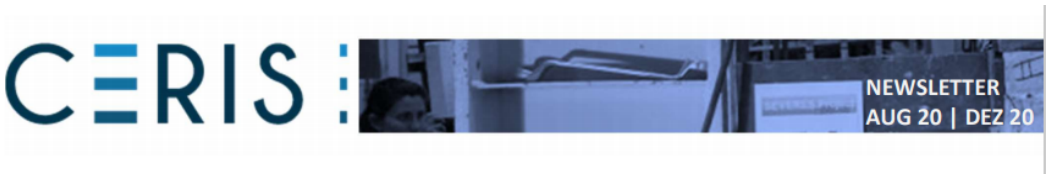
Newsletter CERIS - Aug-Dec 2020



INDEX

THEMATIC STRANDS

1. Product Development in Civil Engineering Industries
2. Risk and Safety in Built and Natural Environments
3. Rehabilitation of Built and Natural Environments
4. Response to Natural and Societal Changes

EDITORIAL TEAM

Inês Flores-Colen (coord.)
António Aguiar Costa
Ana Soares
Bruna Silva
Carlos Tiago
Maria Paula Mendes

01 CERIS BOARD'S NOTE

Approaching the end of our management responsibility, we would like to point out that it was our pleasure to serve CERIS and its members and collaborators.
Aspects as the preparation of the database for an efficient supply of the mandatory reports for our affiliation and financing entities, the renew of the site, the support to the PhD students involving different activities, from CERIS Day-out and "Rocking (pre) Conceptions at Lunch" to support to Laboratory activities and software availability, the push on our presence in social media and spread of CERIS achievements (newsletter, institutional video, and presentations), the financial support to transversal exploratory actions continuing the previous practices, all these implied a tremendous commitment of several people for which we would like to sincerely thank them.
Let us underline the impressive availability of Ana Soares Ramos for all the aspects dealt with. She gave the necessary day-to-day stability to our actions, implying a better service to everyone.
Please stay safe, and we would like to wish you a Merry Christmas and a Happy New Year, much more pleasant and open than this one of 2020.

Best wishes to everyone.

From Left to right: José Oliveira Pedro; Ana Soares Ramos; Inês Flores-Colen; Luis Picado Santos; Rui Ferreira; and Filipe Moura

02 SPOTLIGHT ON

Professor Fernando Branco

Fernando A. Branco is a Distinguished Professor at IST- University of Lisbon where he was Director of the Structures Research Center (CMEST,1987-92), Chair of the Construction Area (1996-20), President of the Civil Engineering Department (2007-09) and President of the Civil Eng. PhD Program (2010-20). At IST he supervised 23 PhD students (4 of which became full professors) and 100 Master students. He co-authored 8 patents, 15 books, over 500 scientific papers and 1000 technical reports. He coordinated 5 European funded international research projects, co-organized 10 international conferences and presented lectures in more than 30 universities. He is former President of the College of Civil Engineers (OE, 2004-07) of the Portuguese Association of Structural Engineers (APEE, 08-17), of the European Council of Civil Engineers (ECCE, 2012-14) and of the International Association for Bridge and Structural Engineering (IABSE, 2016-19). He was consultant for major Public Works in Portugal like the S. João Bridge (world longest railway span in cantilever construction), the International Guadiana Bridge, the Macau-Taipa Bridge (in China), the Vasco da Gama Bridge (the longest in Europa), the Lezíria Bridge (2nd longest in Europe) and did the design control of over 400 bridges and viaducts in major highways in Portugal. He received 7 national awards and 7 international ones, including the Harting Award (SEM, Albuquerque, USA), Polish Government Award (Warsaw), Honorary Senator (EWIF, Berlin), Advisory Professor (Univ. of Tongji, Beijing), Honorary Membership (IABSE, Zurich). His cultural interests led him to do research and publish books related to the History of Portugal (XV cent.), and he was nominated Honorary Member of the Portuguese Academy of History.

The future? It’s up to you to dare, to build it!

Last Lecture

Acknowledgement

The RG5 research group (Studies on Construction) of the CERIS (Civil Engineering Research and Innovation for Sustainability) Research Unit, with headquarters at the Department of Civil Engineering, Architecture and Georesources of Instituto Superior Técnico is one of the legacies of Prof. Fernando Branco. Only 15 years ago, the Construction scientific area was still a relatively unimportant part of a larger scientific area, where other areas were clearly preponderant. In this short period, under Prof. Branco's leadership, the area rose to prominence, at both national and international levels, giving a very strong contribution to the ranking of University of Lisbon in the area of Civil Engineering, the highest of the larger areas both in IST and in Portugal. Even though all such achievements are collective, his humane and assertive leadership has been an example and an inspiration to all members of RG5. Fortunately, Prof. Branco's official retirement does not mean that he will cease his participation in the group, where his many activities have truly been an informal school of research in the area of construction.

by Jorge de Brito and João Ramôa Correia

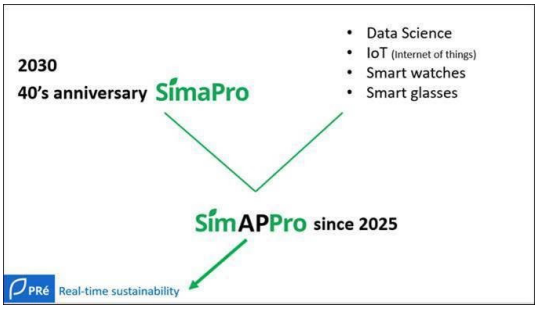
03 AWARDS

Best Practice Recognition

The 3rd edition of CERIS Open Day occurred on October 9th and 10th, 2019, at Foz do Arelho. Our annual event was again recognized as a Best Practice 2020, under the category of Research, Development & Innovation, by the Best Practices Observatory (ObservIST) of Técnico-Lisboa. Given the current situation due to Covid-19, the 4th ObservIST Meeting was not held on September 16, as announced. However, this Good Practice is disseminated in the **Good Practices Portfolio**, **ObservIST** website and **Youtube channel**.

International contest “SimaPro in 2030”

The online pitch event of the international competition 'SimaPro in 2030' took place on December 1st and CERIS researcher José Dinis Silvestre won 1st place. This was a contest of ideas to celebrate the 30 years of the SimaPro Life Cycle Assessment software. Among the 6 competitors shortlisted for the pitch event, José’s presentation of the potential features and impact of this software in 2030 was unanimously considered by the international jury as the most creative and innovative (entitled “SimAPPro: real-time sustainability” - **video of the pitch event available here**). The first prize will allow him to have the support of PRé in bringing a SimaPro-based tool to the market.



Research grant from PARSUK

A bilateral research project, between CERIS members and the Institute for Transport Studies of University of Leeds, was awarded a research grant from PARSUK -

Portuguese Association of Researchers and Students in the United Kingdom. The Propensity to Cycle Tool (PCT) Portugal aims to develop a national evidence-based and transport planning online tool to prioritize investments in active transport.

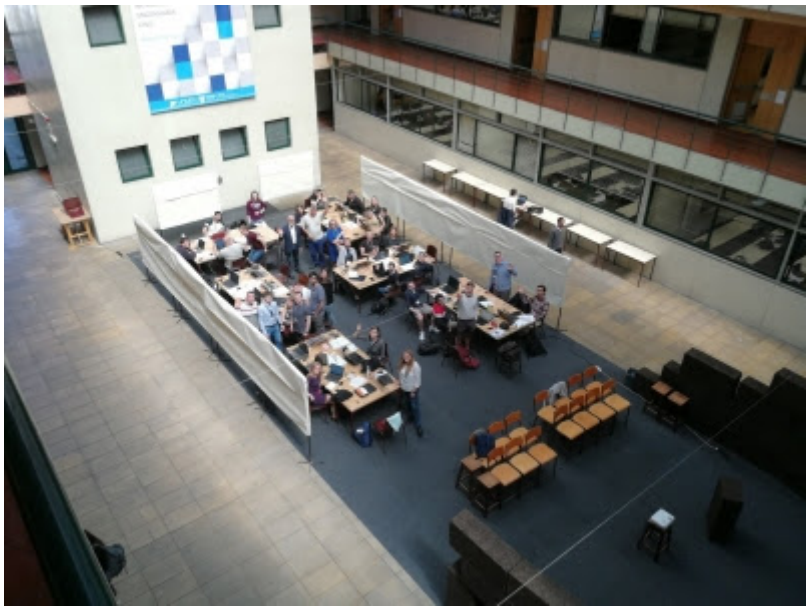
This project will boost the research network and bilateral collaboration between the U-Shift lab of CERIS of Instituto Superior Técnico and the ITS (Institute for Transport Studies) of the University of Leeds, gathering Robin Lovelace, and CERIS researchers Rosa Félix and Filipe Moura.
PCT Portugal was one of the 5 projects to get awarded with a €3.000 research grant, among 147 applications to the PARSUK PT-UK Bilateral Research Fund 2020, from FCT.

04 R&D PROJECTS (concluded in the period)

HiTimber

i) CERIS PI - Miguel Pires Amado
ii) Funded by Erasmus+ Programme
iii) Period- 40 months (01/09/2017-31/12/2020)

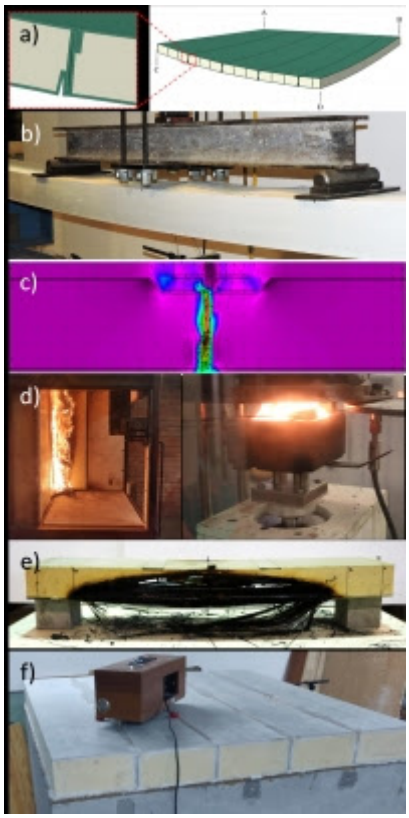
“Sustainable High-Rise Buildings Designed and Constructed in Timber” (HiTimber) is innovative and fulfils a great need for solving the sustainability issues and creating sustainable solutions for the construction and related sectors for the future challenges. It promotes sustainable, environmentally friendly design and construction of high-rise timber buildings. With the objectives to strategically research at which level sustainable design, construction and management of high-rise timber buildings are to be planned and implemented, it has affiliated hundreds of participants (students, teachers and entrepreneurs) from different countries, including 5 partner countries: Denmark, United Kingdom, Estonia, Lithuania and Portugal.
More than 100 students have learned and are yet to learn how to improve competencies in problem solving and teamwork, innovative thinking, motivation, awareness of cross-professional project input and project management by using project-based learning approach. Many new interdisciplinary and transnational connections have been established, 2 presential workshops were carried out and online workshop will be held in early December. There is more information available on the project webpage www.hitimber.eu, where also open access intellectual outputs can be found.



EasyFloor - ANI 2015/3480

i) Project PI being CERIS the leading institution: João Ramôa Correia
ii) Partners: ALTO Perfis Pultrudidos; University of Minho.
iii) Funding: Total – 913,491€; CERIS – 209,375€.
iv) Period: 2016-2020

The objective of this project was to develop two different types of pultruded sandwich panels for the rehabilitation of degraded wooden floors in old buildings: (i) a second generation composite sandwich panel, comprising glass fiber reinforced polymer (GFRP) face sheets; and (ii) a hybrid sandwich panel consisting of a bottom GFRP face sheet or a hybrid of glass and carbon fibers (G / CFRP), and a top face sheet in ultra-high strength performance fiber reinforced mortar (UHPFRM) with high ductility. For both types of panels, targeting spans of respectively 4 m and 5 m, the web core comprises GFRP ribs and rigid polyurethane foam (PUR), which provides good thermal insulation.
The development of the sandwich panels, assisted by optimization methods, comprised comprehensive experimental and numerical investigations, which focused on various aspects of the panels' behaviour: material properties; structural, acoustic, thermal and fire behaviour; cost and sustainability. Tailored panel-to-panel (snap-fit or adhesively bonded) and panel-to-support (bolted and adhesively bonded) connection systems were also developed.
Compared with traditional solutions, often involving the replacement of timber floors with reinforced concrete, metallic or mixed steel-concrete elements, the construction system developed in this project provides, at a competitive cost, an improved performance in terms of: (i) lightness; (ii) ease of transportation; (iii) speed and ease of assembly/disassembly; (iv) compliance with the design codes for structural safety and thermal, acoustic and fire performance; (v) lack of maintenance; (vi) durability; and (vii) possibility and ease of reuse.

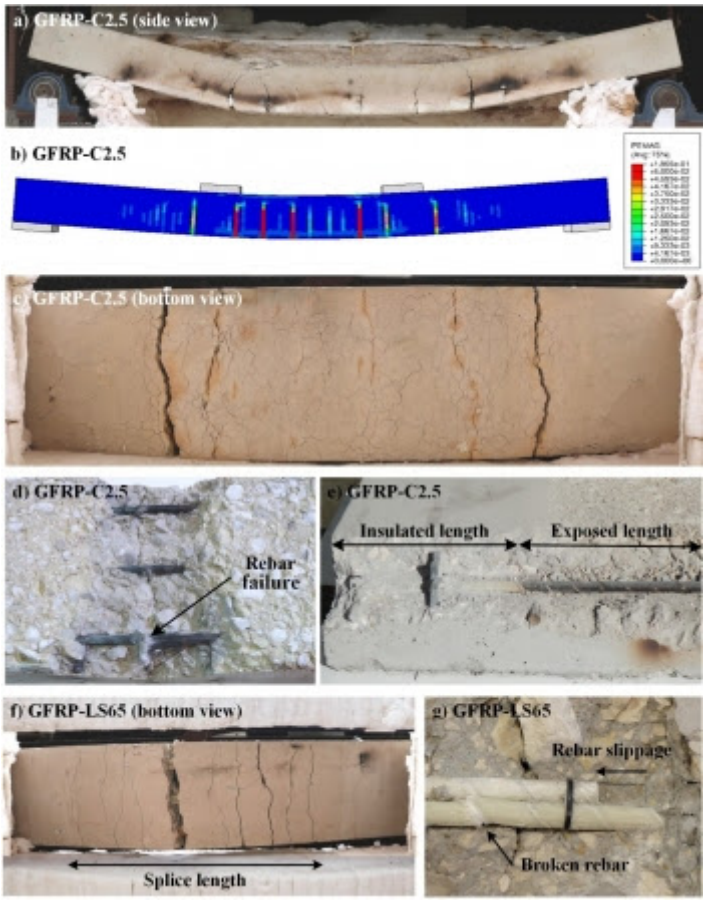


FireComposite - PTDC/ECM-EST/1882/2014

i) CERIS PI: João Ramôa Correia
ii) Partners: University of Minho; S&P Clever Reinforcement; HTecnic; Civitest Tria
iii) Funding: Total – 199,878€; CERIS – 119,910€.
iv) Period: 2016-2020

This project addressed the fire behaviour of reinforced concrete (RC) members incorporating fibre reinforced polymer (FRP) materials for two different applications: new construction with FRP rebars and strengthening with advanced FRP systems.

For new FRP-RC members, experiments were conducted to investigate (i) the adherence between FRP rebars and concrete at elevated temperature, and (ii) the fire behaviour of FRP-RC members, including the effects of rebar surface finishing, lap splices and type of end anchors. For RC members strengthened with advanced FRP systems, in addition to the bond at elevated temperature, the test programme focused on the fire behaviour of the following techniques: (i) flexural strengthening with near surface mounted (NSM) FRP strips, either prestressed or bent in the ends; and (ii) shear strengthening with ETS-FRP bars. In both cases, the effectiveness of cement based adhesives and fire protection systems was investigated.
The numerical modelling comprised thermal and thermo-mechanical uncoupled FE analyses, considering the constitutive relations as a function of temperature of both FRP materials and interfaces. After validation with test data, the models were used to optimize the geometry of FRP components and fire protection systems.
This project provided (i) in-depth understanding of the fire behaviour of RC members with FRPs, for both new construction and rehabilitation; (ii) tailored fire protection systems that enable extending the safe use of FRPs in buildings; and (iii) numerical models able to simulate the fire response of those members.



TEC-TIMBER

i) CERIS PI: M. Dulce Franco Henriques
ii) Funded by Instituto Politécnico de Lisboa, Programme IDI&CA 2019
iii) Period- 12 months (13/05/2019-12/05/2020)

The inspection, diagnosis and safety assessment of existing timber structures is a multidisciplinary process with several constraints, of which the difficulty in recognizing the real resistant capacity of each structural element is highlighted. With the awareness that this knowledge is too necessary to support the decision on the type of intervention to be carried out, the Project “TEC-TIMBER - Development of techniques for the recognition of timber properties in old buildings” was developed.
The TEC-TIMBER project consisted of estimating the properties of pine wood *(Pinus sylvestris, L)* using non-destructive or semi-destructive techniques in situ (visual strength grading, drill resistance tests, penetration resistance tests and ultrasound tests) correlating -the real properties obtained by destructive laboratory tests on wooden test

pieces from old buildings.
Therefore, it intended to contribute to the science of structural wood evaluation in service, and in this way to increase the recognition capacity on the part of technicians who intervene in old buildings in the Lisbon area. At the end of the project, the options, work methodologies and necessary knowledge for the development of correct intervention actions were disseminated among the technical community.

05 SEED PROJECTS

Research Projects supported by CERIS in the 2020th edition

Bi-THEM (PI: Giovanni Borsoi)

Studies on Construction + Structural Design and Geotechnics + Environment and Water Resources

Bi-THEM aims at defying an innovative bio-hydrothermal model for External Thermal Insulation Composite Systems (ETICS). The biological susceptibility of ETICS can be foreseen by knowing their composition and monitoring the environmental temperature and humidity.
Several humidity sensors and thermocouples were used, setting up experimental data loggers, with the aim of monitoring several ETICS specimens exposed to weathering. The selected specimens have different thermal insulations (EPS, ICB, MW), base coats (cement- or lime-based) and top coats (lime, acrylate or silicate). The chemical-physical properties of the systems significantly influence the durability and the appearance of possible anomalies on the ETICS, such as stains due to biological colonization.
The hygrothermal performance of ETICS has been thus monitored over time (September to December 2020), identifying possible patterns among the composition of the ETICS, the formation of stains (generally due to the biological susceptibility of the substrate) and the variation of the humidity and temperature.

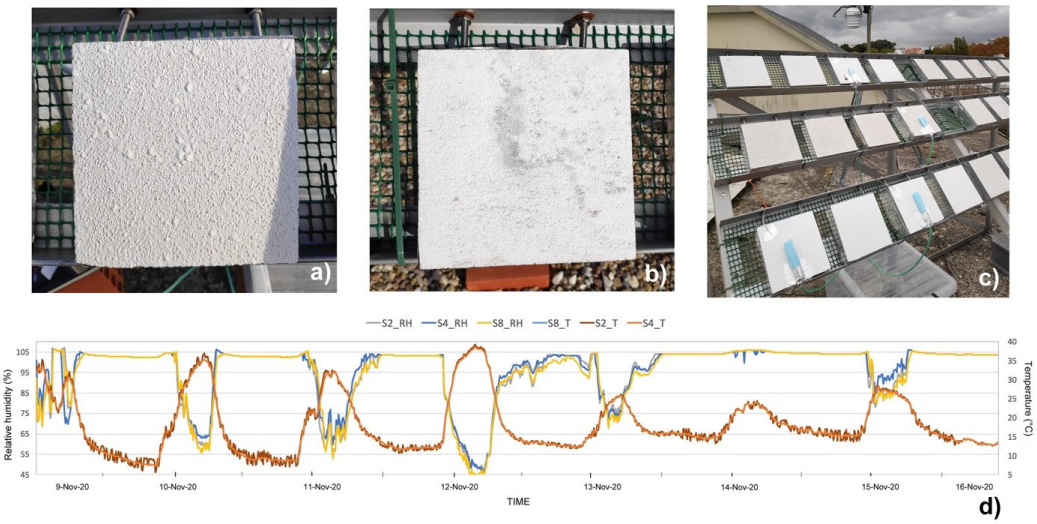


Fig. - a) Surface condensation and b) stains (biocolonization) on (ICB) ETICS specimens; c) T-RH% monitoring with humidity sensors and thermocouples in several ETICS specimens, exposed to weathering; d) evolution of the relative humidity (RH%) and temperature (T) during 8 days, in November 2020 (S2: EPS as TI; S4: ICB as TI; S8: MW as TI).

Due to COVID-19 pandemic, the conclusion of the project was postponed to January 2021. Results will be presented at CEES 2021 Conference. The Ph.D. candidate Júlia Pereira actively collaborates within the project, and a master dissertation (Francisco Gonçalves) was activated within this research topic. With further data modelling with the software WUFI, a peer-reviewed paper is expected to be delivered by the first trimester of 2021. The development of bio-hygrothermal models will be also continued within the Ph.D. dissertation of João Luís Parracha.
The project intends, ultimately, to further explore the biological habitat of ETICS façades and to minimize the development of biological colonization on these external building systems.

06 APPLICATIONS TO THE SOCIETY / COMMUNICATION

Collaborations in actions

The “Técnico Student Club on Mental Health and Inclusion” initiative, founded by CERIS PhD students João Figueira and Luís Vieira in collaboration with the Academic Development Office (NDA), aims to organize an online cycle of conversations called BrainStorms that tackle some of the issues regarding mental health and inclusion. Each session has a specific theme and one or two guest speakers, specialist(s) in the area, to discuss and present solutions related to the issue in question. Throughout the conversation it is possible for participants to interact with the speaker(s) and ask questions or provide some feedback. Previous guests include Ana Moniz, Teresa Espassandim, Márcio Pereira, Isabel Gonçalves, Yolanda Tati, Joana Lobo Antunes and Arlindo Oliveira.

YouTube

Science in Communication

CERIS integrates the IST Research Units' group of Science Communication, coordinated by Joana Lobo Antunes from IST. The initiative “Explain it like I’m 5” started in June, 2020, and had in this period twelve sessions.

Explain me!

The researcher Mónica Amaral Ferreira participated in session 11, on 14th of November, with the subject: “Why does the Earth shake”?
This was the talk with more live participants so far (around 1100) keeping the attendees engaged beyond expected. The talk is **available** and has currently more than 3200 visualizations. The origin of the Earthquakes and the most effective measures to take in such event were some of the discussion topics.

Explain me (11)

90 Seconds of Science (Antena 1) is a project from University of Lisbon and Antena-1, with the support of Novartis and Santander Universities. Portuguese researchers briefly present their research in 90 seconds (in Portuguese).
The researcher Rui Carrilho Gomes participated in the session 937 held on 13th October 2020, talking about a project related to the identification of areas with risk of collapse or flood.

90 segundos

07 CERIS NETWORKS

RILEM (International Union of Laboratories and Experts in Construction Materials, Systems and Structures) has several Technical Commissions (TC). It has currently a very low individual fee for PhD students and other young researchers (https://www.rilem.net/article/membership-32). Participation in TC work is an excellent form of internationalization. The CERIS researcher Paulina Faria is a member and actively participates in the following TCs:

- TC 274 - TCE, Testing and Characterization of Earth-based building materials and elements. 2016-2021, https://www.rilem.net/groupe/274-tce-testing-and-characterisation-of-earth-based-building-materials-and-elements-353
- TC 275 - HDB, Hygrothermal behavior and Durability of Bio-aggregate based building materials. 2016-2021 - https://www.rilem.net/groupe/275-hdb-hygrothermal-behaviour-and-durability-of-bio-aggregate-based-building-materials-349
- TC 277 - LHS, Specifications for testing and evaluation of lime-based repair materials for historic Structures. 2017-2022 https://www.rilem.net/groupe/lhs-specifications-for-testing-and-evaluation-of-lime-based-repair-materials-for-historic-structures-367

For example, these commissions work essentially to propose test methodologies for the characterization of materials and elements for construction based on earth, based on fibers and mortars for historic buildings. But there are many more TCs in several areas: https://www.rilem.net/committees/active-tcs-by-clusters-500209

08 EVENTS / SEMINARS

CERIS SESSIONS: ROCKING (PRE)CONCEPTIONS

The **fifth edition** CERIS WEB Session took place on 16th October and was attended by an average of 30 CERIS researchers. The title was: **“Cryogenic Storage Tanks - A Designers’ Perspective”**. The special guest was Paul Whayman (Technodyne International Ltd), a mechanical engineer with more than 20 years of experience in tank design industry. Technodyne International Ltd is a member of CIMC/TGE group and is an experienced specialised engineering and consultancy company, based in Eastleigh, England.

The bulk storage of Refrigerated Liquified Gasses (RLG's) is an important part of any economy. In general, the RLG's are stored in low pressure cryogenic tanks. In recent years, the petrochemical and energy sector has seen a rapid growth in the number of facilities for exporting and importing liquified gasses. At the heart of any facility is the RLG storage tank. The integrity of the storage tank is of paramount importance in ensuring the safety of any facility handling RLG's. The successful design of these storage tanks requires multi-disciplines of engineering, significant engineering knowledge and "know-how" and attention to detail. In this presentation (available at in internal page of CERIS website. **https://ceris.pt/**) a general overview of the tank types and design considerations was given along with highlighting some important aspects. This session was an excellent opportunity to exchange knowledge between engineering academia and industry.

CERIS DAY OUT

On October 7th, CERIS has promoted the 2020 CERIS Day Out which took place outside IST (specifically, at Quintas do Pisão e da Pedra Amrela, in Cascais), in an informal environment, in order to contribute to the conviviality within the CERIS community and thus strengthen their identity. **Booklet**
The program of the initiative was diverse, fundamentally team building activities, with 40 attendants. Due to safety requirements, all the event occurred outdoors for one day.

Vídeo

CERIS REPRESENTATIONS

Seismic risk awareness actions for children using the game Treme-Treme

Mónica Amaral Ferreira, researcher at CERIS, participated in the European Researchers' Night 2020: Science and Nature (**European Researcher´s Night**), on 27th November, in the section Games, Apps, and Challenges. Here children could learn concepts of seismic and tsunami risk in a fun way playing the game Treme-Treme (inserir link https://www.treme-treme.pt/): what to do before, during and after such an event?

"The Earth Shakes" is a public exercise promoted by Autoridade Nacional de Emergência e Proteção Civil (ANEPC), which takes place on 5th November. Given the present limitations, the Treme-Treme video game was publicized by ANEPC and so the children could mark the date in another way, playing and learning during COVID-19 pandemic.

World Tsunami Risk Awareness Day

On 5 of November, World Tsunami Risk Awareness Day, Mónica Amaral Ferreira, researcher at CERIS, participated in a webinar (**link)** promoted by Câmara Municipal de Portimão. The researcher made a presentation on "What can we do to reduce the risk of catastrophes and make cities more resilient?". The CERIS researcher Professor Carlos Sousa Oliveira, also participated on the debate that followed.

UNITE! Virtual Research Encounter

“Roof, walls and open space – Green Infrastructures and Nature-based Solutions in urban areas”

The researcher Cristina Matos Silva was the co-organizer of this event, with the Technical University of Darmstadt, which was held on 17th September to exchange know-how regarding the ongoing project and thesis work in the interdisciplinary field of Green Infrastructures and Nature-based Solutions. It was an opportunity to bring students and researchers from different universities together and to boost cooperation and future works. 35 attendants. The program and video are available in the following:
Link

Webinar – Removal of Asbestos in School

Ceris president participated in the Webinar “Removal of Asbestos”, which was held on 9th of November. This Webinar was co-organized by the researcher Manuel Pinheiro, and there were 83 attendants.
The program is available **here**

Prof. Luís Picado Santos

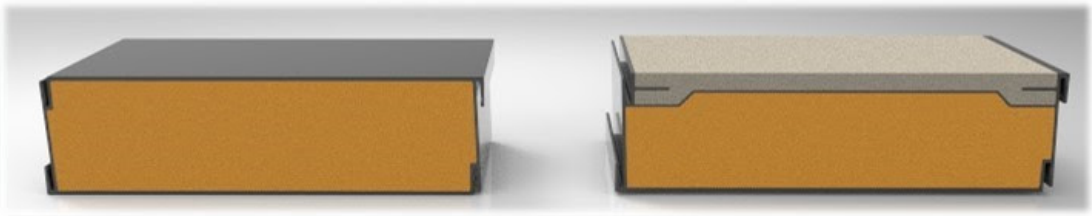
Prof. Manuel Pinheiro

Webinar – Advanced Coatings for Buildings

On 30th September 2020, the webinar was held in the frame of the e-book launch on “Advanced Coating for Buildings”, which was co-edited by the researcher Inês Flores-Colen.
There were 36 attendants. The researcher Giovanni Borsoi also presented a communication. The webinar full recording and the book printed edition is **available**

Webinar – Project EASYFLOOR

On the 28th of September 2020, a webinar was held to present the main developments and findings of the EasyFloor project. Several CERIS researchers participated. IST Research team: J. Ramôa Correia (main investigator), F. Branco, J. Ferreira, N. Silvestre, M.G. Gomes, A. Neves e Sousa, J.D. Silvestre, M. Garrido, M. Proença, M. Sá, M. Demertzi, A. Azevedo, D. Martins, M. Hofmann. The webinar had 51 participants. Program available **here**



"International Congress 40 years of the 1980 Azores earthquake"

The theme of the 40|80 is to remind the 40 years of a devastating earthquake that affect mainly Terceira Island but also Graciosa and São Jorge Island. At 40|80, it was promoted a state-of-the-art of the seismicity in general but also topics like volcanic seismicity, historical seismicity, crustal deformation, tsunamis, seismic hazard and risk. Since earthquakes cause economic and social losses, topics like case studies on the rehabilitation of buildings, retrofit techniques of heritage monuments, an overview of Eurocodes and construction codes, social and economic aspects are paramount to understand their impact and how to mitigate them. Thus, 40|80 aimed at providing the time and place where attendees from around the world were able to share their experience and knowledge to build disaster-resilient societies and to create new directions through integrating various fields

The virtual meeting of 40|80 included several sessions and keynotes and the scientific program had five classes, with six lectures, 16 presentations and a round table. The Book of Minutes (with ISBN) and the videos of all the presentation sessions are available at **http://www.azores40-80meeting.com**/.

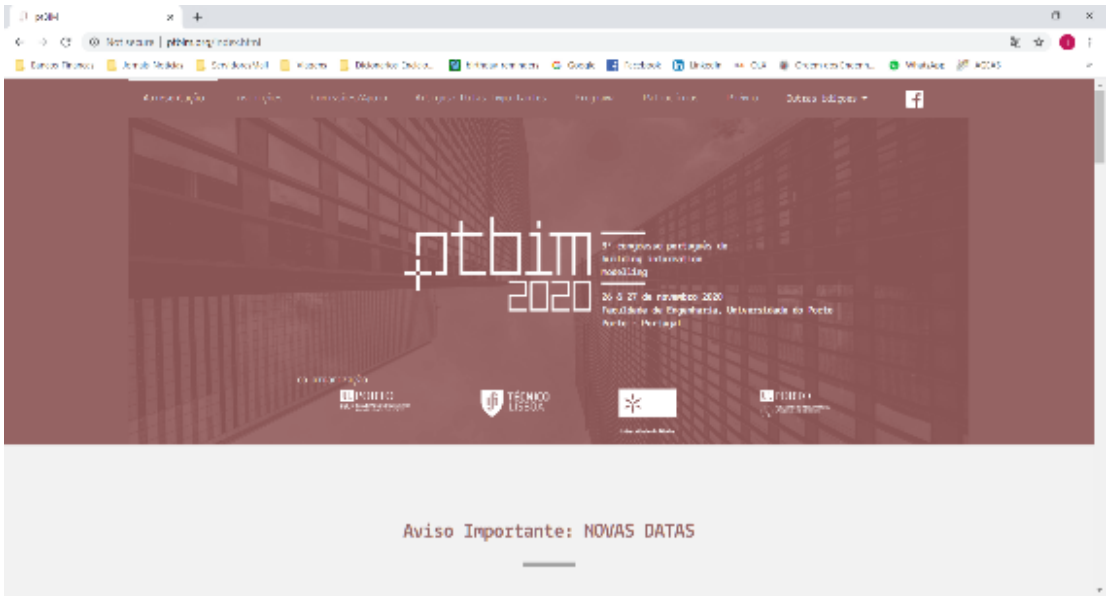
CERIS supported this initiative, with direct transmission (for the 1st time) on CERIS Facebook or via zoom, with 80 participants. The videos on Facebook reached a wide audience, the total views on the first day were 334 and 203 on the second day.

3rd ptBIM - November 2020 – Porto

ptBIM 2020 – 3rd National Congress of Building Information Modelling was held on 26-27 November and 4 December 2020 and had more than 250 participants. The Proceedings of the Conference included almost 100 articles and can be accessed through the following link: https://books.fe.up.pt/index.php/feup/catalog/book/978-972-752-272-9

ptBIM2020 had several thematic round tables involving the academia and the industry, three renowned international invited keynote speakers (Prof.Rafael Sacks, Prof. Eduardo Toledo Santos and Prof. Mohamad Kassem) and more than 60 other technical and scientific presentations.

The participation CERIS research member António Aguiar Costa is Chair of the Scientific Committee and Member of the Organizing Committee. More information available on: [www.ptbim.org.](http://www.ptbim.org)



9th EWICS – 2020 – Lisbon

The 9th European Workshop on the Seismic Behaviour of Irregular and Complex Structures (EWICS), chaired by the researcher Rita Bento, took place online on the 15th and 16th of December 2020. It followed the successful three-annual series of workshops started back in 1996. The workshop is organized under the sponsorships of Working

Group (WG) 8 (Seismic Behaviour of Irregular and Complex Structures) of EAEE. This international event promotes sharing and dissemination of research results, as well as networking in different fields. The event gathered 45 researchers of 12 nationalities: Italy, Greece, Portugal, Mexico, Spain, India, Poland, Romania, Japan, Colombia, Israel, Serbia and United States. A compilation of selected extended abstracts will be published by Springer.

Please check the 9th EWICS webpage: **https://9ewics.org**

09 UPCOMING EVENTS

ISCTSC 2020 – POSTPONED to April 2021 – Porto Novo (Vimeiro)

The 12th International Conference on Transport Survey Methods, 'Travel Survey and Big Data: how to make the best of both worlds' will be held in Hotel Golf Mar in Porto Novo beach. CERIS researcher João de Abreu e Silva is the chairman of the local organizing committee. This event was postponed and will now take place on 25-30 April 2021. More information on **https://www.isctsc2020.pt/**

Velo-city 2021 – June 2021 – Lisbon

The global cycling conference Velo-city 2021 will be held in Lisbon on 1-4 June 2021 and will explore the theme 'Cycle Diversity'. CERIS researchers Filipe Moura and Rosa Félix are in the Scientific Advisory Board. More information available on: **https://www.velo-city2021.com/**

CEES 2021 – October 2021 – Coimbra

CEES 2021 – 1st Conference on Construction, Energy, Environment and Sustainability will take place in Coimbra from 12 to 15 October 2021. CERIS research member Jorge de Brito is co-Chair of the Organizing Committee. More information available on: **https://www.cees2021.uc.pt/**

ICUR2020 – POSTPONED to June 2022 – Lisbon CEES 2021 – October 2021 – Coimbra

The CERU - European Centre on Urban Risks - is organizing the 2nd International Conference on Urban Risks in Lisbon. CERIS researcher Mónica Amaral Ferreira is in the organizing committee. Due to the COVID-19 pandemic, this event was postponed to June 2022 (it will be ICUR2022). More information available on: **https://www.ceru-europa.pt/icur2020/en/**

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Cancele sua subscrição aqui

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