WORLD SUSTAINABLE BUILDING 2014
BARCELONA CONFERENCE

Sustainable Building: RESULTS
Are we moving as quickly as we should?
It's up to us!

CONFERENCE CONCLUSIONS
VOLUME 1

This is the first of four volumes of the World SB14 Barcelona Conference Conclusions, which took place in Barcelona on the 28th, 29th and 30th October 2014.

The Conference was organised by GBCe (Green Building Council España), co-promoted by iiSBE, UNEP-SBCI, CIB and FIDIC, and counted on the participation of World GBC*.

This volume gathers the conclusions from the oral sessions from the Conference area "Creating New Resources", presented at World SB14 Barcelona on the morning of day 2 of the Conference. All the papers in these sessions were double blind peer reviewed by the Scientific Committee of World SB14 Barcelona.

- If you wish you search for session content by author or paper title, please use the Conference programme search engine.
- If you wish to search for session content by topic you can guide yourself by the topic labels that you will find at the top of the Conference programme search engine.

All papers from World SB14 Barcelona have been granted the ISBN number 978-84-697-1815-5.

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Green Building Council España
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28046 Madrid

***iiSBE:** International Initiative for a Sustainable Built Environment
UNEP-SBCI: United Nations Environment Programme - Sustainable Buildings and Climate Initiative
CIB: Conseil International de Batîment
FIDIC: International Federation of Consulting Engineers
World GBC: World Green Building Council

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DAY 1

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Session 7:

What role must the user play in sustainable building?

Chairperson:

Colin, Brigitte

Consultant in Architecture, Cities and Urban Policies. UNESCO Natural Sciences Sector

Speakers:

Title: Impact of occupant behavior on space heating demand in the retrofit of multi-family residential buildings

Domingo-Irigoyen, Silvia

SAVIArquitectura Research Group. School Of Architecture. University Of Navarra. Pamplona.Spain.

Title: Post-Occupancy Evaluation by the test families in five Model Home 2020 across Euro

Christoffersen, Jens

VELUX A/S. Hoersholm.Denmark.

Title: Assessment of Occupant Satisfaction in Building Performance Evaluation based on Systematic Surveys

Wagner, Andreas

Karlsruhe Institute of Technology, Building Science Group. Karlsruhe.Germany.

Title: Using the EduTool: IEQ to evaluate the IEQ performance inside classrooms

Soccio, Philippa

The University Of Melbourne. Melbourne. Australia.

Conclusions:

- *Silvia Domingo-Irigoyen:* Deeper retrofit is part of the solution for energy saving in renovation of buildings, but depends at large on the user's behaviour.
- *Jens Christoffersen:* Model homes 2020 (VELUX experience done from 2008 to 2012) in 12 countries in Europe, the post occupancy evaluation shows a high satisfaction with the indoor environment, better health, fewer sick days and improved sleep quality: for these families the house automation is acceptable.
- *Andreas Wagner:* Assessing occupant satisfaction based on systematic surveys illustrates the complexity of the social issues in the field of building performance and the challenge of translating social reality into scores: a balance between the user satisfaction and the building performance. Follow up feedback is important for improving the users' comfort.
- *Philippa Soccio:* How we can prepare meaningful scientific results to design professional, to design sustainable schools for the future? How to balance energy saving and wellbeing of the users measuring indoor environmental quality? (acoustic, light, air quality and thermal comfort). How to make well informed design decisions from the feedback of the POE tools and EDU tool?

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Session 10:

Where should energy renovation reach up to? (I)

Chairperson:

Lützkendorf, Thomas

Head of the Chair of Sustainable Management of Housing and Real Estate Department of Economic and business Engineering at Karlsruhe Institute of Technology (KIT)

Speakers:

Title: Method to develop cost-effective studies of energy efficiency measures for Mediterranean residential existing buildings with multi-criteria optimization
Salom, Jaume
Catalonia Institute For Energy Research (IREC). Sant Adrià del Besòs.Spain.
Title: Urban energy interventions in Oostland (NL): bottom-up towards sustainability
Broersma, Siebe
Technical University Delft, Fac. Of Architecture. Delft.The Netherlands.
Title: Regionalization of buildings-stock description as basis for evaluating energy conservation measures - South East Norway and South West Sweden
Mata, Erika
Chalmers University Of Technology. Gothenburg.Sweden.
Title: Analysis of Indoor Environment Quality and Heating Energy Consumption by Building Retrotif for Energy Efiiciency of the Public Building

Jang, Min Seon

Korea Institute Of Construction Technology. Goyang-Si.Republic of Korea.

Conclusions:

Our goal is to become independent from fossil fuels, but also to become carbon neutral. We have to take into account:

- The characteristics of existing building stock.
- The potentials in terms of renewable energy use in regions.
- The targets in terms of thermal comfort.
- Willingness to pay.
- Cost-effectiveness of measures.
- The possibilities of passive and active measures.

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Session 12:

Which is the best strategy for building envelopes: insulation or thermal inertia?

Chairperson:

Kratz, Markus

Forschungszentrum Jülich. Germany

Speakers:

Title: Improving the thermal performance of commercial buildings envelope
Mendes Da Silva, J.A.R.
University Of Coimbra. Coimbra.Portugal.
Title: Thermal Performance Analisys of Un-insulated and Owner Insulated Masonry Residential Buildings in Northwestern Mexico using State-Space Simulation and Lumped Parameter Modeling.
Palomera-Arias, Rogelio
University Of Texas At San Antonio. San Antonio.USA.
Title: Energy efficiency in Spanish social housing stock. Façade composition and energy demand review. (Best Papers SB13 California)
Alonso, Carmen
Eduardo Torroja Institute Of Construction Science IETCC, Spanish National Resear. Madrid.Spain.
Title: Double skin façade for naturally ventilated office buildings in Brazil

Barbosa, Sabrina

University Of Brighton. Brighton.United Kingdom.

Conclusions:

- Commercial buildings envelope: What is the best? No answer but 100 potential guidelines related to typology and climatic zones.
- Thermal Performance Analysis: (exterior or interior insulation?) Only related to tropical climates → AC. Matter of location: compare Mexico and the US.
- Review on energy offering in Spanish social housing dynamise no steady state; comfort → uncertainty on climate and comfort parameters:
    1) Measuring and modelling.
    2) Combination isn't lost.
    3) LCA approach (inertia = high amount of energy local continents → resources (waste heat)).
- Double skin facade for office buildings (Brazil).

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Session 13:

Which are the bottlenecks in the sustainable urban regeneration process?

Chairperson:

de Santiago, Eduardo

Consejero Técnico. Subdirección General de Urbanismo. Subdirección General de Urbanismo. Ministerio de Fomento. Gob. España

Speakers:

Title: Rallying to Sustainability of Existing Public Housing Estates
Chan, S.T.
Hong Kong Housing Authority. Hong Kong.China.
Title: A Strong Research Environment for Sustainable Renovation Established in Sweden
Mjörnell, Kristina
SP Technical Research Institute Of Sweden. Gothenburg.Sweden.
Title: 'Propagation' as a key factor to accelerate the transition to low-carbon resilient cities
Mateo, Carolina
Instituto Valenciano Edificación, Universidad Europea Valencia. Valencia.Spain.
Title: A scenario of long-term integrated spatial planning strategies for sustainable community

Kamei, Miho

The University Of Tokyo. Tsukuba.Japan.

Conclusions:

The session identified some of the bottlenecks like: affordability, lack of financial resources, fragmentation of knowledge, lack of skilled manpower, short views favouring low cost solutions, lack of political action and involvement, timing, innate resistance to change daily habits and to make transition happen, absence of widespread strategies for comprehensive urban regeneration.

Some solutions were proposed: bottom-up approaches, education, awareness raising, holistic, integrated approaches, interdisciplinarity, transdisciplinarity, multi stakeholders' involvement, empowerment, propagation, political action, more dedication to the process as key for implementation, etc.

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Session 14:

Urban renewal, how is it managed?

Chairperson:

Cárdenas, Luz

University Of Chile Faculty of Architecture & Urbanism, Santiago, Chile

Speakers:

Title: Sustainable valorization of 'unique heritage': oasis cities
Carrá, Natalina
Mediterranean University of Reggio Calabria, Department PAU. Reggio Calabria.Italy.
Title: Think different – gain more, spend less A real life example from a passive house refit
Martinsson, Linda
Skanska Sverige AB, Göteborg, Sweden. Gothenburg.Sweden.
Title: Comparing socio-technical regimes and transition potential in Austrian and Swedish multi-residential housing
Femenias, Paula
Chalmers University of Technology. Gothenburg.Sweden.
Title: Managing sustainability aspects in renovation processes: Interview study and outline of a process model.

Olsson, Stefan

KTH Royal Institute Of Technology. Stockholm.Sweden.

Conclusions:

Key issues in the renovation process model as a reply to the question, discussed by the audience were summarised, as follows:

- Partnership between the community, private company and the local government.
- Collaboration from tenants when their culture and tradition are considered.
- Business model is becoming necessary to push renovation process forward.
- Sustainability is possible through renovation, rebuilt although it means to manage extra resources.

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Session 15:

Which should the challenges of buildings rating tools be?

Chairperson:

Larsson, Nils

Executive Director. IISBE

Speakers:

Title: Tools comparison: Ecometro vs Existing environmental buildings assessment systems
Alonso, Iñaki
Asociación Ecómetro. Madrid.Spain.
Title: Qualitative assessment for sustainable housing
Lalande, Christophe
UN-Habitat. Nairobi.Kenia.
Title: Social performance criteria for buildings according to the CEN TC 350: Case study of the assessment of the Velux Sunlight-House, Austria
Tritthart, Wibke
Interuniversity Research Center (IFZ). Graz.Austria.
Title: Tool for Evaluation of Thermal and Environmental Performance of Buildings **Badurova, Silvia** Research Centre, University Of Zilina. Zilina.Slovakia.
Title: DGNB Certification System

Dax, Michael

German Sustainable Building Council. Germany.

Conclusions:

- They should be more transparent.
- More emphasis on social and economic criteria.
- Use local data and standard methods and frameworks.
- Support development systems for developing countries.
- Emphasize the use of small sets of key performance indicators.

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Session 16:

How can traditional architecture contribute to sustainability? (I)

Chairperson:

Solé, Josep

European Sustainability and Technical Manager at URSA Insulation. Barcelona, Spain

Speakers:

Title: Assessment of Existing and Historical Buildings in Terms of Sustainability – Case Studies in the Czech Conditions
Mancik, Stepan
CTU In Prague, Faculty Of Civil Engineering. Praha.Czech Republic.
Title: Energetic and comfort benefits of composite buildings. Learning from vernacular techniques
Szkordilisz, Flóra
Department Of Environmental Economics, BUTE, Budapest. Budapest.Hungary.
Title: Vernacular Architecture Approach to achieve sustainability In Informal Settlements
Omar, Walid
Beirut Arab University. Beirut.Lebanon.
Title: Using Historic Cases to Formulate Appropriate Sustainable Building Refurbishment Strategy

Ng, S. Thomas

The University Of Hong Kong. Hong Kong.China.

Conclusions:

The major contribution of vernacular architecture is the use of local resources including environmental, human and cultural ones. Cultural value should be included in the assessment of sustainability in existing buildings.
Traditional buildings techniques can fulfill the actual needs on expectations. Some simple tool showing benefits of refurbishment and needed in order to show benefits to users and policy makers.

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Session 17:

What should the limits to comfort and how can we manage them?

Chairperson:

Sánchez Ostiz, Ana

Dra. Arquitecta, Profesora Titular de Construcciones Arquitectónicas de la Universidad de Navarra, Directora del Master de Diseño y Gestión Ambiental de Edificios. EA UNAV

Speakers:

Title: The use of intelligent buildings to achieve sustainability through an architectural proposal for public buildings in Cairo
Khashaba, Sherif
Zagazig University , Beirut Arab University. Cairo.EGYPT.
Title: Energy and environmental impacts of home automation components
Longo, Sonia
Dipartimento Di Energia, Ingegneria Dell'Informazione E Modelli Matematici – Uni. Palermo.Italy.
Title: The comfort range as a nonlinear function and its role on evaluating the design performance of low energy buildings
Linhares De Siqueira, Gustavo
Hafencity Universität, Resource Efficiency In Architecture And Planning. Hamburg.Germany.
Title: Automatic quantification for waste management with BIM Models

Cózar, Elías

Escuela Técnica Superior de Ingeniería de Edificación. Departamento de construcción. Sevilla. Spain.

Conclusions:

The major contribution of vernacular architecture is the use of local resources including environmental, human and cultural ones. Cultural value should be included in the assessment of sustainability in existing buildings.
Traditional buildings techniques can fulfill the actual needs on expectations. Some simple tool showing benefits of refurbishment and needed in order to show benefits to users and policy makers.

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Session 18:

Is North-South technology transfer efficient?

Chairperson:

El-Korazaty, Tamer

German University in Cairo - GUC

Speakers:

Title: Technological implants for sustainable autonomous upgrading of informal settlements in Cairo-Egypt
Nadim, Wafaa
Assoc. Prof. Architecture and Urban Design, The German University in Cairo (GUC) . Cairo.Egypt.
Title: Sustainable community and neighbourhood regeneration and development. Experiences from the approach and implementation of VTT's EcoCity concept
Huovila, Pekka
VTT Technical Research Centre Of Finland. Espoo.Finland.
Title: The influence of the Mediterranean climate on vernacular architecture: a comparative analysis between the vernacular responsive architecture of southern Portugal and north of Egypt
Fernandes, Jorge
C-TAC Research Unit, University of Minho. Guimaraes.Portugal.
Title: IDES-EDU: Comprehensive multidisciplinary education programme to accelerate the implementation of EPBD in Europe

Wyckmans, Annemie

NTNU Norwegian University Of Science And Technology. Trondheim.Norway.

Conclusions:

The session raised many questions and even "rephrased" the main question: Is this technology transfer actually necessary between North and South? Is it needed? Is it actually transfer, "implants" or exchange?

We agreed/it has been agreed that whether transfer, "implants" or exchange, they are very lacking, and are not efficient. Initiated by the North, or the South, in both cases, there are very strong forces (globalisation forces), financial and political issues dominating such transfers and exchanges. The audience basically agreed that there must be (reciprocal transfer) or (exchange) – North-South (technology)/South-North (human resources) –. These also must be a concentration on local empowerment, raising awareness and localisation policies in order to sustain the exchange and not just to transfer technologies from the North to the South, as they are without localisation.

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Session 25:

Which are the keys to interest owners in sustainable building?

Chairperson:

Colin, Brigitte

Consultant in Architecture, Cities and Urban Policies. UNESCO Natural Sciences Sector

Speakers:

Title: Swedish property owners´experience of added value from environmentally certified non-residential buildings
Brown, Nils
KTH - Royal Institute Of Technology. Stockholm.Sweden.
Title: How to motivate homeowners to invest in sustainable renovation?
Galiotto, Nicolas
Department Of Civil Engineering - Aalborg University. Copenhagen.Denmark.
Title: Integration of sustainability aspects into property valuation practice
Lorenz, David
Karlsruhe Institute Of Technology. Karlsruhe.Germany.
Title: Shifting the ownership paradigm in the built environment

F. Velasco-Fuentes, Carlos

University Of British Columbia. Vancouver.Canada.

Conclusions:

From the Swedish property owner's experience of Added Value (AV) from environmentally certified non-residential buildings. Results suggest that the dominant ideal type orientation of different property owners depends on whether they are public or private, if they are focused on large metropolitan areas or not, and if they are interested in attracting international tenants.

- Energy efficiency: lower energy cost.
- Material Choice and doc: highly quality.

It seems important to integrate homeowners' individual values in renovation decision making processes like the multi-criteria decision making:

- Single synthesis criterion approach.
- On ranking approach.
- Building rehabilitation based approach.
- Constructivist approach.
- Environmental measures principally constituted Added Value from reduced energy cost and are crosscutting for all ideal strategy types.

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Session 27:

What does construction of schools teach us about sustainable building?

Chairperson:

Zamora, Joan Lluís

Professor Universitat Politècnica de Catalunya

Speakers:

Title: ECO - SCHOOL - MAX - Built with waste materials
Camacho Ballesteros, Jesús
Ecoart-Ddactic. Palafolls.Spain.
Title: Integrated value model for sustainable assessment of school centers construction
Pons Valladares, Oriol
Upc. Barcelona.Spain.
Title: Users impact on energy and water consumption in Portuguese school buildings. From assessment to strategy.
Lourenco, Patricia
Técnico, Universidade De Lisboa. Lisbon.Portugal.
Title: From Single Building to Master Plan. Policies for Transformative Refurbishment of School Building Stocks

Lorbek, Maja

Vienna University Of Technology. Wien.Austria.

Conclusions:

- Construction can be also an education activity.
- Construction with waste is an educational opportunity.
- To build sustainable schools needs a general agreement between all agents involved.
- We can learn from buildings in use but we need more comprehensive information to understand.
- It is strategic sharing information about energy consumption.
- Refurbishing old building schools is also an opportunity for improving education results.
- Refurbishment of schools it is not only a technical problem but also an opportunity.
- Customized control of energy can be also an educational output.
- The users don't know the real impact of their behavior.
- Fulfilling the needs of our generation must not sacrifice the future welfare.

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Session 28:

Where should energy renovation reach up to? (II)

Chairperson:

Lützkendorf, Thomas

Head of the Chair of Sustainable Management of Housing and Real Estate Department of Economic and business Engineering at Karlsruhe Institute of Technology (KIT)

Speakers:

Title: Thermal Rehabilitation in old residential buildings
Salehi, Atefeh
Department of Mechanical Engineering, Faculty of Sciences and Technology, Univer. Coimbra.Portugal.
Title: Towards effective energy efficient rehabilitation of building envelopes
Sánchez-Ostiz Gutiérrez, Ana
Universidad De Navarra. Pamplona.Spain.
Title: Spatial Quality in Building Performance Assessments Tools. The case of in Dwelling Renovation for Energy Efficiency
Acre, Fernanda
NTNU Norwegian University Of Science And Technology. Trondheim.Norway.
Title: Regulatory review on the energy performance of buildings towards 2020 EU's targets. Portugal's Case Study

Morais, Patricia

Instituto Superior Técnico, Universidade de Lisboa. Oeiras.Portugal.

Conclusions:

The best idea is to be in line with the EU targets for 2020. We agree with the target to have a carbon neutral building stock in 2050 (in average). However, we have to take into account:

- The need for a clear definition of nearly ZEB.
- Specific strategies for different types of buildings and regions.
- We have to assess the overall advantageousness of the different measures from the point of view of sustainability.
- The benefits, such as thermal comfort, social quality and urban quality.

We need an information campaign and tools for decision-making.

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Session 30:

Do sustainable buildings require complex technical innovations?

Chairperson:

Meacham, Brian, J.

Associate Professor . Worcester Polytechnic Institute. USA

Speakers:

Title: Optimization of Energy Supply Systems for a Sustainable District in Stockholm Using Genetic Algorithms
Magny, Alessandro Antoine Andrea
KTH - Royal Institute of Technology. Stockholm.Sweden.
Title: Characteristics of design process in Life Cycle Carbon Minus House
Toki, Kensuke
KOIZUMI Atelier. Yokohama, Kanagawa.Japan.
Title: Energy-Saving Technologies Incorporated in a Low-Carbon Office Building Located in Tokyo. (Best Papers SB13 Singapore)
Takemasa, Yuichi
Kajima Technical Research Institute Singapore. Singapore.Singapore.
Title: The impact of cool roof applications on energy performance: results from Australian subtropical and tropical field studies

Miller, Wendy

Queensland University Of Technology.

Conclusions:

It depends. There are multiple factors that must be taken into account. When developing sustainable buildings, including climate, local materials, material and technology availability, contractor capability, how occupants use buildings, and more, good solutions do not need to be "high-tech" – solutions should use "appropriate technology" – appropriate to the aforementioned issues. Given the multitude of potential options, what is needed most are "simple to use" decision support tools which are complex enough to address and incorporate the large number of variables and deliver outcomes which all sectors of the community have confidence in, this will require a significant amount of high quality data, this is a critical research need. These data must include how people use buildings, so that appropriate technologies and selected as part of appropriate solutions.
In the end, "appropriate technology" is more important than "new" or "high" technology, and innovation includes looking "outside the technological box"- which sometimes means looking back to move forward.
In all cases, the identification, assessment and selection of technology need to start vearly in the design process. Innovation to achieve appropriate technological solutions is the key: not necessarily complex technological innovation.

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"These conclusions were agreed in principle by the session attendees (they all did not read and specifically agree to what is written here.)"

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Session 31:

Improvements by research and practice. Can the distance between theory and reality be reduced?

Chairperson:

Wadel, Gerardo

Socio fundador. Societat Orgànica Consultora Ambiental SL

Speakers:

Title: What does practice in the built environmental look like from the ecological worldview?
Hes, Dominique
The University Of Melbourne. Melbourne.Australia.
Title: Compact cities for a fast urganizing world
Labbe, Françoise
Urban Morphology and Complex Systems Institute. Paris.France.
Title: Breaking symmetries and emerging urban structures

Salat, Serge

Urban Morphology and Complex Systems Institute. Paris.France.

Conclusions:

Zero carbon design is a way to reduce actual pollution on cities but it is not enough to achieve real sustainable goals. Several examples were shown: countryside prototypes on Taiwan, stadium domes on Japan, a mandatory building certificate on Singapore or a new constructive materials with nanotechnology.
An adequate passive solar design, first, and a convenient technology considering use, place and culture could be the answer, always from a holistic vision of each city to each place.

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Session 33:

To obtain sustainable building, can the same tools be used everywhere?

Chairperson:

Sauer, Bruno

Director Técnico GBCe, socio Bipolaire Arquitectos. Profesor Universidad Europea de Valencia

Speakers:

Title: Application of CASBEE-City to Various Types of Cities around the World
Takigami, Masaki
Keio University. Yokohama.Japan.
Title: A comparison of the life cycle energy profile of residential buildings in different countries
Stephan, André
Université Libre de Bruxelles. Brussels.Belgium.
Title: Tomorrows buildings today – results, conclusions and learnings from a cross-european demonstration programme
Feifer, Lone
VELUX Group. Hoersholm.Denmark.
Title: Do Imported Building Environmental Assessment Methods Accelerate Culturally Appropriate Green Building Practices?

Cole, Raymond

University of British Columbia. Vancouver.Canada.

Conclusions:

The use of a standard tool in different places to obtain sustainability is not new. LEED and BREAM are established already in different countries and their experience can be used as a reference to evaluate the need of an international unified tool. At this moment, they only cover a very small segment of the building market (mainly linked with branding and international companies).
After the presentation of the four speakers and the debate with the audience, we agreed that a common methodology or framework could work if the local market disposes of strong and updated databases. There is a need to anchor the tool on local level giving more importance to cultural aspects in the rating tools, like liveability. Adaptability is a key factor to success. One of the principal aims for applying common (adapted) tools is to use the obtained results for defining comprehensive policies. The fact that worldwide tools like LEED and BREAM are introducing recently more social aspects, and that local tools are trying to become flexible and easy-to-use, shows us that we are going through a period of transition, searching for a new definition of what a rating tool should be.

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Session 34:

How can traditional architecture contribute to sustainability? (II)

Chairperson:

Solé, Josep

European Sustainability and Technical Manager at URSA Insulation. Barcelona, Spain

Speakers:

Title: Earthen Architecture & Sustanable Building: Proposed Union between authenticity and technical renovation - Case of South Moroccan Villages
El Rharbi, Siham
Ecole Nationale d'Architecture - Rabat. Casablanca.Morocco.
Title: Development of a Self-Compacted Clay based Concrete: Rheological, mechanical and environmental investigations
Landrou, Gnanli
ETH Zurich. Zurich.Switzerland.
Title: Energy efficiency strategies and tools for the refurbishment of Mediterranean historical small town centres: a methodology

Battisti, Alessandra

PDTA Departement, Sapienza University Of Rome. Rome.Italy.

Conclusions:

Reinterpret transition architecture on materials is an opportunity to find new sustainability constructions. Know-how for traditional techniques is necessary to be preserved and good learning can be taken.

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Session 35:

How do lighting and ventilation influence user comfort in buildings?

Chairperson:

Gomes, Vanessa

Associate Professor. University of Campinas, Brazil

Speakers:

Title: Post Occupancy Evaluation of Shading Device for Elementary School Classroom
Hsieh, Hung-Ren
Graduate Institute Of Architecture And Sustainable Planning, National Ilan Unive. Yilan.Taiwan Republic of China.
Title: Control of indoor climate systems in Active Houses
Holzer, Peter
Institute Of Building Research & Innovation. Vienna.Austria.
Title: Passive Cooling by Ventilated Façades in Streets Canyons under Climatic Summer Conditions in Southern Europe
Domínguez Delgado, Antonio
Escuela Técnica Superior De Arquitectura. Universidad De Sevilla. Sevilla.Spain.
Title: Floor-integrated HVAC-systems for zonal supply of multifunctional buildings

Wolisz, Henryk

RWTH Aachen University. Aachen.Germany.

Conclusions:

The first two presentations dealt with both light and ventilation while the two last ones addressed thermal comfort only.
In the first half of the session the role of the users is guaranteeing their comfort and the occasional failures of the intended design to achieve it. On the other hand, lessons learned by neat research project (temperate climates) showed how balancing automatisation and user interaction can improve indoor environmental quality.
The second half dealt with passive and active contributions from building façade components and from built in HVAC floor systems, highlighting the technological possibilities to upgrade and/or improve ongoing performance and increase flexibility in building usage.

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Session 36:

Do we know all the benefits of sustainable management?

Chairperson:

Gálvez, Miguel Ángel

Doctor Arquitecto. Profesor Titular Interino. Escuela Técnica Superior Arquitectura Madrid, UPM

Speakers:

Title: Festivals as laboratories: Developing new temporary housing
Haugbølle, Kim
Danish Building Research Institute/Aalborg University. Copenhagen.Denmark.
Title: Avtice + Stadia: Guidelines and Indicators for Sustainability and Plus-Energy Mega-Event-Buildings
Essig, Natalie
Munich University of Applied Science. Germany.
Title: Learning from the past: Training for a sustainable future of the tourist sector in the Coastal Atacama Desert.

Whitman, Christopher J.

Laboratorio De Bioclimática, FAUP, Universidad Central De Chile. Santiago de Chile.Chile.

Conclusions:

There is no definite reply to the question, but some examples of benefits from expertise area, of the speakers:

- Testing new solutions and exploring new models of business.
- Sustainable assessment tools for port infrastructure.
- Learning from the past to provide training in the tourist sector.
- All papers moves to extreme situation, far from traditional viewpoints.