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REHABEND 2016

Euro-American Congress

CONSTRUCTION PATHOLOGY, REHABILITATION TECHNOLOGY AND HERITAGE MANAGEMENT

Burgos (Spain) - May 24th-27th, 2016

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REHABEND 2016

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

(6th REHABEND Congress)

Burgos (Spain), May 24th-27th, 2016

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The **Euro-American Congress REHABEND 2016 on Construction Pathology, Rehabilitation Technology and Heritage Management** was carried out in **Burgos (Spain)**, in **May 2016**. The event was organized by fifteen organizations of **ten European and American countries**, and it was co-chaired by the **University of Cantabria**, through its Building Technology R&D Group (GTED-UC), and the **University of Burgos**.

REHABEND 2016 **continued the series of the five previous REHABEND international events**, which had been developed **since 2006 in different Spanish cities**. The previous one, in **2014**, was carried out in **Santander**. In 2014 edition, **more than 270 papers** by Professionals and Researchers of **17 countries** were presented and it became a conference of great interest according to the people who attended the congress.

Construction Pathology, Rehabilitation Technology and Heritage Management currently have great importance for construction sector. This prompted the organizers to propose the **technical event on these topics in Burgos** (a city with an impressive Gothic Cathedral of the 13th century declared World Heritage by UNESCO, and one of the strategic points of the Route of Santiago de Compostela). This 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 300 technical contributions** coming from professionals, academics and specialists.

Based on previous experiences the Congress **was proposed once again in 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, may be understood by the people who take part in the congress, as it was evident in REHABEND 2014.

Under these premises and the successful previous editions, the Congress was sponsored by the **Government of Spain**, the **Government of Castilla-León**, the **Provincial Government of Burgos**, the **Municipality of Burgos**, the **Chamber of Commerce of Burgos**, **Mapei**, **Sika**, the **University of Cantabria** and the **University of Burgos**. In addition, several Universities, Technical and Professional Associations, Institutes, Foundations and Companies committed their **collaboration** in order to the success of this initiative.

REHABEND 2016 organizers would like to thank the multiple received supports: to the **Sponsor and Collaborating Entities**; to the **Scientific Committee Members** for their hard work in the revision of the different technical contributions, ensuring the required level of quality of an international event; to the **Speakers of the plenary sessions**; to the different **Speakers** for their relevant contributions and, in general, to the **people who will attend the congress** for the confidence shown in the event. Sincerely, many thanks to all.



Prof. Luis Villegas

Chairman of the REHABEND 2016 Congress
Full Professor of the University of Cantabria



Prof. Juan Manuel Manso

Chairman of the REHABEND 2016 Congress
Vice-Rector of Infrastructures and New
Technologies and Professor of the
University of Burgos

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 1st REHABEND Congress was set in motion in Santander in November 2006. It became established in the 2nd (Santander, 2007), 3rd (Valencia, 2008), 4th (Bilbao, 2009) and 5th Congress (Santander, 2014), all of them carried out in Spanish cities. The ability to convene of the five performed editions was prominent, gathering an appreciable number of experts in the topics of the Congress. As a reference, in the 5th edition (REHABEND 2014) took part around 270 speakers from 17 Euro-American countries.

The 3rd edition of the Congress (REHABEND 2008) was organized together with the Construction Technologic Institute of the Valencian autonomous community (AIDICO), and the 4rd and 5th editions (REHABEND 2009 and 2014), in addition to AIDICO, the Congresses were co-organized with TECNALIA Research&Innovation. From the current 6th edition (REHABEND 2016) the congress is going to be co-organized by several entities from different Euro-American countries.

The covers and ISBN of the books corresponding to the performed congresses are attached below. The ISSN of the series of REHABEND books is 2386-8198.



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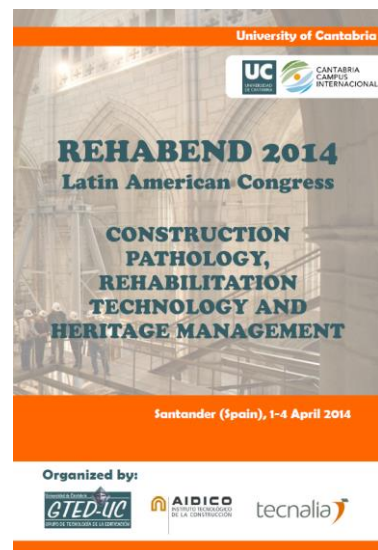
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REHABEND 2014 (Book of Abstracts)
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The Collaborating Entities have been presented grouped in countries, following an alphabetical order. As Collaborating Entities have been considered to all that have contributed with more than two accepted articles in the Congress, or that some of its members formed part of the International Scientific Committee of the Congress. 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;">1.- PREVIOUS STUDIES</p>	<p>1.1.- Studies of conservation (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.- Processes of social participation and socio-cultural aspects in rehabilitation projects.</p> <p>1.6.- Pathology in construction.</p> <p>1.7.- Diagnostic techniques and structural assessment (no destructive testing, monitoring and numerical modeling).</p> <p>1.8.- Guides and regulations.</p>
<p style="text-align: center;">2.-PROJECT</p>	<p>2.1.- Criteria theoretical of the intervention project.</p> <p>2.2.- Traditional materials and construction methods.</p> <p>2.3.- Applicable novelty products and new technologies.</p> <p>2.4.- Sustainable design and energy efficiency.</p>
<p style="text-align: center;">3.-BUILDING INTERVENTION</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;">4.-MAINTENANCE</p>	<p>4.1.- Construction maintenance.</p> <p>4.2.- Preventive conservation of built heritage.</p>
<p style="text-align: center;">5.- DIFFUSION AND PROMOTION</p>	<p>5.1.- Heritage and cultural tourism.</p> <p>5.2.- Formation.</p> <p>5.3.- New technologies applied to the heritage diffusion.</p> <p>5.4.- Accessibility to cultural heritage.</p> <p>5.5.- Working networks in the cultural heritage.</p> <p>5.6.- Management of of built heritage.</p>

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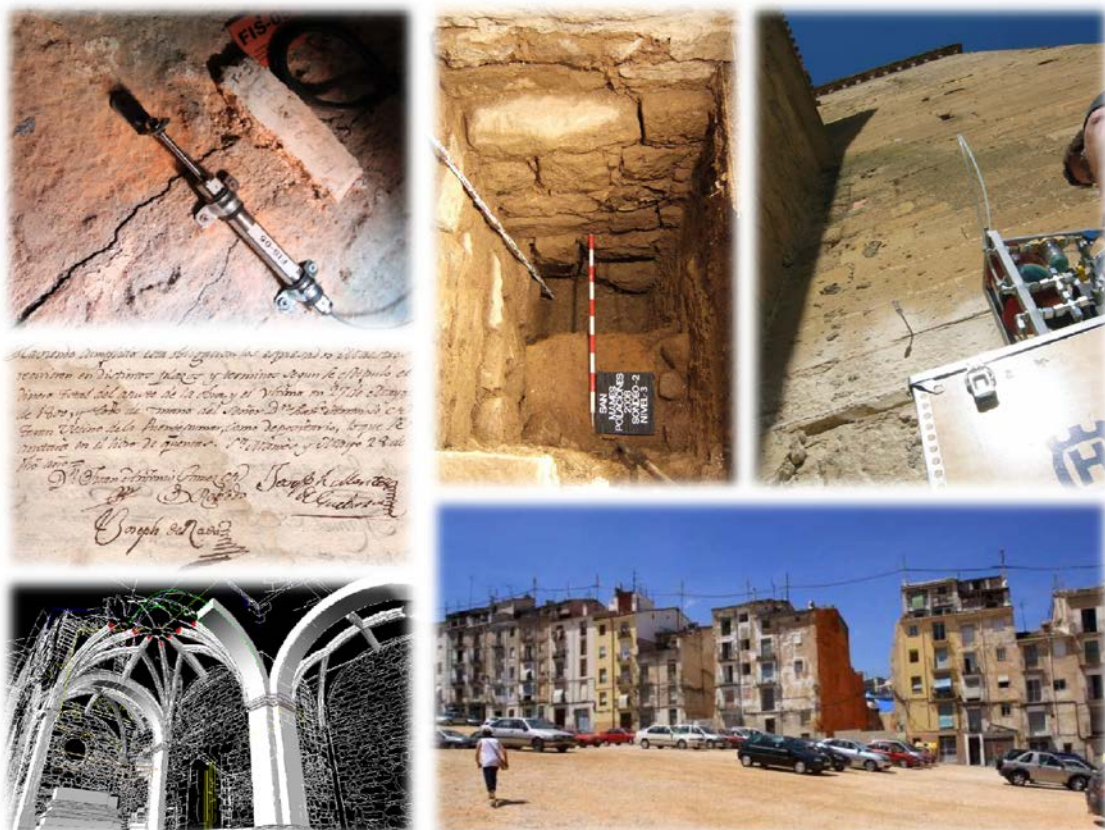
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- 1.3.- URBAN REGENERATION.
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- 1.6.- CONSTRUCTION PATHOLOGY.
- 1.7.- DIAGNOSTIC TECHNIQUES AND STRUCTURAL ASSESSMENT (NO DESTRUCTIVE TESTING, MONITORING AND NUMERICAL MODELING).
- 1.8.- GUIDES AND REGULATIONS.



CODE 3.5.03**DISUSED RAILWAY LINES. RECOVERY AND ENHANCEMENT****Guida, Antonella^{1*}; Mecca, Ippolita²**

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KEYWORDS: Disused railways, recovery, enhancement, sustainable intervention, energy improvement.

ABSTRACT

In the hinterland of the South Italy there are many railway lines with related works of art and abandoned service buildings, sometimes forgotten. These railways come completely, to be part of the industrial archaeological heritage, that you have to restore and enhance, as they represent the result of a process of change and a new way to “live” the territory. The paths, climbing through the mountains, engaged technicians and workers in impressive works of containment and consolidation, in addition were created works of art that are still, thanks to boldness, monumentality and insertion in the landscape, the most eloquent testimony of the technique applied in the beginning of the century for construction of railways. With this paper we want to show how the actions on individual railway lines may be different, but they all turned to the recovery and improvement of existing facilities providing in some cases, the conversion of railways (greenways) and service facilities (staging points, studies and multifunctional centers) and in other cases the reopening of the routes through policies of social, cultural and landscape regeneration.

We propose a methodology of approach to the problem of preservation of artifacts that mark the railway lines, which takes into account the difficulties of functional conversion of all buildings because of their structural fragility and the inadequacy of the technological characteristics of the existing structures and therefore the need for intervention by a sustainable design closely related to their reuse and the reduction of energy consumption. The goal is to demonstrate how these small buildings, now considered outdated and obsolete, wrapped from decay and neglect, can become examples of architectural excellence and technological efficiency through sustainable design, which provides for measures compatible with the historic building technologies and, at the same time, directed to be self-sustaining from the energy point of view.



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