Accelerating the transition towards Circular Economy
IN 2050...

Urban jungle park
IN 2050...

Or stacking
IN 2050...

Or MVRDV/BIG
BUT FIRST...
PROPOSED SCENARIO
PROPOSED SCENARIO

Temporary

Circular

By an integrated team
PROPOSED SCENARIO

Temporary

Circular

By an integrated team

Celebrating the history
Combining the whole site into a transition campus

By an integrated team

Celebrating the history

PROPOSED SCENARIO
Combining the whole site into a transition campus

Providing the missing necessities

By an integrated team

Celebrating the history

Temporary

Circular
PROPOSED SCENARIO

Combining the whole site into a transition campus

Providing the missing necessities

Providing a testing ground

Temporary

Circular

Celebrating the history

By an integrated team
Combining the whole site into a transition campus

Providing the missing necessities

Providing a testing ground

Facilitating interlinkages between niche-innovations

Temporary

Circular

By an integrated team

Celebrating the history

PROPOSED SCENARIO
History and development
History and development
History and development

MARINETERREIN
MARINETERREIN

History and development
History and development
MARINETERREIN

History and development
History and development
MARINETERREIN

History and development
History and development

MARINETERREIN

3 Relatie modulmaat, oppervlakte en overspanning

MODULMAAT - M = 1.90 m

- 6 m x 3.4 m
- 6.16 m²

MODULMAAT - M = 1.93 m

- 5.93 m²

MODULMAAT - M = 1.95 m

- 5.75 m²

KANTORGEDUIVEN

INTERVALLEN: 7 m² EN 10 m²

LESSEBOUWEN

INTERVALLEN: 10 m² EN 14 m²

DELEN

PARKETERREIN

SILHOUETEN

SISTEN PLATFORD

BOEDHOFSLUITING
Circularity
Towards a circular economy: business rationale for an accelerated transition.
Transitions

Landscape developments

Socio-technical regime

ST-regime is “dynamically stable”. On different dimensions there are ongoing processes.

New configuration breaks through, taking advantage of “windows of opportunity”. Adjustments occur in ST-regime.

Elements are gradually linked together, and stabilise into a new ST-configuration which is not (yet) dominant. Internal momentum increases.

Articulation processes with novelties on multiple dimensions (e.g. technology, user preferences, policies). Via co-construction different elements are gradually linked together.

Time

Illustration by Geels. (Geels, 2005)
Wider transformation route in systems innovations. (Geels, 2005)
Actively steer the transition
Actively steer the transition

How can I put this to use?

THEORY
Marineterrein opens its gates
Municipality strategy - three pillars

History

Innovation

Waterpark
Marineterrein as a campus
Marineterrein as a campus

- Conference Centre
- Restaurant
- Digital College
- Makerspace
- Start-up Consultant
- Hotel + Brewery

1500 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Marineterrein as a campus

What is missing?
- A CENTRAL SPACE
- EXTRA CONFERENCE SPACE
- MEETING HUB
- POTENTIALLY: LEISURE (GYM, SWIMMING POOL ETC)
- POTENTIALLY: SUPERMARKET
Marineterrein as a campus

What is missing?
- A CENTRAL SPACE
- EXTRA CONFERENCE SPACE
- MEETING HUB
- POTENTIALY: LEISURE
  (GYM, SWIMMING POOL ETC)
- POTENTIALY: SUPERMARKET
OUR INTERVENTION

Current situation
OUR INTERVENTION

Remove floor & facade
OUR INTERVENTION

Add walkway
OUR INTERVENTION

Add walkway
OUR INTERVENTION

New facade
OUR INTERVENTION

New facade
OUR INTERVENTION

Patio's
FUNCTIONING OF THE BUILDING

Organisation
FUNCTIONING OF THE BUILDING

Organisation
FUNCTIONING OF THE BUILDING

Organisation
FUNCTIONING OF THE BUILDING
FUNCTIONING OF THE BUILDING

Walkway
FUNCTIONING OF THE BUILDING

Transition zones

- Existing concrete column
- Carpet floor finish
- Timber floor finish
- Laminated timber column
- Curtain wall, Aluminum mullions
- Double glazing
- Timber floor finish (outside)
- Balustrade, steel support with steel mesh
- CLT element spanning 3600 mm x 1600 mm
- Air-duct 800 x 550
- Acoustic ceiling panel with PCM and integrated lighting fixtures
- Skylight, walkable 3800 mm x 900 mm
- Timber lateral beam supporting curtain wall
- Shading, retractable curtain, steel mesh
- Curtain wall, aluminum mullion, double glazing
- Existing concrete column
- Existing concrete beam
- Existing concrete prefab facade element
- Concrete, insulated foundation beam
- Laminated timber column
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
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BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING MODULES
BUILDING SYSTEM
Module 1.3
BUILDING SYSTEM
Module 4.2
BUILDING SYSTEM

Module 4.3
Partners & contracts

LEASING MATERIALS

MetsäWood

ALKONDOR
Hengelo
LEASING MATERIALS

Partners & contracts

LEASE CONTRACT

LEASE CONTRACT

LEASE CONTRACT

LEASE CONTRACT

LEASE CONTRACT

MetsäWood

ALKONDOR

unica

DESSO

Kingspan

A Tarkett Company
LEASING MATERIALS

Partners & contracts

- Metsä Wood
- Alkondor
- Unica
- Desso
- Kingspan
- Solease
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS
MODULE ELEMENTS

Kingspan

unica

Alkondor

Hengelo

DeSSo

A Tarkett Company

MetsäWood
Standard sizes

3800 mm

Balustrade, steel support with steel mesh

Beams supported by laminated column and existing concrete column

Overhang: 900mm

CLT element spanning 3600 mm x 1600 mm

Air-duct 800 x 550

Acoustic ceiling panel with PCM and integrated lighting fixtures

Skylight, walkable. 3800 mm x 900 mm

Timber lateral beam supporting curtain wall

Shading, retractable curtain, steel mesh

Curtain wall, aluminum mullion, double glazing

Existing concrete column

Existing concrete beam

Existing concrete prefab facade element

Existing concrete floor

Existing concrete foundation beam (on piles)

CLT element finished with carpet or raised timber floor

Concrete, insulated foundation beam

Laminated timber column
Standard sizes

3800 mm

3600 mm
LEASING MATERIALS

Standard sizes

- Balustrade, steel support with steel mesh
- Beams supported by laminated column and existing concrete column
- Overhang: 900mm
- CLT element spanning 3600 mm x 1600 mm
- Air-duct 800 x 550
- Acoustic ceiling panel with PCM and integrated lighting fixtures
- Skylight, walkable: 3800 mm x 900 mm
- Timber lateral beam supporting curtain wall
- Shading, retractable curtain, steel mesh
- Curtain wall, aluminum mullion, double glazing
- Existing concrete column
- Existing concrete beam
- Existing concrete prefab facade element
- Existing concrete floor
- Existing concrete foundation beam (on piles)
- CLT element finished with carpet or raised timber floor
- Concrete, insulated foundation beam
- Laminated timber column 3800 mm
- 3600 mm
- 100 mm
- 100 mm
LEASING MATERIALS

Standard sizes

- Aluminum mullion standard profile, fixed to concrete beam
- Double glazing
- Downspout every 15.2 m
- Adjusting element
- Timber beam spanning 3800 mm
- Steel U-profile bearing the shading and balusters
- Steel mesh for balustrade
- Same mesh as the curtain
- Steel mesh shading curtain
- Series of blocks guiding steel cable
- Steel cable to pulling up the shading curtain
- Steel baluster every 1900 mm
- Square profile 25 mm
- Timber decking, 180 mm wide
- Screwed to beams
- Timber cladding, 180 mm wide
- Screwed to beams
- Integrated lighting spots
- Lighting the building
- Integrated lighting between cladding (every 900 mm)
- Lighting the curtain
- Electric engine pulling cable
- Gutter, Aluminium
- Timber beam spanning 3800 mm
- Timber decking, 180 mm wide
- Screwed to beams
- Timber cladding, 180 mm wide
- Screwed to beams
- Rigid insulation (100 - 150 mm)
- EPD covered with EPDM
- Timber rafters, every 600 mm
- Supported by insulation, fixed to CLT element
- Timber purlins, every 400 mm
- Supporting the decking
- CLT element spanning 3600 x 1600
- Aluminum mullion standard profile
- Structural glazing, walkable. 3800 x 900
- Adjusting block supporting mullion
- Timber beam every 3800 mm
- Spanning laminated column to concrete column
- Plywood finish plate
- Timber sandwich panel prefab
- Existing concrete prefab facade element
- Existing concrete column
- EPDM waterproofing
- Filling element with non-rigid insulation, supported by timber beams spanning 3600 mm
- Underfloor convector (heating)
- Steel plate connecting laminated timber column to concrete foundation beam
- Laminated timber column 400 mm x 160 mm every 3800 mm
- Timber support for floor finish
- Timber floor finish
- EPS insulation filling element
- Concrete foundation beam
- Adjusting block
- Timber support for floor finish
- Timber floor finish
- Concrete, insulated foundation beam
- CLT element finished with carpet or raised timber floor
- Concrete, insulated foundation beam
- Laminated timber column 3800 mm
- 3600 mm
- 200 mm
- 160 mm
- 20 mm
- 100 mm
- Air-duct 800 x 550
- Acoustic ceiling panel with PCM and integrated lighting fixtures
- Skylight, walkable. 3800 mm x 900 mm
- Timber lateral beam supporting curtain wall
- Shading, retractable curtain, steel mesh
- Curtain wall, aluminum mullion, double glazing
- Existing concrete column
- Existing concrete beam
- Existing concrete, insulated foundation beam (on piles)
- CLT element finished with carpet or raised timber floor
- Concrete, insulated foundation beam
Standard sizes

- Aluminum mullion standard profile, fixed to concrete beam
- Double glazing
- Downspout every 15.2 m
- Adjusting element
- Timber beam spanning 3800 mm
- Steel U-profile bearing the shading and balusters
- Steel mesh for balustrade of the same mesh as the curtain
- Steel mesh shading curtain
- Series of blocks guiding steel cable
- Steel cable to pulling up the shading curtain
- Steel baluster every 1900 mm - square profile 25 mm
- Timber decking, 180 mm wide - screwed to beams
- Timber cladding, 180 mm wide - screwed to beams
- Integrated ligthing spots lighting the building
- Integrated lighting between cladding (every 900 mm) lighting the curtain
- Electric engine pulling cable
- Gutter, aluminium
- Timber beam spanning 3800 mm
- Timber decking, 180 mm wide - screwed to beams
- Timber cladding, 180 mm wide - screwed to beams
- Rigid insulation (100 - 150 mm) EPDM covered with EPDM
- Timber rafters, every 600 mm supported by insulation, fixed to CLT element
- Timber purlins, every 400 mm supporting the decking
- CLT element spanning 3600x1600
- Aluminum mullion standard profile, fixed to concrete beam
- Filling element high performance insulation
- EPDM waterproofing
- EPS rigid insulation filling element
- Concrete foundation beam adjusting block
- Underfloor convector (heating)
- Steel plate connecting laminated timber column to concrete foundation beam
- Laminated timber column 400 mm x 160 mm every 3800 mm
- Timber support for floor finish
- Timber floor finish
- EPS insulation
- Concrete, insulated foundation beam
- Adjusting block
- Timber support for floor finish
- CLT element finished with carpet or raised timber floor
- Concrete, insulated foundation beam
- Laminated timber column 3800 mm 3600 mm 200 mm 160 mm 20 mm 100 mm 100 mm
- 300 mm 20 mm 20 mm 100 mm 100 mm
DESIGN PRINCIPLES

Celebrate the ancient
Celebrate the ancient

Postwar architecture
DESIGN PRINCIPLES

Celebrate the ancient

Postwar architecture

'The new is the old'
POSTWAR ARCHITECTURE

"The old becomes the ancient"

DESIGN PRINCIPLES

Celebrate the ancient
DESIGN PRINCIPLES

Drydock analogy
DESIGN PRINCIPLES

Drydock analogy
DESIGN PRINCIPLES
Drydock analogy
DESIGN PRINCIPLES

Drydock analogy
DESIGN PRINCIPLES

Drydock analogy

History

Temporary

Building (on the circular economy)
DESIGN PRINCIPLES

Ripple effect
DESIGN PRINCIPLES

Ripple effect

Circular
DESIGN PRINCIPLES

Ripple effect

Circular

Low threshold
DESIGN PRINCIPLES

Ripple effect

Circular

Low threshold

Military efficiency
LIFESPAN OF THE BUILDING

Growth of the intervention
LIFESPAN OF THE BUILDING

Start-up policy - room dividers options

Start-ups are given two options:

Expensive: custom build office

See: interior partitions

Cheap: create own lay-out with reused facade elements
LIFESPAN OF THE BUILDING

Start-up policy - roomdividers catalogue

[Diagram showing the lifespan of the building with various events and time periods indicated]

1500
2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2050
LIFESPAN OF THE BUILDING

Start-up policy - placement room dividers
LIFESPAN OF THE BUILDING

Start-up policy - example floor
LIFESPAN OF THE BUILDING

Start-up policy - example floor
LIFESPAN OF THE BUILDING

Start-up policy - example floor
LIFESPAN OF THE BUILDING

Start-up policy - example floor

Exterior Signage: common goal: single style
LIFESPAN OF THE BUILDING

Start-up policy - example floor

Exterior Signage: common goal: single style

Interior Signage: Differentiate! Go nuts!
LIFESPAN OF THE BUILDING

Living lab
Dismanteling the building

TEN YEARS LATER...
TEN YEARS LATER...
Dismanteling the building
TEN YEARS LATER...

Dismanteling the building
Dismanteling the building

TEN YEARS LATER...
TEN YEARS LATER...

Dismanteling the building
Dismanteling the building

TEN YEARS LATER...
Dismanteling the building

TEN YEARS LATER...
TEN YEARS LATER...

Dismanteling the building
Dismanteling the building

TEN YEARS LATER...
Dismanteling the building

TEN YEARS LATER...
Dismanteling the building

TEN YEARS LATER...
TEN YEARS LATER...

Dismanteling the building
Dismanteling the building
TEN YEARS LATER...
Dismantling the building
TEN YEARS LATER...

Dismanteling the building
Dismanteling the building
Dismanteling the building

TEN YEARS LATER...
TEN YEARS LATER...

Dismanteling the building
What is left behind?

TEN YEARS LATER...
In 2050...

Or stacking
QUESTIONS?
Shading curtains

Steel baluster every 1900 mm
Square profile 25 mm
Steel mesh for balustrade:
Same mesh as the curtain
Timber beam, lengthening 3800 mm
Steel I-profile bearing the shading and balustrade
Series of blocks guiding steel cables
Steel mesh shading curtain
Steel cable to pulling up the shading curtain

Steel plate connecting laminated timber column to concrete foundation beam.
Laminated timber column 400 mm x 160 mm every 3800 mm
Timber support for floor finish
Timber floor finish

CLIMATE DESIGN
CLIMATE DESIGN

Interior partition walls