

European Project Semester

PROJECT OUTLINE

Project dates: March – June 2025

Title: Design and build of a low tech and open source drying machine for plastic recycling in island territories.

Project activity areas: Low tech and Reuse, Mechanical design, Automation.

Keywords: Plastic Recycling
Low tech, Design, Machine prototyping, Realisation

Tutor's name and coordinates

Client – End-user: Habit'Âme SARL
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Project origin

Habit'Âme SARL

Project technical background:

Habit'âme is a company based in Mayotte aiming to transform plastic waste in construction materials 100% recyclable and without additives. The current machines employed are inspired from opensource and low tech resources (such as Precious Plastic & Plastic Odyssey). After a year of successful operation, the company needs to increase their production efficiency and their amount of reused plastic.

For this reason, Habit'âme needs new machines among which, a drying machine for plastic waste. The capacity of this new equipment is 50 kg, with the specification of being designed with a maximum of reemployed materials, low tech and open-source data and ideally powered by solar panels.



a)

b)



c)

Figure: Habit'âme products examples a) signs with recycle plastic, b) Habit'Âme premises: exterior cladding made of wood and recycled plastic, c) Habit'Âme workbench: metal structure, drawers and work surface entirely made of recycled plastic.

In order to achieve the project, some topics should be studied by the team of students:

- Definition of requirements and technical specifications
- Analysis of the existing technologies and adopting a design
- Search of necessary components using a maximum of reuse resources
- Building a prototype of the machine
- Testing of the machine to ensure that the requirements are fulfilled. check that the requirements were achieved.

The deliverables are among the following list:

- Technical specification report
- Description of the design
- Electrical drawings and assembly, compliant with CE standards
- Assembly instructions
- List of materials used (distinction between new and reused)
- Testing program and results