

Regenerative Building:

*Examples, Processes and Narratives
from an Ongoing Paradigm Shift*





PROJECT TEAM

REGENERATIVE BUILDING PROCESSES



Lotte Bjerregaard
Jensen (PI)



Heidi Sørensen
Merrild (post-doc)



Peer Nätthke
(research assistant)



Jens Pedersen



Alicia Lazzaroni



Antonio Bernacchi



Elizabeth Donovan
(Co-PI)

PROJECT PARTNERS

- Uffe Jørgensen Følgegruppe medlem, professor på Aarhus Universitet, institut for Agroøkologi, Foulum.
- AU. Steffen Petersen Aktiv forsker i projektet med andel af budget, professor i bygningsvidenskab, Aarhus Universitet.
- Stine Borup Christensen tovholder for Skive Kommunes "Spottet"
- Poul Møller Syddjurs Kommune som Chefkonsulent for 'strategi og projekter' (Syddjurs Kommune, Ledelsessekretariatet).
- Hanne Tine Ring Hansen direktør i Søren Jensen Rådgivende ingeniører.
- Ane Kirstine Brunbjerg biolog og adjunkt på Aarhus Universitet, Ecoscience.
- Kathrine Nykjær Brejnrod COWI
- Stina Jensen Stina Jensen som bæredygtighedsleder hos CEBRA arkitekter, Aarhus.
- Rune Elsgart Bæredygtighedsleder, AART tegnestuen i Aarhus.
- Erik Frehr CSO Rambøll
- Kasper Kurt Jakobsen CSO Grundfos.
- Anne Mette Boye, Aarhus Kommune



PROJECT RESEARCH QUESTIONS

- Which **processes and indicators** lead to solutions that are regenerative?
- What **opportunities** present themselves in today's building sector?
- How can we **support the paradigm shift** while also maintaining and improving the quality of buildings?
- Which **design approaches** could lead to a regenerative level, in the context of our limited resources and vulnerable habitats?





PROJECT WORK PACKAGES

REGENERATIVE BUILDING PROCESSES

WORK PACKAGE ONE



MAPPING

WORK PACKAGE TWO



INTERVIEWS

WORK PACKAGE THREE

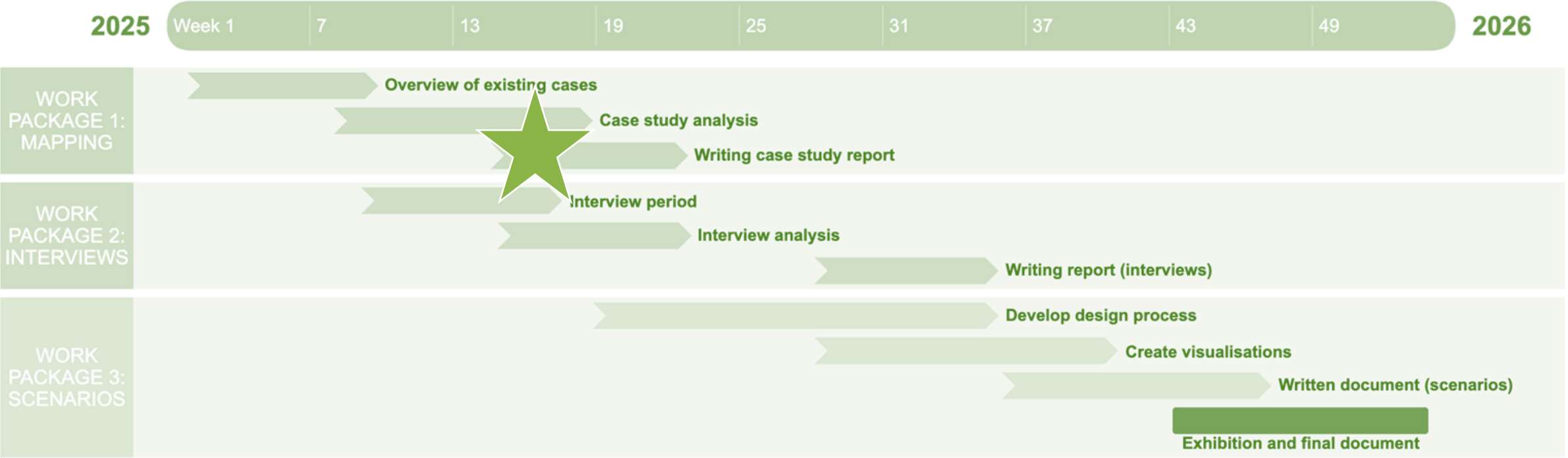


SCENARIOS



PROJECT TIMELINE

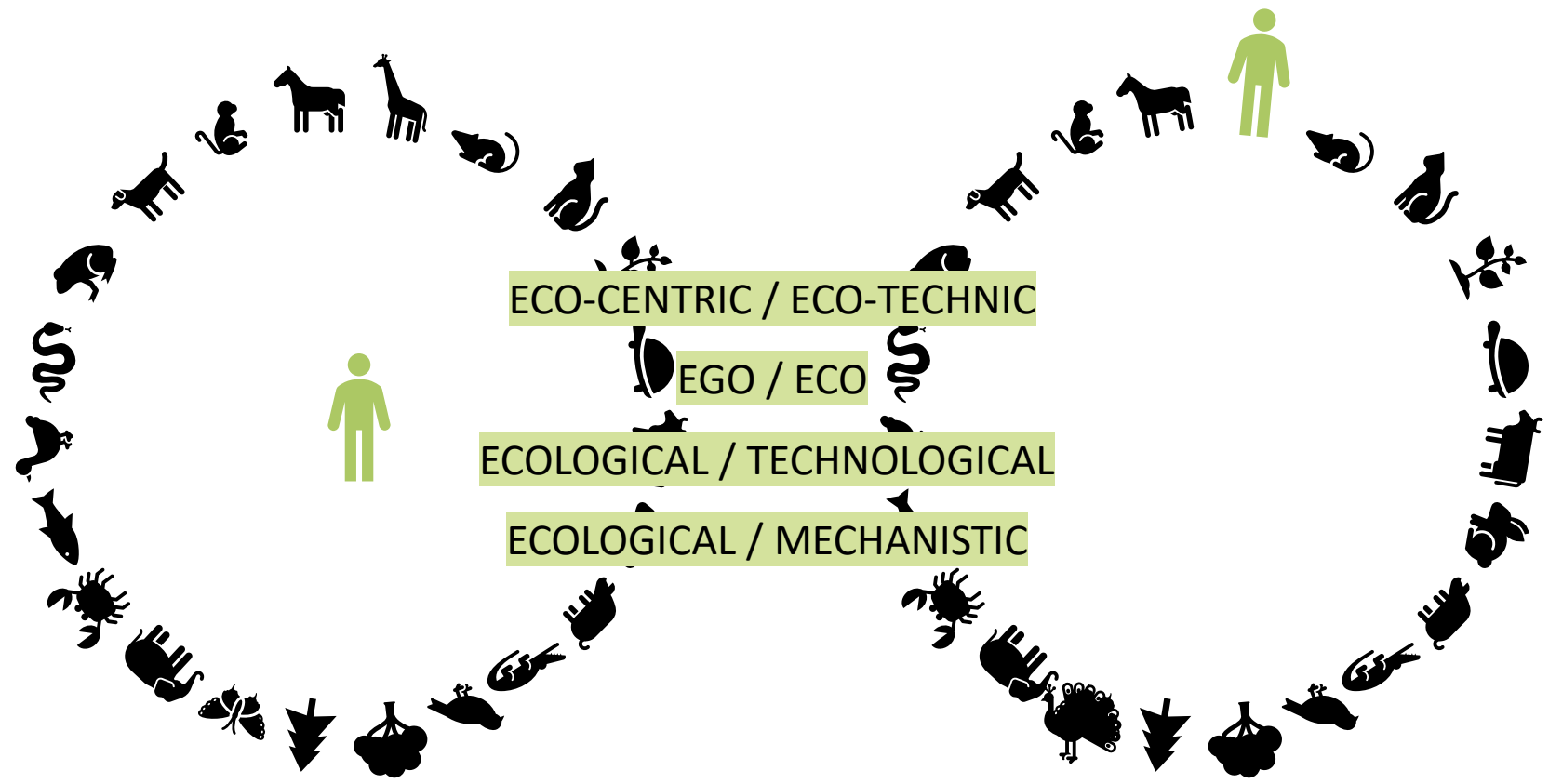
REGENERATIVE BUILDING PROCESSES





PROJECT PARADIGMS & WORLDVIEWS

REGENERATIVE BUILDING PROCESSES

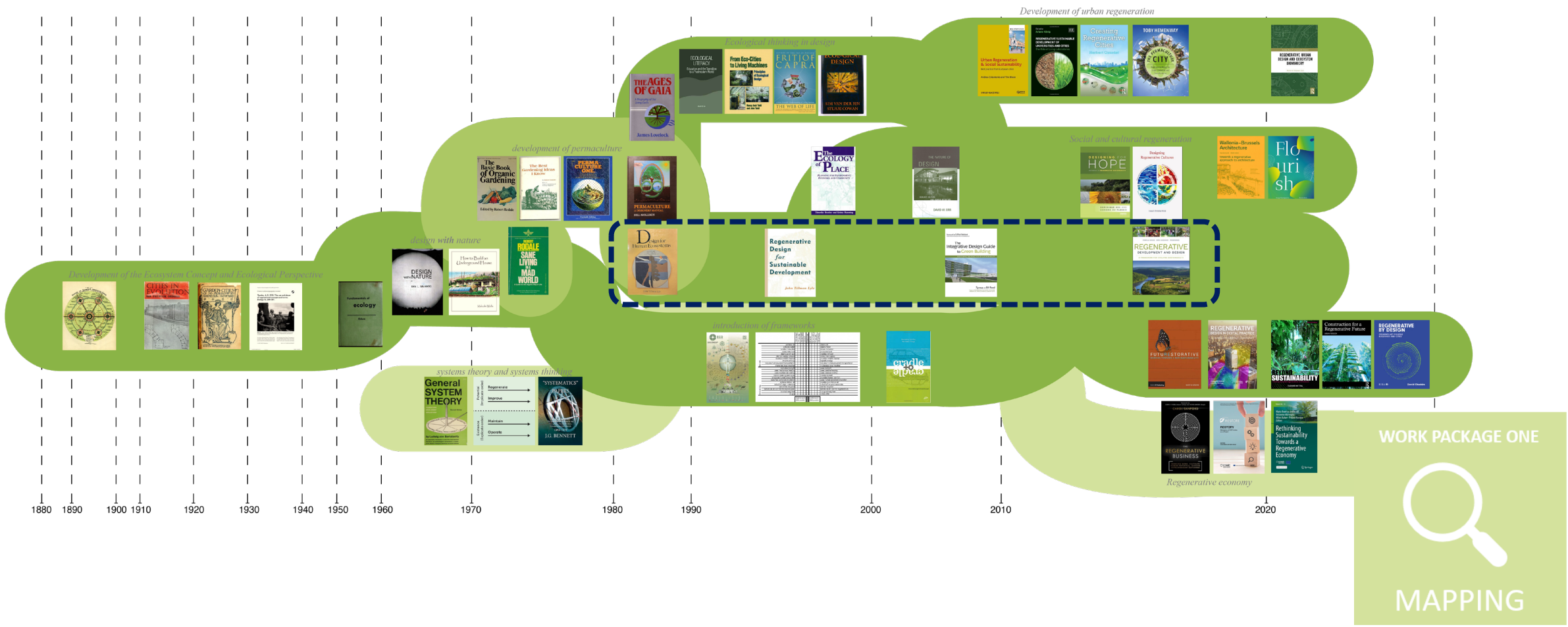


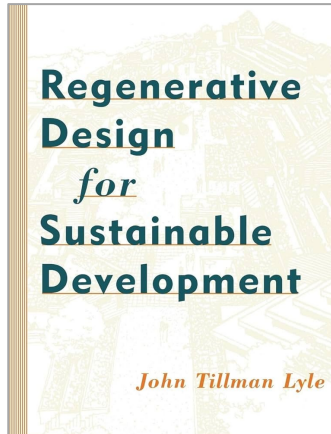
WORK PACKAGE ONE

MAPPING

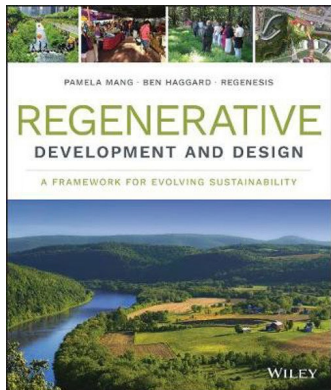
PROJECT FRAMING LITERATURE

REGENERATIVE BUILDING PROCESSES





- Lyle proposed moving away from linear, degenerative processes toward “**cyclical flows**” that enable continuous renewal in alignment with natural ecosystems
- His perspective emphasises a departure from one-way “**source-to-sink**” flows that “**destroy the landscapes on which they depend**”



- **Regenerative design:** “A system of technologies and strategies, based on an **understanding of the inner working of ecosystems that generates designs that regenerate socio-ecological wholes** rather than deplete their underlying life support systems and resources.”
- “**Regenerative development** provides the **framework**, and builds the local capability required to ensure regenerative design processes achieve maximum systemic leverage and support through time.”

Mang, P., Reed, B. (2012). *Regenerative Development and Design*. In: Meyers, R.A. (eds) *Encyclopedia of Sustainability Science and Technology*. Springer, New York, NY

“Regenerative design is described as ‘*building capacity not things*’.

Buildings are designed as systems that interact in complex ways with each other, the living world, and their human inhabitants rather than as objects.”

Source: M. Pedersen Zari. An architectural love of the living: bio-inspired design in the pursuit of ecological regeneration and psychological wellbeing. Referencing Reed, B., Shifting from 'sustainability' to regeneration. Building Research and Information, 35(6), pp. 674–680, 2007.



- “Regenerative practitioners do not think about what they are designing as an **end product**.
- They think about it as the **beginning of a process**.
- Once they release it, **it initiates its own process**, continuing to design the world around it long after they have let it go.”



Source: Mang, P., Haggard, B., Regensis. *Regenerative development and design, a framework for evolving sustainability*

WORK PACKAGE ONE



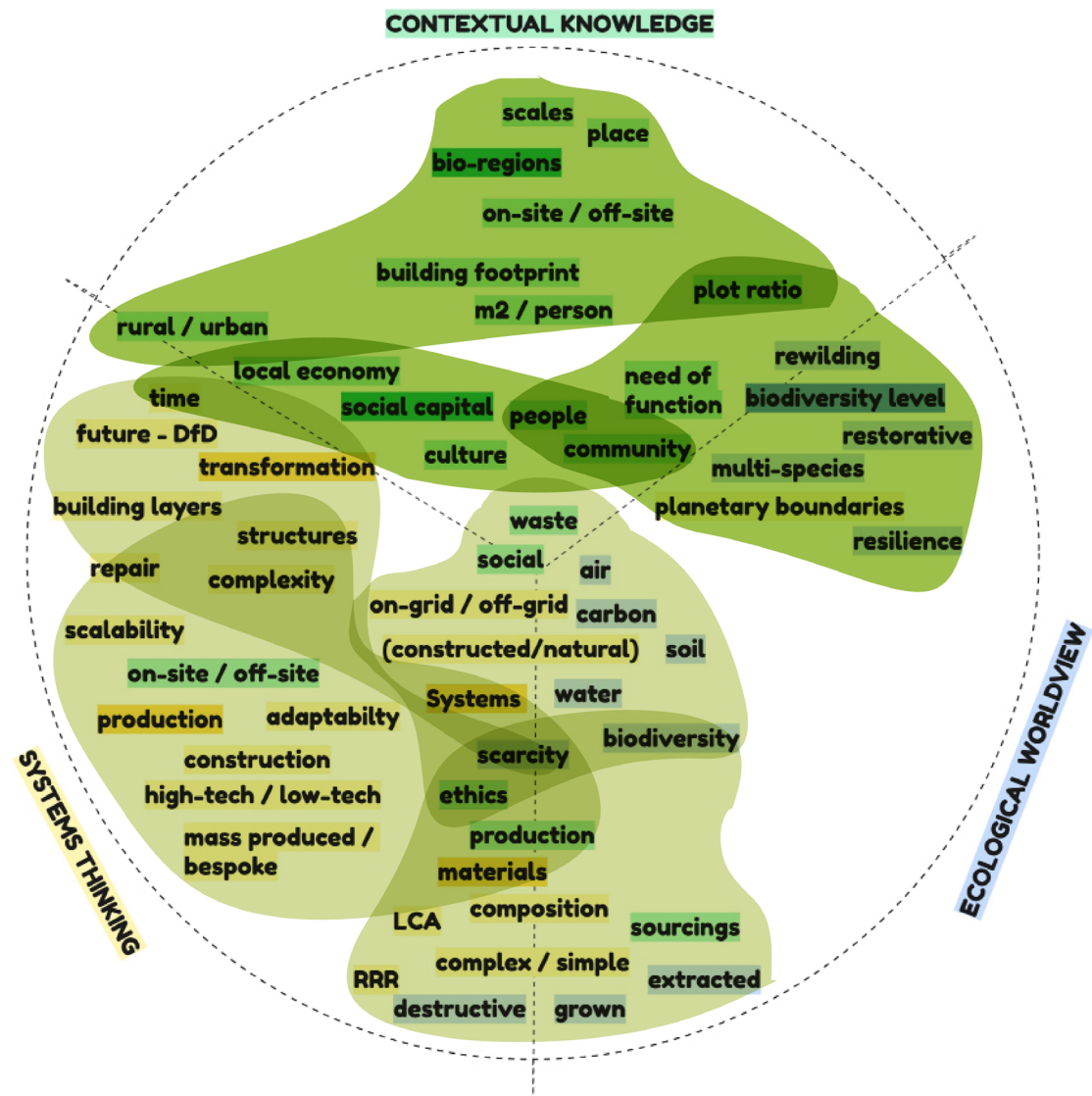
MAPPING



WORK PACKAGE ONE

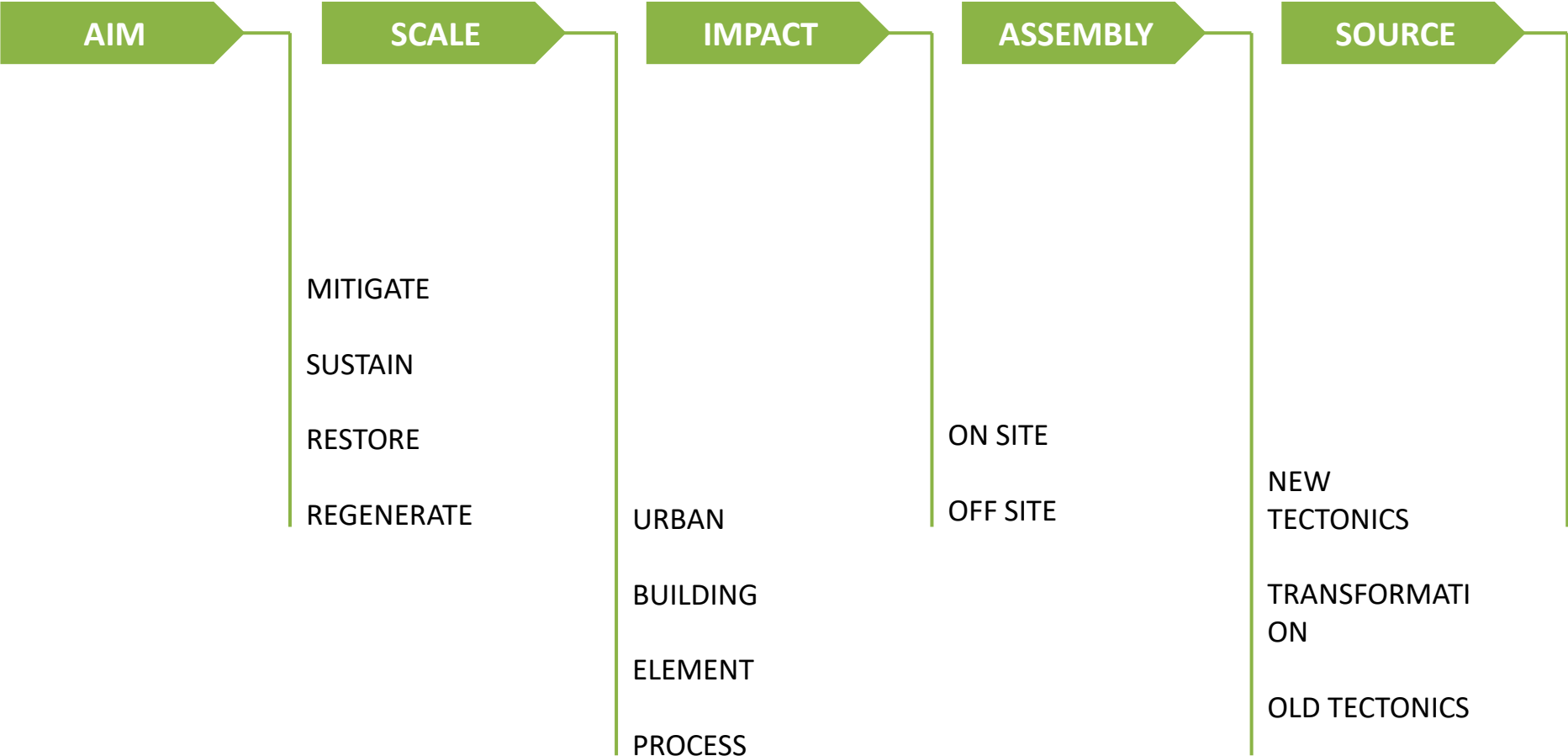


MAPPING



WORK PACKAGE ONE

MAPPING



BIOLOGICAL
GEOLOGICAL
ANTHRO-
POLOGICAL



CATALOGUE OF IDEAS 4-1 PLANET

TINY VARIGHEDEN, KØGE. VANDKUSNTEN

REGENERATIVE BUILDING PROCESSES



COULD THIS ALSO WORK IN AN URBAN CONTEXT?



Drawings: Vandkunsten architects

WORK PACKAGE ONE



MAPPING

LE COSTILL, SAP-EN-AUGE, FR. ANATOMIES D'ARCHITECTURE 2022

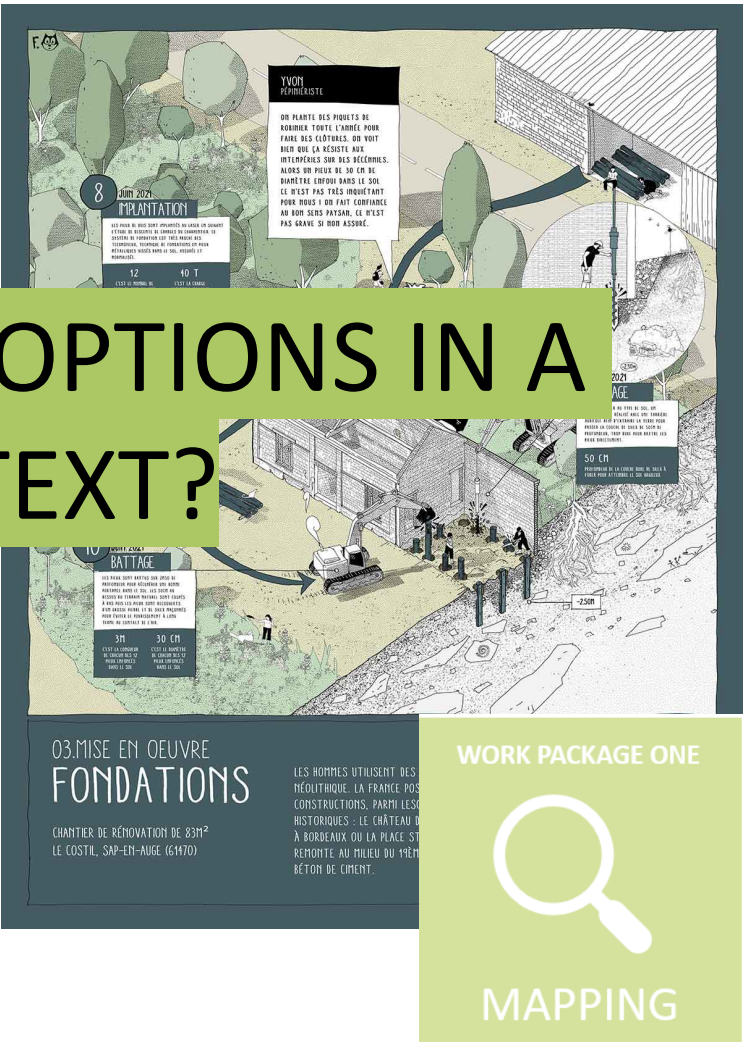


Image: Olivier Sabatier



Drawings: Anatomies D'architecture

WHAT WOULD BE OUR MATERIAL OPTIONS IN A DANISH BIOREGION CONTEXT?





GREAT MOSQUE OF DJENNE, MALI. 1907-ONGOING



COULD A SYSTEM OF ANNUAL RECONSTRUCTION FIT
WITHIN A DANISH CONTEXT AND BUILDING
REGULATIONS?

Image: Juan Manuel Garcia and Paul de Roos

WORK PACKAGE ONE



MAPPING



CATALOGUE OF IDEAS TRANSFORMATION

REGENERATIVE BUILDING PROCESSES

ARTELIER LUMA, ARLES, FR. ASSEMBLE AND BC ARCHITECTS 2024



Image: Assemble

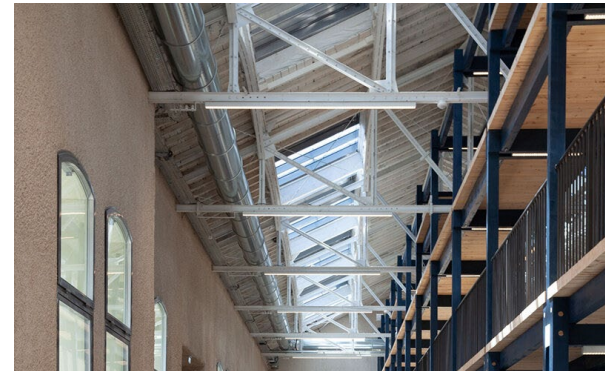


Image: Joseph Halligan



Image: Assemble

WHAT IS NEEDED TO MAKE BIO-BASED TRANSFORMATIONS FINANCIALLY VIABLE?

WORK PACKAGE ONE



MAPPING



CATALOGUE OF IDEAS SCARCITY

REGENERATIVE BUILDING PROCESSES

10K HOUSE, BARCELONA. TAKK ARCHITECTS 2022



WHAT IS COMFORTABLE?



WORK PACKAGE ONE



MAPPING



CATALOGUE OF IDEAS MATERIAL PROCUREMENT

REGENERATIVE BUILDING PROCESSES

HOLZPUR MOONWOOD, KÜNG HOLZBAU HQ. SEILER LINHART ARCHITEKTEN 2020

WHAT BIOLOGICAL PROCCESS CAN IMPROVE MATERIALS?



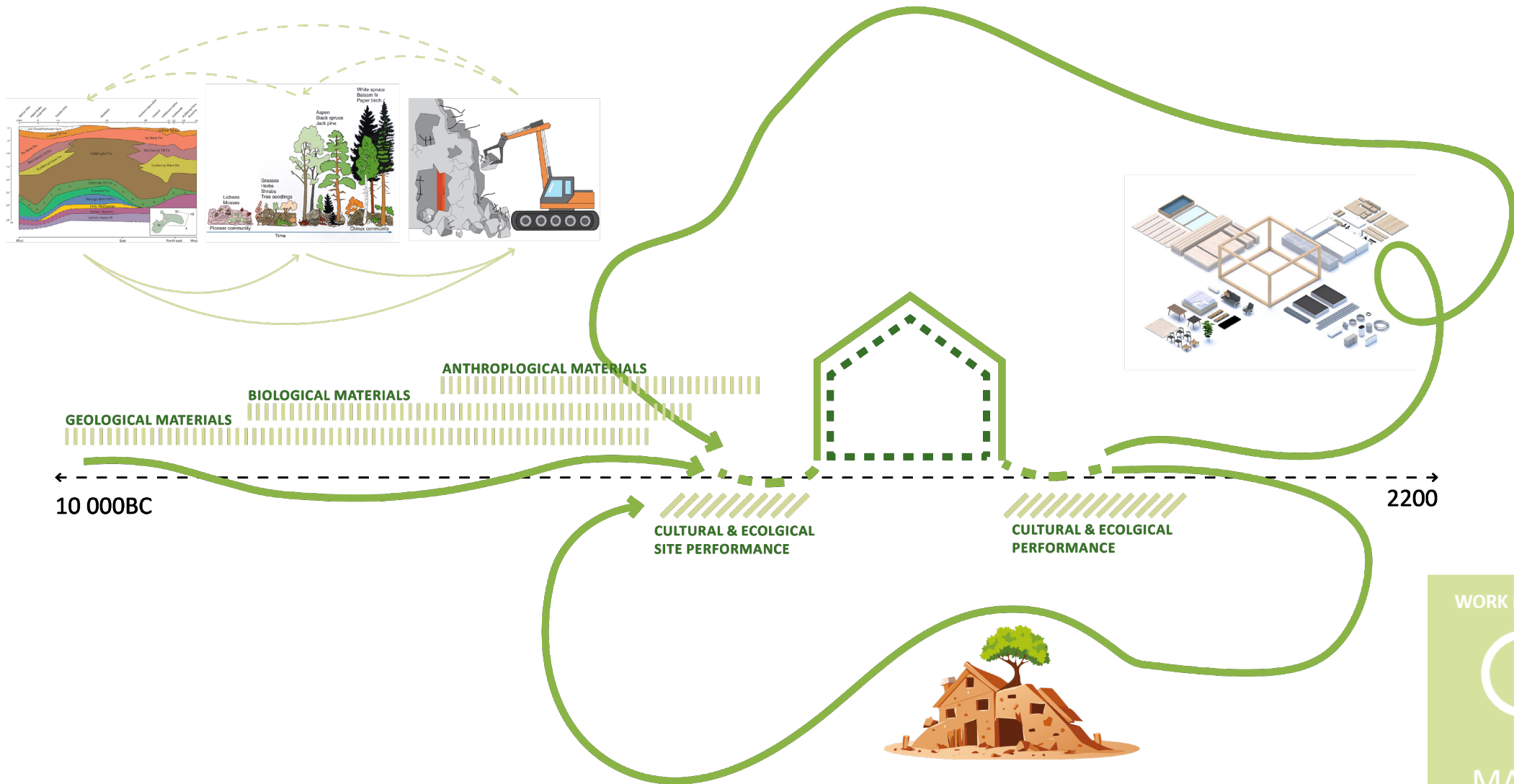
Image: Rasmus Norlander



WORK PACKAGE ONE



MAPPING



WORK PACKAGE ONE

MAPPING

Regenerative Building:

*Examples, Processes and Narratives
from an Ongoing Paradigm Shift*

