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TURKEY in HORIZON 2020
COOPERATION. INNOVATION. COMPETITIVENESS

Technical Assistance for Turkey in Horizon 2020 Phase-II
EuropeAid/139098/IH/SER/TR

Focus Group Training 20

Istanbul, 12 October 2022

Session 1:
Topics of the Built4People Partnership (2022)

REPUBLIC OF TÜRKİYE
MINISTRY OF INDUSTRY AND TECHNOLOGY

COMPETITIVE SECTORS PROGRAMME

TÜBİTAK

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Focus Group Training 20

Dimitris Papageorgiou
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Istanbul, 12 October 2022

Fast intro to the B4P partnership & topics - Examples of B4P-relevant H2020 projects

49 candidate European Partnerships

CLUSTER 1: Health	CLUSTER 4: Digital, Industry & Space	CLUSTER 5: Climate, Energy & Mobility	CLUSTER 6: Food, Bioeconomy, Agriculture, …	EIT (KNOWLEDGE & INNOVATION COMMUNITIES)	SUPPORT TO INNOVATION ECOSYSTEMS
Innovative Health Initiative	Key Digital Technologies	Clean Hydrogen	Circular Bio-based Europe	InnoEnergy	Innovative SMEs
Global Health Partnership	Smart Networks & Services	Clean Aviation	Rescuing Biodiversity to Safeguard Life on Earth	Climate	
Transformation of health systems	High Performance Computing	Single European Sky ATM Research 3	Climate Neutral, Sustainable & Productive Blue Economy	Digital	
Chemicals risk assessment	European Metrology (Art. 185)	Europe's Rail	Water4All	Food	
ERA for Health	AI-Data-Robotics	Connected and Automated Mobility (CCAM)	Animal Health & Welfare*	Health	
Rare diseases*	Photonics	Batteries	Accelerating Farming Systems Transitions*	Raw Materials	
One-Health Anti Microbial Resistance*	Made in Europe	Zero-emission waterborne transport	Agriculture of Data*	Manufacturing	
Personalised Medicine*	Clean steel – low-carbon steelmaking	Zero-emission road transport	Safe & Sustainable Food System*	Urban Mobility	
Pandemic Preparedness* *Co-funded or co-programmed*	Processes4Planet	Built4People		Cultural and Creative Industries	
	Global competitive space systems**	Clean Energy Transition			
		Driving Urban Transitions			

CROSS-PILLARS II & III

European Open Science Cloud

- Institutionalised Partnerships (Art 185/7)
- Institutionalised Partnerships / EIT KICs
- Co-Programmed
- Co-Funded

Built4People Partnership

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- Brings together **the whole value chain** to accelerate people-centric innovation for a **sustainable built environment**

- Contributes to the **agenda-setting & thematic priorities** and helps channel the European **innovation funding** of nearly 400M€ for the built environment

B4P Objectives

- **scientific** – generate holistic innovation towards sustainability;
- **economic** – revitalise the sector through decarbonisation and sustainability transitions;
- **societal** – induce lasting behavioural change towards sustainable living.

B4P Partnership: Linkage with EU Policy Initiatives

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Towards achieving the **2030 energy targets**, leveraging on the **European Renovation Wave strategy**, the EU **Circular Economy Action Plan** and the **Affordable Housing Initiative** in line with the ambitions of the **European Green Deal Action Plan** and the new **European Bauhaus** initiative

Key Facts & Figures

HE Pillar and Cluster: Pillar II – Cluster 5 Climate, energy & mobility

Type of partnership: Co-programmed

Coordinating entity: ECTP & WGBC

Total estimated budget: EUR 780 m

EU commitments: EUR 380 m

Predecessor under H2020: Energy-efficient Buildings (EeB) cPPP

ECTP: European Construction, built environment and energy efficient building Technology Platform
WGBC: World Green Building Council
cPPP: Contractual Public-Private Partnership

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Built4People 2022 Call in figures

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- Call - HORIZON-CL5-2022-D4-02 Efficient, sustainable and inclusive energy use
- 5 topics related to graphene (1 RIA; 4 IA)
- Funding rates for IAs: 60%; 100% for non-profit
- Deadline: 24 January 2023
- Overall indicative budget: 86M€
- 12 projects to be funded (average funding: 7.17M€ per project)

Note 1: Based on Workprogramme Version Final, 22/05/2022
Note 2: Applicants should use the official call documents (including Horizon Europe Cluster 5 Workprogramme; Admissibility conditions, eligibility conditions, financial & operational capacity and exclusion, award criteria, etc. This presentation serves informative purposes.

Overview of 2022 Call Topics

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HORIZON-CL5-2022-D4-02-01

Designs, materials and solutions to improve resilience, preparedness & responsiveness of the built environment for climate adaptation

IA; end TRL6-7; 5-7.5M€/ project; 2 projects to be funded

HORIZON-CL5-2022-D4-02-02

Solutions for the sustainable, resilient, inclusive & accessible regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses

IA; end TRL6-7; 5-7.5M€/ project; 2 projects to be funded

HORIZON-CL5-2022-D4-02-03

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation

RIA; end TRL5; end TRL5; 4-5M€/ project; 4 projects to be funded

HORIZON-CL5-2022-D4-02-04

Smart-grid ready and smart-network ready buildings, acting as active utility nodes

IA; TRL7; end TRL7; 6-9M€/project; 2 projects

HORIZON-CL5-2022-D4-02-05

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs

IA; end TRL6-7; 6-9.5M€/project; 2 projects to be funded

Turkish participation in B4P-relevant H2020 projects

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- **MulHaRes**: A probabilistic decision framework for MULti-HAzard RESilience of residential building portfolios subjected to **floods** and **landslides**. MSCA-IF-2019 - Individual Fellowships. **Turkish partner**: OZYEGIN UNIVERSITESI (coordinator); https://cordis.europa.eu/project/id/893147
- **procuRE**: Pre-commercial Procurement of Breakthrough Solutions for 100% **Renewable Energy Supply** in Buildings. **Turkish partner**: Istanbul Metropolitan Municipality; https://cordis.europa.eu/project/id/963648
- **Surefit**: Sustainable Solutions for **Affordable Retrofit** of Domestic Buildings. **Turkish partner**: SOLIMPEKS ENERJI SANAYI VE TICARET AS; https://cordis.europa.eu/project/id/894511
- **e-SAFE**: Energy and **Seismic AFfordable** rEnovation solutions. Turkish partner: SAMPAS HOLDING AS; https://cordis.europa.eu/project/id/893135
- **REMOURBAN**: **REgeneration** MOdel for accelerating the smart URBAN transformation. **Turkish partners**: TEPEBASI MUNICIPALITY; DEMIR CANER; OLCSAN CAD TEKNOLOJILERI YAZILIM DONANIM DANISMANLIK SANAYI VE TICARETANONIM SIRKETI; ANADOLU UNIVERSITY https://cordis.europa.eu/project/id/646511

TÜBİTAK

Indicative H2020 projects related to B4P 2022 (1/4)

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H2020 2018-2020: Built environment, energy and climate change

- Decarbonisation
- Renovation
- Sustainable buildings
- Improved energy performance
- Resilience and sustainable reconstruction
- Nature-based solutions for carbon neutral cities
- Climate resilience of European coastal cities

Indicative H2020 projects related to B4P 2022 (1/4)

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REACH OUT

- **REACHOUT**: Resilience in Europe Through Activating City Hubs Reaching Out to Users with Triple-a Climate Adaptation Tools; RIA; 2021-05/2025
  https://cordis.europa.eu/project/id/101036599 https://reachout-cities.eu/

RESIN

- **RESIN**: Climate Resilient Cities and Infrastructures; RIA; 2015-/2018; https://cordis.europa.eu/project/id/653522
  https://resin-cities.eu/

SOCLIMPACT

- **SOCLIMPACT**: DownScaling CLImate imPACTs and decarbonisation pathways in EU islands, and enhancing socioeconomic and non-market evaluation of Climate Change for Europe, for 2050 and beyond; RIA; 2017-2021
  https://cordis.europa.eu/project/id/776661

  https://soclimpact.net/

Word Cloud of REACHOUT's Objectives

Produced in:
https://monkeylearn.com/word-cloud

Climate services that support adaptation decision-making in 7 City Hubs across Europe

Dutch National Spatial Adaptation program

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Word Cloud of

RESIN's Objectives

Produced in:

https://monkeylearn.com/word-cloud

Standardised methodologies for:

- vulnerability assessments, performance evaluations
- decision support tools on adaptation strategies

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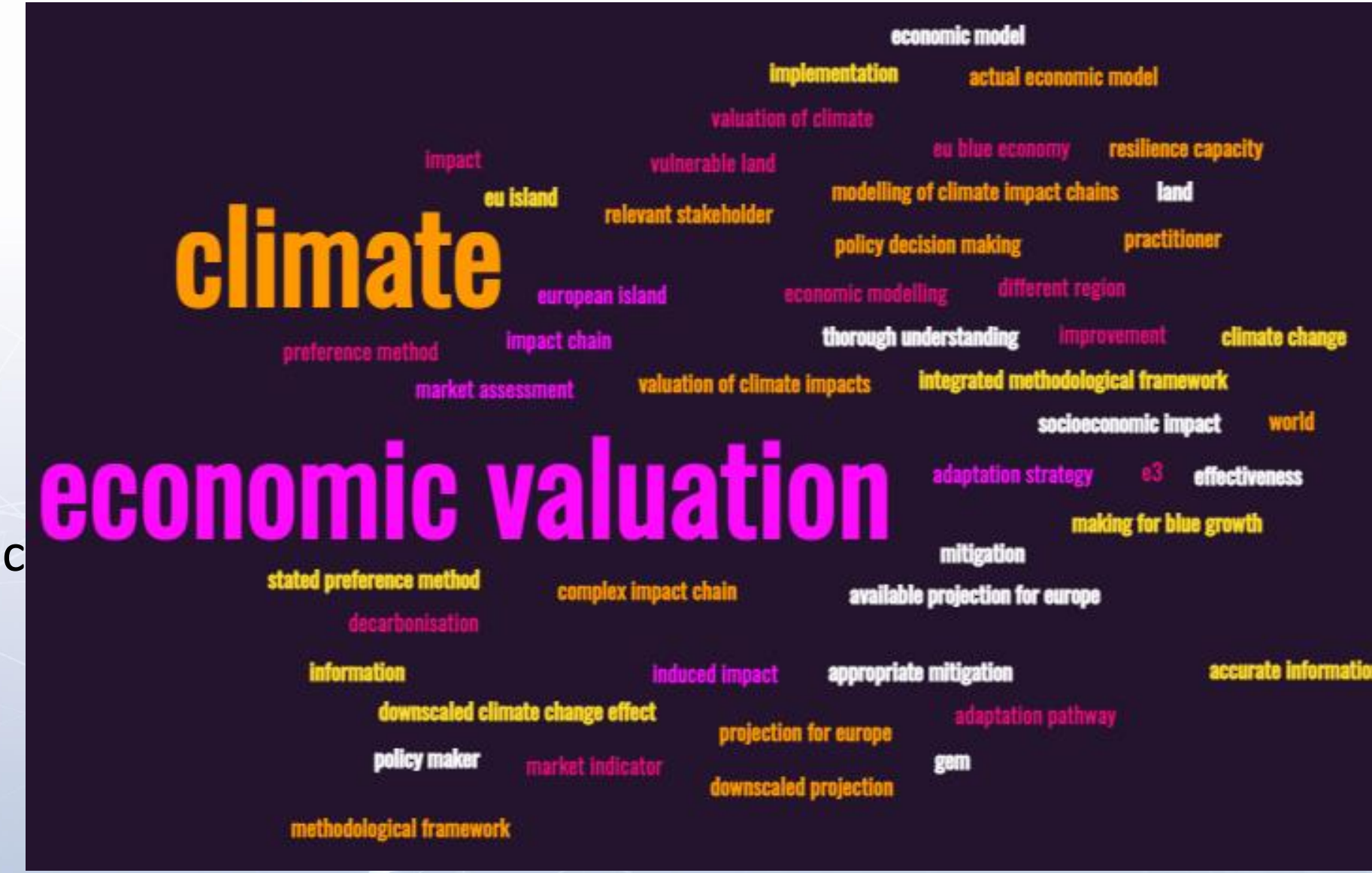
Word Cloud of **SOLIMPACT's Objectives**

Produced in:
https://monkeylearn.com/word-cloud

Modelling **downscaled** Climate Change effects and their socioeconomic impacts in European **islands** for 2030–2100

Assess corresponding decarbonisation and **adaptation pathways**



Indicative H2020 projects related to B4P 2022 (2/4)

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- **CLARITY**: Integrated Climate Adaptation Service Tools for Improving Resilience Measure Efficiency; IA; 2017-2020;

https://cordis.europa.eu/project/id/730355
https://clarity-h2020.eu/

Cloud-based climate services to calculate the effects of Climate Change-induced and -amplified hazards at the level of risk, vulnerability and impact functions

- **BRESAER**: Breakthrough solutions for adaptable envelopes for building refurbishment; RIA; 2015-2019

https://cordis.europa.eu/project/id/637186

- **IMPETUS**: Dynamic Information Management Approach for the Implementation Of Climate Resilient Adaptation Packages In European Regions; IA; 2021-2025;

https://cordis.europa.eu/project/id/101037084
https://www.impetus-project.eu/

Word Cloud of **BRESAER's Objectives**

Produced in:
https://monkeylearn.com/word-cloud

Cost-effective, adaptable and industrialized envelope for buildings refurbishment

Combined active and passive pre-fabricated solutions integrated in versatile lightweight structural mesh

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Indicative H2020 projects related to B4P 2022 (3/4)

CULTURAL-E: Climate and cultural based design and market valuable technology solutions for **Plus Energy Houses**; IA; 2019-2024; https://cordis.europa.eu/project/id/870072

Tailored solutions for effective & cost-affordable interior environmental conditions based on the concept of **regeneration** for both the outside and inside environment

- **ENABLE.EU**: Enabling the Energy Union through understanding the drivers of individual and collective energy choices in Europe; RIA; 2016-2019

https://cordis.europa.eu/project/id/727524

Define key determinants of individual and **collective energy choices** in 3 consumption areas - transportation, heating & cooling, and electricity Analysis will be based on national household and business surveys in 11 countries

- **PENNY**: Psychological, social and financial barriers to energy efficiency; RIA; 2016-2019;

https://cordis.europa.eu/project/id/723791

Improving our understanding on **behavioural mechanisms** in energy efficiency, following an interdisciplinary and broad behavioural science approach

Indicative H2020 projects related to B4P 2022 (1/4)

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- **ROCK**: Regeneration and Optimisation of Cultural heritage in creative and Knowledge cities; IA; 2017-2020; https://cordis.europa.eu/project/id/730280

Collaborative and circular systemic approach for regeneration and adaptive reuse of historic city centres

- **CIRCuIT**: Circular Construction In Regenerative Cities; IA; 2019-2023;

https://cordis.europa.eu/project/id/821201 https://www.circuit-project.eu/

Create a value chain that will allow cities to become fully smart, eco-friendly, regenerative, and circular economies

- **inteGRIDy**: Integrated Smart GRID Cross-Functional Solutions for Optimized Synergetic Energy Distribution, Utilization Storage Technologies; IA; 2017-2021

https://cordis.europa.eu/project/id/731268

A scalable Cross-Functional Platform connecting energy networks with diverse stakeholders, facilitating optimal and dynamic operation of the Distribution Grid

BRIDGE initiative: https://bridge-smart-grid-storage-systems-digital-projects.ec.europa.eu/

What to consider for a B4P partnership proposal

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- **The past**: EU funding allocated; EU funded initiatives; established R&I community;
- **The present**: EU funding allocated; Type of R&I activities to be funded;
- **Future**: 2023-2024 Workprogramme of HE CL5; What are the benefits your company/ organisation can get by entering the European Built4People partnership?

Food for thought & Q&A SESSION

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Dig deeper and better:

- Built4People Stakeholder Forum 2022 https://www.youtube.com/user/WorldGreenBuilding/videos
- Cordis DB (Collection: projects) https://cordis.europa.eu/search/en
- https://www.ectp.org/project-database-list/
- EeB project review 2021; https://www.ectp.org/fileadmin/user_upload/documents/E2B/0_EeB_PPP_Project-Reviews_Roadmaps/EeB_PPP_Project_Review_2021.pdf

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Focus Group Training 20

Dimitris Papageorgiou - *Juan M. Espeche*
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Istanbul, 12 October 2022

Built4People 2022 call topics in detail

Why is the call text so important

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- Can help to define the scope of a project
- Can define the Impact section & metrics
- Sometimes really defines the problem to be solved
- Helps to identify project gaps and potential partner roles
- Identifies potential opportunities for organisations to join consortia
- Helps to keep our project in scope
- Helps to maximise the proposal score

Cluster 5: Climate, Energy and Mobility
DESTINATION 4 – Efficient, sustainable and inclusive energy use

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Contribution to KSOs of HE Strategic Plan:

- C: Making Europe the first **digitally enabled circular, climate-neutral and sustainable economy** through the transformation of its mobility, energy, construction and production systems;
- A: Promoting an **open strategic autonomy** while preserving an open economy

Relevant **impact areas**:

- **Industrial leadership** in key and emerging technologies that work for people
- **Affordable and clean energy**
- **Circular and clean economy**

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B4P 2022 Topics

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment for climate adaptation (1/8)

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HORIZON-CL5-2022-D4-02-01

IA; TRL6-7; 5-7.5 M€/ project; 2 projects to be funded; 70 pages proposal;

Funding rate: 60% (100% for non-profit)

Eligible costs in the form of lump sum

Expected Outcome (contribute to ALL bullets)

- ✓Increased **awareness of the built environment's protective role** for people and climate adaptation in case of **disruptive events**

AND

- ✓**Mainstreamed resilience** as a key feature of the built environment across its life cycle

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (2/8)

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HORIZON-CL5-2022-D4-02-01

Outcome (continued)

- ✓ Improved **ability** of the built environment
  - ✓ to support the **preparedness and responsiveness to disruptive events** at **larger scales**
  - ✓ to contribute to the overall **quality of living and working**

AND

- ✓ **Strengthened supply chains for materials and solutions** for a resilient and climate proof built environment, adapted to local risks

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (3/8)

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Scope

Projects should:

- ✓ Deliver innovative designs, materials and solutions to improve resilience and climate proofing of the built environment (in particular new and existing **buildings**) in a **cost-effective** and **reliable** manner
- ✓ Ensure the proposed solutions **cover a broad spectrum of natural risks and disasters**, for instance natural disruptive events such as earthquakes, floods, heat waves, with a particular focus on extreme climatic events

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (4/8)

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HORIZON-CL5-2022-D4-02-01

Scope (continued)

- ✓Ensure solutions make use of natural, easy to manage, advanced, **evolutive materials and technologies** that help **combat the effects of global warming** (increased cooling demand, heat island effects, etc.) and result in **increased durability, resilience and adaptability** of buildings and infrastructures, including their foundations.
- ✓Consider **social innovation** where relevant, notably as new tools, ideas and methods leading to **active citizen engagement and resilience**, and as drivers of social change, social ownership, and new social practices
- ✓Develop & deploy digital & interoperable tools for monitoring, detection of, & response to critical situations (e.g. evacuation of people & first responders)

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (5/8)

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Scope (continued)

- ✓Develop and deploy **digital and interoperable tools for monitoring, detection of, and response to critical situations** (e.g. evacuation of people and first responders)
- ✓Rely, where relevant, on self-sensing and adaptable materials, and materials with embedded sensors and actuators
- ✓Include **built environment concepts that are self-sustained** for a certain period of time – including off-grid electricity supply, green infrastructure and water purification and / or rain water provision in buildings

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (6/8)

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Scope (continued)

- ✓Investigate whether and how the proposed approaches could **apply to cultural heritage buildings** across different typologies and geographic conditions, also including innovations in business models and ensuring holistic integration of disciplines across the value chain
- ✓Validate the proposed solutions for a set of **locations that is coherent with the risks and disasters considered in the proposal**, ensuring a high degree of awareness and **involvement of supply chains**
- ✓**Demonstrate** that the proposed solutions **improve the protection of people when experiencing disruptive events** and contribute to enhance resilience and climate proofing at a larger scale (e.g. district, city, energy system)

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (7/8)

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HORIZON-CL5-2022-D4-02-01

Scope (continued)

- ✓Demonstrate that the proposed solutions contribute to **improving the overall quality of living and working** in the buildings (e.g. in terms of accessibility, comfort and well-being)
- ✓Demonstrate cost-effective **improvement of the energy performance**, **reducing the cost** of the interventions compared to traditional methods, as well as the energy related operational costs after the renovation
- ✓Demonstrate that the proposed solutions **improve the use of relevant data** such as weather forecasts or catastrophe warnings by monitoring and management systems in the built environment (e.g. to launch automatic emergency protocols to warn and protect buildings users)

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment … (8/8)

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Scope (continued)

- ✓Lead at least **3 large-scale demonstration** of the solutions in diverse geographical areas, with various local environmental, social, and economic conditions.

Clustering and cooperation with other relevant projects is strongly encouraged; e.g. with the Horizon Europe Partnership on ‘Driving urban transitions’

Requirement: effective contribution of SSH disciplines and the involvement of SSH experts, institutions & relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Projects are encouraged to define and implement ambitious international outreach and cooperation strategies

Designs, materials & solutions to improve resilience, preparedness & responsiveness of the built environment …

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Topic analysis

- ✓ Intervention level: buildings
- ✓ Only 2 large projects to be funded: priority to join potential winning proposals
- ✓ Local ecosystems are needed around each demo site (can you provide one?)
- ✓ The application of a wide range of materials, solutions, ICT tools, etc. is required

Indicative strategies

- ? Identify advanced demo sites and then select suitable technologies / solutions
- ? Driven by geographies and/or application areas
- ? A mix of advanced cities/ neighbourhoods and less mature

Concept ideas

- ✓ Target segment: e.g. coastal cities with a record on natural disasters
- ✓ Address combined occurrence of various natural hazards / weather events

Solutions for the sustainable, resilient, inclusive & accessible regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (1/8)

HORIZON-CL5-2022-D4-02-02

IA; TRL6-7; 5-7.5 M€/ project; 2 projects to be funded; 70 pages proposal

Funding rate: 60% (100% for non-profit)

Expected Outcome (contribute to ALL bullets)

- ✓Lasting behavioural change of people and economic actors towards lower carbon footprint lifestyles and businesses

AND

- ✓Mainstreamed participatory planning processes and interaction with all relevant stakeholder groups in city planning

AND

- ✓More sustainable, low emission, inclusive and affordable neighbourhoods and built environment

Solutions for the sustainable, resilient, inclusive & accessible regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (2/8)

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Outcome (continued)

- ✓ Improved accessibility of neighbourhoods through building-integrated, sustainable mobility solutions

AND

- ✓Extended application of digital applications and tools to ease decision-making processes in complex stakeholder structures

AND

- ✓Raised awareness and increased capacity of citizens on participatory processes for enhanced sustainability and environmental performance

Solutions for the sustainable, resilient, inclusive & accessible regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (3/8)

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Outcome (continued)

- ✓ Increased well-being and economic prosperity of citizens in a low carbon, sustainable built environment by ensuring high indoor and outdoor quality, and affordability of renovation solutions

AND

- ✓Increased attractiveness of deep renovation through new regeneration and smart growth models for sustainable living

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (4/8)

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Scope

Projects should:

- ✓Deliver innovative methods and solutions for the regeneration of neighbourhoods, with due consideration of, inter alia, energy efficiency, sustainability, resilience, health, inclusiveness and accessibility, based on participatory planning processes and innovative decision-making procedures and digital applications
- ✓Ensure the proposed solutions allow to identify and integrate local sources of raw materials for building renovation in built environment planning scenarios

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (5/8)

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Scope (continued)

- ✓Ensure the proposed solutions include **new evidence-based approaches** (e.g. strategies and digital tools) to help **quantify the benefits** of integrated built environment transformation aimed at **climate neutrality**
- ✓Ensure the proposed solutions allow for involving all stakeholder groups, including inter alia **elderly people**, those with reduced mobility and **persons with disabilities**, and households affected by **energy poverty**, also seeking to address **gentrification issues** in neighbourhoods affected by energy poverty
- ✓…

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (6/8)

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TURKEY in HORIZON 2020

HORIZON-CL5-2022-D4-02-01

Scope (continued)

- ✓Ensure the proposed solutions include concepts for local renewable energy generation and consumption integrated at building and district level in combination with multi-modal mobility concepts targeted to both urban and rural neighbourhoods
- ✓Ensure the proposed solutions contribute to optimising energy balancing at local level (e.g. thanks to energy sharing platforms and services connected to local micro-grids and / or virtual energy markets, including demand response and decision-support systems and block chain applications)

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses(7/8)

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TURKEY in HORIZON 2020

HORIZON-CL5-2022-D4-02-02

Scope (continued)

- ✓Ensure the proposed solutions comply with the principles of circular economy, favouring urban mining, efficient use of resources, durability, reuse and recyclability.
- ✓Ensure the proposed solutions are developed taking into account local environmental, social, and economic conditions and are relevant for the different geographical locations targeted.
- ✓Include concepts for energy circularity such as waste heat recovery from local industries (or other sources) and use in nearby buildings or in low-temperature district networks and, valorisation of by-products and residues (e.g. from local agro-food industry) for energy or other uses.

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses (7/8)

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HORIZON-CL5-2022-D4-02-02

Scope (continued)

- ✓Investigate whether and how the proposed approaches could apply to cultural heritage buildings.
- ✓Lead at least 3 large-scale demonstrations of the solutions in diverse geographical areas, with various local environmental, social, and economic conditions.
- ✓Consider social innovation where relevant and in the case where the proposed solutions are at the socio-technical interface and require social change, new social practices, social ownership or market uptake.

Solutions for the … regeneration of neighbourhoods enabling low carbon footprint lifestyles and businesses(9/9)

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HORIZON-CL5-2022-D4-02-02

Scope (continued)

- ✓ Facilitate awareness raising and capacity building of citizens and relevant stakeholders (e.g. citizen associations, local authorities, businesses from the relevant sectors) on the principles and multi-benefits of sustainable, inclusive and accessible built environment.

Clustering and cooperation with other relevant projects is strongly encouraged; e.g. with the European Partnership on ‘Driving urban transitions’.

Requirement for: effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities

Solutions for the sustainable, resilient, inclusive & accessible regeneration of neighbourhoods …

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HORIZON-CL5-2022-D4-02-02

Topic analysis

- ✓Intervention level: neighbourhood
- ✓Only 2 large projects to be funded: priority to join potential wining proposals
- ✓Demo sites with already active citizen engagement/ civil society / energy communities
- ✓The application of a wide range of solutions is required

Indicative strategies

- ? Identify demo sites and then select suitable technologies / solutions (or vice versa)
- ? Starting point: the vision for low carbon footprint lifestyle / businesses
- ? A mix of advanced neighbourhoods and less advanced

Indicative concept ideas

- ✓Incentives for just regeneration to address gentrification issues
- ✓…

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (1/7)

HORIZON-CL5-2022-D4-02-03

- ✓ **RIA**
- ✓ **TRL5**
- ✓ **4-5 M€/ project**
- ✓ **4 projects to be funded**
- ✓ **45 pages proposal**

Expected Outcome (contribute to ALL bullets)

- ✓ Increased availability and enhanced overall performance, including with regard to cost-effectiveness, of solutions applicable to the reliable and respectful historical renovation of heritage buildings, preserving their architectural and cultural identity.
- ✓ Demonstrated potential of sustainable, energy and resource-efficient historical renovation of heritage buildings.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (2/7)

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HORIZON-CL5-2022-D4-02-03

Expected Outcome (contribute to ALL bullets)

- ✓Better protection of the value and long-term inclusiveness, accessibility and usability of cultural heritage sites.
- ✓More cost-effective and less disruptive modernisation and preservation of the heritage built environment.
- ✓Enhanced prevention and monitoring of the heritage built environment.
- ✓More important role of the cultural heritage in deployment, showcasing and replication of solutions for a sustainable built environment.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (3/7)

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HORIZON-CL5-2022-D4-02-03

Scope - The proposal should:

- ✓ Deliver technically and socially innovative, sustainable, energy and resource-efficient solutions for the cost-effective improvement and preservation of cultural heritage built environment along all relevant aspects: inclusiveness, accessibility, resilience, environmental and energy performance.
- ✓ Ensure the proposed solutions cover all relevant aspects of the heritage built environment's life cycle: design, renovation works, operation, monitoring and management, and maintenance.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (4/7)

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HORIZON-CL5-2022-D4-02-03

Scope - The proposal should:

- ✓Ensure the proposed solutions allow to maintain the heritage value (e.g. artistic, historic, archaeological, social and scientific) of targeted sites, while improving access and comfort of users and visitors, and reducing maintenance and operational costs.
- ✓Ensure, where relevant, that the proposed solutions rely on (adapted) historical or traditional construction techniques and materials for sustainable restoration.
- ✓Ensure the proposed solutions include natural low maintenance as well as advanced renovation techniques for high quality design and construction, including new digital technologies, while preserving the cultural value of the targeted sites.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (5/7)

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HORIZON-CL5-2022-D4-02-03

Scope - The proposal should:

- ✓Ensure the proposed solutions contribute to facilitate the integration renewable energy sources while respecting the aesthetic and cultural identity of the targeted buildings.
- ✓Ensure the proposed solutions contribute to the cost-effective improvement of the energy performance, also reducing the cost of the interventions compared to traditional methods.
- ✓Ensure the involvement of relevant stakeholder groups (e.g. civil society organisations, associations, cultural heritage stakeholders such as cultural heritage protection bodies) and citizens' acceptance thanks to co-creation processes and socially innovative ideas.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (6/7)

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HORIZON-CL5-2022-D4-02-03

Scope - The proposal should:

- ✓Deliver and demonstrate decision-support tools for low-disruptive, optimal renovation of heritage built environment to enhance sustainability.
- ✓Clustering and cooperation with other relevant projects is strongly encouraged; e.g. with the Horizon Europe Partnership on ‘Driving urban transitions’.
- ✓This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.
- ✓This topic should consider social innovation as driver of social change, new social practices, social ownership and/or market uptake.

Sustainable and resource-efficient solutions for an open, accessible, inclusive, resilient and low-emission cultural heritage: prevention, monitoring, management, maintenance, and renovation (7/7)

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HORIZON-CL5-2022-D4-02-03

Topic analysis

- ✓Pilots including buildings with diverse cultural heritage characteristics
- ✓Multi-disciplinary concept and consortium
- ✓ Innovative RES integration such as BIPV
- ✓Multiple ICT solutions integration to cover the scope
- ✓Particular attention on SSH, Co-creation, Participatory processes, etc
- ✓It’s a RIA, demonstration can be lab testbeds and real pilots
- ✓Hot topics: Building Information Modeling (BIM), Digital Twins, predictive maintenance

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (1/7)

Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir
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TURKEY in HORIZON 2020

HORIZON-CL5-2022-D4-02-04

- ✓ **IA**
- ✓ **TRL 7**
- ✓ **6 - 9 M€/ project**
- ✓ **2 - 3 projects to be funded (18 M€ total Budget)**
- ✓ **70 pages proposal**
- ✓ **The funding rate is up to 60% of the eligible costs (for profit entities), 100% for nonprofit entities**

Expected Outcome (*Project results are expected to contribute to all of the following expected outcomes from the grid and to adapt their behaviour accordingly***)**

✓Improved interoperability and synergies between electricity and other energy carriers, and with other relevant non-energy sectors (e.g. mobility), supported by buildings, contribution to energy system integration at building's level.

✓Improved competitiveness of buildings as flexibility assets for grid and network management.

REPUBLIC OF TÜRKİYE MINISTRY OF INDUSTRY AND TECHNOLOGY

COMPETITIVE SECTORS PROGRAMME

TÜBİTAK

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (2/7)

Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir
This project is co-funded by the European Union and the Republic of Türkiye

Scope

- ✓Deliver building-to-grid integration solutions that are cost-effective, simple to use and easy to install and maintain, and are applicable to both new and existing buildings.
- ✓Enhance interoperability and synergies between buildings and grids, electricity and other energy carriers (e.g. district heating networks, hydrogen, etc.) and where relevant, other relevant sectors (e.g. e-mobility).
- ✓Enhance synergies between on-site energy storage and on-site renewable energy sources.

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (3/7)

Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından finanse edilmektedir
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Scope

- ✓Contribute to enhance interoperability in the modelling of energy grids and buildings.
- ✓Ensure the proposed solutions include ‘big data’ applications for real-time management and predictive maintenance of technical building systems.
- ✓Ensure the proposed solutions minimise potential negative impacts neither on the satisfaction of building users (e.g. in relation to comfort or accessibility) nor on the potential of circular material flows during the building’s life cycle, and maximise potential benefits (e.g. energy costs savings and health).

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (4/7)

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TURKEY in HORIZON 2020

HORIZON-CL5-2022-D4-02-04

Scope

- ✓Ensure the proposed solutions give access to accessible, inclusive, reliable and user-friendly tools with limited maintenance needs and, to relevant building (and grid / network) data for interested stakeholders (e.g. facility managers).
- ✓Assess the contribution of proposed solutions to the enhancement of smart readiness of buildings as rated by the smart readiness indicator under Directive 2010/31/EU.
- ✓Where relevant, rely on advanced monitoring and management solutions such as those that integrate digital models / BIM with energy modelling and simulation at building level and district level.

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (5/7)

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HORIZON-CL5-2022-D4-02-04

Scope

- ✓Implement and demonstrate innovative and competitive balancing, storage and generation services in buildings, while maximising building users' and occupants' health, comfort and satisfaction.
- ✓Demonstrate cost-effectiveness and economic viability of the proposed solutions and underlying business models for both consumers / end-users and the economic actors involved.
- ✓Demonstrate the use of large-scale interoperable platforms that bring together different actors and sectors (ESCOs, aggregators, DSOs, etc.) to exchange data and develop services.

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (6/7)

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Scope

- ✓Seek to involve major European innovators, including social innovators, in relevant fields (demand response, communications, smart appliances, building services, facility management, energy services, etc.) with limited experience of Horizon 2020.
- ✓Clustering and cooperation with relevant projects is strongly encouraged; e.g. with the European Partnership on 'Driving urban transitions'.
- ✓The selected projects are expected to contribute to relevant BRIDGE[1] activities, in particular with respect to data exchange and interoperability.

Smart-grid ready and smart-network ready buildings, acting as active utility nodes (7/7)

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HORIZON-CL5-2022-D4-02-04

Topic analysis

- ✓Unlocking demand response potential of buildings
- ✓De-risk the implementation through simulation and emulation tools
- ✓Platform to optimize loads consumption, assets generation, storage, carrier conversion and grid support
- ✓Work on the standardization of the interface of DR for DSOs, aggregators, flex providers
- ✓Innovative SMEs on the technical side are required (Voltalis, Bamboo energy, etc) and on the SSH side (Duneworks, TRAZA, etc)
- ✓Well know research center or University in the field of energy optimization algorithms developments (Leuven, TEKNIKER, etc)

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (1/7)

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HORIZON-CL5-2022-D4-02-05

- ✓ **IA**
- ✓ **TRL 6 - 7**
- ✓ **6 – 9.5 M€/ project**
- ✓ **2 - 3 projects to be funded (18 M€ total Budget)**
- ✓ **70 pages proposal**
- ✓ **The funding rate is up to 60% of the eligible costs (for profit entities), 100% for nonprofit entities**

Expected Outcome (contribute to ALL bullets)

- ✓ Increased and more traceable reduction of the GHG emissions of buildings in design, construction, renovation, operation and end of life.
- ✓ Faster market uptake of design solutions, materials, products, techniques and business models that are demonstrated to reduce significantly building related life-cycle costs and impacts, including whole life emissions, compared to current building completions.
- ✓ Main streamed affordable high life-cycle performance, and improved circularity of buildings in construction and renovation.

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (2/7)

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HORIZON-CL5-2022-D4-02-05

Scope - The proposal should:

- ✓ Demonstrate innovative design, construction and renovation methods, design and technology solutions that minimise the overall life-cycle environmental impact, reducing energy consumption and carbon footprint of the built environment across the life cycle, from construction to end of life thanks to, inter alia, applying circularity principles throughout the design and construction process, flexible use and lifecycle extension by design, design for deconstruction, disassembly and reassembly, integration of waste, reused, recycled, upcycled and bio-based materials and components, optimisation of design, construction and operation by means of digital tools.

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (3/7)

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HORIZON-CL5-2022-D4-02-05

Scope - The proposal should:

- ✓ Deliver scalable full building demonstrations (both new and renovation) with validated performance measurements based on appropriate Level(s) indicators, demonstrating that the proposed methods and technology solutions optimise the use of energy and resources, and minimise the emissions of CO2 and other air pollutants across all phases of the life cycle, including construction and renovation works, and operation.

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (4/7)

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HORIZON-CL5-2022-D4-02-05

Scope - The proposal should:

- ✓Integrate the use of low embodied carbon products and solutions, including those that are locally sourced and bio-based with low carbon impact and capturing / storing CO2, selected based on modelling of their performance in terms of (inter alia) insulating, cooling, acoustic and hygrometric performance, ageing patterns, potential for deconstruction and/or reuse at end of life, and potential for automated / mechanised deployment.
- ✓Identify and integrate local sources of reused or recycled construction products and secondary raw materials for building renovation in urban and rural planning scenarios.

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (5/7)

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HORIZON-CL5-2022-D4-02-05

Scope - The proposal should:

- ✓Where relevant, investigate whether and how the proposed approaches could apply to cultural heritage buildings.
- ✓Seek to ensure from the design phase that the project is developed with a view to integrate its results/deliverables under a digital building logbook.
- ✓Deploy advanced, market-ready prefabs and multifunctional materials and components with optimal recycling and re-using potential (e.g. through new designs enabling the re-use) and optimal performance across relevant areas (energy, durability, safety and protection against fire).

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (6/7)

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HORIZON-CL5-2022-D4-02-05

Scope - The proposal should:

- ✓Demonstrate innovative solutions for optimal design, construction, operation and maintenance of sustainable buildings, including efficient technical building systems, automation and control, digital building logbooks, digital twins and other tools.
- ✓Demonstrate the solutions in diverse geographical areas, with various local environmental, social, and economic conditions.
- ✓Clustering and cooperation with other relevant projects is strongly encouraged; e.g. with the Horizon Europe Partnership on ‘Driving urban transitions’.

More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (7/7)

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HORIZON-CL5-2022-D4-02-05

Topic Analysis:

- ✓Cradle to Cradle approach, circular economy
- ✓Multi-sided sustainable business models to support the market uptake
- ✓Crowdfunding-Lending financing mechanisims
- ✓Whole construction value chain should be involved in the consortium
- ✓Pilots should include building in different life cycle situation to demonstrate all the proposed solutions (design, operation, renovation, end of life)
- ✓Propose portfolio of tools and solutions to make the Project scalable and replicable accross the EU

Food for thought & Q&A SESSION

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Extra topics / Funding opportunities

- ❑ EIC Pathfinder
- ❑ EIC-Transition
- ❑ HE Twinning (excellence hubs)
- ❑ ERC
- ❑ Marie Curie

CL5 Workprogramme 2023-2024 (draft version: https://sciencebusiness.net/sites/default/files/inline-files/HORIZON-CL5.pdf)


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Teşekkür ederim!
Thank you!

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