



Dear Reader,

We are delighted to introduce this first edition of the EnDurCrete newsletter. In this edition, we will share with you a brief overview of the project, and short reports from the events where our project was presented.

**EnDurCrete project consortium**

## COORDINATOR'S MESSAGE



Many activities have already taken place during this first year of the project. CEM II/C and CEM VI cements have been developed. For the first time, the production of these new cements took place on an industrial scale. Concretes have been successfully designed to fulfill the local standard requirements and new concrete technologies have been developed, applying innovative additives. 2019 will be a challenging year for EnDurCrete, where the different technologies have to come together and ensure the durability of the EnDurCrete concretes. Lab-scale durability testing will be carried out by the different partners generating data to calibrate our models. Non-destructive tools will be developed to monitor the health of our future demonstrators.

**Dr. Arnaud Muller, EnDurCrete project coordinator**

## WHAT IS THE PROJECT ABOUT?

**New Environmental friendly and Durable conCrete, integrating industrial by-products and hybrid systems, for civil, industrial and offshore applications.**

16 partners

12 countries

Start  
1. 1. 2018

42 months

Ordinary Portland cement has been considered for many years the benchmark structural material for durable buildings and infrastructures, as well as for marine environments. However, its production process consumes significant mineral resources (good-quality limestone and clay), energy and fuel, and creates greenhouse gas emissions. Various efforts are underway to improve the environmental friendliness of concrete, by integrating supplementary cementitious materials (SCM), such as by-products of industrial processes. Nevertheless, current state of the art sustainable solutions based on high substitution rate of Portland cement clinker by SCM occasionally lead to limited performance and durability of concrete structures, particularly critical when applied in harsh conditions. All these aspects affect also the resource consumption, waste production, environmental and economic costs of repair and replacement.

**The main goal of EnDurCrete project is to develop a new cost-effective sustainable reinforced concrete for long lasting and added value applications. The concept is based on the integration of novel low-clinker cement including high-value industrial by-products, new nano and micro technologies and hybrid systems ensuring enhanced durability of sustainable concrete structures with high mechanical properties, self-healing and self-monitoring capacities.**

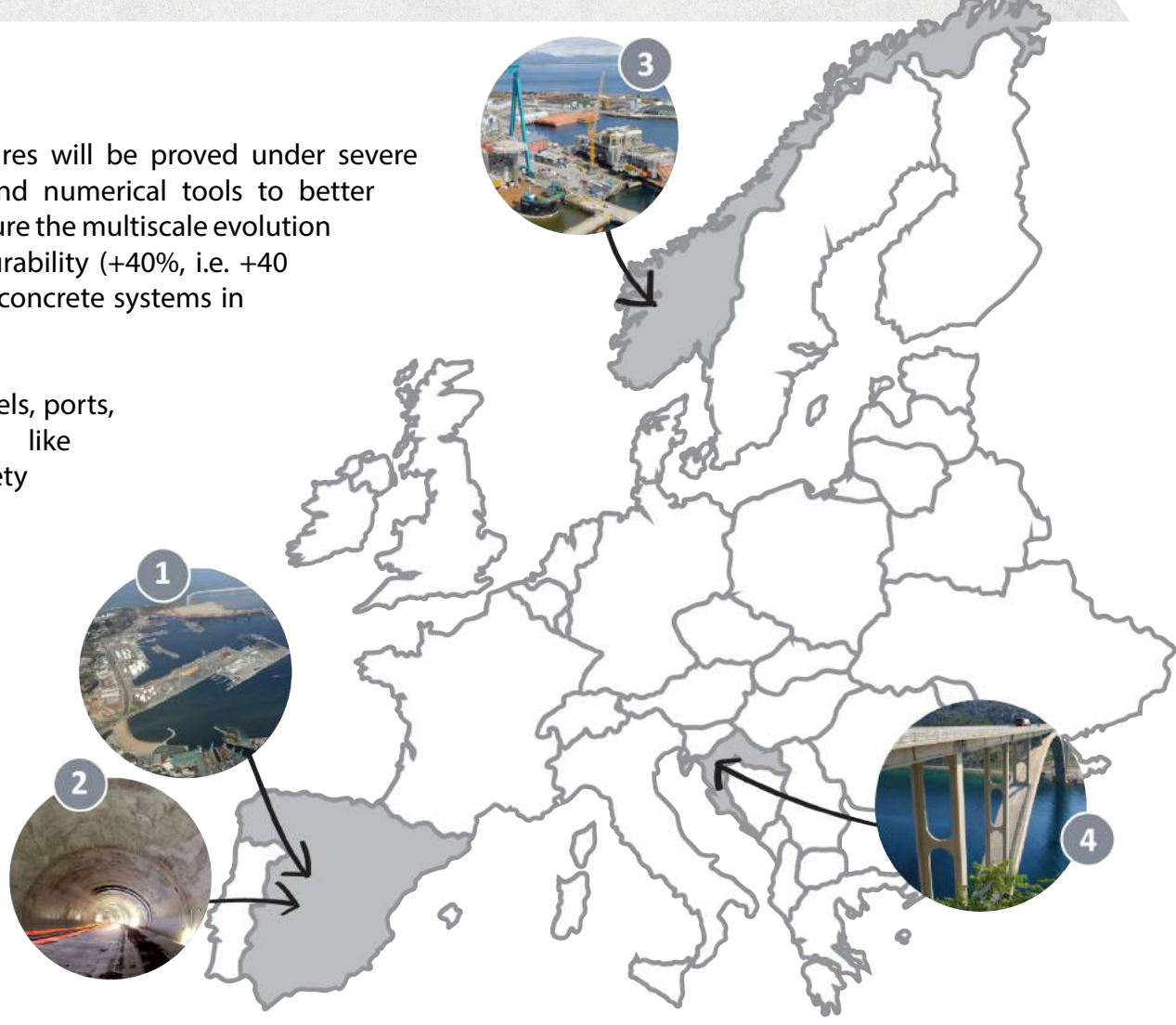
## DEMOSITE

The functionality of the developed concrete structures will be proved under severe operating conditions supported by experimental and numerical tools to better understand the factors affecting durability and to capture the multiscale evolution of damage as well as to enable service enhanced durability (+40%, i.e. +40 years) and decreased cost (at least -30%) of the new concrete systems in such critical applications.

Demonstrators will be tested in working sites of tunnels, ports, and offshore structures. Innovation aspects like standardization, life cycle assessments, health and safety and training activities will be performed.

- 1 Port of Gijón "El Musel" in Spain, exposed to seawater conditions of the Cantabrian Sea
- 2 Mining tunnel facility located in Leon, Spain
- 3 Ship Yard in Norway a Norwegian cost line
- 4 Krk Bridge in Croatia characterized by a very aggressive marine environment

**READ MORE ABOUT THE PROJECT ON OUR WEBSITE**



The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 760639.

YOU CAN FIND US ALSO ON:



[www.endurcrete.eu](http://www.endurcrete.eu)

## UPCOMING EVENTS

### GENERAL ASSEMBLY MEETING AFTER 12 MONTHS



EnDurCrete consortium will meet again after 12 months of the project in Cordoba, Spain. The meeting will focus on the presentation of progress made within the individual Work Packages and their evaluation as well as on the planning of the next project period.

### MADE EXPO 2019

Project representatives from UNIVERSITÀ POLITECNICA DELLE MARCHE, HEIDELBERG CEMENT, NUOVA TESI and RINA-CONSULTING will attend the MADE EXPO 2019 that will take place on 13<sup>th</sup>-16<sup>th</sup> March 2019 in Milan, Italy. MADE EXPO is Italy's most important trade show for the Building & Construction industry. Our project will be introduced via presentation on 14<sup>th</sup> March.



## PAST EVENTS

### ECTP CONFERENCE

Actors from the whole construction value-chain, including academia, industry, and representatives of the European were discussing the topics of innovation in the Built Environment in Europe at the 8<sup>th</sup> ECTP conference from 13<sup>th</sup> to 14<sup>th</sup> November 2018 in Brussels. In addition, the ECTP conference offered an exhibition area in which key results from innovation projects were presented. FENIX TNT represented our project at their stand with other H2020 projects.



### AMANAC WORKSHOP

Project representatives from FENIX TNT introduced our project within the "AMANAC WORKSHOP - Branding innovations beyond the technical Life Cycle Assessment and the trade-offs of sustainable growth" on 29<sup>th</sup> October, in Vienna (Austria). The presentation was titled "How to use positive LCA as a value proposition and exploitation/business tool". The workshop aimed to address the challenges and opportunities of Life Cycle based decision-making by offering different stakeholders a thorough review of various LCA technical and communication barriers. It considered social and economic perspectives to facilitate a thorough and holistic sustainable approach.

### CLUSTER COOPERATION

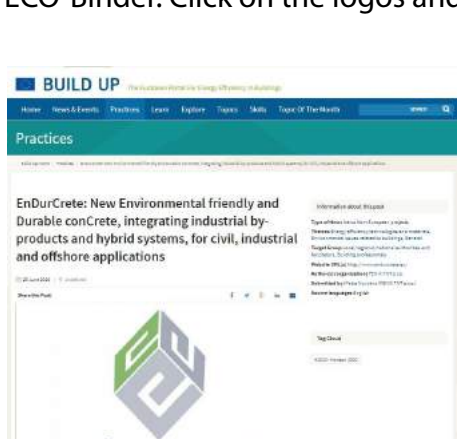
Clustering of projects aims to more efficient cooperation between the clusters dealing with the same topic. Clustering activities include sharing a knowledge, expertise and experience, organising joint events and activities raising public awareness about the problematics. So far, two H2020 projects have been identified as suitable clusters for the EnDurCrete project, ReSHEALiance and ECO-Binder. Click on the logos and access the project websites.



[www.uhdce.eu](http://www.uhdce.eu)



[www.ecobinder-project.eu](http://www.ecobinder-project.eu)



### ENDURCRETE ON BUILD UP PORTAL

The BUILD UP initiative was established by the European Commission in 2009 to support EU Member States in implementing the Energy Performance of Buildings Directive (EPBD). The web portal is intended to reap the benefits of Europe's collective intelligence on energy reduction in buildings for all relevant audiences. It brings together new practitioners and professional associations while motivating them to exchange best working practices and knowledge and to transfer tools and resources.

### PLATINUM MAGAZINE

Our partners from NUOVA TESI have published an article about the EnDurCrete project in the July edition of the Italian PLATINUM magazine. The article is available in Italian and English language. Click on the pictures and access the article on page 96.

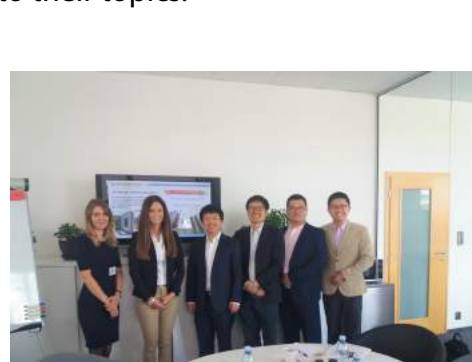
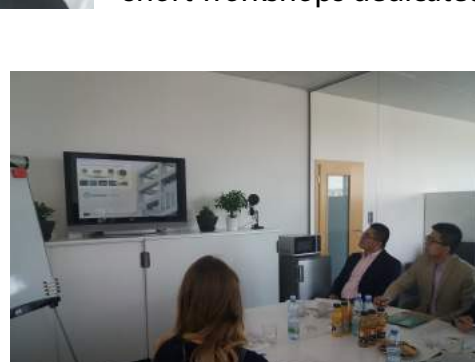


### GENERAL ASSEMBLY MEETING AFTER 6 MONTHS

EnDurCrete consortium met at the General Assembly meeting in Leimen, Germany on 18<sup>th</sup> and 19<sup>th</sup> June 2018. The first day of the meeting was dedicated to the detailed presentation of the project progress within the individual Work Packages. Partners also had a chance to visit the HeidelbergCement premises and laboratories. The next day, some Work Package leaders organized short workshops dedicated to their topics.

### CHINA ACADEMY OF BUILDING RESEARCH

EnDurCrete project was introduced to the representatives of the China Academy of Building Research (CABR) who visited the FENIX TNT premises in Brno, Czech Republic on 26<sup>th</sup> June 2018. CABR is the largest comprehensive R&D institution in the building sector in China. In recent years, CABR has put more efforts to research and development of technologies concerning green buildings, new energy applications, disaster prevention and mitigation and intelligent integration. EnDurCrete project was introduced via presentation.



### STARTUP OLÉ

I-BOX CREATE introduced the EnDurCrete project within the "Start Up Olé 2018" on 17<sup>th</sup> April 2018 in Salamanca, Spain. This event gathered Start Ups selected from those with the Seal of Excellence from EU. I-BOX CREATE introduced EnDurCrete project as one of these startups.

### UK - SPAIN BILATERAL EVENT FOR NANOTECHNOLOGIES & ADVANCED MATERIALS

Acciona presented the EnDurCrete project during the workshop called "UK - Spain bilateral event for Nanotechnologies & Advanced Materials" in Cambridge, United Kingdom. The main aim of the event was to foster cooperative partnerships in order to build prospective collaborative R&D project consortia for EU and nationally funded programmes such as Horizon 2020.



### ENDURCRETE ON EU AGENDA PORTAL

EU AGENDA website the best events, goings-on, and policy resources so that readers can enjoy valuable content, learn about policy, and know the news in Brussels, in Europe and the world. They provide an in-depth perspective on the thinking of EU policymakers, the policy developments taking place every day, and the events where you can contribute, learn, and expand network.

### ENDURCRETE LISTED IN THE ECTP DATABASE

The European Construction, built environment and energy efficient building Technology Platform (ECTP) is a leading membership organisation promoting and influencing the future of the Built Environment. ECTP is today one of the 38 European Promoting Platforms (ETPs) which are industry-led stakeholder fora recognised by the European Commission as key actors in driving innovation, knowledge transfer and European competitiveness.



### KICK-OFF MEETING

EnDurCrete consortium met during the first General assembly meeting. The kick-off meeting took place on 16<sup>th</sup> January 2018 in Brussels. The project partners introduced themselves and discussed the planned activities for the next six-month period within the work packages. It was a great opportunity for partners to meet each other face-to-face and to establish successful cooperation.

