Universities
Informal
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Network

UnILiON BROKERAGE EVENT

26 th January 2026, 11:00-13:30 CET

HORIZON EUROPE

Cluster 2

Culture, Creativity and Inclusive Society

Universidad Rey Juan Carlos
Universidad de Alcalá

Politecnico di Torino

Addysg Uwch Cymru Brwsel
Welsh Higher Education Brussels

LULEÅ TEKNISKA UNIVERSITET

ELTE EÖTVÖS LORÁND UNIVERSITY

CORVINUS UNIVERSITY of BUDAPEST

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Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

CLUSTER 2: CULTURE, CREATIVITY AND INCLUSIVE SOCIETY

Speaker name (edit)

Organisation (edit)

UnILiON Brokerage Event under Horizon Europe Cluster 2 calls on Culture, Creativity and Inclusive Society I DATE

SHORT INTRODUCTION OF YOUR ORGANISATION

- INTROMAC is a public Research Institute of the Extremadura Regional Government (Spain).

- The center is aimed to improve the competitiveness of companies within the energy-efficient building sector through R&D and innovation activities.

- Historical Heritage , Energy Efficiency, Sustainability, New/ improved materials and structures and Industrial Processes optimization, relying upon specialized researchers and leading testing facilities.

Experimental Infrastructure EDEACICE

INTROMAC *manages the Centre for Innovation and Quality of Buildings* ***EDEA-CICE****, consisting of experimental infrastructure & 2 real scale social house prototypes.*

Expertise (of your Institution/Company/University/Regional Authority/ Research Centre, NGO, Other)

ROLE AS A PARTNER IN EUROPE PROJETCS

- **Historical Heritage Conservation:** Conservation protocols through monitoring, digitisation, artificial intelligence, non-destructive techniques, provenance of materials, historic quarries.

- **EU Pilot Demonstrations:** Developing clean, sustainable production of feedstocks from end-of-life products.

- **Technical Optimization:** Advancing processing, recycling, and recovery schemes for complex primary and secondary resources.

- **Resource Mapping:** Identifying future supply of secondary raw materials using harmonized UNFC data classification.

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EXPERTISE

- **POCTEP 0274_HEPRESTONE_4_E.** Preventive management of built heritage to protect it from climate change through the promotion of sustainable and inclusive tourism.

- **POCTEP 0083_FEENERT_4_E.** Promoting energy efficiency in traditional public buildings in the EUROACE cross-border area.

- **ReNaturalNZEB:** Recycled and Natural Materials and Products to develop nearly zero energy buildings with low carbon footprint. ’.

- **POCTEP 0318_RITECA_4_E.** Diagnosis and durability in construction materials of current and historical heritage (Cross-Border Research Network of Extremadura, Centre and Alentejo).

- **EDEA-RENOV:** Development of Energy Efficiency in Architecture: Energy Renovation, Innovation and ICTs. Life+ 09’. *Awarded as Best LIFE-Environment/ Information Projects 2015*.

- **EDEA:** Experimental Demonstrators on Energy and Architecture. Life+ 07’. *Awarded as Best LIFE-Environment/ Information Projects 2013*.

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Profile you are seeking and why

HORIZON-CL2-2027-01-HERITAGE-03: CRAFTING ROUTES TO A CIRCULAR ECONOMY

IDENTIFIED WEAKNESS (GAP)

Standard restoration materials often rely on extracting scarce raw materials (original ornamental rocks, natural hydraulic lime, specific sands) or use synthetic additives with a high carbon footprint. There is a lack of "Circular Heritage Materials" that valorize industrial or agricultural waste (secondary raw materials) to create effective restoration products. Furthermore, architects fear using these new eco-materials due to a lack of data on their long-term compatibility with historical substrates..

OUR KNOWLEDGE & TECHNICAL CAPACITY

The technical capacity focuses on engineering the next generation of Circular Restoration Materials.
-Circular Formulation: Expertise is applied to design advanced compatible mortars and consolidants by upcycling waste (e.g., brick dust, ornamental rock waste) to replace virgin raw materials without compromising quality.
-Compatibility Validation: These new materials are fully characterized to prove they match the porosity and mechanics of the historical stone (breathability), ensuring higher safety than standard cement.
-LCA & Norms: Life Cycle Assessment (LCA) is performed to quantify the CO2 footprint reduction, helping to define the technical standards for their market introduction

Profile you are seeking and why

HORIZON-CL2-2026-01-HERITAGE-07: PREVENTING AND FIGHTING ILLICIT TRAFFICKING OF CULTURAL GOODS

IDENTIFIED WEAKNESS (GAP)

Determining the provenance of seized artifacts is difficult due to the lack of robust scientific methods legally accepted across the EU. Visual inspection is insufficient to identify the geological origin. There is a specific need for geochemical and petrographic fingerprinting that can irrefutably link an object to its original supply zone (quarry) to detect smuggling routes.

OUR KNOWLEDGE & TECHNICAL CAPACITY

The Centre acts as the forensic material authority:

Provenance Tracing: Advanced Geochemical and Petrographic techniques (e.g., thin-section microscopy, trace element analysis) are applied to analyze the mineralogical DNA of the artifact.

Supply Zone Identification: By comparing the artifact's signature with geological databases, the exact quarry or supply zone is identified. This provides scientifically validated evidence of origin, supporting law enforcement in proving illicit extraction.

Profile you are seeking and why

HORIZON-CL2-2027-01-HERITAGE-06: FUTURE-PROOFING SUSTAINABLE CULTURAL TOURISM

IDENTIFIED WEAKNESS (GAP)

Sites opened to mass tourism suffer accelerated degradation. Managers lack tools to monitor structural safety in real-time and often use repair materials that fail quickly under high footfall, without measuring the environmental cost of constant repairs.

OUR KNOWLEDGE & TECHNICAL CAPACITY

Safe and sustainable tourism is enabled through a scientific and technical layer:
-NDT Monitoring: Structural health is monitored using **NDT sensors** under tourist load to ensure visitor safety.
-Advanced Materials: High-durability, breathable coatings/floors are formulated and characterized, specifically designed to withstand visitor traffic.
-LCA Integration: The environmental footprint of maintenance strategies is calculated to certify the site as truly "Sustainable."

Profile you are seeking and why

HORIZON-CL2-2027-01-HERITAGE-04: CULTURE, HERITAGE AND CREATIVE INDUSTRIES FOR HEALTH AND WELL- BEING

IDENTIFIED WEAKNESS (GAP)

Heritage buildings are often damp and cold ("Sick Building Syndrome"). Standard insulation is invasive. There is a lack of passive material solutions that improve indoor health (humidity/temperature) without damaging the historic structure.

OUR KNOWLEDGE & TECHNICAL CAPACITY

The proposal offers expertise in "Health-Centric Material Engineering":
-Material Innovation: Advanced eco-mortars (insulating/hygroscopic) are developed to naturally regulate indoor humidity and temperature.
-NDT Verification: Thermography and Moisture Sensors (NDT) are employed to scientifically prove that the new material is efficient and chemically compatible, ensuring improved human comfort without causing pathology in the wall.

Profile you are seeking and why

HORIZON-CL2-2027-01-TRANSFO-01: IMPACT OF ACCESS TO NATURE-POSITIVE ENVIRONMENTS IN URBAN AND PERI-URBAN SETTINGS

IDENTIFIED WEAKNESS (GAP)

Historic urban centers suffer from heat and flooding due to impermeable sealed surfaces. Standard "green" concrete solutions look alien in a historical context. Architects need paving that performs like nature but looks historical.

OUR KNOWLEDGE & TECHNICAL CAPACITY

Technical expertise in porous materials is transferred to the historic urban context:
Material Engineering: Permeable paving mixtures are designed using historical aggregates/waste to mimic the aesthetics of the old city.
Performance Testing: Hydraulic capacity (drainage) and mechanical strength are characterized to prove the reduction of the Urban Heat Island effect while preserving the heritage landscape.

Profile you are seeking and why

HORIZON-CL2-2027-01-HERITAGE-08: SAFEGUARDING & TRANSMISSION OF INTANGIBLE CULTURAL HERITAGE

IDENTIFIED WEAKNESS (GAP)

Traditional craftsmanship is facing a dual loss. First, the specific "recipe" (mix proportions) of mortars and ceramics is lost as oral transmission fades. Second, the knowledge regarding the **historical supply zones** (quarries, sand pits) is forgotten. Without knowing the exact chemical composition AND the geological origin of the raw materials, it is impossible to faithfully replicate the craft or understand the historical trade routes.

OUR KNOWLEDGE & TECHNICAL CAPACITY

The Centre applies a holistic scientific approach to recover the "lost knowledge" of artisans:
-Reverse Engineering (The Technique): Advanced characterization (SEM/XRD) is used to analyze historical samples and decode the exact manufacturing "recipe" (binder-to-aggregate ratio, additives).
-Provenance Tracing (The Source): Geochemical and Petrographic techniques are employed to trace the raw materials back to their original supply zones. This identifies exactly where the artisans sourced their stone or sand.
-Scientific Codification: This combined data (technique + source) is translated into technical standards, ensuring the craft can be accurately taught and physically replicated by future generations using the correct materials.

Profile you are seeking and why

HORIZON-CL2-2026-01-TRANSFO-10: FOSTERING COOPERATION AND INTEGRATION BETWEEN SSH AND STEM RESEARCH AND INNOVATION IN THE EU

IDENTIFIED WEAKNESS (GAP)

Heritage projects often fail because Humanities (SSH) and Engineering (STEM) work in silos. There is a lack of integrated methodologies where scientific data (materials, NDT) directly informs historical interpretation or social impact.

OUR KNOWLEDGE & TECHNICAL CAPACITY

A perfect SSH-STEM symbiosis is demonstrated through the Centre's workflow.
A methodology is proposed where **Material Science (Characterization), Engineering (NDT/Materials), and Sustainability (LCA)** are integrated into the archaeological/social workflow from the start, proving that hard science is necessary to effectively solve social and historical challenges

CONTACT DETAILS

María Isabel Mota López

mariaisabel.mota@juntaex.es

María Concepción Pacheco Menor

concepcion.pacheco@juntaex.es