

# Holistic approach to construction projects

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# Agenda

## Introduction

**01** Challenges

**02** Solution(s) : need for a global approach

**03** Example

**04** Key take aways



# Who is cfe

**Building a sustainable and innovative world**

# More than 140 years creating impact





Construction & Renovation



Real estate



Multitechnics



Investments

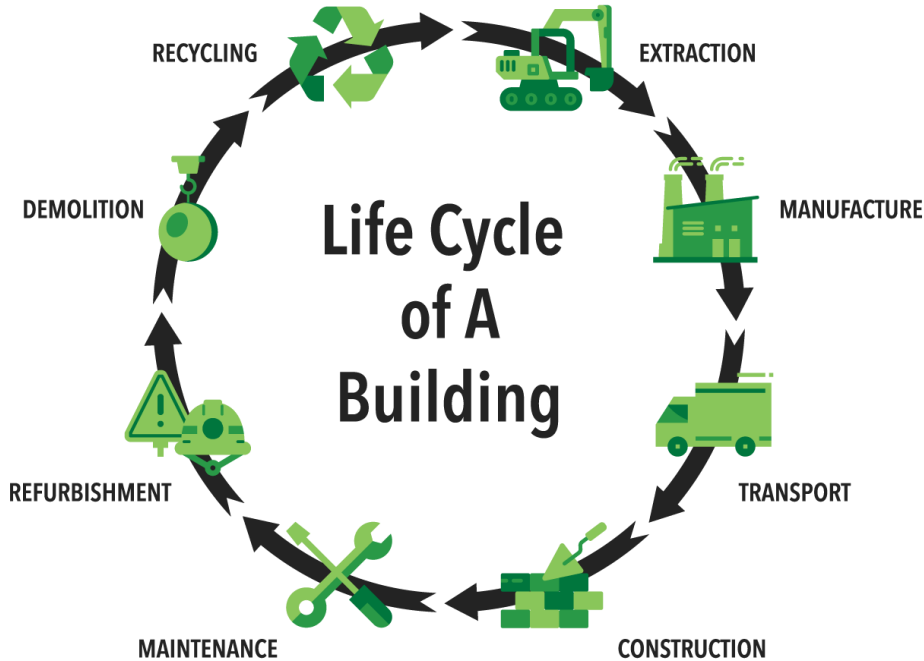


Green-Offshore



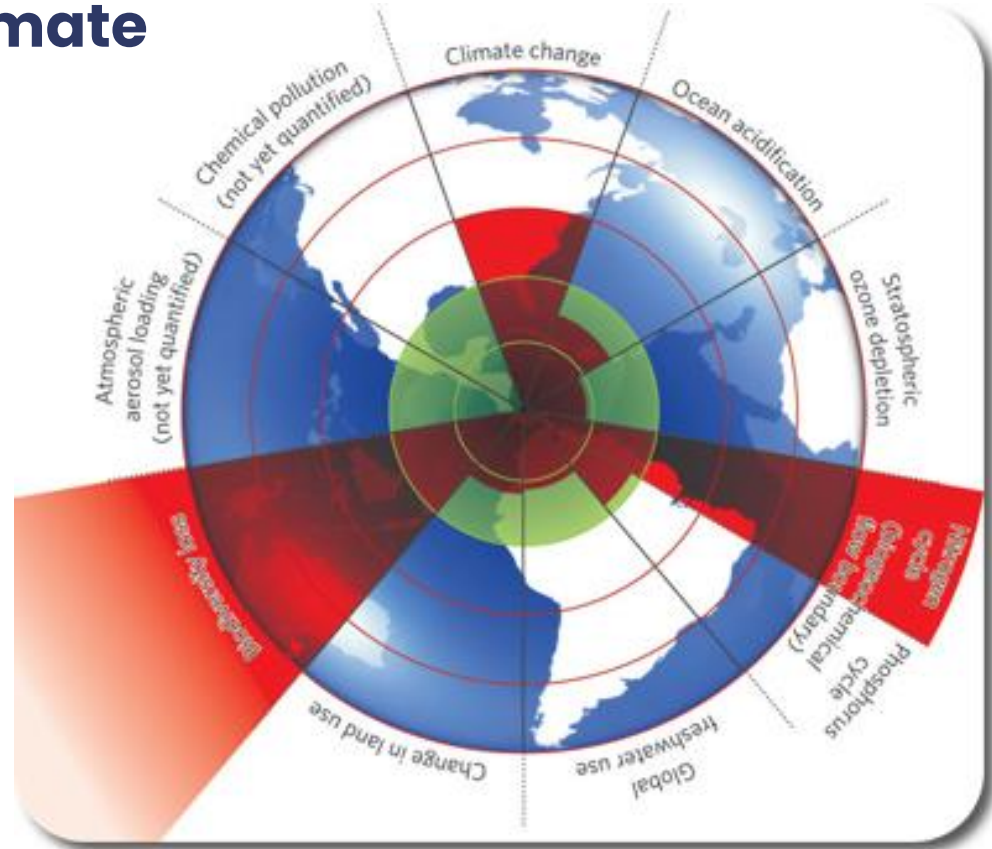
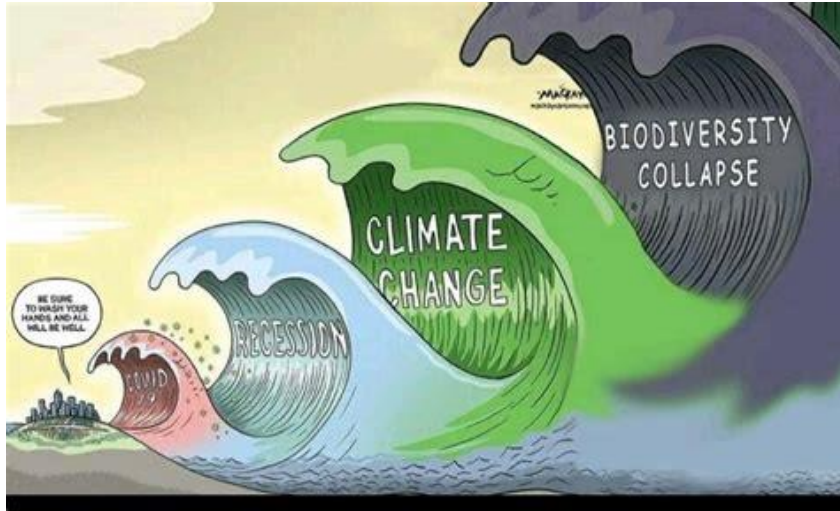
# 01. Challenges

# The challenge



- **Materials shortages**
- **Concrete CO2 footprint**
- **Mobility issues**
- **On-site emissions**
- **75% of buildings not energy-efficient**
- **No cradle-to-cradle**
- **Waste %**
- **Surroundings: biodiversity, community, ...**

# And it is not “only” about climate change...



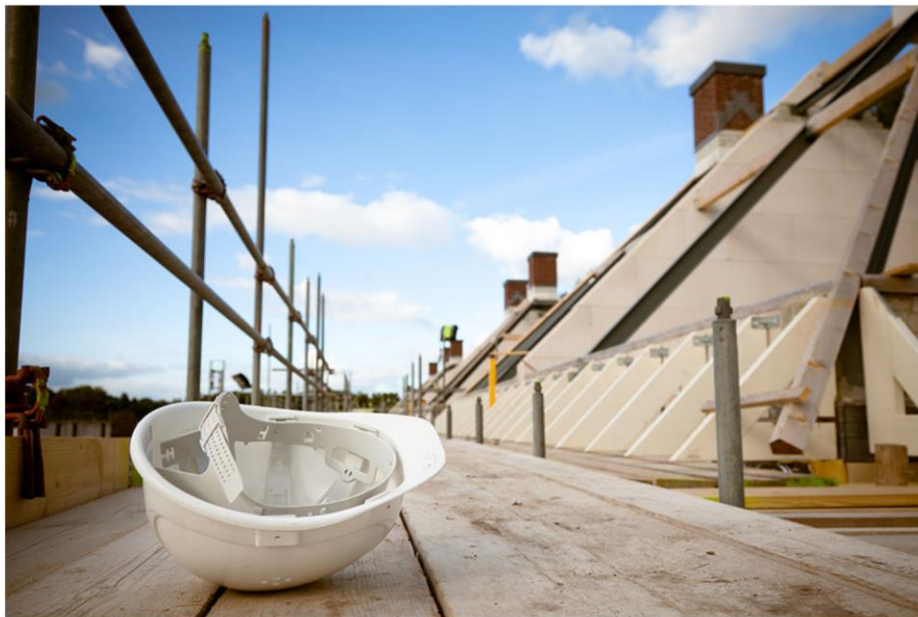
## It is about the collapse of the ecosystem



**And above all, it is not “only” about the “E” aspect ...**



**and this applies to the entire supply chain.**



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PEOPLE, PROJECTS

## Construction Faces a Massive Labor Shortage. Here's How Contractors Can Act.

Major investments in infrastructure and energy in the years ahead mean lucrative opportunities for construction firms. But the industry faces a major worker shortage that will require purposeful actions to reverse

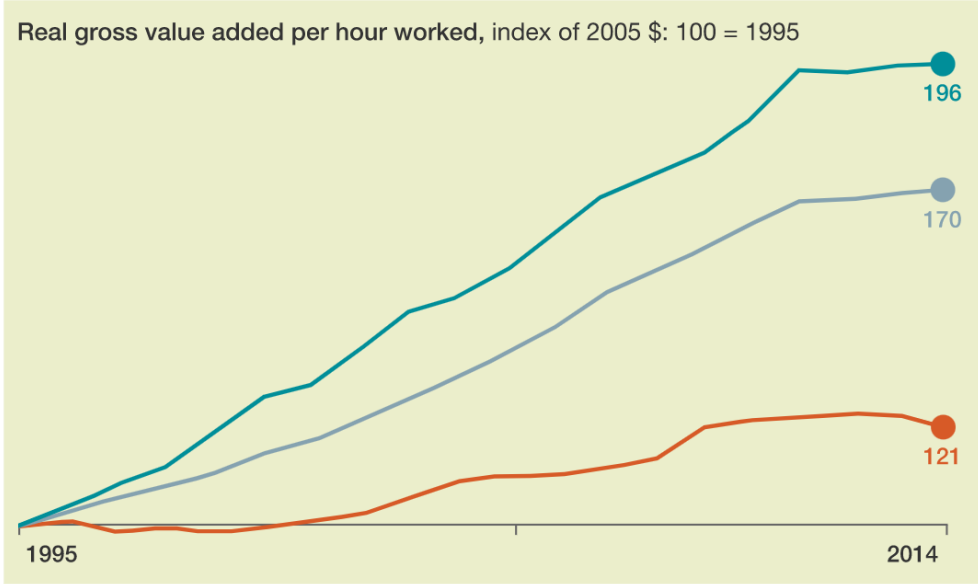
BY DIANA KIGHTLINGER | OCTOBER 14, 2022

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The main reasons are :

- Aging workforce
- Unskilled new hires
- Mediocre pay for poor conditions and uncertain work
- ....

Globally, labor-productivity growth in **construction** lags far behind that of **manufacturing** or the total economy.



Source: GGCD-10; national statistical agencies of Turkey, Malaysia, and Singapore; OECD, Rosstat; US Bureau of Economic Affairs; US Bureau of Labor Statistics; WIOD; World Bank; McKinsey Global Institute analysis

McKinsey&Company

## Stagnant productivity levels

# The construction industry is among the least digitized.

## Slow technology adoption

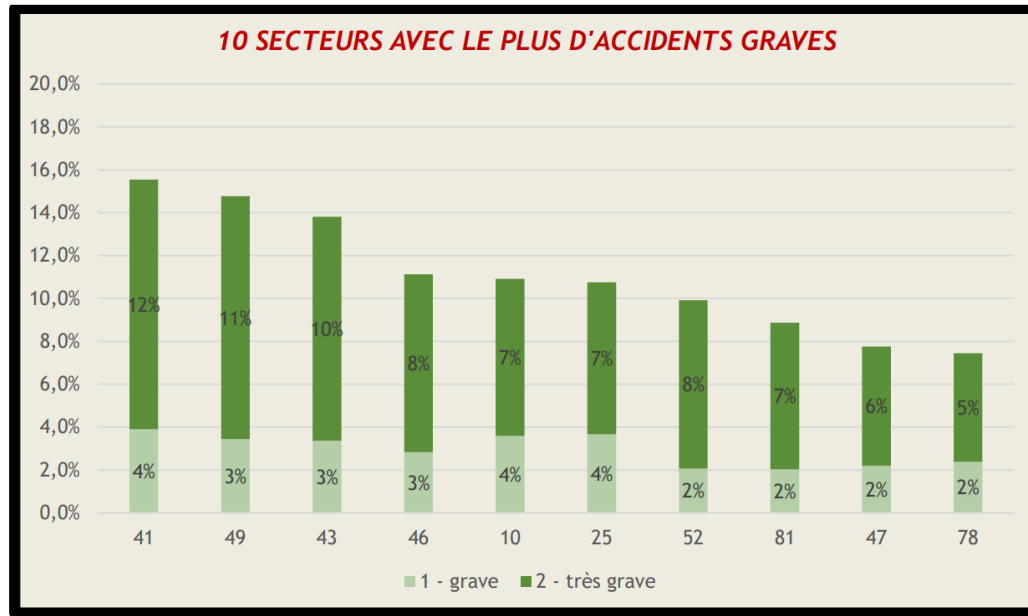
McKinsey Global Institute industry digitization index; 2015 or latest available data

Relatively low digitization  Relatively high digitization

● Digital leaders within relatively undigitized sectors



## Health & safety



avec

- 41 Construction de bâtiments; promotion immobilière
- 49 Transports terrestres et transport par conduites
- 43 Travaux de construction spécialisés
- 46 Commerce de gros, à l'exception des véhicules automobiles et des motocycles
- 10 Industries alimentaires
- 25 Fabrication de produits métalliques, à l'exception des machines et des équipements
- 52 Entreposage et services auxiliaires des transports

# Earth Is Running Out of Sand ... Which Is, You Know, Pretty Concerning


Sand is the second most-used resource after water, but it's unregulated and ripping environments apart.



BY [TIM NEWCOMB](#) PUBLISHED: MAY 3, 2022

Construction and demolition waste (CDW) accounts for more than a third of all waste generated in the EU. It contains a wide variety of materials such as concrete, bricks, wood, glass, metals and plastic. It includes all the waste produced by the construction and demolition of buildings and infrastructure, as well as road planning and maintenance.

Resource scarcity & waste generation management



## **02. Solution(s): need for a global approach**

# What is Europe saying?

EU Green Deal

**“We have to be better by 2050”**

1. No net emissions of greenhouse gases by 2050
2. Economic growth decoupled from resource use
3. No person and no place left behind

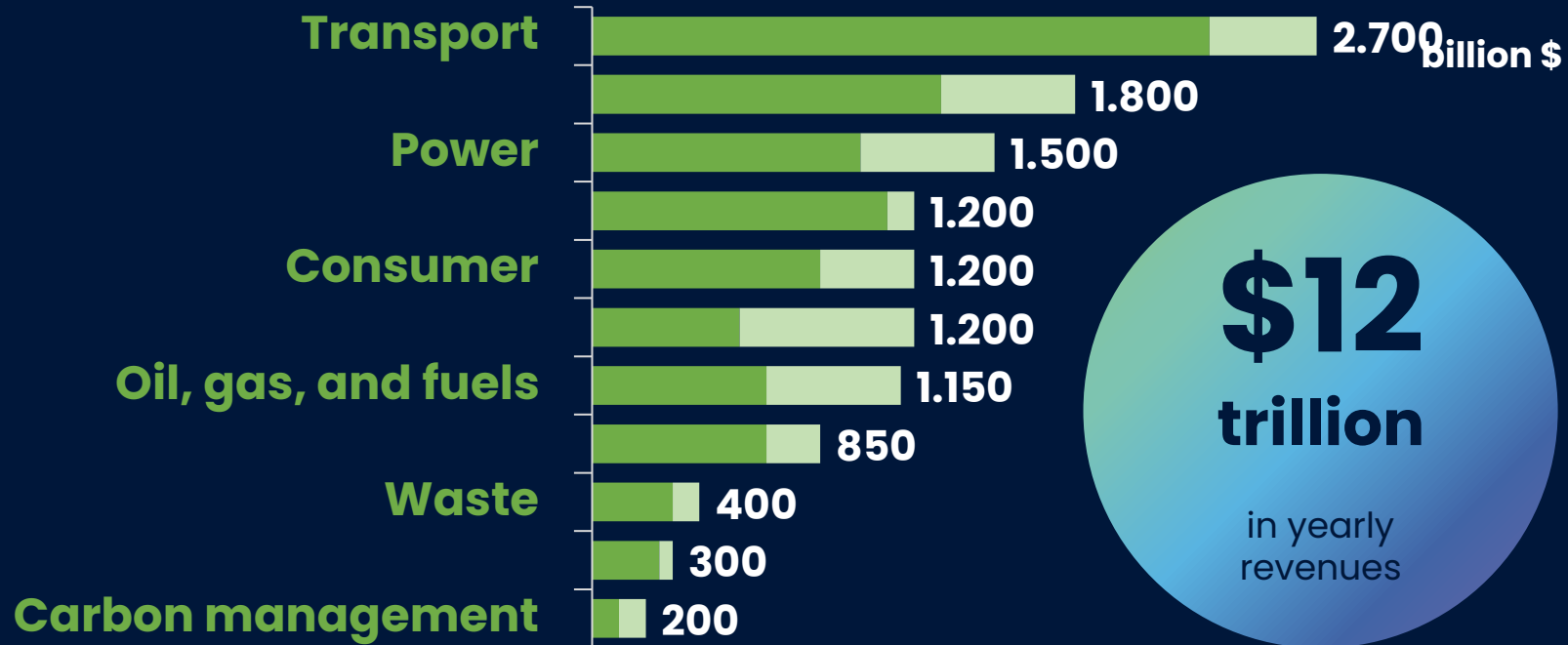
The European Commission has adopted a set of proposals to make the EU's climate, energy, transport and taxation **policies fit for reducing net greenhouse gas emissions by at least 55% by 2030**, compared to 1990 levels.



# How is Europe nudging?

- **Single and clear definition** of 'what is green?'
  - **Taxonomy**: % of revenue and investments aligned with this definition
  - **CSRD**: consistent reporting on sustainability KPI's
- **These are / will become conditions for doing business and getting financing**

# Net-zero transition market size in 2030



# We know the answers



**BIO-BASED  
MATERIALS**



**SUSTAINABLE  
SITE OPERATIONS**



**INSULATION**



**SMART BUILDING  
MANAGEMENT**



**BUILD TO  
RENOVATE**

**And so  
much  
more ...**

# What are the roadblocks?



- Legalese
- **Timing is not ok**
- Our current business models are not adapted → shift for TCO's models
- ...



# **03: A concrete example: ZIN (Brussels)**

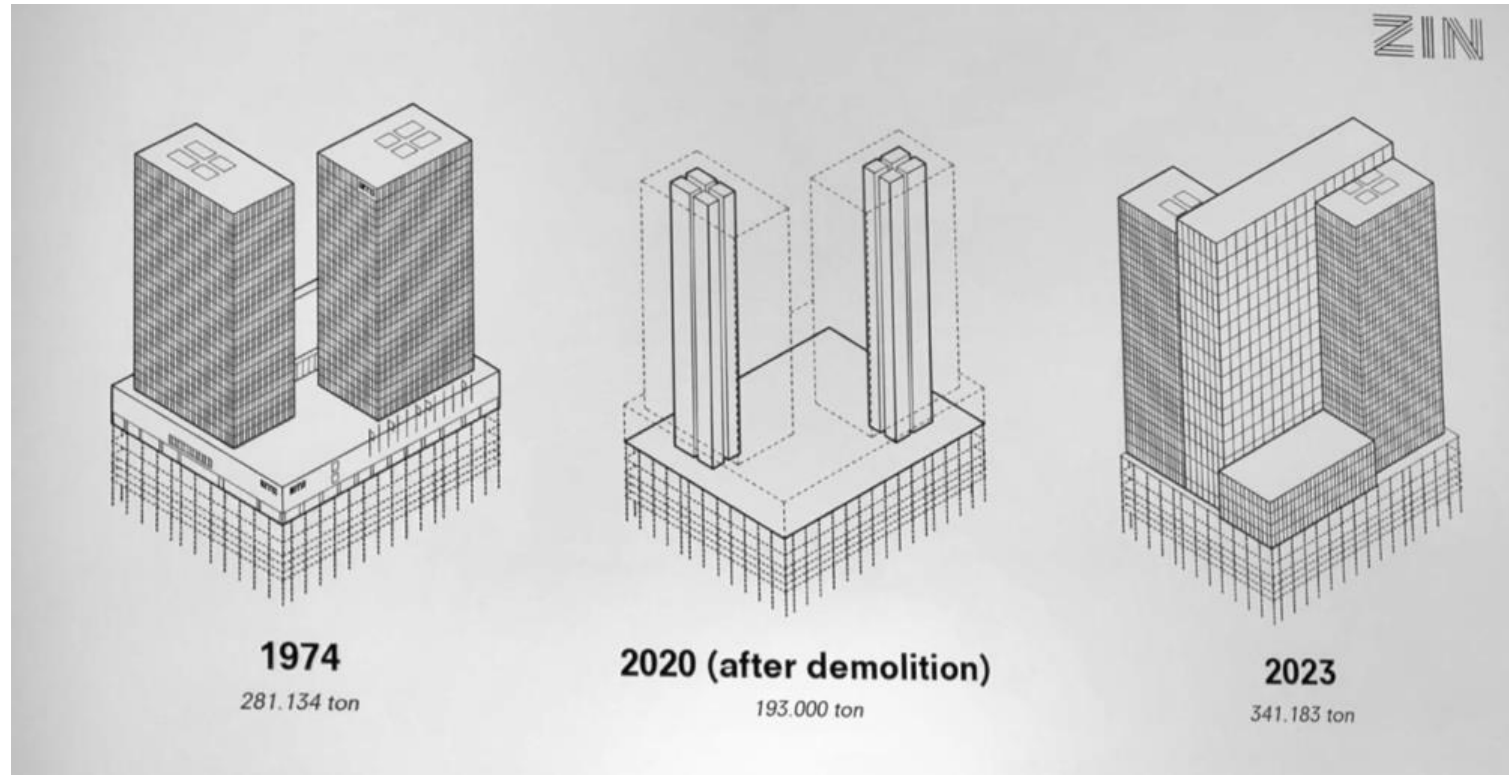
# ZIN, a project with a global sustainable approach



The Zin project is currently underway in the North district of Brussels. It involves the reconstruction (after demolition of part of the former WTC towers) of +- 110,000m<sup>2</sup> of office, hotel and residential space.

# Design phase

# ZIN, A CIRCULAR PROJECT



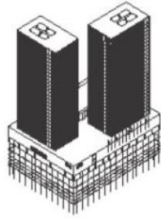


**65** %  
**of the structure is being retained**

**30,000** tonnes  
**of dismantled concrete will be reused in the new concrete of the ZIN project**

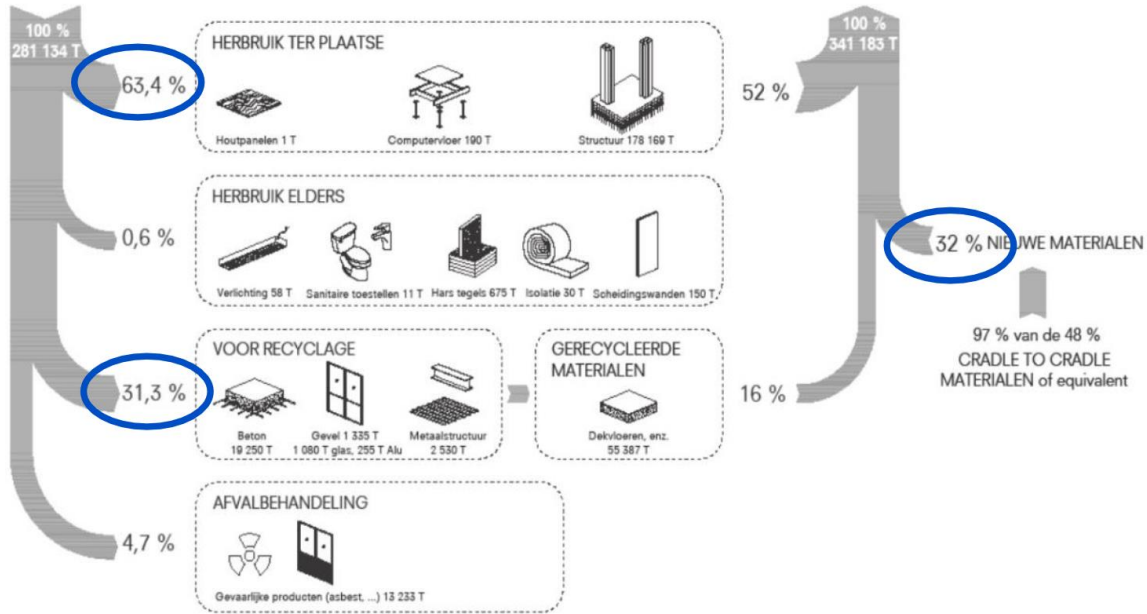
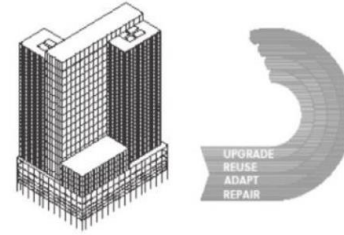
**95** %  
**of the new materials are certified C2C (or equivalent)**

2018: WTC I & II

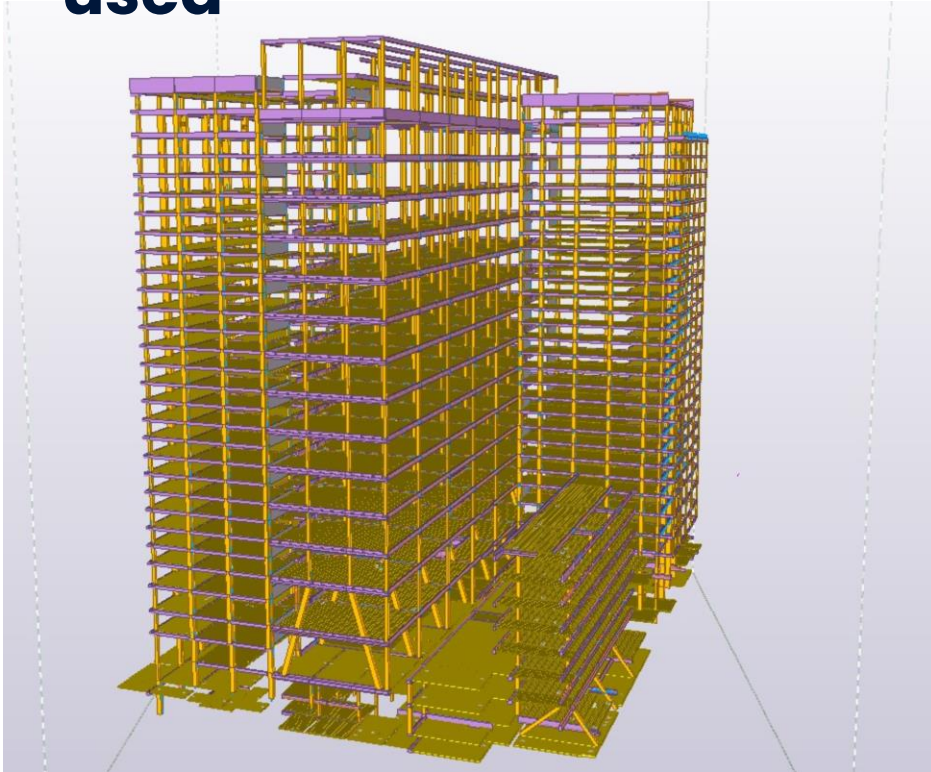


# Befimmo

2023: ZIN in No(o)rd



# BIM & BOM, the keys to future re-use of the materials used

A diagram illustrating the concept of a Bill of Materials (BOM). It features a blue background with a white scroll that unrolls from top-left to bottom-right. The scroll contains icons representing various materials and components: a roll of fabric, a stack of metal bars, a flame, and a pile of stones. Small white stars are scattered around the scroll. To the right of the scroll, the text 'Bill of Materials' is written in a large, bold, black font. Below it, the phonetic transcription '[bil əv mə-ˈtir-ē-əls]' is provided. Further down, a definition states: 'An extensive list of raw materials, components, and instructions required to construct, manufacture, or repair a product or service.' At the bottom right, the Investopedia logo is visible.

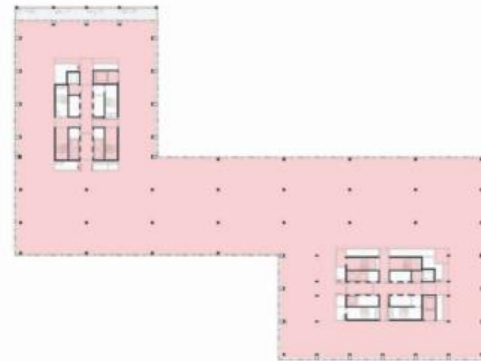
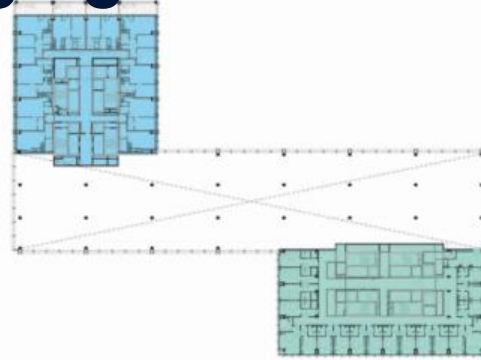
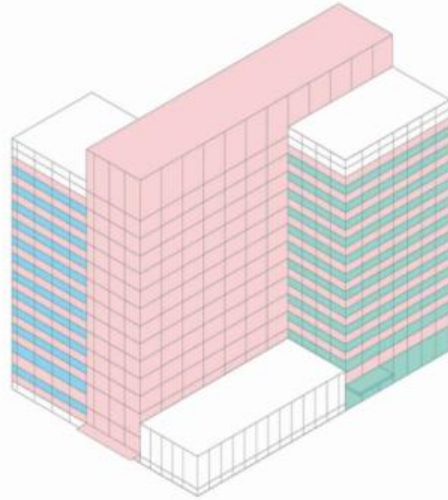
**Bill of Materials**

*[bil əv mə-ˈtir-ē-əls]*

An extensive list of raw materials, components, and instructions required to construct, manufacture, or repair a product or service.

Investopedia

# A design that adapts to changing needs over time



# Energy optimization through smart management



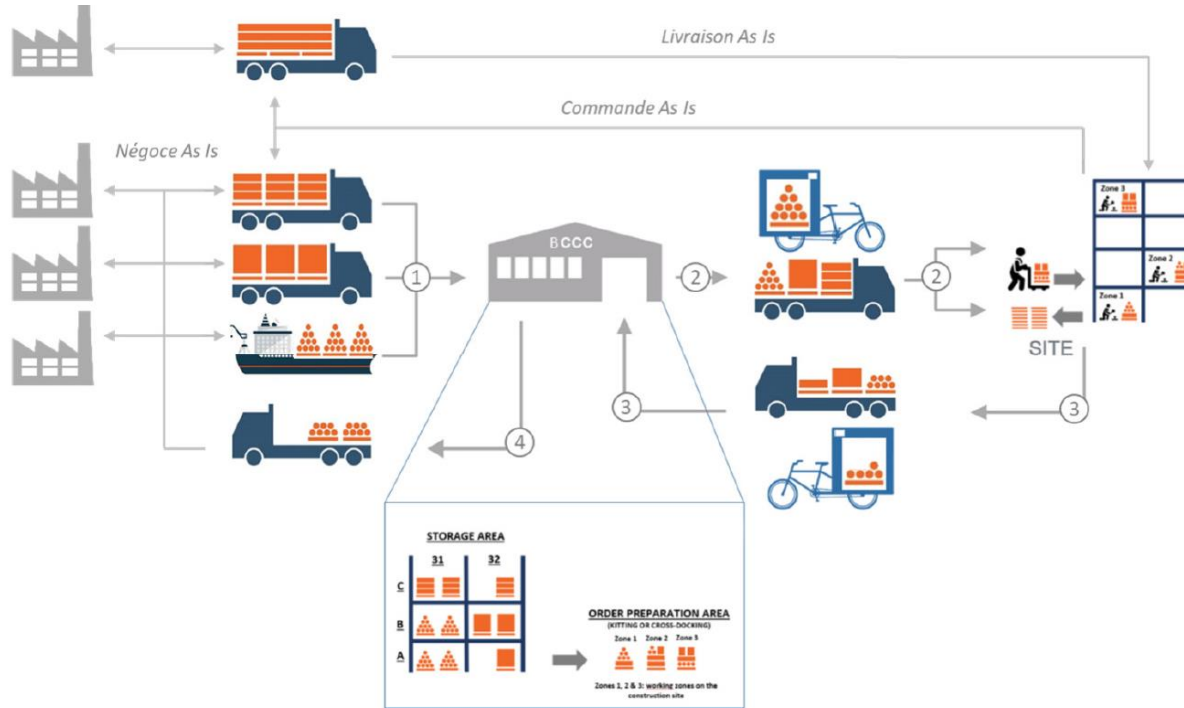
70

%

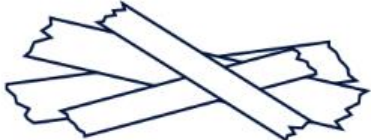
**of the heating and cooling needs are covered by the geothermal system**

# Execution phase

# Material transport optimisation



# Partnerships for reuse of the waste



5 m<sup>3</sup> de déchets de bois

=



14 bancs

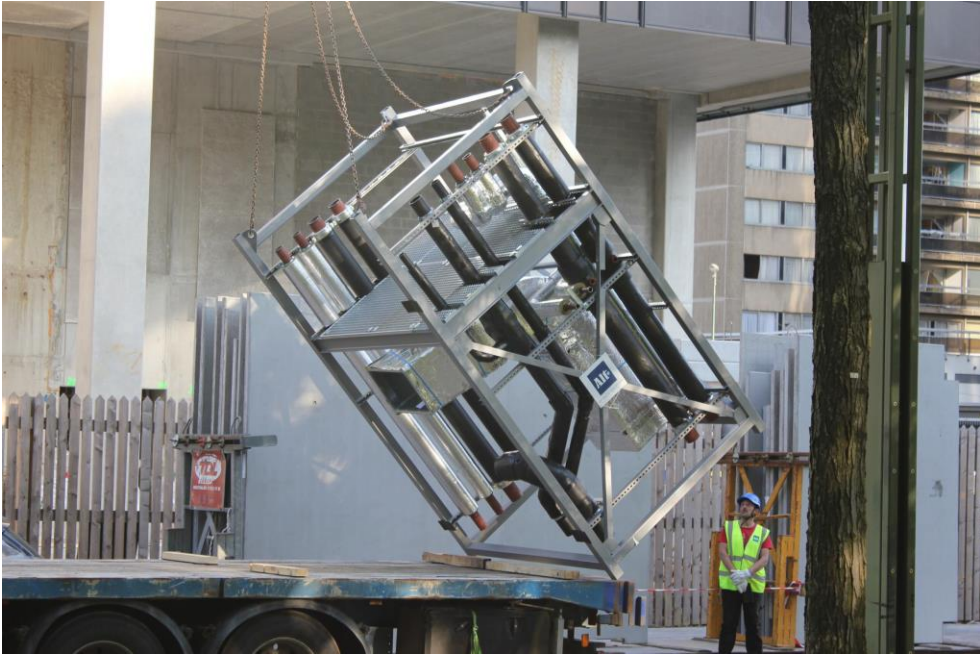
+



21 bacs à fleurs



# Prefab



# Development of an internal app to ease circularity





# 04. Key take aways

# Key take-aways

- The world is changing, and the construction and real estate sectors must constantly reinvent themselves to keep up with this change. But it is not enough to follow this change. **We have to be proactive and accelerate it** because many **opportunities** are coming up and we have to seize them now : **Vmanager** for example or the acceleration of **renovation** and the use of **sustainable materials**
- There's no magic formula, but only a **global approach** to challenges (LCA), adapted to the location and the project, can have a real and lasting impact.
- **Business models need to be adapted** to the reality of the urgency of the problem. We need to think in terms of **TCO** rather than direct costs. We need to think in terms of **partners** and no longer in terms of customer-performer-supplier.

**The greatest threat to our planet  
is the belief that someone else  
will save it.**

Robert Swan

# Thank you

