## DRASTIC

Demonstrating Real and Affordable Sustainable Building Solutions with Top-level whole life cycle performance and Improved Circularity.



ESTEP 2024 Annual Event

#### Bárbara Fernández, CELSA Group

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**European Steel Technology Platform** 







A CIRCULAR ECONOMY DRIVEN BY THE EUROPEAN STEEL

20 years together

## **Drastic: in a nutshell**



Drastic aims for significant environmental impact reduction in construction and retrofitting, and financial potential through circular strategies



Drastic hopes to **demonstrate affordable circular solutions** across different geographical zones, building layers, materials, and typologies



Drastic aims to develop a **multicyclic guidance and performance assessment framework** to validate solutions



Drastic aims to implement **datadriven tools** and a common digital platform







## **Recognising the challenge**

In Europe, the operational use phase of buildings alone accounts for around 40% of all energy consumption and 36% of Greenhouse Gas (GHG) emissions, whilst the construction sector is responsible for 50% of raw material extraction and 36% of generated waste.





The Drastic project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101123330.



## **Showcasing solutions**

Drastic aims to **reduce operational and embodied carbon** by engaging its collection of five Demonstrator projects, each based in distinct geographic zones with specific drivers that focus on reducing the embodied carbon impacts of construction materials.

Drastic's Demonstrators will also look to **promote innovative circular economy construction practices to reduce waste and environmental burdens** across the entire construction industry, and will seek opportunities to upscale Drastic to a pan-European level. The Demonstrators will focus on **improving the life cycle performance of construction materials** holistically, addressing the technical, environmental, economic, circular and sufficiency aspects of design, use and reusability. A variety of building typologies will be considered, representing up to 80% of all EU buildings.





## **Evaluating impact**

This four-year project aims to develop a ground-breaking approach to sustainability and circularity assessment, validation and governance risk and mitigation, including revolutionising how data is homogenised, traced, and shared amongst value chain stakeholders. Drastic will use innovative technology to **enhance data-driven tools for equality evaluation, thermal efficiency, asset identification, multicycle traceability and social acceptance**. All of this will be integrated into a common digital platform, available on the Drastic website for all to use.

By addressing each layer of buildings, Drastic looks to **accelerate the adoption of sustainable and circular building and design practices** to help collectively shape a greener European future.















## **Demonstrators – Lleida, Spain**



#### Partners: Celsa Group, Lezama Demoliciones, Polytechnic University of Catalonia, Sorigué

- Attending to the structural layer of buildings, Drastic's Spanish Demonstrator tackles two materials that can have the largest environmental impact within the built environment life cycle: cement and steel.
- With no established ecosystem for the disassembly and reuse of structural steel elements, this Demonstrator looks to implement and prove the feasibility of such a system.
- As well as this, this project aims to repurpose a byproduct from the secondary steelmaking process, known as white slag, via its application as a supplementary material within concrete.





## **Demonstrator workflow**





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## Job performed up to date





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## **Why Drastic?**





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Demonstrating the feasibility of new technologies, processes and products combined with new business models for a faster market uptake.

FOR

More sustainable buildings, with reduced life-cycle carbon, high lifecycle performance and reduced life-cycle costs.

# DRASTIC

Demonstrating affordability, sustainability and circularity









# Thank you

Visit the Drastic website to learn more:

www.drasticproject.eu



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