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CRADLE-TO-CRADLE®
A HOLISTIC VALUE PROPOSITION

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THE INVITATION

Dense cities are the perfect Material Banks

Upcycling not Downcycling

Breaking siloed supply chains

Image: Dillon Marsh



FROM FRINGE 'FEEL-GOOD' TO THE DRIVING SEAT

TODAY

- Misaligned drivers in value chains reducing quality
- Planned obsolescence: low-skilled labour, high material footprint
- Volatile raw material supply chains
- Surge in climate-related extreme weather events
- Pandemic: resilience through transparency & collaboration



NET ZERO BY 2050

2035

UK: 78% Carbon reduction target



2023/25

SDR / UK taxonomy
Mandatory measurement of whole life carbon

2021

SFDR takes effect



2020

EU Taxonomy
- Defines 'sustainability'
- Strong move against 'greenwashing'
- Frame of reference for fund classification





I'M INVISIBLE, MY MARRIAGE IS "SUSTAINABLE" : IS THIS THE AIM ?

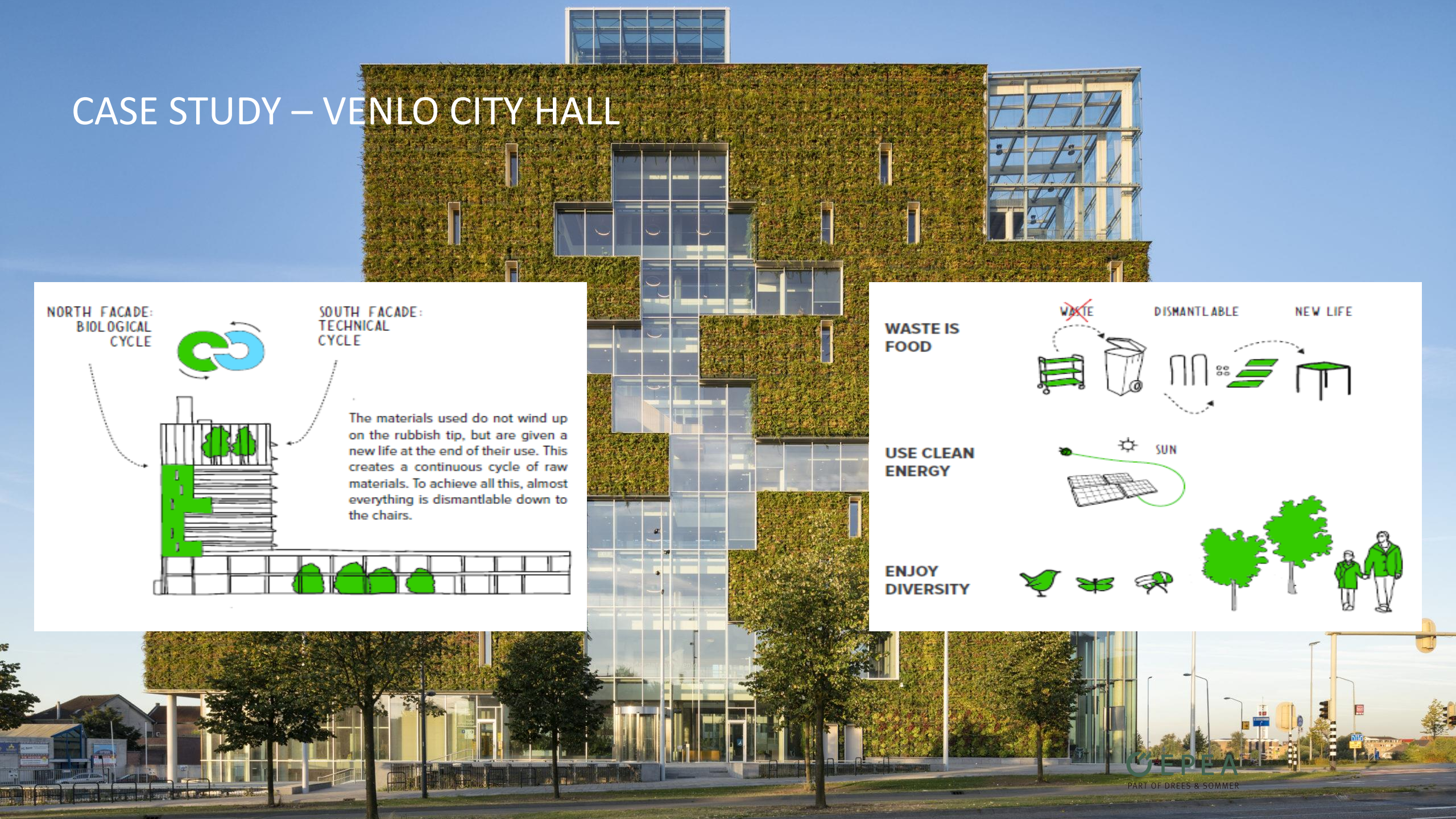
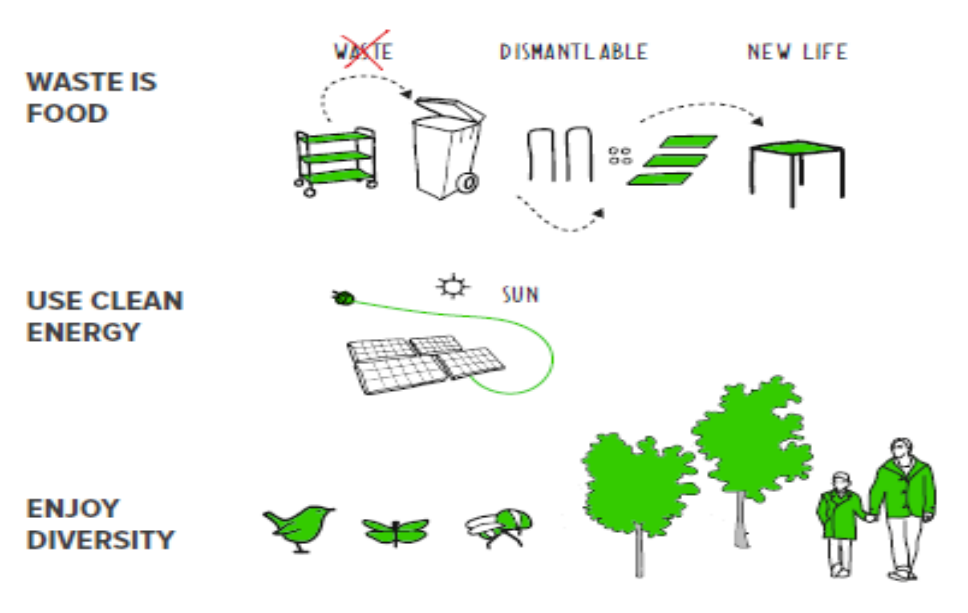
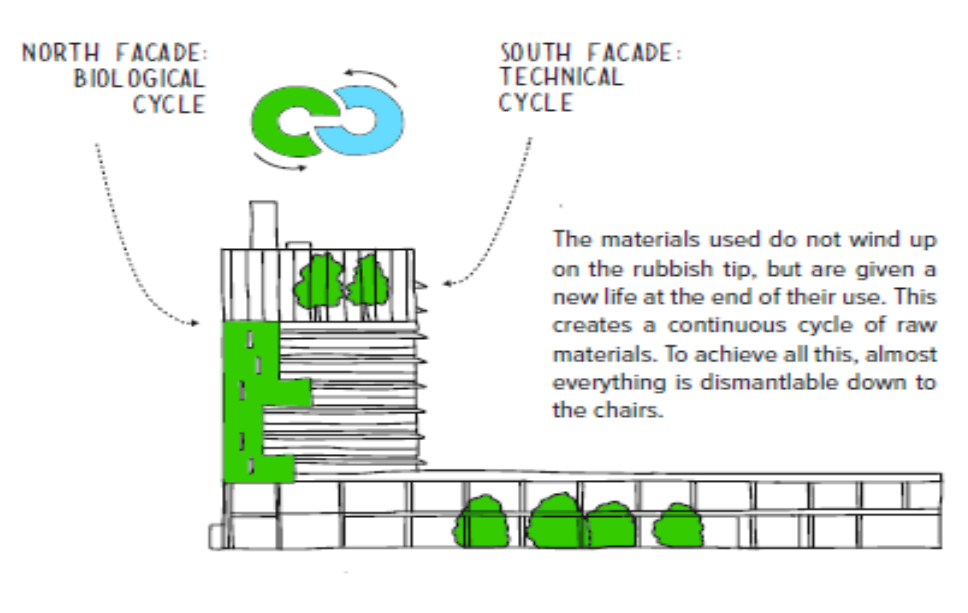
Regenerative Design, Verb:

'Enabling social and ecological systems to maintain a healthy state and evolve.'



How can ESG drive growth, reduce risk and improve quality of our Buildings?

CASE STUDY – VENLO CITY HALL



CASE STUDY – VENLO CITY HALL

5% guaranteed residual value of materials

18% residual value of interiors

26% reduction in symptoms of Sick Building Syndrome

Indoor air quality is better than outdoor air quality

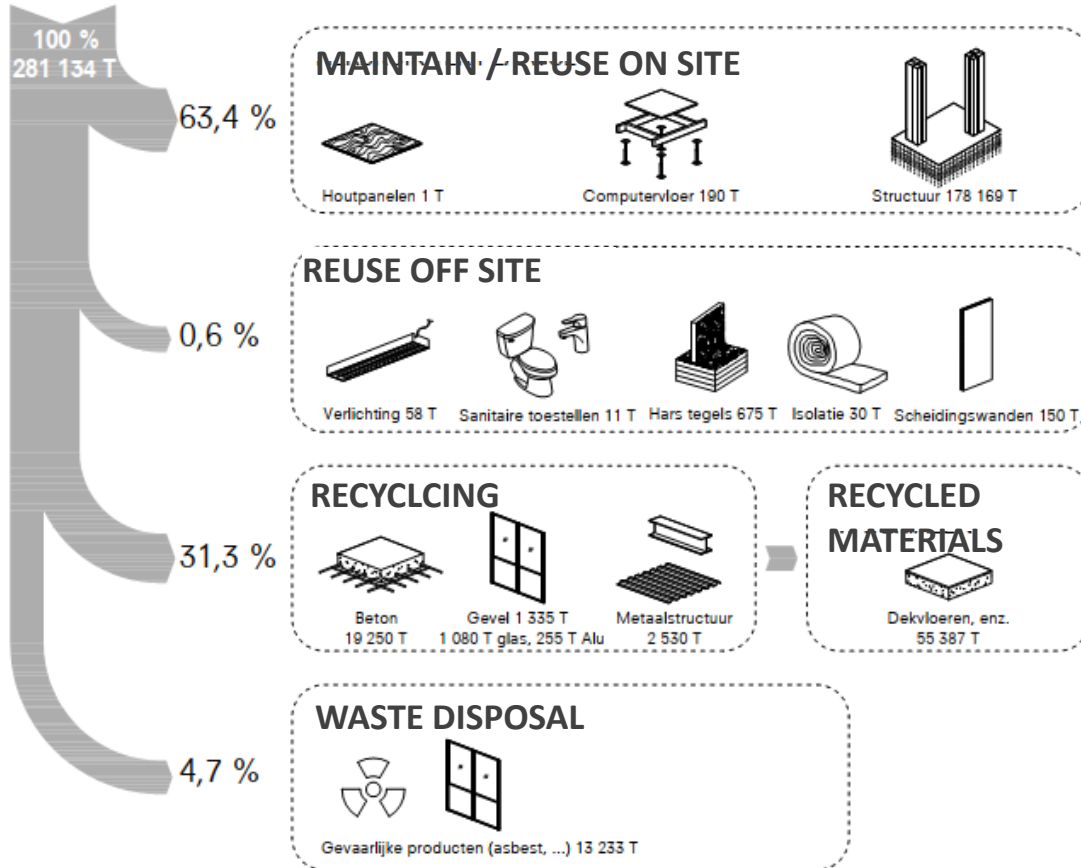
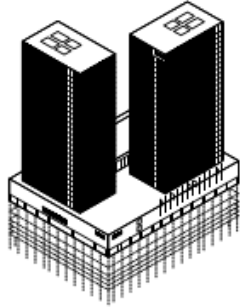
Building purifies 30 % of fine-dust and CO₂ within a radius of 500 m

In the first year, sick-leave reduced by 2 % relative to previous building

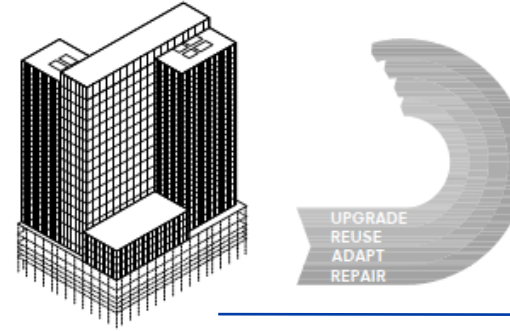


WORLD TRADE CENTRE
Brussels, Belgium

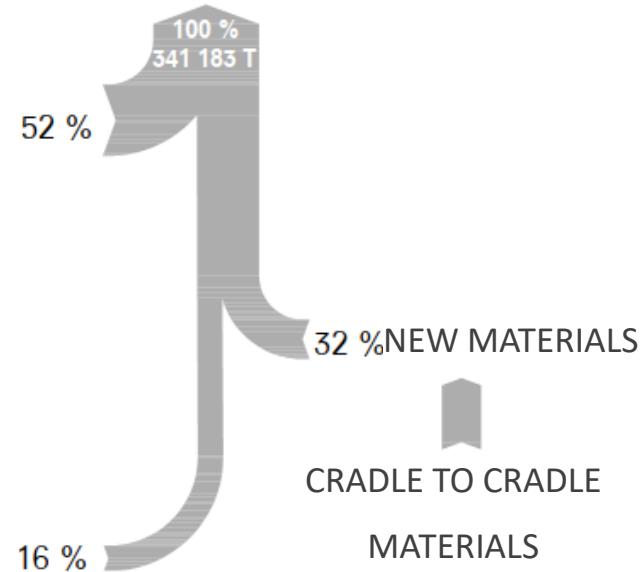
2018: WTC I & II



2023: ZIN in No(o)rd



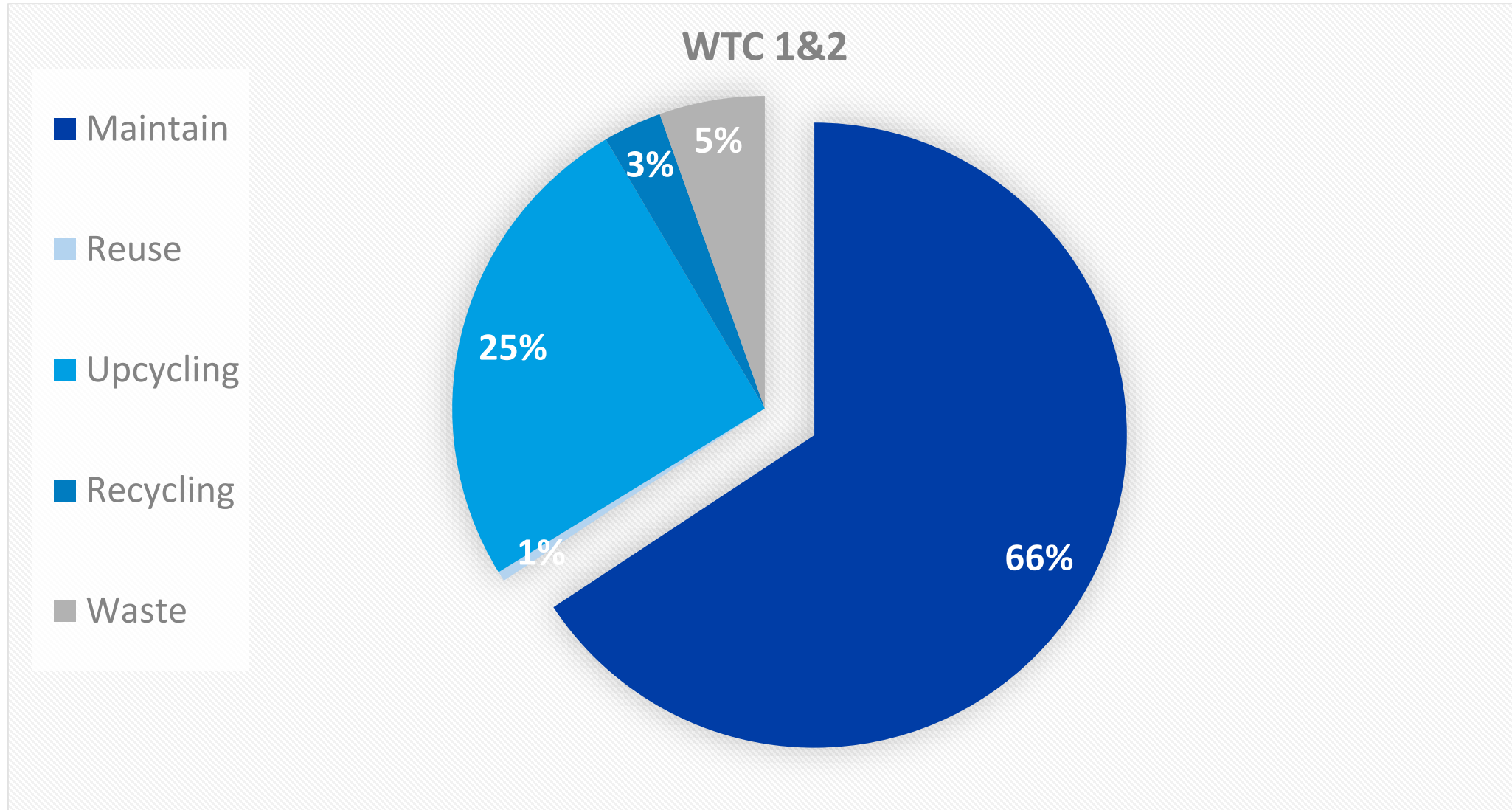
WTC Project foresaw 15 % cost savings on demolition by reusing 1600 tons of material and upcycling 70.000 tons.



Re-use of reconstructed stone floor tiles (SILIPOL) with a value of 150 €/m² (confirmed by the supplier and demolition company).



ZIN - URBAN MINING STRATEGY





INDUSTRIAL TAKE BACK LOOPS : FLOAT GLASS

Big reductions in carbon footprint when comparing traditional and C2C processes

TRADITIONAL DEMO

Glass is extracted as impure demolition waste



Glass is discarded into containers and shipped to a third party.



Skills and labour exported



Valuable glass is downcycled into bottles and eventually brown glass.



CRADLE-TO-CRADLE

Recovery of entire façade elements through careful demolition



Localization and upskilling of the labour force



Clear separation of the material enables dedicated processing



Material upcycling to new glass for windows and façades



KEY TAKEAWAYS

- Reuse of glass panels is difficult due to rapidly evolving product performance and bespoke project requirements.
- Contamination is the main reason for the downgrading of glass value. Careful demolition is key.

BENEFITS OF THE C2C APPROACH

- Carbon savings
- Economic impact localised
- Material diverted from landfill and reduced mining for virgin materials
- Financial valorisation of materials by diverting landfill and maximising resale of high-value materials
- Upskilling the local construction sector



URBAN MINING

1.246 tons of materials to be reused on site and other locations

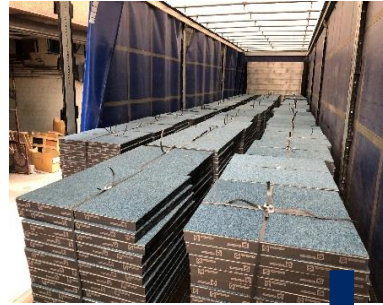
Tiles, panels, etc.

REUSE IN THE SAME PROJECT



Raised floor

REUSE IN PROJECT IN PARIS



Carpet

REUSE IN PROJECT NEARBY



Ceiling tiles

USED FOR NEW PRODUCTS



DEALERS FOR USED MATERIALS





WHAT IF WE RECONSIDERED?

What is the value proposition of a more holistic approach to the people around this table?

How does this vary across Europe ?

What are the unseen risks or today's status quo : on project proposals, commercial models? How could these become seen?

What are the right metrics to drive positive buildings?

Do buildings drive policy, or vice versa – where is the sweet spot for you?

ERFOLGREICHE GEBÄUDE

LEBENSWERTE STÄDTE

RENDITESTARKE PORTFOLIOS

LEISTUNGSFÄHIGE INFRASTRUKTUR

ZUKUNFTSWEISENDE BERATUNG



DREES &
SOMMER