



EU Laboratorium voor circulair

bouwen GTB Lab

by dr. Elma Durmisevic

Tijdens de transformatiefase van GTB Lab werd een all-electric, flexibel en betaalbaar circulair woonconcept ontwikkeld met lokaal ecosysteem. Het omkeerbare gebouwoontwerp maakte de ontwikkeling van een materiaalalterugnamesysteem (met materiaalproducenten en Rd4) en de identificatie van de restwaarde ervan mogelijk.

- Architect:** E. Durmisevic, 4D Architects
- Constructeur:** J. van Heijster, AB
- Aannemer:** Habenu-van de Kreeke Bouw BV
- Leveranciers:** Warsco, Jansen, Bluedec, Tectum, Soltech, Marmony, Nordish Infrared





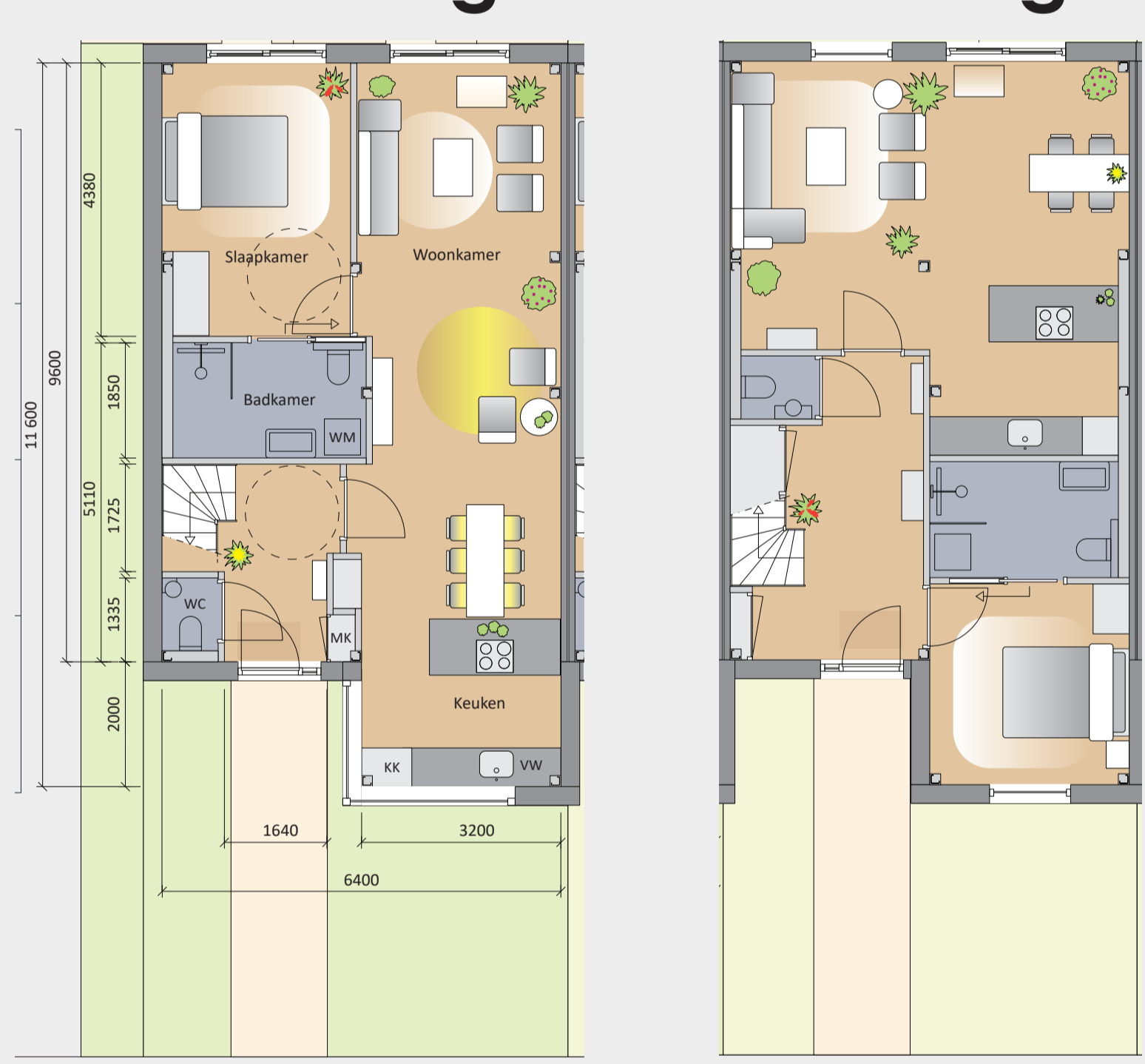
Optie 1

© architect dr. Elma Durmisevic
4D architects

Meerdere circulaire oplossingen

Doorzon woning

Tuin woning



optie 1a

optie 1b

optie 2

optie 3

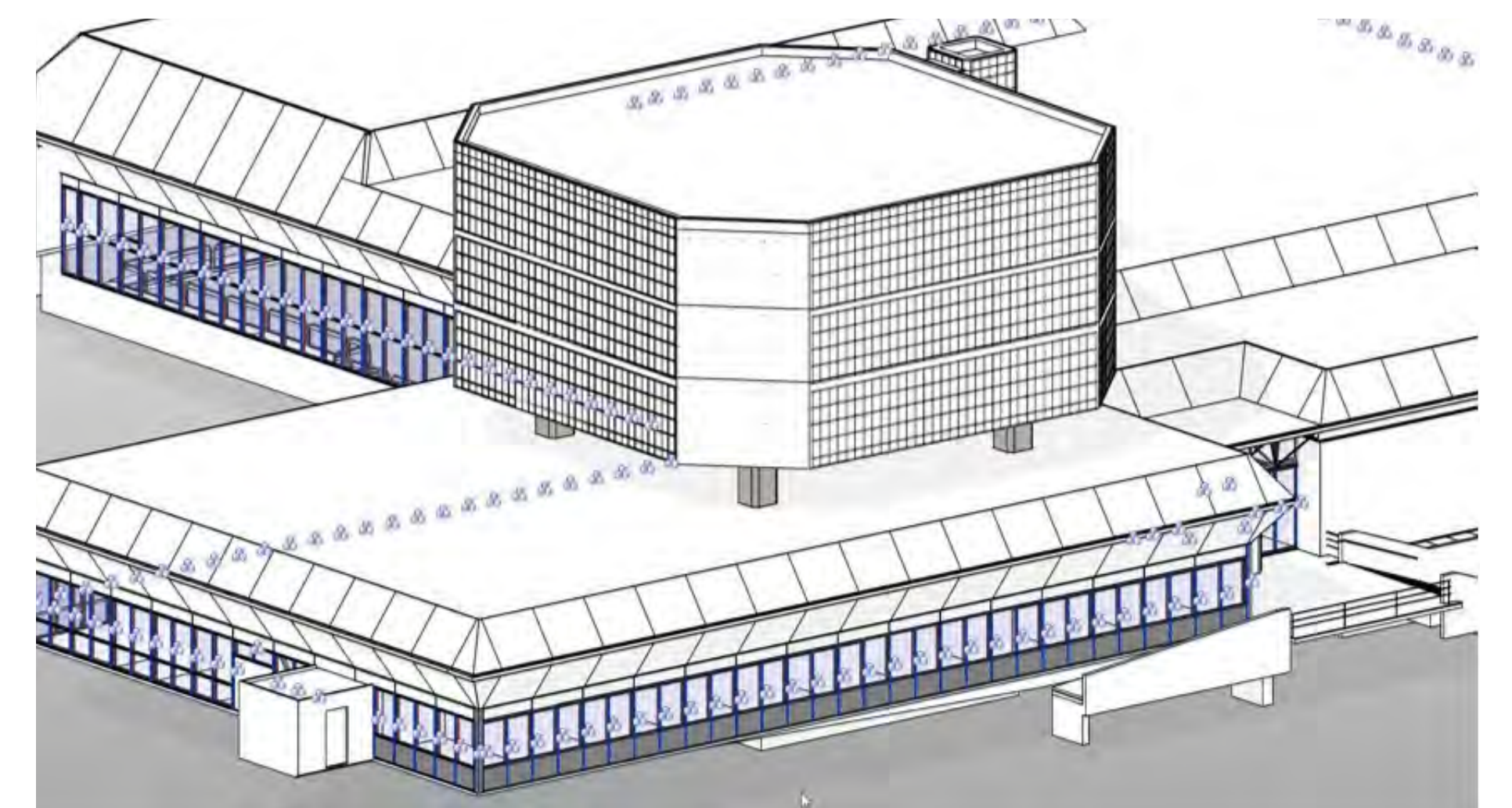
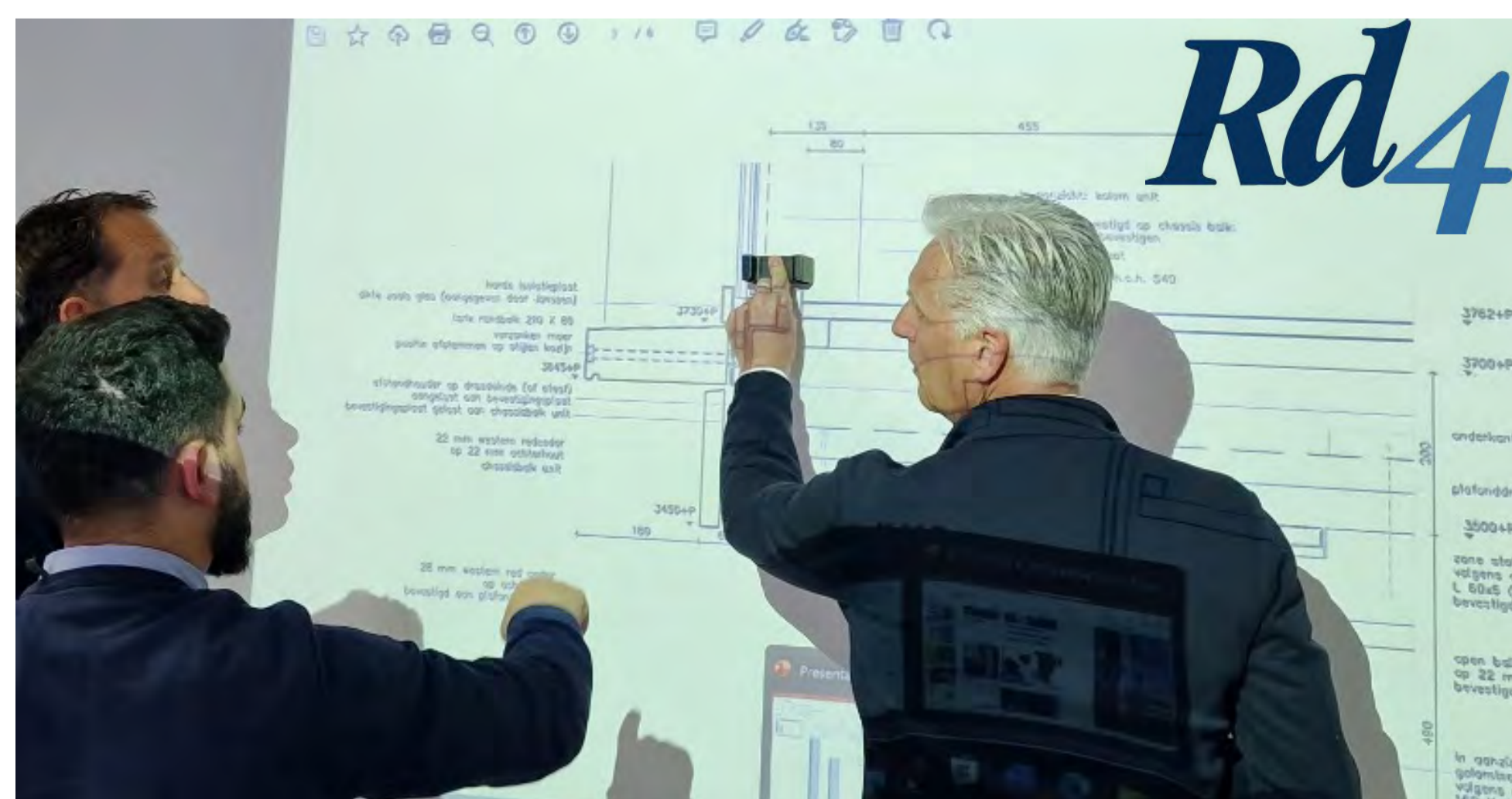
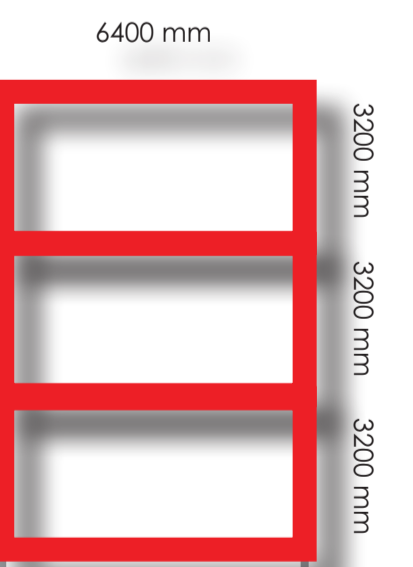
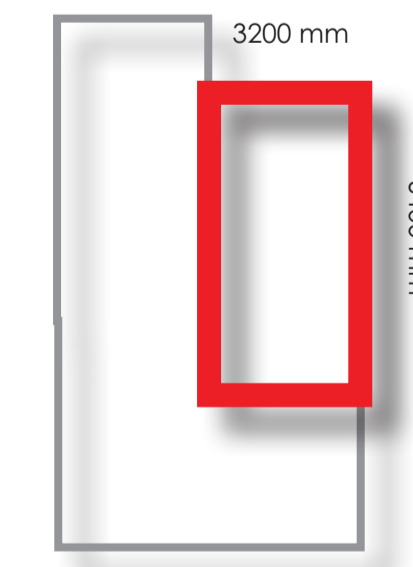
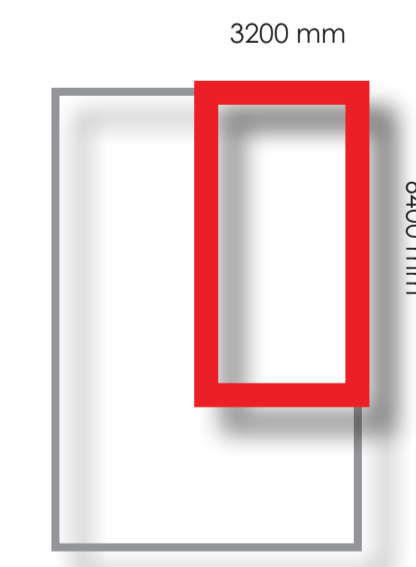
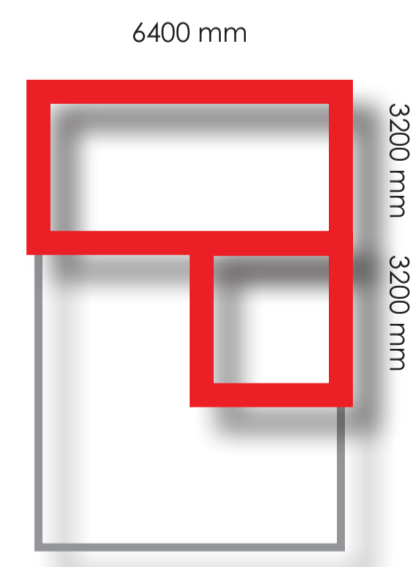
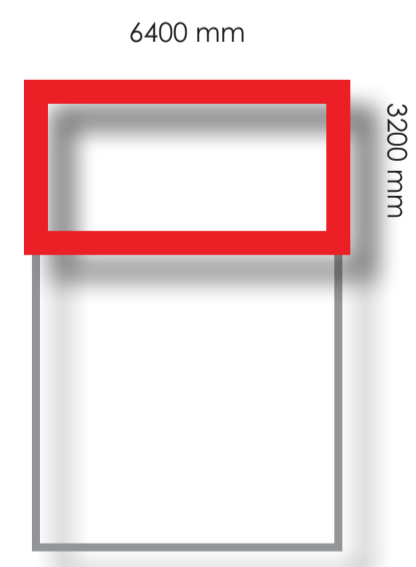
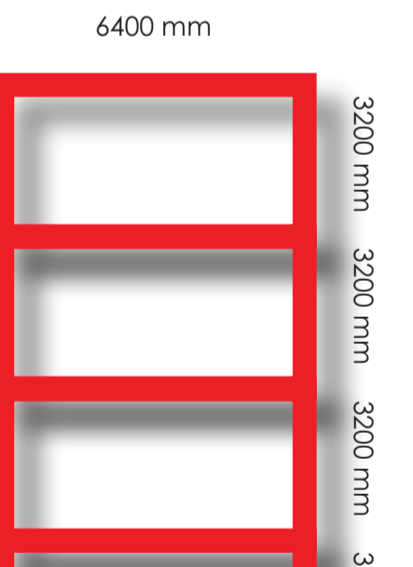
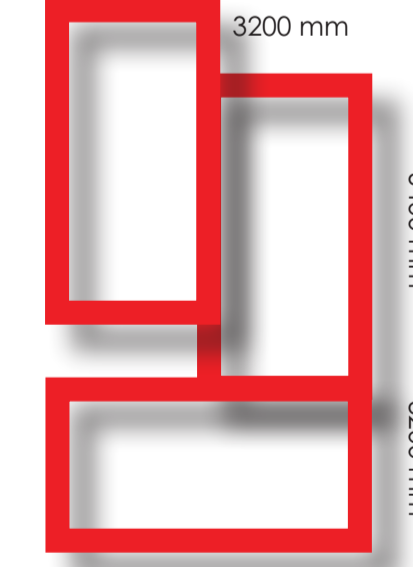
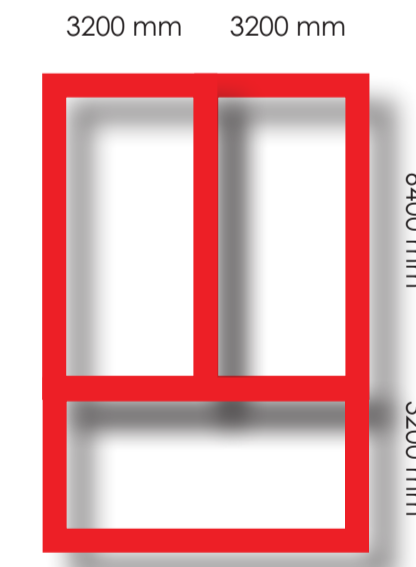
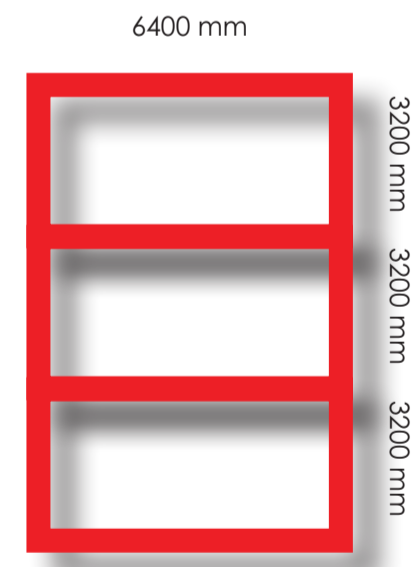
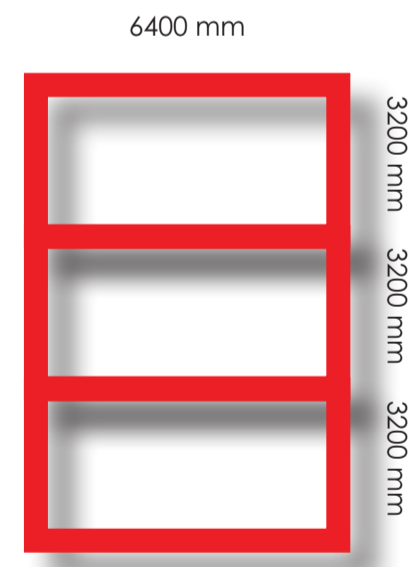
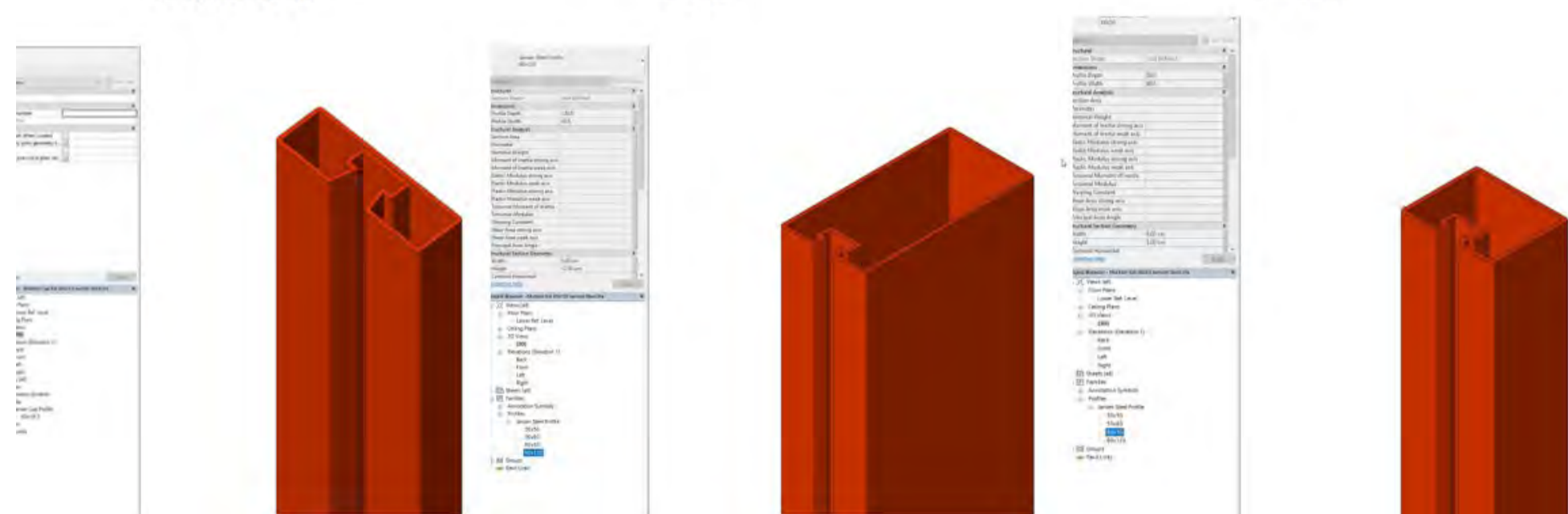
optie 1 XL

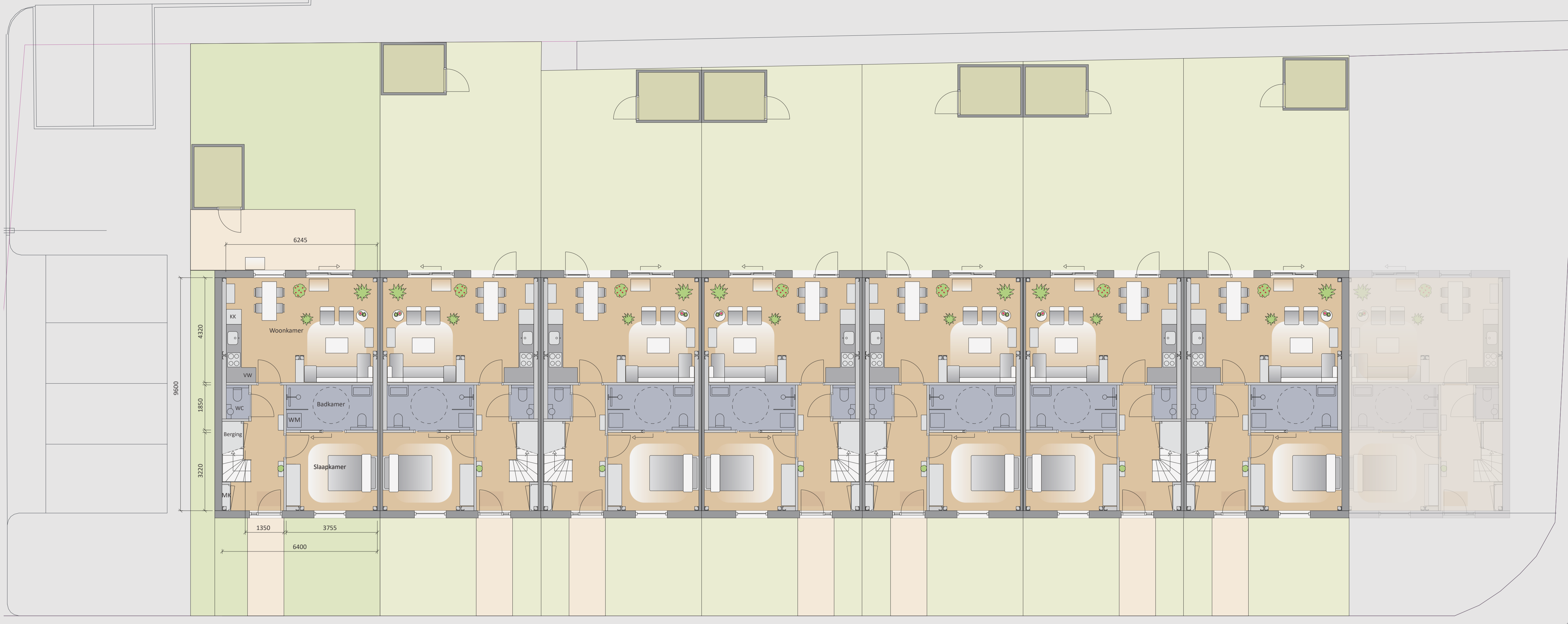
Het ontwerp van de modules zorgt voor maximale ruimtelijke flexibiliteit, technische omkeerbaarheid en hoogwaardig hergebruik van materialen. Het ontwerp voor demontage houdt rekening met het hergebruik van stalen gevelprofielen die werden teruggewonnen tijdens de transformatie van het Romeinse Museum in Heerlen.

No. of profiles = 201
Embodied CO₂/kg: 3172
Embodied Tonne steel: 2
RP=0,48
L=4,3+5=18 m

No. of profiles = 93
Embodied 3520 CO₂/kg
Embodied 1Tonne
RP=0,44
L=5m

No. of profiles = 108
Embodied 2751 CO₂/kg
Embodied 1,75 Tonne
RP=0,45
L= 4,3m



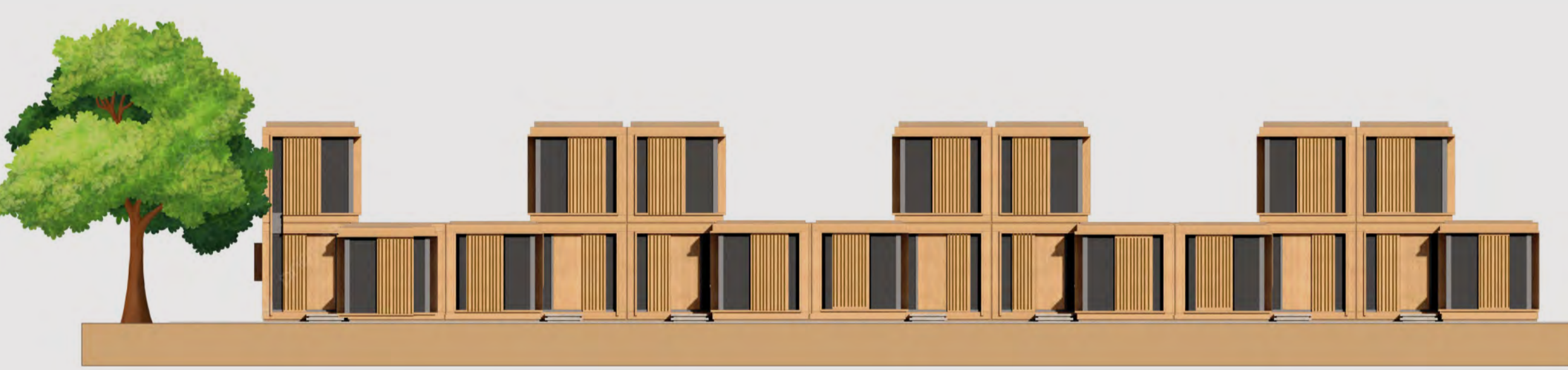


Groene en circulaire oplossingen



4D architects

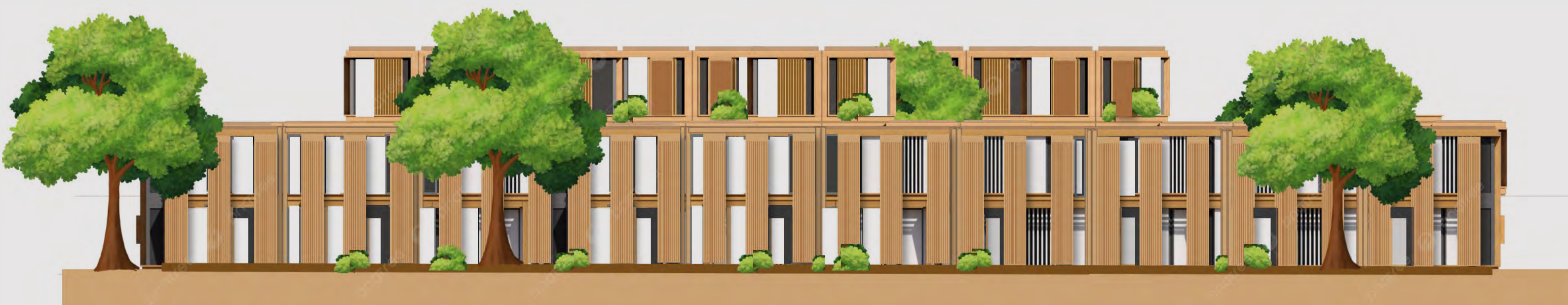
Circulariteitsprofiel gebaseerd op omkeerbaarheidsindicatoren / demontage-index = hergebruikscapaciteit van gebouwen en materialen



Optie 1

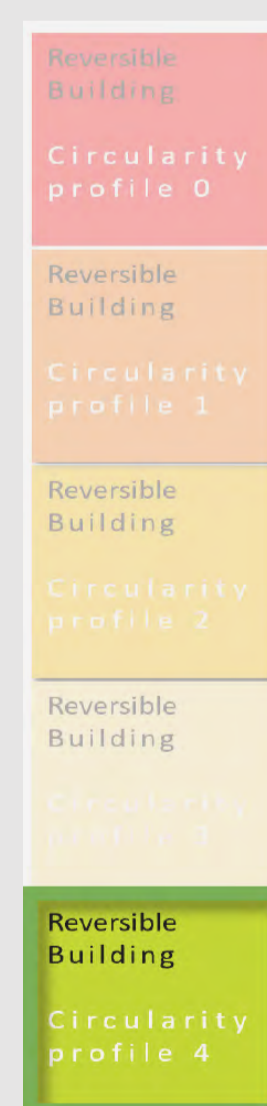


Optie 2

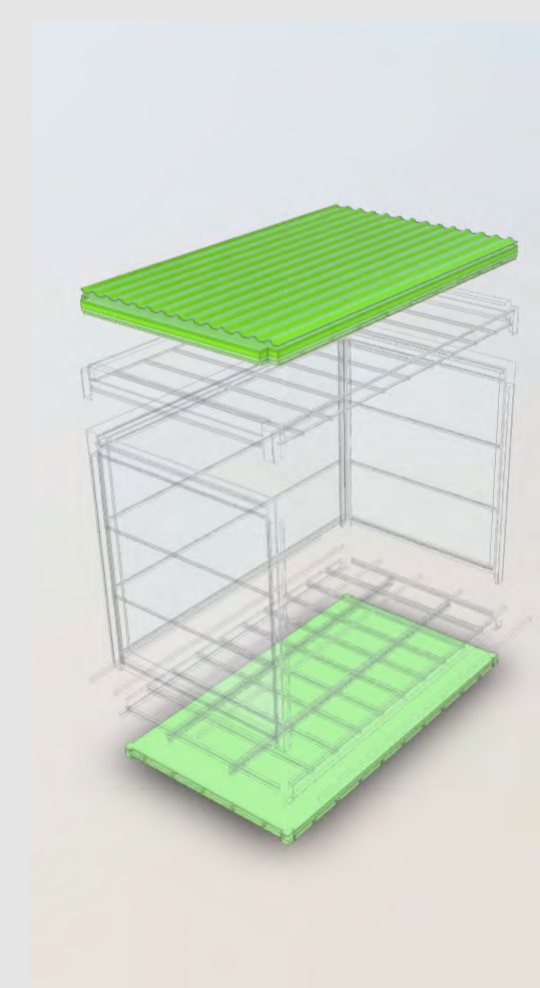


Optie 3

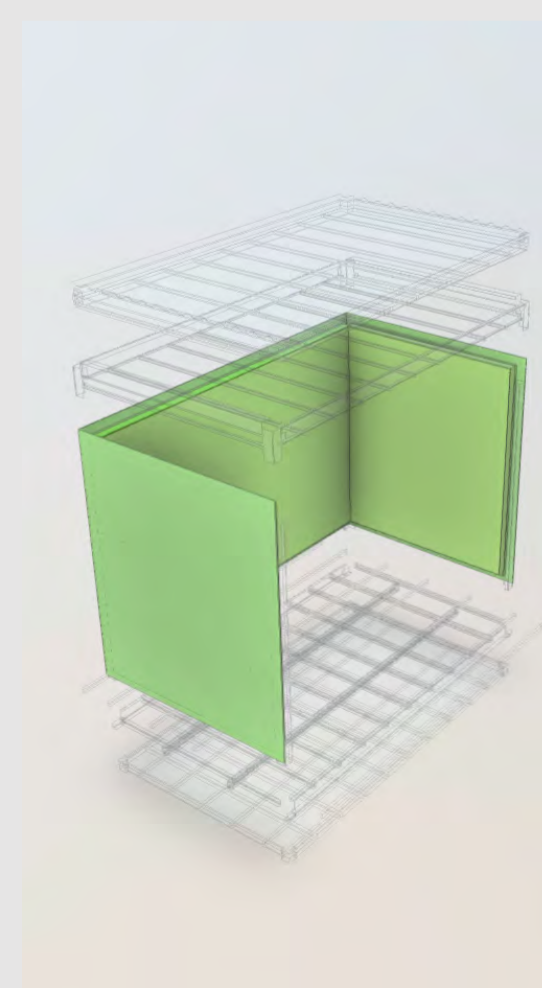
Circulariteits profiel 4



Structuur
95%
restwaarde



Vloer
95%
restwaarde



Gevel
50%
restwaarde

BUILDING REUSE POTENTIAL

Hergebruiksopties:

- RP 0.9 = Direct hergebruik
- RP 0.8 = Direct hergebruik door kleine reparatie
- RP 0.7 = Hergebruik door grote reparatie
- RP 0.6 = Hergebruik door grote reparatie
- RP 0.5 = Revisie
- RP 0.4 = Revisie
- RP 0.3 = Monomateriaal recycle
- RP 0.2 = Recycle
- RP 0.1 = Afval

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Green transformable building Lab

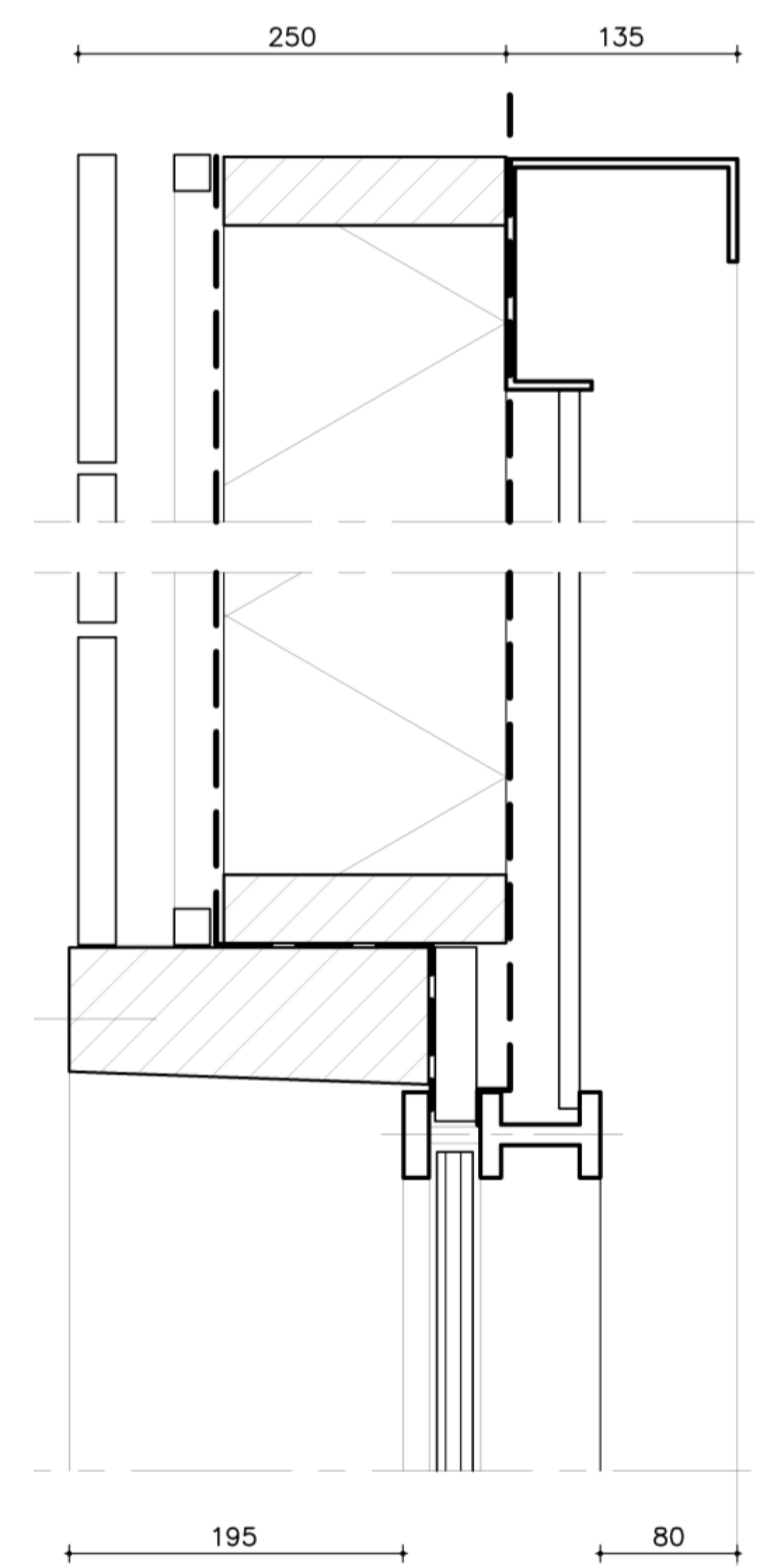
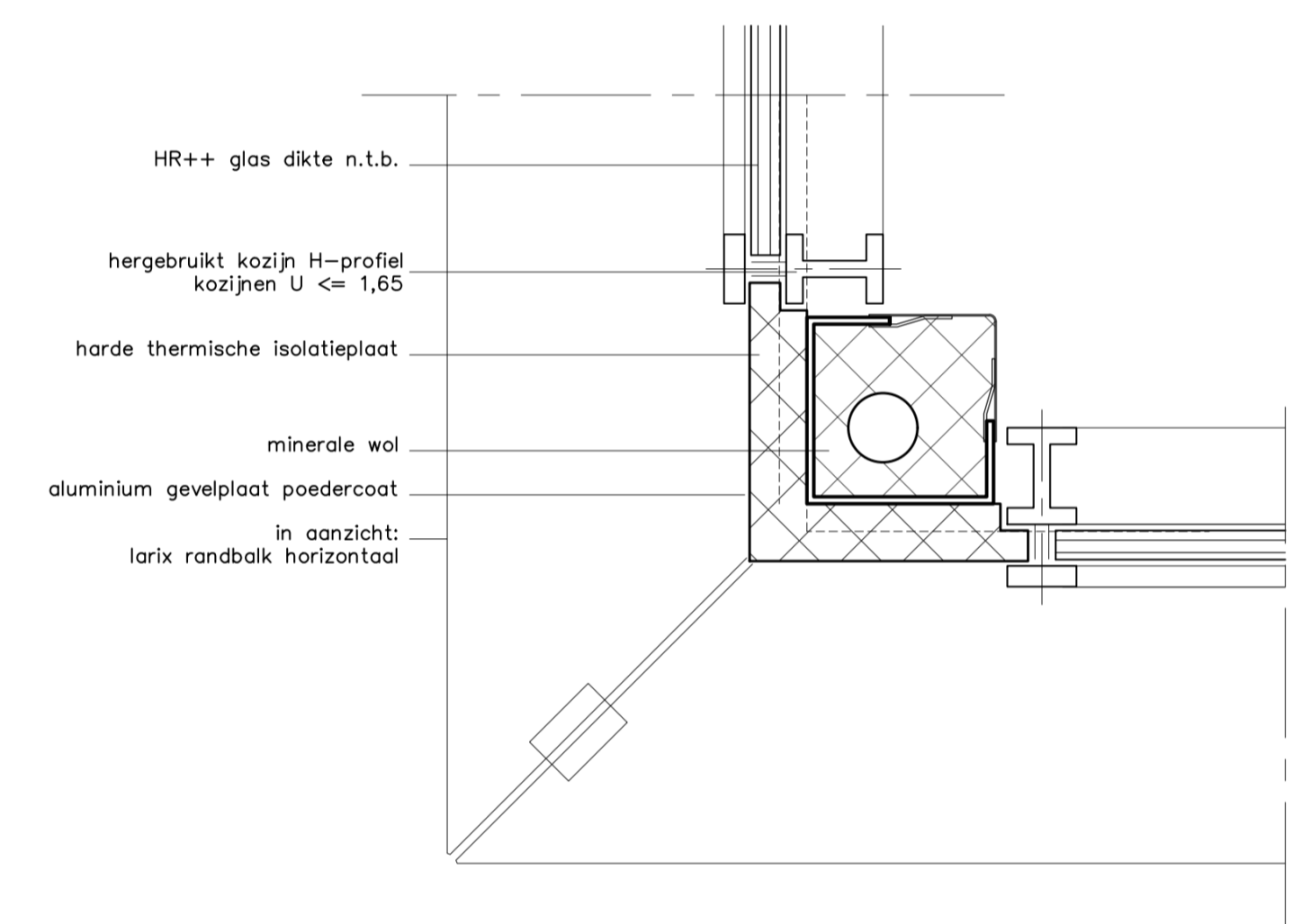
www.gtb-lab.com

All-electric, flexibel, circulair woningbouwconcept van Limburg

GTB Lab met publieke en private partners

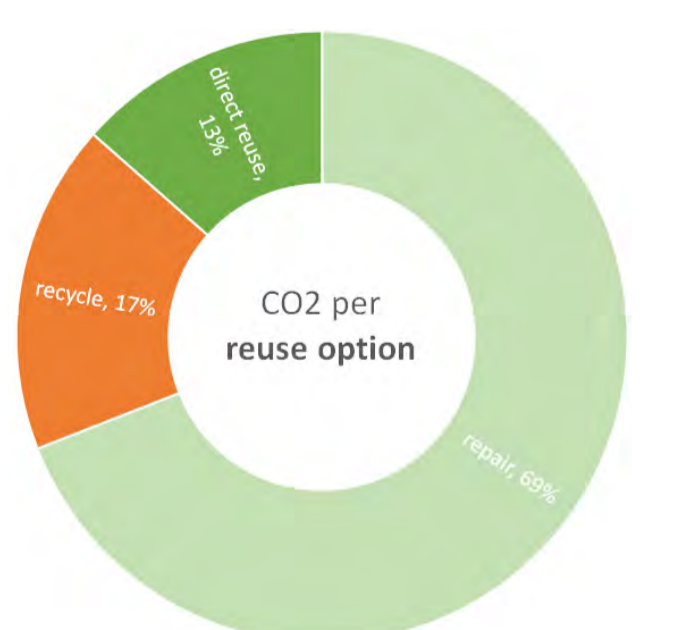
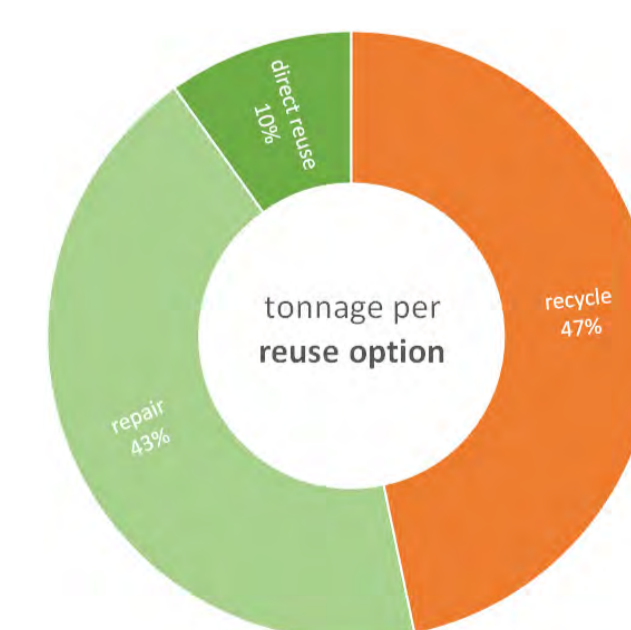


4D architects

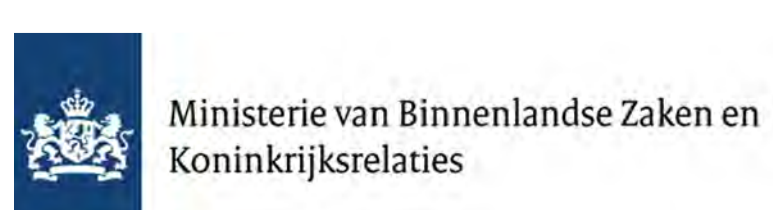
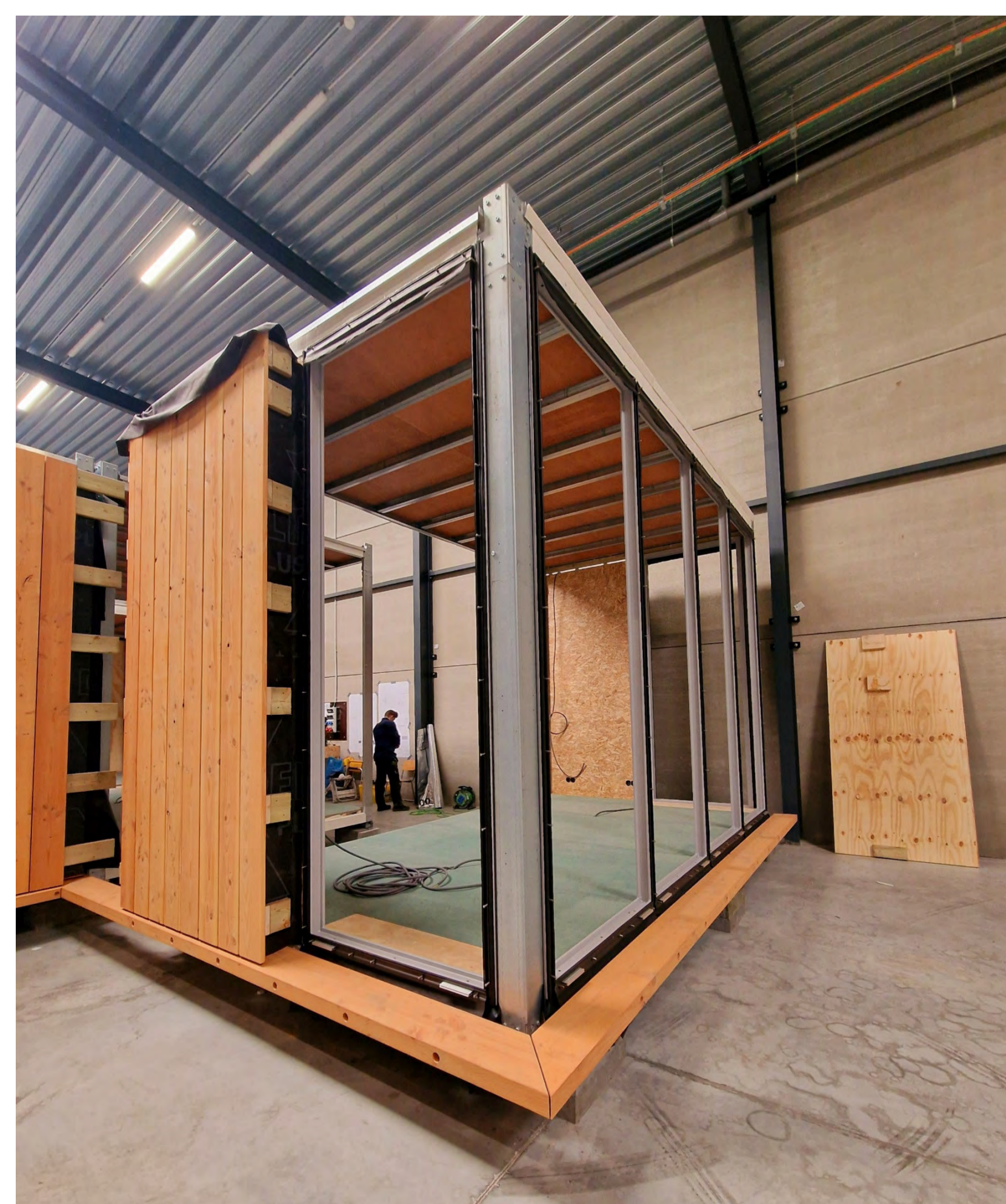
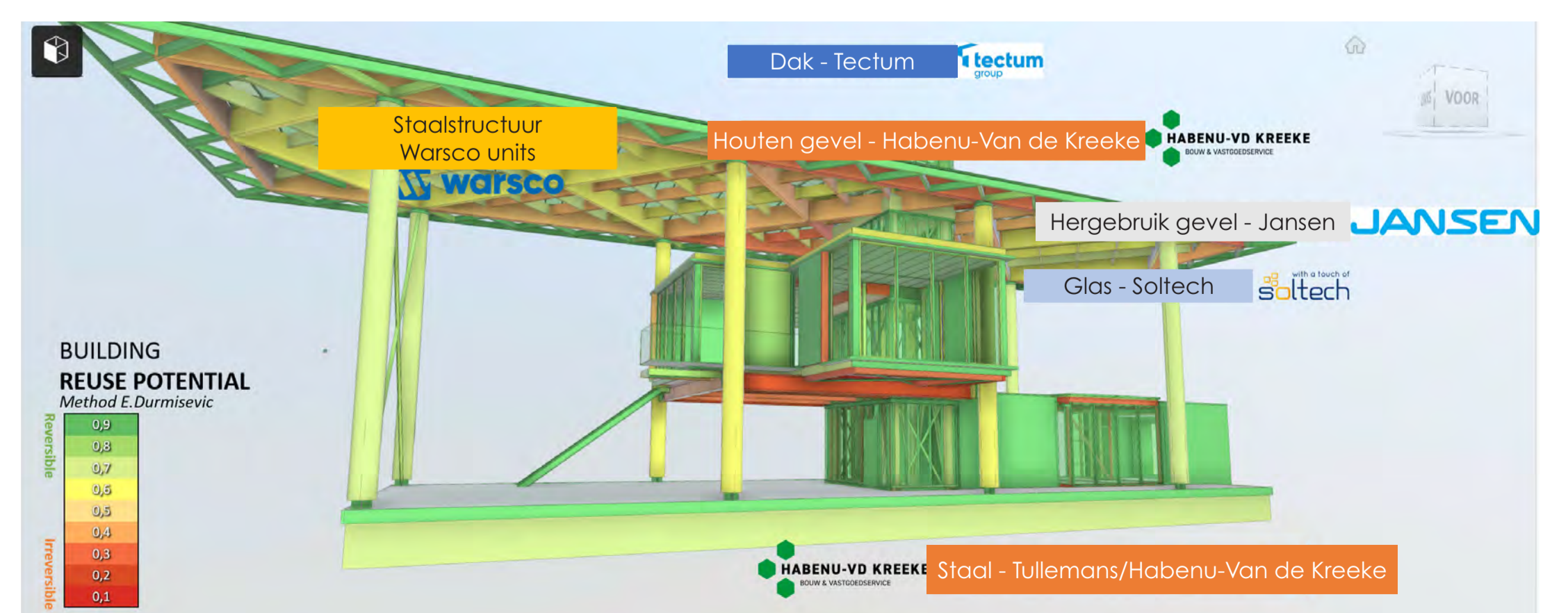


75-85%
Materiaal hergebruik

83-93%
CO2 bespaard



4D architects



provincie limburg



Heerlen