

## NEWSLETTER – issue 31.05.2012

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You may leave the list at any time by clicking here:

<http://www.3encult.eu/en/newsevents/newsletter/>

## 3ENCULT wins the Innovation Award at AR&PA 2012



**Awarded for exemplary action in facilitating the connection between conservation of historic landmarks and citizens, the 3ENCULT projects highlights that citizens are crucial actors in safeguarding a new life for historic buildings across Europe.**

The 3ENCULT project has been awarded on 27 May with the "Premio Innovación AR&PA 2012" at AR&PA 2012 - the 8th Biennial of Heritage Restoration and Management Fair that took place from 14 to 27 May 2012, in Valladolid, Spain. This award is given to the best innovation project presented at the fair, and this year the jury decided to award 3ENCULT for its exemplary actions in boosting links between cultural heritage and society.

AR&PA is organized by the Spanish Castilla & León Regional Authority, in collaboration with the European Commission, Tecnalia Research & Innovation and Cartif Foundation. It is a meeting and discussion place for institutions and professionals dealing with preserving cultural heritage and transmitting this legacy to future generations. Part of this fair are:

- A demonstration area to exhibit technologies developed as part of research projects related to cultural heritage.
- An area presenting projects and research results.
- Expert evaluation and the 2nd AR&PA Innovation Awards.

AR&PA Innovación 2012 presented several innovative and outstanding prototypes, research and implementation projects in the field of cultural heritage protection. "It has been a great privilege to receive this award on behalf of the 3ENCULT Consortium," said Daniel García Gil, Cartif. "This award is a very important acknowledgement of the high-quality results that the 3ENCULT project group and Cartif have been obtaining in the field of energy efficiency applied to cultural heritage. It is a further encouragement for us to keep working on this path".

The AR&PA Innovation programme serves as a platform to show the results of all relevant research projects carried out within the 7th Framework Programme of the European Commission, such as 3ENCULT.

Further information on AR&PA 2012 can be found [here](#)

## Can legislation, such as EPBD, boost our Cultural Heritage's energy ambition?



Legislation is a proven instrument to help reaching energy ambitions. The Energy Performance of Buildings Directive (EPBD) is such an instrument, put in place on a European level and influencing legislation in all Member States in respect of energy use in the built environment. Integration of historic buildings in the EPBD will be a driving force in striving towards the ambitious energy goals that have been set.

3ENCULT explores the possibilities of this integration. Currently, most EPBD requirements exclude formally listed historic buildings. Evidently conservation aspects make it less evident to demand energy efficiency targets when historic buildings undergo major renovation. But there are alternatives thinkable which encourages the choice for energy saving measures, without asking for the impossible.

For instance, the EPBD can require that during the renovation process of historic buildings the technical, environmental and economic feasibility of various energy saving measures is considered. The EPBD won't require the implementation of these measures, regardless of the outcome of such analysis. But measures that turn out to be feasible stand a higher chance of being implemented than when they would not have been considered at all.

The first report of the 3ENCULT study on this topic can be found [here](#). It introduces the recasted EPBD, especially where it concerns old and historic buildings, and presents our suggestions for energy performance calculations for historic buildings. Since this is an ongoing task, please check the website for more information on this topic in a later stage.

Further Information: Marleen Spiekman (TNO), [marleen.spiekman@tno.nl](mailto:marleen.spiekman@tno.nl)

## Copenhagen Study Tour June 2012: energy efficient renovation of Historic Buildings



**An invitation for Nordic municipalities and heritage site managers – join us in Copenhagen in June! European city centers are of great historic and cultural value. How can we improve energy efficiency and use renewable energy in buildings while also protecting our heritage? Are these conflicting requirements?**

ICLEI Europe, in the context of the 3ENCULT project, and in cooperation with the city of Copenhagen, organizes a study tour on **26 June 2012**. This exciting 1-day programme is aimed at offering up-to-date information to local leaders and municipal staff dealing with buildings, energy and cultural heritage, especially from Northern Europe and the Baltic Region.

Learn from experts how materials and technology options can be harmonised with cultural heritage. Explore energy efficiency options with us, and the relevant context of local policy and urban planning. Explore innovative approaches in bridging the gap between preserving European landmarks and energy efficiency. A combination of presentations by experts and guided site visits will be organized, exploring:

- the Osram Building – constructed in 1953, this historic landmark was extensively “energy renovated”, reducing energy consumption by more than 60%. Creative solutions were used to preserve the façade and it is connected to the local district heating system.
- the Masteskurene and Mærsehuset - awarded the Mies van der Rohe Prize as a good example of renovation that preserves historical trademarks and meets the users’ needs.
- the Fæstningens Materialegård - a 3ENCULT demonstration project that brings together unique materials, smart solutions and analyzing how to combine energy efficiency and cultural heritage.

Limited space is available – so secure your slot now by [registering](#). For more information please visit the website for the [programme](#) or contact us at [ccp-europe@iclei.org](mailto:ccp-europe@iclei.org).

## Exploring exemplary research and demonstration approaches at Resilient Cities



**Urban areas, historic buildings and climate change – these issues are being explored in the 3ENCULT project. Results and research experiences will be represented at the Resilient Cities 2012 Conference held from 13 to 15 May in Bonn, Germany.**

This 3<sup>rd</sup> Global Forum of the Urban Resilience and Adaptation brings together municipal representatives and scientists from all around the world to discuss relevant issues and exchange knowledge.

Results from 3ENCULT will be shared – linked to other research and development projects and exchanges. The project addresses smart solutions for energy efficiency in historic

buildings, as a crucial component for a comprehensive and integrated resilience strategy. Not only do most European cities and towns have a historic town centre and many buildings of cultural heritage, but all of them will experience climate change and need to plan and respond appropriately. Results of multi-disciplinary research collaboration, such as 3ENCULT, are valuable to help local governments and other key actors explore proven options – from policies and strategies to energy relevant technologies and materials.

Ms. Astrid Kaemena, from the EC DG Research and Innovation, will represent 3ENCULT and other **7th Framework Programmes (FP7)** research projects’ experience, in her role as facilitator of the session C3 on building capacity and getting results with research collaboration on Monday, 14 May. The role played by DG Research FP7 projects in this specific field is especially valuable and aims to reinforce excellence, dynamism and creativity in European research.

More details are available on the Resilient Cities conference [programme](#), including adaptation and resilience strategies from city cases shared in [the Reality Check Workshops](#) (featuring Copenhagen in Denmark, Sorsogon in the Philippines, La Paz in Mexico and Ancona in Italy).

## Good practice seminar on integration of conservation and improvement of energy efficiency in historic buildings



### Date & place:

4.5.2012, 11.00 - 17.00  
Bologna, Palazzo Merendoni  
in Italian

### Links:

European Days <http://www.comune.bologna.it/bolognaeuropeandays>  
Green Social Festival <http://www.greensocialfestival.it>  
Blog <http://bolognaeuropeandays.tumblr.com>

### Further information:

Pamela Lama (COBO) [pamela.lama@comune.bologna.it](mailto:pamela.lama@comune.bologna.it)

Public and private decision-makers, professionals and scientific organisations are invited to attend the seminar on "Conservation and energy retrofitting of historic buildings" in Bologna on 4th of May 2012, where also 3ENCULT will be presented.

As final event of the Energy Days and included in the European Days initiative organised by the Municipality of Bologna, the seminar will draw the attention of the audience to good practices of integration between conservation and improvement of energy efficiency in historic buildings.

The seminar will present experiences and best practices from two EU funded projects: the **GovernEE** project, which aims at rationalising energy use of public and historic buildings, by approaching the problem from the point of view of good governance, and the **3ENCULT** project, through presentations given by some of the project partners.

## European Research joins forces



3ENCULT contributes to the **2nd European Workshop on Cultural Heritage Preservation (EWCHP)**, which clusters research and development activities in the field of cultural heritage and its preservation for future generations.

The workshop will take place on September 24–25, 2012 and an additional training day will be held on September 26th 2012. The 2nd EWCHP will take place at Kjeller, about 25 km outside of Oslo, Norway and will be hosted by NILU- Norwegian Institute for Air Research.

The Organizing Committee is delighted to invite you to the 2nd EWCHP and looks forward to welcoming you.

**Abstracts** deadline has been extended to **16th of April 2012**.



### Dates

24-25 September 2012 - Workshop  
26 September 2012 - Training Day

### Further information

Elin Dahlin (NILU) - Chair  
Alexandra Troi (EURAC) for 3ENCULT in the Scientific Committee

## Non-invasive ventilation system tested in masterpiece of early-modern architecture



In Innsbruck, at the Neue Mittelschule Hötting - a historic building and 3ENCULT pilot project - a new minimally invasive ventilation system for school buildings is being tested. The dual aim of this system is to preserve the architectural value of the building while guaranteeing scholars' comfort.

When ventilation systems are integrated into historic buildings this requires minimal invasiveness (structurally) with maximum reversibility. For this purpose the principle of "active overflow", which is already used in refurbished dwellings, is an optimal energy efficient solution that can also be applied to school buildings. The idea is simple: fresh air is vented into the corridor and stair case, with fans actively pushing the air from the corridor into the classrooms.

Typically to optimize this approach, the ventilation system is linked to heat recovery and therefore needs ducts for air inlet and - exhaust to and from the rooms. Silencers are also needed to prevent noise.

Two 3ENCULT partners, the University of Innsbruck together with the company ATREA, are testing the first prototypes of active overflow elements with fans and silencers in one class room of the Hötting school. The prototypes aim for the obvious advantage - to avoid the need for ducts in the corridor or for the installation of a vertical shaft to provide fresh air.

The heat recovery system is instead placed on the roof and the fresh air is distributed via the open staircase and corridors through vertical ducts. Driven by a fan through a silencer the air is then distributed through textile ducts. The flow rate of the central unit is controlled by CO<sub>2</sub>-sensor in the corridor and the fans in the classrooms are switched on according to a schedule one hour before the start of lessons. Motion control sensors switch off the fans after a delay of 15 minutes.

With a special focus on cultural heritage, this minimally invasive strategy is a big advantage to combine together preservation aspects and user comfort at the same time.

## Green Week celebrating sustainable energy for all

### V Semana Verde Usal



Papel 100% reciclado

The fifth edition of Green Week at the University of Salamanca, was held from 26 to 30 March 2012. The theme of this edition was "S.O.S.TENIENDO LA ENERGÍA" coinciding with the UN declaration of 2012 as the "International Year of sustainable energy for all" and the "International Year of Cooperatives".

Numerous activities were scheduled including a contest, workshops, visits, exhibitions, debates and conferences. These were held on all the campuses of the University of Salamanca, including the cities of Zamora, Avila and Bejar. One of the highlights was a conference in Zamora, "Green Day in Zamora. Sustainable building" held on 28 March 2012.

project is undergoing energy efficient refurbishment – namely the Industrial Engineering School in Bejar, which belongs to Salamanca University.

An exhibition on sustainable building presented several projects, including 3ENCULT. One of the cases in this

More information in this case can be found at: <http://calidadambiental.usal.es>

## Beautiful historic farm house - case study visit to Appenzell



The so-called “Strickbau” in Appenzell, Switzerland, is one of the case studies of the 3ENCULT project. The aim of this case study is to retain comfortable use of historic Strickbauten by carrying out the best possible energetic refurbishment without harming the historical substance.

In collaboration with conservators, the best possible balance between the three major concerns of energy efficiency, comfort and conservation were explored and developed in this case. Four rooms of Strickbau – built in 1630 - were improved with an internal insulation in autumn 2011. It was further important to provide surveillance possibilities and monitoring the procedure and impacts.

In March 2012, the building was visited by the 3ENCULT project consortium and their guests working with building

conservation to explore the progress made in the case study. The visit was led by Prof. Dr.-Ing. Harald Garrecht, head of the Chair of Building Materials, Building Physics and Building Chemistry at the Technische Universität Darmstadt.

### Further information:

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## Smart windows for smart historic buildings



Corinna Engelhardt from youris.com interviews Dr. Alexandra Troi on the latest developments of the “SmartWin historic” window used in the energy efficient refurbishment of the ‘Waaghaus’ in Bolzano, Italy.

3ENCULT and its case studies - test and demonstration cases under development - show how important the role of window refurbishment is to drastically reduce energy waste. This has huge potential especially in historical buildings. The Waaghaus (Public Weighing House) case had undertaken a previous window refurbishment that left the building with new windows that were neither aesthetically pleasing nor historically accurate. This opened up a range of opportunities for experimenting with other more optimal solutions. EURAC and the designer Franz Freundorfer, together with the building curator Waltraud Kofler-Engl, had

the luxury of complete freedom to develop a new energy efficient window design that would integrate well with the building’s historic façade.

Alexandra Troi, Vice Head of the [Institute for Renewable Energy at EURAC](#) and Scientific Coordinator of 3ENCULT, supervised the development of the new “SmartWin historic” window. “With our window we believe we have a solution for all historic buildings whose windows can be replaced. The SmartWin Historic Window is not only a very well insulated window that fits perfectly in historic buildings—it is also affordable.” The first prototype was installed in the Waaghaus in February 2012. The next step is to measure and analyse different parameters of this prototype and compare it to one of the old windows from the 1950s. This prototype, which can be touched and examined, is a good starting point for multidisciplinary discussions – an essential element in the 3ENCULT project context.

Article by  
Corinna Engelhardt, [youris.com](http://youris.com)

For more information: [www.3encult.eu](http://www.3encult.eu) and [www.youris.com](http://www.youris.com)

## “A window through time ...” – introducing an expert



Growing up in a family of window-makers, Franz Freundorfer trained as a cabinetmaker, studied wood technology, and created windows for energy efficient houses. Now, with 20 certified window designs to his name, Freundorfer is considered an expert in his field. He is applying his knowledge to the development of 3ENCULT's 'SmartWin Historic Window'.

**Q: Mr. Freundorfer, going from modern energy efficient houses to historic buildings must have been a big leap for you. What were your initial thoughts when the building conservationists knocked at your door and asked you to create a 'historic' but energy-efficient window for the Waaghaus in Bolzano?**

A: I first saw it as a possibility to increase my range of work in the field. I thought that the biggest challenge would be to

understand a building conservationist's way of thinking and to assume the challenge of developing an energy-efficient window that could respect the aesthetics of a historic building.

**Q: There are many windows currently available on the market. Why do we need to develop a new one for historic buildings?**

A: During a workshop in Bolzano, the curator of the Waaghaus, Waltraud Kofler-Engl, took us on a stroll through the Old Town to look at the historic buildings. In an instant, the differences became clear. Today's windows are massive, often with very wide frames, and they don't fit the proportions of a historic facade. Furthermore, contrary to historic windows, modern insulated glazing maintains a constant pressure inside the window, which causes the glass to bow a little to the outside or the inside depending on how high or low the external air pressure is. Before this project, I had never noticed how dramatic this could be, but now it is clear to me and I can empathise more with the concerns of building conservationists.

**Q: What did you take into consideration when solving the problem?**

A: We agreed relatively quickly that we needed to use a box-type window with two different types of glass. To respect the visual integrity of the historic building, we used single glazing on the outside and an insulating triple glazing on the inside. In the end, our 'SmartWin Historic Window' is the equivalent of a 'countersash' window, in which two windows are installed close to each other. The next step was to find the right historic profile for the design of the window.

**Q: So you not only had to work as a window developer, but also collaborate with the building's conservationists as a historian. How did you come up with the design idea for your window in the Waaghaus in Bozen?**

A: Collaboration with the conservationists was essential. And it was fun to search through the drawings—some several hundred years old—to find that people back then had many of the same preoccupations as we do now. Of course they had poorer quality glass, but like us they wanted to get the maximum amount of light into their buildings. They had already thought the problem through, and developed solutions that have somehow gotten lost over the years! One of their innovations that I found in a historical drawing was the 'Geißfuß', a very smart geometrical arrangement that allows the window sash to tuck horizontally in behind the blind frame. It was this idea that made it possible for us to insert the countersash window into an energy efficient frame.

**Q: So your window design is a combination of old and new technology - of high-tech materials and a historic narrow frame**

A: That's true. You lose much less heat with a narrow frame because a windowpane has far better energy efficiency than a window frame: the narrower the frame, the lower the energy loss. At the same time, more glass gives you greater exposure to the sun. In fact, from this perspective, a window cannot be considered energetically well-engineered until the frame width is zero. And this, in the end, was our aim: to depart from conventional wisdom and be happy about every millimetre less frame-width we could achieve.

**Q: What are the further plans regarding the 'SmartWin Historic' window?**

A: Soon we would like to start using a thin layer of glazing for the historic look of the inner window and in a few years we might also try using vacuum glazing. Already at this stage, we've received Smart Window certification together with our French manufacturer "André Meniserie", and it is ready to be used in other historic buildings as well.

Interview by  
Corinna Engelhardt, [youris.com](http://youris.com)

For more information: [www.3encult.eu](http://www.3encult.eu) and [www.youris.com](http://www.youris.com)



## International Preservation News features 3ENCULT approach



“Libraries, archives and museums do not intend to renounce their core missions through throwing enormous budgets into increasing energy costs” underlines the editor of *International Preservation News*, the magazine of the International Federation of Library Associations and Institutions (IFLA) – with its Core Activity on Preservation and Conservation (PAC).

This is a key message in the December issue of the magazine which is distributed to 2500 librarians, curators and archivists through the world – also accessible online “*Energy Savings and Preservation in Libraries and Archives*”. It features, besides energy efficient preservation and climate control strategies, the design of new archives. The 3ENCULT project approach is to bring energy efficiency to existing buildings which are to be preserved and may also include valuable collections.

The authors point out that “It is a base principle postulated by 3ENCULT to include all stakeholder in the design process of the energy retrofit of a historic building”, and „Multidisciplinary exchange starts with the comprehensive diagnosis, supports the design and does not end before the implementation of an integrated monitoring & control.” 3ENCULT aims at developing necessary solutions, both by adapting existing solutions to specific issues of historic buildings and by developing new solutions and products. A series of case studies are being accompanied and used to stimulate research activities - at the same time assessing the solutions developed.

## PROJECT INFORMATION

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- » Deliverables

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