CA - EED

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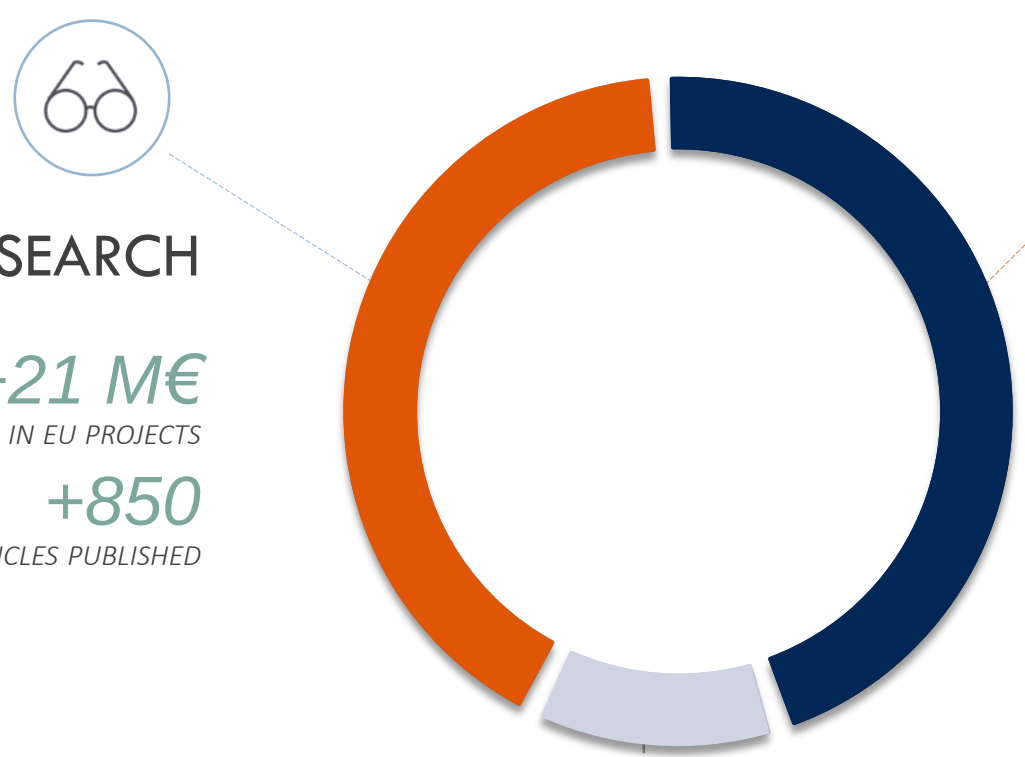
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 649770

CIRCE Foundation.

R&D&i in Energy



RESEARCH

+21 M€

Economic return in EU projects

+850

Scientific articles published

TRANSFER AND SERVICES

50%

Volume of private invoicing

+250

Active clients

TRAINING

Technology update to companies

Specialization courses

MOTIVATION

Tribe
Play it!

Training Behaviours Towards Energy Efficiency: Play it!

Strategic Energy Technology Plan

Horizon 2020

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THE PARTNERS

Acciona Infraestructuras
www.acciona-infrastructure.com

Zaragoza Vivienda S.L.U
www.zaragozavivienda.es

CIRCE Foundation
www.fcirce.es

Deloitte Sustainability
https://www2.deloitte.com/fr

Özyeğin University
www.ozyegin.edu.tr

University of Graz
www.uni-graz.at/en7

RISE
www.rise.se

OBJECTIVES

TRIBE project aims to contribute to

A **CITIZENS' BEHAVIOUR CHANGE**

towards energy efficiency in public buildings

through their engagement in the experience

OF **PLAYING A SOCIAL GAME**

linked by ICT to time data collected

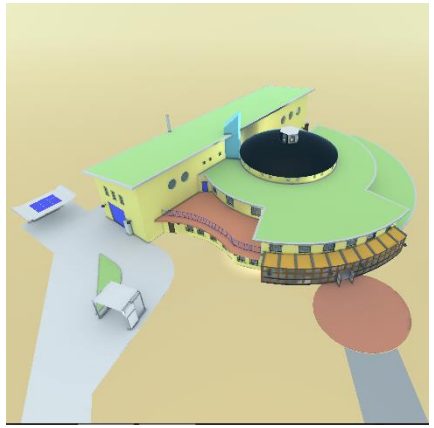
FROM **5 PILOT BUILDINGS**

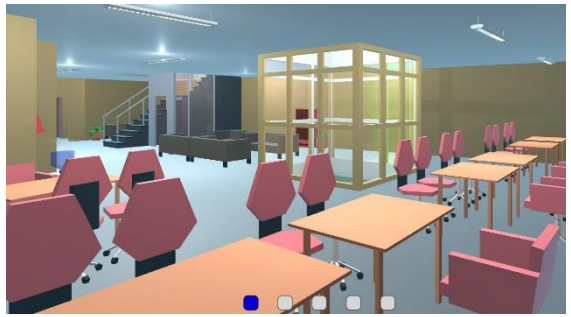
hosting around 1.300 regular users (employees, tenants…)

and almost 12.000 eventual users (visitors).

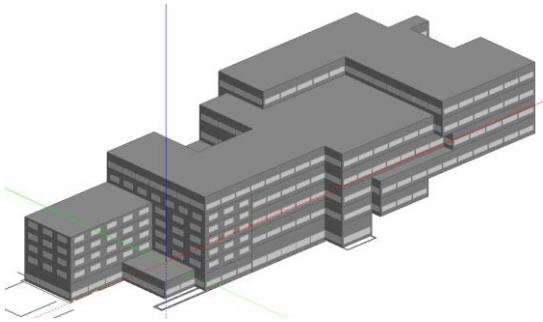
PILOT BUILDINGS

Public Offices

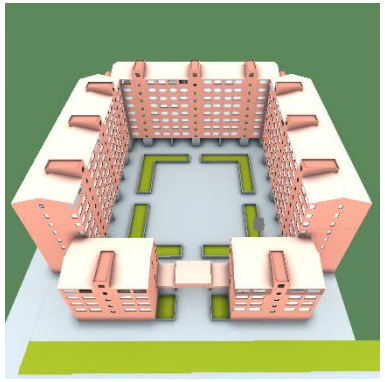




Academic



Social housing



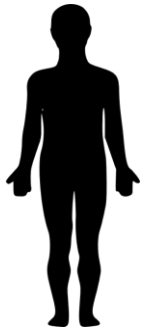
1.300 regular users

12.000 eventual users

INNOVATION

ICTs

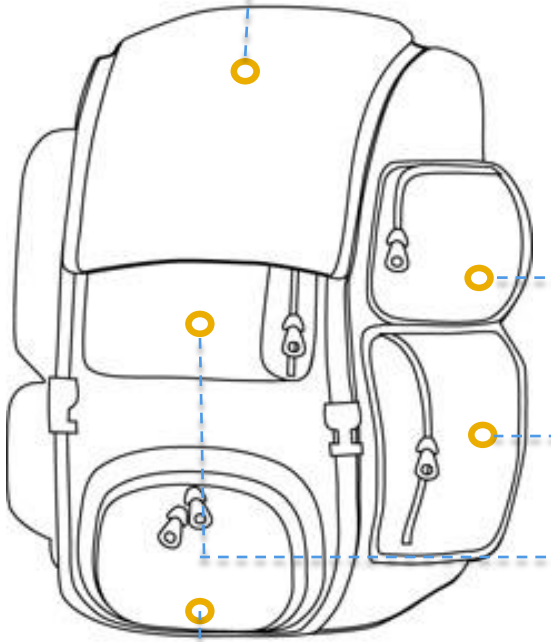
User behaviour



Energy Efficiency

TANGIBLE OUTCOMES

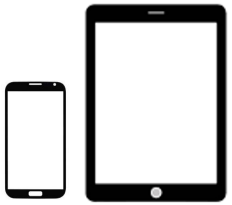
TRIBE PACK FOR PUBLIC AUTHORITIES



1. Energy audit and diagnosis
2. Virtual Pilot design
3. ICT deployment plan
4. Funding scheme
5. User engagement campaign

TANGIBLE OUTCOMES

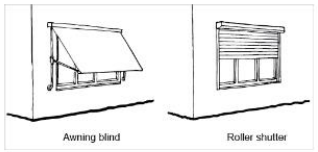
VIDEO**GAME**



TANGIBLE OUTCOMES

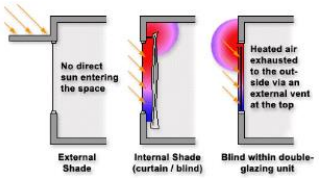
Online library – EE measures in buildings

1.1.6 Correct use of external solar shading



In cooling seasons users have to block direct solar radiation by closing solar shadings to avoid internal overheating.

1.1.7 Correct use of internal solar shading



Internal solar shadings allow the protection of interior space from direct radiation.

1.1.8 Improve insulation of roller shutter box

It is important to check heat losses from the shutter box because often it is not isolated and it is a significant poin of air leakage. The solution consists in installing roller shutter box insulation.

1.1.6 Correct use of external solar shading

Description

In cooling seasons users have to block direct solar radiation by closing solar shadings to avoid internal overheating. In others seasons solar shadings should be opened to take advantage of natural light and, in heating seasons also of solar radiation to increase internal thermal load.

Benefits

- Shading windows can block up to 90% of heat generated by direct sun.
- Reduce internal summer temperatures
- Improve comfort
- Reduce the use of cooling and heating systems

Limitations

- Occupant acceptance
- Design defect

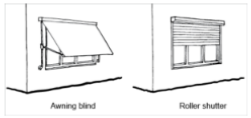
Economic assessment

The initial investment is zero, although it is convenient to train and inform properly users on these issues. It reduces the costs associated to HVAC systems.

References and best practices

- Impact of external shading devices on thermal and daylighting performance of offices in hot climate regions: sciencedirect

Image gallery



CHARACTERIZATION

Environment or playable world:	Carried out by:	Reduce consumption of:
☐ Residential	☑ Public building users	☑ Heating
☐ Academic	☐ Owners	☑ Cooling
☐ Offices	☑ Operators	☐ DHW
☑ All	☐ All	☐ Lighting
		☐ Electric devices

Type of driver:	Time framework:	Type of measure:
☑ Physical environmental	☑ Short term	☑ Envelope
☑ Contextual	☐ Long term	☐ HVAC
☑ Psychological		☐ DHW
☐ Physiological		☐ Lighting
☑ Social		☐ Electrical devices
		☐ Other

IMPACT

20.000 App downloads

> 40 events

> 50.000 recipients

> 7.500 visitors

> 24.000 reproductions

Google AdWords

> 17 m impressions

> 70.000 impressions

100.000 recipients

> 11.000 impressions

BARRIERS

→ Bad habits during excessive number of years in old public buildings

→ Eventual users

→ Technical and technological (lack of knowledge)

→ Complexity of the current methods for monitoring energy consumption

OPPORTUNITIES

→ Provide or improve the technical knowledge and experience to understand EE methods and technologies to owners or users of public buildings

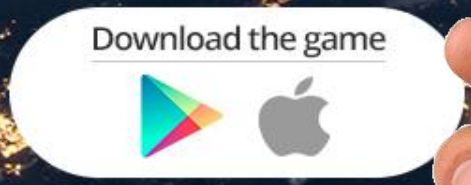
→ Development of useful and easy to use and understand tools to monitor energy consumption

→ Standardization of energy action plans for public buildings in EU

Download the APP

&

Save the planet



THANK YOU FOR
YOUR ATTENTION!

WWW.TRIBE2020.EU

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