

FAB CITY

DT314 PP3 HU - Turning waste into material

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General information

Engagement tool: FabCity
Location: FabLab Budapest
Date: 17th November, 2018

1. Background



The design stands at the beginning of the products' lifecycle and is essential for ensuring circularity. With the implementation of the Ecodesign Working Plan 2016-2019, the European Commission has further promoted the circular design of products, together with energy efficiency objectives. Ecodesign and Energy Labelling measures for several products now include rules on material efficiency requirements such as availability of spare parts, ease of repair, and facilitating end-of-life treatment. The Commission has tasked the European Standardization Organisations with developing horizontal criteria to measure durability, reusability, reparability, recyclability and the presence of critical raw materials. These criteria should be applied in existing and new standards. Products and services designed circularly can minimize resource use and foster materials' reuse, recovery, and recyclability down the road.

Sound and efficient waste management systems are an essential building block of a circular economy. To modernize waste management systems in the Union and to consolidate the European model as one of the most effective in the world, a revised waste legislative framework entered into force in July 2018. This includes:

- new ambitious yet realistic recycling rates
- simplification and harmonization of definitions and calculation methods and clarified legal status for recycled materials and by-products;
- reinforced rules and new obligations on separate collection (bio-waste, textiles and hazardous waste produced by households, construction, and demolition waste);
- minimum requirements for Extended Producer Responsibility;
- waste prevention and waste management measures, including for marine litter, food waste, and products containing critical raw materials;

In a Fab City, digital tools and networks (such as Fab Labs, Makerspaces, etc.) are used to support citizen empowerment, so people can have an active role in making key decisions related to the development of their city, increase their resilience and improve urban sustainability

Today, cities are the largest consumers in the world. Rapid urbanisation, accelerated industrial development and disproportionate consumption are causing the deterioration of our ecosystems and have a strong social impact. The idea of rethinking the way we live, work and relate to our environment was born with these issues in mind.

Fab City is a global movement of cities that aims to develop a new urban model based on local production and global connectivity to encourage cities to become self-sufficient.

Fab City' started in 2011 at the Fab7 international conference, as a partnership between IAAC Fab Lab Barcelona, the MIT Center for Bits and Atoms, the Fab Foundation and Barcelona City Council. In 2014, the project was officially launched at Fab10 and the the city of Barcelona accepted the 40 year challenge and created the first network of public Fab Labs in the city, to support the initiative. In 2015 Fab City became a global initiative, with cities such as Boston, Ekurhuleni, Cambridge, Shenzhen, Somerville, the state of Kerala in India and the country of Georgia joining the project. The following year, Amsterdam, Detroit, Paris, Santiago de Chile, Bhutan, Occitanie, Sacramento, Toulouse also join the initiative and consolidate the project as a global movement.

Fab City's main strategy is to create a sustainable ecosystem of production and knowledge transfer by facilitating collaboration between urban spaces and encouraging them to visualize a more promising future for the following generations. With citizen leadership is at the core of the Fab City approach, the project focuses on the following areas:

- Advanced Manufacturing Ecosystem
- Distributed Energy Production
- Cryptocurrencies for a New Value Chain



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- Food Production and Urban Permaculture
 - **Circular Economy**
 - Education and Collaboration with Local Governments.

Fab City's impact and reach is impressive. From a project to a global movement, with a network of cities that continues to grow, the project is a great example of how local initiatives that are connected globally can shift some of the paradigms that govern the world today.

While changing the traditional ways, governments work and citizens think is a complex and lengthy process, following the example of these pioneering cities is a step forward towards reaching sustainability at a global level.

In the future, Fab City hope to convince more cities to join the challenge, and by 2054, they are hoping that cities will produce everything they consume, share a global repository of open source solutions for cities, and source their material locally through recycling and digital manufacturing.

Fab City is currently running in Barcelona, Boston, Ekurhuleni, Cambridge, Shenzhen, Somerville, Kerala state in India, Georgia, Amsterdam, Detroit, Paris, Santiago de Chile, Bhutan, Occitanie, Sacramento, Toulouse, Brest, and Curitiba.

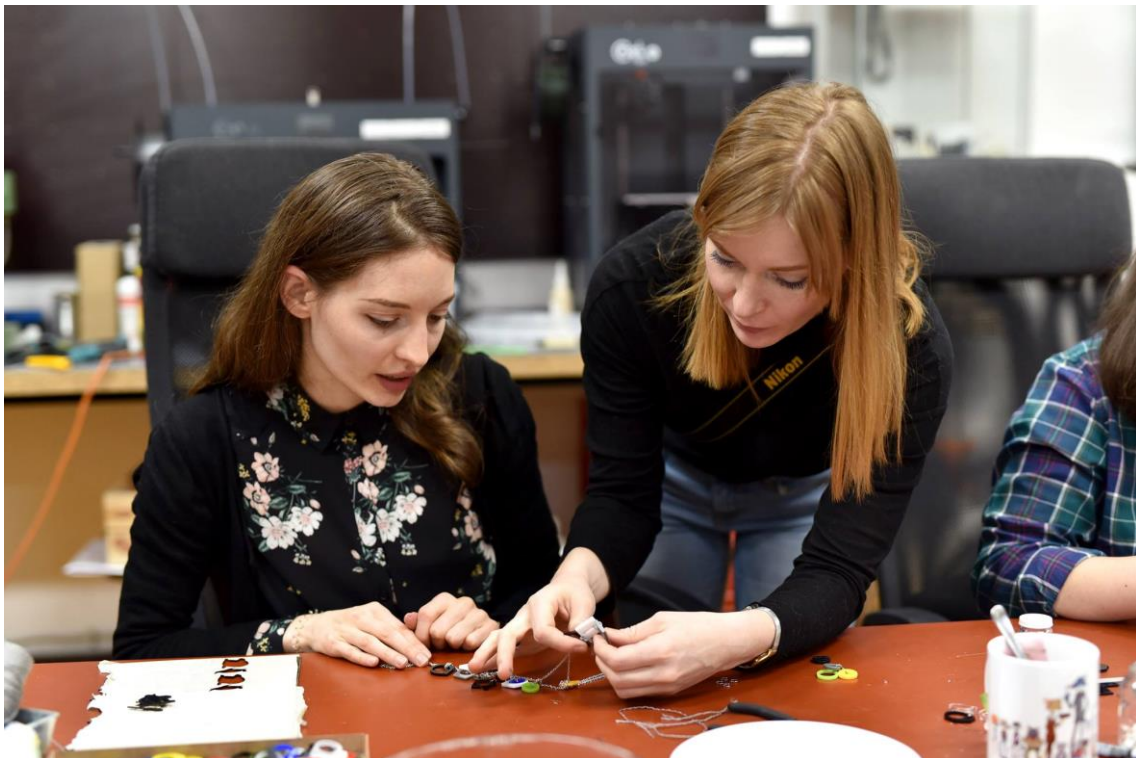
2. Concept

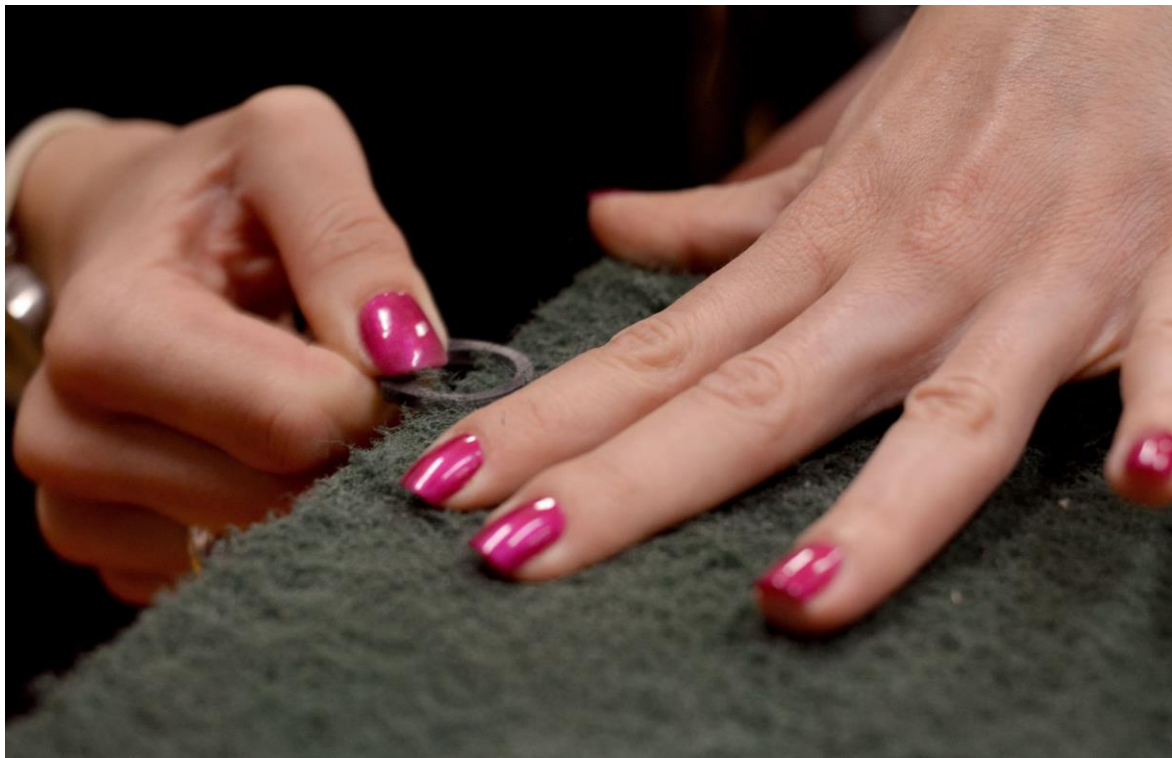
Our concept was to show to users of our FabLab that we can turn our unwanted plastic waste into most wanted plastic wearables: jewelry. The aim was to bring awareness to waste recovery and upcycling. We have collected the acryl leftover materials of the FabLab and done the following:

- all material has been assorted by width and color
- all material has been cleaned properly
- we have measured the useful surface of them
- we have created zero waste patterns for laser cutting
- the users received a short introduction to the laser cutter
- users cut the basic shapes from the prepared acryl with the laser cutter
- manual crafting followed the digital one: with the combination of the parts by free will the participants created their own jewelry;











3. Lessons learned

Tonnes of wastes are produced every day in our cities, and some educators are attempting to raise citizens' awareness, especially the youth. To redefine the concept of recycling previously confined to trash categorization, groups of young designers have tried to transform "trash" into potentially marketable products.

Stop Doing

- Last minute acceptance of a participant
- Focusing too much on technology
- Keep every leftover material without a concept what to do with them

Keep doing

- Play music to hav fun
- Asking for photo usage (GDPR) with a signature at the very beginning, together with the registration
- Mixing the participants with different background in small groups where they help each other, based on the competences declared in the registration form.
- Using the local catering, very flexible for last minute change.
- Using a very large room, with space for eating and working in two separate areas of the same room

Start doing

- Create a waste management plan for the FabLab
- Create a monthly based event where users and outsiders can come and do upcycling projects
- Provide them sample projects
- Help them to create their personalized project
- Make photos of the process and the proud makers

3. Outcomes

The main outcome is an approach where FabLab users done practically upcycling their own plastic waste produced by the FabLab.



4. Sustainability and Transferability

The experience is repeatable in the future, by using the FabLabs equipment and the professionalism acquired during the course. During the workshop, all essential FabLab principles were used, such as **learning by doing** (learning to use the laser cutter), **doing with others**, using **digital fabrication tools** and **design**. The experience becomes readily repeatable in the future; in any lab where laser cutter exists and acryl is being used for production. The concept is also sustainable from an environmental point of view. We started a workshop series called wrkLab Budapest using the experience.

5. Benefits

Our users learned that the existence of upcycling. The FabLab is the place where cutting edge technology is readily available, a community is present for ensuring a mutual learned of new technologies, and for providing help in designing and prototyping solutions. The overall course can be repeated in the future, as it is by all the FabLabNet partners turning every Lab into a small part of a Fab City 😊