

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 3**



This is the third 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](#).
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Green Building Council España
Paseo de la Castellana 114, 4º 7, puerta 7
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 Batiment

FIDIC: International Federation of Consulting Engineers

World GBC: World Green Building Council



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Session 79:

How can we empower citizens to create an urban identity?

Chairperson:

Nadim, Wafaa

Assoc. Prof. Architecture and Urban Design, The German University in Cairo (GUC)

Speakers:

Title: Social sustainability between idealism and realism

Zalloom, Bushra

Birmingham City University. Birmingham.United Kingdom.

Title: Local GREEN PARTNERSHIPS for greener Cities and Regions

Domingo Reig, Virginia

Granollers City Council. Granollers.Spain.

Title: Understanding residents' attitudes towards infill development at Finnish urban suburbs

Arvola, Anne

VTT Technical Research Centre Of Finland. Espoo.Finland.

Title: Tactical Urbanism: a Method of Community Empowerment in Cairo Neighborhoods (Best Papers SB13 Cairo)

Elshater, Abeer

Ain Shams University. Cairo.Egypt.

Title: Social impacts of citizen participation in service development. A case study from a Finnish urban neighbourhood.

Ahvenniemi, Hannele

VTT Technical Research Centre Of Finland . Finland.

Conclusions:

In order to empower citizens we need first to define:

- Social sustainability.
- Factors affecting urban identity and image.
- Awareness that urban identity is not static, it is about linking the past with the future.
- People and capacity building are very important.
- Technical and organisational knowledge.
- Governance models.
- Belonging to the environment.
- Indicators.
- Allow low risk flexibility for transformation.
- Recreational areas and improve quality of life.



Session 80:

Educating for a new paradigm. Are there barriers for the inclusion of this approach in formal education?

Chairperson:

Verdaguer, Carlos

Profesor Asociado. Escuela Técnica Superior Arquitectura Madrid, UPM

Speakers:

Title: Living Labs in Architecture: Open innovation and co-creation towards a more sustainable architecture and lifestyle

Masseck, Torsten

Universitat Politècnica De Catalunya (UPC). Sant Cugat del Vallés.Spain.

Title: Real Life Learning Lab Approach in Sustainable Building Education - EURL3A Pilot Project

Ruzicka, Jan

CTU In Prague, Faculty Of Civil Engineering, Dept. Of Building Structures. Prague.Czech Republic.

Title: MSc(Built environment) curriculum for sustainable development education - a post graduate student's perception. (Best Papers SB13 Southern Africa)

Mahlangabeza, Luyolo

Nelson Mandela Metropolitan University. Port Elizabeth.South Africa.

Title: Environmental design process at facility planning and management offices in the national universities in Japan

Yokoo, Noriyoshi

Utsunomiya University. Utsunomiya.Japan.

Conclusions:

- There is an intrinsic contradiction between the formal education as an expression of consolidated old paradigm and the inclusion of a new paradigm.
- There is a difficulty to achieve the involvement of users in the formal education structure.
- Learning environments must be created within the Universities in such a way that technical, environmental and social issues can be understood and applied in a multidisciplinary way.
- Giving labs can be an innovative tool to link teaching, research, and innovation.



Session 83:

What should new envelopes for ZEB be like?

Chairperson:

Wassouf, Micheel

Director. Energiehaus scp

Speakers:

Title: Primary energy implications of different external wall configurations for residential buildings

Tetty, Uniben Y.A.

Linnaeus University. Växjö.Sweden.

Title: Carbon and Energy in Efficient Building Envelopes: A Comparative Case Study in Life Cycle Phases

Moore, Erin

University Of Oregon Dept Of Architecture. Eugene, OR.USA.

Title: Assessment and selection of external walls of buildings based on their environmental, performance "from cradle-to-cradle"

Dinis Silvestre, José

Instituto Superior Técnico, Universidade De Lisboa. Lisbon.Portugal.

Conclusions:

- A lot of factors influence the answer.
- We need a contextual approach with a LCA
- Research should focus on making radical change to reduce material impact in the life cycle chain.
- There is a big work to make to simplify the tools for LCA assessment.



Session 84:

How can we know which the best constructive solution is?

Chairperson:

Kratz, Markus

Forschungszentrum Jülich. Germany

Speakers:

Title: Green infrastructure improvements for a more sustainable building sector

Pérez, Gabriel

University Of Lleida. Lleida.Spain.

Title: Implementation of GIS methodology and passive strategies to improve the quality of social housing in the Andean region of Ecuador

Miño Rodríguez, Isabel

National Institute of Energy Efficiency and Renewable Energy (INER). Quito.Ecuador.

Title: Retrofitting with prefabricated modules. Stakeholders views and needs.

Kleiven, Tommy

Sintef. Trondheim.Norway.

Title: Reshaping Housing Using Prefabricated Systems

Steinhardt, Dale

Queensland University Of Technology. Brisbane.Australia.

Conclusions:

- traditional, aesthetics, economics, environmental and social criteria. Functionality; think process not objects, LCA.
- Isabel Miño: No national codes, standard and regulation in Ecuador respecting climate differences (discomfort hours).
- Tommy Kleiven: Many different solutions; mere knowledge than real (own) experience. Find a cooperation basis inviting relevant people in process.
- Lack of good limits, good decision making.

Summary:

- Kleiven/Steinhardt: workforce shrinking (Florida). Skills to shift → color issue. Open buildings research going.
- Scanska: adoption.



Session 85:

Which are the key elements to follow-up environmental targets at an urban scale?

Chairperson:

Velázquez, Isabela

Directora de proyectos de Gea21

Speakers:

Title: Impact Assessment and Life Cycle improving energy efficiency in urban areas

Zambrana Vasquez, David,

CIRCE - Centro De Investigación De Recursos Y Consumos Energéticos. Zaragoza.Spain.

Title: Design and operation of a test bench for agent based control systems of building supply systems

Huber, Max

RWTH Aachen, Institute For Energy Efficient Buildings And Indoor Climate. Aachen.Germany.

Title: Energy and architectural retrofitting in the urban context of Athens

Fotopoulou, Anastasia

DA -Department Of Architecture- School Of Architecture And Engineer ALMA M. Bologna.Italy.

Title: Economic Assessment of Refurbishment of Federal Public Housing in the UAE (Best Paper SB13 Dubai)

Manneh, Abeer

The British University in Dubai. Dubai.United Arab Emirates.

Conclusions:

The urgent need of tools and smart methods to monitor, assess and anticipate results when applying the new paradigm

We explored several options (in course) to develop these tools. I.e. to replicate consolidated IT tools in other fields of knowledge. I.e. the multi-agent system coming from electronic engineering might be a tool for control of services in building (heating, cooling, lighting, security) or the use of computer modelling for the complex collection of data, to understand urban life and planning

In the second part of the session, focused on alternatives for social housing, ecological or energy-efficient retrofitting, the main conclusion has been the need of detailed assessment (environmental and energy; social, economical feasibility), “zoomed” to diverse housing models and urban characteristics. Strategies might be completely different addressing the same goals for different areas as Dubai researchers explained in the session and was discussed by the attendees.



Session 86:

What role should public housing play in sustainable building?

Chairperson:

Laudy, Sander Cornelius

Architect, B01 Arquitectes

Speakers:

Title: Sustainability Metrics - A Public Housing Empirical Experience

Lo, Winnie W.Y.

Hong Kong Housing Authority. Hong Kong.China.

Title: "L'HDC" the CO2 indicator of L'Hospitalet in a P2P environmental governance towards NZEmissions Cities. A benchmark for S.E.A.P of signatories Covenant of Mayors

López Grado, Sergi

Ayuntamiento de L'Hospitalet. Spain.

Title: Renovation of non-profit social housing to CO2 neutral buildings on Active House level

Eriksen, Kurt Emil

Active House Alliance. Brussels.Belgium.

Title: The pace of energy improvement in the Dutch non-profit housing sector

Filippidou, Faidra

Delft University Of Technology, Faculty Of Architecture And The Built Environmen.
Delft.The Netherlands.

Conclusions:

Public housing as a market segment is easy relatively to monitorize and thus it is feasible to improve.

The scale and the big steps that can be made in social housing, turn these typologies into an interesting sector for sustainable exploitation and renovation projects.



Session 87:

How reliable are previous level rating tools on an urban scale?

Chairperson:

González, María Jesús

ASA President (Association of Sustainable Architecture) from 2010 to 2013. Member of the Scientific Committee of the contest POWERING TRANSFORMATION

Speakers:

Title: A hybrid methodology for the environmental assessment of the anthropic systems in urban area

Schiopu, Nicoleta

Cstb. Saint Martin d'Herès. France.

Title: A contextual and spatial approach towards resource cycles

Geldermans, Bob

Delft University Of Technology. Delft. The Netherlands.

Title: INDI: Neighbourhood a rating tool with a whole life value analysis for buildings

Outrequin, Philippe

Suden. Valbonne. France.

Title: Integrated decision support tool in energy retrofitting projects for sustainable urban districts

Romero Amorrortu, Ander

Fundación TECNALIA Research & Innovation. Derio. Spain.

Conclusions:

The tools will be reliable if there are accurate in its inputs, and it depends of use and local practice. The question has no meaning in some contexts. In the case of the airport, for example, the analysis has been very special. Nevertheless, its methodology is replicable.

What is basic is involve the users, stakeholders and citizens. The tools of an urban scale cannot repeat the same errors as the tools at building scale: the humanistic aspects must be prioritized. Any tool must consider the public participation from the beginning. To consider the limits are too very important matter.



Session 88:

Which are the limits of life-cycle assessment as a rating tool to evaluate sustainability in building? (III)

Chairperson:

Macías, Manuel

Profesor/Responsable del área de Investigación. Universidad Politécnica de Madrid/GBCe

Speakers:

Title: Simplified and reproducible building Life Cycle Assessment: Validation tests on a case study compared to a detailed LCA with different user's profiles

Bonnet, Romain

Bouygues Construction. Guyancourt.France.

Title: Results of DGNB certified sustainable buildings. Austrian case study focussing on economic and environmental life cycle performance. (LCA)

Smutny, Roman

BOKU Vienna, University Of Natural Resources And Life Sciences, H875. Vienna.Austria.

Title: Life Cycle Based Optimization of Building Design

Szalay, Zsuzsa

Budapest University Of Technology And Economics. Budapest.Hungary.

Title: Identification of building materials influence on robustness and uncertainty of multi-residential buildings LCA

Hoxha, Endrit

Cstb. Saint Martin d'Hères.France.

Conclusions:

- Limits.
- Adaptation to non LCA experts.
- Difficulties to adapt LCA to the early stages of the design.
- Applicability of LCA to other regions.
- Reference unit/Functional unit.
- Consistency for benchmarking.
- LCA is only or part of SB Assessment. Additional criteria are necessary.
- LCA can be used as part of the design process.
- Limitations.



Session 89:

Neighborhoods with roots. Which are the keys to manage high-complexity and low-resource frameworks?

Chairperson:

Gomes, Vanessa

Associate Professor. University of Campinas, Brazil

Speakers:

Title: Cohousing and The Development of Rating Tools for Sustainable Living in Thailand

Takkanon, Pattaranan

Faculty Of Architecture, Kasetsart University. Bangkok.Thailand.

Title: Fatimid Cairo a Sustainable Neighborhood from Medieval

Salama, Ali

Alazhar University. Cairo.Egypt.

Title: Preserving the Old "Ksar" of Bou Saada - Algeria

Diafat, Abderrahmane

Labo. PUViT,. Sétif.Argelia.

Title: Regeneration for Urban and Economic Sustainability: Assessment of the U.S. Neighborhood Stabilization Program (NSP - 2)

Kamal, Azza

University Of Texas At San Antonio. San Antonio, Texas.USA.

Conclusions:

A possible answer to that question is somewhere between top down and bottom up approaches, complemented by the presence of an intermediate player to facilitate solutions development and implementation. Government support to enable knowledge transfer and going beyond project financing.

Finally, available support tools and sustainability (clear) definitions and criteria should be made visible, to eliminate ambiguity and streamline the overall forces.



Session 90:

What capacity does the construction sector have to absorb its own waste and by-products?

Chairperson:

Díaz Camacho, Miguel Ángel

President of ASA (Association of Sustainable Architecture), Spain

Speakers:

Title: Waste – a Resource for Sustainable and Resilient Future Cities

Wisniewska, Marta H.

ETH Zurich / Future Cities Laboratory Singapore. Singapore.Singapore.

Title: Earthships: The building of the future

Soriano Vivas, Marta

Ecoart-Didactic. Palafolls.Spain.

Title: Recycling Construction Waste as Action to Minimize the Environmental Impact

Rangel Martinez, Yamile

Universidad Autonoma Del Estado De Hidalgo. Mineral de la Reforma, Hidalgo.Mexico.

Title: A model combining three methods lean, green, and six-sigma (LG6) to identify waste in construction processes prior to construction phase.

Banawi, Abdulaziz

United Arab Emirates University. Al Ain.United Arab Emirates.

Conclusions:

- Only 10 % of industry has real capacity to absorb its own waste.
- There is no social demand, waste still has a cultural stigma. On the other hand, it has a huge potential of development in the near future.
- As customers do not demand it, more products are not designed for being reused. We need to DESIGN for DISMANTLE and REUSE. This will add value to brands.
- Governments fail to complete the international agreements on waste management or Kyoto Protocol, for example illeal dumping represents health and environmental problem all over the world.
- Waste is a new renewable resource, emerged from consumer society and we need to develop new global and local strategies to deal with it.



Session 97:

The role of the 'other' stakeholders. How to improve the position of the weakest members of society in empowerment processes?

Chairperson:

Nadim, Wafaa

Assoc. Prof. Architecture and Urban Design, The German University in Cairo (GUC)

Speakers:

Title: Ecómetro, collaborative work project to develop a design and measure tool of ecology in architecture.

González Pérez, Ana

Ecómetro. Asociación Para La Medición Y Difusión De La Ecología En La Arquitectura. Madrid.Spain.

Title: Good Urban Governance of Informal Settlements in Metropolitan Areas: Case Study of Informal Settlement of Ezzbet Al-Haggana, Cairo

Azouz, Nouran

Ain Shams University. Cairo.Egypt.

Title: Exploring ways to successful resident-driven infill development: Lessons learned from two cases in Helsinki area (Best Papers SB13 Oulu)

Pennanen, Kyösti

VTT Technical Research Centre Of Finland. Espoo.Finland.

Title: Mc Kinley Workshops: Sustainability Seen Through The Eyes of Children (Best Papers SB13 California)

Babtiwale, Era

Cal Poly Pomona College Of Environmental Design. Ontario.USA.

Conclusions:

- We need first to define who are the weakest. The weakest is basically those who are lacking information.
- Make use of technology and make it accessible to everyone to help in the decision making.
- Have common language/communication between technical people and lawpersons.
- Local governance/decentralization.
- Transparency and openness.
- Project management.
- Building Trust.
- Assessment/Cost-benefits analysis.
- Putting yourself in people's shoes.



Session 99:

Do particular examples allow generic results to be extrapolated?

Chairperson:

Gomes, Vanessa

Associate Professor. University of Campinas, Brazil

Speakers:

Title: Energy Conservation in Existing Office Building: Case study Petrojet Company Head Office Buildings in Cairo, Egypt

Refaat Abd-Allah, Nayera

Energy Resources Engineering Department, Egypt- Japan University Of Science And. Alexandria.Egypt.

Title: Subjective and Objective Measurements of Thermal Comfort in An Austrian Active House: Occupant-reported Thermal Sensation and Measured Temperatures during a one-year period

Foldbjerg, Peter

Velux A/s. Horsholm.Denmark.

Title: Architectural integration of solar collectors on Dwellings' roofs

Zalamea León, Esteban

Universidad Del Bío-Bío. Concepción.Chile.

Title: An Intelligent Energy Management System For Sustainable Public Underground Spaces

Simon, Jonathan

Fraunhofer Institute For Applied Information Technology FIT. Sankt Augustin.Germany.

Conclusions:

It is indeed possible to transfer ideas, overall concepts, step by step guidance. However, as one shifts to more context-dependent problems to be solved/decisions to be made, it is not advisable to transfer (solutions) and extrapolate results from specific case studies/demo projects.

Also, in regard to thermal comfort and user interaction, overall concepts can be transformed or extrapolated, as long as there no significant context changed on need or dependency on user interaction. Again, ideas can be transformed based upon results achieved in given situation. However solid ideas are context specific. Multiple particular examples approach might be an intermediate, good compromise. That helps to improve database quality.



Session 100:

Where should energy renovation reach up to? (III).

Chairperson:

Donath, Cristian

Eco Platform, Germany

Speakers:

Title: Energy upgrading of residential buildings senties and eighties with improved architectural quality

Gunnarshaug Lien, Anne

SINTEF Building And Infrastructure. Trondheim.Norway.

Title: Energy Efficient Refurbishment analysis for an Apartment Building in Portugal

Demir, Ece

University Of Applied Sciences Stuttgart. Stuttgart.Germany.

Title: Tackling climate change at community level: the example of Geothermal Community project in Montieri (Italy)

Marino, Valentina

Politecnico Di Torino Dipartimento di Architettura e Design. Turin.Italy.

Conclusions:

11. Community scale t.b. considered (technical & financial level).
16. Local resources t.b. considered/used whenever possible.
12. Balance between energy demand & renewables.
12. Regional aspects to be considered (example of POR).
12. Consideration of embodied energy.
8. In most regions info of products are hardly available.
8. Short energy amortization times for insulation (1-2 years).
3. Economic issues are biggest challenge for lifetime assessment (embodied energy).
15. Energy legislation does not yet consider embodied energy, but should to be complete and reasonable.
16. Energy is not enough. Many other indicators, ej. cost, aesthetical, social, heath, functional..
13. Involve (motivate & educate) all involved parties (esp. building users) in order to mobilize the potential (economical incentives).



Session 101:

Towards a shared definition of nZEB? (I)

Chairperson:

López, Fabían

Societat Orgànica

Speakers:

Title: Sustainable Master Planning for the 21st Century: Metrics, Tools and Processes for Achieving Net-Zero College Campus Design and Operation

Vujovic, Vuk

Legat Architects. Chicago.USA.

Title: Evaluation of the energy performance strategies in competition tenders to achieve nearly zero energy buildings: Two case studies in Barcelona and Merano

González Matterson, Maria Leandra

IREC- Institut de Reserca en Energia de Catalunya. Sant Adrià del Besòs.Spain.

Title: Measuring the sustainability through a life cycle perspective: the case of Sunslice, a NZEB for high density urban environment

Sirombo, Elisa

Department of Energy, Politecnico Di Torino. Torino.Italy.

Title: Cost optimality and zero energy levels in the renovation of residential building - Rainha Dona Leonor case study (Best Papers SB13 Portugal)

Almeida, Manuela

University Of Minho. Guimaraes.Portugal.

Conclusions:

- La definición de los Edificios de Consumo de Energía Casi Nulo (NZEB) requiere el análisis y la consideración de todo el ciclo de vida de los edificios. De lo contrario sería una iniciativa parcial.
- El Balance energético es fundamental para poder plantear unas exigencias asumibles.
- La estrategia NZEB necesariamente debe partir de la reducción de la demanda como condición.
- No es necesario que la exigencia de que NZEB regule todos los aspectos. Experiencia en USA, por ejemplo demuestran que se puede dejar abiertos temas para que cada región los pueda concretar.



Session 103:

How can we transform specific goals into urban scale strategies?

Chairperson:

Velázquez, Isabela

Directora de proyectos de Gea21

Speakers:

Title: An exploration of Law instruments in Kaohsiung sustainable actions: Taking Kaohsiung City Green Building Self-Governance Act for example

Huang, Chin-Ming

Public Works Bureau Of Kaohsiung City Government. Kaohsiung.Taiwan Republic of China.

Title: Embedding sustainability considerations within the strategic and operative management of real estate organisations

Lützkendorf, Thomas

Karlsruhe Institute Of Technology. Karlsruhe.Germany.

Title: A Framework for People Capability Enhancement to Support Sustainable Facility Management Practices

Yang, Jay

Queensland University Of Technology. Brisbane.Australia.

Title: A sustainable? urban planing for the poorest

Gesto Barroso, Belen

ICHaB, ETSAM – Universidad Politécnica De Madrid (España). Madrid.Spain.

Conclusions:

In this session there's been a clear contrast into urban situations. Some cities have a good quality of life and a high footprint and most of urban areas in the planet have a low quality of life and a lower footprint per capita. So strategies are radically different in order to advance to global sustainability. In each case finding the key stakeholders of processes is fundamental. Incorporate sustainable language and aims into their economic and operational cultures is a way to convert specific goals into wider successes, in the urban scale.



Session 104:

Which are the keys to integrate sustainability in architecture projects?

Chairperson:

Colin, Brigitte

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

Speakers:

Title: The discussion on the Localization Architecture Design Principles of the Project Kaohsiung Houses with Sustainable Perspectives

Chang, Kuei-Feng

National Pingtung Institute Of Commerce. Pingtung.Taiwan Republic of China.

Title: Architectural Approaches to Sustainable Design: Towards an Expanded Definition of Sustainability in the Context of Building Transformation

Peters, Terri

Arkitektskolen Aarhus. Aarhus.Denmark.

Title: Assessing sustainability of building materials in developing countries: The sustainable building materials index (SBMI) (Best Papers SB13 Southern Africa)

Gibberd, Jeremy

University of Pretoria, Gauge/CSIR. Pretoria.South Africa.

Title: Eco-responsible plan and design. Processes, strategies and tools towards environmental assessment in Architecture

Meloni, Alessia

University Of Engineering And Architecture Of Cagliari. Assemini.Italy.

Conclusions:

1. One of the keys presented by Taiwan is the localization Architectural Design principle with sustainable perspectives. The design criteria from this perspective have three cores: environment sustainability, reflection of localization; identity and healthy living. From design indicators identified: environmental load, social culture, service quality and indoor environment quality.
2. Current sustainable transformation approaches need to be enriched with architecturally focused criteria to allow a more complete perspective of sustainability in relation to social housing building transformations in Northern Europe.
New and truly sustainable renovations need to be robust from a social and architectural viewpoint and also meet frightening energy and climate goals. Through layering a customizable architectural framework such as reinterpretation or plus onto the typical energy focused parameters we can improve the social-architectural sustainability of these buildings to allow them not only prolonged use but potentially improved qualities of continued life.



3. In developing countries, social and economic countries, there is a wider and holistic approach to sustainable architectural projects. A specific tool has been developed for S.A. first to do a simple system including social, education security...a tool to compare products, not only to make diagnostics but to propose technical advice to decision makers to identify the impacts of products used to build. For S.A., how to improve quality of products, social and health improvement, increase awareness of local authorities: a set of local parameters and experts, access to market with a better quality of the products in informal sites.
4. To reply some keywords like eco-urbanism, eco-design and bio-architecture to be considered from a bottom-up approach to lead to guidelines in favour of environmental sustainability able to integrate the technical standards of implementation of local restoration plans. The use of these guidelines allows to make eco-responsible choices and build with due respect to environment.



Session 105:

Up to what degree are eco-efficiency management tools developed?

Chairperson:

Sauer, Bruno

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

Speakers:

Title: Development of the rating system for environmental performance of city block (CASBEE-UD) and Case study.

Hayashi, Tatsuya

Chiba University. Chiba City.Japan.

Title: EcoBalance model for assessing eco-efficiency of urban development

Wahlgren, Irmeli

VTT Technical Research Centre Of Finland. Espoo.Finland.

Title: Estimation of load and generation peaks in residential neighbourhoods with BIPV: bottom-up simulations vs. Velander

Sartori, Igor

Sintef. Oslo.Norway.

Title: Sustainability indicators for building modernization and urban regeneration

Cronhjort, Yrsa

Aalto University School Of Arts, Design And Architecture. Espoo.Finland.

Conclusions:

Session 105 showed clear examples of the use of eco-efficiency management tools, mainly on the urban level. The tools exist, they are used and the (dis)advantages are well-known. One of the speakers explained a study that can be used to fine tune one specific indicator: the use of PV panels to cover electric demand for housing and how to scale the distribution network to optimize the urban grid. There exists a constant need to update every indicator with new benchmarks and local adaptation.

Despite of the general use of these tools, there is a clear need of focusing more on social aspects and the way inhabitants are involved in the management process.



Session 106:

Which are the most notable contributions to applying LCA in building renovation?

Chairperson:

Charlotte Valdieu, Catherine

Sustainable Urban Development European Network (SUDEN), France

Speakers:

Title: Methodology proposal for the socioeconomic life cycle assessment applied to retrofitting in a local context.

Touceda, M^a Isabel

Ulb. Brussels.Belgium.

Title: Life cycle optimized application of renewable raw materials for retrofitting measures

Klueber, Norman

Fraunhofer Institute For Mechanics Of Material. Halle.Germany.

Title: Environmental Impact of housing retrofit activities: Case study.

Russell, Mark

University Of New Mexico. Albuquerque, New Mexico.USA.

Title: Relevance of the recycling potential (module D) in building LCA: A case study on the retrofitting of a house in Seraing (Best Papers SB13 Graz)

Wastiels, Lisa

Belgian Building Research Institute. Brussels.Belgium.

Conclusions:

To allow:

- A debate on all the hypotheses.
- A comparison between various scenarios using different products, equipment, appliances or materials.
- A decision aid tool on environment issues but knowing that there are other aspects/issues to deal with too, such as LCC and social LCA.
- A help for developing/using natural, recyclable and recycled as well as renewable products/materials, including renewable energy.
- A decision aid tool for disadvantaged neighbourhoods with a lot of old housing and fuel poverty.
- A decision aid tool to answer the question: demolition or renovation (module D).
- An environmental tool to be completed with others.



Session 107:

Are we advancing towards a truly complete urban regeneration?

Chairperson:

López, María Isabel

Investigadora Depto Planificación y Diseño Urbano Universidad del Bio Bio. Chile

Speakers:

Title: The role of rehabilitation of buildings in the urban integration, social cohesion and environmental responsibility.

González García, Isabel

Departamento De Urbanística Y Ordenación Del Territorio. GIAU+S. ETSAM. UPM. Madrid. Spain.

Title: New concept for user-orientated suburb renovation

Soikkeli, Anu

University Of Oulu / Faculty Of Architecture. Oulu.Finland.

Title: Evaluation and Development of Indicators for Sustainability Assessment of Urban Neighbourhood Renovation Projects

Mittermeier, Paul

Munich University Of Applied Sciences. Kirchheim.Germany.

Title: How do we understand net positive neighbourhoods? Three perspectives

Oliver, Amy

Université De Montréal. Montreal.Canada.

Conclusions:

The session agreed we are advancing at a very slow pace and that two main bottlenecks to advance more quickly are:

- a) Really involving users in early stages of regeneration strategies (planning, design, construction techniques, etc.)
- b) Linking academic research with government policies and practice



Session 108:

Is it possible to define habitability conditions that insure healthy buildings without excessive spending?

Chairperson:

Zamora, Joan Lluís

Professor Universitat Politècnica de Catalunya

Speakers:

Title: The Psychophysics of Well-being Socio-psychological Monitoring and Benchmark Measurement in Energy-efficient Housing

Wegener, Bernd

Humboldt University Berlin. Berlin.Germany.

Title: Towards a fuel poverty definition for Spain

Sánchez-Guevara, Carmen

Universidad Politécnica De Madrid. Madrid.Spain.

Title: PM2.5 emissions of urban dwellings in China: Case study from Fuzhou

Huang, Lizhen

School Of Management, Fuzhou University, China. Fuzhou.China.

Title: Psychotherapeutic and Team Building Initiative of Greening Construction Sites - The Case Study of an 'Oasis in the Desert'

Smallwood, John

Department Of Construction Management. Port Elizabeth.South Africa.

Conclusions:

1. There are two important boundaries: between the quality of indoor and outdoor air. There is a temporal boundary also between the construction process and the operational process air quality.
2. We must consider in the future not only comfort parameters but also multifactor parameters of wellbeing.
3. The financial crisis shows the situation of poor people living in poorer buildings. Cheap energy hid this situation in the past.
4. We need more studies related to health research.
5. The money currently pays the gap between real comfort and desired comfort. Is this the only solution?
6. Healthy conditions of our building environment begin at building work stage, and biophilia methodology helps us.

Paralell conclusion by volunteer:

Financial prices are responsible for the “fuel poverty” in many countries, like in Spain. Those

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prices and the crisis situation have influenced to reduce indoor comfort, so, the question is:
-How far are you from comfort conditions? Then I can tell you how far you are from healthy conditions.

So the final conclusion was that there is a need for more health and indoor comfort research to reduce the cost of the process of habitability conditions, not only in Spain, Europe, but also all over the world.