CAT Industrial realisation

BVS 23/9/2022

R Bosselaers/W Bastiaens

Content

- General overview – Rudy Bosselaers
- Design and construction of disposal modules – Wim Bastiaens

Concept: **Surface disposal**

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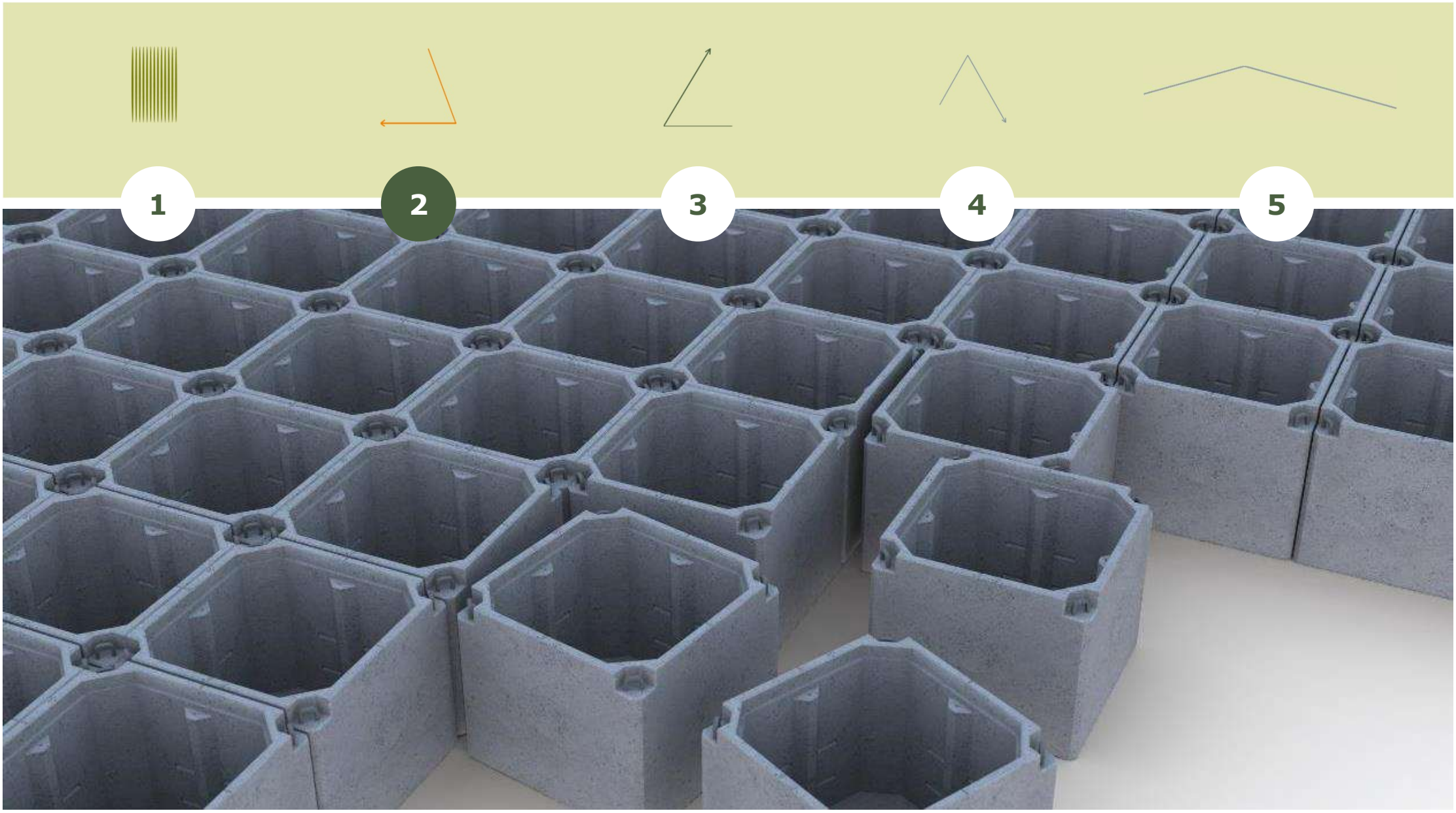
94-0181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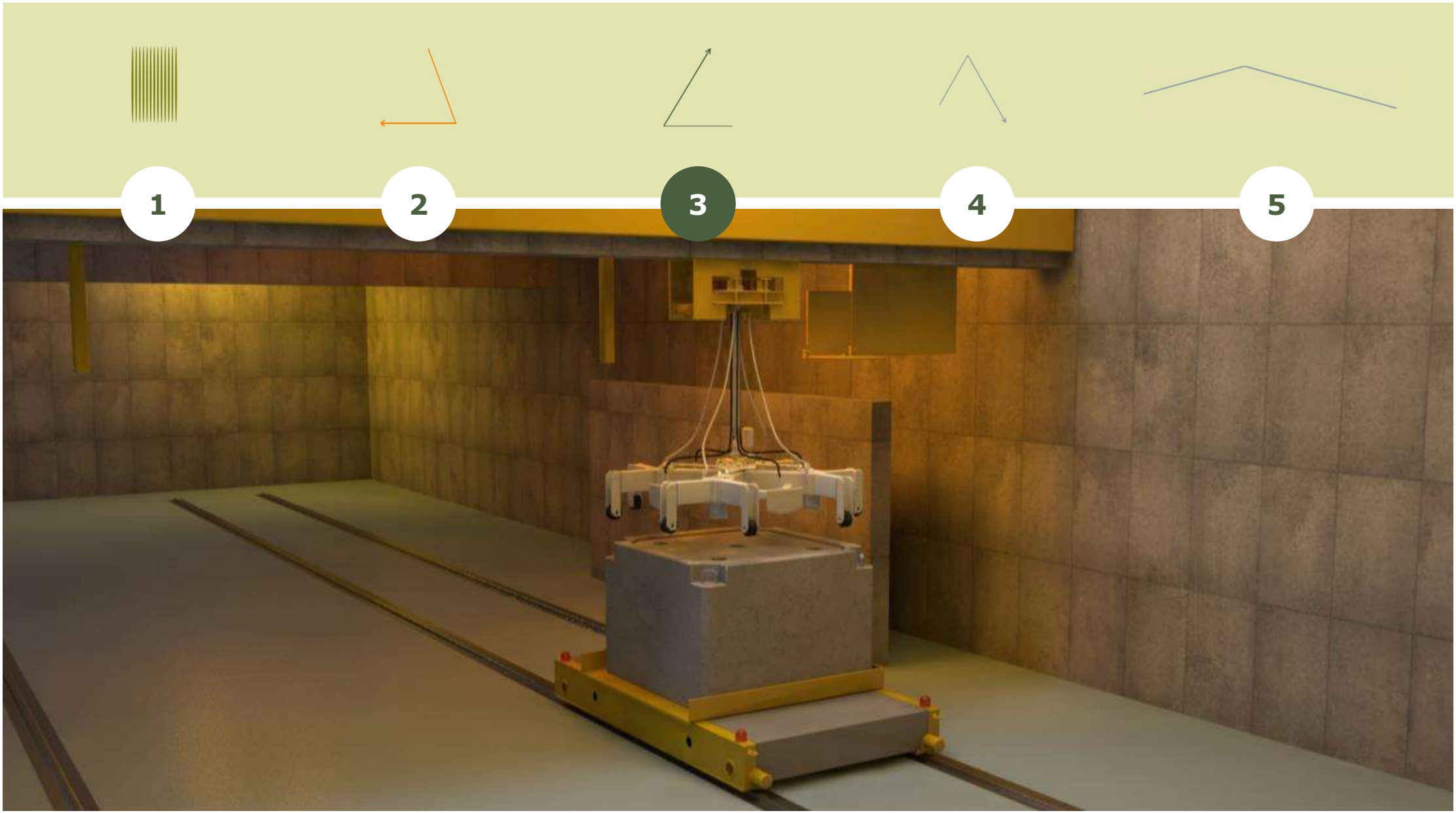
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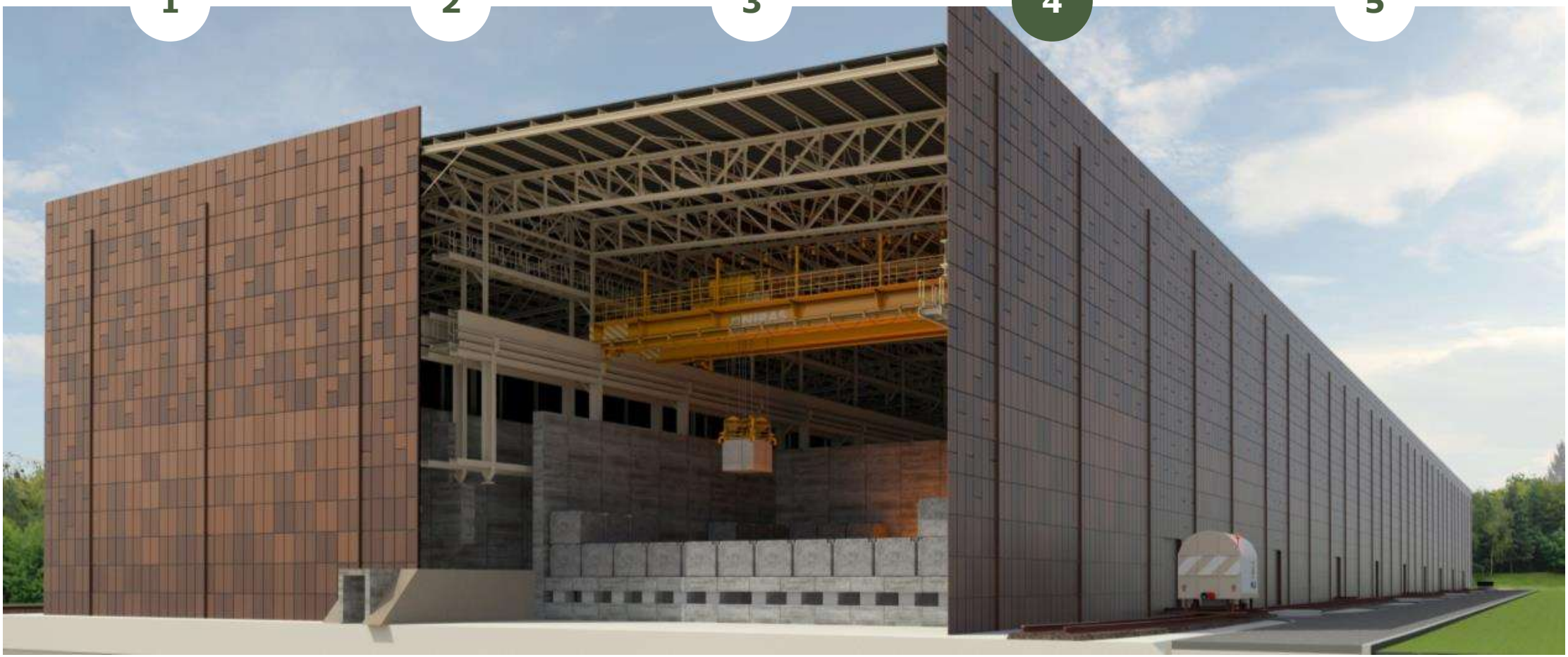
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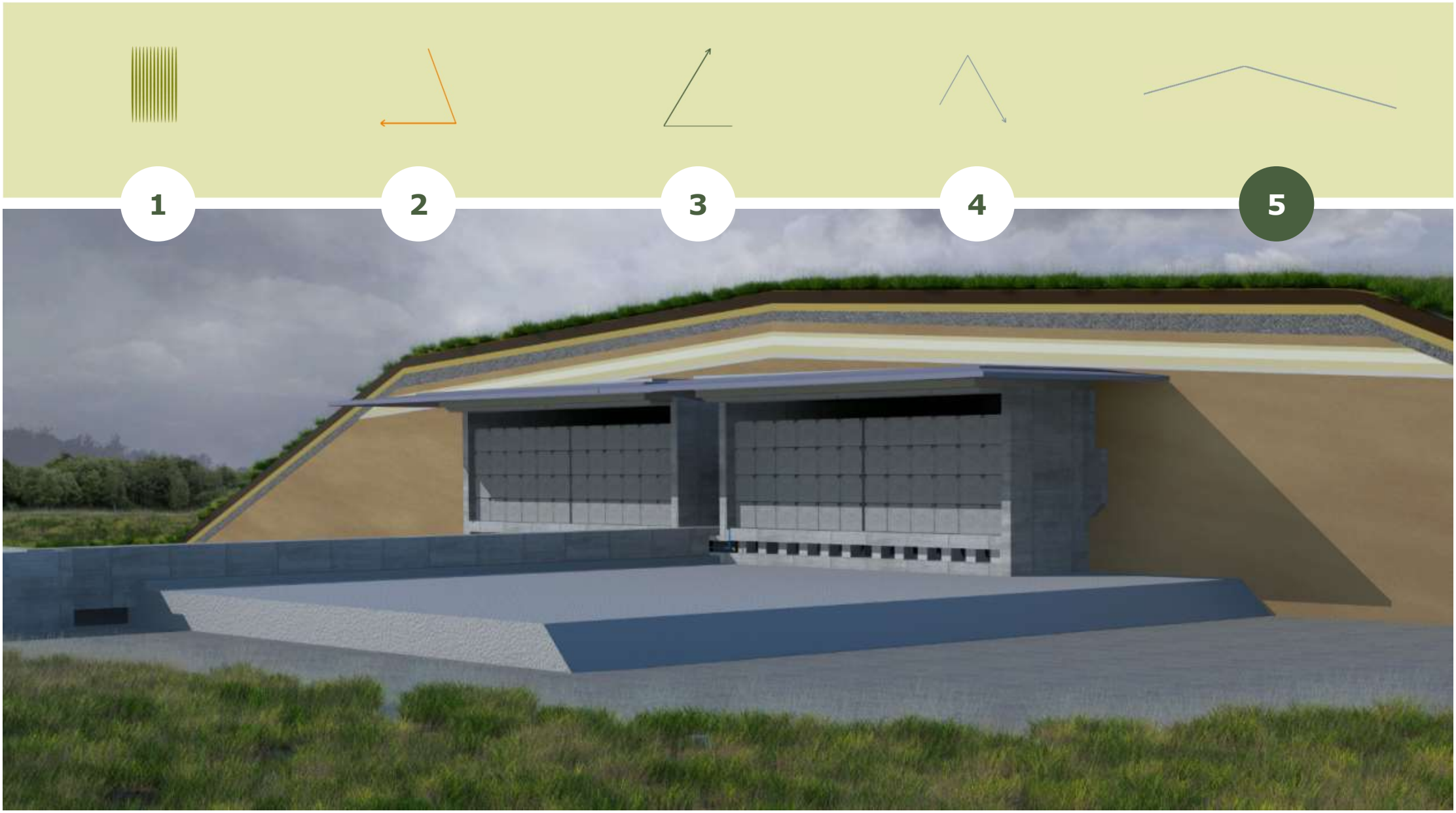
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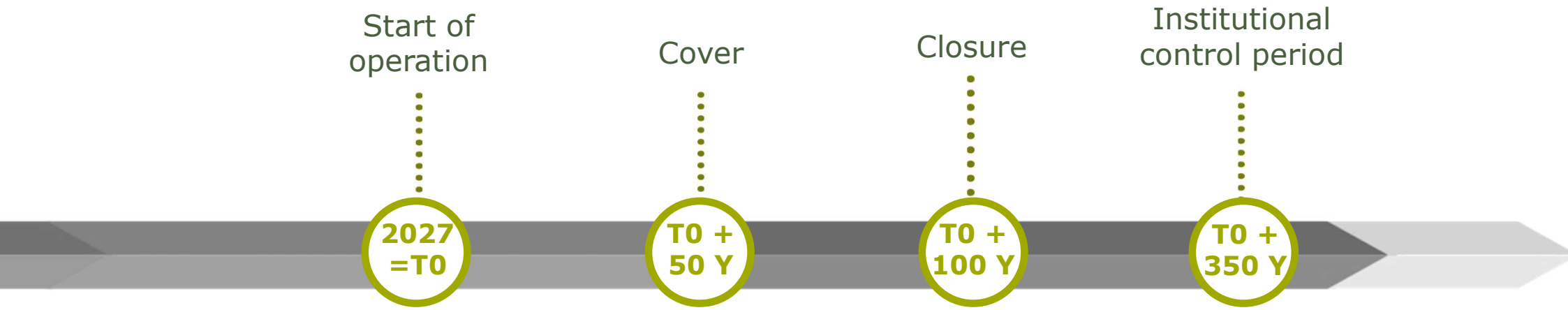
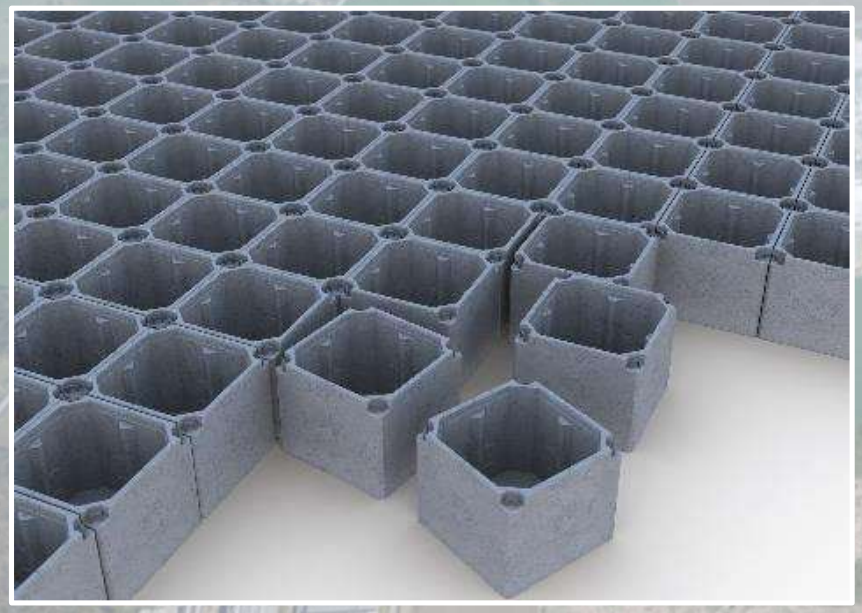
Planning


Start of operation
2027 =T0
Cover
T0 + 50 Y
Closure
T0 + 100 Y
Institutional control period
T0 + 350 Y

Aerial view of the site

STORAGE BUILDING FOR LOW-LEVEL WASTE



CAISSON PRODUCTION FACILITY

Caisson production facility

Tests for provisional acceptance

Caisson production facility

Tests for provisional acceptance

MONOLITH PRODUCTION FACILITY (IPM)

IPM

Tests for provisional acceptance

DISPOSAL MODULES AND ACCESS CLUSTER

AROUND THE TABLE IN TABLOO

Tabloo

Information centre

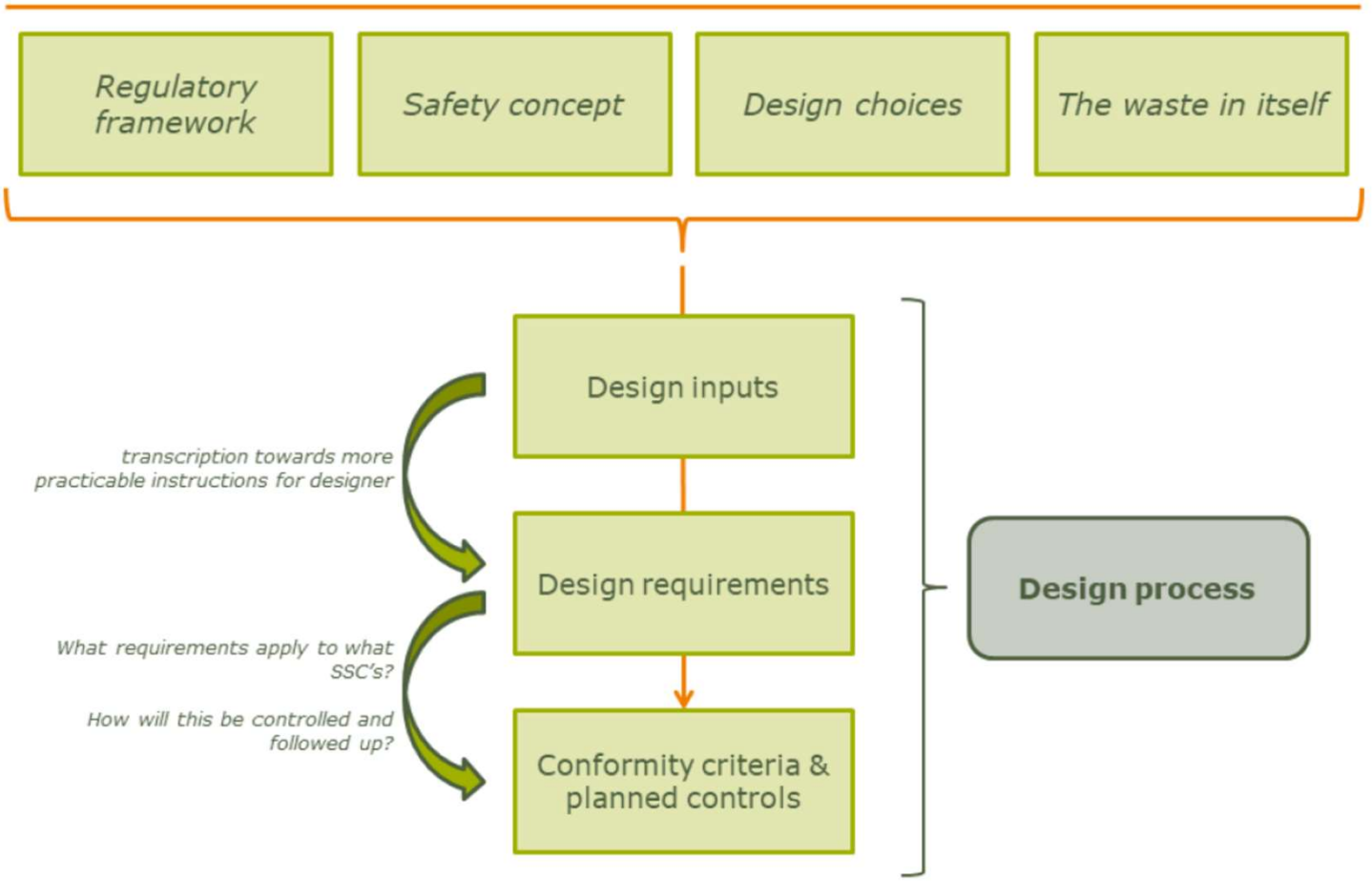
Recreation centre

Community centre

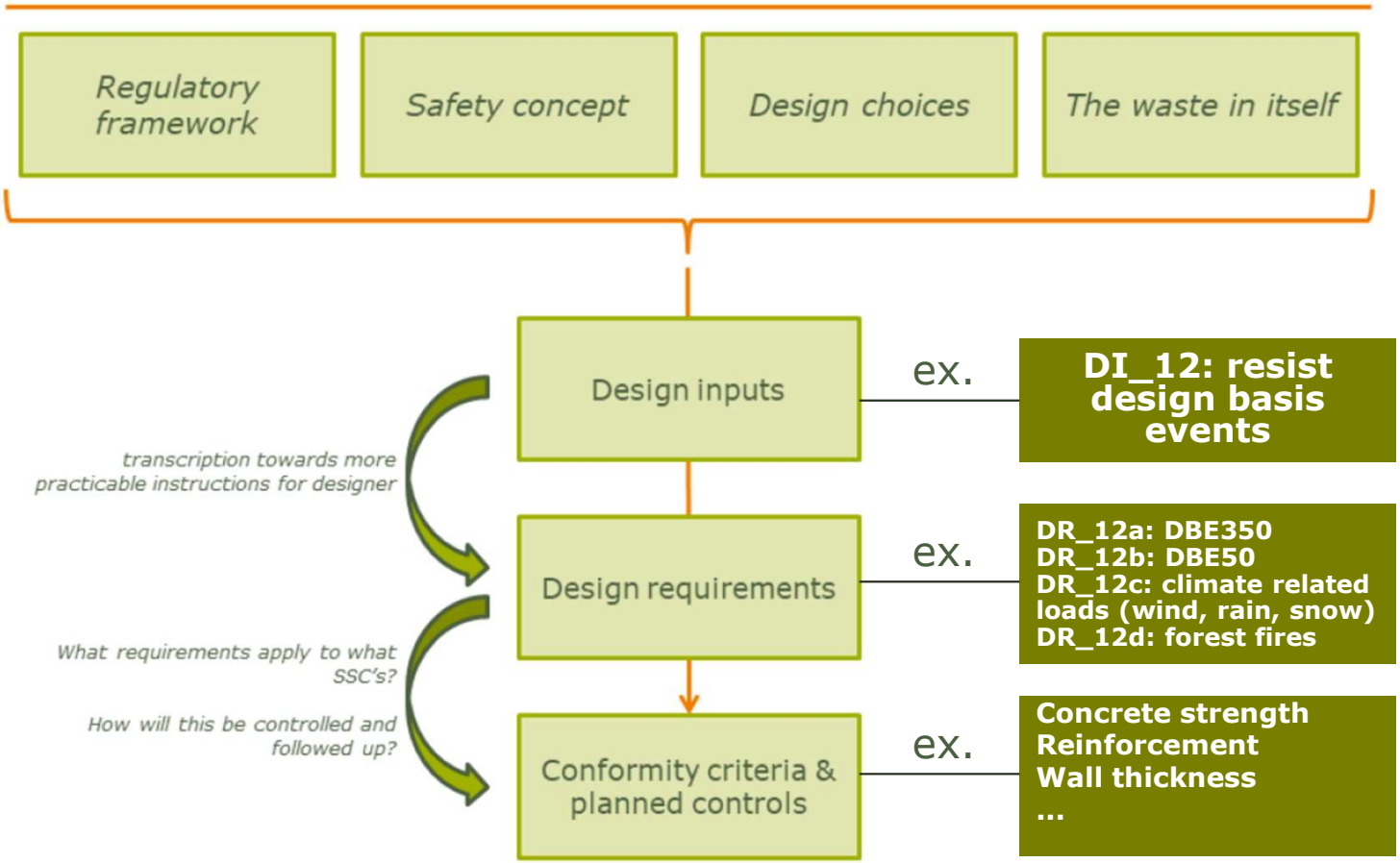
A place to host your event

Design and construction of disposal modules

Design process



Design process



Monoliths

- Three types
- Wall thickness 12 cm
- Surface: 1,95 m x 1,95 m
- Stacked 5 or 6
  - 1,35 m (Type I) of 1,62 m (Type II/III)
- 780 à 936 per module
- Max 20 ton
- Max 20 mSv/h contact dose rate

Modules

Foundation (60cm gravel + 200cm sand-cement)

Monoliths are stored in 34 concrete modules

- 25m x 27m x 11m ➔ 900 monoliths each
- Wall thickness: 70 – 85 cm
- Inspection area + inspection gallery (drainage system)
- Concrete mix design with a focus on

  long-term durability
- Concrete plant on construction site
- Specific construction sequence

Insulated steel roof structure

Transport of monoliths by rail

2 SFP overhead cranes

Reinforced concrete

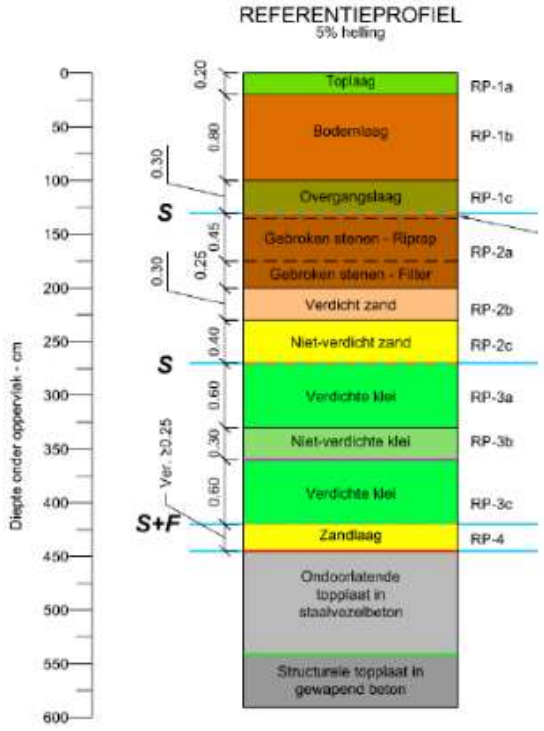
Steel structure attached to the modules + 2 SFP overhead cranes

Steel cladding

Final cover

Steel roof will be replaced by final cover

- System of natural materials and foils
  - Biological layer
  - Bio-intrusion barrier
  - Infiltration barrier
  - Drainage layer
  - Fibre-reinforced concrete slab
- Protection against water, extreme temperatures, roots and animals



DEMONSTRATE feasibility: test materials and construcion techniques

Testing settlements

Testing & optimizing
construction techniques

PROTOTYPES

Testing robustness

Testing process equipment (IPM)

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