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# REHABEND 2024

## Euro-American Congress

CONSTRUCTION  
PATHOLOGY,  
REHABILITATION  
TECHNOLOGY AND  
HERITAGE MANAGEMENT

Gijón (Spain) - May 7<sup>th</sup> - 10<sup>th</sup>, 2024

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# **REHABEND 2024**

**CONSTRUCTION PATHOLOGY, REHABILITATION TECHNOLOGY AND  
HERITAGE MANAGEMENT**

*(10<sup>th</sup> REHABEND Congress)*

**Gijón (Spain), May 7<sup>th</sup>-10<sup>th</sup>, 2024**

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**10<sup>TH</sup> EURO-AMERICAN CONGRESS ON CONSTRUCTION PATHOLOGY,  
REHABILITATION TECHNOLOGY AND HERITAGE MANAGEMENT  
REHABEND 2024**

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The **Euro-American Congress REHABEND 2024 on Construction Pathology, Rehabilitation Technology and Heritage Management** was held in **Gijón (Spain)**, in **May 2024**. The event was co-chaired by the **University of Cantabria** and the **University of Oviedo**.

REHABEND 2024 **continued the series of the nine previous REHABEND international events**, which had been held **since 2006 in different Spanish cities**. The previous one, in **2022**, took place in **Granada, Spain**. In 2022 edition, approximately **280 papers** from around **30 countries** were presented, making it a conference of great interest to those who attended.

**Construction Pathology, Rehabilitation Technology and Heritage Management currently hold significant importance in the construction sector**. This prompted the organizers to propose a **technical event on these topics in Gijón**. The event aimed to collect the **advances obtained in the last two years** in the **theoretical knowledge** and **practical realizations** carried out on the referred topics. The Congress met around **275 technical contributions** coming from professionals, academics and specialists from more than **30 countries**.

Based on previous experiences, the Congress **was once again proposed within the Euro-American cultural space**. The **official languages** were **English, Italian, Portuguese and Spanish**. Organizers understand that technical articles and oral presentations, with the support of graphic material and schemes, would be understood by participants, as evidenced by previous editions of REHABEND.

Under these premises and the success of previous editions, the Congress was sponsored by the **Government of Spain, the Regional Government of Asturias, the Municipality of Gijón, Laboral Ciudad de la Cultura, Gijón Convention Bureau, Grupo Puma, Mapei, Sika, Tecnalía, the University of Cantabria and the University of Oviedo**. Additionally, several universities, technical and professional associations, institutes, foundations and companies pledged their collaboration to ensure the success of this initiative.

The organizers of REHABEND 2024 extend their gratitude to the **sponsors and collaborating entities**; the **Scientific Committee members** for their diligent review of technical contributions to ensure the required level of quality for an international event, to the **keynote speakers**, to the different **speakers** for their valuable contributions, and **all attendees** for their confidence in the event. Sincerely, many thanks to all.



**Dr. Ignacio Lombillo**

Chairman of the REHABEND 2024 Congress  
Associate Professor  
University of Cantabria



**Dr. Alfonso Lozano**

Chairman of the REHABEND 2024 Congress  
Associate Professor  
University of Oviedo

The University of Cantabria, through its Building Technology R&D Group (GTED-UC), was the promoter of the REHABEND Congresses on Construction Pathology, Rehabilitation Technology and Heritage Management.

The 1<sup>st</sup> REHABEND Congress was set in motion in Santander, Spain, in November 2006. It became established in the 2<sup>nd</sup> (Santander, 2007), 3<sup>rd</sup> (Valencia, 2008), 4<sup>th</sup> (Bilbao, 2009), 5<sup>th</sup> (Santander, 2014), 6<sup>th</sup> (Burgos, 2016) and 7<sup>th</sup> Congress (Caceres, 2018), all of them carried out in Spanish cities. The 2020 edition was to be held in person in Granada in March 2020, but due to the global health emergency resulting from Covid-19, it had to be held online in September 2020. The 9<sup>th</sup> edition (REHABEND 2022) took place in Granada, featuring a hybrid format combining in-person presentations with other asynchronous online sessions.

The ability to convene of the nine performed editions was prominent, gathering an appreciable number of experts in the topics of the Congress. As a reference, in REHABEND 2022 Congress took part approximately 280 speakers from around 30 countries worldwide.

The covers and ISBN of some the books of papers corresponding to the previous congresses are attached below. The ISSN of the series of REHABEND books is 2386-8198. In addition, since REHABEND 2014, the papers presented at the congress have been indexed in Scopus.



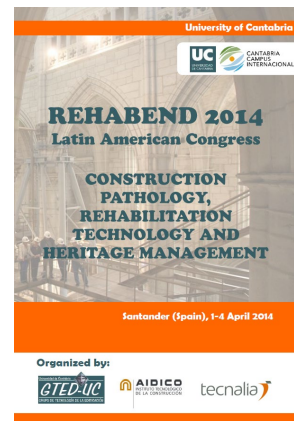
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The Collaborating Entities have been presented grouped in countries, following an alphabetical order. As Collaborating Entities have been considered to all that have contributed at least with two accepted articles in the Congress, or that some of its members formed part of the International Scientific Committee of the Congress / keynote speakers. Finally, in each country, the Collaborating Entities have been ordered according to the number of accepted articles.

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<p style="text-align: center;"><b>1.- PREVIOUS STUDIES</b></p>	<p>1.1.- Multidisciplinary studies (historical, archaeological, etc.).</p> <p>1.2.- Heritage and territory.</p> <p>1.3.- Urban regeneration.</p> <p>1.4.- Economical and financial policies.</p> <p>1.5.- Social participation processes and socio-cultural aspects in rehabilitation projects.</p> <p>1.6.- Construction pathology.</p> <p>1.7.- Diagnostic techniques and structural assessment.</p> <p>1.8.- Vulnerability studies and risk management.</p> <p>1.9.- Guides and regulations.</p>
<p style="text-align: center;"><b>2.- PROJECT</b></p>	<p>2.1.- Theoretical criteria of the intervention project.</p> <p>2.2.- Traditional materials and construction methods.</p> <p>2.3.- Novelty products applicable and new technologies.</p> <p>2.4.- Sustainable design and energy efficiency.</p>
<p style="text-align: center;"><b>3.- BUILDING INTERVENTION</b></p>	<p>3.1.- Intervention plans.</p> <p>3.2.- Rehabilitation and durability.</p> <p>3.3.- Reinforcement technologies.</p> <p>3.4.- Restoration of artworks.</p> <p>3.5.- Conservation of industrial heritage.</p> <p>3.6.- Examples of intervention.</p>
<p style="text-align: center;"><b>4.- MAINTENANCE</b></p>	<p>4.1.- Construction maintenance and infrastructures.</p> <p>4.2.- Preventive conservation of built heritage.</p>
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**CODE 171****EVALUATION AND CHARACTERIZATION OF THE BUILT RURAL ENVIRONMENT OF THE MONTESINHO NATURAL PARK, PORTUGAL. THE INHAVIT PROJECT****Luso, Eduarda<sup>1</sup>; Ferreira, Débora<sup>1</sup>**

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**KEYWORDS:** Vernacular architecture; INHAVIT project; Chalkboard roofs; Water mills.

**ABSTRACT**

In Portugal, in recent decades, there has been an increase in the population and cities located on the coast and, on the contrary, a decrease in inland locations, with greater severity in rural areas. The causes are complex and not consensual, but it is clear that factors such as the lack of investment in the interior, emigration and migration to a coast that is increasingly autistic in its relationship with the rest of the territory, the abandonment of agriculture and aging of the population constitute sufficient ingredients to promote the desertification of some areas of the country.

The abandonment and desertification of villages is not just a problem in Portugal, however. Although Portugal is one of the countries most affected by this problem that affects the entire national territory, it is a European problem that has been increasing since the second half of the 20th century.

Concerned about this fact, which puts at risk the high level of abandonment of villages and places in the interior of Portugal, particularly those located in the northeast of Trás-os-Montes, the InHaVit Project - Sustainable approaches for the rehabilitation and revitalization of the cultural heritage built in the Montesinho Natural Park (PNM), funded by FCT – Fundação de Ciência e Tecnologia, has as its main objective the evaluation and characterization of: (1) the rural built environment of the PNM, at the level of buildings and at the level of villages; and (2) socioeconomic and environmental factors that contribute to the vulnerability of PNM villages and vernacular architecture. In-depth knowledge of these aspects will help to understand the reasons why the villages were progressively abandoned. In the end, the project will propose strategies for risk mitigation, rehabilitation and conservation of built heritage, recognizing that the appreciation and preservation of vernacular architecture is a key element of cultural identity and that it can become a privileged factor for local development.

This article aims to show the work methodology relating to the “in-situ” survey carried out so far, relating to point (1), as well as some very particular aspects of this region, namely the slate roofs and the water mills.