

2011 Helsinki World Sustainable Building Conference Full papers

Committees

Preface

Conference organizers

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Keynotes: 40:40 Looking back and looking forward

The Relevance of Time

Lorch Richard, United Kingdom

Environmental Issues Past, Present & Future: Changing Priorities & Responsibilities for Building Design

Cole Raymond J., Canada

Rapid Urbanisation in Developing Africa

Ngowi Alfred, Botswana

China's rapid urbanisation: challenges and opportunities

Li Baizhan, China

Built environment professionals in the UK:

40 years back, 40 years on?

Bordass Bill, United Kingdom

Keynote: sustainable businesses

Mesoscopic Solar Cells for Building Integrated Photovoltaics

Grätzel Michael, Switzerland



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Theme 1

World resources

Forecasts and Globalisation (WR-F)

Shifting Paradigms To Study Urban Sustainability

Du Plessis C., South Africa

Beyond Sustainability - The Importance Of Thinking Beyond Efficiency Based Initiatives In Buildings

Hes D., Australia

Lifecycle Tower - High-rise Buildings In Hybrid Timber Construction

Rhomberg H.R., *Bonomo J.B.*, Austria

Factor 10: Multiplying By 10 Resource Productivity In The Urban World

Salat S., *Bourdic L.B.*, France

Un-changing Climate?

Söderlund A.T., Finland

Energy Efficiency Improvement Of Building Stock In The European Union

Tuominen P., *Klobut K.*, *Tolman A.*, Finland

Water and waste management (WR-W)

The application of Solidification and Stabilisation technology for the treatment of harbour sediments

Fotis P.D., *Hytiris N.*, *Bennabi A.*, United Kingdom, France

Twin Tanks for Fresh and Flush Water Supply System in Hong Kong Housing Authority Public Rental Housing Estates

Yeung C.K.Y., *Mak J.Y.W.*, *Ho C.S.*, *Pang H.W.*, *Fung C.K.Y.*, *Lai W.K.W.*, Hong Kong

Energy Water Relationships in Reticulated Water Systems

Lawton M.E., New Zealand

Economic Feasibility Study for Rainwater Harvesting in Brazil

Motta S.R.F., *Teixeira P.C.*, *Paulino J.F.A.*, *Aguilar M.T.P.*, Brazil

Life Cycle Inventory of the Pneumatic Waste Collection System in a Dense Urban Area

Punkkinen H.M., *Merta E.S.A.*, *Teerioja N.S.I.*, Finland

Sustainable Wastewater Polishing Treatment by Wetlands

Sallanko J.T., *Lakso E.*, Finland

Planning for SME's Proactive Waste Management in Office Building Retrofit Projects

Yang J., *Li M.*, *Li Q.M.*, Australia, China



2000-watt-society In Switzerland → From A Global Perspective To A Single Building

Kellenberger D., Steiger P., Lenel S., Schneider S., Ménard M., Switzerland

From Smart Grids To Synergy Grids

Larsson N., Hovorka F., Salat S., Bourdic L., Canada, France

Life Cycle Energy Consumption And Co2 Emissions Of Buildings: An Overview And Case Studies In Beijing

Peng P.B., Lin L.B.R., Zhu Z.Y.X., China

Simulating Energy Demand And Emissions Of The Residential Building Stock In Germany By Taking Occupant Characteristics Into Account

Hiete M., Stengel J., Schultmann F., Germany

The Effects Of Slag Content And Surface Finish On Concrete Albedo

West R.P., Sweeney A., O' Connor C., Ireland

Indicators For Environmental Monitoring Of The Swedish Building And Real Estate Management Sector

Toller S., Finnveden G., Wadeskog A., Miliutenko S., Sweden

Energetic Urban Planning – A Novel Approach To Carbon-neutral Cities

van den Dobbelsteen A., Tillie N., Netherlands

Observed and simulated town energy balance parameters in Helsinki, Finland, 2009/2010

Drebs A.J., Fortelius C.G.E., Finland

Heat Mapping The Netherlands – Laying The Foundations For Energy-based Planning

Broersma S., Fremouw M., van den Dobbelsteen A., Netherlands

The Contribution Of Plastic Pipe Systems To Sustainability In The Built Environment

Spirinckx C.H., Harget D.C., Belgium, United Kingdom

The Embodied Air Emissions Of Construction Sector In Norway: The Input-output Analysis

Huang L., Bohne R.A., Hovde P.J., Norway

Improved Service Life Predictions For Better Life Cycle Assessments

van Nunen H., Mooiman A., Netherlands

Low Exergy Systems For High-performance Buildings And Communities

Schmidt D.S., Germany

Unique Investigation Of Chemicals In Construction And Indoor Air Of Swedish Dwellings

Giselsson S.E., Sweden

Description Of The Swedish Building Stock By Material From A Swedish Statistical Survey Of 1800 Buildings.

Hjortsberg M., Sweden



Physical Properties Of The Cellulose Foam Thermal Insulation By Cellulose And Starch, Polypropylene

Kang J.S., Choi G.S., Lee S.E., Republic of Korea

Novel Construction Materials For A Sustainable Future

Wang W.D.M., Ang A.K.S., Low L.G.L., Chew Sarah s.c., Low L.G.L., Singapore

Life Cycle Assessment Of Canadian Steel Building Design And Case Studies Comparison Limitations

Straka V.A., Gorgolewski M., Pinto I.L.R., Canada

Application Of Lca In The Construction Sector: Considerations On Impact Allocation In Steelmaking Processes And Its Reflection On The Cement Industry

Saade M.R.M., Silva M.G., Silva V.G., Brazil

Influence Of Impact Allocation Between Steel And Its Slags On Their Potential Use In The Construction Sector

Saade M.R.M., de Oliveira B.M., da Silva M.G., Silva V.G., Brazil

Developing A Life Cycle Assessment (lca) Database Of Wood Materials Based On International Field Survey

Nambu Y., Ikaga T., Japan

Shading system and daylight control in low energy office buildings in Norway

Haase M., Wigenstad T, Norway

Life Cycle Assessment of a residential building in Brazil

Motta S.R.F., Garcia D.B., Aguilar M.T.P., Brazil

Aia 2030 Commitment Initiative: Design Firms' Role, Tools And Processes For Transforming The Building Design And Construction Industry To A More Sustainable Model

Vujovic V.V., United States

Design For Reuse Of Building Materials In The Us

Guy G.B.G., United States

Demonstration Of The Economic Viability Of Applying Technological Innovations To Air-conditioning Systems In Buildings: Exhaust Air Heat Recovery, The Variation In External Air Flow And Water Reuse.

Vedovello C.S.V., Melhado S.B.M., Gonçalves C.M.G., Brazil

Ecomimesis a 21 Century Model For A Sustainable Built Environment Based On Nature's Ecosystems

Woo L.C., Woo L.C., United States



Theme 2

Well-being in cities and urban environments

Indicators for the Quality of Life (CU-I)

Light Trespass From Exterior Lighting In Urban Residential Areas Of Compact Cities

Chao Y.C., Huang K.Y., Kuo P.Y., Taiwan

Evaluation Of Investment In House Improvement Considering Non-energy Benefits Delivered By Health Promotion

Eguchi R.E., Ikaga T.I., Murakami S.M., Kawakubo S.K., Japan

Environmental Comfort And Urban Spaces

Benedetti C., Leone G., Di Palma D., Russo A., Ratajczak J., Italy

Qualitative User Evaluation Of Energy Efficient Buildings – Case Studies Of Six Passive Houses And Zero-energy Buildings

Thomsen J., Hauge Å.L., Denizou K., Jerkø S., Wågø S., Norway

Design For Well-being In Older People's Residential Environments - Sustainable Design In Finland And Sweden

Verma I., Aalto L., Malmqvist I., Elf L.M., Finland, Sweden

Modular Flat Design For Mass Customization In Hong Kong Housing Authority Public Rental Housing Estates

Yeung C.K.Y., Fung C.K.Y., Lai W.K.W., Cheng I., Hong Kong

Clarification Of Health Benefit Yielded By Appropriate Maintenance Of Housing And Regional Environment

Deguchi M., Ikaga T., Kawakubo S., Japan

Indoor Air Quality – A New Important Criterion For The Sustainability Of Houses

Koch G., Krische A., Austria

Shall We Dense? / Save: My Life

McPherson S., Haddow A., Australia

Tool Indicators For Sustainable Building Materials. Target Study - Lime Mortars.

Vasconcelos S., Alho C., Portugal

An Important Piece Of The Puzzle

Wörman E.C., Sweden

A Preliminary Study Of Resident's Mental Health In Archilife Symbiosphere 1 Center

Lin Y.J., Chou Y.C., Su C.H., Taiwan

Symbiotic Shield: The Archilife Symbiosphere I Center (asic) As A Basic Sustainable Built Unit To Minimize Human Living Demands To The Global Resources

Day Y.T., Chung C.H., Taiwan



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Sustainable Urban Housing And Alternative Indicators Of Well-being

Karhu J., Nenonen S., Finland

A Study On The Residents' Awareness For Energy-saving Renovation Measures

Lin S.H., Lai R.P., Liu H.Y., Taiwan

Successful User Engagement In The Construction Sector Based On Perfection Project Case Study

Kowalska A., Poland

Cultural and Regional Issues (CU-C)

Modeling Common Health-related Factors Of Housing And Regional Environment In Japan

Ando S.A., Oshige K.O., Shiraishi Y.S., Ikaga T.I., Hoshi T.H., Japan

An Exploration Of The Challenges Facing Developers Of Affordable Dwellings Following Low Carbon And Ecological Principles, In Rural Locations In Wales

Hatherley S.A., Littlewood J.R., Counsell J.A.M., Geens A.J., Sinnett N., United Kingdom

Architecture In Crisis

Trocka-Leszczynska E., Jablonska J., Poland

An Analysis Of The Visioning Process Of The Inner City Community Sustainable Swansea Project

Fox C.E., Littlewood J.R., Counsell J., United Kingdom

From Tradition To Modernity: Role Of Food Activities In City Evolution And Hybridization Of Sustainable Built Environments

Odeyale T.O., Sodagar B., Temple N., O'Coill C., United Kingdom

Towards Sustainable Residential Practices - Can Architecture Make A Change?

Støa E., Larssæther S., Norway

Measuring The Influence Of Using Intelligent Living Concept On The Sustainable Rural Villages In Taiwan

Chang K.F., Chou P.C., Taiwan

Urban environment and inhabitants' welfare in Constantine: when cultural issues oppose socioeconomic changes

Makhloufi, M., Algeria

Changing Around Time (cat-med): Sustainable Urban Models

Marín Cots P., Spain

Sustainability In A Historic Context – Case Bulevardi 6 In Central Helsinki

Vanhanen J., Vehviläinen I., Finland

Role of Architecture in Immigrants' Integration Process

Virkkala V.I.I., Tenho T.E.V., Finland

To Set Up The Composting System In Ultimate Structure Of Symbiosphere Ii In Taiwan

Gao C.C., Taiwan



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The Innovative Concept Of Housing Renewal: Emphasis On People In Major Renewal Process Of Old Neighbourhoods. Case: Peltosaari-project, Riihimäki

Väkevää-Harjula I., Finland

The Environmental Impact Of Industry And Development In Regional Australia

Hamilton-Foster E.L., Australia

Innovative Management and Operation (CU-M)

A Top Down Approach To Improve Ieq While Reducing Energy Consumption

Bluyssen P.M., Oostra M.A.R., Meertins D., Netherlands

Productive Development And Sustainability In Tuscany Environmental Policy In Industrial Areas: The Apea

Gallo P., Gianfrate V., Italy

Carrot City: The Impact Of Food Security On The Design Of Cities And Buildings

Gorgolewski M.T., Canada

A Study On Operational Information Hierarchy Through An Energy Efficiency Contest ~case In Taiki-cho "my Home" Energy Efficiency Contest 2010-2011~

Morishita Y., Ikeda H., Yashiro T., Magori B., Fujii H., Nunome M., Higasa H., Yamagata K., Japan

Climate Change - Mitigating Effects Vs. Adapting To Climate Change

Rasmussen T.V., de Place Hansen E.J., Denmark

Dematerialization Of The Built Environment

Sato S.P., Paulert R., Silva B.A., Carboni M.H.S., Rocha G.L., Baldessar S.M.N., Santos A., Brazil

Venturing Gbi-nreb Into Carbon Credit: A Sustainable Framework For Malaysian "green Property" And "green Economy"

Bagdad M., Mohamad M.F., Malaysia

Soft Landings For Sustainable Buildings - Designing For Operational Outcomes.

Bunn R., United Kingdom

Green Leases In Australia: An Analysis Of Current Trends And Issues

Burroughs V.S., Australia

R&D Based Living Buildings in a Fast Changing Environment R&D Instead of D&C for a Sustainable Environment

de Ridder H., Netherlands

Sustainable Management As An Effective Solution For The Improvement Of Working Conditions On Building Sites In The State Of Pernambuco - Brazil

Priori L., Jéferson J., Brazil

Green Lease Model Creation for Single-user Office Building

Rajakallio K., Anttila M., Finland

A Heat Robust City. Case Study Designs For Two Neighbourhoods In The Netherlands.

Kleerekoper L., van den Dobbelaer A.A.J., van Dorst M.J., Hordijk G.J., Netherlands



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A Sustainable Future For The Past: Managing Historic Industrial And Urban Environments

Landorf C.M., Australia

A Prototype Domestic Energy Model using Intelligent Agents

Lee T., Yao R., United Kingdom

Strategies For An Integrated Sustainable Renovation Process: Focus On The Swedish Housing Stock 'people's Home'

Thuvander L., Femenias P., Meiling P., Sweden

Resources For Regeneration: Economic And Financial Processes For Social Housing In Italy

Piermattei P., Italy

The Real Challenge (regional Environmental Affordable Living) In Western Australia's North West.

Williams B.W., Australia

Sustainable Social Housing: Transformations In Maintenance And Management Practices For Public Housing In Hong Kong

Au B., Pang H.W., Wong G., Chan L.S., Hsu V.K.L., Hong Kong

Retrospective Evaluation And Prospective Value-add: A Review Of R&d Investment In Australia

Hampson K.D., Kraatz J.A., Australia

Climate Adaptation: The Future Of Extra-care Housing For The Elderly In The United Kingdom.

Keeffe G.P., McHugh I., United Kingdom

Understanding Customer Needs Is The Key To A Sustainable Community

Siponen J.T., Malvalehto J.M., Herrala M.E., Haapasalo H., Finland

Modeling Health-related Factors Of Housing And Regional Environment In The City Of Kitakyushu

Shiraishi Y.S., Ando S.A., Ikaga T.I., Hoshi T.H., Oshige K.O., Japan

Umeå. More Sustainable Buildings. The Network For Sustainable Construction And Real Estate Management In Cold Climates

Söderström R., Johansson C., Sweden

Inspired By The Past-built For The Future—appreciated Living Conversion And Redevelopment Of A Former Electrical Substation Into 51 Residential Units With Meeting Points Ludwigshafen, Germany

Schneider B., Osika K., Osika A., Germany

Existing Buildings- From Energy To Sustainability

Samila E., Heikkinen L., Finland

Global and Regional Building Performance Benchmarking and its Use to Improve Buildings' Performance

Skopek J.S., Canada

Innovative And Effective Trials For Upgrading Efficiency In Social Housing In Italy, Aimed At Sustainability And The Reduction Of Energy Poverty

Corsetti M., Italy



Evidence-based Brief For Sustainable Healthcare Environments

Svedbo Engström M., Wijk H., Elf M., Sweden

Energy Efficiency In Historical Architecture: Peculiarity And Limitations Of Italian Case

Cerroni F., Italy

Integrated Solutions Of Collective Housing Rehabilitation In Romania

Georgescu M.S., Ochinciuc C.V., Bliuc I., Dumitrescu C., Iana C., Romania

Energy Assessment Of An Office Building In Hong Kong Using Lcem Tool

Yang Z., Okumiya M., Wei Q.P., Tokita S., Japan, China

Change Dwelling Condition: New Dwelling In Used Real Estate Market Units

Barros L.A.F., Brazil

Land Use, Infrastructure, Transport (CU-L)

Choi Hei Road Park - A Community Park Converted From An Abandoned Quarry

Chan S.H.W., Hong Kong

Usable Sustainability Of Shopping Centres: Components Of The Rating Tool

Alho J., Nenonen S., Nissinen K., Niemi R., Finland

Spatial Modelling Of Electric Vehicle Uptake And Electricity Grid Impacts In Australia

Paevere P.J., Higgins A., Australia

Infrastructure Of A New Carbon Neutral Settlement

Slagstad H., Brattebø H., Norway

Development Strategies Of Finnish Municipalities: Gis Approach In Evaluation Of Development Scenario Impacts On Co2e Balance

Tvrđý J., Finland

Smart Use Of Storage Potentials Of Electric Vehicles For Renewable Energy Generation In The Built Environment; A Design Scenario

van Timmeren A., Bauer P., Silvester S., Beella S., Quist J., van Dijk S., Netherlands

Land Use And Urban Planning. Contributions To Urban Sustainability

Faísca M.G., Alho C.A., Silva L.M.C., Portugal

Sustainable Building Services Design For Affordable Social Housing In Hong Kong

Leung C.K., Leung Y.K., Tang W.K., Hong Kong

Envisioning An User-centric Infrastructure Lifecycle Management

Manninen A.P., Kärnä S., Nenonen S., Finland

Cultural Sustainability In An Australian Regional Centre: The Case Of Swan Hill

Nichols D.G., Darian Smith K., Australia

Risk And Vulnerability Assessment Of The Built Environment In A Dynamic Changing Society

Nie L., Oyen C.F., Groven K., Aall C., Norway



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Development Of A Commercial Building Site Selection Framework For Minimizing Greenhouse Gas Emissions And Energy Consumption

Weigel B.A., United States

The Bioclimatic Urban Planning, A Case Of Study: The Railway Workshops Area In Bozen, Italy

Benedetti C., Pasetti Monizza G., Leone G., Girasoli M.T., Italy

Urban Sprawl Promoted Through Master Planning

Amado M.P., Ribeiro M.R., Portugal



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Theme 3

Sustainability in developing countries

Appropriate Sustainable Technologies (DC-T1)

A Comparison Evaluation By Sbttool On The Green Buildings Certified From Taiwan Eewh System

Kuo Y.C., Chiang C.M., Chang K.F., Chou P.C., Taiwan

Challenges In The Environmental Assessment Of Humanitarian Construction. Case Study From School Reconstruction Project In Haiti.

Kuittinen M.K.J., Kaipainen S., Finland, Haiti

Natural Ventilation And Traditional Architectonical Devise: Physical Analysis Of Badgir Structure.

Benedetti C., Leone G., Baratieri M., Brauer I., Italy

Life-cycle Assessment Of Different Building Technologies For Partion Walls - Contribution To Future Developments On Interior Partition Concepts

Mendonca P., Macieira M., Mateus R., Braganca L., Braganca L., Mendoca P., Macieira M., Braganca L., Portugal

Sustainable And Eco-efficient Technologies - Multi-dwelling Urban Building 2030

Piasecki M.P., Poland

Feasible Sustainable Building For A Small Development Project In South East India

Versele A., Voet J., Claes K., Biesbroeck K., Wauman B., Breesch H., Belgium

Determinants Of Successful Sustainable Building Practices In Nigeria

Anigbogu N.A., Nigeria

The Solarpowerhouse Concept – A Model Of Transition Towards Affordable Energy Services For Delta State, Nigeria

Geissler S., Austria

Barriers To Sustainable Construction (development) In South Africa

Emuze F., Smallwood J.J., South Africa

Promoting Sustainable Technology – What Have We Forgotten?

Tracey-White J.D., United Kingdom

Ecoenvolventes R & D. Passive Architectural Envelopes High Thermal Performance And Low Environmental Impact For Tropical Geo-climatic Zones With Cultivated Native Woods And Plants.

Varini C.V., Velasco R.V., Rocha E.R., Bolaños T.B., Moscoso A.M., Contreras C.C., Romero P.R., Luciani S.L., Colombia

Energy Conservation Technologies For Subtropical Public Buildings - A Study Of The Retrofit Design Of The Taipei County Sustainable Development Education Center

Wu H., Cheng C., Hu C., Chao N., Taiwan

Moisture And Mould Problems A Threat Against Sustainable Buildings, The Betsi Study In Sweden.

Åberg O., Sweden



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A New Approach To Energetic Requalification Of Existing Buildings: The Impact Of The Planning Decisions On Moisture Content And Behaviour

Benedetti C., Demattio M., Girasoli M.T., Marchesi M., Rondoni M., Italy

Ecological Dimension Of The Intermediate Habitat

Gradinaru T., Baran I., Gradinaru T., Romania

Principles Of Sustainable Development And Architectural Design

Lepadatu C., Fartatescu M., Dumitrascu A.I., Romania

Coastal Cities, Risks of Climate Change (DC-C)

Sustainable Construction In Colombia: Main Actors And Implementation

Guevara J.A., Vargas H., Ozuna Giraldo A.O., Rivera J.R., Colombia

A Case Study Regarding The Potential Impact On Socio-economic And Property Development Resulting From Road Transport Corridors In Africa

Hauptfleisch A.C.H., Marx H.J., South Africa

Swarm Planning: A Unified Approach Dealing With The Two Sides Of Climate Change

Roggema R.E., Van den Dobbelsteen A.A.J., Australia, Netherlands

Us/Japanese Building Energy Efficiency Measures In Relation To Southeast Asia

Washiya S., Yamamoto Y., Ono K., Miyazaki K., Takaguchi H., Knapp R., Japan, United States

Modeling Effective Global Warming Countermeasures For The Residential Sector In China For 2050

Xing R.X., Ikaga T.I., Japan

Homeostasis In Architecture And Climate Change – A Case Study

Lanzinha J.C., Furtado L.C.G., Jular J.E.R., Portugal

Urbanization, Mega Cities, Employment (DC-U)

The Sustainability Guidelines For Slums Upgrading Projects

Aulicino P., Abiko A.K., Andrade M.H., Brazil

Analysis Of Sustainability In The Slum Upgrading Process: The Storm Water Subsystem And The Accessibility, Mobility And Transport

Abiko A.K., Andrade M.H., Aulicino P., Brazil

Snow Transportation By Wind Action On A Wide Roof With Irregular Curved Shape Placed In Urban Texture

Teleman T.E.C., Axinte A.E., Vasies G., Romania

Building The New World- Three Eco-city Projects To China

Eriksson P., Paloheimo E., Mikkonen J., Finland

The Impact Of Vegetation On Urban Microclimates

Shinzato P., Duarte D.H.S., Brazil



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Actions Of Low-carbon Construction For Cities Responding To Climate Change Impacts In China
Wang X.M.W., Wu J.X.W., Wang X.W., Hua H.H., Hua H., China

Indicators To Measure Sustainability In Urban Developments
Amado M.P., Freitas J.C., Lopes T.C., Portugal



Theme 4

Sustainable processes and eco-efficient technologies

Assessment Of Cities, Neighbourhoods, Buildings And Products (EE-A)

Sustainability Assessment Of Renovation For Increased End-use Energy Efficiency For Multi-family Buildings In Sweden

Brown N.W.O., Bai W., Björk F., Malmqvist T., Molinari M., Sweden

Does Sustainability Increase The Value Of Properties?

Frank S.O., Stoy C., Germany

Design Of A Simplified Comparative Ecological And Economic Lca Tool For Swiss Residential Apartment Buildings – Methodological Approach

John V., Wallbaum H., Switzerland

Sustainability Assessment System For Housing In Germany – Concept, Experiences, Opportunities

Immendoerfer A.I., Luetzkendorf T.P., Rietz A., Schuetz H., Germany

Developing Energy And Ghg Reduction Model For Commercial Office Building Stock

Seo S., Foliente G., Australia

Lca In Building Certification: Experiences From Germany

Wittstock B., Braune A., Fischer M., Kreissig J., Lemaitre C., Sedlbauer K., Germany

Certification Of Sustainable Housing In Large Housing Estates - Experience From The European "longlife" Project

Dirlich S., Blum A., Germany

Assessing The Built Environment's Contribution To Sustainable Development: The Sustainable Building Assessment Tool

Gibberd J.T., South Africa

Life Cycle Costs And Life Cycle Assessment Benchmarks For Residential Buildings In Germany

König H., De Cristofaro M.L., Germany

Sustainable Building Assessment Systems As Integrated Tools For Effective Policy Level Steering.

Mäkeläinen T. (Finland), Häkkinen T. (Finland), Lupisek A. (Czech Republic,

Life Cycle Assessment Methodologies In The Construction Sector: The Contribution Of The European Lore-lca Project

Peuportier B.L.P., Herfray G., Malmqvist T., Zabalza I., Staller H., Tritthart W., Wetzel C., Szalay Z., France, Sweden, Spain, Austria, Germany

Outline Of Approach To Low Carbonization By Strengthening Casbee For New Construction (2010 Edition)

Sato M.S., Murakami S.M., Ikaga T.I., Takai H.T., Yanai T.Y., Hayashi T.H., Endo J.E., Japan

School Buildings On The Path To The 2000-watt-society

Aumann A.A., Switzerland



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Sustainable Buildings – A Global Overview Of Users' Perceptions

Baird G., New Zealand

Integrating Municipal Climate Targets With Planning Targets At Building Level In A Life Cycle Perspective

Malmqvist T.I., Keski-Seppälä L., Glaumann M., Sweden

Towards A 2000 Watt Society – Assessing Building-specific Saving Potentials Of The Swiss Residential Building Park

Heeren N., Jakob M., Wallbaum H., Switzerland

Selecting Environmental Assessment Tool For Buildings

Glaumann M., Malmqvist T., Wallhagen M., Sweden

Per Capita Energyfor Living, Work, Transport And Other Social Activities In Cities In Kinki Region, Japan

Yamaguchi Y., Nakashima S., Shimoda Y., Japan

Comparison Of Sustainability Rating Systems For Buildings And Evaluation Of Trends.

Berardi U., Tortorici G., Italy

The Influence Of Building Plot Ratios On Urban Heat Island Intensity In The Tropics

Wong N.H., Jusuf S.K., Ignatius M., Eliza A., Singapore

Comprehensive Assessment Of Whole Japanese Cities From The Perspective Of Environmental Efficiency

Kawakubo S., Murakami S., Asami Y., Ikaga T., Yamaguchi N., Kaburagi S., Japan

A Systems Approach To Urban Development

Kuronen M., Finland

Toward A Multiscale Sustainability Assessment Of Urban District Projects

Lombardi L.P., Trossero E.T., Italy

Methodological Improvements In Life Cycle Analysis Of Buildings: Results From The Coimbra Project

Salmon N., Peuportier B., Chevalier J., Sidler O., Mikolasek R., France

Comparison Effective Environmental Strategies For Buildings, Houses And Transportation In High-density Cities And Low-density Cities

Yokoo N.Y., Oka T.O., Japan

Sustainable Construction Projects: Case Study Of Flexible Strategies For Long-term Sustainability Under Uncertainty

Fawcett W., Vennström A., Albrecht S., Krieg H., Hugues M., United Kingdom, Sweden, Germany, United Kingdom

An Empirical Evaluation Of Metropolitan Carbon Mitigation Strategies

Heinonen J.T., Junnila S.I., Kyrö R.K., Finland

It Takes Only Two Hours To Get Rough Estimate Of Urban Eco-efficiency

Lahti P., Nikkanen A., Puurunen E., Finland, United States



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An Empirical Evaluation Of The Significance Of The Carbon Spike In The Construction

Säynäjoki A.J., Heinonen J.T., Junnila S.I., Finland

Neighborhood Eco-efficiency – A Finnish Perspective

Säynäjoki E.S., Kyrö R.K., Heinonen J.T., Junnila S.I., Finland

Adding Value Using Sustainable Building Construction In Cyprus: The Case Study Of The Cyprus University Of Technology In Limassol

Hadjimitsis D., Themistocleous K., Achillides Z., Philimis P., Sofou S., Cyprus

Generating An Understanding Of The Development Criteria Required For The Next Generation Of Sustainability Assessment Methods For The Built Environment.

Poston A., Emmanuel R., Thomson C.S., United Kingdom

What Is Best For The Climate - Refurbishment Or Replacement Of Buildings?

Rønning A., Vold M., Norway

Multi-criteria Assessment Of High Performance Residential Building Envelope Typologies In Canada

Roos R.J., Gorgolewski M.T., Canada

Futurebuilt – A Programme For Realizing Best Practise Climate Effective Architecture And City Areas

Rusten B., Stoknes S., Norway

The Cultural Values Embedded In Building Environmental Assessment Tools: A Comparison Of Leed-canada And Japan's Casbee

Blaviesciunaite A., Cole R.J., Canada

Sustainable Evaluation - Concept To Assess The Applicability Of Secondary Aggregates In Concrete

Herbst T., Rübner K., Meng B., Hauer B., Germany

Life Cycle Assessment Of Energy Efficient Timber Frame Outer Walls – Does Thicker Insulation Pay Off?

Folvik K., Holthe K., Einstabland H., Norway

Next Generation Of Sustainability Assessment – Top Down Approach And Stakeholders Needs

Luetzkendorf T.P., Hajek P., Immendoerfer A.I., Lupisek A., Nibel S., Häkkinen T., Germany, Czech Republic, France, Finland

Development Of A Sustainability Assessment System For Education Buildings – Relevance, Specifications And Differences From Other Building Types

Nannen C.H., Wittstock B., Germany

Comparison Of Steve And Envi-met As Temperature Prediction Models For Singapore Context

Wong N.H., Jusuf S.K., Ignatius M., Eliza A., Samsudin R., Singapore

Improving The Environmental Impacts Of A Typical Flemish Retirement Home: A Life Cycle Approach

Debacker W.A., Van Holm M., Annemans M., Heyrman L., Spirinckx C., Verhaegen M., Belgium

Understanding Houses – A Key Step To Sustainability

Burrough L.J., Isaacs N.P., Pollard A.R., Burgess J.C., Camilleri M.T., Saville-Smith K., New Zealand



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Undertaking Social Housing Energy Refurbishment In Ireland

Daly P.G., Ireland

Benchmarking Values For Building Environmental Performances Assessment : The French Experiment

Chevalier J., Lebert A., Fedolliere J., Lasvaux S., Ravel P., Laurent J., Hans J., Nibel S., Chorier J., France

Sustainability Evaluation Of Viennese Housing Estates In Passive House Standard – A Post Occupancy Reflexion

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Theme 5

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Gabe J.S., New Zealand

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Noring M., Hochschorner E., Sweden

New Economic Incentives For Sustainable Building: Energy Saving Certificates And Energy Performance Contracting

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Linkage Building Environmental Assessment Tool To Property Appraisal - Casbee For Market Promotion (tentative Version)

Takai H.T., Murakami S.M., Ito M.I., Ikaga T.I., Iwamura K.I., Yamaguchi N.Y., Endo J.E., Japan

Twelve Years Of Environmental Work In The Swedish Construction Industry

Thuvander L., Gluch P., Gustafsson M., Baumann H., Sweden

Achieving Large Scale Uptake Of Sustainable Residential Renovation In New Zealand

Easton L.M., Saville-Smith K., New Zealand

Client Strategies For Driving Innovation In Low Energy Building

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The Business Of Green Housing: A Strategic View

Kam M., Prasad D., Hes D., Australia

Cities As Market-makers: Policy And Financing Strategies For Sustainable Real Estate Markets

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Study On Preferences For Energy-saving Facilities In Green House On The Basis Of A Questionnaire-type Survey

Ooka R.O., Kurosawa T.K., Japan

Understanding Trends In Characteristics And Achievement Of Leed Platinum Buildings: Application Of The Green Building Information Gateway

Todd J.A., Pyke C., Rohloff A., United States

Global Challenges Of Sustainability Business Innovations In Built Environment

Sivunen M., Kajander J.K., Heinonen J., Junnila S., Finland

Implementing Green Building Policies And Assuring Environmental Benefits In Singapore

Chong W., Anggadajaja E., Ang K.S., Moossa N.M., United States, Singapore



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Sustainable Innovations And Its Routinization

Langar S., Pearce A.R., United States

The Role Of Environmental Efficiency In Finnish Real Estate Market – A Market Study

Kyyhkynen A.M., Finland

The Labelling Landscape. Natureplus® – An Ambitious Pan-european Initiative.

Schmitz-Günther T., Welteke-Fabricius U., Germany

Full Service Energy Efficient Renovation Business For Swedish Single-family Houses

Mahapatra K., Gustavsson L., Sweden

Factors That Have Influenced Education Sector Projects In Nz Since 2008

Bretherton J.E., Spencer T.A., Curtain B., New Zealand

Assessing The State Of Existing Residential Real Estate – Developing, Piloting And Results. – Tila-arviointi.

Karhu T., Saarinen J., Finland

Sustainable Procurement (BM-P)

A Nordic Guideline On Sustainable Refurbishment Of Buildings

Almås A.J., Bjørberg S., Haugbølle K., Vogelius P., Huovila P., Nieminen J., Marteinson B., Norway, Denmark, Finland, Iceland

Achieving Sustainable Retrofit: Human Barriers And Solutions

Thurairajah N., Bichard E.M., United Kingdom

Sustainable Building Renovation And Refurbishment With Applications Of Vacuum Insulation Panels

Gohardani N., Gudmundsson K., Sweden

Sustainable Building Process

Häkkinen T., Nykänen V., Finland

Five Years Later: Revisiting The Construction Client As Change Agent

Haugbølle K., Olsen I.S., Vogelius P., Denmark

Procurement And Sustainability In Construction Works – Two Cases Of Construction Works Projects With Sustainability Demands Regarding The Phase Of Procurement

Persson U., Sweden

Strategising Sustainable Procurement In A Political Environment

Vogelius P.E.V., Haugbølle K.H.H., Olsen I.S.O., Denmark

Green Public Procurement In Poland – Criteria For Thermal Insulation Products

Bekierski D., Poland

Estimating Energy Consumption During Construction Of Buildings: A Contractor's Perspective

Chini A.R., Shrivastava S., United States



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Calculating Life Cycle Cost In The Early Design Phase To Encourage Energy Efficient And Sustainable Buildings

Hofer G., Herzog B., Grim M., Austria

Value Driven Management Decisions And Eco-efficient Technologies For Building Sustainability

Philimis P., Sofou S., Hadjimitsis D., Themistocleous K., Paraskeva P., Cyprus

Design Competition For A Near Zero Energy Building – Implementation, Results And Lessons To Learn

Rintala T., Nissinen A.N., Finland

Parallel Commissioning. A New Way Of Planning For A Sustainable Settlement. - The Case Of Brøset, Trondheim.

Bohne R.A., Wyckmans A., Norway

Financing and Incentives (BM-F)

Sustainable Construction In The Recession

Naoum S., Mulholland Z.E., Fong D., United Kingdom

Swedish Architects' Perceptions Of Hindrances To The Adoption Of Wood Frames And Other Innovations In Multi-storey Building Construction

Hemström K., Mahapatra K., Gustavsson L., Sweden

Built Environment Professionalism In A Changing Economy

Hill S., Lorenz D., Dent P., Lützkendorf T. (Germany, United Kingdom, Germany)

Sustainability Reporting and Rating in the Construction and Real Estate Sector

Lützkendorf T.P., Lorenz D., Germany

Climate Change: What's In It For A Bank? Roles Of Financial Institutions In Mitigation Effort

Tobing H.L.Y., Prasad D.K., Merson J., Australia

Low-energy Versus Conventional Residential Buildings: Market Stimulants, Investment Cost And Profit

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Theme 6

Social sustainability and environmental ethics

Sustainable Policies (SS-P)

Assessing Non-monetized Benefits Of An Energy Efficiency Retrofit: A Job Forecasting Methodology For Use In Policy Making And Evaluations

Fobair R.C., Kibert C.J.K., United States

Organisational Sustainability Reframing The Community Perspective

Jackson S.J., Australia

Assessment Of Improving Energy Efficiency Of Buildings: Impacts On Indoor Environmental Quality And Public Health In Europe

Haverinen-Shaughnessy U., Turunen M., Leivo V., Martuzevicius D., Pekkonen M., Prasauskas T., Aaltonen A., Finland, Lithuania

Costs For Reducing The Energy Demand In The Swedish Building Stock According To National Energy Targets

Mattsson B., Mattsson B., Sweden

Office Occupiers' Preference Profiles

Niemi J.M.E., Finland

Sustainable Building Reporting System In Japan

Endo J.E., Sanada N.S., Japan

An Approach For An Eco-management And Audit Scheme (emas) For The Construction Sector

Hiete M., Kühlen A., Schultmann F., Germany

Sustainability Threats And Responsive Policies In The Arab States: A Critique Overview

Shaawat M.E., Saudi Arabia

Promoting Environmental Sustainability In The Absence Of A Statutory Framework: Case Study - Inner City Council, Melbourne Australia

Trickett J.M., Australia

Analysing Carbon Reduction Policy Impacts On The Carbon-vs-cost Burden In A Building Project

Wang T., Foliente G., Fang D., China, Australia

Going Beyond The Social Mission - The Environmentally Ethical Museum

Hartenberger U., Belgium

Integration Of Sustainable Building Technology And Form Generation Of Tall Building

Kim H.I., Shin S.W., Republic of Korea

Decision Support To Promote Green Technology Implementation On Australian University Campuses

Luo H.Y., Yang J., Australia



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Sustainable Retrofit – Understanding Barriers To Progress, Community Engagement And Policy Strategies For Increase Of Take Up By Home Owners And Tenants

Britnell J., Chen J., Dantsiou D., Sunikka-Blank M.M., United Kingdom

Study On The Contingent Valuation Methods Applied On Sustainable Policies Making Process |v The Case Study Of Illumination Replacing On Campus In Taiwan

Chung S.C., Yeh Y.C., Tsay Y.S., Hsu K.H., Chiang C.M., Taiwan

Comparison Of The China Green Building Label And The U.s. Leed 2009

Zhang Z.D., Lau S.S.Y., Hong Kong

Digital Life - A Critical Factor To Realize Sustainable Life For Coping With Climate Change

Liu D.C., Lin D.E., Taiwan

Study On Constructing The Revitalization Of Community Industry -the Case Study Of The Communities Around The Hu-shan Dam In Taiwan

Yeh Y.C., Tsay Y.S., Chung S.C., Chiang C.M., Su T.Y., Taiwan

Assessment Procedures And Tools For The Social Sustainability And The Humanization In Hospital Buildings

Giordano R., Montacchini E.P., Tedesco S., Peretti G., Italy

A Rose Is Still A Rose: On Municipal Quality Programs For Sustainability In Sweden

Granath K., Andersson A.C., Johansson P., Sweden

Insulation Performance And Grade System Of Windows In Korea

Lee S.E., Kang J.S., Choi K.S., Republic of Korea

Social Impacts Of Climate Change – A Case Study In Finland

Kohl J., Finland

Floor Systems - Key Elements For Sustainable Multi-storey Buildings

Döring B., Kuhnhenne M., Feldmann M., Germany

Corporate Responsibility And Reporting (SS-R)

The Influence Building Codes And Fire Regulations Have On Multi-storey Timber Construction In Australia.

Holmes M., Ding G., Crews K., Australia

Variance Analysis On Different Emission Test Methods By A Certified Green Building Material In Taiwan

Chen J.L., Liao H.Y., Chiang C.M., Liao L.Y., Chen c.c., Yau J.T., Taiwan

Summary Of The Ircc Workshop On International Perspectives On The Role Of Building Regulation In Responding To The Challenges Of Climate Change

Meacham B.J., United States

Energy Certification Of Windows In Poland

Rucinska J.R., Panek A.D.P., Trzaski A.T., Poland



How To Measure The Sustainability Of Concrete Structures?

Josa A., Aguado A., Pardo F., Spain

The Social Sustainability Of Construction Works – Challenges For Integrating Social Dimensions Into The Sustainability Assessment Of Buildings

Tritthart W., Rohracher H., Austria

German And European Approaches To Sustainable Construction

Brockmann T., Germany

Education, Training, Standardization And Regulation (SS-E)

Evaluation Of Sustainability In A University In South Of Brazil – Focus On Education

Brandli L.L., Frandoloso M.A.L., Fraga K.T., Vieira L.C., Pereira L.A., Brazil

A Methodology To Develop Judgment Skills In Sustainable Architectural Education

Kenny P., Brophy V., Ireland

Master Programme In Sustainable Architecture: Towards A Zero Emission Built Environment – Lessons Learnt From The First Year Of Teaching

Haase M.H., Wyckmans A.W., Norway

Educating The Architect; Formation Of Sustainability Constructs

Kishnani N., Ng L.J., Singapore

The Teaching Of Sustainable Buildings And Communities In South Of Brazil

Sattler M.A., Brazil

Sustainability Competencies Of Engineers In The Field Of Water Supply And Sanitation

Takala A.J., Finland

Occupancy Costs Benchmarks For Schools And Sport Facilities In Germany

Beusker E., Stoy C., Germany

Development Of An Appraisal System For Green Demolition

Huang R.Y.H., Chou H.Y.C., Taiwan

Architecture As A Framework For Action And Change: Community Participation Strategies For Brøset, Trondheim.

Hatleskog E.K., Norway

Environmental Local Agents (ALAs): Towards the Sustainable City

Marín Herbert S., Spain

Participatory Design Process Of A Youth Center In Phnom Penh, Cambodia

Kassi T., Suomi M., Finland

Children And Sustainable Buildings: Learning Through Community Collaboration

Wake S.J., New Zealand

+hytte. Sustainable Design Among Didactics, Research And Social Awareness.

Finocchiaro L.F., Haase M.H., Wyckmans A.W., Norway



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Qualification Concepts And Trainings For Energy Consulting Services

Heinen S., Frenz M., Djaloeis R., Schlick C.M., Germany

Influencing Sustainability Through Curriculum Links

Bretherton J.E., Spencer T.A., Burr C.J., New Zealand

Sustainable Building Engineering Education 2011

Pollock E., Finland



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Special forums

Toward Rio+20 and Beyond (SF01)

Zero Emission Buildings (SF2)

Implementing zero energy buildings in Nordic climate conditions. A case study.

Jormanainen J., Finland

Building form, climate and energy supply system in a passive house building

Haase M., Norway

Towards Zero Energy Office Buildings In Northern Europe

Flodberg K., Blomsterberg Å., Dubois M.C., Sweden

Achieving Zero Carbon Emission In The Uk Construction Industry Integrating Offsite Construction And Renewable Energy Technologies

Nadim W., Boudjabeur S., United Kingdom

Energy-plus Primary School, Hohen Neuendorf, Germany

Luetskemeyer I., Krause J., Germany

Zero Energy Building Project In The University Of Tokyo

Yashiro T., Mago-ori B., Ooka R., Shida H., Sako H., Hiyama K., Yasuda D., Kato M., Nagata T., Chikushi K., Kawatani S., Ikeda H., Japan

Suvelasurge Student Competition (SF3)

High Performance Energy Systems (SF10)

Industry Panel (SF4)

Sustainable Procurement (SF5)

Sustainable Valuing (SF6)

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PREFACE

The 6th World Sustainable Building (SB) Conference, SB11 Helsinki, addresses new opportunities for improving quality of life, mitigating the effects of climate change and making new business.

The SB Conference series, co-sponsored by CIB, iiSBE and UNEP, gathers the world's leading industry experts and researchers on sustainable built environment. The aim of this prestigious summit, held every three years, is to share leading knowledge, and also to find new solutions which can enhance sustainable ways of living and working within built environments. The previous conference SB08 held in Melbourne was an overwhelming success, attracting more than 2.000 delegates from over 60 countries with over 350 papers and speeches delivered and 185 posters shown, and thus setting new standards that the SB11 Helsinki intends to carry even further by getting more countries involved and increasing the technical quality of the conference contents.

To improve our current understanding on sustainable building and to develop new solutions for the present and future, SB11 Helsinki will provide a vivid forum for discussion and networking between all stakeholders. 51 Scientific Sessions and 10 Special Forums covering all the themes of the conference will showcase the valuable contribution of experts from more than 50 countries. Seven scientific journals are planned to publish the conference's best papers.

In this edition the global aspect will be particularly emphasized both in terms of conference themes and conference organization. As an example, more than 70 countries are represented within the International Scientific Committee, about three times the number reached in previous events!

To reach further, SB11 Helsinki has devoted a big effort to reinforce communication and dissemination through a very active website that houses promo-videos, interviews, permanently updated news and a special section featuring brief reports on recent initiatives worldwide towards a more sustainable built environment.

Moreover, and hand in hand with the desire to encourage the participation of young generations in SB11 Helsinki, an International Student Idea & Design Competition for Sustainable Neighbourhood Regeneration in Espoo, SuvelaSURGE has been launched. Without precedent in these international conferences, this innovative initiative intended for multidisciplinary working teams has received proposals from students from over 14 countries. Even children have taken part! The results will be presented during one of the conference's special forums.

Looking forward to a stimulating summit.

Pekka Huovila
Chair of the International Scientific Committee



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