

Can aesthetics instigate the reintegration of waste into new products, promoting circular economy?

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The increase in energy expenditure by 100% over the last 25 years is representative of the increase in the consumption of tradable goods worldwide and its consequent production, having as direct effect serious issues of management, storage and eventual reuse of industrial waste.

According to (Liboiron, 2010) the ratio of industrial waste production to domestic waste is 97-3, which clearly demonstrates the scale of the problem we're facing. Given the current solution for waste to be deposited in landfills, it is urgent to discover new solutions for the reuse of the various types of waste. According to Eurostat (2017), in 2014 approximately 2320 million tonnes of waste were treated in the European Union (domestic, agriculture, mining, energy, water treatment, construction, manufacturing, and other sectors), with only 36, 2% of the total treated wastes being sent to recovery operations called recycling. Of the total of waste produced in Europe, a considerable amount is related to industrial waste, which according to the CVR, is around 300,000,000 tonnes per year. Included in

the category of industrial waste are residues such as sludge from the aluminum anodizing process, steel slag, effluent sludge, fly ash, among others, the destination of which is mostly direct landfill (except fly ash, usually included in Portland cement production). The management of industrial waste, in particular, is carried out in most cases by companies specialized in waste management, making them not visible/perceptible or accessible to the general population, requiring that their reintegration in the value chain, must pass by an industrial context. In this sense, it was identified the opportunity for the development of artifacts capable of integrating industrial waste of categories C and F, produced by companies from the North of Portugal, in a way to valorize them, enhancing through design different physical, chromatic, plastic and resistance to use and aging, not forgetting their economic relevance. In this sense, it was proposed the development of a series of innovative products for Architecture and Urbanism, under the brand Geodesign that adopt an aesthetics that is designated by eco-brutalist.

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