



**RETIME**  
Inclusive Urban Resilience



Co-funded by  
the European Union

PROJECT PRESENTATION

# Urban Adaptation and Alert Solutions for a Timely Reaction





# Project Overview



# Adaptation strategies for urban resilience

RETIME combines advanced tech with thorough socio-environmental analysis to build hazard exposure resiliency and informed urban environments for all.

RETIME intends to meet citizens' real-time needs while supporting monitoring and decision-making processes





# Objectives



1 Support public authorities and other key stakeholders in enhancing the safety and resilience of the built environment by implementing site-specific emergency protocols.



2 Increase awareness of building occupants and other vulnerable key stakeholders on the available solutions in case of extreme climatic events and natural disasters.



3 Test innovative and practical adaptation measures for at-risk urban areas.

## Project Coordinator

**iscte**

— Conhecimento e Inovação

## Horizon Europe

Efficient, sustainable and  
inclusive energy use  
(HORIZON-CL5-2023-D4-02)

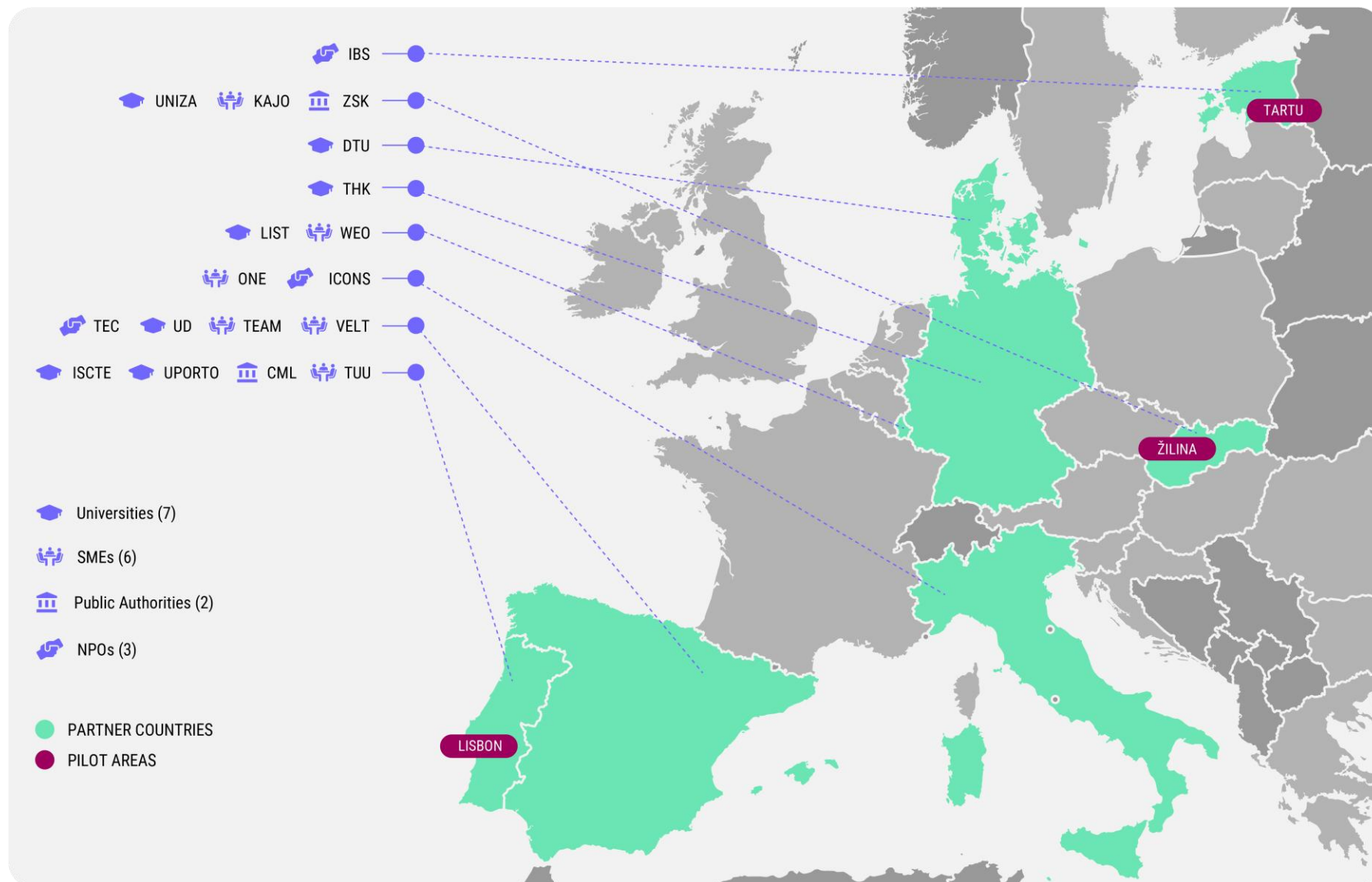
**Total Budget: €5,475,761**

**18 partners**

**48 months**

**Start date: 1 May 2024**

**End date: 30 April 2028**



# Consortium

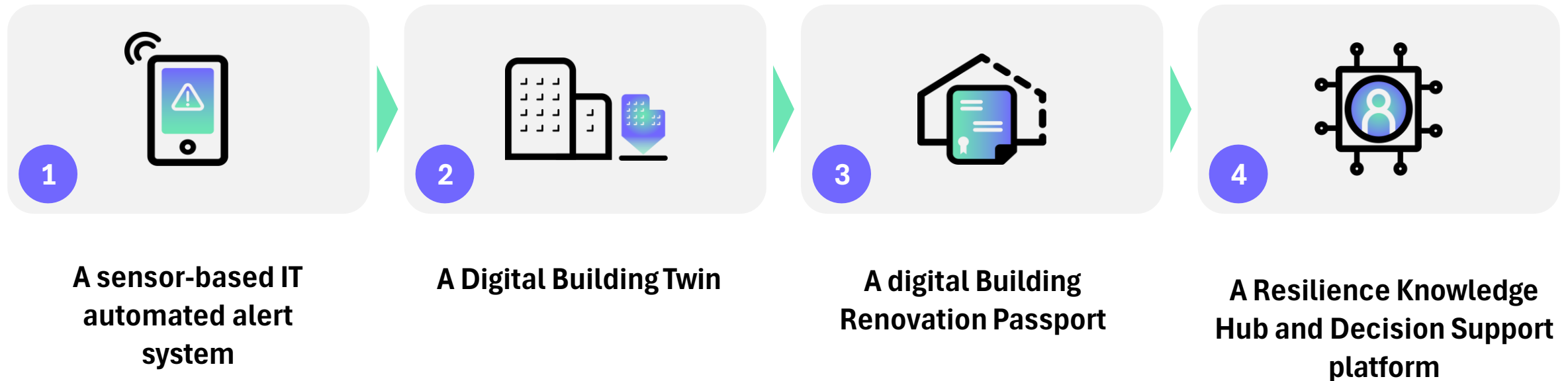




# RETIME Solutions



# Digital Solutions for urban adaptation and risk reduction







# Sensor-based IT Automated Alert System

**A suite of automatic alerting strategies and building monitoring systems designed to inform residents and building managers about extreme climatic events.**

Using IoT technology, the system relies on existing devices to promptly inform the population about emergencies and communicate actions to minimise risks.

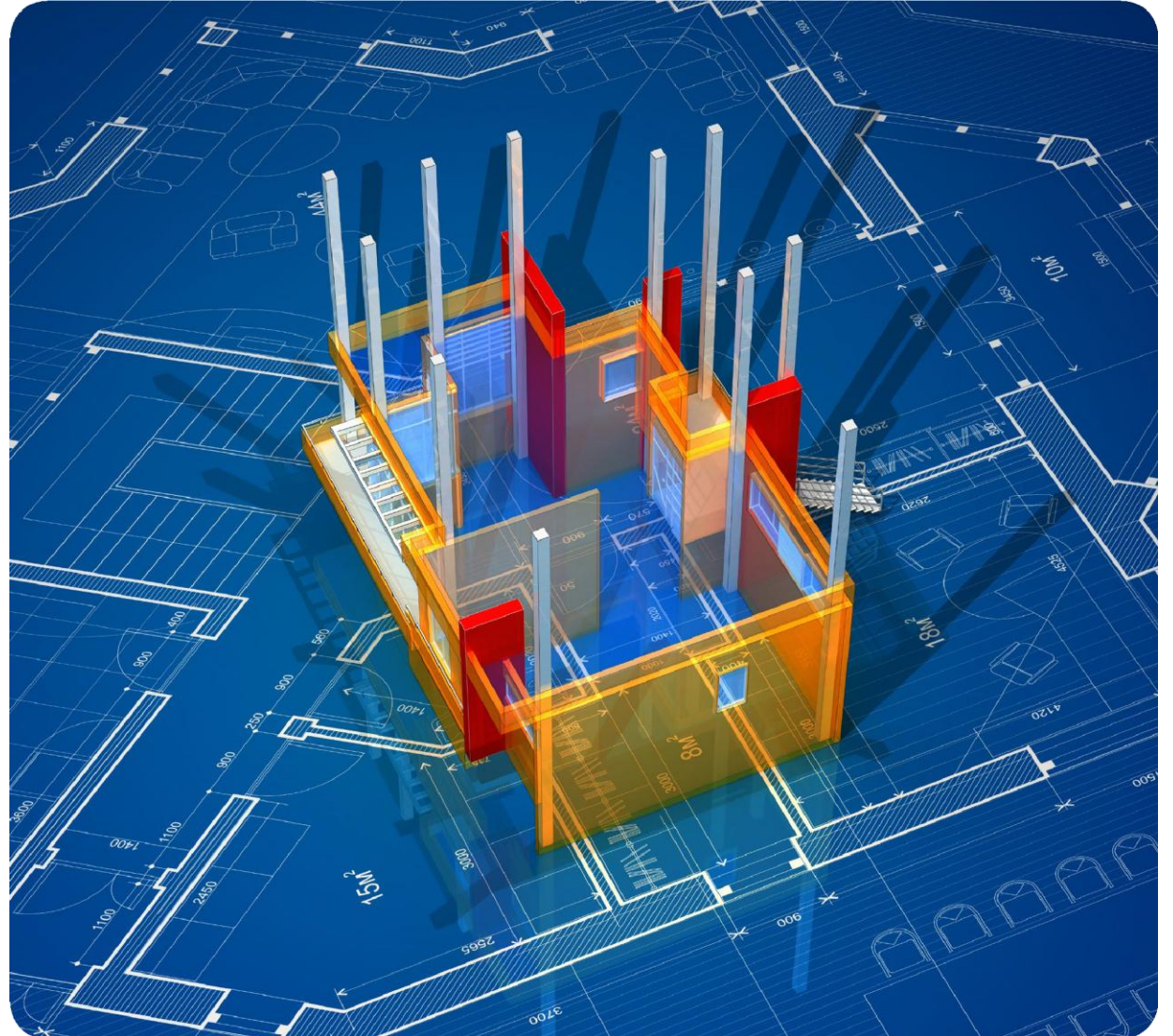




# Building Digital Twin (BDT)

**A virtual representation of a physical building,  
encompassing all associated technologies, systems,  
equipment, and stakeholders.**

This tool supports proper maintenance of facilities and provides early warnings for heat waves, air pollution peaks, earthquakes, wildfires, and floods.







# Building Renovation Passport (BRP)

**A digital tool providing building owners and managers with a step-by-step renovation roadmap.**

The Building Renovation Passport helps identify measures to enhance building resilience and outlines the expected benefits, including energy savings, reduced energy poverty, and improved comfort.





# Resilience Knowledge Hub and Decision Support Platform

**A suite of automatic alerting strategies and building monitoring systems designed to inform residents and building managers about extreme climatic events.**

Using IoT technology, the system relies on existing devices to promptly inform the population about emergencies and communicate actions to minimise risks.



# Implementation



Integration of data from local social surveys, statistical reports, satellite - imagery, and weather forecasts



Co-creation of solutions with key stakeholders across different scales



Test and deployment of physical and digital solutions in Portugal, Slovakia, and Estonia





Pilot sites



## Three Pilot sites: local stakeholder-centric approach



**Lisbon**



**Žilina**



**Tartu**

## LISBON

# Bairro da Boavista

**Location:** Lisbon, near Monsanto Forest Park


**Population:** ~1,900 residents

**Key Features:** Publicly owned and managed housing; diverse building ages, typologies, and conditions; high population density; strong community cohesion.

### Hazards & Exposure

 Energy Poverty

 Extreme heatwaves

 Flooding

 Wildfires

### Vulnerable Groups

 Low-income residents

 Individuals with limited literacy skills

 Older adults





ŽILINA

# Zástranie Neighborhood

**Location:** Žilina, Slovakia, in the foothills of Straník Mountain

**Population:** ~925 residents

**Key Features:** Suburban setting; predominantly privately owned residential housing; ageing infrastructure

## Hazards & Exposure



Landslides



Extreme heatwaves



Earthquakes



Flooding



Wildfires



Heavy Snowfalls

## Vulnerable Groups



Low-income residents



Individuals with mental and physical disabilities



Older adults



## TARTU

# Historic City Centre


**Location:** Tartu, Estonia, along the Emajõgi River

**Population:** ~6,900 residents

**Key Features:** Rich cultural and architectural heritage; dynamic urban environment.

## Hazards & Exposure

 Energy Poverty

 Heatwaves

 Coldspells

 Wildfires

## Vulnerable Groups

 Low-income residents

 Older adults

 War Refugees

 Persons with disabilities

 Domestic violence survivors





# Local stakeholder-centric approach: current and future needs



## Hazards Exposures

Flood areas  
Heatwaves  
Cold spells  
Energy  
poverty



## Pilot Sites

Lisbon  
Žilina  
Tartu



## Vulnerable Groups

Low-income inhabitants  
Older population  
Low-literate inhabitants  
Domestic violence  
victims  
Displaced individuals due  
to climate disasters  
Ukrainian war refugees



## Perception & Perspectives

User generated  
content  
On-site interviews  
Focus groups  
Informal meetings  
E-learning activities

# RETIME EU-Sister projects and related initiatives



**SIRCULAR**





# Thank you!



RETIME – Urban Adaptation and Alert Solutions for a TIMEly (re)Action | HORIZON- CL-2023-D4-02

Co-funded by the European Union under grant agreement no. 101147113. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.