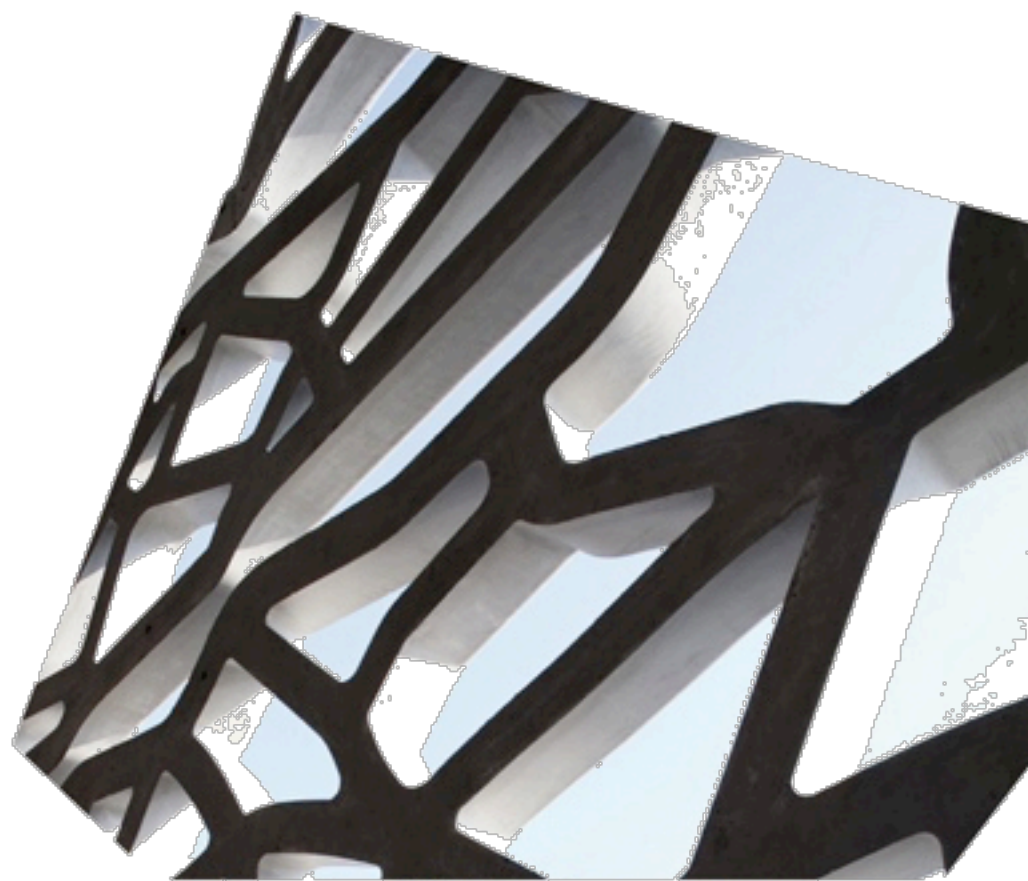


Your role in precast concrete to build a sustainable society



Tomas Plauška
BIBM Congress
Madrid, 18th May 2017

Consolis is member of



INTERNATIONAL PRESTRESSED
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What is the role for business in
the modern and challenging
global economy?

Role for business

- To maximize profits (Friedman)?
- To maximize shareholders value?
- To be accountable to stakeholders?
- To contribute to a better world?



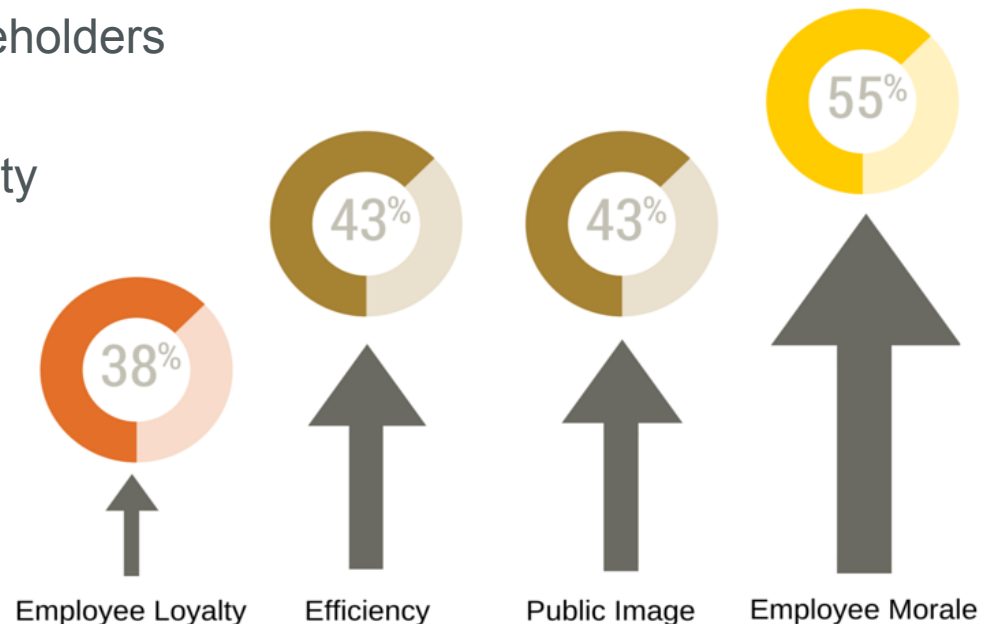
Stakeholder interests

- Businesses are striving to be profitable as their ultimate goal
- Nowadays stakeholders are not only concerned about profits but are more interested in company regarding various
 - Economic
 - Environmental
 - Ethical
 - Governance, and
 - Social aspects



Corporate Social Responsibility (CSR) role

- By integrating sustainability into organization can lead to more superior performance and better competitive position as a result of
 - engaged employees
 - secured business
 - better risk management
 - satisfied customer
 - better relationship with stakeholders
 - better transparency
 - more collaborative community
 - better ability to innovate
 - etc.



Ways of doing business

Quality
Performance
Price

OLD WAY

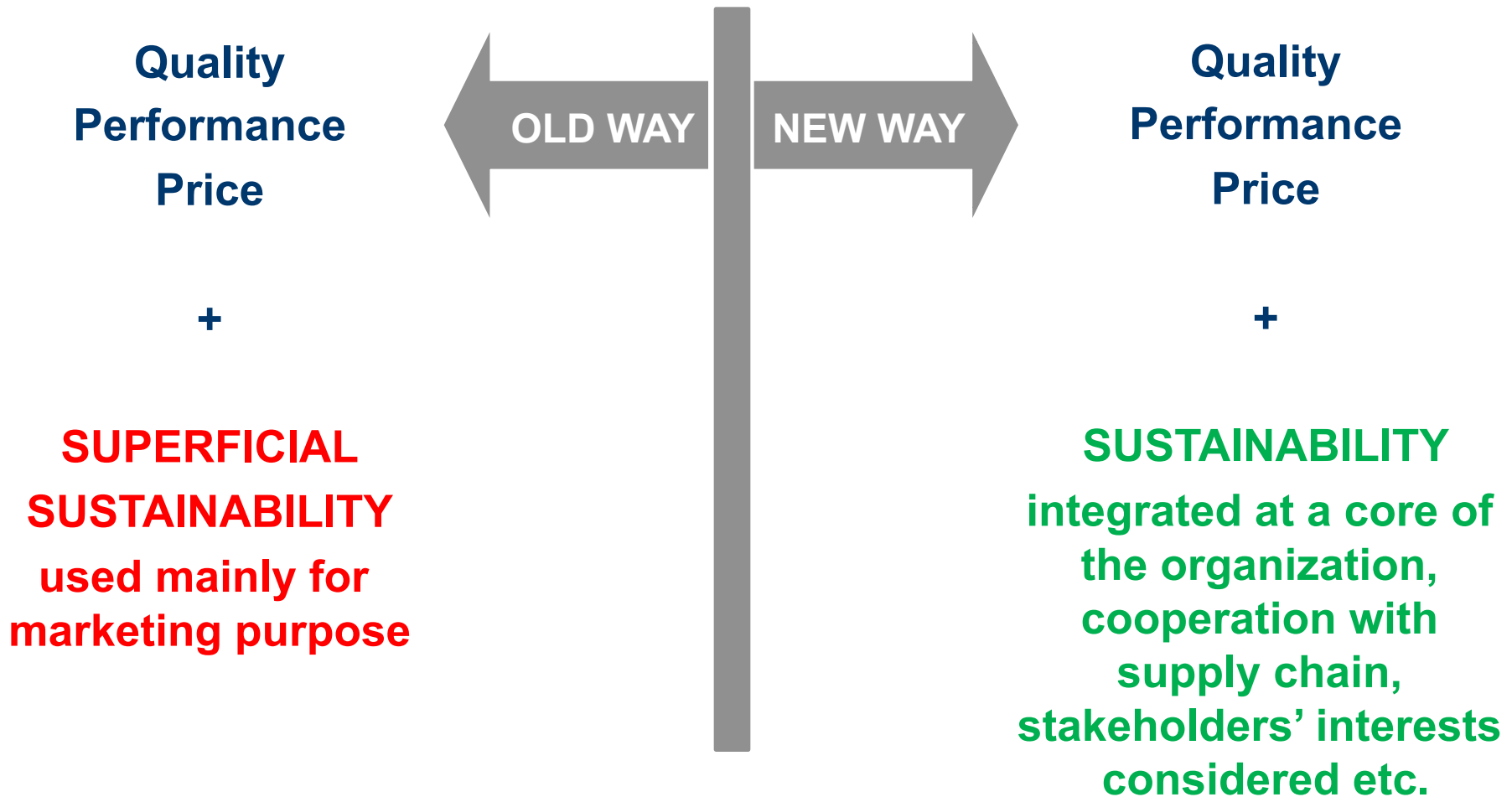
NEW WAY

Quality
Performance
Price

+

SUSTAINABILITY

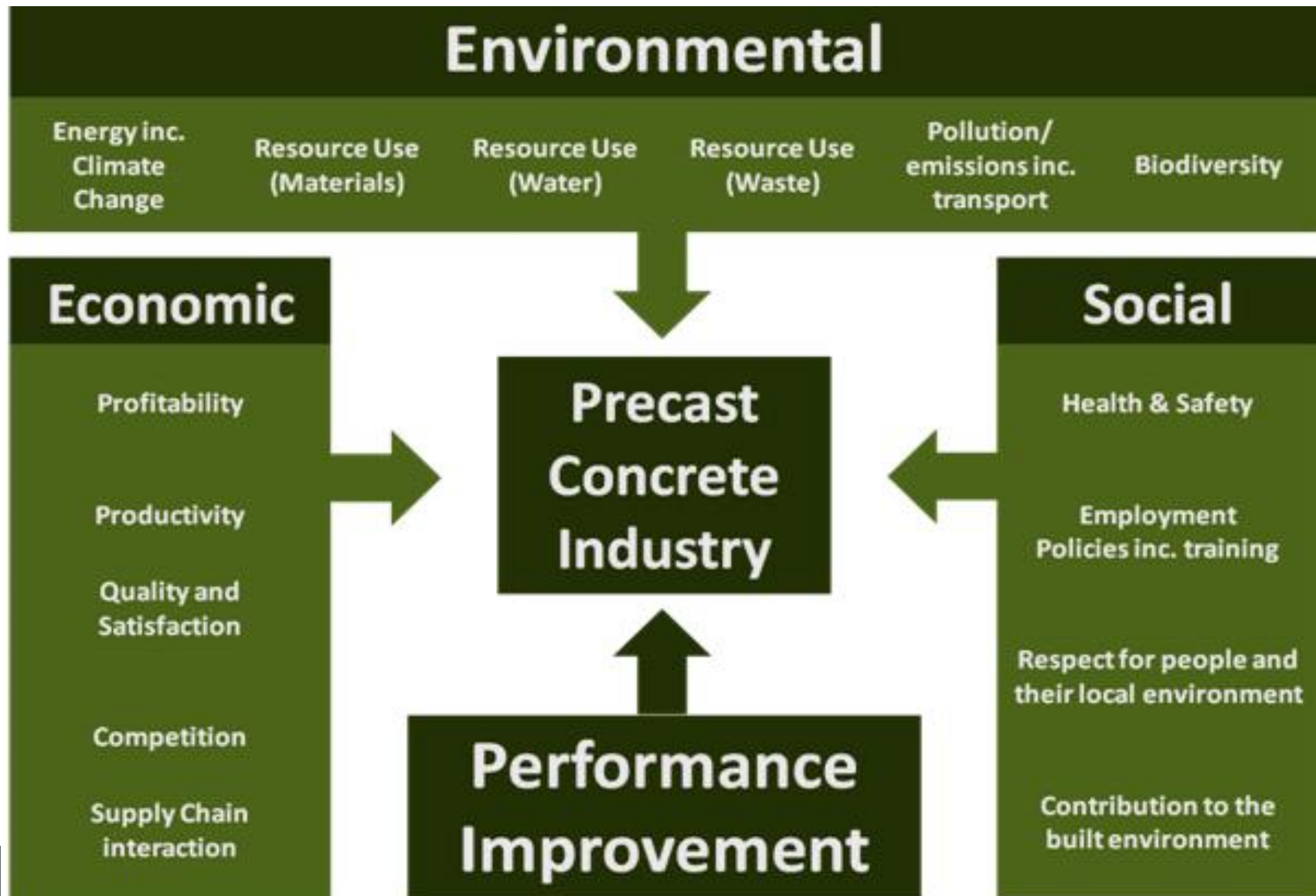
Ways of doing business



Sustainability at a core of your business



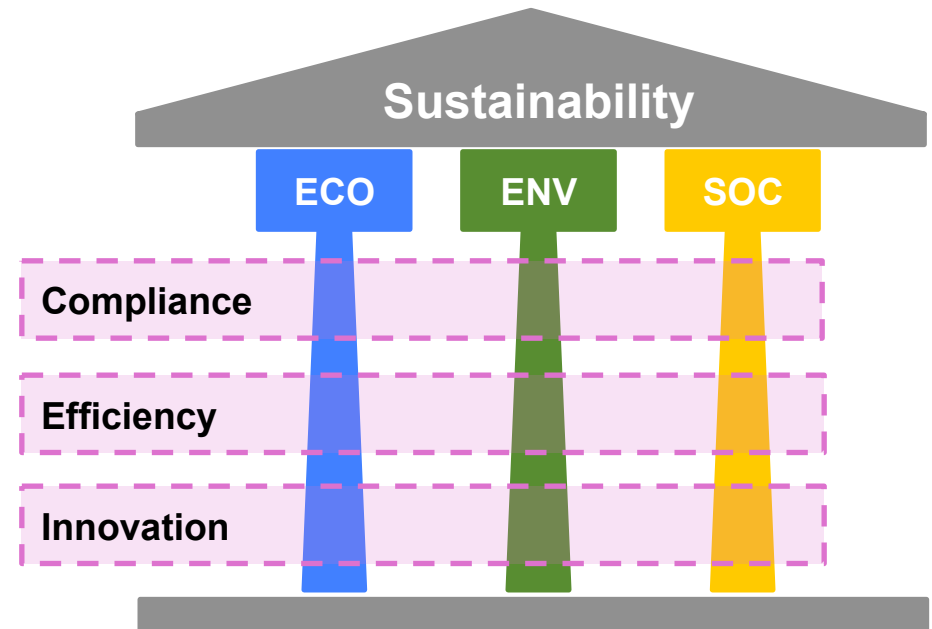
Sustainability KPIs of precast concrete



What is your role in precast
concrete to build a sustainable
society?

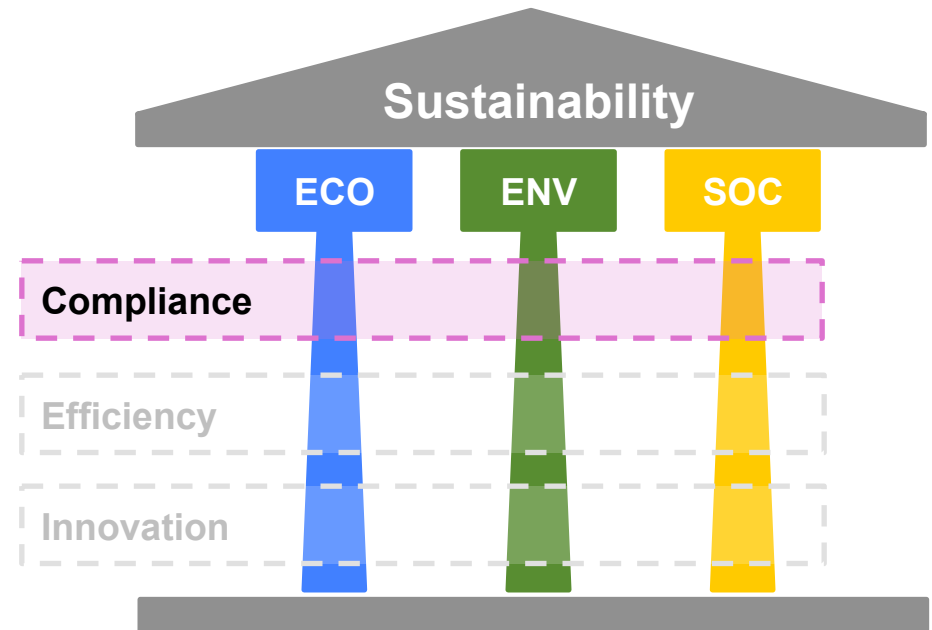
Your role is

- **Be compliant**
 - Transparent and responsible management of supply chain
- **Be efficient**
 - Efficient management of resources and processes
- **Be innovative**
 - Development of sustainable precast concrete products, solutions and services



Your role in precast concrete to build a sustainable society

- **Compliance**
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Did you know

- About 80% of consumers are willing to pay 5% more for sustainable buildings (Source: McKinsey)
- About 80% of the customers would wait an extra-day for climate-friendly delivery of their purchases (Source: West Monroe Partners)
- Companies engaging in sustainable initiatives commonly have 20% increased revenues, 16% cost reduction, and 30% increased brand value (Source: World Economic Forum)
- Construction industry is subject to growing stakeholder expectations about the accountability, transparency and legitimacy of its operations

Concrete Sustainability Council's (CSC) scheme

- A global responsible sourcing certification system (similar as FSC for timber products) designed to help concrete, cement and aggregate companies obtain insight in the level to which a company operates in an environmentally, socially and economically responsible way
- Key objectives of the scheme
 - Help improve concrete's sustainable/ responsible performance
 - Improve transparency of the concrete sector
 - Receive recognition in green building rating systems
 - Get recognition in green procurement government policies
 - Improve the public opinion of both the concrete product and the sector
 - Improve the business case for responsible/ sustainable concrete



Consolis VBI CSC certified

- Consolis VBI is the first precast manufacturer to receive CSC certification on 12th April 2017



Compliance – Where to start?

- Start collaborating with your major suppliers (cement, aggregates, steel etc.).
- Build sustainability requirements in the new and existing supplier contracts
- Measure and turn data into decision-making information
- Identify and eliminate the worst suppliers, retain the best suppliers
- Be transparent and accountable!



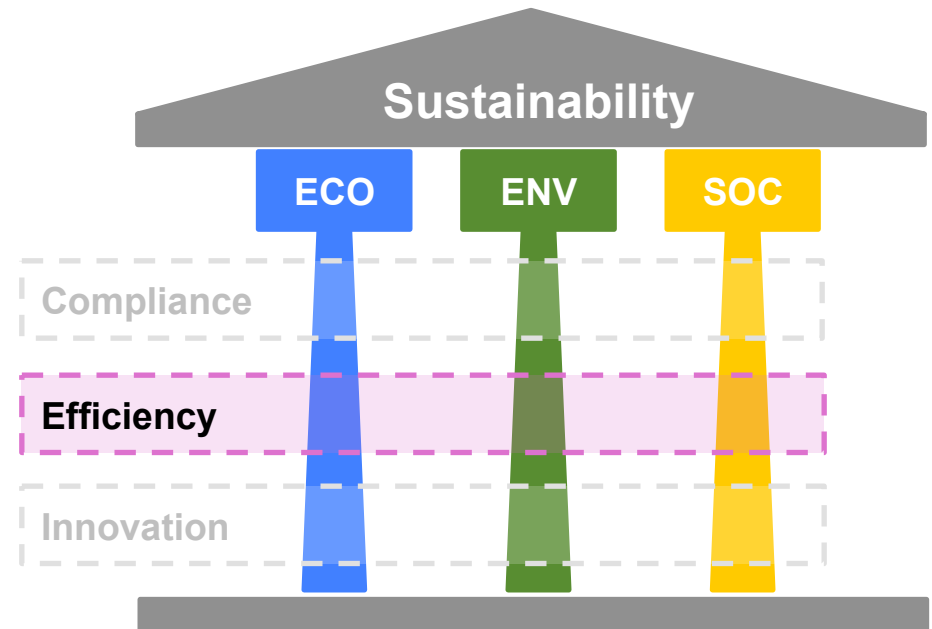
Compliance – Where to start?

- Work towards building credibility and image of precast concrete
- Cooperate with supply chain, consider stakeholders' interests and integrate sustainability in your organization
 - identify KPIs, monitor, set targets, improve and communicate your sustainable initiatives and performance to customers, stakeholders and shareholders
- Transparency will improve the public opinion of the precast concrete product, your organization and the sector



Your role in precast concrete to build a sustainable society

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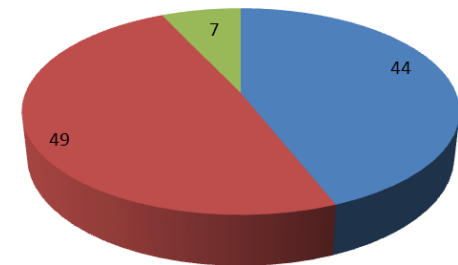
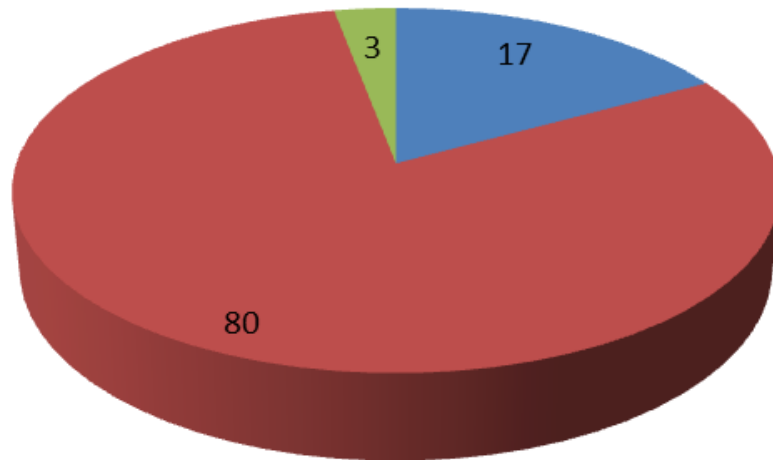
Environmental impact of construction materials

- Distribution of environmental impact between the different phases of 50-years service life of a building

Today

->

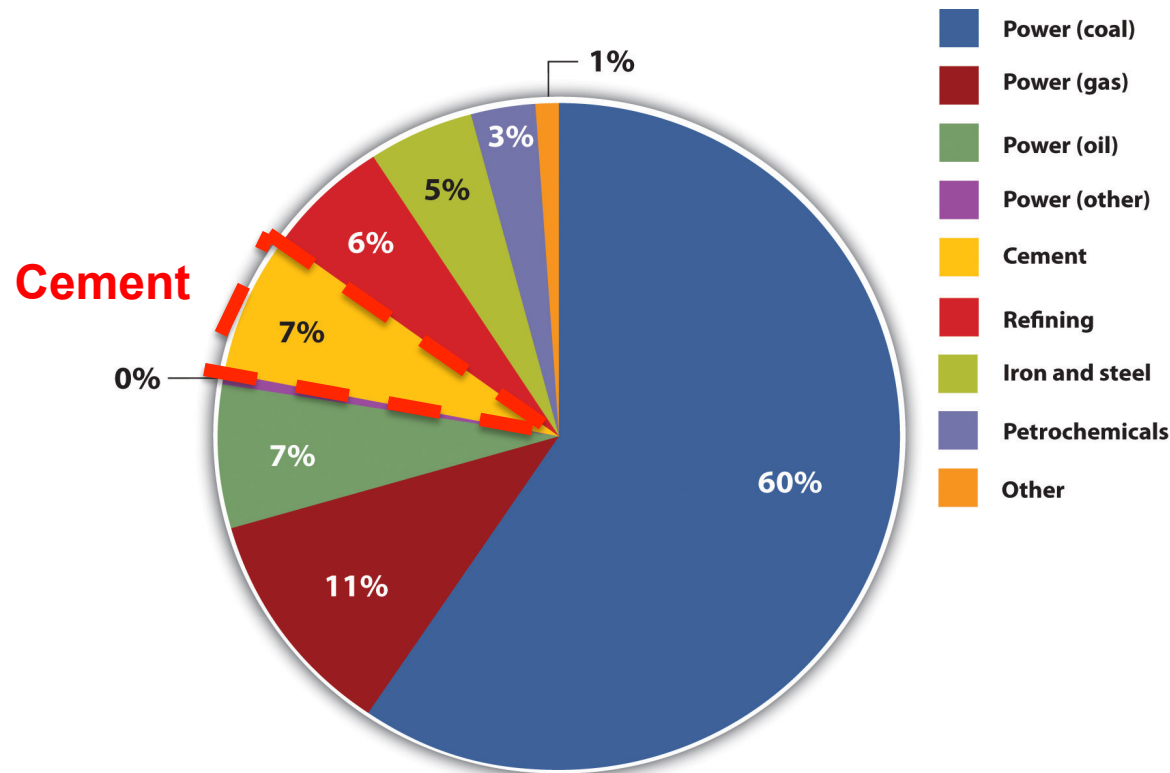
Near future



■ Construction
■ User phase
■ Demolition

Environmental impact of cement

- Production of Portland cement, the main binder for conventional concrete, accounts for about 7% of global CO₂-emissions, making it one of the more CO₂-intense industries



Cement sector CO₂-emissions reduction plan

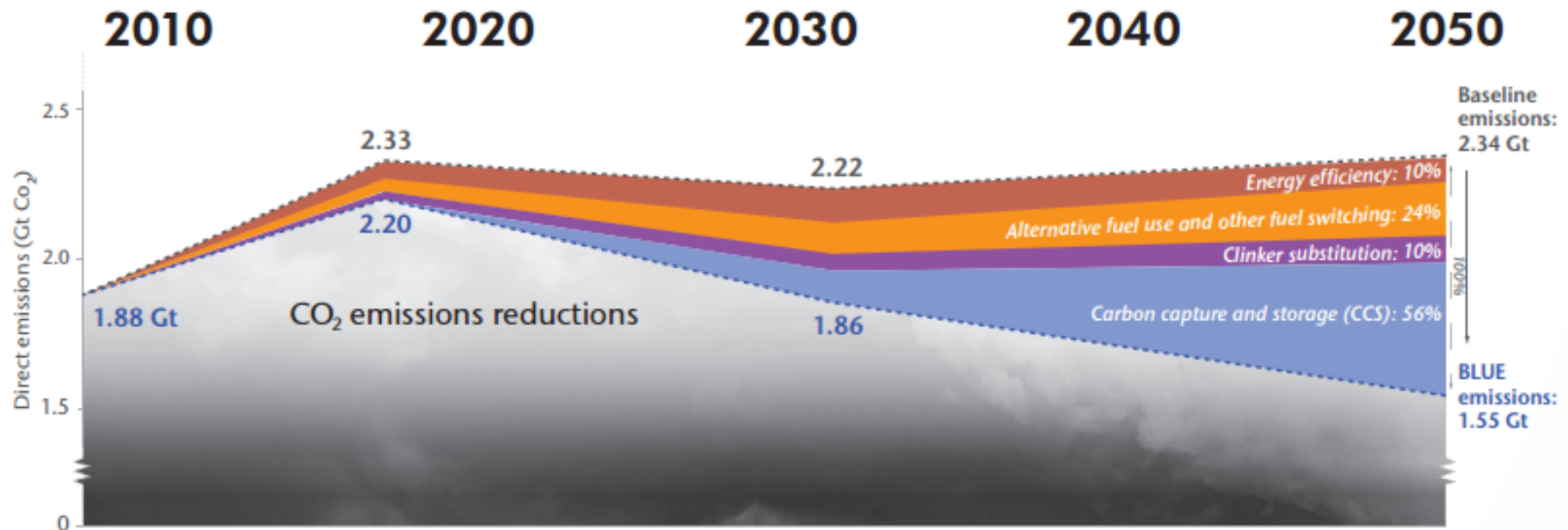


International
Energy Agency



World Business Council for
Sustainable Development

Cement sector CO₂ emissions reductions
below the baseline, low demand scenario, 2010-2050

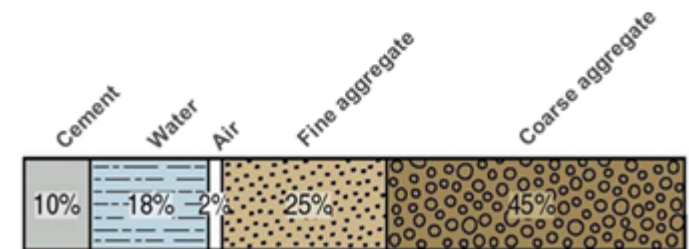
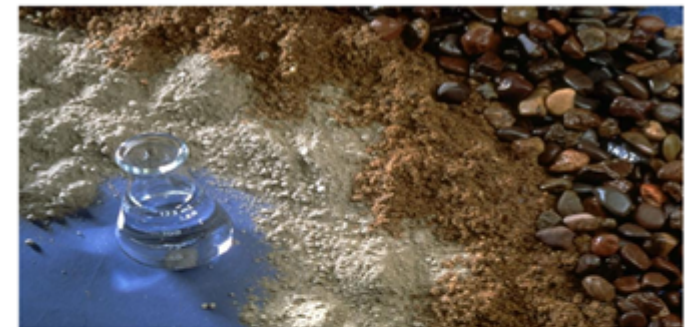
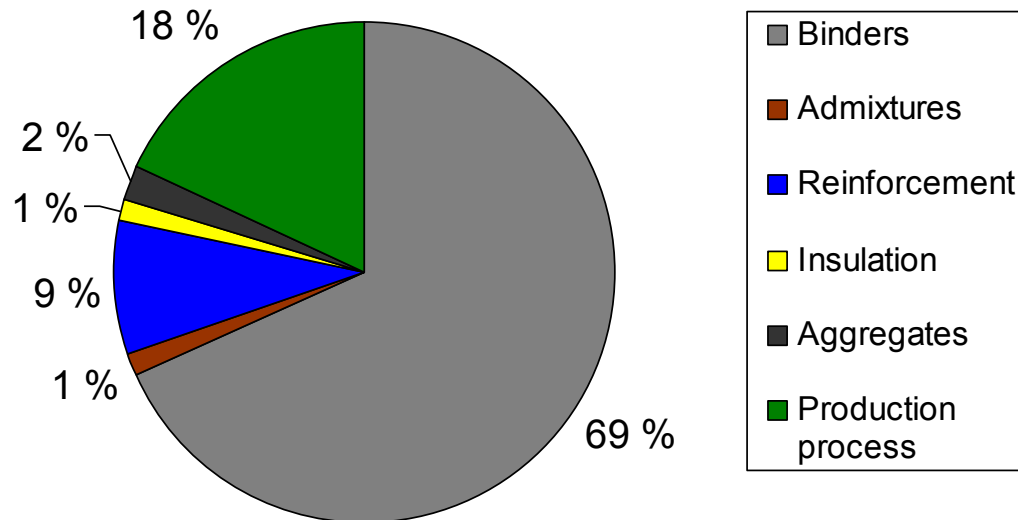


All of these technologies need to be applied together if the BLUE scenario targets are to be achieved – no one option alone can yield the necessary emissions reductions

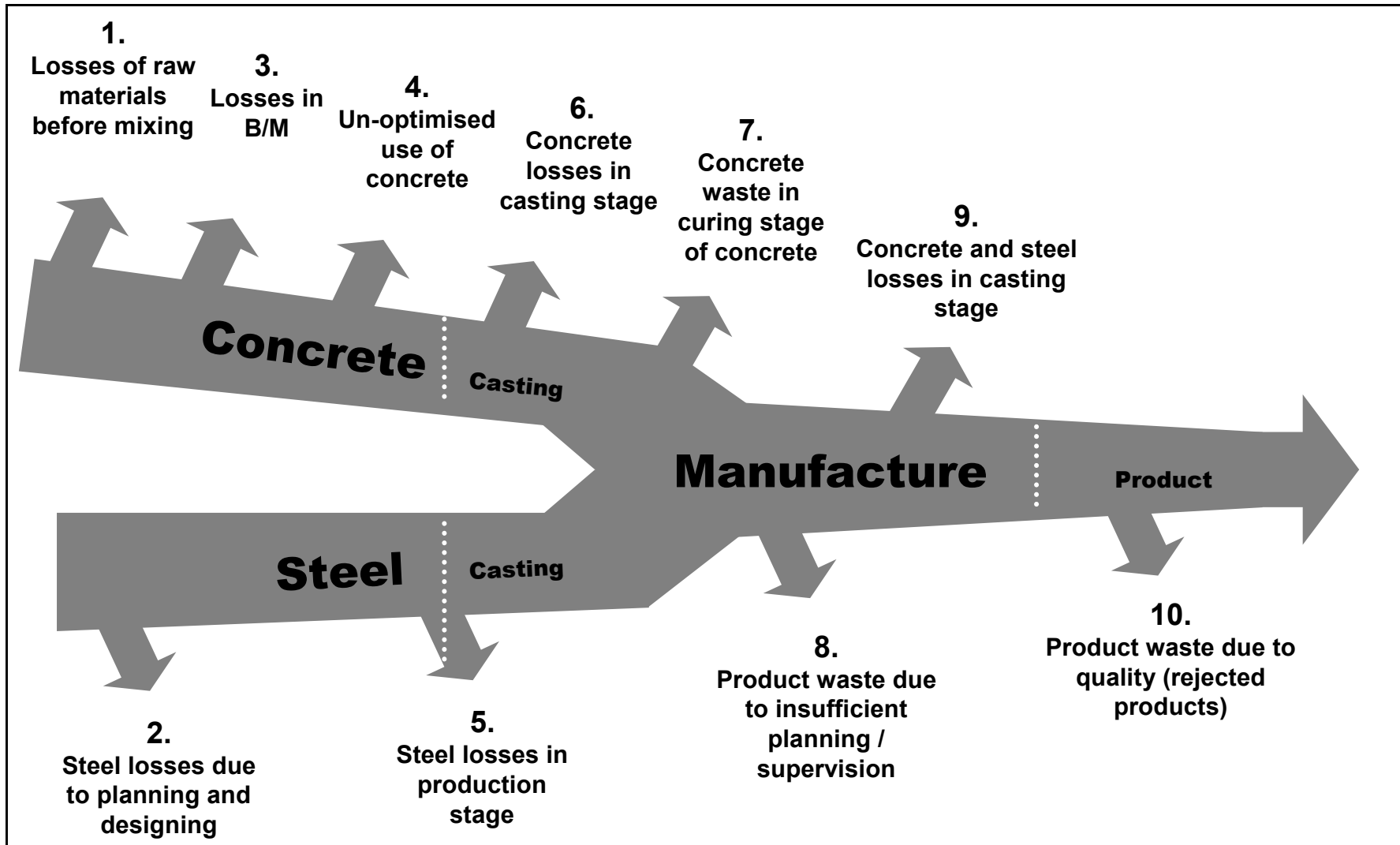
Environmental impact of precast concrete

- Typical distribution of CO₂-emissions of precast concrete production. The example is “from cradle to factory gate” and therefore the transportation of the products has not been shown. The emission values can vary $\pm 30\%$ from the values presented

CO₂-emissions of precast industry



Sources of concrete and steel waste in precast concrete manufacturing process

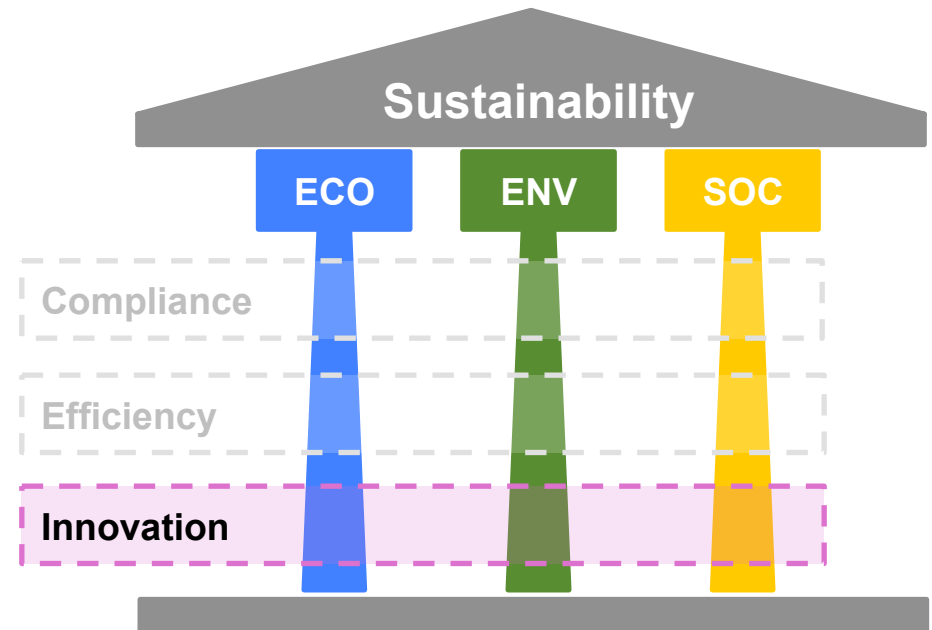


Efficiency – Where to start?

- Measure your environmental footprint in your own operating facilities as well as your supply chain
- Identify your greatest environmental impacts
- Reduce your material, energy and water use and work with suppliers to reduce their own
- Reduce the waste you generate in your own operations, and divert more of it from landfills
- Implement Office Energy Policies = improve situation not only at the factories but also offices
- Collaborate with stakeholders to make progress towards your goals

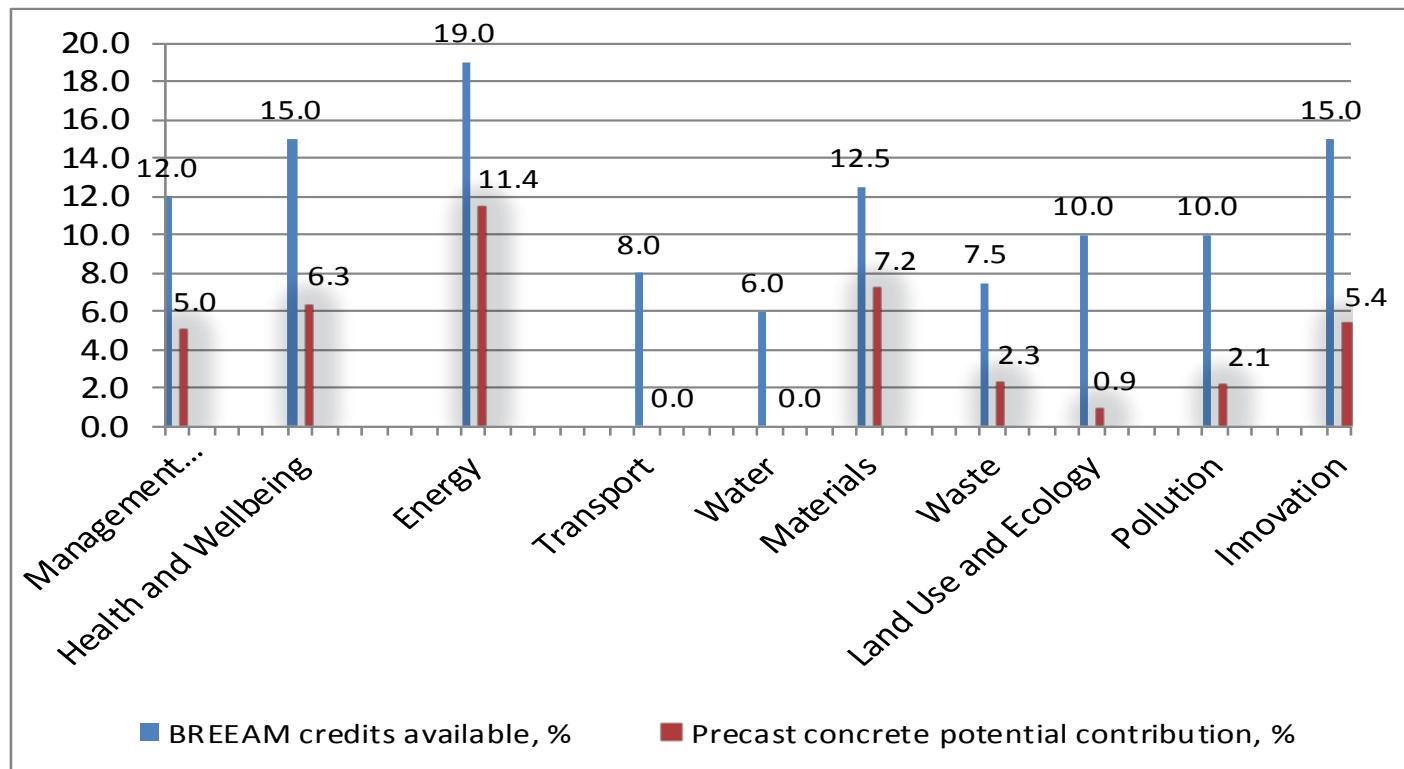
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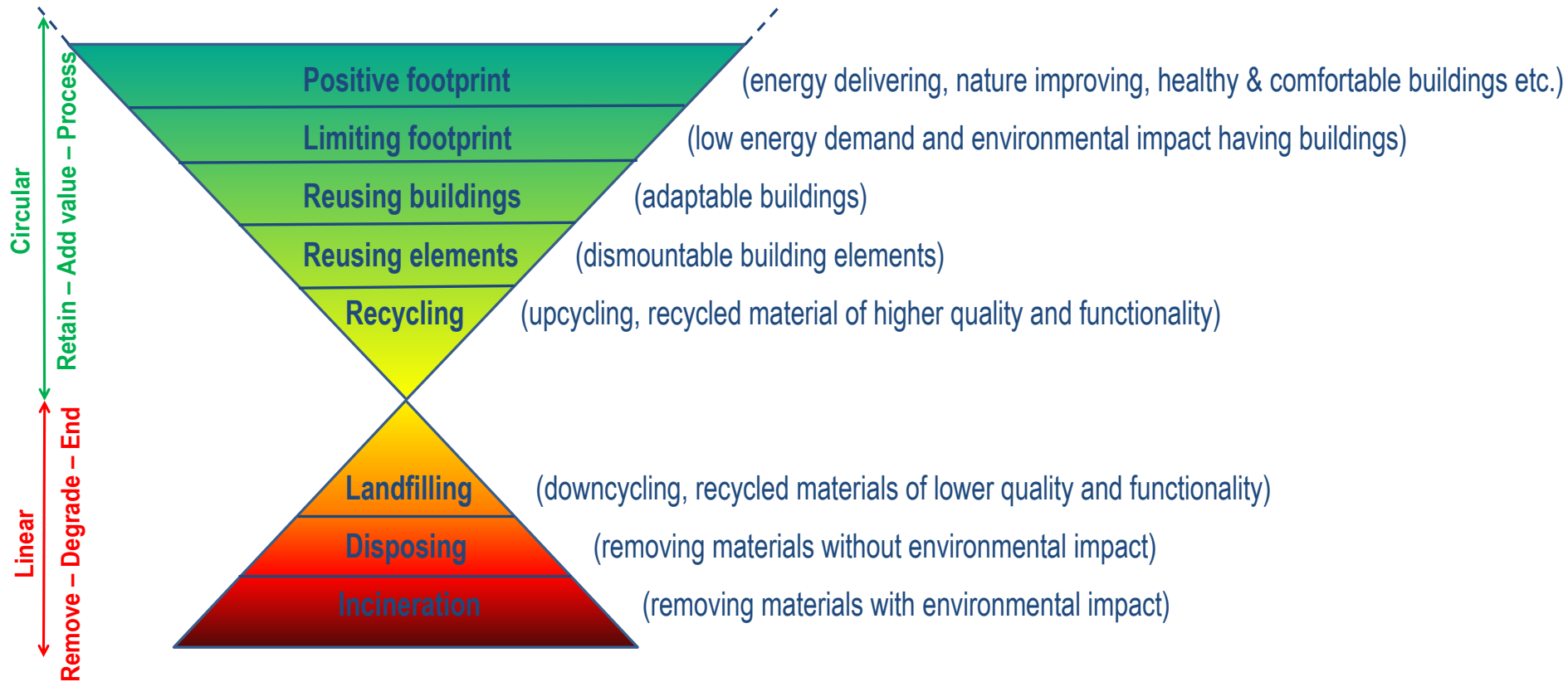


Precast concrete potential contribution to sustainability

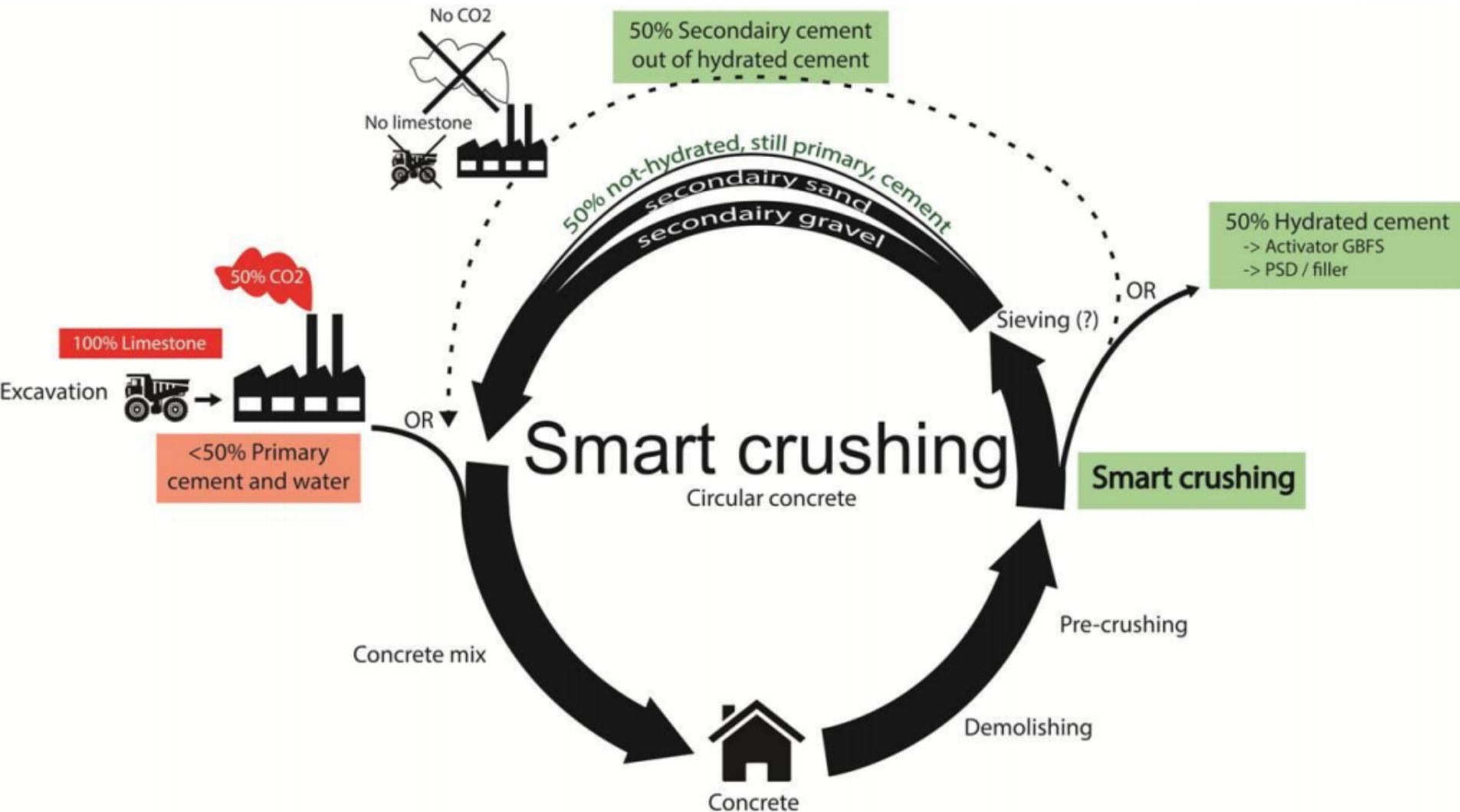
- Precast concrete's versatility and its inherent durability, resilience and thermal mass properties can enhance sustainability performance of a building through a potential contribution by up to 40% or higher to the overall BREEAM rating



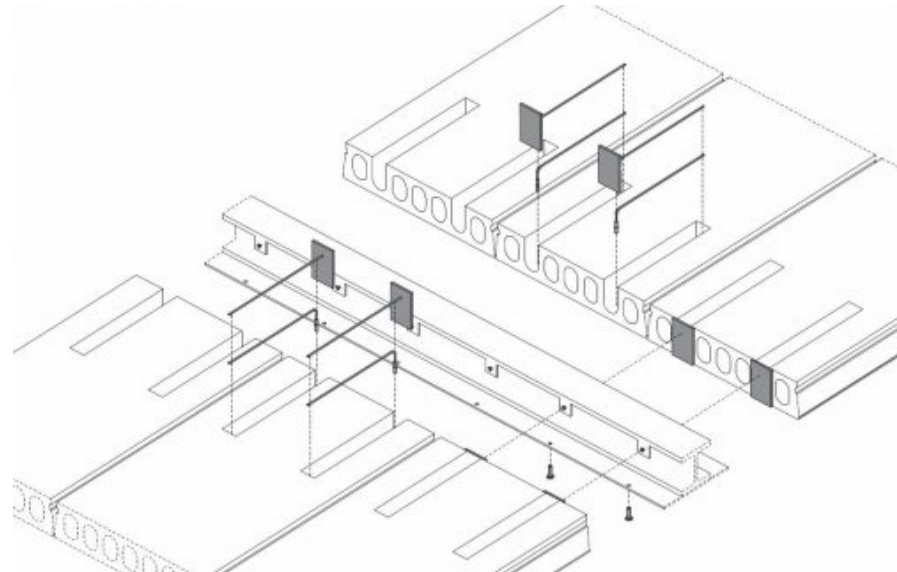
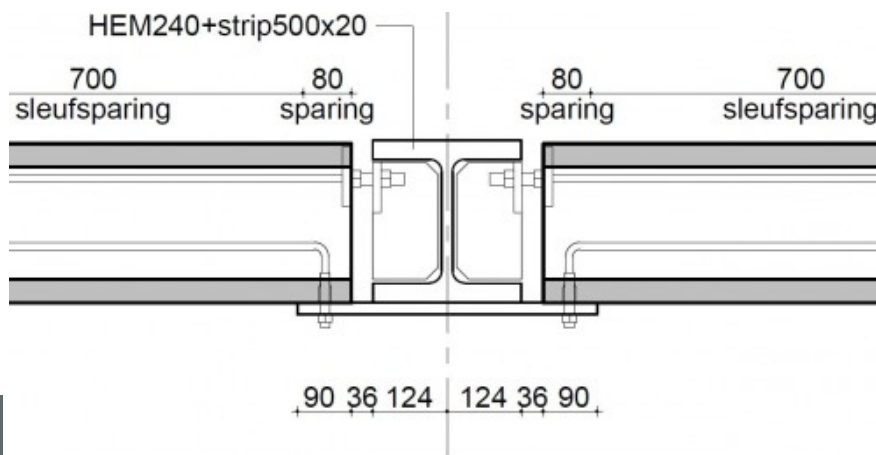
Huissensche ladder model – enhanced Waste hierarchy model, as a guide for sustainable innovation



Innovation example – smart crushing

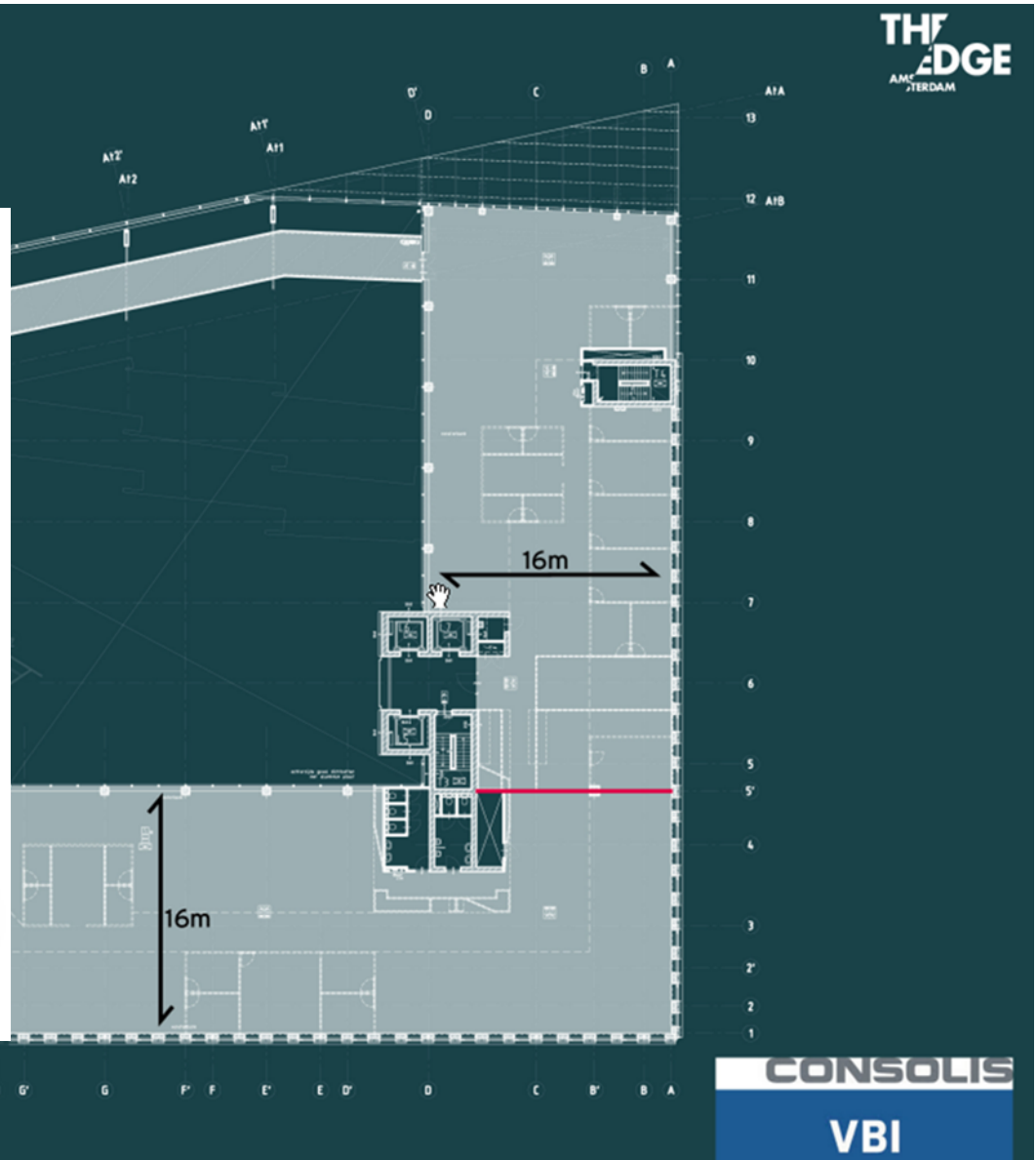


Innovation example – reusable hollow core slabs

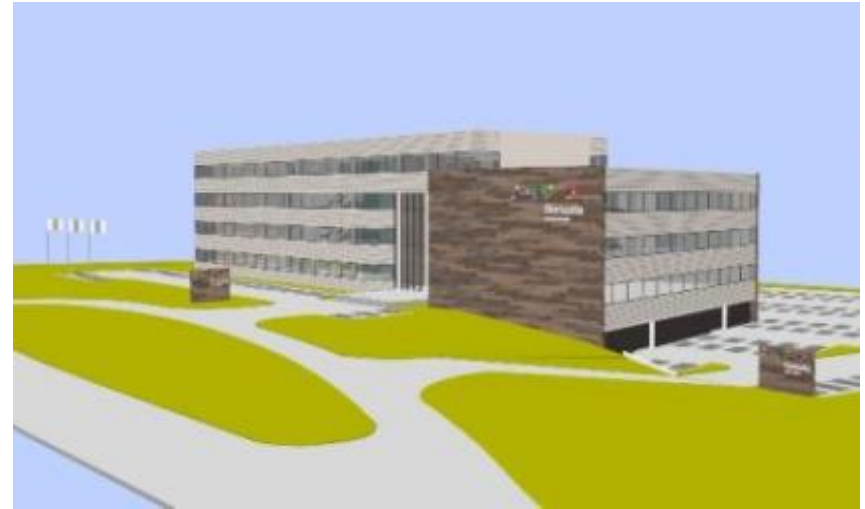


Innovation example – flexible and adaptable building space

HEA 16 - Flexibiliteit



Innovation example – cementless hollow core slabs with low environmental impact

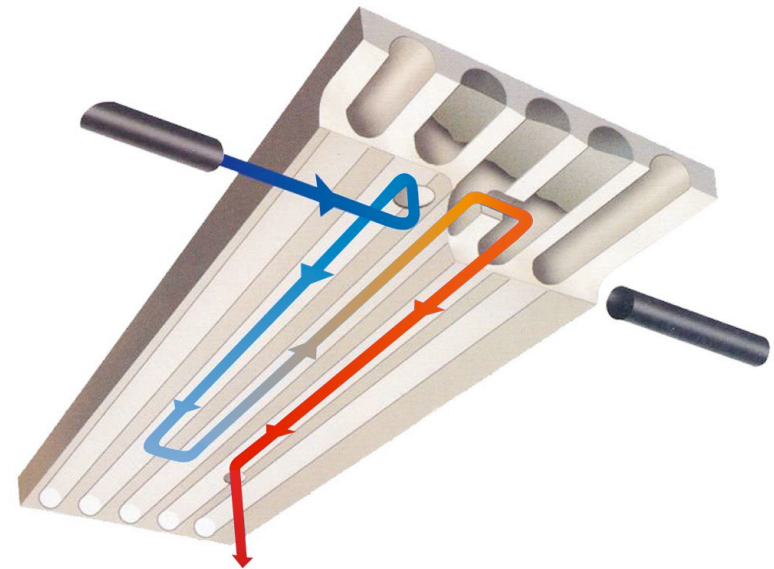


Global comparison	CO2 Index
Solid concrete floor	100
Hollow core floor (reduce raw material)	50
Hollow core floor VBI GreenLine (use secondary materials)	30
Hollow core floor GP (use of alternative binder)	15

Innovation example – air based thermal active building system (TABS)

- TermoDeck® as a solution improving sustainability performance of buildings
- TermoDeck® - a low energy system for distributing
 - Heating
 - Cooling, and
 - Ventilation

...through the channels of concrete HC-slab



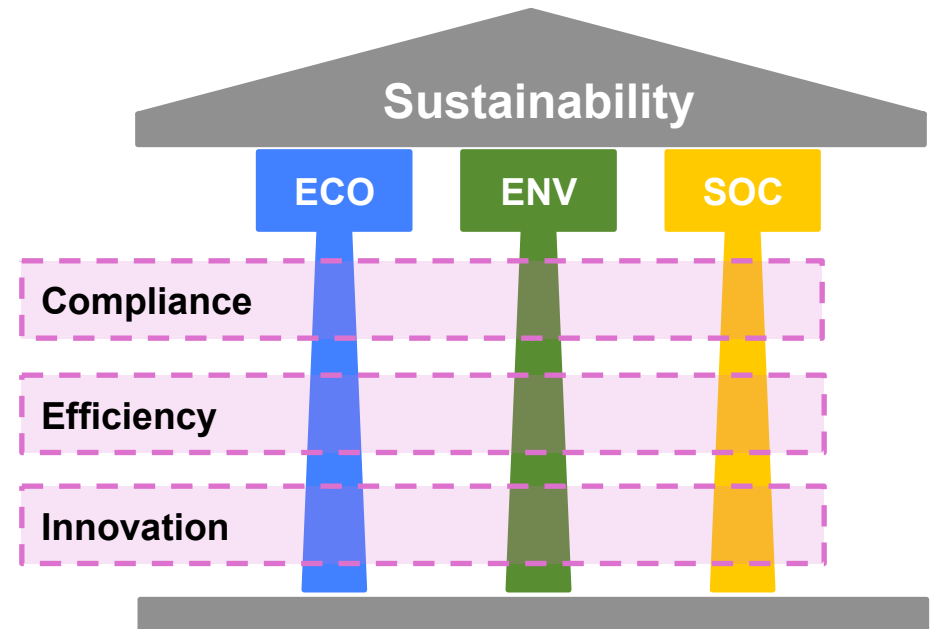
Innovation – Where to start?

- Define the project. Take into account sustainability requirements
- Measure and determine customer requirements (voice of the customer)
- Analyze and identify functions. Generate and select concepts
- Develop the design, test & optimize design components and completed the design
- Verify design performance and implement the design



Conclusion

- **Be compliant**
 - Transparent and responsible management of supply chain
- **Be efficient**
 - Efficient management of resources and processes
- **Be innovative**
 - Development of sustainable precast concrete products, solutions and services



...and then you will be able not only to improve your competitive position in the construction market but also contribute to the good image of precast concrete in general!