

HIGHLIGHTS IN CIRCULAR ECONOMY STANDARDIZATION

CEN-CLC SABE CE-TG WORKSHOP 1 - 25 FEB 2022 - VIRTUAL

CEN/TC 350

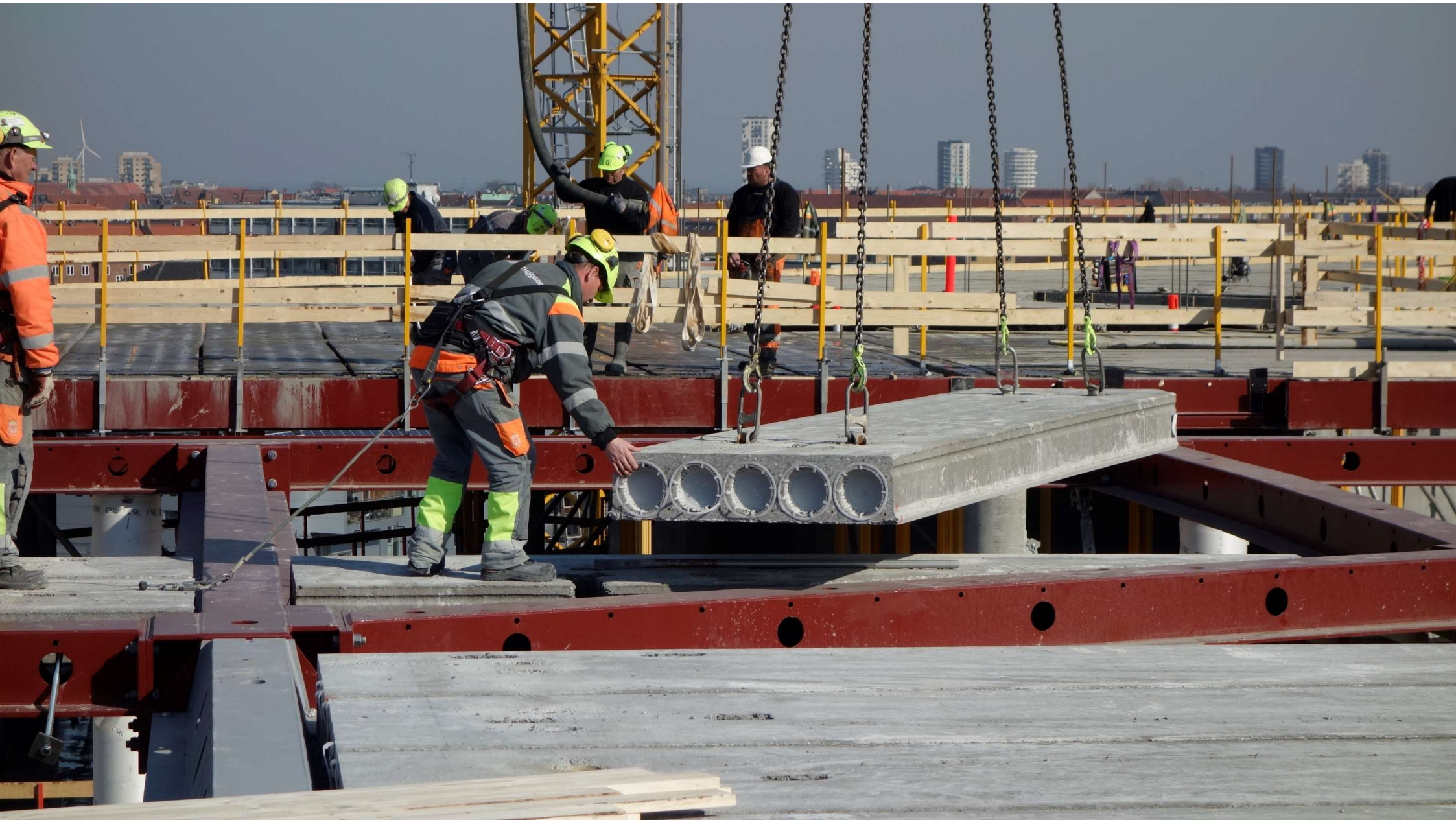
KASPER GULDAGER JENSEN, CHAIR / CO-FOUNDER OF HOME EARTH / ARCHITECT



Building a
Circular Future



Circular Economy is about the Economy

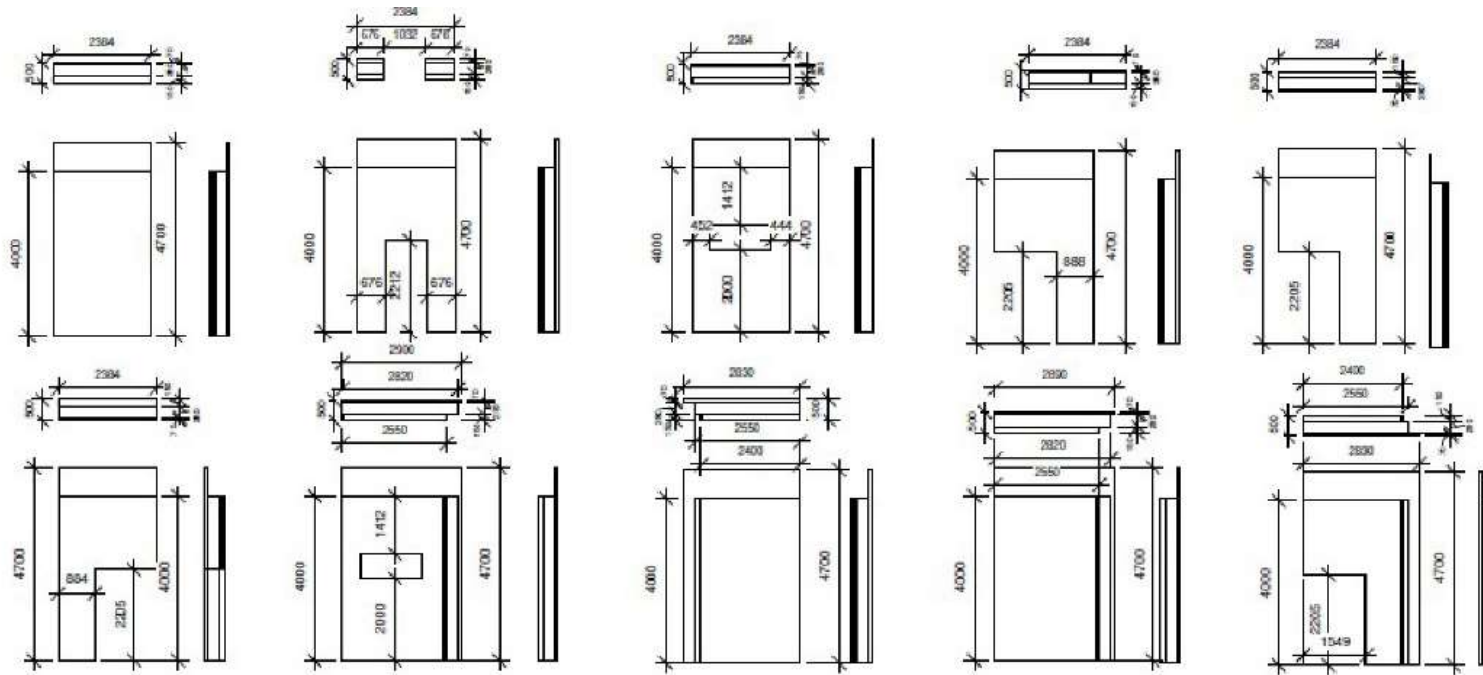


Exposition / Exterior







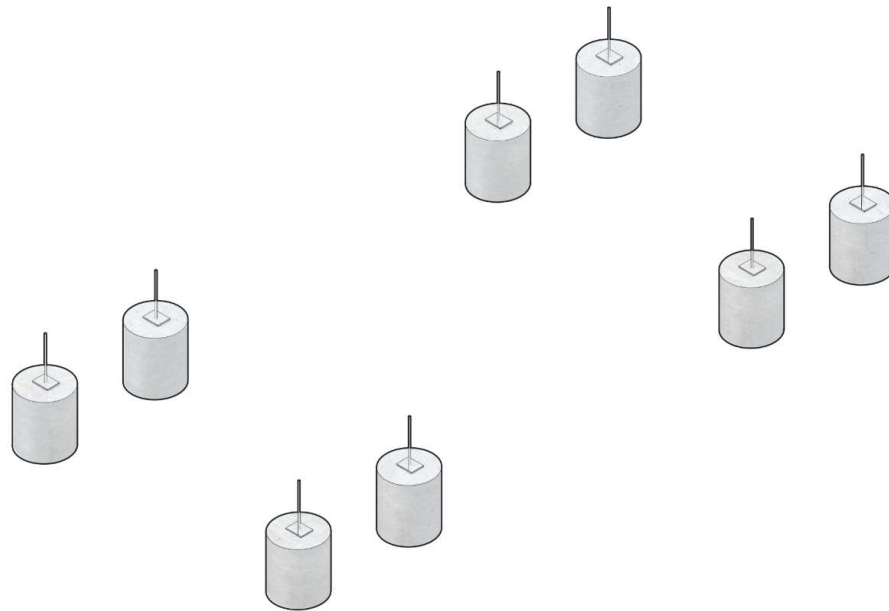


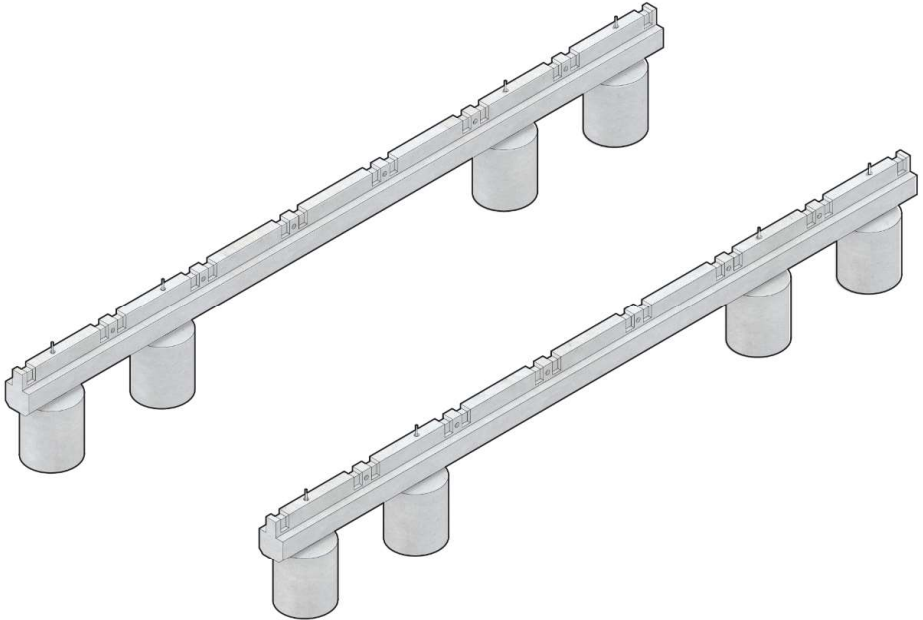


Wall

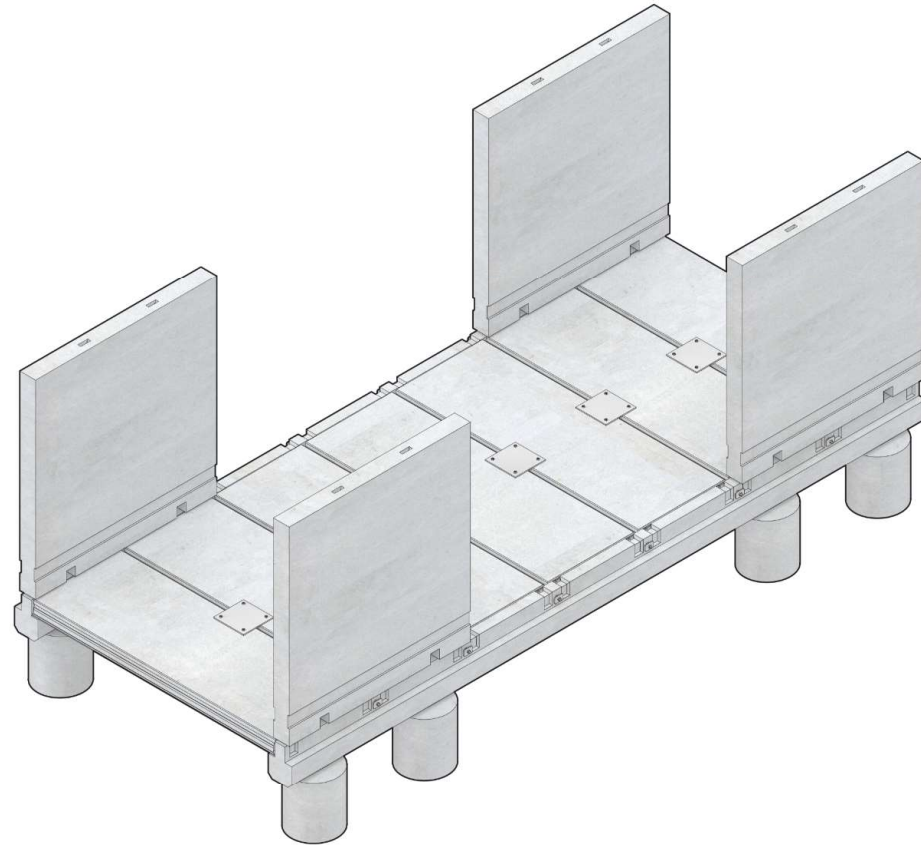
Beam

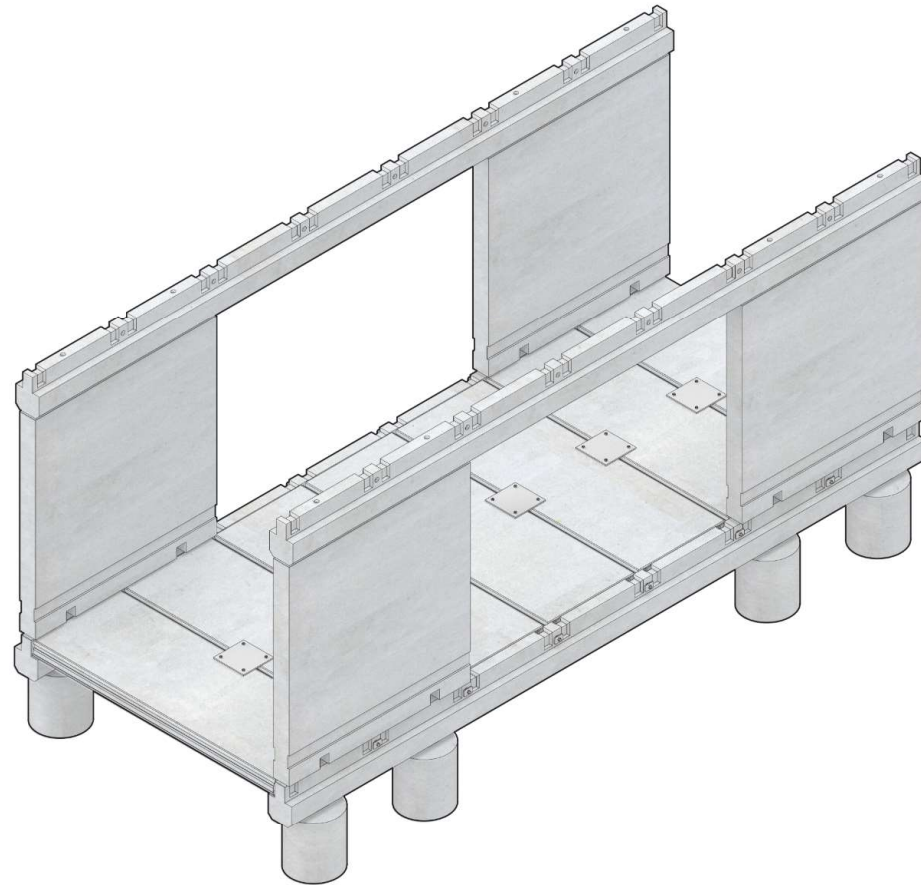
Deck





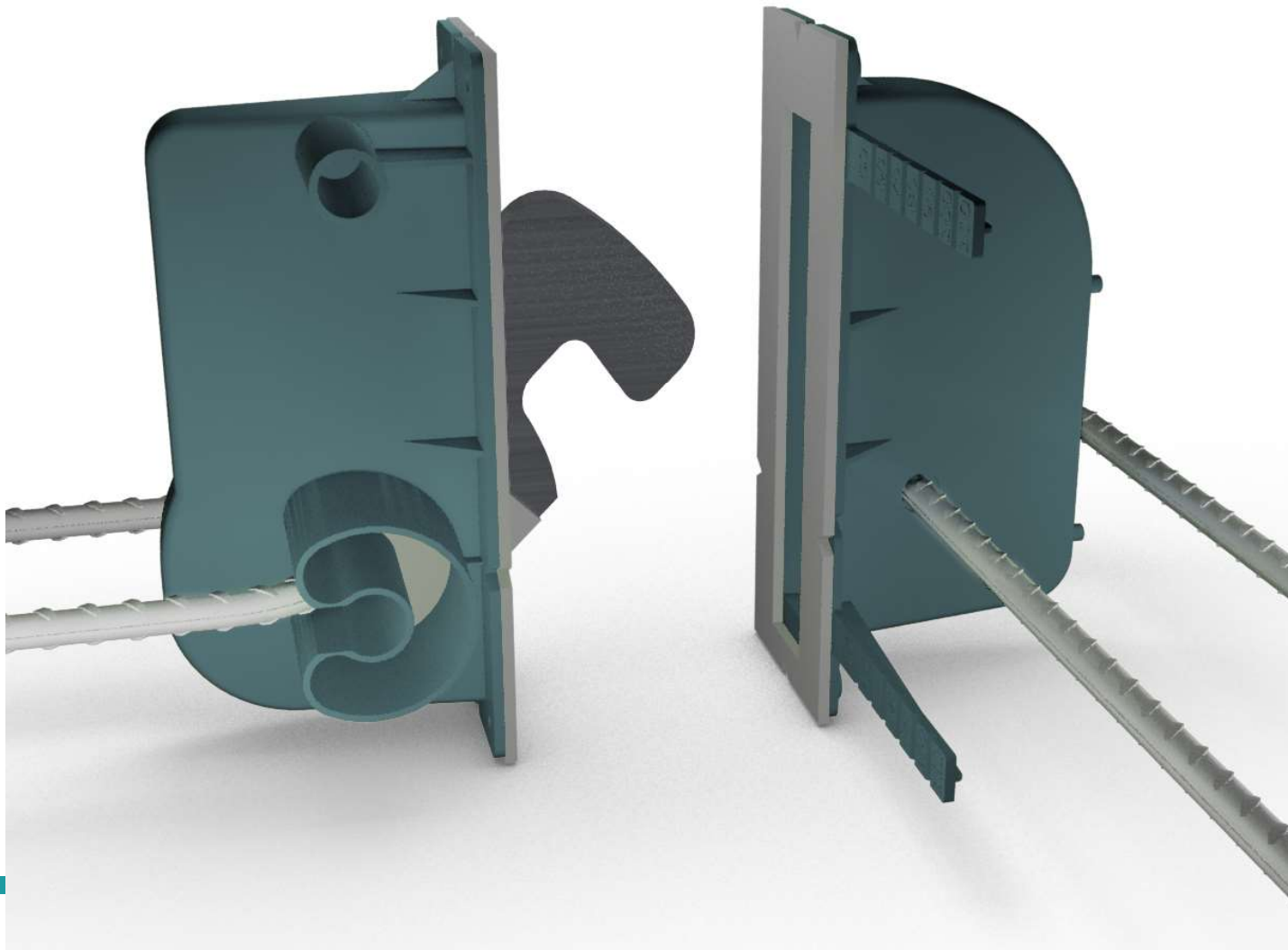


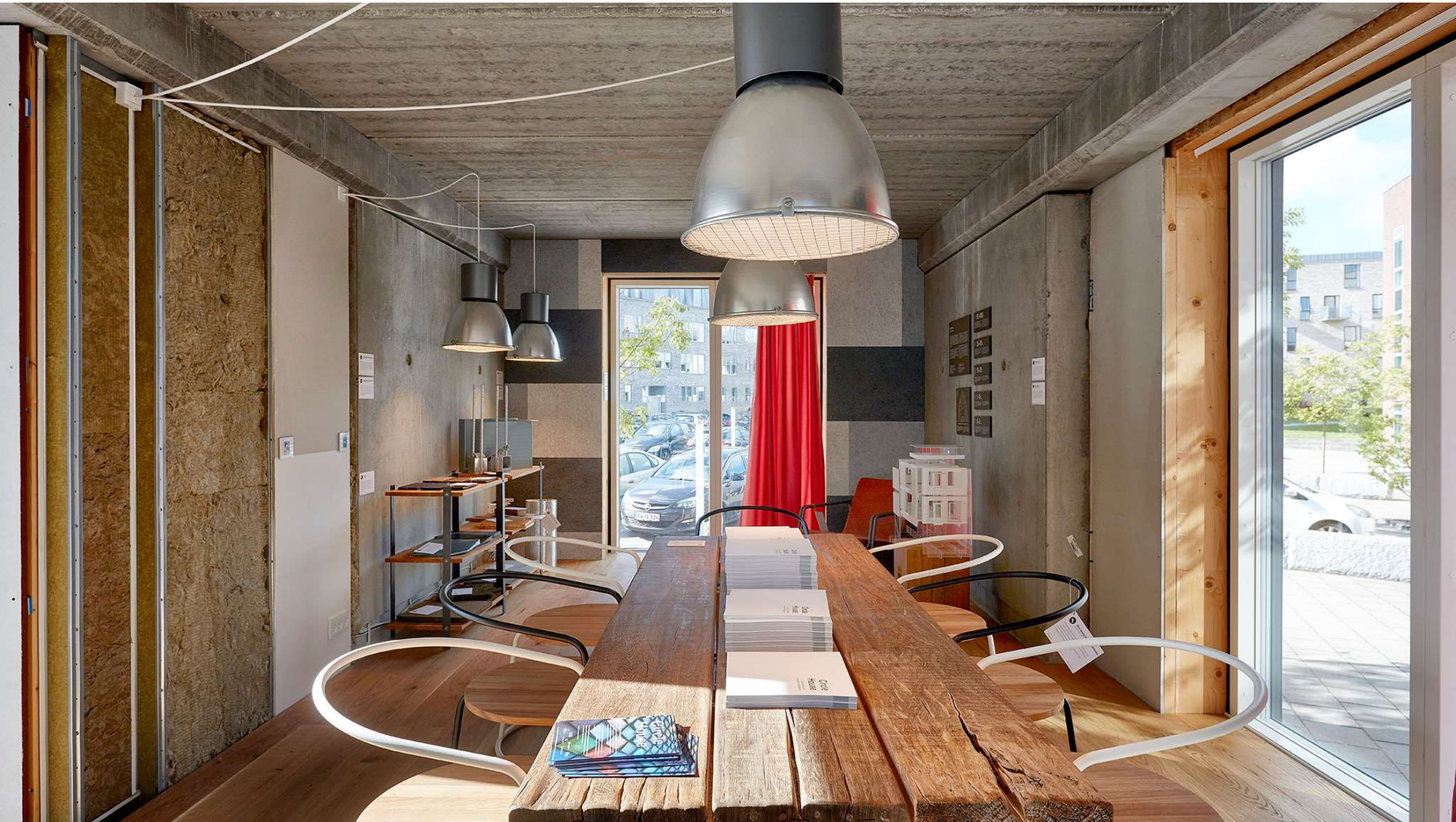


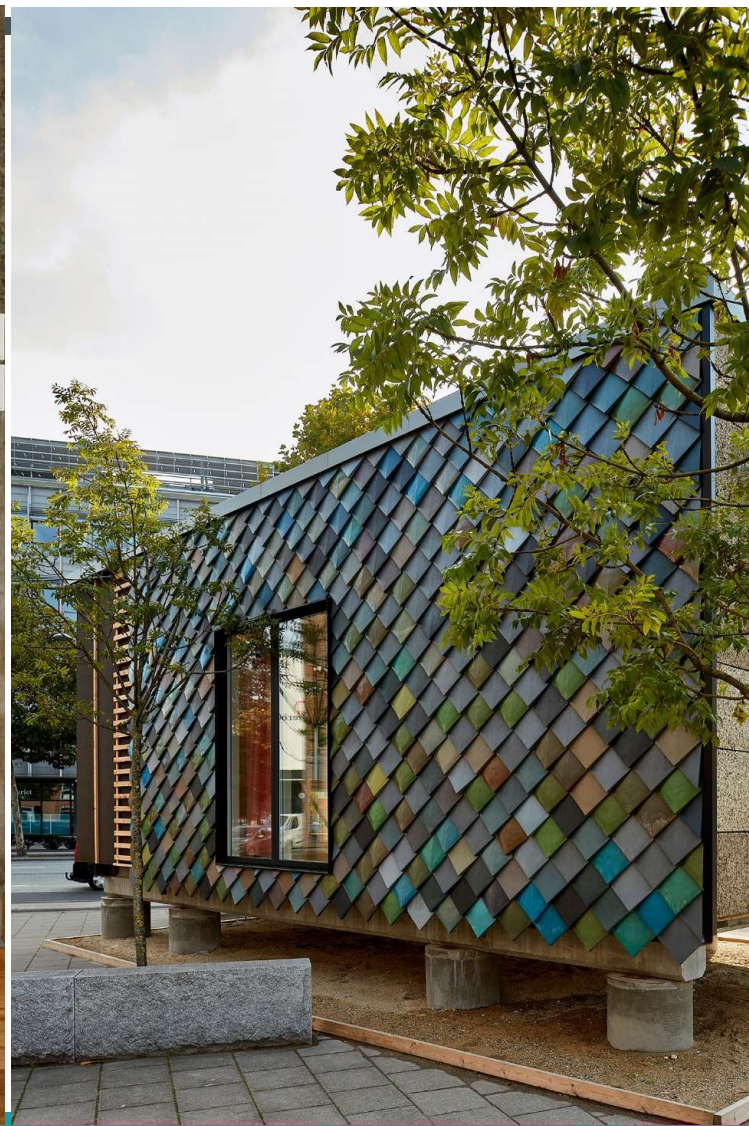


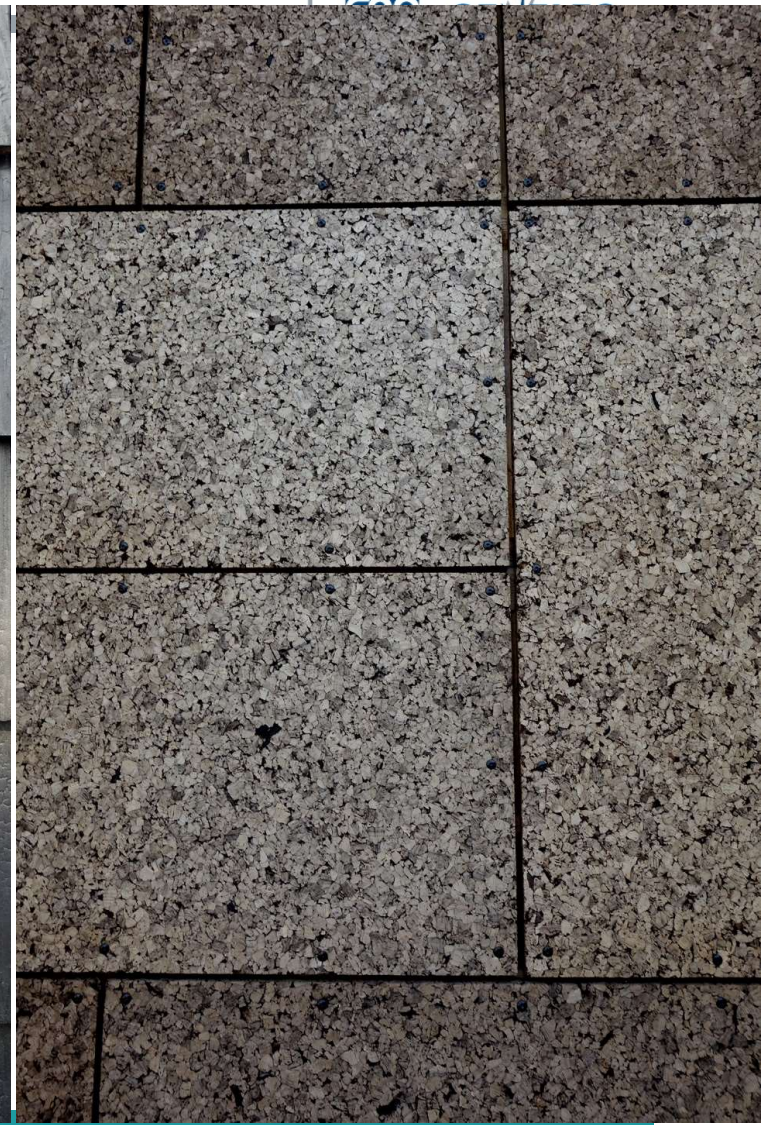
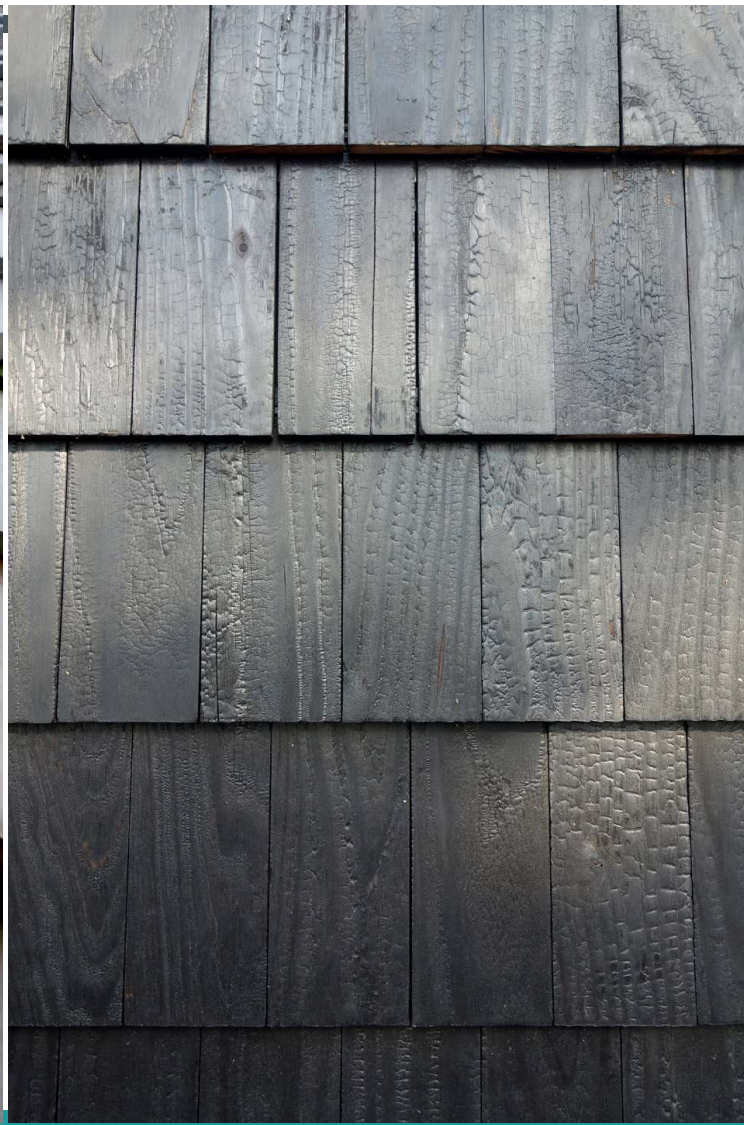


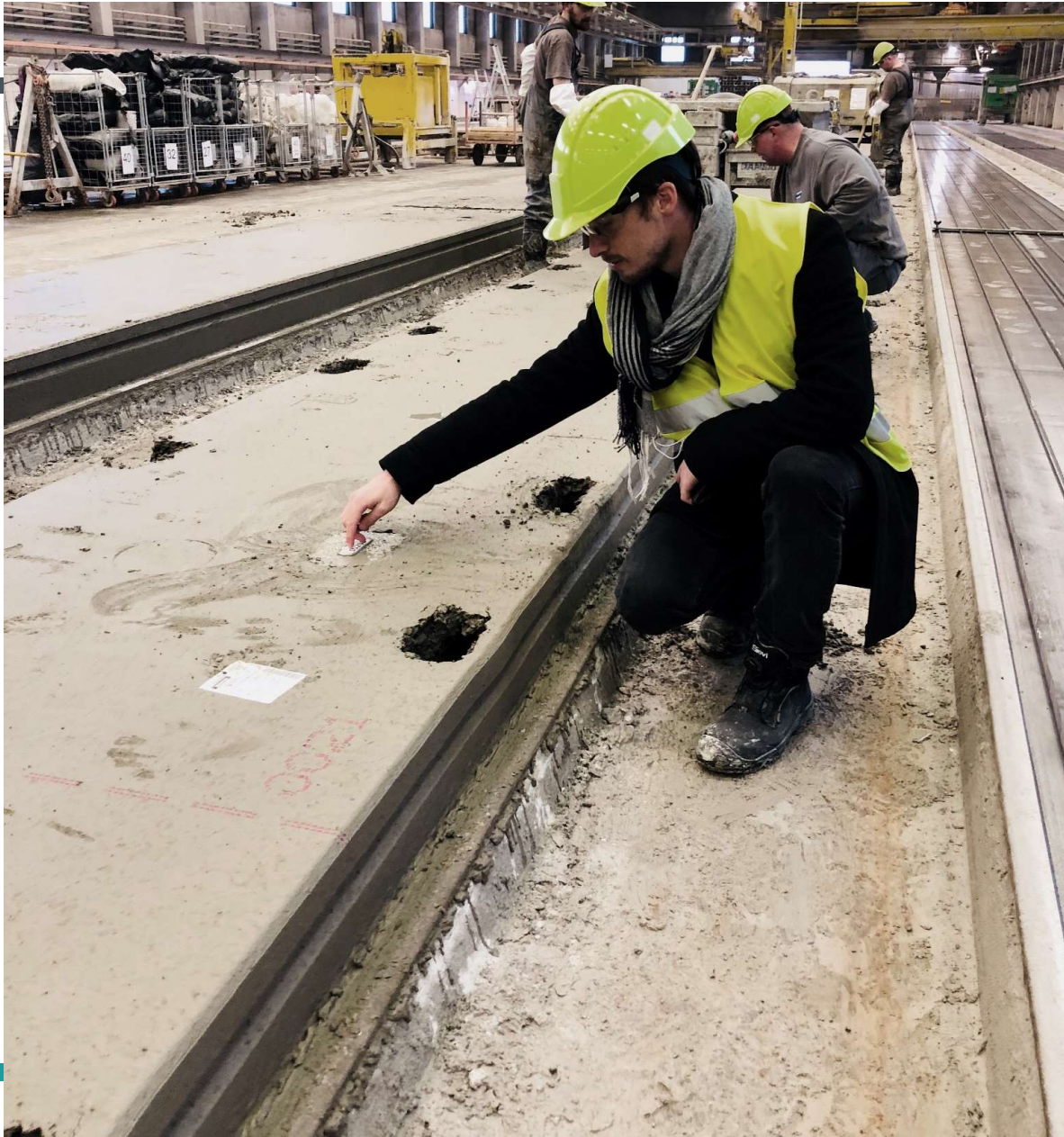
CIRCLE HOUSE / DEMONSTRATOR













CENELEC

Material Google

circularity lab

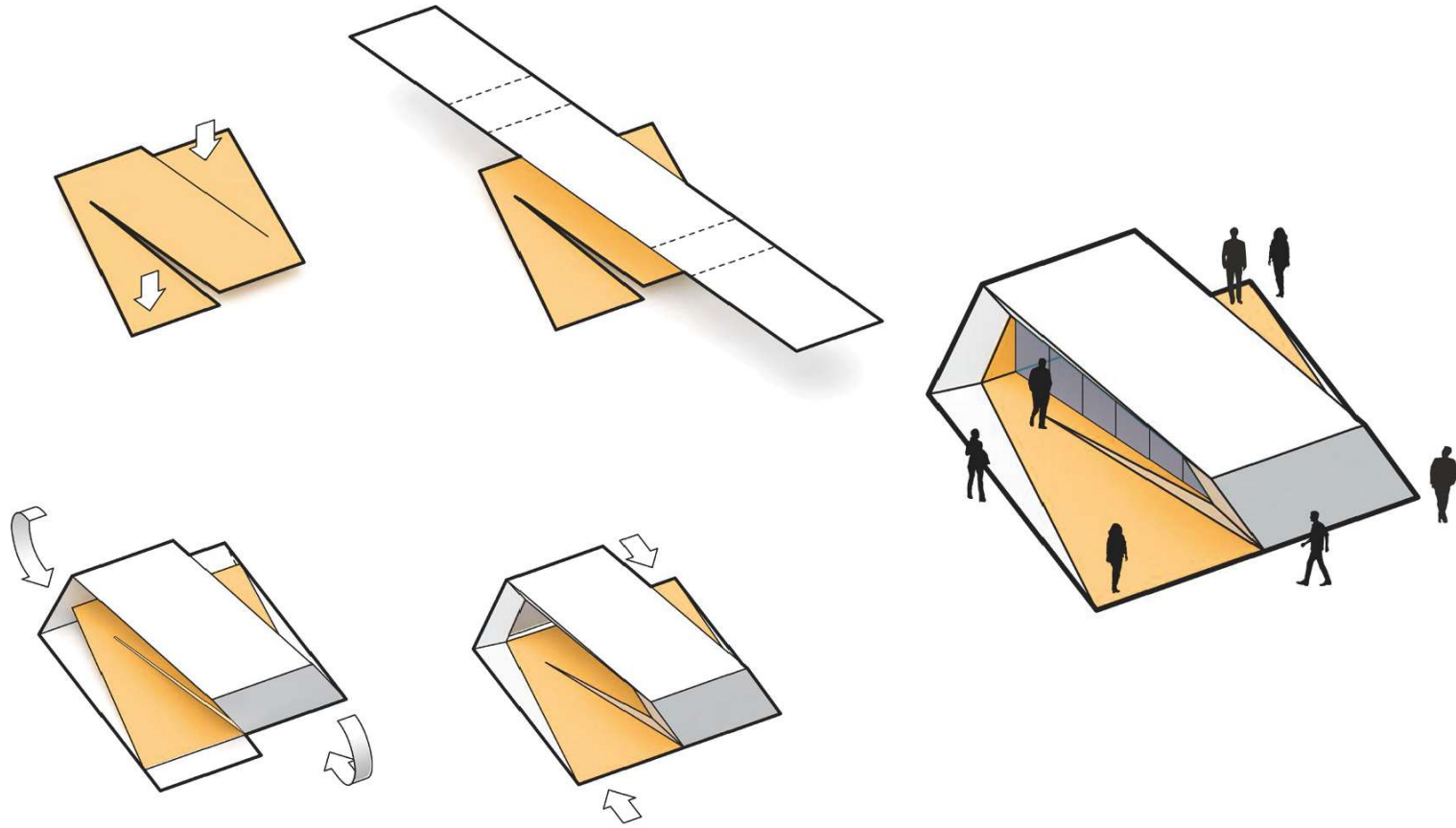
Google

ARUP

3XN
GXN



ELLEN MACARTHUR
FOUNDATION











HOME.EARTH

∴ Home.Earth



Climate
Positive

Circular
construction

Increased
Biodiversity

Home.Earth



CEN/TC 350 SC1

european standards circular construction

ABOUT CEN/TC/350/SC1

- CEN/TC350/SC1 Circular economy in the construction sector
- Vision
- Status
- Timeline
- SC Scope
- Why a dedicated Sub committee on circular economy in the construction sector?

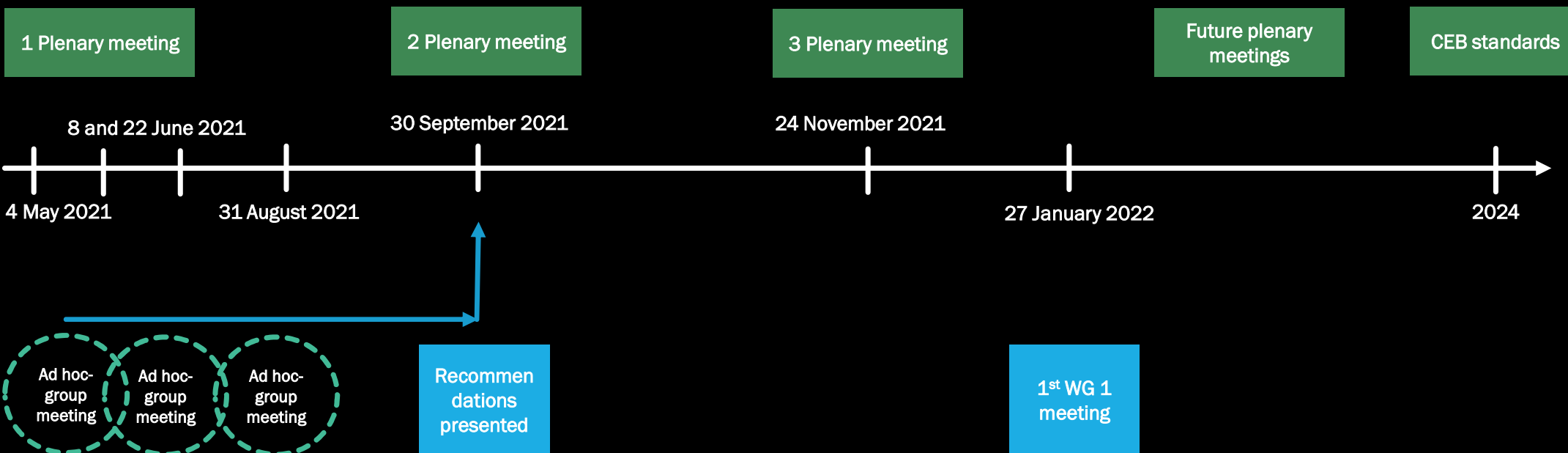
VISION FOR CEN/TC350/SC1

- Contribute to ease the transition to circular economy in the European construction sector
- Develop standardized procedures and basis for comparison
- Streamline and ease trade agreement
- Cooperation with all stakeholders in the circular value chain
- Create standards that gives value

CEN/TC350/SC1

- Newly established Sub committee on Circular economy in the construction sector part of CEN/TC350 - Sustainability of construction works established 2021
 - Recommendations from ad hoc group on
 - initial framework
 - mapping existing and ongoing work
 - potential work items, prioritisation and work groups
 - Working Groups
 - WG1 – Framework, principles and definitions
 - WG2 – Gap analysis, conclusions and recommendations
- } Gap analysis, creation of WGs and Chair Advisory Group (CAG)

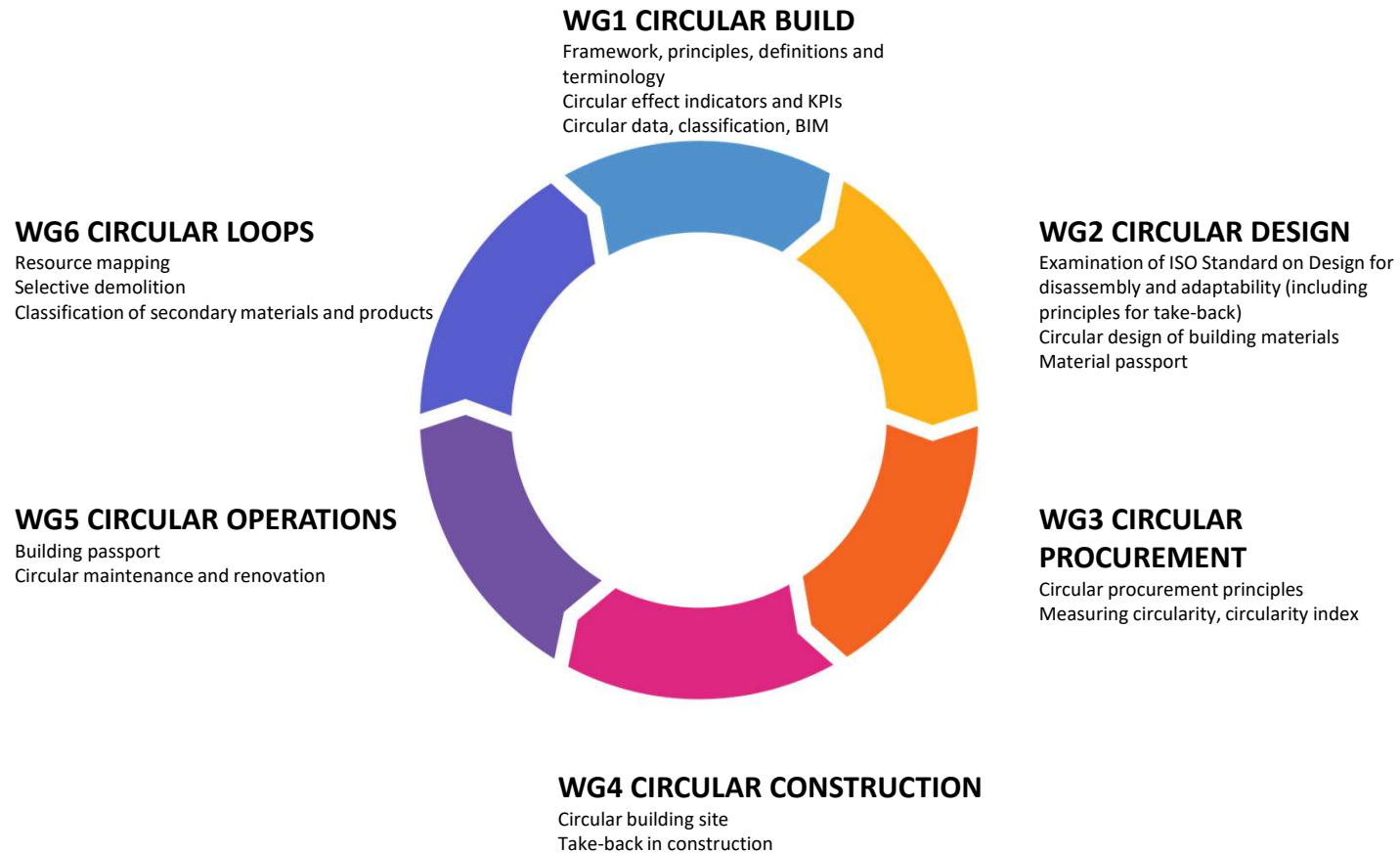
Timeline CEN/TC 350/SC1



SCOPE CEN/TC350/SC1

- Standardization in the field of circular economy in the built environment specifying circular principles and guidelines and requirements to facilitate the transition to a more sustainable circular economy including tools and processes to achieve this; covering design to de-construction and end-of-life scenarios in all stages of current and subsequent life cycles.
- This applies to new and existing construction works (buildings and civil engineering works), including their products, materials and components. The Subcommittee deals both with technical issues on circularity, as well as environmental, economic and social challenges.
- This work will take into account standards of CEN/TC 350 and consider the work of existing committees on subjects that may support the circular economy in the construction sector, such as ISO/TC 323 and CEN-CLC/JTC 10, including initiatives of the European Commission.

CIRCULAR VALUE CHAIN - DANISH DRAFT WP CEN/TC350/SC1



Overview input for possible WIs from plenary meeting 4 May 2021

Framework

1. Definitions

Framework and definitions

Framework for assessment in accordance with CEN/TC350 and ISO/TC323

"Level(s) framework for sustainable buildings" integrated into standardization work.

Common definition prioritized and used as a basis for all further working groups to align work

Definition of Circular Economy should clearly differentiate from the definition of sustainability

2. Measurements

Assessing CE in construction

Why and how to assess circularity (multi lifecycle material flow analysis, environmental impact, multiple lifecycles)

Measurement of recyclability (suitability for dismantling, separation, recycling): indicators

Underlying circular performance in terms of extended functional and technical lifespan, adaptability, ability to disassemble and prevention of degradation (needed to perform material flow and environmental impact analysis).

Economic aspects of circularity (buildings, buildings as service, products, insurability)

3. Documentation

Data, BIM, passports

Circular data, circular information, Construction passports and -logbooks, (definitions and classification, documentation of characteristics, requirements for data systems long term reliability, transparency, security etc., link to BIM)

Material Passport (certification process for re-using materials, components and systems, remove risk)

BIM based material passport and digital lifetime update?

Mapping of building materials, components and buildings as material banks (linked to BIM)

Process

4. Circular Design

Buildings and products

Design for disassembly (examination/ takeover ISO20887)

Design for adaptability, durability, reduction of raw materials, and reparability and preventing degradation

Aspects of durability and RSL (Reference Service Life) as basis for a 2nd application

Design for reuse, reusability, recyclability, and next life cycle performance

Structural design for recyclable construction works

5. Circular Business

Procurement, take-back

Green Public Procurement allowing for circularity (incl. fair specification of re-used materials)

Sustainable Circular Procurement (performance-based, functional specifications, circularity indicators)

Take-back solutions taking into account EoL phase of the respective products/components

6. Circular Resources

End-of-life, CDW, and re-use

Resource mapping of existing buildings

Selective demolition / dismantling of buildings, for high quality secondary materials

CDW (Construction and Demolition Waste) management

Logistics in the EoL-phase, especially for re-use (transport, storage, etc.)

Aspect of liability and warranty in the case of re-use.

Classification of secondary materials and products.

Requirements for product standards to ensure the application of secondary materials

Comparability of construction products manufactured from secondary and primary materials

Cutting points between technical requirements and legal framework of future CPR (Construction Products Regulation); end of waste, RSL, DoP (Declaration of Performance)

Quality requirements for DoP and CE-marking; harmonized environmental classification of recycled construction products compatible with national

WHY A DEDICATED SC ON CIRCULAR ECONOMY IN THE CONSTRUCTION (BUILT ENVIRONMENT) SECTOR?

- Many initiatives within circular economy in the construction sector are already in progress in European countries
- The construction is a huge and important sector both when it comes to resource use and waste generation
- There is already a market demand and a political pressure to use circular principles
- There is a need to create trust and reliability which standardisation can help to reach to goal
- Avoid different local legislation
- A standardisation work within the area can influence and provide a market relevant basis for future legislation
- The standardisation organisations should not stand on the side-line while state of the art is created differently in the different countries
- A new SC has attracted a new group of stakeholders

RECOMMENDATIONS

- Close alignment with other Technical Committees in circular economy (e.g. avoiding overlap of the scopes) and EU initiatives
- Focus on Value not Volume – the economy part of Circular Economy

SABE TOPIC GROUP CIRCULAR ECONOMY (CE-TG)



Thanks for your
participation!