



multiclimact



Co-funded by  
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# WHAT IS MULTICLIMACT?

- Innovation Action project
- Dedicated to safeguarding Europe's built environment and people's well-being
- Against the rising threats of natural & climatic hazards
- By preventing the risks that the built environment could pose on people due to climate change



*MULTICLIMACT logo*

# WHAT ARE THE KEY FACTS?

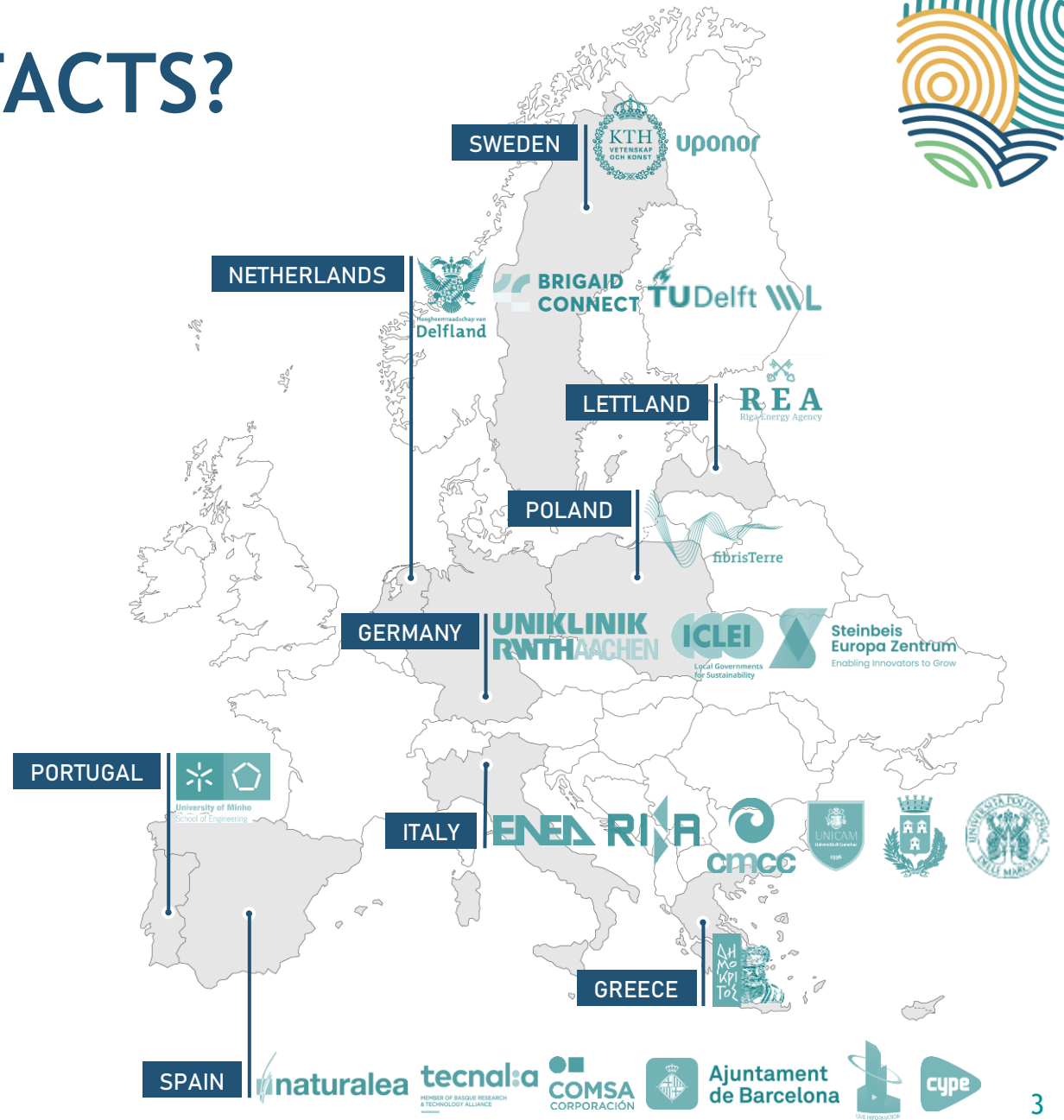


 **42**  
months

 **7,5**  
M.€ funds

 **25**  
partners

 **9**  
countries



# WHY DO WE NEED IT?

Sources are the CDP report “Protecting People and the Planet” (2022) and World Bank Group publication “Lifelines: The Resilient Infrastructure Opportunity”



## 80%

of cities world-wide reported natural & climatic hazards in 2022 & number is increasing  
– it is important to act on it



## 4\$

are returned in the future for every 1\$ invested in the past for resilient solutions  
– it is worth the investment



## 3%

of extra investments are needed to build resilience into the built environment  
– it is needed in big scale



# WHERE ARE THE DEMO SITES?

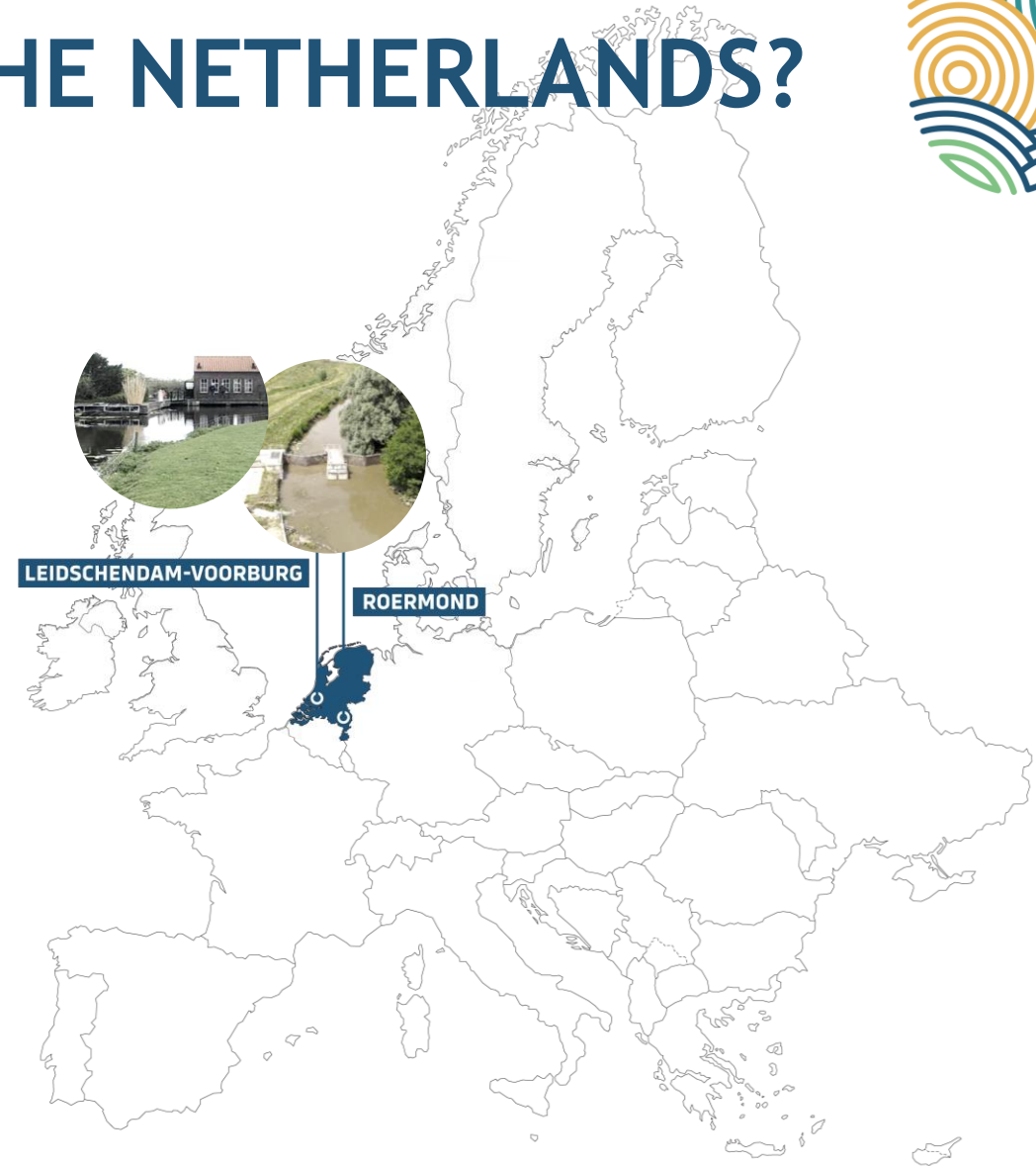
- **Netherlands:** Dike in Leidschendam-Voorburg & movable barrier in Roermond
- **Latvia:** Riga city & Central Market
- **Spain:** Barcelona city
- **Italy:** Carmelitane building in Camerino



# WHAT DO WE TEST IN THE NETHERLANDS?



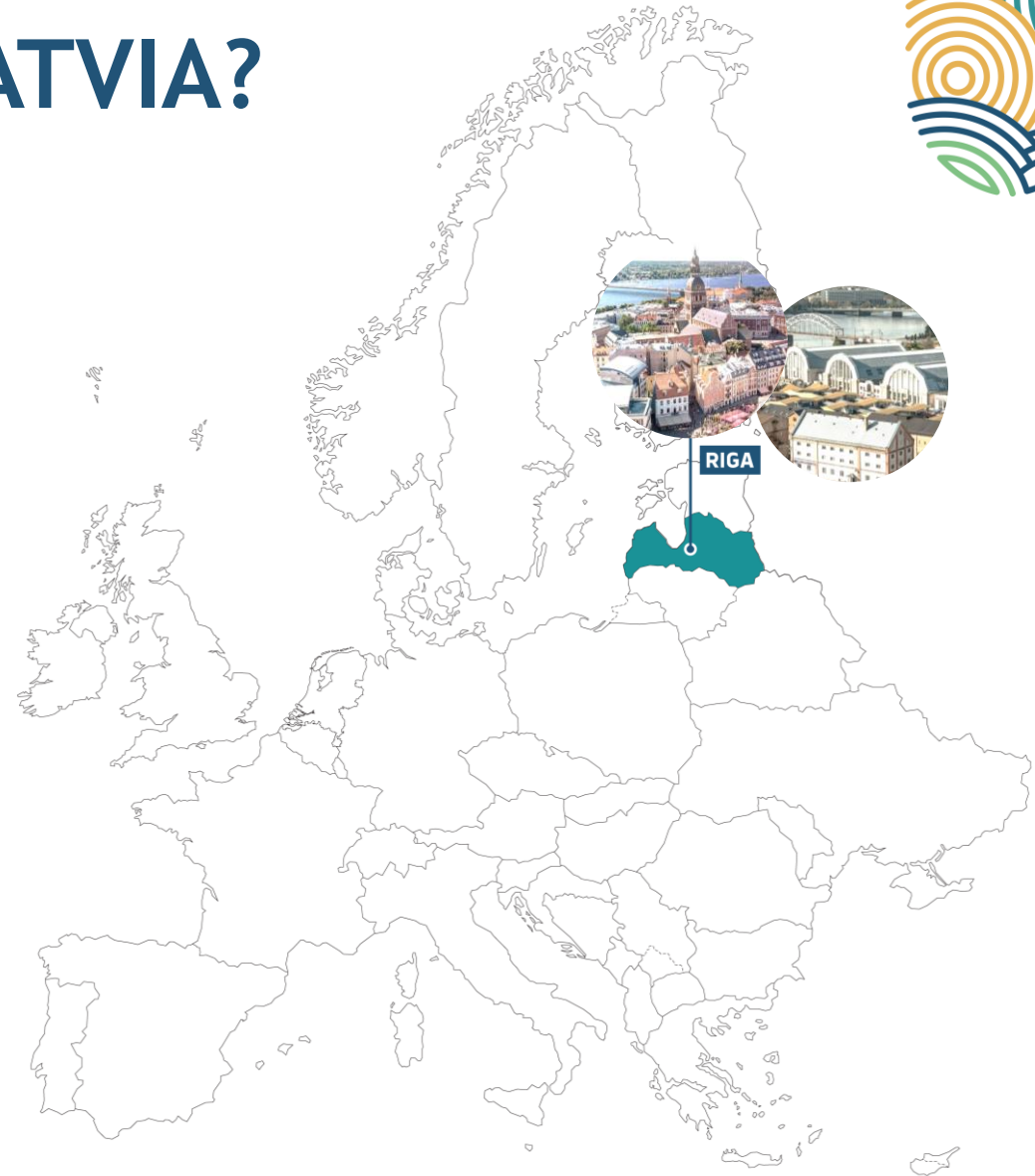
- Focus on tools for floods and drought in territorial scale
- Fiber optics flood monitoring
- Early-warning of floods



# WHAT DO WE TEST IN LATVIA?



- Focus on tools for extreme weather, heatwaves, droughts and floods in urban & building scale
- Guideline to supply chains
- Life cycle approach
- Cultural heritage protection
- Passive system for housing
- Energy solution planning





# WHAT DO WE TEST IN SPAIN?

- Focus on tools for heatwaves and floods in urban scale
- Guideline to political policies
- Recycled cool pavements
- NBS to reduce urban floods
- Energy solution planning
- Energy & heat evaluation







# WHAT DO WE TEST IN ITALY?

- Focus on tools for earthquakes, floods and heatwaves in building scale
- Guideline to thermal comfort
- Human-centeredness
- Sensorized concrete (ECCs)
- Eco-friendly mortar
- Wearable vital signs sensors
- Extreme weather prevention & damage estimation
- Environmental & structural monitoring of buildings





# WHAT DO WE WANT TO DO?



## 18

innovative tools which are reliable, easy-to-implement & cost-efficient

- 5 digital solutions
- 6 design practices
- 7 materials & technologies



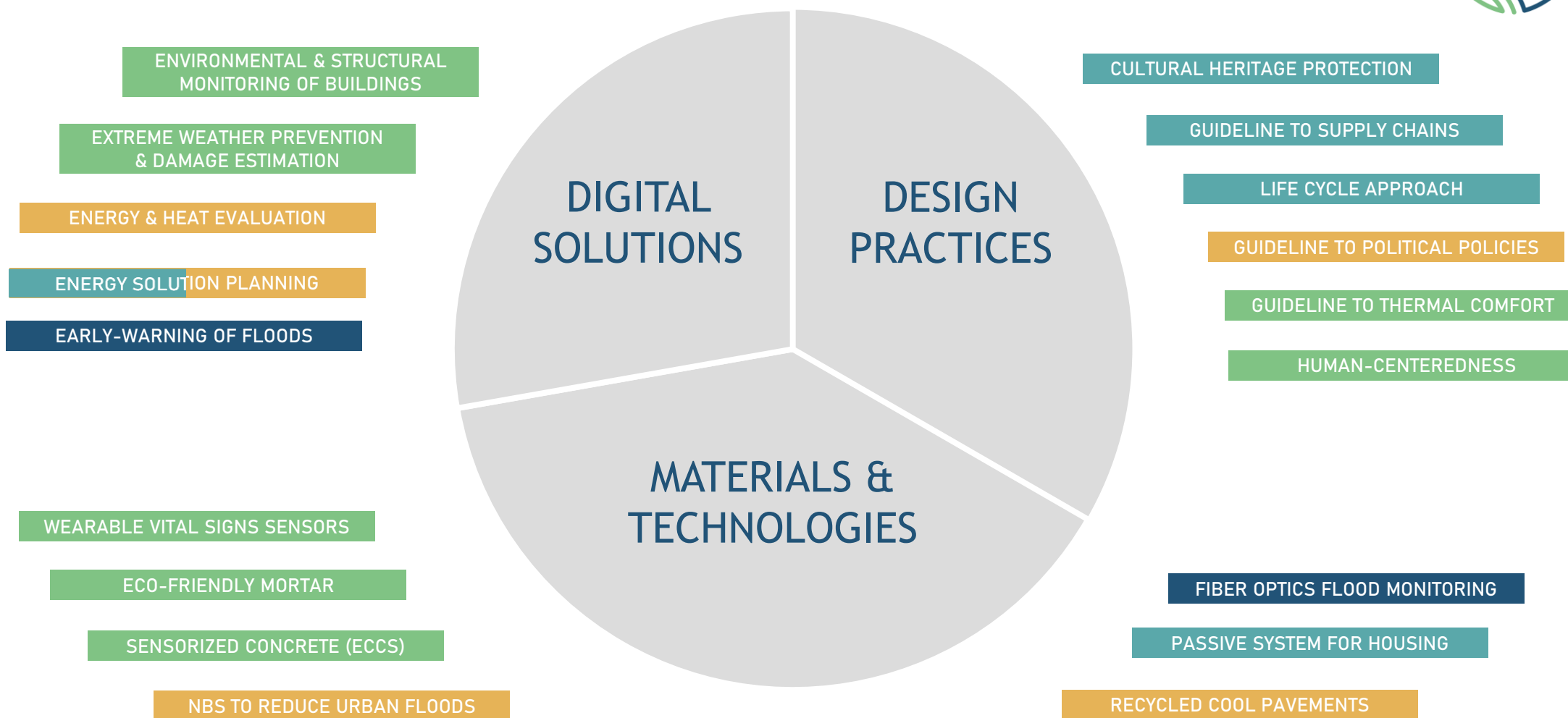
## 4

demo sites with diverse climatic conditions and potential hazards will be used to test the effectiveness of the strategies

- Netherlands
- Spain
- Latvia
- Italy



# WHAT ARE THE TOOLS?





# WHERE ARE WE NOW?



- ✓ 1st project phase completed
- ✓ 18 tools planned and designed
- ✓ 24 submitted deliverables
- ✓ 2 achieved milestones

- ✓ 3 general assemblies
- ✓ 13 attended events
- ✓ 2 clustering activity
- ✓ 2 scientific publication



# WHAT ARE THE OUTCOMES SO FAR?



## Standards

- ✓ 6 for heritage protection
- ✓ 34 for supply chains
- ✓ 16 for life cycle approach
- ✓ 44 for political policies
- ✓ 85 for energy & water
- ✓ 14 for human-centeredness



## Designs

- ✓ 3 fiber optic cables
- ✓ Co-simulation for passive systems
- ✓ 3 pavement mixtures
- ✓ 2 planted channels for floods (NBS)
- ✓ Sensing elements for the concrete
- ✓ 2 eco-friendly mortar types



# WHAT ARE THE OUTCOMES SO FAR?

## Wireframes

- ✓ For early-warning of floods (sensor, integration & presentation)
- ✓ For improving an existing energy solution planning tool
- ✓ For the heat & energy evaluation with 2 modelling tools
- ✓ For extreme weather prevention & damage estimation
- ✓ For environmental & structural monitoring of buildings

# WHAT CHALLENGES DO WE FACE?



## Data

- Collecting data on events like floods & droughts are seasonal
- Accessing quality data for risk analysis in heritage sites
- Ensuring digital tools remain accurate despite limited data



## Location

- Maintaining active engagement with local stakeholders which is impacting the project timeline
- Adapting tools to different environments & heritage regulations

# WHAT SYNERGIES ARE WE OPEN TO?



## Topics

- Cultural heritage sites
- Advanced data analytics
- Community engagement strategies
- Adapting tools in the Netherlands, Latvia, Spain and Italy
- Call/Topic HORIZON-CL5-2023-D4-02-02 & 2022-D4-02-01



## Activities

- Cluster meetings
- Presence at events
- Social Media posts
- Policy briefs
- Webinars
- Publications





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*This project has received funding from the European Union's HORIZON Innovation Actions programme under the grant agreement No. 101123538.*

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