



# Usage of Dramix® Steel Fiber in Precast and Impact on Sustainability

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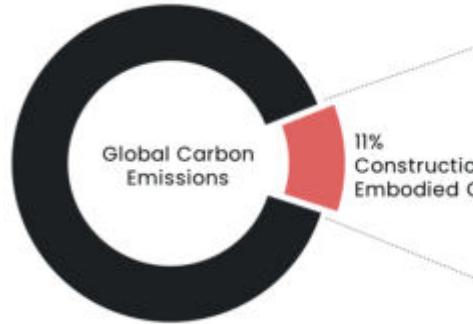
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 Bekaert

# Sustainability is transforming the construction industry



## Construction embodied carbon share



Regulations & Standards



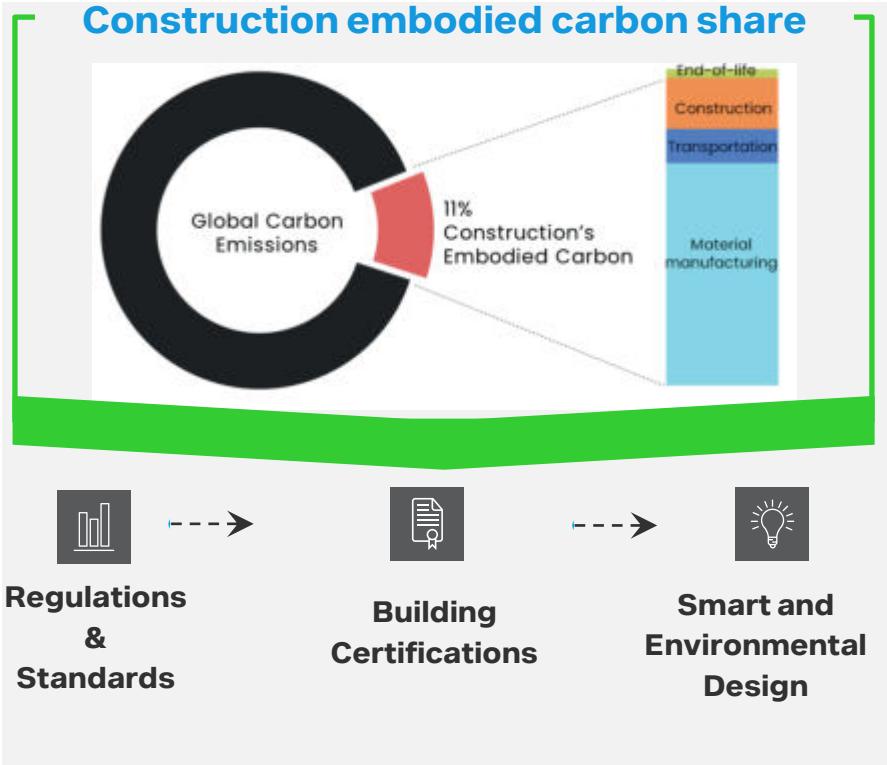
Building Certifications



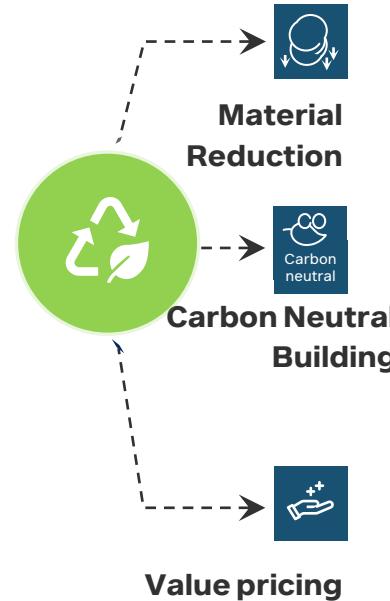
Smart and Environmental Design

Source OneClick LCA

# Sustainability is transforming the construction industry



## Translates into customer needs



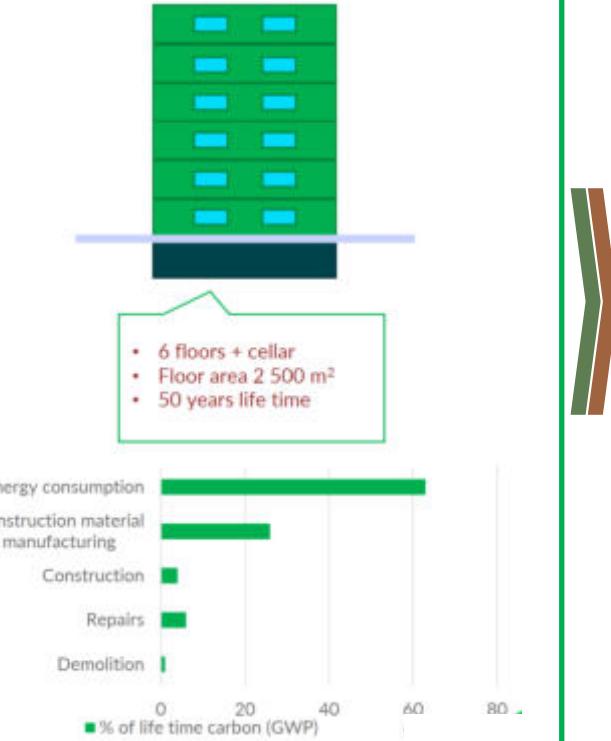
Do more with less  
Improve the total cost of ownership

Buildings with green and recycled materials

Maximize the value of building with better sustainability

# Material carbon emission is becoming more and more important

## LCA of average apartment building

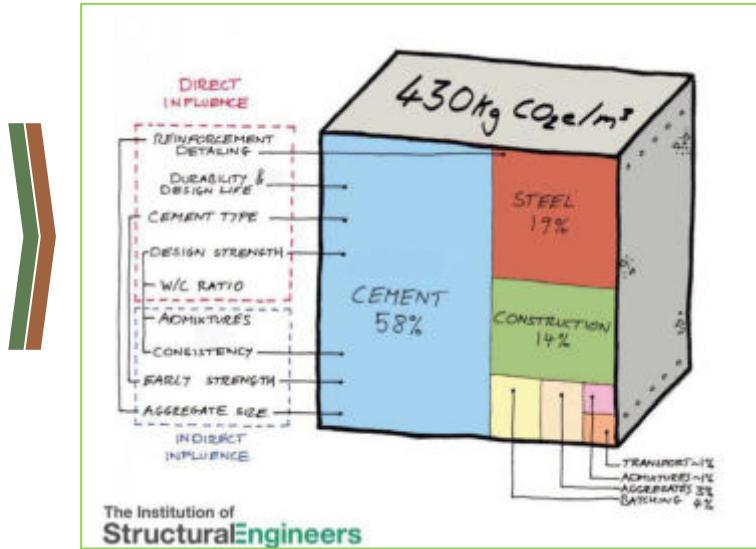


- Emission is the highest at during construction and other phases spread out over lifetime

- Energy emission expected to reduce by 50% with insulation and green energy sourcing

➤ **Material will represent a bigger portion of the total emission over buildings lifetime**

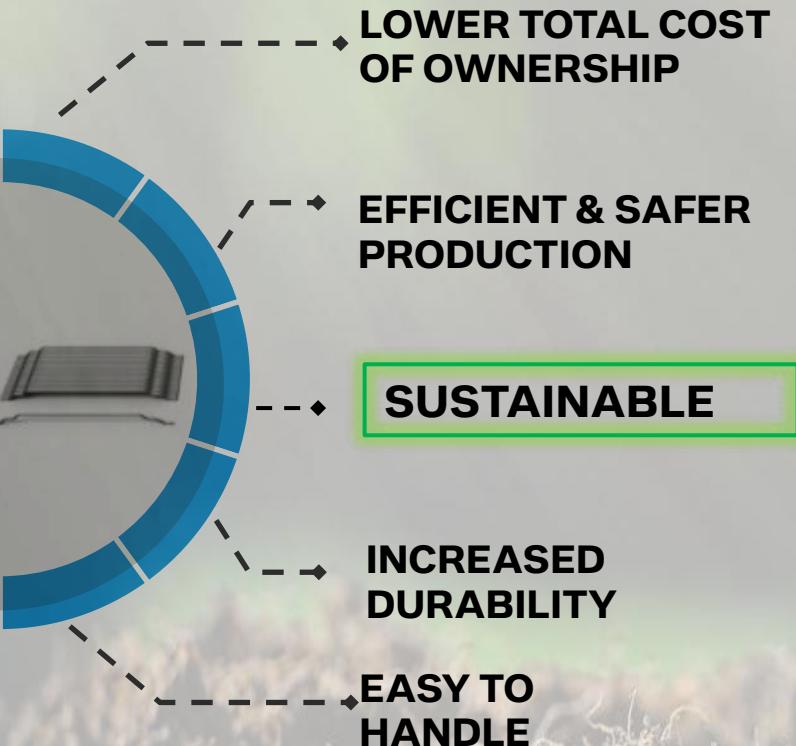
## Key constituents of carbon emission



## Steel fiber – Game changing concrete reinforcement



- **The role of the reinforcement is to increase load bearing capacity and limit crack opening**
- **Steel fibers for concrete appear in different colors, shapes and sizes**
- **Engineered to replace rebar and mesh in concrete**
- **Provides superior resistance to cracking and crack propagation**



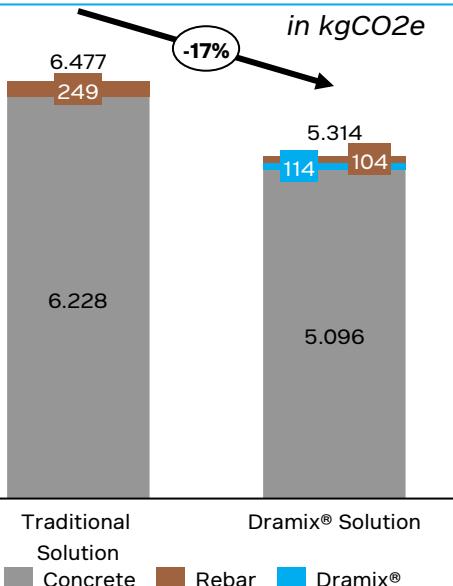
## Less concrete + steel fiber = less CO<sub>2</sub>

- Reduction of reinforcement material
- Optimized design and reduced concrete thickness
- Advanced reinforcement solutions further decrease of tonCO<sub>2</sub>e

# Steel fiber carbon footprint on different precast applications

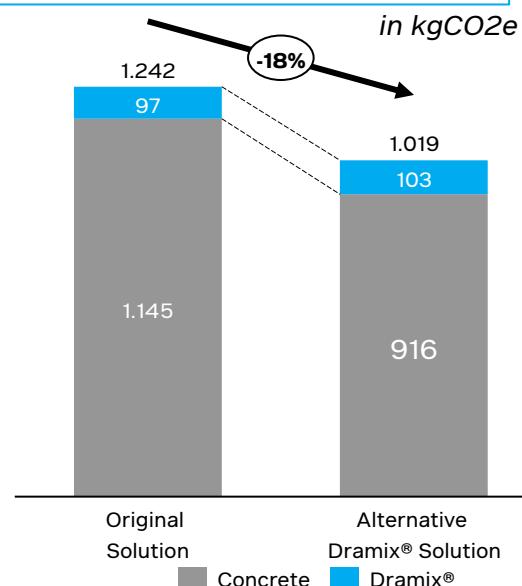
## Utility Vaults – Electric Cabins

Reduction of CO2 emission by ~17% achieved in a less amount of reinforcement solution with reduced wall thickness



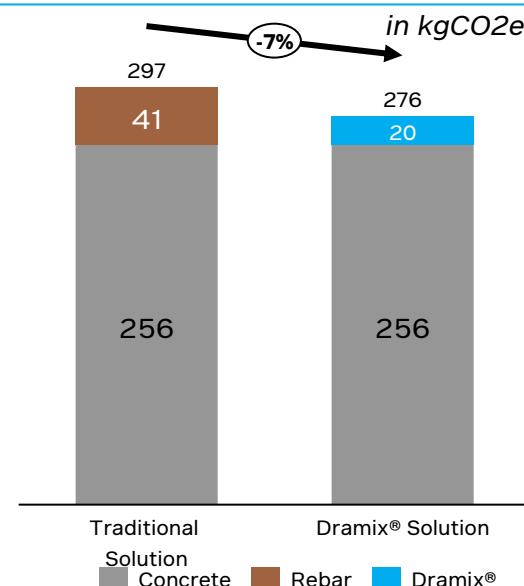
## Precast Sandwich Wall

Reduction of thickness by 4 cm while increasing dosage from 20 to 25kg/m<sup>3</sup> resulted in 18% less CO2 emission



## Precast Pipes

Amount of total reinforcement reduced by 20% resulting in savings in material and CO2 footprint



## Dramix® supports you along your sustainability journey



