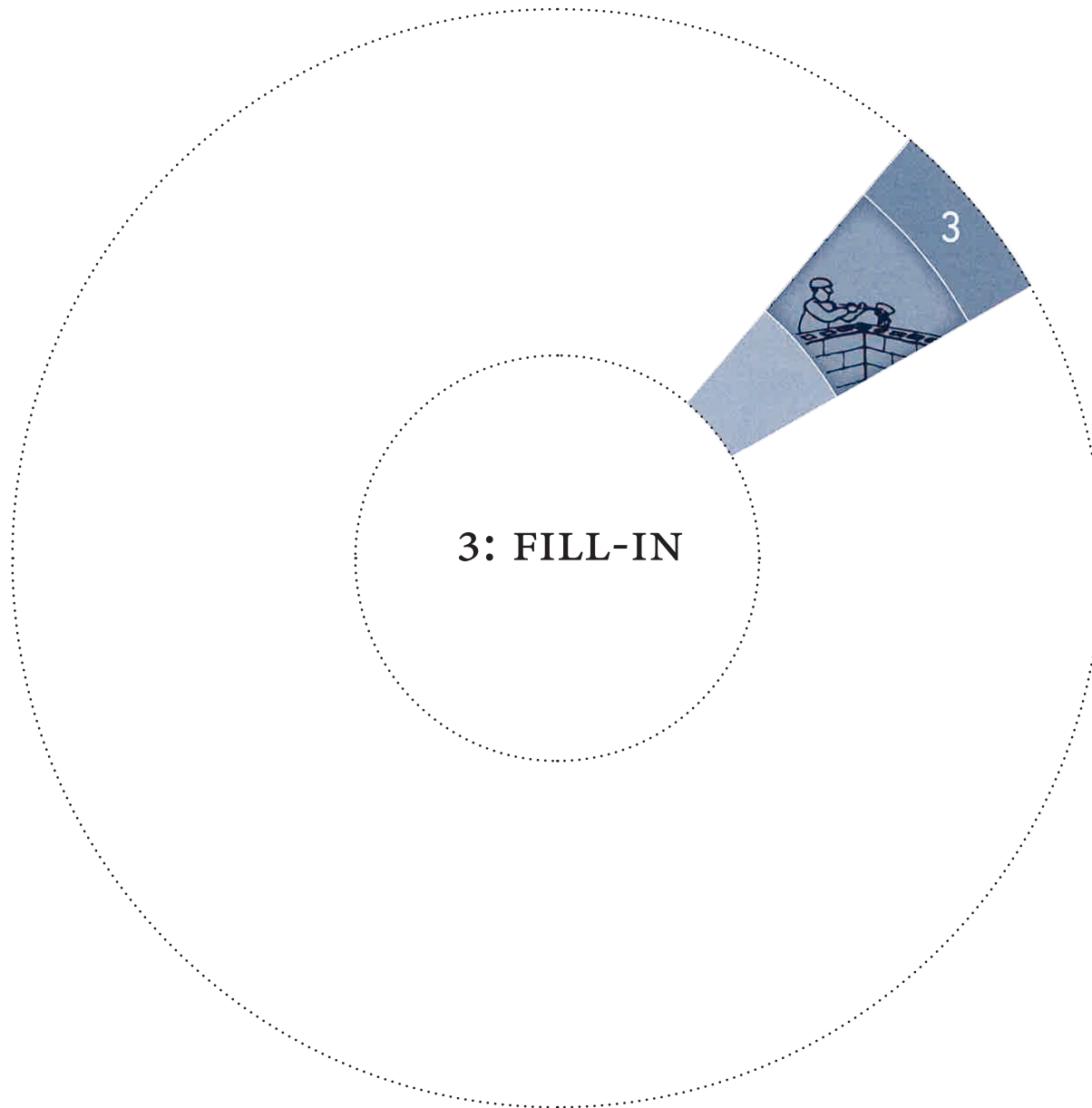
Traditional underground houses, Guadix, Spain





Moesgaard Museum, Henning Larsen

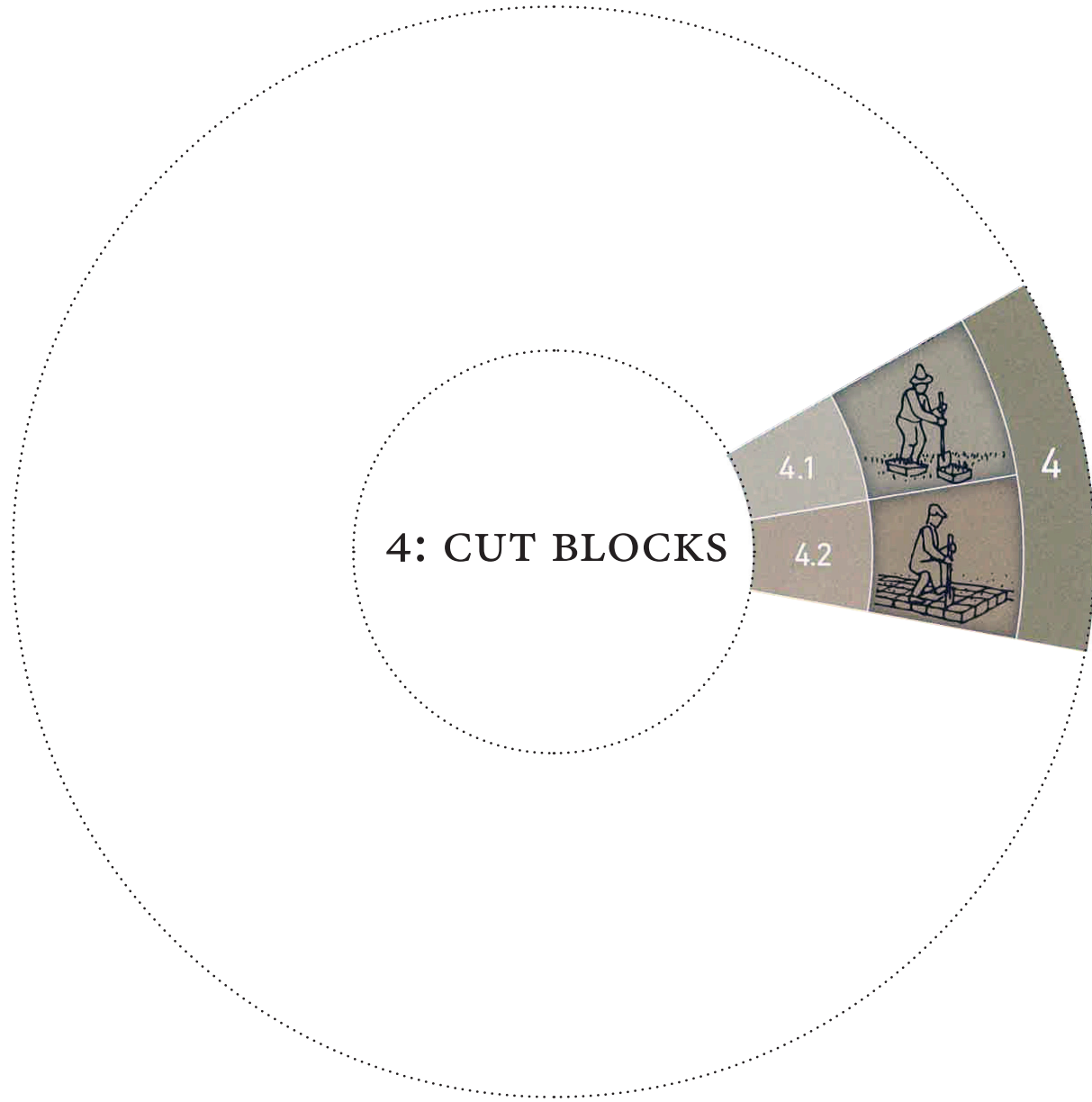




Superadobe - Nader Khalili



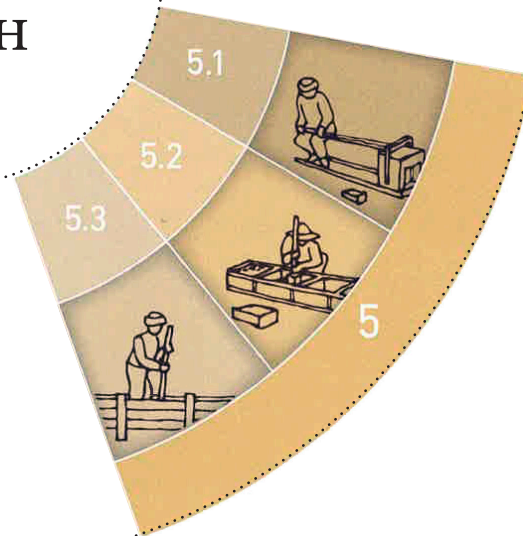




Collège Hampaté Bâ, Article 25, Niamey, Niger



5: COMPRESSED EARTH



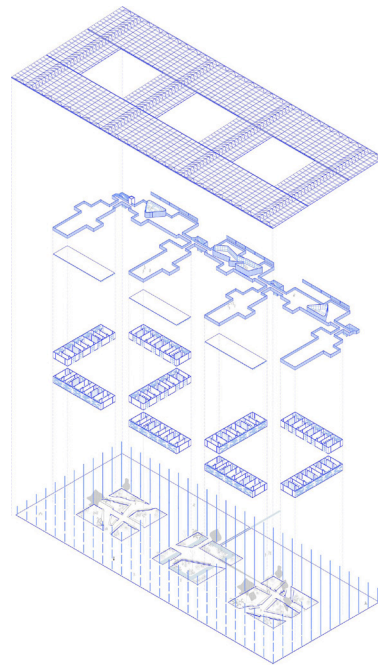


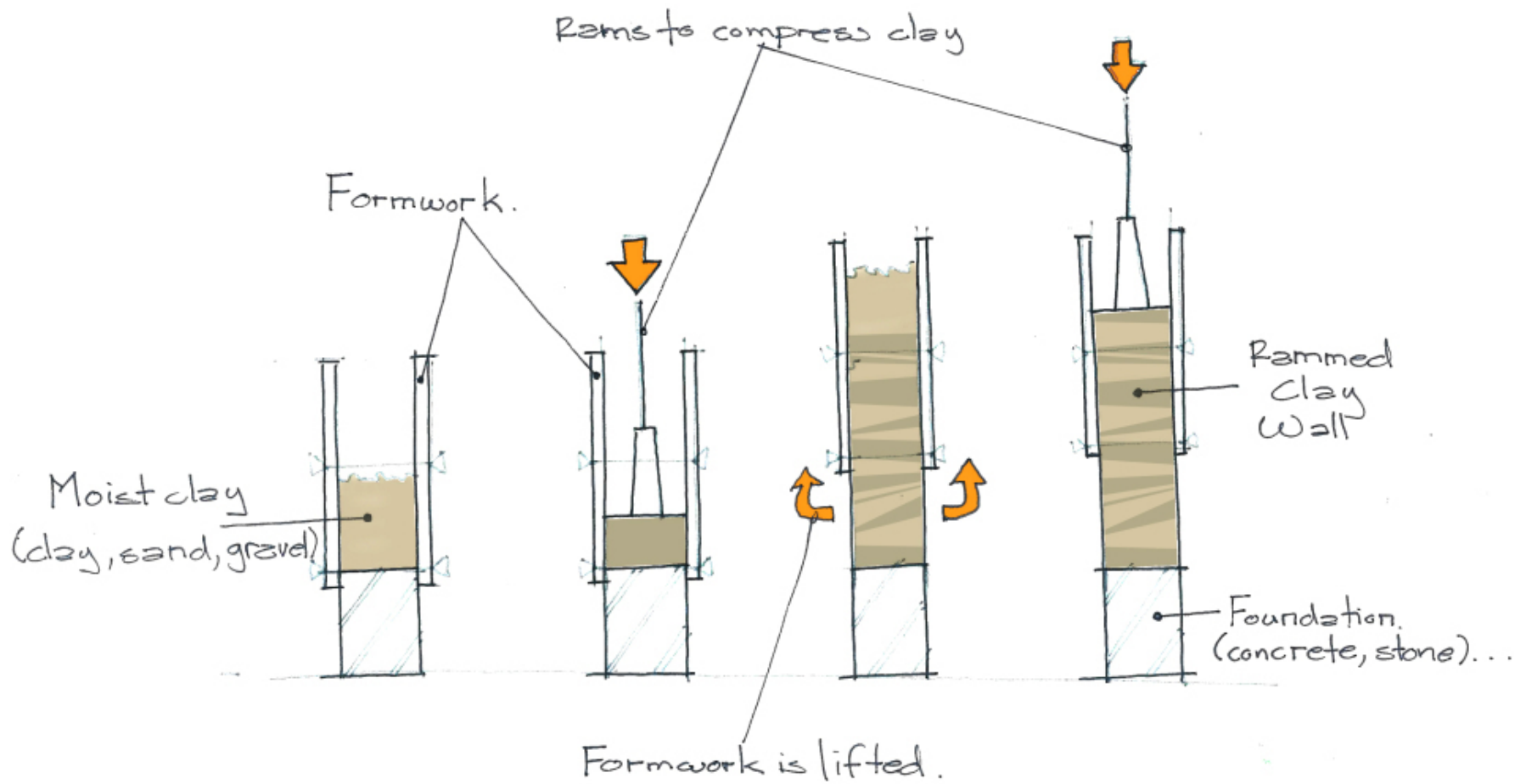
KKYC
Komitu Architects
(CEB)





Children Village Canuanã,
Gustavo Utrabo
Pedro Duschenes
Rosembaum
Brazil



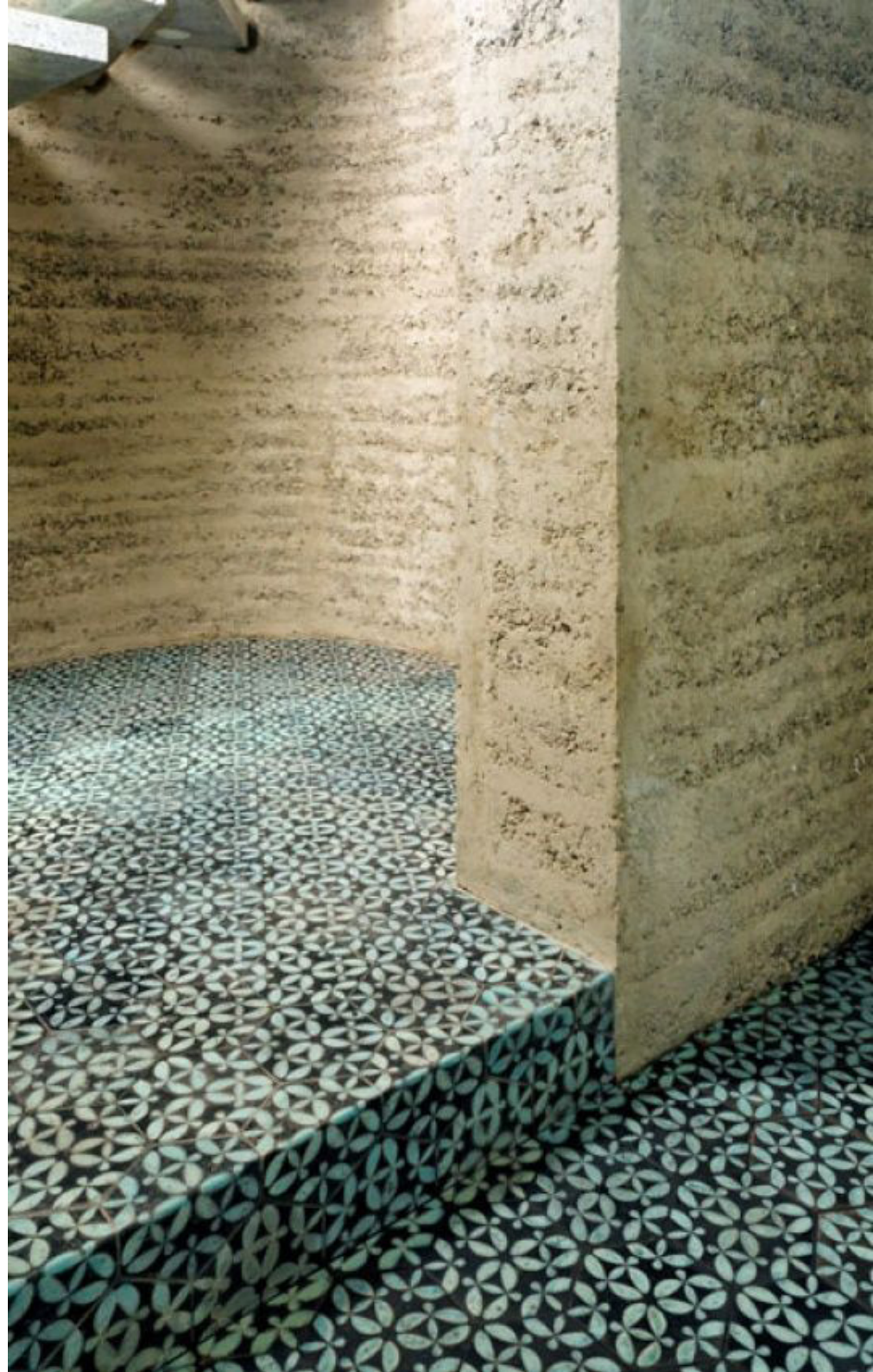
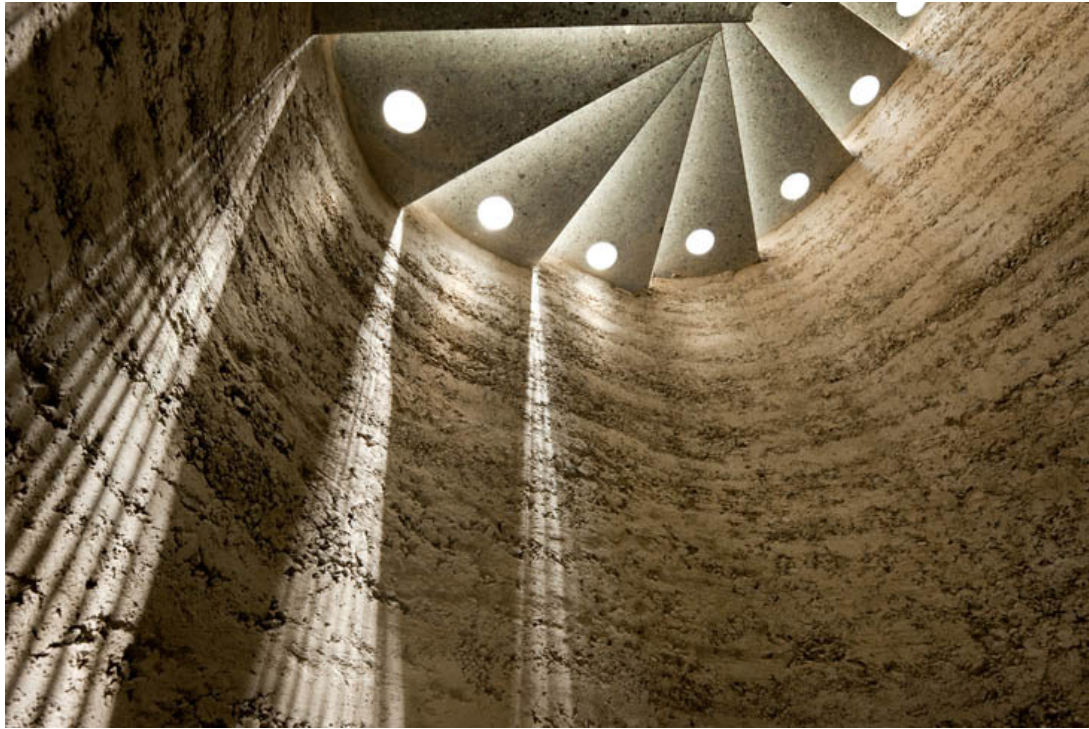




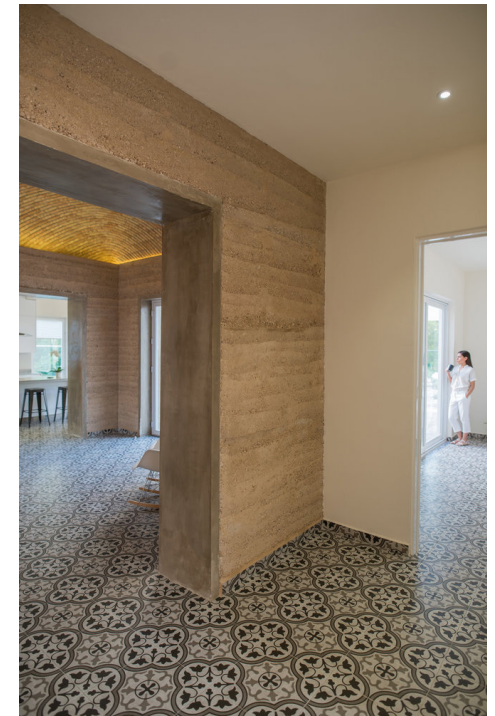
The Great Wall of China

Haus Rauch - Martin Rauch 2008



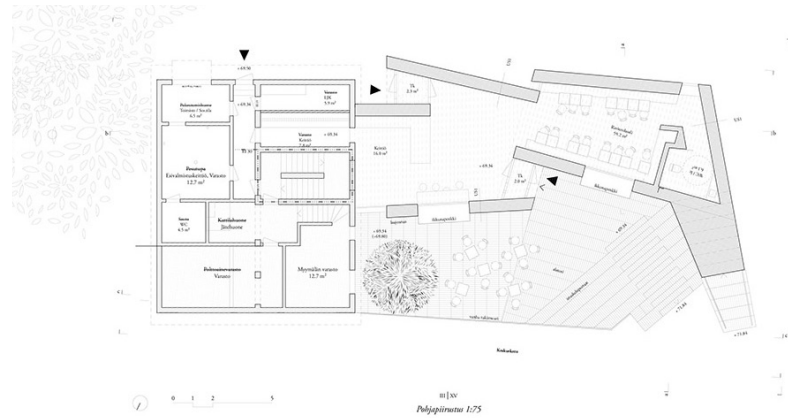


Earth House earthLAB Studio





Chapel of Reconciliation
Rudolf Reitermann and Peter Sassenroth
Berlin 2000



Kristiina Kuusiluoma Päivölä kindergarden Diplomawork

6: DIRECT
SHAPING



6



Omicron Electronics, Anna Heringer & Martin Rauch, Austria 2015

7: STACKED
EARTH



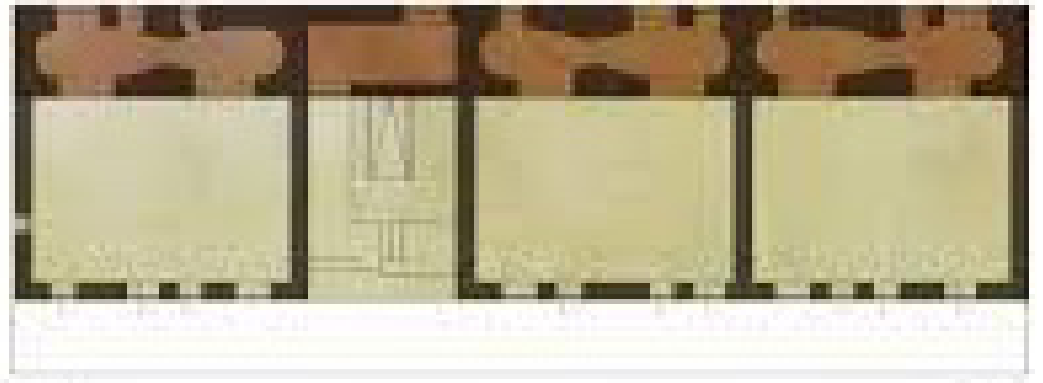
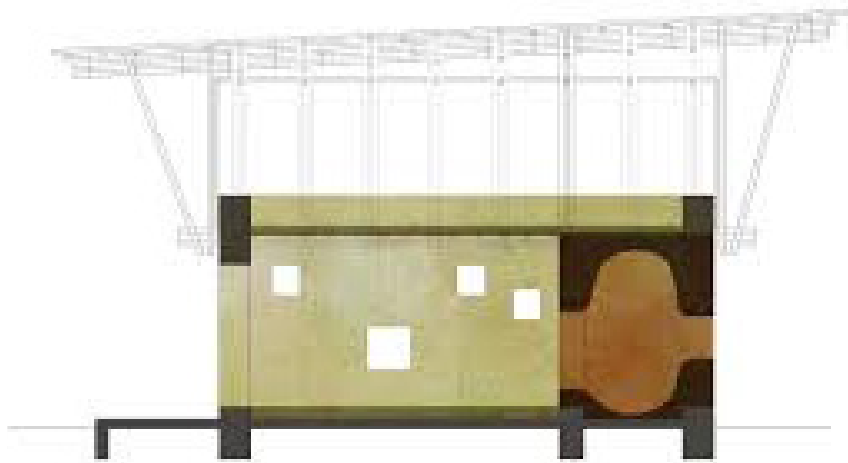
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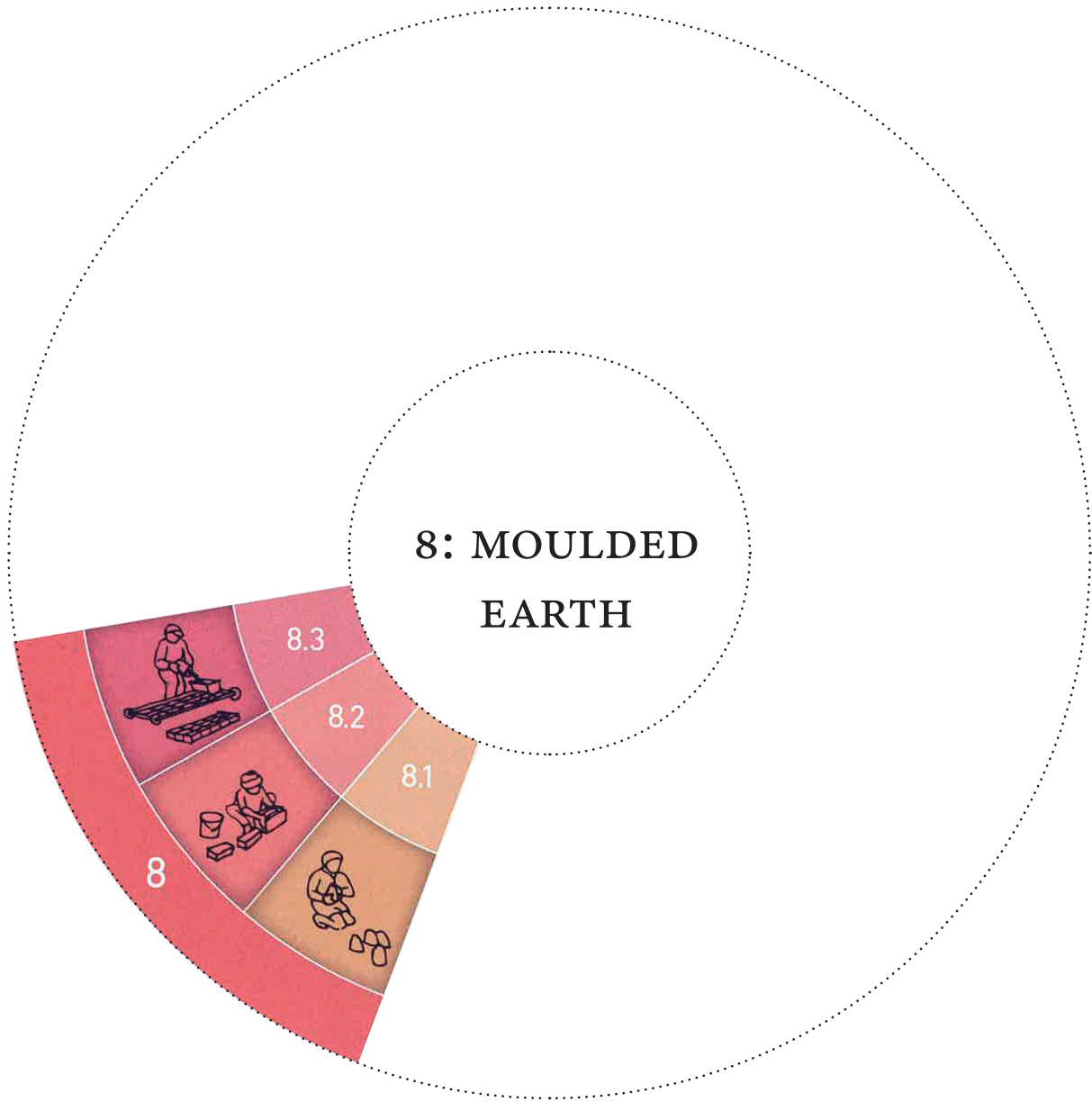
Shiban, Yemen

METI school, Anna Heringer, Bangladesh









Sra Pou vocational School, Rudanko+Kankkunen,

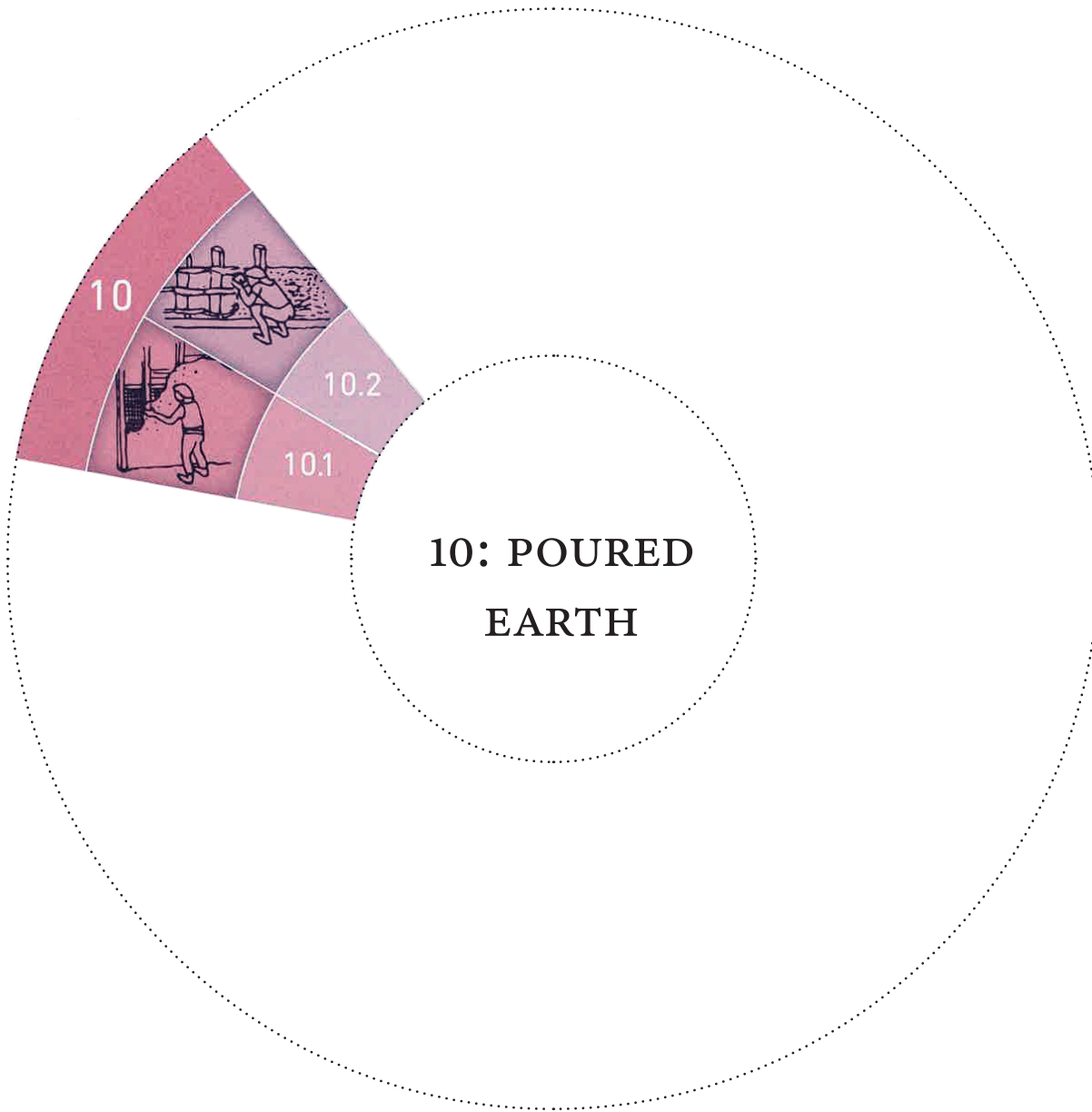






Institute for Advanced Architecture of Catalonia (IAAC) - 3D printing









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12: WATTLE
AND
DAUB





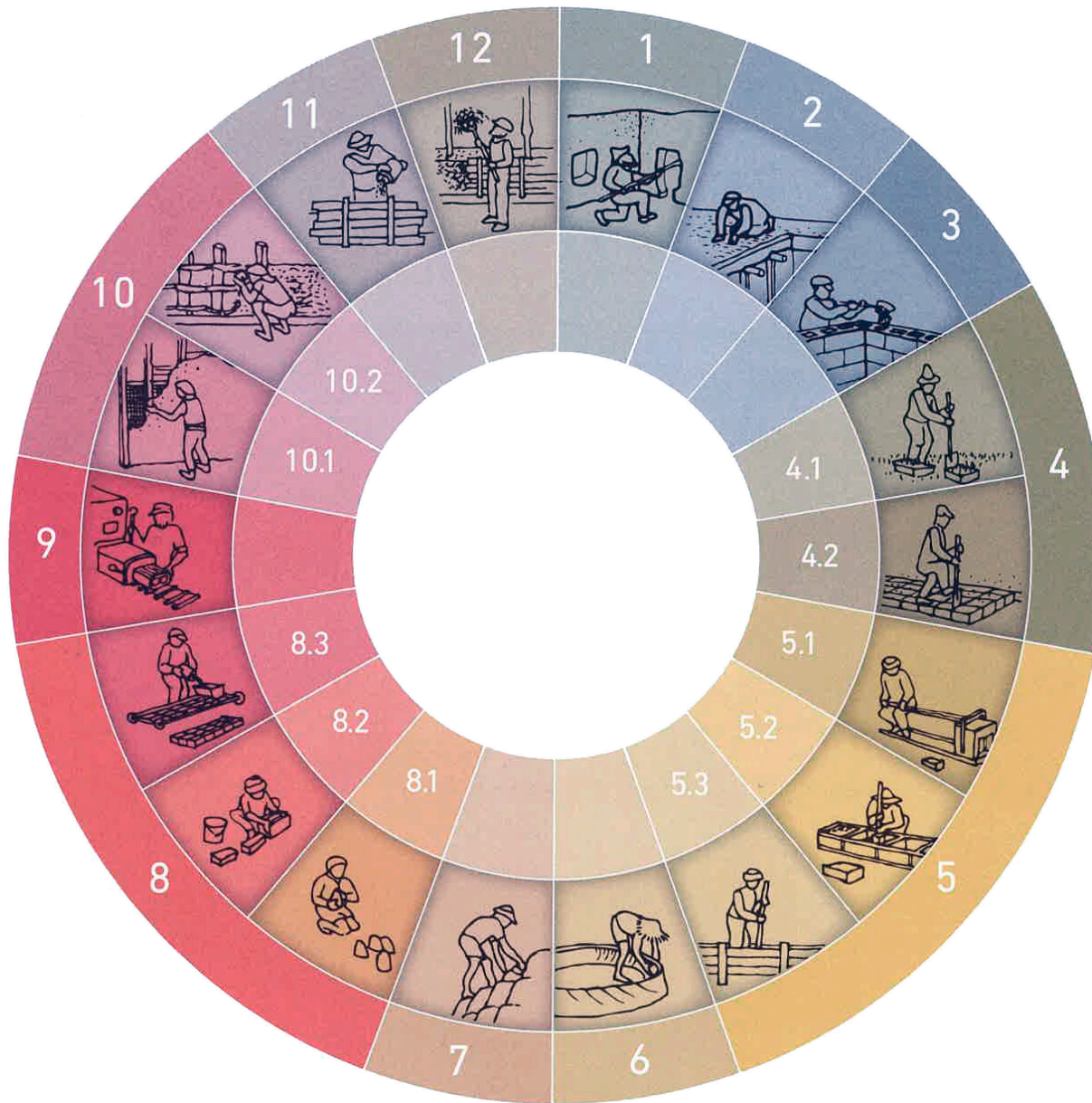
Skaarup, Funen, Denmark







Createrra + Ecococon
Passive family house
Slovakia



Source: CRAterre

GOOD READS AND OTHER TIPS:

Design museum: Soil Matters

4.9.-10.1.

*Soil Matters exhibition explores the effects of design
and manufacturing industries on soil*

Jean Dethier:

The Art of Earth Architecture

Martin Rauch:

Refined Earth Construction & Design with Rammed Earth

Anna Heringer & al:

Upscaling Earth