

## WASTE VALORIZATION BY PRODUCT DESIGN AT UNIVERSITY OF MINHO

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### Examples of design proposals using wastes in Product Design degree

#### Keywords

Product Design, Waste, Eco-design, University of Minho

#### Aims

- pedagogical component of sustainability
- reinforce the opportunity of creating the degree in Product Design, and its contribution to sustainability and innovation.
- discuss designers' skills to complementing research on the subject at our University.

#### Introduction

This poster intends to gather some initiatives and works on "waste" and eco design, carried out with students of the degree in Product Design of the University of Minho. This course is very recent; this work is therefore a contribution to witness an initial chapter of its history. The discussion can also contribute to the positive evolution of programs and results in the future.

For the first time in 2017, two undergraduate Design students did their curricular traineeship at the CVR (Center for the Valorization of Waste, University of Minho). This fact was the motto to think and organize some questions about how this theme is approached throughout the course. Thinking on how to organize those examples, we reached three categories of products and processes related to Design for sustainability. (In some cases, these characteristics are combined). We call them: (Eco) Design Show, Re-new (Design) and (New) Design.



a) Christmas tree



b) school bench

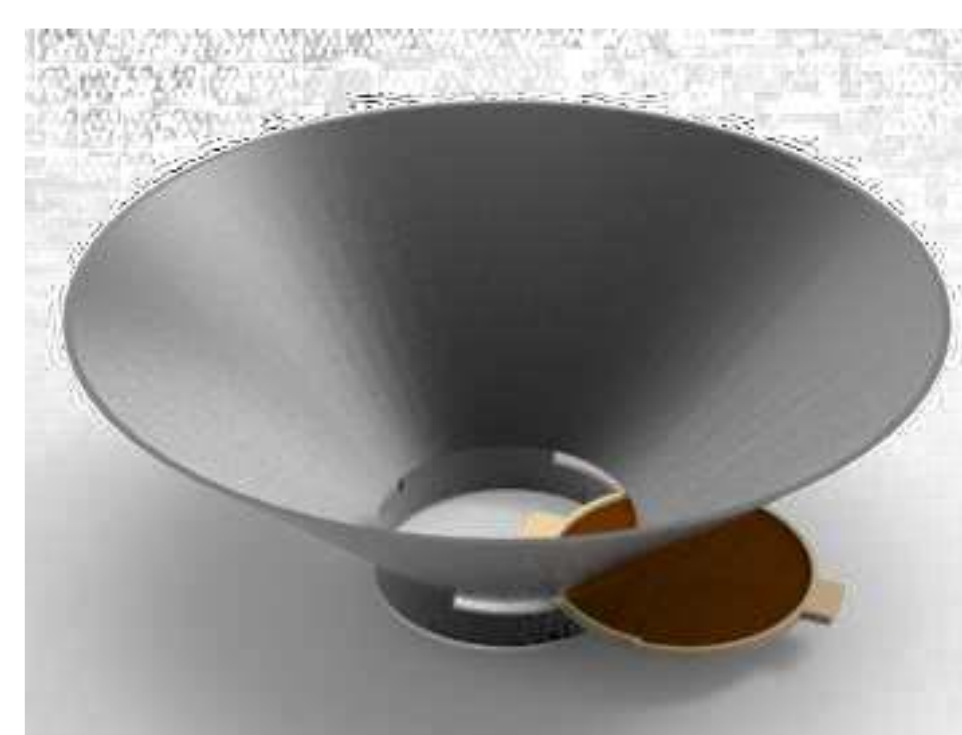


c) hat for girls

Figure 1: a) M. Ribeiro, P. Freitas, C. Ferreira e M. Dias; b) P. Pereira, M. Delgado, M. I. Braga, F. Machado; c) A. Ferreira, B. Silva, C. Quintela, H. Martins, I. Abreu.



a) Bags from old umbrellas

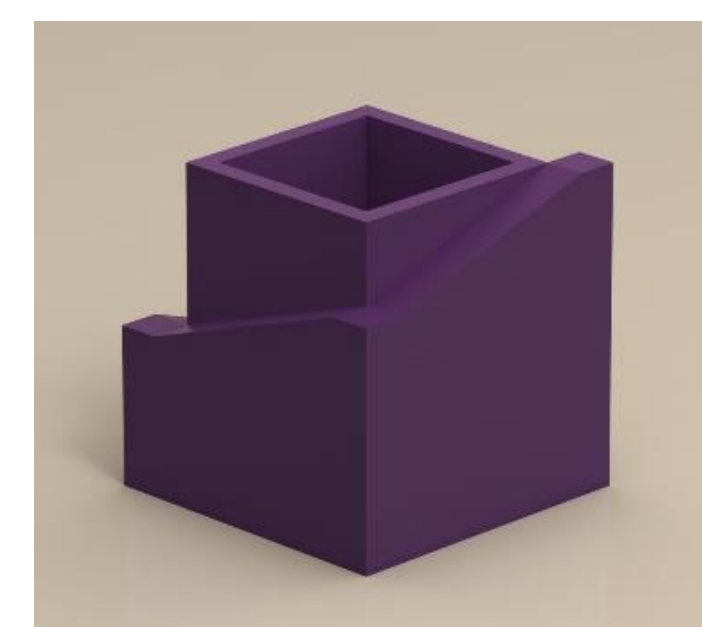


b) Domestic filter from mousse socks

Figure 2: a) J. Ferreira, J. Oliveira, R. Costa, R. Abreu, S. Fernandes and b) A.R. Pinto, B. Dourado, B. Guimarães, H. Gonçalves, J. Moreira.



a) Modular bench of lime mortars and geopolymers



b) Vase on polymeric material from chiclets

### 3 categories

Category	Aims	Nr. of pieces/cases	Production	Value for pedagogic concerns	Added value by design
(eco) Design show	Sensitize – sustainability issues cheap materials	single	just prototypes	good	low
Re-new (Design)	Ecologic values, differentiation	limited	hand-crafted customized	good	relative (dependent on craft skills and customization)
(New) Design	Taking good advantage and balance from materials and costumers' requirements. Sustainable concerns.	multiple	mass-production/ industrial	good	high

### (Eco) Design Show

actions, performances and products aimed at sensitizing students and the community

Curricular Unit	Acad. year	Exercise	Duration time	organization
Project – Concept and form	1st	Design for the real world	10 days	Group work (2-3 pax)

### Re-new (Design)

mostly handcrafted products, for restricted markets, (re)using materials or parts of other products (wastes)

Curricular Unit	Acad. year	Exercise	Duration time	organization
Eco-design	3rd	Report on design ideas for the reuse of wastes	1 semester	Group work (4-6 pax)

Thanks to the professors in charge of UC Eco-design: O. Carneiro, T. Amorim e C. Vilarinho)

### (New) Design

product design with new materials, obtained from wastes

Curricular Unit	Acad. year	Exercise	Duration time	organization
Project-Industry	3rd	Internship at CVR (UM)	1 semester	Individual

Thanks to the supervisor of Internship (Projeto-Industry): F Castro