



PLEA 2006

PLEA 2006

23rd INTERNATIONAL CONFERENCE ON
PASSIVE AND LOW ENERGY ARCHITECTURE
GENEVA SWITZERLAND 6-8 SEPTEMBER 2006

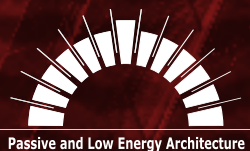
CLEVER DESIGN, AFFORDABLE COMFORT

A Challenge for Low Energy Architecture and Urban Planning

PROGRAMME

PLEA 2006 conference is jointly organised by

Hes·SO
Haute Ecole Spécialisée
de Suisse occidentale



Passive and Low Energy Architecture



UNIVERSITÉ
DE GENÈVE

www.plea2006.org

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Gerhard ZWEIFEL	University of Applied Sciences of Central Switzerland

Many thoughts for Niobe CHRISOMALLIDOU who died suddenly at the beginning of this summer

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Dear Friends of PLEA, Geneva and the University of Geneva are proud to host this 23rd Passive and Low Energy Architecture Conference.

Organized by the University of Geneva in association with the Specialized High School of Western Switzerland, this conference aims to present the state of research, experiments and achievements in the field of low energy architecture and sustainable built environment.

The three days of the conference are structured around a global topic, «Clever design, affordable comfort: a challenge for low energy in architecture and urban planning».

The first day will focus on «Issues» and reflect on the general problematics in relation to comfort and climate, as well as on examples of traditional architecture.

«Case studies» will be presented on the second day, with experiments, analyses and high achievements in the field of building and town planning. Architects from the Geneva region interested in the subject of the conference are invited to join on that day.

The third day, dedicated to the topic «Dissemination», will show education programs, design strategies and tools, examples of research and technology transfer, in order to promote a multidisciplinary approach which integrates technical, architectural, social aspects and economic concerns.

In view of the number of papers received, we have organized three parallel sessions for oral presentations. Invited keynote speeches, oral sessions as well as the possibility for poster authors to make short presentations, will enable participants in PLEA 2006 to have a fruitful exchange of information.

We hope that you will enjoy this conference in Geneva, and that its international environment will facilitate the exchange of views and dialogue between the 40 countries represented at this congress, as well as promote a global development of sustainable architecture and urban planning.



Willi Weber, Chairman



TUESDAY

5 September 2006 afternoon

17:00

Registration

19:00

Welcome from the PLEA Team

WEDNESDAY

6 September 2006 morning

08:00

Registration

09:00

Opening of the 25th PLEA conference

- Opening by Willi WEBER, Chairman
- Welcome from the Heads of the University of Geneva and HES-SO
- Introduction from Koen STEEMERS, President of PLEA

09:15

Keynote speakers

- Benjamin DESSUS «Energie et environnement, la nécessité de repenser nos infrastructures»
- Robert HASTING «A time journey through solar architecture – 1900 into the future»

10:50

Coffee break

11:00

Technical sessions

Auditorium Paxton

Lessons from traditional architecture

- | | |
|--|-------------|
| • Windows as environmental modifiers in Lebanese vernacular architecture
H. MELKI | 884 / I-75 |
| • Applying the lessons of Indian vernacular architecture: the bungalow as example of adaptive climatic response
K.KRAMER | 767 / I-69 |
| • H.A.M.A.M. project and climate design of Islamic bath buildings
J.BOUILLLOT | 967 / I-889 |
| • The historic Hammams of Damascus and Fez: lessons of sustainability and future developments
M. SIBLEY | 971 / I-81 |
| • Bioclimatic interpretation over vernacular houses from historical city Basrah
A. ALMUSAED, A. ALMSSAD | 242 / I-87 |
| • Lighting features in Japanese traditional architecture
J.-M. CABEZALÁINEZ, T. SAIKI, J.-M. ALMODOVAR-MELENDO, J.-R. JIMÉNEZ-VERDEJO | 773 / I-113 |

papad



WEDNESDAY 6 September 2006 morning

Trombe Hall

Comfort and well-being in indoor and outdoor spaces

- | | |
|--|--|
| <ul style="list-style-type: none"> • The influence of daylightsign in office buildings on the users comfort
H. SCHUSTER • User interactions with environmental control systems in buildings
A. MAHDAVI, E. KABIR, A. MOHAMMADI, L. LAMBEVA, C. PRÖGLHÖF • Users' perception of comfort and well-being in university buildings
E. TRIANTIS, F. BOUGIATIOTI, A. OIKONOMOU • Natural light and environmental stress
I. FONSECA, M. M. PORTO, A. FANCHIOTTI, A. GONÇALVES • Conceptualizing urban places as a 'fourth skin'
S. LENZHOLZER | paper
847 / I-447
862 / I-399
951 / I-405
191 / I-441
811 / I-465 |
|--|--|

11:00

Technical sessions

Bowen Hall

Strategies and tools for renovation

- | | |
|---|--|
| <ul style="list-style-type: none"> • Passive cooling of existing office buildings – proposal for a building typology
C. HOFFMANN, K. VOSS • Zero energy housing retrofit
B. VALE, R. VALE • Conversion design of solar houses from active to passive
K. KIMURA • The comprehensive housing renovation approach
M. HAM, R. WOUTERS • «Brand new second hand» upgrading of a block of flats (b.1956) through energy efficient renovation
M. KUBIN, M. HAM • Domestic retrofitting strategies in the UK: effectiveness versus affordability
P. MAHADEVAN | paper
160 / I-585
304 / I-573
840 / I-603
220 / II-705
221 / II-869
580 / II-711 |
|---|--|

12:30

Lunch



WEDNESDAY

6 September 2006 afternoon

14:00

Technical sessions

Auditorium Paxton

Lessons from traditional architecture

pad

- The environmental performance of traditional courtyard housing in China – case study: Zhang’s house, Zhouzhuang, Jiangsu Province 990 / I-119
B. FORD, B. LAU, H. ZHANG
- Analysis of the units contributing climate comfort condition in outdoor spaces in Turkish traditional architecture 800 / II-103
S. A. GÜLEÇ, F. CANAN, M. KORUMAZ
- The Vernacular as a model for sustainable design 896 / II-111
A. HEAL, C. PARADISE, W. FORSTER
- Shifting comfort zone for hot-humid environments 842 / II-125
K. JITKHAJORNWANICH
- Wee energy house; environmentally responsive architecture for rural Northern Ireland 610 / II-137
J.-A. FLEMING
- Traditional architecture and bioclimatic design – case study: Tecozautla, Hgo. Mexico 889 / II-899
R. MANRÍQUEZ, V. FUENTES, L. GUERRERO

Trombe Hall

Comfort and well-being in indoor and outdoor spaces

pad

- Ground surface materials and microclimates in urban open spaces 981 / II-485
A. CHATZIDIMITRIOU, N. CHRISOMALLIDOU, S. YANNAS
- Effect of urban geometry on surface temperatures of ‘skin’ materials in Greek cities 165 / I-471
F. BOUGIATIOTI
- Effect of external ground surface materials on indoor thermal comfort 604 / I-495
T.-P. LIN, R.-L. HWANG, M.-J. CHENG
- Ventilation investigations in a densely built-up area of Hong Kong to describe thermal comfort 715 / I-511
L. KATZSCHNER, E. NG
- Caring buildings; a concept to implement individual comfort and well-being 163 / II-473
W. ZEILER, R. van HOUTEN, R. KAMPHUIS, M. HOMMELBERG
- A study on the thermal comfort range considering adjustment actions by residents 932 / II-479
T. FUKAZAWA, N. SUNAGA, K. MATSUDA, Y. CHIBA, M. OZAKI

Bowen Hall

Design strategies and tools

pad

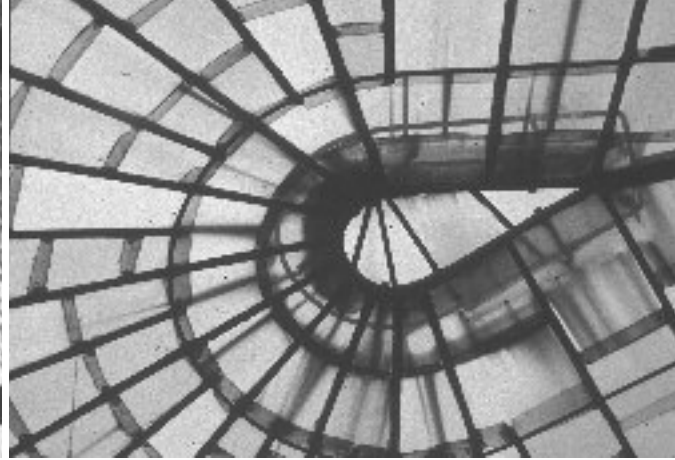
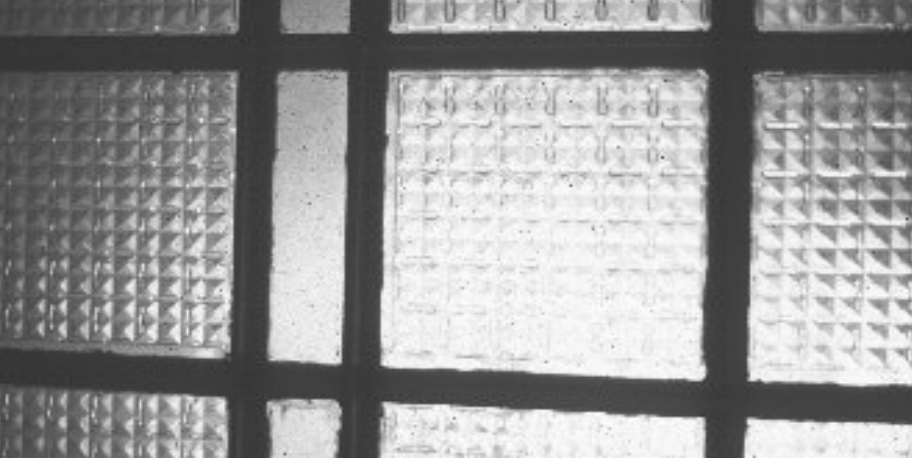
- Thermal rehabilitation: assignment of balconies into conservatories; the ‘Libellules’ case study. 994 / I-931
R. CAMPONOVO, J.-Y. MAGNIIN, P. GALLINELLI
- Problems of house energy rating (HERS) in warm-humid climates 846 / I-233
S. SZOKOLAY
- CEN-Standards for implementing the European directive on energy performance of buildings 183 / I-221
C.-A. ROULET, B. ANDERSON
- Ecologically sustainable development and architecture: the impact of rating tools 153 / II-147
C. LAMBORN, S. ALTOMONTE, M. LUTHER, R. FULLER
- New building principles in consequence of legislative demands for reduced energy consumption in Danish housing 843 / I-239
R. ZEDERKOF JESSEN, P.-H. KIRKEGAARD, H. BROHUS

15:50

Short introduction to Posters

16:00

Coffee break / visit of Posters



WEDNESDAY 6 September 2006 afternoon

16:30

Technical sessions

Auditorium Paxton

Lessons from traditional architecture

paper

- The four elements of Santorini architecture lessons in vernacular sustainability
T. STASINOPOULOS 783 / II-73
- Learning from the past: the traditional compact city in hot-humid climates
G. DIAZ, A. Ma. DE LA PEÑA, A. ALFONSO 556 / II-19
- Lessons from traditional architecture: design for a climatic responsive contemporary house in Thailand
P. ANTARIKANANDA, E. DOUVLOU, K. McCARTNEY 725 / II-43
- Shape, culture and environment: a lesson of urban design from Dakhleh oasis, Egypt
R. BALBO 882 / II-49
- Bioclimatic elements for traditional Romanian houses
N. PETRASINCU, L. FARA 975 / II-85
- Shekhawati: urbanism in the semi-desert of India – a climatic study
A. AGRAWAL, R.-K. JAIN, R. AHUJA 978 / I-901

Trombe Hall

Comfort and well-being in indoor and outdoor spaces

paper

- Roof cooling techniques
E. ERELL, S. YANNAS, J. MOLINA 646 / II-571
- Environment and urbanization: Microclimatic variations in a brownfield site in São Paulo, Brazil
D. DUARTE, J. GONÇALVES 839 / II-497
- Thermal comfort and building energy consumption in the Philippine context
M. M. ANDAMON 730 / II-547
- Thermal comfort & reduced flood risk through green roofs in the tropics
M.I. LAAR, F. W. GRIMME 312 / II-577
- Towards a safe sun-bathing canopy
C. MACKAY 768 / II-581
- Comfort in the science garden
S. UBBELOHDE, G. LOISOS, S. PHILIP 973 / II-523

Bowen Hall

Low energy design at the urban scale

paper

- Urban form, density and solar potential
V. CHEN, K. STEEMERS, M. MONTAVON, R. COMPAGNON 904 / I-701
- Optimising energy use in master planning
S. STANKOVIC, N. CAMPBELL, W. GAISER, A. STONE 189 / II-855
- Assessing urban sustainability: microclimate and design qualities of a new development
S. de SCHILLER, John Martin EVANS 804 / II-969
- Participative retrofit of the «îlot 13» area in Geneva
M. GISSELBAEK, P. HAEFELI, P. HOLLMULLER 941 / II-1049
- Applying GIS tools for analysing urban thermal environment
L. C. LUCAS DE SOUZA, A. N. RODRIGUES DA SILVA 121 / II-741
- Façades design and environmental performance in building in Chiado
N. REDIN, M. CORREIA GUEDES 145 / I-269

18:00

Closure of Day 1

19:00

Welcome from the City and Canton of Geneva



THURSDAY

7 September 2006 morning

09:00

Keynote speakers

- Bureau Baumschlager-Eberle, «Work»
- Thomas HERZOG, «Extension to the head office of SOKO-BAU, the pensions and benefits fund of German building industry, in Wiesbaden»
- Mario CUCCINELLA, «Work»

10:30

Coffee break

11:00

Technical sessions

Auditorium Paxton

Case study

- | | |
|--|--------------|
| • Bioclimatic lessons from Luis Barragán's architecture
A. FIGUEROA, G. CASTORENA | 115 / 1-37 |
| • Bioclimatic skyscraper – learning from Bawa
B.-K. TAN, D. ROBSON | 134 / 1-753 |
| • Thermal comfort in a sustainable house by Frank Lloyd Wright
M. SCHILER, S. BRAHMBHATT | 759 / 11-535 |
| • An analysis of the contributions of lighting and climate to the architecture of Luis Barragán
D. AVILA | 876 / 11-993 |
| • Brasilia: daylighting analysis of public buildings designed by Oscar Niemeyer
C. NAVES, D. AMORIM, L. SZABO | 922 / 11-999 |
| • Linking bioclimatic theory and environmental performance in its climatic and cultural context – an analysis into the tropical high-rises of Ken Yeang
P. S. JAHNKASSIM, K. IP | 969 / 11-309 |
| • Architecture integrated to nature: the use of timber by Severiano Porto in Brazilian Amazon
L. NEVES | 232 / 1-49 |

paper

Trombe Hall

Case study

- | | |
|---|---------------|
| • Performance monitoring of a naturally ventilated city centre library
B. KRAUSSE, M. COOK, K. LOMAS | 144 / 1-791 |
| • The variety and analysis of ecological footprint in recent years in Chongqing, China
M. LI, B. LI, S. LI | 834 / 1-785 |
| • Tinted glass curtain wall and its implications on the occupants' health – case study of a tight office building in Algiers
I. CHABANE, R. BENSALEM | 762 / 1-803 |
| • Daylighting optimization of the new factory of Turbomeca in Bordes, France
B. PAULE, J.F. IRISSOU, G. SAUNIER | 322 / 1-811 |
| • A passive solar office building in Portugal
H. GONÇALVES, P. CABRITO | 175 / 1-821 |
| • Tyre_space©, elastic building frames applied in urban and rural environments
C. SUAU, F. AYALA | 949 / 11-1005 |

paper

Bowen Hall

Low energy design at the urban scale

- | | |
|--|-------------|
| • Tempering the elements: botanic gardens and the search for paradise
K. BAKER | 177 / 1-477 |
| • Air ventilation assessment system for high density planning and design
E. Yan-Yung NG | 642 / 1-323 |
| • Integration of energy issues into the design process of sustainable neighbourhoods
E. REY | 710 / 1-679 |
| • Solar rights in the design of urban spaces
I. CAPELUTO, A. YEZIORO, T. BLEIBERG, E. SHAVIV | 780 / 1-689 |
| • Exploring the thermal benefits of plants in industrial areas with respect to the tropical climate
N.-H. WONG, Y. CHEN, S.-T. WONG, C. CHUNG | 554 / 1-299 |
| • Housing daylight in urban centres, study case: Havana
D. GONZALEZ COURET, A. ZORRILLA, H. GOMEZ | 821 / 1-817 |

paper

12:30

Lunch

14:00

Technical sessions

Auditorium Paxton

Case study

- Thermal studies of suitable ecological building in China's Loess Plateau region 703 / II-921
Jun MU, Edward Yan-Yung NG
- Integration of living machine and biogas plant – case EVA Centre Lanxmeer, Culemborg 892 / I-947
A. van TIMMEREN, M. TAVIL
- A comparative study of the thermal performance of building materials 918 / I-959
S. ELIAS-OZKAN, F. SUMMERS, N. SURMELI, S. YANNIAS
- Rural populations and renewable energy sources – experiences of the Republic of Serbia 317 / I-965
M. PUCAR, M. NENKOVIC
- Experiences from Universeum Science Centre in Sweden: focus on delivery – a weak link between the project and the building in use 502 / II-939
P. FEMENIAS
- Linking sustainability to the realm of built environment: central paradigms in sustainability research 938 / II-975
H. DUMREICHER, B. KOLB

Trombe Hall

Case study

- Albatros-D: a systemic method for participatory urban diagnosis 996 / I-937
G. DESTHIEUX, C. MERZ, F. FLOURENTZOU, L. CHENU, F. GOLAY
- Arfrisol, bioclimatic architecture and solar cooling project 560 / I-833
A. BOSQUED, S. PALERO, C. SAN JUAN, S. SOUTULLO, R. ENRIQUEZ, J. A. FERRER, J. MARTI, J. HERAS, J. D. GUZMAN, M. J. JIMENEZ, R. BOSQUED, M. R. HERAS
- Design and evaluation of a low carbon emitting naturally ventilated student health centre 204 / I-849
I. WARD, H. ALTAN, N.-X. LIU
- Case study of the design and post-occupancy evaluation of an environmentally sustainable educational facility 841 / I-913
L. PARTRIDGE, N. GROENHOUT
- Case study of a low-energy (minergie®) multifamily complex in Switzerland. First appraisal after two years of exploitation 944 / I-925
J.-M. ZGRAGGEN, M. BARTHASSAT, P. HAEFELI, B. LACHAL, B. SCHMID, V. WEBER
- A multi-stage down-draft evaporative cool tower for semi-enclosed spaces. Part I: aerodynamic design 808 / II-559
E. ERELL, D. PEARLMUTTER, Y. ETZION
- A multi-stage down-draft evaporative cool tower for semi-enclosed spaces. Part II: water spraying system 809 / II-565
D. PEARLMUTTER, Y. ETZION, E. ERELL

Bowen Hall

Low energy design at the urban scale

- «La ville radieuse» by Le Corbusier, once again a case study 987 / I-941
M. MONTAVON, K. STEEMERS, V. CHEN, R. COMPAGNON
- The impermanent house: a psycho-analytical approach to improving Glasgow's social housing scheme 214 / II-131
J. FUNG, C. PORTEOUS, T. SHARPE
- Thermal comfort in urban space renewal 858 / II-491
G. SCUDO, V. DESSI
- Thermal generative model for energy efficient form generation 832 / I-349
S. CHEN, K. STEEMERS
- Impact of on-site variables on the influence of vegetation in lowering outdoor temperature in high-rise high-density environments 807 / II-827
R. GIRIDHARAN, S. S.Y. LAU, S. GANESAN, B. GIVONI
- The role of courtyards in relation to air temperature of urban dwellings in Athens 173 / II-833
E. TSIANAKA

15:30

Poster session – short presentations

16:00

Coffee break

16:50

Round table, Auditorium Paxton

- Alexandros TOMBAZIS, Introductory remarks for round table discussion: «case studies – from theory to practice»

18:00

Closure of Day 2

19:50

GALA dinner



FRIDAY

8 September 2006 morning

09:00

Keynote speakers

- Paula CADIMA, «Retrofitting of social housing: opportunities from the intelligent energy Europe - programme»
- Simos YANNAS, «Learning environment»
- Edgard GOUVEIA Júnior, «Empowerment»

10:50

Coffee break

11:00

Technical sessions

Auditorium Paxton

Architectural education for sustainable design

paper

- Communicational platform for knowledge transfer in housing design process 141 / I-629
B. CHEN, A. PITTS 142
- Australian approach to sustainable design professional development education 869 / I-641
S. BERRY, T. MARKER, C. MCGEE
- Applications and developments of blended learning course ecology in architectural design 991 / I-647
P. CAPUTO, W. WEBER, P. HAEFELI, I. REGA
- Centres for regenerative studies: graduate studio experiences in education for sustainable design 986 / I-659
R. KOESTER
- Implementing building energy simulation into the design process: a teaching experience in Brazil 106 / II-755
S. DELBIN, V. GOMES da SILVA, D. KOWALTOWSKI, L. LABAKI
- Education in environmental construction at the University of Plymouth: the eco-house project 184 / II-773
P. de WILDE, B. PILKINGTON
- Sustainability education: addressing practice and attitude 504 / II-793
P. SASSI

Trombe Hall

Design strategies and tools

paper

- The use of analyses for a better environment in early design for a Stanford University building 636 / I-317
I. LAVEDRINE, C. ROBERTS, T. BAUER
- Alter-CLIM: a decision tool for passive and hybrid thermal control strategies 205 / I-251
G. van MOESEKE
- Crucial building parameters as a novel approach for the design of passive solar houses in a Mediterranean climate 550 / I-257
E. MÜLLER
- An energy-efficient office building in a tropical climate: the INPE-CRN's project in Natal, Brazil 179 / II-419
A. de OLIVEIRA, H. MARANHÃO BRITTO, S. CIRNE TRINDADE, R. DE MATOS, P. DE FARIA RANGEL, L. DE CUNHA, A. PEDRINI
- Improving comfort and energy efficiency in a nursery school design process 995 / II-425
S. FERRARI, G. MASERA, D. DELL'ORO

Bowen Hall

Design strategies and tools

paper

- Integration of sustainability in the design process of contemporary architectural practice 724 / I-245
M. TREBILCOCK, B. FORD, R. WILSON
- An energy-efficient simulation-assisted lighting control system for buildings 861 / I-565
A. MAHDAVI, B. SPASOJEVIC
- The use of genetic algorithms for a net-zero energy solar home design optimisation tool 146 / I-215
R. CHARRON, A. ATHIENITIS
- Mapping tools for a sustainable building cycle 893 / I-363
G.-J. van den BRAND
- Design strategies in steady-state systems 738 / II-183
M. CLEMENTI
- Using axiomatic design to support sustainable projects at São Paulo, Brazil 798 / II-819
V. GRAÇA, D. LIMA, J. BUDA, J. PETRECHE

12:50

Lunch

14:00

Technical sessions

Auditorium Paxton

Design strategies and tools

paper

- Potential for passive cooling of buildings by night-time ventilation in present and future climates in Europe
N. ARTMANN, H. MANZ, P. HEISELBERG 200 / II-339
- Natural ventilation through buried pipes in a small school in Viamão, Brazil
D. MUSSKOPF, M. SATTLER 568 / II-345
- Ventilated façade design in hot and humid climate
M. HAASE, A. AMATO 510 / I-281
- A new ventilation and thermal storage technique for passive cooling of buildings: thermal phase-shifting
P. HOLLMULLER, B. LACHAL, J.M. ZGRAGGEN 942 / I-541
- Influence of ventilation mode on passive cooling effect – a proposal of flex vent system
Y. KODAMA, K. TAKEMASA, F. MIYAOKA, C. HASUI 240 / II-357
- The impact of façade designs: orientations, window to wall ratios and shading devices on indoor environment for naturally ventilated residential buildings in Singapore
L.P. WANG, N.-H. WONG 578 / I-293

Trombe Hall

Design strategies and tools

paper

- Assessment of the effects of environmental factors on air flow in and around buildings
K-P LAM, S. HAY, P. SATWIKO, J. JENNINGS, J. COLE 926 / I-337
- Application of multicriteria optimization in wind flow analysis
K. KLEMM, H. JEDRZEJUK, W. MARKS 815 / II-323
- Impact on water consumption by cooling equipment in arid region of Mexico
L. C. HERRERA, G. GÓMEZ-AZPEITIA 149 / II-381
- Design guidelines for direct ground cooling systems in different climates
A. ANGELOTTI, G. SOLAINI 616 / II-363
- Integral design methodology for collaborative design of sustainable roofs
E. QUANJEL, W. ZEILER, W. BORSBOOM, H. SPOORENBERG 161 / II-195
- Criterion for the design on the building envelope related to ecological sensitivity in tourism buildings in the Mediterranean region, Turkey
E. ACAR, D. E. ÖNDER 707 / II-285

Bowen Hall

Design strategies and tools

paper

- Integration of daylight quality in the design studio: from research to practice
M.C. DUBOIS 320 / I-671
- Experimental laboratory for teaching architecture lighting in a virtual learning environment
V. ATANASIO, F. PEREIRA, A. PEREIRA 107 / II-761
- Assessing a rapid technique for estimating the daylight transmittance of atrium roofs
D. LASH, S. SHARPLES 197 / I-169
- Simplified on-site method for evaluating solar shading performance of advanced windows
T. INOUE, M. MOMOTA 704 / I-175
- A design method for fixed outside solar shading device
B. MATUSIAK 194 / I-151
- Development of a probe for measuring in-situ the thermal properties of building materials
B. PILKINGTON, P. de WILDE, S. GOODHEW, R. GRIFFITHS 185 / II-665

15:30

Poster session – short presentations

16:00

Coffee break

16:30

Distribution of awards, final discussion

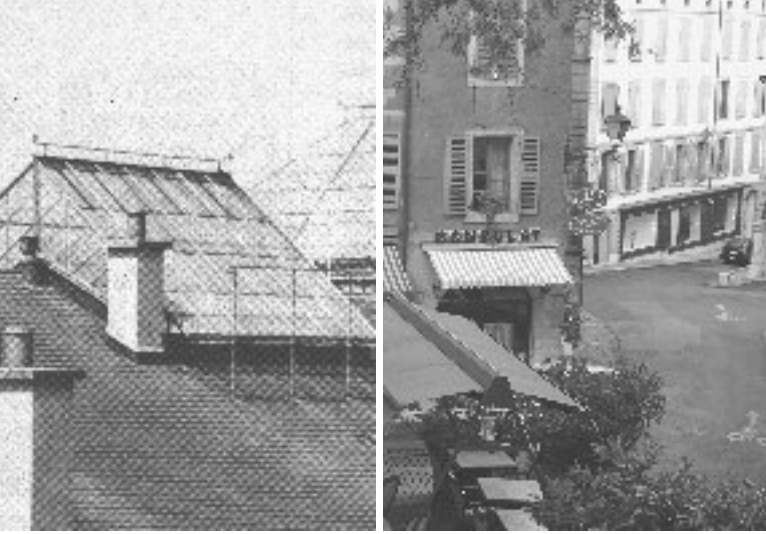
- PLEA Award, presentation of work
- Award for best paper
- Award for best poster
- Award for best presentation

17:30

Presentation of PLEA 2007

18:00

Closure of PLEA 2006



PROGRAMME DAY 1 WEDNESDAY 6 SEPTEMBER 2006

POSTERS

LESSONS FROM TRADITIONAL ARCHITECTURE

- 1 Tradition and innovation in contemporary Romanian architecture
Ana-Maria Dabija 102 / II-79
- 2 Summer Thermal and Daylighting Conditions in 19th Century Traditional Buildings of Florina in North-Western Greece
Aineias Oikonomou 168 / II-61
- 3 Cooking practices as an indication of heat use in traditional Greek life. The case of Cyclades islands
Elias Zacharopoulos 219 / II-67
- 4 Passive Design of Traditional Buildings in the Hot and Arid Regions in Northwest China
Yu Liu, Jing Li, Jinghua Liu and Ying Fu 238 / II-57
- 5 Vernacular passive houses from Aarhus city
Amjad Almusaed, Asaad Almsaad 243 / I-91
- 6 Traditional Mayan Architecture According to Latitude and Altitude
Manuel Rodríguez Viqueira, Victor Fuentes Freixanet 631 / I-55
- 7 Quality Concept in Persian Precedent Architecture: A Lesson in Eco-Building Design
Ali Vakili-Ardebili, Abdel Halim Bousabaine 709 / II-37
- 8 Past and present of sustainability: the case of Castellana, an historical centre in South Italy
Dora Francese, Luca Buoninconti 742 / II-25
- 9 The role of landscape design in improving the microclimate in traditional courtyard-buildings in hot arid climates
Shady Attia 746 / I-61
- 10 The relationship between climate and energy in vernacular architecture in central Italy
Kristian Fabbri, Lamberto Tronchin 749 / I-95
- 11 Climate Control Strategies Used in Rural Housing: Ardebil Province
Shahrbanoo Djalilian, Mansoureh Tahbaz 771 / II-89
- 12 Evaluation of the Energy Efficiency of Gaziantep Traditional Houses
Mustafa Korumaz, Fatih Canan, Saadet Armajan Güleç 797 / II-95
- 13 The traditional architecture in Sicily: the rural area around the volcano Etna
Irene Caltabiano 855 / I-101
- 14 A systematic approach to scientific study of traditional architecture
Ardeshir Mahdavi, Lyudmila Lambeva, Dina K. Shehayeb, Alaa El-Habashi 860 / I-125
- 15 Traditional architecture in the Dakhleh Oasis, Egypt: space, form and building systems
Francesca De Filippi 881 / I-43
- 16 Autonomous Lightweight Houses: Learning from Yurts
Katarina Mrkonjic 886 / II-15
- 17 Local Tradition and Bioclimatic Architecture in the Italian Alpine Region
Rossano Albatini 905 / I-107
- 18 Traditional climate-adapted typologies as a base for a new contemporary architectural approach
C. Ganem, A. Esteves, H. Coch 913 / II-117

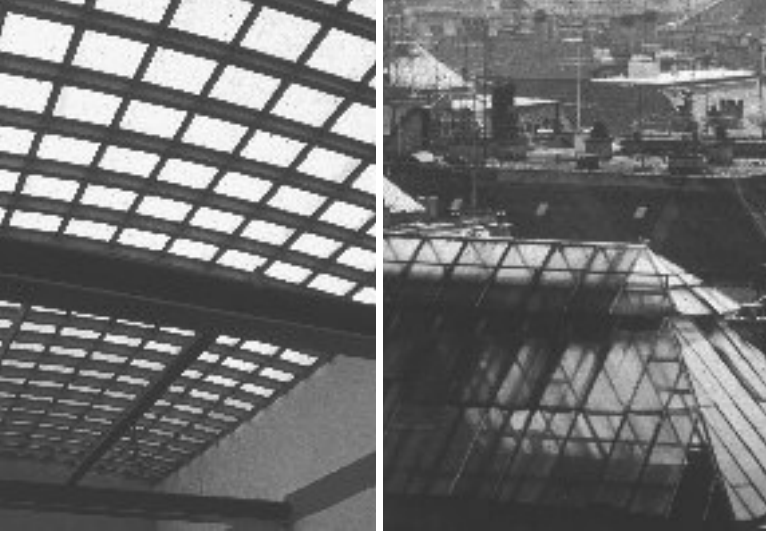
COMFORT AND WELL-BEING IN INDOOR AND OUTDOOR SPACES

- 1 Thermal comfort evaluation in outdoor space of tropical humid climate
Leficia Zambrano, Cristina Malafaia and Leopoldo E.G. Bastos 116 / I-377
- 2 A sense of comfort in open space around owner-built houses: the case of Campinas, Brazil
Evandro Z. Monteiro, Mayra de Mattos Moreno, Silvia A. Mikami G. Pina, Lucila C. Labaki, Doris C.C.K. Kowaltowski, Vanessa Gomes da Silva, Mariela C. Aires de Oliveira 138 / II-455
- 3 Design Evaluation and Strategies: the case of University Auditoriums
Doris C.C.K. Kowaltowski, Silvia A. Mikami G. Pina, Stelamaris R. Bertoli, Carolina Soler 139 / II-631
- 4 Noise - Violence relation in a sample of houses in Colima
Gabriel Gómez-Azpeitia, Ana G. Magaña, Armando Alcántara 148 / II-645
- 5 Biophilic architecture, the concept of healthy sustainable architecture
Amjad Almusaed, Asaad Almsaad, Zaki Khalil Abdushaik, Salih Khalil 151 / I-383
- 6 Outdoor Comfort in Low-Income Housing Design
Thalita Giglio, Ercília Hirota 178 / II-461
- 7 Comfort and well-being in solar buildings. Results from a European audit
Claude-Alain Roulet, Chrit Cox, Philo Bluyssen 182 / I-387
- 8 Modelling the thermal bioclimate in urban areas with the RayMan Model
Andreas Matzarakis, Frank Rutz, Helmut Mayer 196 / II-449
- 9 Comfort Levels for Office Environment Users
Luciano C. de Faria, Marcelo de A. Romero and Carlos A. R. Esteves 212 / II-529
- 10 Thermal comfort in Bangkok residential buildings, Thailand
Preechaya Rangsiraksa 234 / II-541
- 11 The importance of users' actions for the sensation of comfort in buildings
A. Isalgue, M. Palme, H. Coch, R. Serr 310 / I-393
- 12 Calibration of outdoor thermal comfort models
Leonardo Marques Monteiro, Marcia Peinado Alucci 314 / I-515

- 13 **A computational application to assess thermal and luminous comfort under tensioned membrane structures**
M. Peinado Alucci, L. Marques Monteiro, R. Brandão, A. Miana, M. Marcondes, D. Costola, N. Moura 315 / I-453
- 14 **Ponds, Green Roofs, Pergolas and High Albedo Materials; Which Cooling Technique for Urban Spaces?**
Eleftheria Alexandri, Phil Jones 501 / II-517
- 15 **Low-Cost Climate Control System for Museum Storage Facility on Tenerife Island**
Shin Maekawa and Maria Garcia Morales 526 / I-411
- 16 **Study on Effect of Greenery in Campus Area**
Steve Kardinal Jusuf, Wong Nyuk Hien, Aung Aung La Win, Htun Kyaw Thu, To Syatia Negara, Wu Xuchao 552 / I-483
- 17 **The noise influence in the school environment**
M.J. Oliveira Santos, C. Malafaia, M. Lygia Niemeyer 573 / II-637
- 18 **Elements for the design of acoustic barriers: some cases in Rio de Janeiro city**
Cristina Malafaia, Maria Julia Oliveira Santos, Maria Lygia Niemeyer 574 / II-641
- 19 **Environmental Comfort Perception in the Alvorada Sustainable Low-Cost House: Second Post-Occupancy Evaluation**
Adriana de Oliveira Santos, Cristiano Richter, Eugenia Aumond Kuhn, Marcos Berwanger Profes, Maurício Lago Magro, Patrícia de Freitas Nerbas, Miguel Aloysio Sattler 575 / II-467
- 20 **Influence of building design on thermal comfort of hawker centers in Singapore**
Song Jiafang, Wong Nyuk Hien 581 / I-489
- 21 **Assessment of visual comfort of spectators in stadia**
Ágota Szücs, Michel Perraudeau, Francis Allard 601 / II-609
- 22 **Thermal comfort and passive design strategy of bus shelters**
Tzu-Ping Lin, Andreas Matzarakis, Jia-Jian Huang 605 / I-499
- 23 **Daylight measurement in Milan**
Tiziana Poli, Luca Pietro Gattoni, Daniele Zappalà, Roberto Gottardi 630 / I-429
- 24 **Comparison between the UK and Taiwan on the sound environment in urban residential areas**
C. Yu, J. Kang 632 / II-625
- 25 **Behaviour of People in Open Spaces in Dependence of Thermal Comfort Conditions**
Lutz Katzschner 714 / I-505
- 26 **Considerations on glazed office buildings retrofit focusing luminic and visual comfort**
Sigfried Neutzling Buchweitz, Leopoldo Eurico Gonçalves Bastos, Teresa C. F. Queiroz, Eduardo Breviglieri Pereira de Castro 716 / II-597
- 27 **Transition Spaces and Thermal Comfort – Opportunities for Optimising Energy**
Adrian Pitts, Jasmi bin Saleh Soler 740 / I-423
- 28 **Thermal Comfort and Environmental Modelling in Atrium Buildings**
Rong Li, Adrian Pitts 741 / I-417
- 29 **Urban Environmental Glare: the Secondary Consequence of Highly Reflective Materials**
Marc Schiler, Elizabeth Valmont 753 / I-459
- 30 **Shading Devices Designed to Achieve the Desired Quality of Internal Daylight Environment**
Dariusz Heim, Kamil Kieszowski 786 / II-587
- 31 **The Guidelines for Internal Daylighting Design Based on Global Daylight Index (GDI)**
Dariusz Heim, Piotr Klemm, Eliza Szczepanska 787 / II-591
- 32 **The Impact of Daylighting-Guiding Systems on Indoor Natural Light Penetration: Simulation Analysis for Light Shelves**
Hanan Mustafa Kamal Sabry 850 / II-603
- 33 **Evaluation of indoor environment quality of Urban Residential Buildings in Chongqing**
Xie Hui, Baizhan Li, Jie Zheng 854 / II-553
- 34 **The «soundwalk» as an operational component for urban design**
Flora Venot, Catherine Semidor 867 / II-619
- 35 **Effect of Urban Forest on Daylight Availability in Built Environments. The case of Metropolitan area in Mendoza**
Claudia F. Martinez, Lorena Córlica, Martín Endrizzi, Andrea Pattini, M. Alicia Cantón 878 / II-511
- 36 **Daylighting the retail environment**
Caroline Paradise, Amanda Heal and Wayne Forster 894 II-613
- 37 **Impact of Urban Parks on the Climatic Pattern of Mendoza's Metropolitan Area, in Argentina**
Erica Correa, Claudia Martínez, Graciela Lesino, Carlos de Rosa, Alicia Cantón 908 / II-505
- 38 **Warm-Humid Climate: Methodology to Study the Distribution of Air Temperature**
Angelina D. L. Costa, Lucila C. Labaki, Virgínia Maria D. de Araújo 920 / I-523
- 39 **Daylight at home: differences between developers and architectural competition houses**
Gabriel Rodriguez, Daniel Siret 945 / I-435

STRATEGIES AND TOOLS FOR RENOVATION

- 1 **Daylight for Sustainable Intervention in Historic Towns: The case of Edinburgh and Cairo**
Sura Al-Maiyah, Hisham Elkadi 170 / I-609
- 2 **Shower Tower, Miele Showroom, Johannesburg South Africa**
Paul Carew, Gerry Joubert 625 / I-591
- 3 **Energy-Efficient and Culturally Relevant Housing Concepts for Modern Native American Settlements**
David N. Benjamin 629 / I-579
- 4 **Monitoring of Miele corporate headquarters Johannesburg, South Africa**
Gerry Joubert 734 / I-597
- 5 **Exploiting Natural Ventilation for Renovation of Historic Buildings in an Urban Context**
Vincent Buhagiar, Phil Jones 791 / II-735
- 6 **Renovation of apartments adding portal structures and façade-elements for extra space and high energy performance**
Michiel Ham, Arend Schamhart 961 / II-717
- 7 **Some Possibilities of Extensions in Building Renovation**
Natasa Cukovic-Ignjatovic, Dusan Ignjatovic 974 / II-729



PROGRAMME DAY 2 THURSDAY 7 SEPTEMBER 2006

POSTERS

LOW-ENERGY DESIGN AT URBAN SCALE

- 1 A GIS-based Method for Determining Natural Ventilation Potentials and Urban Morphology
Tung-Shen Hsie, Ian C. Ward 156 / I-707
- 2 Optimal orientation for a typical Italian residential building and its urban context
Antonio Carbonari, Luca Porciani, Federica Fido 186 / II-845
- 3 Impact of urban design on daylight availability
Solange M. Leder, Fernando O. R. Pereira, Anderson Claro, Marcela G. Ramos 209 / I-695
- 4 Energy-Efficient Building Design: The «Borgo Solare» Case Study
Niccolò Aste, Umberto Beneventano, Michela Buzzetti, Lavinia Tagliabue 222 / I-713
- 5 Redevelopment and Requalification of a Residential and Industrial Settlement: High-Energy Performance Strategies
Giancarlo Chiesa, Niccolò Aste, Michela Buzzetti, Marcella Capobianco 224 / I-721
- 6 London Prototype House: A Flexible Design Alternative for Accommodating Change
Amy Jo Holtz 700 / II-849
- 7 Energy design strategies for city-centres: an evaluation
Rajat Aggarwal 777 / I-683
- 8 Lessons for the Application of Renewable Energy Technologies in High Density Urban Locations
Lynne Sullivan, Brian Mark, Tessa Parnell 875 / I-727
- 9 Examples of Low Energy Design at Urban Scale in Egypt
Suzette Michel, Hend Elsayed 885 / II-839
- 10 Solar Energy Potential of Low Density Urban Zones in Mendoza's Metropolitan Area
Mariela Arboit, Alejandro Mesa, Carlos de Rosa 909 / I-733

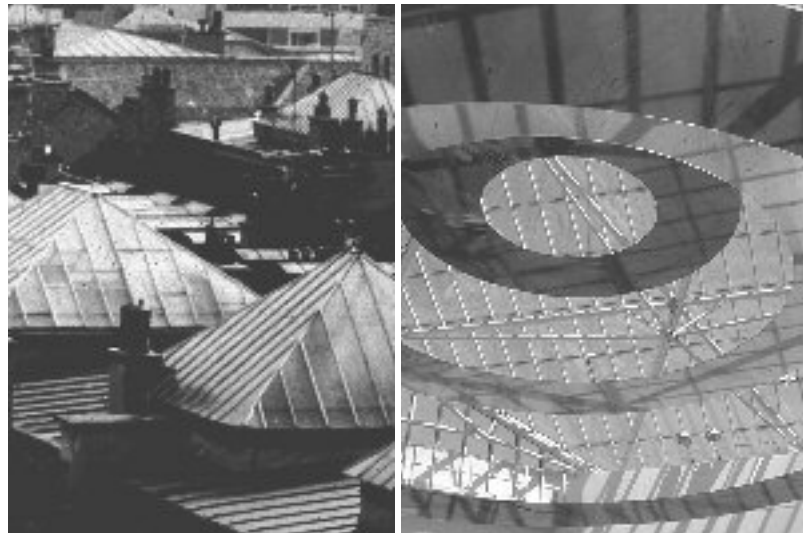
CASE STUDIES

- 1 The Energy-producing Greenhouse
Jon Kristinsson 112 / I-741
- 2 Energetic and Environmental Impacts of the Urban Sprawl on Productive Oasis Land around Cities in Arid Zones. The Case of Mendoza's Metropolitan Area, in Argentina
Alejandro Mesa, Mariela Arboit, Carlos de Rosa 118 / I-747

- 3 Secondary residences: a problem of sustainability
Silvia Martin, Ignacio Gonzalez, Ignacio Cañas 164 / I-827
- 4 Thermal performance of a passive solar house for continental climate, in Florina, north-western Greece
Achilleas Stoios, Flora Bougiatioti, Aineias Oikonomou 167 / II-863
- 5 Environmental Evaluation of an Active Façade in a Naturally Ventilated Office Building
Ian C. Ward, Hassim Altan, J. Mohelniková, D. Plsek 201 / I-839
- 6 Effect of Occupant Environmental Issues on the Passive Design Strategy of a Naturally Ventilated Building
Yufan Zhang, I.C.Ward 202 / I-845
- 7 The performance of award winning houses
V. Soebarto, T. Williamson, A. Radford, H. Bennets 229 / I-855
- 8 Passive cooling for complex buildings in a humid tropical area – Study case Colombia
Agustin Adarve 233 / I-867
- 9 The microclimate in housing estates in the Northeast of Brazil
Ana Lucia R.C. da Silveira, Marta A. B. Romero 237 / I-873
- 10 The Landcare Research building: Sustainable performance in practice
Robert Vale, Margaret Lawton, Fraser Morgan 305 / I-861
- 11 An adaptable urban house designed for the southern Brazilian climate – emphasis on summer and winter thermal comfort
Marianne Costella 306 / II-893
- 12 Otara project: Thermal performance analysis of Fibre Reinforced Earth Composite Indigenous Housing in Auckland – NZ
Rosangela Tenorio, Aldomar Pedrini, Hugh Morris, Te Kipa Kepa Brian Morgan, Rau Hoskins 83/ I-953
- 13 FAUUSP, São Paulo, Brazil: an icon of Brazilian modern architecture with lessons and questions on environmental design and thermal comfort
J.-C. Gonçalves, P. Sanches, R. Cavalcante 515 / II-875
- 14 Sustainable development in a precarious urban environment: the case of the University City of Soa, Cameroon
Alice Fiuza 527 / II-909
- 15 Environmental and economical assessment of a more sustainable low-cost house
Eugenia Aumond Kuhn, Miguel Aloysio Sattler 570 / I-765
- 16 Greenhouse technologies for a painting studio
C. Claret, D. Calatayud, S. Cantos, J. Vidal 607 /II-951
- 17 Analysis of thermal behaviour of a low-cost, single-family, housing prototype considering specific climatic conditions
A. Morello, G. Grigoletti, M.- A. Sattler 608 / II-933
- 18 Visitors' Center in Archeological Sites – an architectural approach to the sustainable use
Neuvânia C. Ghetti, Angela M. M. Martins, Claudia B. Krause, Leopoldo E. G. Bastos 613 / II-945
- 19 Sustainable City Planning and Building Design: Case Study
Kem F To 712 / I-895
- 20 Placing low-energy architecture in a low-cost economy
Alan M. Jones 718 / I-759

- 21 **Frei Pacífico Primary School Sustainable Project**
Náuíra Zanardo Zanin, Cristian Riveros Illanes, Miguel Aloysio Sattler, Vivian Ecker, Raquel Azevedo 719 / I-879
- 22 **Achieving Suitable Thermal Performance in Residential Buildings in Wuhan, China**
Feifei Sun 726 / II-927
- 23 **A Very Low Cost Sustainable Housing Prototype for Tijuana, Mexico**
Pablo La Roche, Irma Ramirez, Kyle Brown, Kristian Whitsett, Kim Wehinger, Mauricio Carranza, Leslie Lum, Sonya Reed 766 / I-773
- 24 **Post-Occupancy Evaluation of a Scientists Village Complex in the Desert – Towards a Comprehensive Methodology**
Liat Frenkel, Shiri Fundaminsky, Isaac Meir, Lusi Morhayim 769 / I-907
- 25 **Energy performance of a retrofitted pilot building made with industrialized technology**
Tamás Csoknyai 775 / II-957
- 26 **EULEB – European high quality Low Energy Buildings**
Jörg Schlenger, Helmut Müller 782 / I-919
- 27 **Daylighting Strategy for Kuwait Autism Center Eliminates the Need for Electric Lighting**
Abdullah Al-Mohaisen 801 / II-963
- 28 **Optimized Social Housing in France**
Jean Bouillot, Philippe Gagliardi 828 / II-987
- 29 **The sustainable Development of Intelligent Building in China**
Zheng Jie, Wu Pei, Chen Liang, Sun Jie 830 / II-915
- 30 **Ambiguous Porosity – Integrated Urban Gaps Identification and Experimenting Urban Connectivity**
Chady S. Bleich 863 / II-1041
- 31 **Comparison of soundscape on the ground floor of tube houses in Hanoi and open urban space in Bordeaux**
Tuan Anh Nguyen 865 / II-1029
- 32 **Relationship between urban activities and soundscape: commercial areas in Bordeaux and Hanoi**
Tuan Anh Nguyen, Catherine Semidor 866 / II-1035
- 33 **Evaporative Cooling in Tropical Climate: Case Study of Campinas, Brazil**
Carla Fernanda Barbosa Teixeira, Lucila Chebel Labaki 888 / II-887
- 34 **Environmental Profile and Building Process. Life-Cycle Assessment application to experimental dry external wall Construction Systems**
Carol Monticelli 911 / II-1023
- 35 **A border customs control building at 4.700 m. above sea level in Southern Andes plateau: a challenge for design in extreme climatic conditions**
Pablo Flores, Gabriela Armijo, Eugenio Collados 927 / I-885
- 36 **Intra-Urban Mobility and Suburbanisation Influences on the Urban Form**
Agapi Fylaktou Cattaneo 955 / II-1011
- 37 **Bioclimatic Performance of High Rise Office Buildings: A Case Study in Penang Island**
Lokman Hakim Ismail, Magda Sibley 970 / II-981
- 38 **Learning more from existing indoors: An investigation of roof lighting within lecture rooms**
Djamila Rouag-Saffidine, Sarah Benharkat 976 / I-797

- 39 **Public Offices Buildings in Brasília: a point of view of Environmental Comfort**
Joene Saibrosa da Silva, Cláudia Naves, David Amorim 983 / II-881



PROGRAMME DAY 3 FRIDAY 8 SEPTEMBER 2006

POSTERS

DESIGN STRATEGIES AND TOOLS

- 1 **Balance Assessment of Energy Systems: Integrating Energy Use & Supply**
Karin Regina de Castro Marins 101 / II-189
- 2 **Design guidelines for thermal comfort in row houses in Bangkok**
Pattaranan Takkanon 109 / II-279
- 3 **A web tool for the choice of daylight scale model materials**
Magali Bodart, Rodrigue de Peñaranda, Arnaud Deneyer, Gilles Flamant 110 I-133
- 4 **A guide for the building of daylight scale models**
Magali Bodart, Arnaud Deneyer 114 / I-139
- 5 **Passive Design of an Indoor Railway Station**
Matthew Payne, Matthew Jessup 127 / I-189
- 6 **Passive Draught Evaporative Cooling Applied on Existing Fabric: Using Traditional Chimney as Case Study in Portugal**
Ana Cláudia Martins de Melo, Manuel Correia Guedes 129 / I-203
- 7 **Daylighting museums – a case study in Lisbon**
Fernanda Sá de Oliveira, Manuel Correia Guedes 130 / I-263
- 8 **Bioclimatic architecture in East-Timor – a path to sustainability**
Gonçalo Silva, Manuel Correia Guedes 132 / I-287
- 9 **Comparing the accuracy of daylighting physical and virtual models for complex fenestration systems**
A. Thanachareonkit, J.-L. Scartezzini, D. Robinson 136 / I-145
- 10 **An Approach to the Effects of Environmental Change on Building Design and Construction**
N. Papamanolis 140 / II-171

- 11 Numerical and experimental analysis of light pipes' performances: comparison of the obtained results
Paolo Zazzini, Fabrizio Chella, Angelo Scarduzio 143 / II-219
- 12 A dynamic skylight for daylighting and assisting climatization in a medium-size room
Antonio Carbonari, Fabio Peron, Nicola Cereser 187 / II-201
- 13 Eco-efficiency of passivhaus in Mediterranean climate
Monica Lavagna 199 / II-257
- 14 Parametric Lighting Studies
S. Garcia Tavares, L. Stürmer Kinsel, H. da Costa Silva 210 / II-213
- 15 Cost-effective thermal insulation in housing
Igor Sanjee, Michiel Ham 217 / II-263
- 16 House/Home Energy Rating Schemes/Systems (HERS)
T. Williamson, V. Soebarto, H. Bennetts, A. Radford 230 / I-227
- 17 Shading as an active component for solar control: an integrated approach at the early design stage
Athanasios Tzempelikos, Andreas K. Athienitis 235 / I-157
- 18 Architectural design and environmental performance: the ADDENDA method through case study
Leticia Zambrano, Leopoldo Eurico Gonçalves Bastos, Pierre Fernandez, Frédéric Bonneaud, Alain Castells 244 / I-305
- 19 Office Buildings Façades: The Relationship between Costs and Performance
L. Fernanda de Souza Pirró, M. de Andrade Romero 245 / II-269
- 20 Potentials of Window Design in Inducing Airchange in Still Air Condition
K. Shabbir Ahmed, A. Haq, M. Moniruzzaman 303 / I-209
- 21 Robust design: a way to control energy use from the human behaviour in architectural spaces
M. Palme, A. Isalgue, H. Coch, R. Serra 311 / I-311
- 22 Effect of Reflection of Sunlight on Illuminance and Energy Gain of Greenhouses
Mila Pucar 316 / I-183
- 23 Modelling the solar factor of glazing combined with indoor Venetian blinds
Alessandro Dama, Tilmann Kuhn, Lorenzo Pagliano 503 / II-243
- 24 Does the EPBD promote the solar architecture?
András Zöld, Zsuzsa Szalay 508 / II-159
- 25 Sustainable Façade Design for Zero Energy Buildings in the Tropics
Matthias Haase, Alex Amato 509 / I-275
- 26 Performance Based Window Selection Model for Residential Buildings
Aslihan Tavil, Hakan Yaman, İkbâl Cetiner 521 / II-237
- 27 Interrelation between glazed Surfaces, Building Structure and Thermal Comfort
Ferenc Kalmár, András Csiha 524 / II-273
- 28 A green experiment conducted in the tropical climate
Chen Yu, Wong Nyuk Hien 553 / II-251
- 29 Thorough Study of a Proposal to Improve the Thermal Behaviour of a Bioclimatic Building
Palero S., San Juan C., Enríquez R., Ferrer J. A., Soutullo S., Martí J., Bosqued A., Heras J., Guzmán J.D., Jiménez M.J., Bosqued R., Porcar B., Heras M.R. 561 / II-297
- 30 The Use of the Artificial Sky as a Means for Studying the Daylight Performance of Classrooms
Konstantinos Antoniou, Aikaterini Meresi 571 / II-225
- 31 Natural ventilation simulation with coupling program between building simulation (BS) and computational fluid dynamics (CFD) simulation program for accurate prediction of indoor thermal environment
Wang Liping, Wong Nyuk Hien 576 / I-195
- 32 Air Flow Exchange Velocity of Urban Canyon Cavities due to Thermal Spatial Differences
Marta Oliveira Panão, Helder Gonçalves, Paulo Ferrão 582 / II-317
- 33 A Systematic Parametric Study on a Passive Room-Dehumidifying System Using the Sorption Property of a Wooden Attic Space
Areemil Narongwit, Sakamoto Yuzo 617 / II-375
- 34 Permeability, Porosity and Better Ventilated Design for High Density Cities
Edward Ng, Hyuk-Hien Wong, Meiqi Han 643 / I-329
- 35 Eco-Building Design (EBD): Design Strategies to Increase Building Compatibility
Ali Vakili-Ardebili, Abdel Halim Boussabaine 708 II-177
- 36 Improvement of precooling supply air by way of coupled earth to air heat exchanger and solar chimney
José Correia da Silva 711 / II-369
- 37 Daylight in Urban Canyons: Planning in Europe
Luisa Brotas, Mike Wilson 735 / II-207
- 38 Cooling natural ventilation for office buildings in a Mediterranean climate
Waldo Bustamante Gómez 736 / II-335
- 39 A Method to Identify the Solar Absorptance of Opaque Surfaces with a Low-cost Spectrometer
Kelen Dornelles, Maurício Roriz 758 / II-385
- 40 Five Locations to Represent World Climates
Khaled Mansy 764 / II-397
- 41 Load-Representative Temperature-Difference Method, a Third Generation Design-Assisting Tool
Khaled Mansy 765 / II-401
- 42 Methodological Model for Evaluating the Thermal Behavior of External Walls Exposed to Moisture Phenomena
Leonardo Veas 774 / II-303
- 43 Using Daylighting in Highly Luminous Climates: Visual Comfort and Performance
I. Guedi Capeluto, Carlos E. Ochoa 781 / II-231
- 44 Design Fire in Performance-based Fire Safety Design for Green and Sustainable Buildings
W.K. Chow 820 / II-431
- 45 Sarah Kubitschek Hospital-Salvador, Brazil: principles for a healing architecture at latitude 13°
Rosangela Tenorio 837 / I-343
- 46 A Simple Thermal Model for the Development Project «KIUMA» in Tropic Climate, Matemanga, Tanzania
Umit Esiyok 845 / II-405
- 47 Investigation on a natural ventilation system using the structure design of a building
Fretin Dominique, Bedendo Ivana, Szabo Ladislao Pedro, Amodeo Wagner, Benites Henrique, Joerg Spanengerg 852 / II-351
- 48 Optimization of the solar control devices in windows for hot climates
Silvia Arias 877 / I-163

- 49 Summer climatic data for Geneva: average and extreme conditions
Pierre Ineichen 899 / Il-391
- 50 Sustainable building life-cycle: approach model and construction techniques
Luca Beraghi 903 / Il-437
- 51 Environmental compatibility of the coastal tourist installations: definition of a sustainable planning design tool
Antonella Serafino 919 / Il-291
- 52 Whose Sustainability Is It Anyway?
Ruchita Sutaria, Aalok Deshmukh 939 / Il-165
- 53 Intra-urban Ventilation Conditions and Interactions between Urban Morphology and Climate Variables
Homero Jorge M. de Carvalho, Oscar Daniel Corbella 977 / Il-329
- 54 Environmental impact assessment of building construction systems
Reto Camponovo, Catherine Merz, Laurent Vorlet 997 / I-369
- 55 An Approach to Low-Energy Architecture for Commercial Buildings in Vietnam
Viet Tuan Do, Alan N. Young 999 / I-355

RESEARCH AND TECHNOLOGY TRANSFER

- 1 Passive House Projects in Belgium
Erwin Mlecnik, Karen Verhaeghe 105 / Il-653
- 2 Numerical simulations of ground-coupled heat pumps combined with thermal solar collectors
Valentin Trillat-Berdal, Bernard Souyri, Gilbert Achard 128 / Il-679
- 3 Investigation of Roof Pitch and Wind Induced Ventilation by Computational Fluid Dynamics
Jian Qiang Li, Ian C. Ward 131 / I-529
- 4 Vacuum Insulation Panel: friend or foe?
Martin Tenpierik, Hans Cauberg 150 / I-535
- 5 Evaluating the Effectiveness of Photovoltaic Cells for Air Conditioning in Athens, Greece
Eirini Tsianaka 158 / I-559
- 6 Energy Consumption of Underfloor Air Distribution Systems: A Literature Overview
Thais Aya H. Inatomi, Viviane Abe, Brenda C. C. Leite 228 / Il-685
- 7 Improving energy efficiency through artificial inertia: the use of Phase Change Materials in light, internal components
Marco Imperadori, Gabriele Maserà, Giuliana Iannaccone, Davide Dell'Oro 507 / I-547
- 8 A Numerical Study of Trombe Wall for Enhancing Stack Ventilation in Buildings
Wang Liping, Li Angui 577 / Il-671
- 9 Sorption behaviour of Lime-Hemp Concrete and its relation to indoor comfort and energy demand
Arnaud Evrard 603 / I-553
- 10 Developing Predictive Venetian Blinds Control Models using Visual Comfort Predictors
Vorapat Inkarojrit 727 / Il-691
- 11 Design, Monitoring of Hybrid Living System for Onsite Wastewater Treatment, Recycling
Hemant Thakare 856 / Il-697

- 12 Analysis of the Potential of Controlled Air Movement for Improving Comfort Conditions in an Ambient Chamber
José Roberto García Chávez, Juan José Ambríz García, Hernando Romero Paredes 957 / Il-659

ARCHITECTURAL EDUCATION FOR SUSTAINABLE DESIGN

- 1 What went wrong? Teaching about failures in building design and construction
Ana-Maria Dabija 103 / Il-749
- 2 An easy-learning and easy-teaching tool for indoor thermal analysis – ArcTech
Léa Cristina Lucas de Souza, João Roberto Gomes de Faria, Kátia Lívia Zambon 122 / Il-767
- 3 Up-Skilling Architects and Building Services Engineers in the Use of Higher Level Evaluation Tools for Energy Efficient Design of Buildings
Ian C. Ward, Martin Brocklesby 125 / I-617
- 4 Architecture Unplugged: The Teaching of the Principles, Needs and Calculation Procedures for Sustainable Housing Design
Phillip Tabb, Hazem Rashed-Ali 133 / I-623
- 5 A Roadmap to Renewable Adaptive Recyclable Environmental (R.A.R.E.) Architecture
Sergio Altomonte, Mark B. Luther 155 / Il-803
- 6 Architectural education for sustainable design. A proposal for improving indoor environment quality
Claude-Alain Roulet 181 / I-653
- 7 Designed Green Toolbox as Built Environment Educating Method. Analytical comparison between two groups of students with different cultural background
Usama El Fiky, Inass Hamdy, Mohamed Fikry 207 / Il-779
- 8 Vision Evaluation of the Students in Architecture about Sustainable Architecture in a Local Context in Konya / Turkey
Fatih Canan, Musatfa Korumaz, Saadet Armagan Güleç 300 / Il-785
- 9 Sustainability criteria as a helping tool for developing architectural projects
María Andrea Triana, Alice T. Cybis Pereira, Fernando O. Ruttkay Pereira 733 / Il-799
- 10 Towards Key Performance Indicators for 'Environmental Building'
Pieter de Wilde, Steve Goodhew 792 / Il-809
- 11 Sustainability issues in architectural education – the integrated approach
Euphrosyne Triantis 952 / I-635
- 12 Architectural Research into Environmental Performance
Werner Gaiser, Steve Hardy 966 / Il-815
- 13 Theory meets 'reality': an Energy-effective House Design course
Deborah White 998 / I-665



SCHEDULED ON 9 SEPTEMBER 2006

REGISTRATION ON THE SPOT

VISITS 1

Participative retrofit of the «ÎLOT 13 » area in Geneva

Housing some 600 people, the Îlot 13 buildings are located behind the railway station. Supposed to be demolished and reconstructed in the 1960's, it raised a large political and urbanistic debate. Beyond the simple question of maintaining the constructed structure, the inhabitants were claiming a type of architectural intervention that would be based on their active participation in both decision-making and execution. The aim was firstly to preserve the existing social and economic structure and sustain the experimentation of local democracy, and secondly to give care to an ecological rehabilitation process. Several inhabitant cooperatives were constituted so that the local government supported a set of real-estate operations, making the experiment possible through a step-by-step approach, paying special attention to the inhabitants' effective needs. The result was interesting architectural solutions and affordable rents, as well as low-cost renewable energy production.



VISITS 2

Low-energy (Minergie®) multifamily buildings

Recently, around Geneva, a few low-energy buildings were achieved according to the Minergie standard. From the preliminary draft till the buildings construction, close attention has been given to the energy concept by an interdisciplinary group of architects and engineers.

«LE POMMIER» / Grand-Saconnex / Geneva

A large multifamily complex of about 21'000 square meters (three buildings) was recently built in the suburb of Geneva and was certified Minergie®, a Swiss quality label. This outstanding realization is actually under monitoring by the Energy Centre of the University of Geneva (CUEPE) for a four-year period. Annual gas consumption per unit of gross heated floor was measured as 228 MJ/m² for the first year, more than the predicted value of 92 MJ/m², and will probably lower to 191 MJ/m² for the second year. Although higher than the designed value, the performance of these buildings remains excellent compared to the usual measured values for recent buildings (350-400 MJ/m²), especially considering their large scale and residential nature. The design, realization and exploitation stages are currently under investigation in order to better understand the difference between designed and measured value.



CODHA Cooperative housing

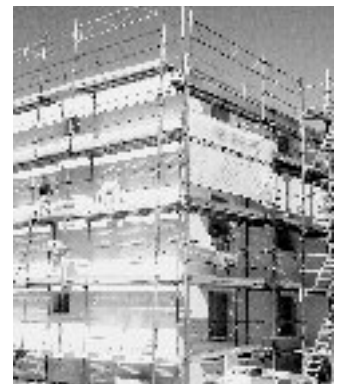
«LES ZABOUCHES» Charmilles-Châtelaine, 2004

This housing community includes 27 flats dispatched on 2 Minergie buildings.



«LES VOIRETS» Plan-les-Ouates. 2006

This housing complex, currently under construction, integrates many ecological concepts like Minergie, embodied energy of construction materials, geobiology, Feng-Shui, etc.



THE HAMMAMS WORKSHOP

AN ALL-DAY EVENT ON 9 SEPTEMBER 2006

GENEVA, SWITZERLAND

Extending the «Hammams» workshop from the last PLEA conference in Lebanon, Jean Bouillot and Heidi Dumreicher organize in Geneva a workshop about «Hammams and baths, sanitary and sociocultural aspects».

programme

morning

- Guided visit of the «Bains des Pâquis» including bathing for amateurs
- Lunch in the «Buvette des Bains des Pâquis»



afternoon

Workshop in Uni-Mail on the topic «Hammams and baths, sanitary and sociocultural aspects»
Different speakers will develop the different topics within the Hammam project:

- **Sociocultural aspects of Hammams**
Heidi DUMREICHER, Bettina KOLB
Typology of Hammam buildings around the Mediterranean
Magda SIBLEY
- **Analysis and diagnosis of Hammam buildings**
Ardeshir MAHDAWI
- **Design of Hammam buildings through different climates**
Jean BOUILLLOT
- **Comments and discussion**

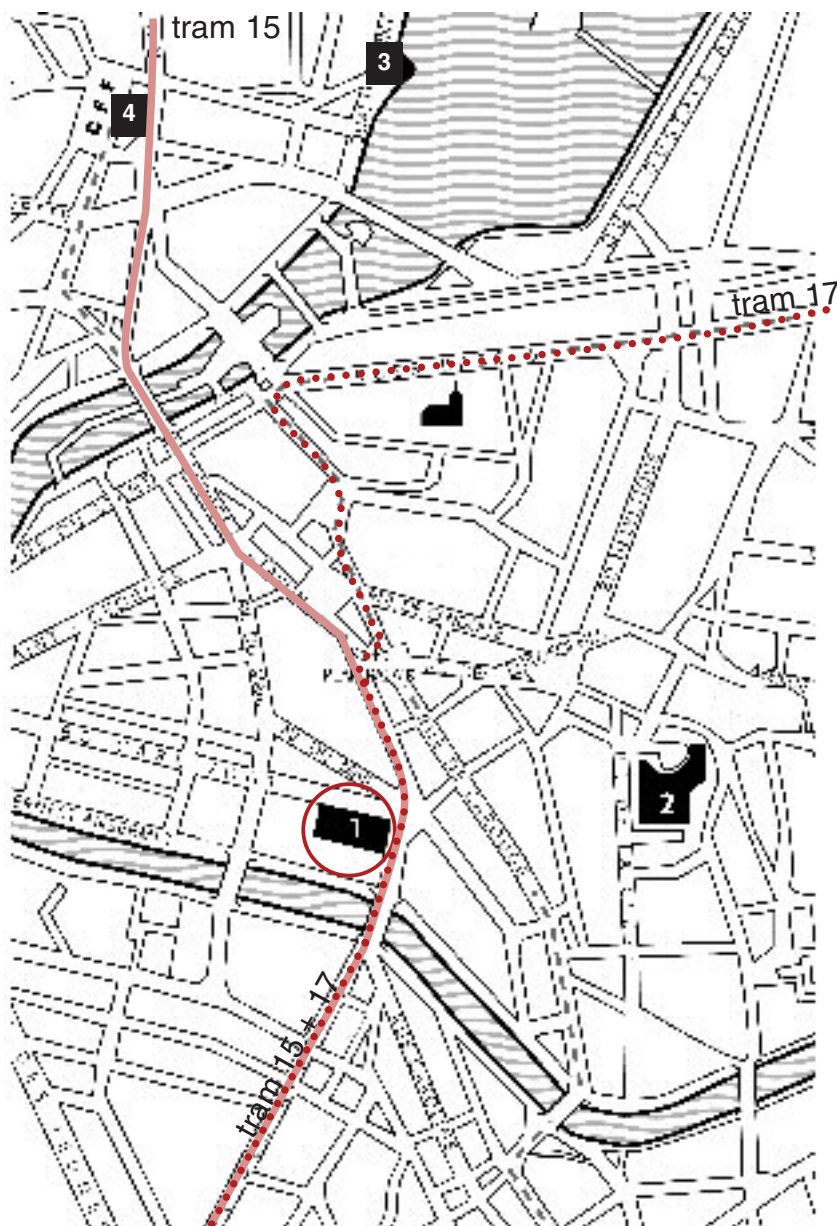


PRACTICAL INFORMATION

- Visits restricted to 30 people
- Registration and information at the Conference Desk



Plainpalais area map



1. Uni Mail / Conference Venue

- 2. Hôpitaux Universitaire de Genève (HUG) / Geneva Hospital
- 3. Embarkation peer
- 4. Gare CFF Cornavin / Railway station

— Tram 15

••• Tram 17

Emergency

Cardiomobile / ambulance Tel. 144

Police Tel. 117

Pompiers / Fire brigade Tel. 118

Hôpitaux universitaires de Genève (HUG) / Geneva Hospital
Rue Micheli-du-Crest 24
1211 Genève 14
Tel. 022 382 33 11

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