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CIRCULAR DESIGN

Learning for Innovative
Design for Sustainability

GENERAL INFORMATION

SCHEDULE

TIME TABLE

ROOM AA203

	Monday 12-Feb	Tuesday 13-Feb	Wednesday 14-Feb	Thursday 15-Feb	Friday 16-Feb
9:00-10:30	Carnival (No classes)	Technical Communication in English Joe Barr	Social Sustainable Design Enric Trullols	Social Sustainable Design Enric Trullols	Social Sustainable Design Enric Trullols
10:30-10:45		BREAK			
10:45-12:15		Spanish 1	Social Sustainable Design Enric Trullols	Social Sustainable Design Enric Trullols	
12:15-12:30		BREAK			
12:30-14:00		Spanish 2			

	Monday 19-Feb	Tuesday 20-Feb	Wednesday 21-Feb	Thursday 22-Feb	Friday 23-Feb
9:00-10:30	Marketing Alina Popescu	Marketing Alina Popescu	Project Management David Ashworth	Project Management David Ashworth	Project Management David Ashworth
10:30-10:45	BREAK				
10:45-12:15	Marketing Alina Popescu	Marketing Alina Popescu	Project Management David Ashworth	Project Management David Ashworth	Project Management David Ashworth
12:15-12:30	BREAK				
12:30-14:00	Marketing Alina Popescu	Marketing Alina Popescu	Project Management David Ashworth	Project Management David Ashworth	Project Management David Ashworth
14:00-16:00	BREAK				
16:00-17:30			Project Management David Ashworth	Project Management David Ashworth	Project Management David Ashworth

SCHEDULE

	Monday 26-Feb	Tuesday 27-Feb	Wednesday 28-Feb	Thursday 1-Mar	Friday 2-Mar
9:00-10:30		Technical Communication in English Joe Barr			
10:30-10:45	BREAK				
10:45-12:15	Ecodesign Jordi Segalàs	Spanish 1	Ecodesign Jordi Segalàs	Ecodesign Jordi Segalàs	
12:15-12:30	BREAK				
12:30-14:00	Intercultural Communication Barbara Ferne	Intercultural Communication Barbara Ferne		Intercultural Communication Barbara Ferne	
14:00-16:00	BREAK				
16:00-17:30	Intercultural Communication Barbara Ferne	Intercultural Communication Barbara Ferne		Intercultural Communication Barbara Ferne	

	Monday 5-Mar	Tuesday 6-Mar	Wednesday 7-Mar	Thursday 8-Mar	Friday 9-Mar
9:00-10:30		Technical Communication in English Joe Barr		Teambuilding Roger Nyland	Teambuilding Roger Nyland
10:30-10:45	BREAK				
10:45-12:15	Ecodesign Jordi Segalàs	Spanish 1	Ecodesign Jordi Segalàs	Teambuilding Roger Nyland	Teambuilding Roger Nyland
12:15-12:30	BREAK				
12:30-14:00		Spanish 2		Teambuilding Roger Nyland	Teambuilding Roger Nyland
14:00-16:00	BREAK				
16:00-17:30				Teambuilding Roger Nyland	Teambuilding Roger Nyland

SCHEDULE

PROGRAMME SCHEDULE

TIME TABLE

FROM 12TH OF MARCH TO 6TH OF JUNE

ROOM AA203

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-10:30		Technical Communication in English Joe Barr		Technical Communication in English Joe Barr	
10:30-10:45	BREAK				
10:45-12:15		Spanish 1		Project Management II Joan V. Castell	
12:15-12:30	BREAK				
12:30-14:00		Spanish 2		Project Management II Joan V. Castell	

NOTES:

PROGRAMME SCHEDULE

DATE	TOPIC	DELIVER	LOCATION
PHASE 1 RESEARCH			
FEB 9	9:00	Circular Design presentation	AA 205
	9:30	Thesis presentation	
	11:30	Projects presentation	
FEB 9 - MAR 8	RESEARCH		BA102
MAR 9	9:30 - 11:00	Team presentation: <ul style="list-style-type: none"> Research outcomes Comments for other projects Presentation	AA101

DATE	TOPIC	DELIVER	LOCATION
PHASE 2 IDEATION			
MAR 13 - APR 22	IDEAS GENERATION		BA102
	9:30	Team presentation: Initial ideas presented to representatives of key contacts, lecturers and other professionals	Mock-ups Presentation AA101
APR 23	Planning	Meetings with every team on how to continue the project, defining shortcomings and planning the further steps	
PHASE 3 DESIGN DETAILING			
APR 23 - APR 25	Training co-creation workshop		
APR 26 - MAY 10	Design detailing		BA102
MAY 11	9:30 - 11:30	Team presentation: Finalized design solutions & their initial assessment	Mock-ups Presentation AA101
		Group discussion	BA102
	PHASE 4 PROTOTYPING		
MAY 12 - JUN 4	Prototyping		
JUN 11 - JUN 18	Preparation of communicating material		
JUN 19	9:30 - 14:00	Exhibition and final presentations Final presentation to clients, representatives of key contacts, lecturers and other professionals	Posters Presentation Prototype AA101
JUN 20	Group discussion		

EXPECTED OUTCOMES



During this project, you will be asked to develop, within your group, a process book, which will document your entire design process, from research, ideation and initial concepts, to your final concept and its development. This document will take the format of printed A3 paper as well as a PDF version which you will hand us over at the end of the internship. It will also feature the logo of your partner, of the Universitat Politècnica de Catalunya and of the Circular design project. Those will have to be at least 3 cm large.

For the final presentation and exhibition of your project, you will be asked to create posters to present your project next to your prototype. Those will be the synthesis of your research, ideation and creation process. It will show your design process from your initial research up to your final project. The format of the posters will be decided during the internship. It will also feature the logos as previously indicated.



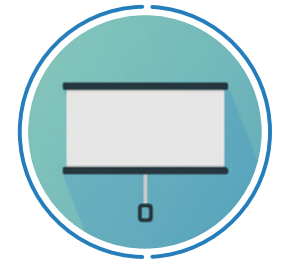
During the Phase 2 of this project, it will be expected that you develop one or more mock-ups to represent your initial ideas. To build those, you will have access to the EPSEVG workshop and to the Fabrica del Sol (depending on its availability). Those mock-ups can be physical ones as well as slide shows, video, interface, etc., or any medium that best represents your ideas. You will then present your mock-up(s) and initial ideas to your partner.



Prototype : At the end of your internship, you are expected to have built a prototype of your design solution. Although the specifications of your prototype will change according to your design solution, you are expected to build one as close to the real thing as possible, using the Workshop facilities.

For each phase of the project, you will be presenting the advancement of your project to your partner, the UPC team or external professional experts.

The presentation medium is yours to choose (slide shows, videos, etc.) The only obligation you have is to feature the logo of your partner, the logo of the UPC and the logo of the Circular Design project. Your names should also be visible. You should also make sure your presentation's file is as small as possible.



A FEW RECOMMENDATIONS FOR YOUR PRESENTATION

- Don't use more than **6 lines of text**, the less text the better
- Use **sans serif fonts**, you can still use a creative font for a slide title but avoid using it for body text
- Maintain a **strong contrast** between text and background.
- Use no more than **5 colors**, you can use a tool like **Adobe's Kuler** to help you choose the colors.
- Use no font size smaller than **18 point (24 is preferred)** and you can go up to **35-45 points for title**.
- Don't forget to integrate the **logo of your partner, of the Universitat Politècnica de Catalunya and of the Circular Design project**.
- **Test your slide-show** beforehand to adjust the colors, font sizes and bugs.

FACILITIES

WORKSHOPS

The school workshops are distributed in three rooms on the ground floor of the Main Building and will be available to you upon request. at **Laboratory Technical Services (STL)**.

You will have access to the following spaces and machines depending on your previous training and workshop capabilities.

RAPID PROTOTYPING (room AL003)

- Working spaces (up to 20 people)
- Laser Cutter PC 13/90II Perez Camps
- 3D printers 3D Colido 2.0

PRODUCT DESIGN (room AL006)

- Working spaces (up to 10 people)
- Basic modeling tools
- Projector

MODELS AND PROTOTYPES (room AL007)

- Working spaces (up to 10 people)
- Lathe, small milling machine, saws, drills, folding machines

You are required to wear a **white coat and protection glasses**.

CONTACT

Laboratory Technical Services (STL)

Room AD-151, Main Building EPSEVG

Hours:

Monday - Thursday: 8 a.m. to 2 p.m. and 3 p.m. to 7 p.m.

Friday: 8 a.m. to 4 p.m.

LA FÀBRICA DEL SOL

La Fàbrica del Sol is an institution of environmental education promoted by the Area of Ecology, Urbanism and Mobility of the City Council of Barcelona.

CONTACT



La Fàbrica del Sol
Passeig de Salvat Papasseit,
1, 08003 Barcelona

Find more information on the website :

 <http://ajuntament.barcelona.cat/lafabricadelsol/en>

CONTACTS

Area of International Relations

Nuria Martínez

International Officer

Tel.: +34 93 896 78 57

internacional.epsevg@upc.edu

Hours:

Monday - Friday 11:00 am - 1:30 p.m.

Wednesday: 3:30 p.m. to 5:30 p.m.

Unitat de Suport a la Docència

Av. Víctor Balaguer, 1

08800 Vilanova i la Geltrú (Barcelona)

Circular Design Team



Jordi Segalàs

Principal Investigator &
Project Contributor

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Gemma Tejedor

Project Manager &
Contributor

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Aya Ulan

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CIRCULAR DESIGN

Learning for Innovative
Design for Sustainability

STUDENTS INTERNSHIP - CATALONIA
PROJECT: ZICLA

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THE UPC TEAM _____ **1**

YOUR PARTNER _____ **2**

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STAKEHOLDERS _____ **6**

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THE UPC TEAM

WHO WE ARE



Jordi Segalàs
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Gemma Tejedor
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Contributor
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Aya Ulan
Internship Mentor & Project
Contributor
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ABOUT



In ZICLA, we have been working since 2005 to turn waste from cities into new materials for industry and new products which solve cities' problems. We develop projects based on waste and we create and eco-design products that contribute to efficient, sustainable, safer and accessible cities, and also friendly business growth.

We involve all agents associated with the value chain of our products and we look after all the details, from the initial phase to the end of the product life cycle, to offer a full service to our customers. For us, waste is an opportunity for change. We are committed to excellence.

PEOPLE



DR. ALFREDO BALMACEDA
Co-director

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IRENE GRASA
Design Engineer

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GASTÓN VILLELLA
Co-director

gvillella@zicla.com



PAU SAIZ
Project Manager

psaiz@zicla.com

YOUR THEME

Cities are alive and continuously are demanding new solutions to become much more liveable. Accessibility, mobility and safety in traffic are key aspects of citizens' daily life in cities. In ZICLA, we focus on developing solutions for traffic, mobility, accessibility and the enjoyment of cities, all entirely committed to the circular economy based on making use of waste generated by cities themselves and their associated activities: industries, services, etc.

Throughout this internship, students are expected to explore the potentials of reclaimed material coming from post consumed Tetrapack packaging generated by paper mills after the recovery of the cellulose, and come up with innovative solutions on using them in new pavements to be used in different urban applications.

YOUR CHALLENGE

Students shall contribute to the design and conception phase of new solutions for cities done with reclaimed materials as well as their industrialization. Its contribution will come from the point of view of both product and materials design within the framework of the circular economy. The proposed solutions need to consider the use of reclaimed materials in order to reveal the potentials and limitations of it as a material input for durable products. The design of the components and/or products produced out of this reclaimed material needs to be timeless and durable, parallel to the ZICLA's direction.

Craft and the materials: All the products designed, produced and sold by ZICLA are eco-designed, through a deep understanding of the opportunities and limitations embedded in the reclaimed materials. Students shall experiment with these materials, understand the potential within, and design one-off pavements reflecting this potential. A detailed understanding of their craft and their decision-making process is highly important for this project.

The new secondary material: With its purely functional design, Tetra Brick containers are produced to be used over very short periods of time. Once they become waste, paper mills recover the cellulose they contain generating a waste material formed by a mixture of aluminium and low

density polyethylene. This waste can be agglomerated and extruded to be transformed into pellets which could later be transformed into products via injection or extrusion. It is necessary to understand the story of this material and to re-imagine circular design solutions in the form of pavements for cities.

The new product: Students will have to propose different applications of this reclaimed material in the form of pavements which will have to be able to fulfil the existing related legislation and at the same time include smart solutions able to nourish the cities' big data.

Understanding the Business Structure: Students need to map out the existing internal and external design and production opportunities of the company, as well as the sale and post-use services, their opportunities and limitations.

Through such an analysis, students can position their design solution within this structure or suggest changes to it.

INTELLECTUAL PROPERTY

Any potential Intellectual Property rights arising from the Circular Design internship project reside with the client company. As such all information should be treated with confidence unless there is agreement from the client.

Students recognize and accept that all industrial, intellectual property rights and / or know-how that can be derived from the activity that the student develops by virtue of their collaboration in practices with ZICLA, will be the exclusive property of ZICLA in all its extension. In this regard, the undersigned exclusively assign to ZICLA all intellectual, industrial and intellectual property rights and / or know-how that could result from the activity carried out by the student by virtue of their collaboration. Work in practices with ZICLA and, in particular, the rights of reproduction, distribution, public communication and transformation, for its free use by ZICLA in any way and in any medium or support, without limitation, for a field territorial worldwide and for the entire duration of the rights. Students will refrain from using and / or registering in their name any right of industrial and / or intellectual property (patents, trademarks, industrial designs, etc.) that is owned by ZICLA or may derive from the activity that

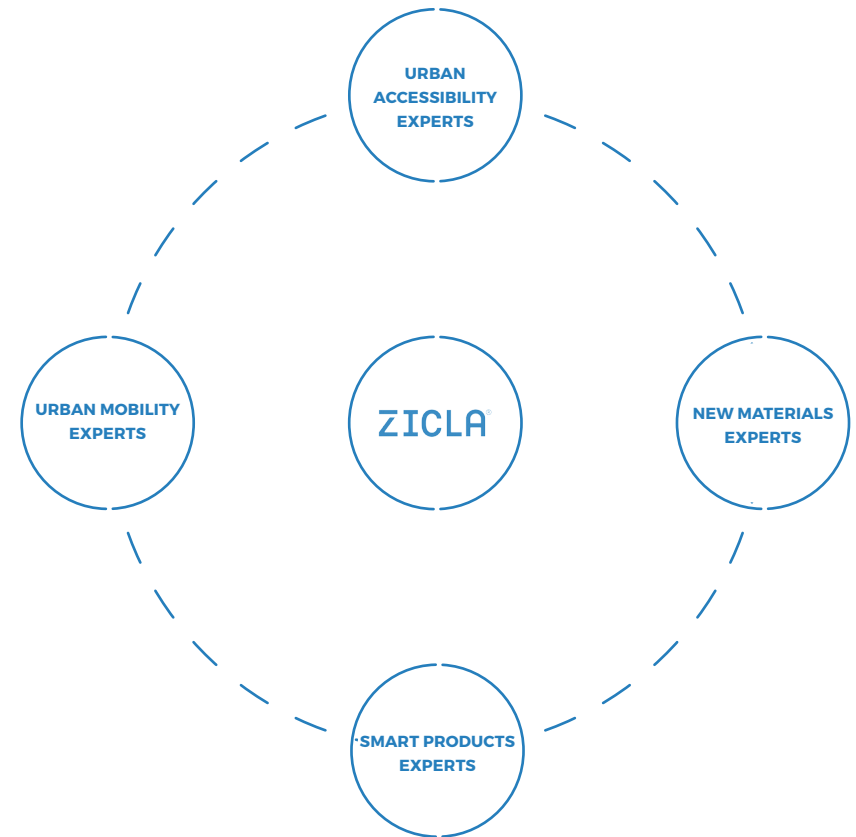
develop the student or teacher in the same way as their collaboration in practices at ZICLA, of which ZICLA will be the holder, and will not be able to carry out any exploitation or disclosure about these rights.

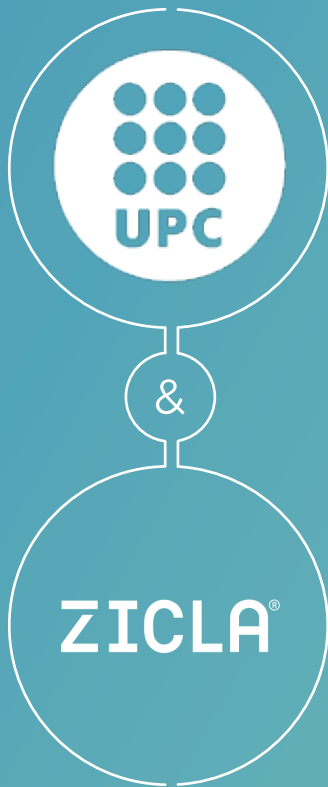
In the event that students have knowledge of the violation of the rights of industrial property, intellectual and / or know-how of ZICLA by a third party, they must immediately inform ZICLA, who will decide, in his at its own discretion, the actions, if necessary, carry out.

POTENTIAL STAKEHOLDERS

Here are some other potential stakeholders that are located in/around Barcelona. Students can try getting in touch with them. Students should know that this list is not final and students should try finding out more potential stakeholders to understand the context of this design projects.

- Experts on urban accessibility.
- Experts on mobility and traffic in cities.
- Experts on new materials.
- Experts on smart products.





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STUDENTS INTERNSHIP - CATALONIA
PROJECT: ENT COMPANY

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ABOUT



ENT is a consultancy and private research centre created in 2001, with two different legal forms: a company and a foundation. It is based in Vilanova i la Geltrú.

Its mission is to contribute towards a socially, environmentally and economically sustainable society by studying and implementing innovative approaches mainly in the fields of environmental policies. ENT is formed by 14 experienced engineers, graduates, postgraduates and PhDs from different fields related to environmental management. Its main areas of expertise are waste management, ecological and environmental economics, political ecology and fishing policies. ENT works, in most cases, for public administrations, and also for non profit organizations: NGOs, trade unions, universities, etc., but it also carries out projects with for profit initiatives if the same values are shared. ENT tries to be innovative in the majority of its projects, and also participates in a number of research and development projects. Finally ENT disseminates the results in peer-reviewed scientific publications and through the participation in conferences.

PEOPLE



MARIA CALAF FORN
Environmental Consultant

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DR. IGNASI PUIG VENTOSA
Project Manager

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YOUR THEME

It is becoming more obvious that synergies between waste management and circular economy can attribute to the ideal of achieving a world with a responsible attitude to production and consumption. However, there are many challenges to be handled. Your theme is waste management in municipalities. **Throughout this internship you are expected to increase the knowledge about technologies for user identification in containers in high-density contexts, to reduce anonymity and get better results of municipal waste separate collection to give compliment to the Waste Framework Directive 2008/98/EC, and other national and regional targets.**

YOUR CHALLENGE

Primary goals:

- Elaborate a Guide available online (ENT and UPC websites in English but translated to Spanish and possibly Catalan)
- Elaborate a mapping of case studies
- Possibility: elaborate a tool to facilitate the implementation of such technologies in municipalities (logistics and economics)

Secondary goals:

- Participate in the planning of the project
- Participate in the definition of the contents of the Guide
- Learn about procedural of project writing

INTELLECTUAL PROPERTY

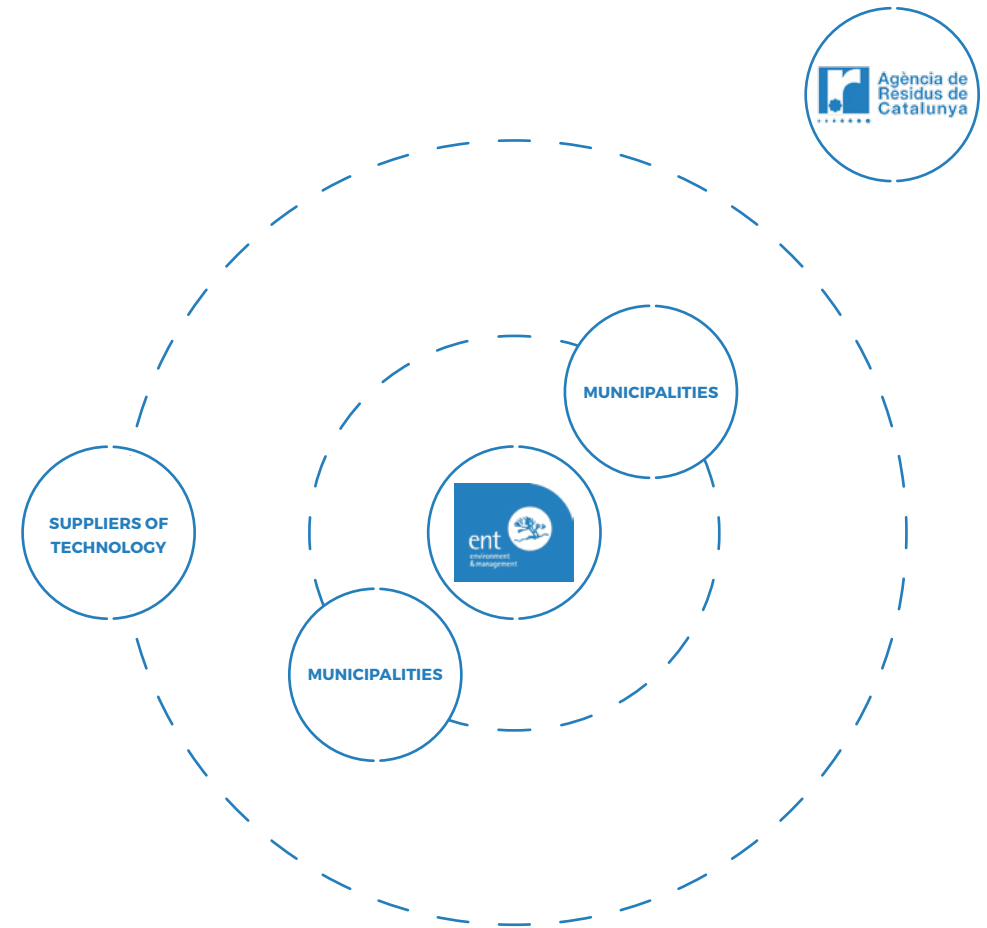
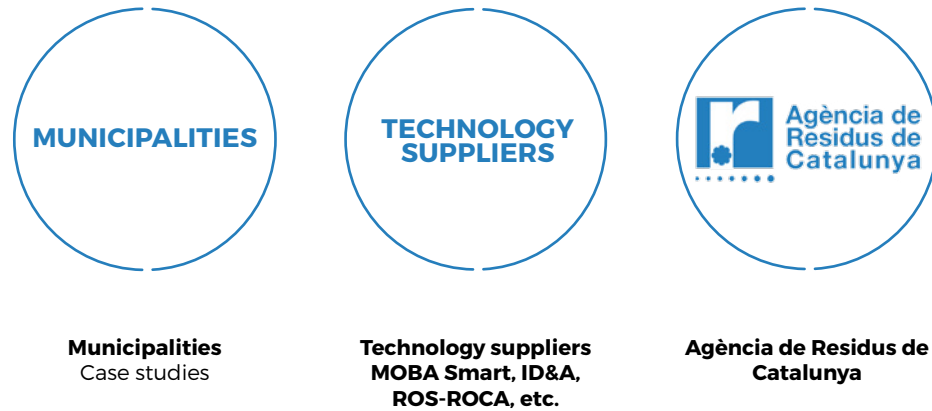
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WHO THEY WORK WITH

Companies suppliers of technology

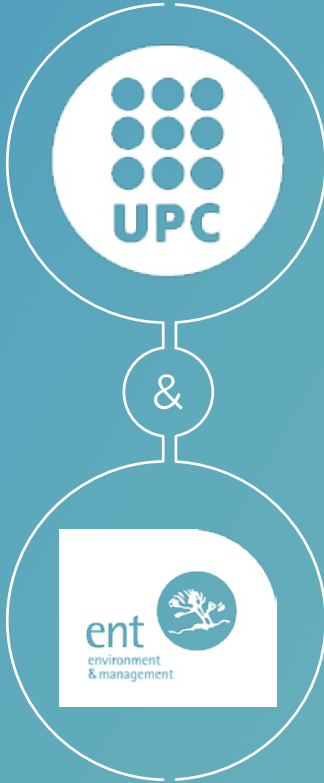
Municipalities for case studies

Catalan Waste Agency (in a secondary role) and other consultancies



Here is a link to a Google Map with more details on the stakeholders location:

 <https://goo.gl/BINUdZ>



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STUDENTS INTERNSHIP - CATALONIA
PROJECT: UPC RECIRCULA

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Aya Ulan
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Contributor
ayaulanproject@gmail.com

ABOUT



The Gabinet dInnovació i Comunitat (GIC) mission is to make the Universitat Politècnica de Catalunya (UPC) a living, welcoming and sustainable community, prepared to face the challenges and changes in the environment. We like to promote innovative and user-oriented projects that include, in an integrated manner, sustainability, inclusion and the gender perspective.

The UPC is a public institution of research and higher education in the fields of architecture, engineering, science and technology where more than 35,000 people study and work. For years GIC has been dedicated, as far as possible, to transforming the campus towards a more sustainable operation by placing people at the center of strategy and change. In the field of circular economy the institution has approved the Recircula UPC Strategy to promote the circular economy in the use, purchase and responsible management of resources and waste. We try to reduce the consumption of resources, favor its reuse and close the cycle of materials.

PEOPLE



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Head of GIC

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YOUR THEME

The challenge is to create a solution that facilitates the selective separation of waste in the workplace, temporary storage and transfer to the nearest selective collection point.

This solution will be part of a real change project that is being implemented at the UPC and which consists of redesigning the current selective collection service within the buildings of the UPC through the implementation of centralized points of selective collection (Recircula UPC points) and the reduction of the emptying service of the individual refuse bin by the cleaning service. The change of model implies moving from an unsustainable solution and with individual logic to a more sustainable and community approach.

The new approach requires the collaboration and change of habits of the users, since to get rid of a waste it must be moved to the nearest Recircula UPC Point. Likewise, it raises the opportunity to redefine the function of the individual reject bin to adapt it to the new objectives or to create an alternative system to facilitate the user to change habits.

YOUR CHALLENGE

Students shall contribute to promote the participation of UPC staff in the new selective collection system by designing a solution that facilitates logistics and increases user comfort. Solutions are expected to be practical, attractive, user-oriented and consistent with the change of model, considering as essential knowing and understanding the users' behavior as well as the general model of selective collection at EPSEVG-UPC and the actors involved.

The proposed solution should be an example of a circular economy, from the redesign of the current individual reject bin to adapt it to the new need, to creating a new product always consistent with a rational consumption of resources. The solution must consider the following criteria:

- practical and solving the user's problems
- low cost and easy to distribute among users, or self-assembly
- taking advantage of UPC or external existing material or waste recovery
- transmitting the values of the solution and the change of habits
- making you want to have it
- being institutional and following the graphic image of Recircula -UPC
- with more utility beyond accumulating waste

STAKEHOLDERS

INTELLECTUAL PROPERTY

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WHO THEY WORK WITH

Transversal Management (UTG) of EPSEVG, cleaning service, GIC.

UTG of EPSEVG, GIC.

POTENTIAL STAKEHOLDERS

- Barcelona Sostenible (Barcelona Sustainability Office)
- Rezero
- La Fàbrica del Sol
- Material suppliers (some waste management from the UPC to close the cycle).



Barcelona + Sostenible
Ajuntament de Barcelona



REZERO
Catalan Foundation for Waste
Prevention and Responsible
Consumption



LA FÀBRICA DEL SOL
Ajuntament de Barcelona

MAP

