

## KATCH\_e: DESIGNING A CIRCULAR ECONOMY

With each passing day, our society becomes more conscious of the importance of taking care of our planet. We are aware of the consequences of climate change and global warming, as we have been affected by them more and more over the past few years. We now acknowledge that the sustainability of the items we consume and produce –whether they are clothes, furniture, cars, etc.– is of very important added value. One of the main stages that determines the sustainability of a product is the design phase, where materials and procedures are chosen. From this, the product is developed accordingly to the priorities of the manufacturer. Thus, the design is the core focus of this project, financed under the Knowledge Alliances initiative of the Erasmus+ programme. The partners of the KATCH\_e project aimed to incorporate the philosophy of the Circular Economy into the design and production of materials for the construction and furniture industries.

### What are: Erasmus+ **Knowledge Alliances**?

This initiative of the European Commission supported 2014 – 2020 158 international collaborations between partners from higher education institutions and businesses. Still, it is open to any sector and involves a wide range of stakeholders on all levels. These consortia bring their particular expertise together, amplifying innovation across their fields through collaboration by developing new and multidisciplinary teaching & learning approaches, providing entrepreneurial mindsets and relevant skills to participants, and stimulating knowledge exchange.

The fields of action are broad and include current topics such as ICT, (green) economy and sustainable energy, education, life sciences, societal challenges, etc. Overall, the results of KAs strengthen Europe's innovation capacity in the form of novel curricula and study programs, open educational and e-learning resources, accelerators, hubs and start-ups, new products and prototypes.

**11 organisations** from 4 countries of the EU (Portugal, Spain, Austria and Denmark) got together in order to develop materials, strategies and tools that allow the current industry to get in line with the principals of **Circular Economy** (CE). The project, which ran from 2017 to 2020, managed to successfully face those challenges present in the context of implementing CE into the furniture and construction sectors. With it, partners demonstrated that Circular Economy is sustainable, as well as beneficial.

During the project the partners also achieved the creation of an important network of stakeholders that not only tested the materials developed but was also able to further disseminate them, making them reach larger audiences and establishing a cooperation between all interested parties within the sectors involved.

### **WHAT WAS CREATED?**

As mentioned before, the main objective of the partnership was to create materials, tools and methodologies that help the construction and furniture industries to adopt a work ethic based on Circular Economy. In order to achieve this aim, they first analysed the current necessities and policies of the market in order to create materials tailored to both students and professionals in these sectors. Thus, the materials developed were based on real-life needs and experiences, and all of them fostered entrepreneurial skills, innovation and sustainability.

At the end of the KATCH\_e project, the partners achieved the following results, among others:

- A **report** on current needs and the state of the art
- An **E-book** including 8 theoretical modules on the successful application of Circular Economy on businesses within the furniture and construction sectors

- A **guide** on how to identify and engage stakeholders, based on techniques applied during the duration of the project
- An **overview** of the 8 modules and 7 tools developed under the KATCH\_e project

All of these, along with additional materials, are available on the webpage of the project. All the materials were created with the purpose of being used in either academic settings (e.g., by students and teachers) or in companies belonging to the private sector.

### KATCH\_e KNOWLEDGE PLATFORM

Along with the materials, the project also developed an **online Knowledge Platform** to act as a hub for all the resources created during its lifetime. Here, students, teachers and professionals of the sector can access

**“The main aim of the partnership was to demonstrate that Circular Economy is not only sustainable, but also beneficial for both businesses and the planet.”**

an online course on how to apply the methodologies of CE onto the sectors mentioned above, as well as view and use the tools and training materials developed by the partnership. Users can also find other useful resources that are related to the main topic. With all of these available and open to the public, the project partners achieved their main and final goal: to promote Circular Economy and the development of sustainable product-services.

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*For further information on the Alliance, please consult the following links:*

KATCH\_e official website: <https://www.katche.eu/>

Knowledge Platform: <https://www.katche.eu/knowledge-platform/>

Contact:

[cristina.rocha@lneg.pt](mailto:cristina.rocha@lneg.pt) (Main Coordinator)

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### Questions to the Project Coordinators (Cristina Rocha)

*How (and in what moment of your lives) did you develop the idea for KATCH\_e?*

The idea of a project dedicated to exploring the contribution of design to the circular economy started to take shape after the publishing of the EU Action Plan on The Circular Economy, in 2015. We discussed it with partners from Spain, Austria and Denmark with whom we had worked on Leonardo da Vinci and ERASMUS+ projects before, in the fields of eco-design and design for sustainability, and immediately saw the opportunity of building upon those projects' results and joint expertise. Finding companies interested in being part of the Alliance was not difficult and the result was a very strong and cooperative partnership.

*What was one of the most challenging moments of KATCH\_e?*

I wouldn't be able to spot a specific moment, but for me, the main challenge was to match our (research centres' and universities') somewhat theoretical way of developing the theme with the needs of the companies – which, of course were much more practically-oriented. The fact that we did not only create theoretical modules and content but also various circularity tools that can be used as stand-alone instruments, provided that the users have an adequate background, helped in filling this gap. Through the cooperation with partner companies and by adopting a problem-based learning approach I believe we were able to make the alliance and its underlying purpose work in our project.

From your point of view, how is the project contributing to the beneficiaries' real life and activities? Could you provide examples?

From our side, at LNEG (Laboratório Nacional de Energia e Geologia), we are applying the resources developed in KATCH\_e in several training activities and as background knowledge in various projects that deal with design applied to circular products, services and business models, at the national and international level. I would also like to highlight the launching of the first curricular unit on circular design in Portugal, by our partner the University of Aveiro, as an outcome of KATCH\_e. We were very proud to see this very tangible result that started in the first semester of 2018-2019 and is still running. The business partner in Portugal, Amorim Cork Composite, started focusing more on the environmental impacts on the value chain and as a result, many clients are asking for life cycle assessments of their products. One Portuguese company that followed KATCH\_e and joined some of our workshops during the testing phase invited us and our partner the Technical University Vienna to adapt three KATCH\_e tools to the product category they manage (packaging waste). This follow-up project is finished and now packaging companies in Portugal are applying circular design and evaluation to their products. There are Austrian Universities and Universities of Applied Sciences in the field of product design and construction which use our results as a basis and orientation for the integration of circularity into their study programs. In Denmark, the KATCH\_e materials are used in teaching activities, and also through cooperation between the Aalborg University and their business network. As for Spain, our partner Institute of Ceramic Technology (ITC) reports numerous follow-up activities: the course content is in their training catalogue and they are using KATCH\_e to teach ceramic glaze and ceramic tile manufacturers, the association of designers of the Comunitat Valenciana and the Polytechnic University of Valencia. Moreover, some modules have also been included in the "University expert course in ceramic materials processing" offered by the Universitat Jaume I (equally a member of the KATCH\_e consortium). In the same way as at LNEG, ITC uses KATCH\_e in internal training so that our researchers can think about and implement circularity and sustainability in future R&D&I projects. In ITC, some of the tools have been applied to evaluate and implement the sustainability and circularity of the results of R&D projects in which ITC participate. In these projects, new materials, processes, products and technologies are developed. And last but not least, the experience acquired has allowed us to develop another ERASMUS+ project: Circular Start into Business (<https://www.circularstart.eu/>) – this project shares 5 partners with the KATCH\_e consortium.

Which moment made you laugh a lot?

Again, I cannot specify a moment. We had many good and joyful moments, especially in the consortium meetings – during the working hours and when socializing. We worked a lot, but we also managed to enjoy ourselves. We built a really good working atmosphere and all partners were engaged and even doing more tasks than initially planned. This is because everyone was motivated and every time we were together we knew we were going to have long discussions, work a lot, but also come to an agreement and move forward. And in between, there would be time for relaxing, trying good local food, partying and even making fun of the tensest moments of the day. This spirit helped a lot.

And what was the most rewarding moment?

Perhaps the Final Conference and the workshops that ran in parallel that very day. It was the moment when we showed the outside world the final results of the project, discussed the topic in the context of the business-academia alliances and allowed the attendants to participate in demonstration sessions of the tools. We had a remarkable number of dissemination activities

throughout the project, during which we had very fruitful discussions. But in the Final Conference (November 2019, Lisbon) we knew we had achieved and even surpassed our goals. The question then was: what next? Are these results going to continue to be useful to Higher Education institutions, research institutes and businesses in the partner countries and elsewhere? Fortunately, the answer is yes.