

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings**

Applied Social Sciences in Housing

- ID**
- 18 MEASURING HOUSING SATISFACTION THROUGH THE USE OF STRUCTURAL EQUATION MODELLING
Clinton Aigbavboa
- 72 SUSTAINABILITY WITH PARTICIPATIONS IN DEVELOPMENT OF INFRASTRUCTURE PROJECTS
Maha Mustafa Eltahir
- 73 THE EVALUATION OF SOCIAL SUSTAINABILITY IN "MAHALLE" (NEIGHBORHOOD) IN TURKEY, BURSA AS A CASE
Şeyda Akçalı, Arzu Çahantimur
- 90 MONITORING OF INDOOR ENVIRONMENTAL QUALITY
Ludmila Meciarova, Silvia Vilcekova, Eva Kridlova Burdova
- 115 ENERGY BEHAVIOUR CHANGE BY COLOURED IN-HOME DISPLAY
Jon Stinson, Alasdair Reid, Julio Bros-Williamson, John Currie
- 130 THE ROLE OF CIVIL SOCIETY GROUPS IN HOUSING DEVELOPMENT IN BRAZIL: THE PROGRAM MINHA CASA MINHA VIDA - ENTIDADES (MCMV-E).
Paula Noia, Gonzalo Lizarralde, Erica Yoshioka, Lisa Bornstein, Ricardo Ferreira Leoto
- 197 MIGRANTS: IMPACT ON HOUSING
Angela Silvia Pavesi, Marta Gechelin
- 216 INTERLINKING LANDSCAPE ELEMENTS WITH USERS' PERCEPTION OF SAFETY AT CITY LEVEL PARKS IN INDIA FOR SAFER GREEN OPEN SPACES IN THE BUILT ENVIRONMENT
Aditi T Koshley, Jaydip Barman
- 515 IMPACT OF SOCIO-ECONOMIC STATUS ON THE ATTACHMENT TO DWELLING AND LIVING ENVIRONMENT IN PROJECT AFFECTED PEOPLE
Priyanka Dey, Subrata Chattopadhyay

Building Design

- ID**
- 2 TOWARDS CULTURE-SPECIFIC PRIVATE OUTDOOR LIVING SPACE IN SOUTHERN AFRICAN CLUSTER HOUSING
Gerald Steyn
- 14 ENVIRONMENTAL PARAMETERS FOR DESIGN OF BUILDINGS FOR INDIAN CONDITIONS
Eshwariah Sheela
- 168 CONCEPTUAL AND PERCEPTUAL STATUS OF THE MOSQUES IN TURKEY
Onur Sürücü, Hacı Abdullah Erdoğan, Ebru Erdoğan
- 205 NEW LIVING PARADIGMS. A QUALITATIVE ANALYSIS OF RECENT SOCIAL HOUSING NEIGHBOURHOODS IN MILAN
Anna Delera, Andrea Di Giovanni, Gabriele Solazzi
- 311 ADAPTING PORTUGUESE ARCHITECTURE TO FORMER AFRICAN COLONIES CLIMATE CONDITIONS
Ana Ferreira Ramos, José Mendes da Silva
- 408 REVIEW OF DEVELOPMENTS AND NEW INNOVATIONS IN TEMPORARY HOUSING AND FOLDABLE BUILDINGS
Merve Sağiroğlu, Ali M. Memari
- 452 DESIGN OF AN ASSISTED UNIT FOR SIMULATING INDEPENDENT LIVING ACTIVITIES
Antonio Frattari, Michela Dalprà, Barbara Bauer, Lorenzo Luchetta

Building Physics

- ID**
- 29 MIXED VENTILATION SYSTEMS IN RESIDENTIAL BUILDINGS: APPLICATION OF THE DESIGN PRINCIPLES BASED ON prNP 1037-5
Manuel Pinto, João Viegas, Vasco Freitas
- 110 HYGROTHERMAL PERFORMANCE BENEFITS OF THE CELLULOSE FIBRE THERMAL INSULATION STRUCTURES
Tuomo Ojanen, Juho Laaksonen

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 332 RISING DAMP CONTROL USING PHASE CHANGE MATERIALS
Ana Vaz Sá, Ana Sofia Guimarães, Vitor Abrantes, Steven Barbosa
- 335 PLASTERING MORTARS WITH EMBEDDED PCM'S FOR MOISTURE CONTROL OF OLD RESIDENTIAL BUILDINGS
Ana Vaz Sá, Ana Guimarães, Vitor Abrantes, Miguel Azenha, João Meireles
- 520 HEAT TRANSFER MEASUREMENTS OF A WOOD BUILDING CORNER
Joana Prata, Nuno Simões, António Tadeu

Economics, Financing and Management

ID

- 19 NEW INSIGHTS ABOUT THE RELATION BETWEEN THE COST OF BUILDING MATERIALS AND THEIR EMBODIED ENERGY
Sergio Copiello, Pietro Bonifaci
- 42 OPTIMIZATION OF THE URBAN LICENSES MANAGEMENT IN THE CITY OF MADRID APPLYING INTERNATIONAL STANDARD ISO 21500
Adolfo García Ruiz-Espiga, Manuel Soler Severino
- 48 THE EFFECTS OF SMART GRIDS INNOVATION ON REAL ESTATE MARKET VALUES
Chiara D'Alpaos, Michele Moretto
- 51 OVERCOMING THE MULTI-STAKEHOLDERS BARRIER IN BUILDING ENERGY RETROFITS: A COMPARATIVE ANALYSIS OF EVALUATION METHODS
Pietro Bonifaci, Sergio Copiello, Stefano Stanghellini
- 194 A DECISION MAKING TOOL FOR ASSESSING GREEN BUILDING PROJECT TEAM ATTRIBUTES
Senem Seyis, Esin Ergen
- 255 MODEL TO FORECAST THE NUMBER OF HOUSING STARTS IN JAPAN IN THE MEDIUM TO LONG TERM FUTURE
Saori Watanabe, Kazuyoshi Endo
- 263 A STUDY ON CONCERN BETWEEN CAPACITIES AND ACTIVITIES OF PUBLIC FACILITIES IN JAPAN
Shin Murakami, Norie Kawano, Misato Shibata, Eisuke Tabata, Kazuhisa Tsunekawa, Nobuyuki Nomura
- 322 COMPARATIVE ANALYSIS OF THE RESIDENTIAL REAL ESTATE IN J-REIT AND GLOBAL REIT
Nobuyoshi Noso, Kazuyoshi Endo
- 402 SUSTAINABLE RETROFITTING AND REAL ESTATE VALUE OF RESIDENTIAL BUILDINGS
Maria Luisa Del Gatto, Marzia Morena
- 451 THE PUBLIC PRIVATE PARTNERSHIP IN SUPPORT OF THE DEVELOPMENT OF URBAN PLANNING
Genny Cia, Liala Baiardi, Bogdan Fratini
- 488 SUSTAINABILITY IN CONSTRUCTION WORKS: LIFE CYCLE COST APPROACH FOR THE ASSESSMENT OF ECONOMIC PERFORMANCE OF BUILDINGS
Filipa Salvado, Nuno Almeida, Álvaro Vale e Azevedo
- 497 ARCHITECTURAL HERITAGE SUSTAINABLE REHABILITATION: PROPOSAL FOR APPLICATION OF COST-BENEFIT ANALYSIS
Maria João Falcão Silva, Filipa Salvado, Manuel Baião
- 499 MANAGEMENT OF SMALL PROJECTS WITH SCRUM METHOD
Manuela Cristina Timóteo
- 511 IMPROVING PUBLIC TRANSPORT MANAGEMENT THROUGH OPTIMISING USE OF RESOURCES: A CASE STUDY
Nuno Biga, Jorge M. Bandeira, Vitor Abrantes

General Sessions - keynote speakers

ID

- 24 DIFFUSION-CONVECTIVE TRANSPORT OF HEAT AND MOISTURE THROUGH A POROUS SOLID USING BEM
Leopold Škerget, António Tadeu, Jure Ravnik
- 522 DOMUS SOCIAL - SOCIAL HOUSING, MAINTAINANCE AND ORGANIZATION
Manuela Álvares, Lourenço Pinheiro

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings**

Materials and Building Technology
--

ID

- 3 IN DISCUSSION: HOW TO AVOID RADON IN BUILDINGS
Elisabeth M. F. Severo, Hipólito J. C. de Sousa
- 31 NEW CONSTRUCTION MATERIALS AND TECHNOLOGIES FOR CONTEMPORARY BUILDING ENVELOPES
Genny Cia, Valentina Puglisi, Alberto Celani
- 41 LINOLEUM AS FLOOR COVERING: CHARACTERISTICS, APPLICATION AND MAINTENANCE
Raquel F. Bastos, Paulo M. da Silveira
- 52 ENVIRONMENTAL ASSESSMENT OF CARDBOARD AS A BUILDING MATERIAL FOR TRANSITIONAL HOUSING
Mirian Sayuri Vaccari
- 68 THE LICENSED BUILDING PRACTITIONERS SCHEME: FOUR YEARS ON
Chris Murphy
- 79 INNOVATIONS WITH CONCRETE AND RECYCLED MATERIAL USE IN INFORMAL HOUSING, SEEKING HEAT COMFORT
Carolina da Silva Leonardo, Louise Land Bittencourt Lomardo, Diego Souza Caetano, Paula de Castro Brasil
- 85 TABIQUE WALLS COMPOSITE EARTH-BASED CHARACTERIZATION IN THE ALTO DOURO WINE REGION, PORTUGAL
Rui Cardoso, João C. G. Lanzinha, Jorge Pinto, Anabela Paiva
- 94 BRICK STAIRCASES AT THE HEART OF ANCIENT NAPLES - TYPOLOGICAL, MATERIAL AND TECHNOLOGICAL KNOWLEDGE
Flavia Fascia, Emanuele La Mantia, Aldo Rosato
- 103 DEVELOPMENT OF COMPRESSIVE STRENGTH OF CONCRETES HAVING HIGH DOSAGE OF SCM'S AND THEIR ACTIVATION POSSIBILITIES
Alena Sicakova, Marek Kovac, Matej Spak
- 111 CHANGES IN TECHNOLOGICAL PARAMETERS OF SELECTED WASTE AGGREGATES AFTER THE SURFACE TREATMENTS FOR USE IN CONCRETE
Alena Sikacova, Karol Urban, Jozef Junak, Marcela Ondova
- 145 ANALYSIS OF INDOOR RELATIVE HUMIDITY IN SCHOOLS THROUGH THE QUANTIFICATION OF ABSORBED WATER IN BUILDING MATERIALS
Susana Lagüela, Ana Álvarez, Patricia Liñares, Sonia Zaragoza, Henrique Lorenzo
- 232 EVALUATION OF BORON COMPOUNDS AS ADDITIVES IN BUILDING MATERIAL PRODUCTION WITHIN THE CONTEXT SUSTAINABILITY
Tufan Bora Samuk, Mahmure Ovul Arioglu Akan, Nihal Arioglu
- 296 ANALYSIS OF THE CRYSTALLINE WATERPROOFING BEHAVIOR IN REPAIRING CRACKS IN CONCRETE
Vanessa G. Cappellesso, Natália dos S. Petry, Denise C. C. Dal Molin, Angela B. Masuero
- 385 EVALUATION OF THE PHYSICAL AND MECHANICAL PROPERTIES OF RECYCLED AGGREGATES. PROPERTY CLASSIFICATION ACCORDING TO THE EUROPEAN STANDARDS FOR CONCRETE AND MORTAR
Miguel Oliveira, Matthias Eckert
- 418 CONSTRUCTIVE CHARACTERISTICS OF CATALAN VAULT THROUGH THE CONSTRUCTION EXPERIMENT OF FULL SCALE FLOOR MODEL
Ryohei Kumagai, Ayako Maeshima
- 468 ASSESSMENT OF INTERNAL CONDENSATION RISK IN AN INNOVATIVE SUSTAINABLE WALL COMPOSED OF RICE BY-PRODUCTS
Beatriz Marques, António Tadeu, Jorge de Brito, João Almeida, João Rama
- 482 CEMENTITIOUS COMPOSITE FROM PORCELAIN TILE GROUT: ANALYSIS OF THEIR PROPERTIES AND APPLICATION FOR SUSTAINABILITY
Daniela Casagrande Matos, Ivete Peixoto Pinheiro Silva, Claudinei Rezende Calado, Augusto César da Silva Bezerra
- 501 CONSTRUCTION SYSTEM WITH PREFABRICATED LIGHTWEIGHT CONCRETE PANELS – CHARACTERIZATION TESTS
João Veludo, Florindo Gaspar, Paulo Fernandes, Hugo Rodrigues, Carla Sousa
- 506 SOUND ABSORPTION SOLUTIONS USING PERFORATED CORK PANELS
Julieta António, António Tadeu, Vasco Pinto, Tiago Ferreira

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 523 BUILDING SOLUTIONS INCORPORATING MEDIUM DENSITY EXPANDED CORK
Rosário Fino, Nuno Simões, António Tadeu
- 524 NEW NATURAL HYDRAULIC LIME IN REHABILITATION
André Correia, Dina Frade, Ana Sofia Santos

Rehabilitation, Retrofitting and Refurbishment

- ID**
- 8 THE ARCHITECTURAL AND ENVIRONMENTAL RETROFITTING OF PUBLIC SOCIAL HOUSING AS A RESOURCE FOR CONTEMPORARY CITIES. THE REDESIGN OF BUILDING ENVELOPES
Roberto Bianchi, Spartaco Paris
- 15 CONSTRAINTS ON THE REHABILITATION OF BUILDINGS IN OLD URBAN AREAS
Lurdes Belgas, Jorge Mascarenhas, Fernando G. Branco
- 16 THE EXOSKELETON SYSTEM AS A SOCIO-TECHNICAL DEVICE. COUPLING TECHNICAL DEVICES AND SOCIAL INVOLVEMENT IN THE REHABILITATION PROCESS
Francesca Guidolin
- 49 SUSTAINABLE HERITAGE: HIGH-RISE BUILDING STRUCTURES BUILT 1955-1965 IN ZAGREB, CROATIA
Iva Muraj
- 84 GROWTH CURVES APPLIED TO THE SERVICE LIFE PREDICTION OF CERAMIC CLADDINGS
Ana Silva, Jorge de Brito, Pedro Lima Gaspar
- 96 BRICK STAIRCASES AT THE HEART OF ANCIENT NAPLES - MAINTENANCE AND CONSOLIDATION
Renato Iovino, Emanuele La Mantia, Aldo Rosato
- 119 ADAPTIVE REUSE OF VACANT OFFICE BUILDINGS IN MILAN
Elisabetta Ginelli
- 175 INNOVATIVE REFURBISHMENT STRATEGIES FOR POORLY PERFORMING HOUSING STOCK IN SCOTLAND, UK
Julio Bros-Williamson, Jon Stinson, Alasdair Reid, Dorian Gravrand
- 231 ECO-FRIENDLY STUDENT HOUSING AS A WAY TOWARDS BUILDINGS REFURBISHMENT AND URBAN RENEWAL
Oscar Eugenio Bellini
- 233 "EMBRECHADOS" - CONSERVING A TECHNIQUE
Ana Velosa, Luís Mariz
- 278 DISSOLUTION AND REBUILDING OF TEMPORARY HOUSING BY WOODEN CONSTRUCTION METHOD "ITAKURA" IN JAPAN
Yasuo Omi
- 279 CASA CARMELITA: BALANCING THE BENEFITS AND CHALLENGES OF MODERNIZATION WHILE REHABILITATING A RESIDENTIAL HISTORIC BUILDING
Francisco Borvice
- 287 IS REGENERATION SUFFICIENT FOR URBAN SECURITY ? BURSA/TURKEY AS A CASE
Rengin Beceren Ozturk, Arzu Çahantimur
- 303 INVESTIGATING SUSTAINABILITY IN DIFFERENT STREET REHABILITATION SAMPLES IN TURKEY
Nurhilal Şimşek
- 315 RECOVERING THE SOCIAL AND ENVIRONMENT VALUE OF BUILT HERITAGE. THE CASE STUDY OF "PALAZZO MUSCETTOLA" IN SOUTH ITALY
Dora Francese, Emanuela Adamo
- 338 REUSE OF ABANDONED MONASTERIES. METHODOLOGIES AND A CASE STUDY
Pierfrancesco Fiore
- 344 IN-SITU ANALYSIS OF THERMAL PERFORMANCE OF DWELLINGS OF THE MEDIEVAL CENTER OF CAHORS BEFORE THERMAL REHABILITATION
Sophie Claude, Stéphane Ginestet, Gilles Escadeillas, Marion Bonhomme
- 364 TEACHING FAÇADE RETROFITS: REFLECTIONS ON FOUR APPROACHES
Patrick P. Charles, Jo Ruoff
- 398 ACOUSTIC CHARACTERIZATION OF TRADITIONAL WOOD PAVEMENTS
Rui Calejo, Dóris Queirós, Rogério Silva
- 411 GIS APPLICATION IN URBAN DISTRICTS MAINTENANCE
Sebastiano Maltese, Giulia Fradegrada, Nicola Moretti, Mario Claudio Dejaco, Fulvio Re Cecconi
- 434 PRESERVATION OF THE HOUSE OF VENUS IN THE ARCHAEOLOGICAL SITE VOLUBILIS (MOROCCO)
Issam Aalil, Kevin Beck, Xavier Brunetaud, Dalal Badreddine, Khalid Cherkaoui, Ali Chaaba, Muzahim Al-Mukhtar,

41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings

Sustainability and Energy Efficiency

- ID**
- 4 IMPACT OF DIFFERENT CONTROL STRATEGIES OF A COMPLEX FENESTRATION SYSTEM ON VISUAL COMFORT AND ENERGY CONSUMPTION OF AN OFFICE BUILDING IN A SEMIARID CLIMATE
Daniel Uribe, Waldo Bustamante, Germán Molina, Sergio Vera
- 12 ENVIRONMENTAL LIFE CYCLE ASSESSMENT OF CONCRETE CONTAINING BIOMASS FLY ASH
Elisabete R. Teixeira, Ricardo Mateus, Aires Camões, Luís Bragança, Fernando G. Branco
- 13 INFLUENCE OF THE OPTICAL PROPERTIES OF FAÇADE COATING ON THE BUILDING ENERGY DEMAND
Maria J. Gavira, Gloria Pérez, Ana Guerrero
- 102 COST-OPTIMAL METHODOLOGY: APPLICATION TO THE THERMAL AND LIGHTING REFURBISHMENT OF A PORTUGUESE REFERENCE BUILDING
Ana Brandão de Vasconcelos, António Santos, António Cabaço
- 114 CIRCULAR ECONOMY IN THE BUILDING SECTOR THROUGH THE INNOVATION AND THE DEVELOPMENT OF NEW INDUSTRIAL STRATEGIES: THE ROLE OF THE INFORMATION IN THE MANAGEMENT OF BY-PRODUCTS AND WASTE
Marco Migliore, Monica Lavagna, Cinzia Talamo
- 120 URBAN MORPHOLOGY AND ENERGY EFFICIENCY PRACTICE: THE URBAN PATTERN ANALYSIS AS FRAMEWORK FOR IMPACT EVALUATION OF BIOMASS PRODUCTION TOWARDS ENERGY EFFICIENT DISTRICTS
Alessandro Pracucci, Theo Zaffagnini
- 125 STRAW AS A CONTEMPORARY BIOMATERIAL: ENERGETIC EFFICIENCY AND ENVIRONMENTAL SUSTAINABILITY
Tiziana Campisi, Manfredi Saeli
- 141 TYPOLOGICAL EVOLUTION OF THE SUSTAINABLE HOUSING: OPPORTUNITIES AND LIMITS
Raffaella Lione, Fabio Minutoli
- 150 MEASURING ENERGY AND ENVIRONMENTAL IMPACTS OF MATERIALS BUILT IN MASONRY HOUSES AS A TOOL FOR SUSTAINABILITY IN BUILDING INDUSTRY
Adriana Estokova, Milan Porhincak
- 155 EFFECT OF DIFFERENT SEDUM TYPES ON GREEN ROOF TEMPERATURE
Zuzana Poárová, František Vranay, Zuzana Vranayová
- 195 USE OF LCA AS A TOOL TO ASSIST IN DECISION ABOUT ELECTRIC ENERGY EFFICIENCY BETWEEN DIFFERENT MORTARS
Antônio Claret de Almeida Gama Junior, Helena Carasek, Maria Carolina Gomes de Oliveira Brandstetter
- 203 THE ENVIRONMENTAL IMPACT OF A TEMPORARY LIGHTWEIGHT BUILDING
Mariangela De Vita, Pierluigi De Berardinis, Paolo Beccarelli
- 239 MAKING COMPLEX CONTROLS FOR SMART BUILDINGS IN THE ENERGYPLUS: OPTIMIZING THERMAL COMFORT BY PASSIVE SYSTEMS
Anderson Priebe Ferrugem, Lorenzo Fagundes Antunes, Antônio César Silveira Baptista da Silva
- 240 INDOOR AIR QUALITY, THERMAL COMFORT AND ENERGY EFFICIENCY CONSTRAINTS – CASE STUDY FOR A PUBLIC HEALTH CARE BUILDING
Ana C. V. Vieira, João Garcia, Flávio Chaves, Nuno Fonseca, João Caetano
- 242 INDOOR AIR QUALITY, THERMAL COMFORT AND ENERGY EFFICIENCY CONSTRAINTS– CASE STUDY FOR AN EDUCATIONAL BUILDING
Flávio Chaves, Ana C. V. Vieira, Jorge M. Antunes, Carlos C. Coelho
- 264 REAL ESTATE STRATEGIES AND OPPORTUNITIES FOR COMPANIES FROM ENERGY EFFICIENCY: A SYSTEMIC APPROACH
Stefano Bellintani, Alberto Celani
- 267 EXPERIMENTAL STUDY OF UNCONVENTIONAL SOLUTIONS OF THERMAL PROTECTION PERFORMANCE ON FLAT ROOFS
Alexandra Costa, Carlos Pina dos Santos
- 280 ELECTROCHROMIC GLASS: FOUR YEARS TESTING
Gianraffaele Loddo, Daniela Ludoni
- 291 STUDY ON EXPERIMENTAL TECHNOLOGIES AND SYSTEMS FOR REUSE OF EXPO BUILDINGS
Shiro Watanabe, Takayuki Isobe
- 326 PASSIVE SYSTEMS FOR BUILDINGS INDOOR COMFORT
Antonio De Vecchi, Simona Colajanni, Alessandro Licalsi, Elsa Sanfilippo, Marianna Di Salvo, Angela D'Araio

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 361 DESIGN AND CHARACTERIZATION OF A NEW ASPHALT COLLECTOR FOR SOLAR THERMAL ENERGY HARVESTING
Jose Luis Sampedro-Garcia, Alejandro Alonso-Estebanez, Irune Indacoechea-Vega, Pablo Pascual-Muñoz, Daniel Castro-Fresno
- 417 ENERGY EFFICIENCY IN HISTORIC BUILDINGS: ADVANCED TRAINING
Fátima Farinha, Eurídice Cristo
- 422 CONTROL LOGICS OF NATURAL VENTILATION FOR ENERGY EFFICIENCY AND THERMAL COMFORT
Alessandro Rinaldi, Francesco Iannone
- 443 AUTOMATED ENERGY PERFORMANCE SIMULATION OF RESIDENTIAL BUILDINGS AND THEIR HEATING SYSTEMS
Aurelien Bres, Florian Judex, Georg Suter
- 473 UNFIRED CLAY MASONARY BRICK AS SUSTAINABLE AND LOW COST BUILDING MATERIAL
usama Mohamed Mohamed
- 479 COLLECTOR SOLAR MODELING FOR IDENTIFICATION OF IMPROVEMENTS IN PERFORMANCE
Gildásio de Paula Silva, Douglas Barreto
- 503 PREFABRICATED MULTI-ACTIVE FACADE ELEMENTS FOR ENERGY RENOVATION OF MULTI-FAMILY HOUSES - A THEORETICAL CASE-STUDY IN SWEDEN
Luis Ricardo Bernardo, Ahmed Hadzimuratovic, Markus Swedmark, Stephen Burke, Rikard Nilsson, Tomas Ekström, Susanne Gosztonyi, Åke Blomsterberg
- 514 DEFINING AN ANNUAL ENERGY OUTPUT RATIO BETWEEN SOLAR THERMAL COLLECTORS AND PHOTOVOLTAIC MODULES
João Gomes, Jana Junge, Tiffany Lehmann, Björn Karlsson
- 518 PASSIVE MEASURES FOR ENERGY RENOVATION OF A SECONDARY SCHOOL: PILOT PROJECT "INSTITUTO FLORIANI"
Antonio Frattari, Irene Ferro

Sustainable Architecture

ID

- 9 VERNACULAR FLEXIBILITY: THE CONCEPT AND STRATEGY OF ADAPTABLE DEVELOPMENT OF THE UNFINISHED INHABITED SELF-BUILT DWELLINGS IN ALBANIA
Anna Yunitsyna
- 38 WASTE MANAGEMENT AND MATERIAL RECYCLE AS A POTENTIAL OF SUSTAINABLE BUILDING ENVELOPE FOR LOW INCOME HOUSING
Samar M. Sheweka, Amira Elnokaly
- 40 THE ROLE OF NETWORKS IN SUSTAINABLE DEVELOPMENT OF BUILT ENVIRONMENT. THE CASE OF LOCAL WOOD SUPPLY- CHAINS FOR THE BUILDING SECTOR
Chiara Piccardo, Andrea Giachetta, Vannina Bernard-Leoni
- 58 REVIVING EARTHEN ARCHITECTURE IN PALESTINE: THE ADDED SIGNIFICANCES OF THE BUILDING SUSTAINABILITY AND AN OPPORTUNITY FOR THE FUTURE
Maria Luisa Germanà, Bader Alatawneh
- 74 REHABILITATION OF ADOBE BUILDINGS. UNDERSTANDING DIFFERENT MATERIALS FROM TWO REGIONS OF PORTUGAL (FIGUEIRA DA FOZ AND MIRA)
Cristiana Costa, Ana Velosa, Fernando Rocha
- 93 THE INNOVATIVE AND ENVIRONMENTALLY FRIENDLY CONSTRUCTION TECHNIQUES - THE HOUSE OF WOOD AND STRAW
Renato Iovino, Flavia Fascia, Emanuele La Mantia
- 99 IDENTITY, SUSTAINABILITY AND PERCEPTION IN TRADITIONAL NEIGHBORHOODS TRABZON/AKÇAABAT ORTAMAHALLE EXAMPLE
Ayça Araz Ustaömeroğlu
- 118 DESIGN AND PROTOTYPING OF A FLEXIBLE PREFABRICATED MODULE FOR LOFT CONVERSIONS. THE "MADE IN ITALY" NATIONAL RESEARCH PROGRAMME.
Laura Daglio, Giulia Gerosa
- 123 LCA BENCHMARKS IN BUILDING'S ENVIRONMENTAL CERTIFICATION SYSTEMS
Sara Ganassali, Monica Lavagna, Andrea Campioli
- 135 CHANGE MANAGEMENT AND NEW EXPERTISE IN AEC FIRMS: IMPROVEMENT IN ENVIRONMENTAL COMPETENCE
Anna Dalla Valle, Monica Lavagna, Andrea Campioli

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 137 WASTE IS MORE WASTE REUSE IN ARCHITECTURE
Tiziana Firrone, Carmelo Bustinto, Eleonora Montalbano
- 142 LOW-COST HOUSING MODELS
Ana Carolina Monteiro, Miguel Pires Amado
- 167 BIOCLIMATIC MUSEUM ARCHITECTURE IN HISTORIC BUILDINGS: NEW CHALLENGES FOR SUSTAINABLE ARCHITECTURE IN BRAZIL
Marina Byrro Ribeiro, Louise Land Bittencourt Lomardo
- 173 TRANSFORMATION OF DERELICT INDUSTRIAL SITES: FROM INDUSTRY TO CULTURE
Soheil Khoshkholghi, Solmaz Khoshkholghi, Yunus Turan Pekmezci
- 181 CONSTRUCTIVE ASPECTS AND CONTRADICTIONS OF EARTHEN BUILDING: CRITICAL PERSPECTIVES
Maria Costi de Castrillo, Panayiota Ioanni Pyla
- 185 SELF-FORMED MICRO ARCHITECTURE FOR SUSTAINABLE HABITATIONS
Walter Klasz
- 223 CUSTOMIZED PREFABRICATION: A NEW EXPERIENCE OF LIVING
Simone Pirro, Maria Federica Ottone, Timothy Daniel Brownlee
- 276 A STUDY OF THE ECODISTRICTS MORPHOLOGY IMPACT ON THERMAL COMFORT IN OUTDOOR SPACES - PART I: IN TEMPERATE OCEANIC CLIMATE
Khaled Athamena, Jean-François Sini, Julien Guilhot
- 294 SUSTAINABLE BUILDINGS VERSUS SOLID STRUCTURES: A CONCEPTUAL FRAMEWORK FOR SUSTAINABILITY OF HIGH RISE BUILDINGS IN ISTANBUL
Tuba Sari
- 469 MEMORABLE PLACES AS SUSTAINABLE PLACES, CASE STUDY: KARAKÖY
Armin Tayyebiazar, Mahsa Safaei

Tourism and Regional Development

ID

- 169 AN ADAPTIVE REUSE EXPERIENCE FOR SUSTAINABLE CULTURE TOURISM: A CASE STUDY ON THE HISTORICAL TEXTURE OF SİĞİRÇI/TURKEY
Ebru Erdoğan, Hacı Abdullah Erdoğan
- 176 UTILISING URBAN DESIGN, RECONSIDERING THE COLONIAL LEGACY; TOWARDS THE MUSEUMISATION OF KHARTOUM'S CITY CENTRE
Muna Eltahir, Malathe Hamid
- 277 PRIORITIZATION OF PUBLIC INVESTMENT IN REGIONAL SPATIAL PLANNING – THE CASE OF ALGARVE
Paulo Correia, Carlos Bana-e-Costa
- 282 CULTURAL TOURISM AT TRADITIONAL SETTLEMENTS: EXAMPLE OF HISTORICAL SUR AREA OF DIYARBAKIR
Yadigar Berivan Ozbudak Akca, Fatma Demet Aykal

Urban Planning

ID

- 50 COMMUNITIES IN TRANSFORMATION - SUSTAINING COMMUNITY DESIGN, ENABLING INTERVENTIONS.
Nasamat Abdel-Kader, Sayed Ettouney
- 56 CURRENT STATUS AND ISSUES OF PUBLIC HOUSING REDEVELOPMENT PROJECTS WITH PUBLIC-PRIVATE PARTNERSHIP APPROACH IN JAPAN
Yoshiro Morita, Shuichi Matsumura, Seiji Kobata, Ryohei Hashida
- 71 EFFICIENT DEVELOPMENT CONTROL REGULATIONS AND URBAN MORPHOLOGY ANALYSIS
Sahar Imam
- 113 EVALUATING GEODESIGN WITH ECOPHYSIOGRAPHY
Saye Nihan Çabuk, Mehmet Değerliyurt, Taki Can Metin, Alper Çabuk
- 116 MANAGEMENT, CONSERVATION AND REHABILITATION OF THE HISTORIC HOUSING STOCK IN CAIRO, EGYPT
Aliaa AlSadaty
- 200 CAN TEMPORARY ARCHITECTURE IMPROVE OUTDOOR CONDITIONS IN RESIDENTIAL DISTRICTS?
Timothy Daniel Brownlee, Ernesto Cesario, Federica Ottone, Simone Pirro

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 307 UTILIZING METHOD OF HOUSING AND RESIDENTIAL DATA BASED ON NATIONAL STATISTICS, AND BASIS
EXAMINATION OF MANAGEMENT METHOD ABOUT HOUSING STOCKS IN SITUATION OF POPULATION
Koya Utsumi
- 318 THE NEW PORTUGUESE LEGAL FRAMEWORK FOR LAND POLICIES AND LAND-USE PLANNING:
OPPORTUNITIES FOR A NEW PRACTICE
Paulo Vasconcelos Dias Correia, Ana Morais de Sá
- 330 SANTA LUZIA QUARTER: LEARNING WITH DESIGN PRACTICE
Nuno Abrantes, Fernando Brandão Alves, Vitor Abrantes
- 336 SMART CITY PERFORMANCE MEASUREMENT SYSTEM
Aapo Huovila, Miimu Airaksinen, Isabel Pinto-Seppä, Kalevi Piira, Topi Penttinen
- 341 CIB SMART CITY ROAD MAP AND VISION
Isabel Pinto-Seppä, Miimu Airaksinen, Terttu Vainio
- 389 A DIALOGUE ON THE GENESIS OF HOUSING PROBLEMS IN SOUTH AFRICA
Clinton Aigbavboa
- 437 ANALYSIS OF INTERLOCUTION BETWEEN HOUSING POLITICS OF JUIZ DE FORA AND PROGRAMA MINHA
CASA, MINHA VIDA
Livia R. A. Muchinelli, Raquel F. F. Hellich, Nádia de O. Camacho
- 510 INFLUENCE OF RUNOFF ON URBAN WASTEWATER - THE HUELVA CASE
Ricardo Arribas de Paz, Inmaculada Salvador Crespo, Marta Montañez Entrenas

OS: Assessment, Diagnosis, Energy Efficiency and Building Refurbishment for Sustainability

Org. Anabela Paiva (University of Trás-os-Montes and Alto Douro, Portugal) and João Carlos Lanzinha (University of Beira Interior, Portugal)

ID

- 25 INFLUENCE OF EXTERNAL ENVIRONMENT CHANGES ON EVALUATION OF ENERGY SAVING PROJECTS
Dalibor Vytlačil
- 139 ENERGY RETROFIT OF SARDINIAN LAND REFORM RURAL SETTLEMENTS
Giuseppe Desogus, Antonello Sanna, Sergio Arru
- 182 LIFE CYCLE ASSESSMENT FOR SUSTAINABLE CONSTRUCTION: A CASE STUDY IN CANADA
Ricardo Ferreira Leoto, Charles Thibodeau, Gonzalo Lizarralde
- 183 ENERGY SCREENING OF WIDE BUILDING STOCK
Vittorino Belpoliti, Giacomo Bizzarri, Marta Calzolari, Elena Cattani, Pietromaria Davoli, Stefania Pitzianti, Andrea Rinaldi,
- 247 TOXIC METALS IN INDOOR DUST COLLECTED FROM HOUSES INCLUDED IN THE "6X60X6" PROJECT
(COVILHÃ, PORTUGAL) DURING THE COOLING SEASON
M. Ramiro Pastorinho, João C. G. Lanzinha, Luís Taborda-Barata, Maria Assunção Vaz-Patto, Marisa Monteiro, Miguel C.S. Nepomuceno, Ana C.A. Sousa,
- 248 ASSESSMENT OF A TIMBER STRUCTURE IN THE "ERMIDA DA ASCENSÃO DE CRISTO" IN LISBON
Diana Araújo, Dulce Franco Henriques
- 283 THERMAL COMFORT ASSESSMENT USING IN SITU MEASUREMENTS IN A RETROFITTED HOTEL OCCUPYING
AN URBAN MANOR HOUSE
Luís Rego, António Curado, Kevin Aleixo, Francisco Laranjeira
- 306 THERMOGRAPHIC INSPECTION AND HEATING ENERGY AUDIT OF RESIDENTIAL BUILDINGS
Egemen Kaymaz
- 430 USE OF LCA AS A TOOL TO MEASURE CARBON DIOXIDE AND ASSIST IN DECISIONS ABOUT THE MODEL AND
THE LOGISTICS OF THE MASONRY SYSTEM PRODUCTION
Victor Gomes Barbosa, António Claret de Almeida Gama Junior
- 494 DYNAMIC SIMULATION OF THE TROMBE WALL THERMAL PERFORMANCE
Ana Briga Sá, Ivo Pinto, Anabela Paiva
- 507 THERMAL AND ACOUSTIC PERFORMANCE OF INTERLOCKING COMPRESSED EARTH BLOCKS MASONRY
Dinis Leitão, Ana Briga Sá, Edgar Soares, Tiago Miranda

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings**

OS: BIM – Vision, Strategy and Implementation

Org. Fernanda Rodrigues (University of Aveiro, Portugal) and Hugo Rodrigues (Polytechnic Institute of Leiria, Portugal)

ID

- 78 BIM IMPLEMENTATION IN DESIGN FIRMS. RISK-RESPONSE STRATEGIES TO SUPPORT CHANGE MANAGEMENT
Marcella Bonanomi, Giancarlo Paganin, Cinzia Talamo
- 126 AUTOMATED RULE-CHECKING – A TOOL FOR DESIGN DEVELOPMENT
João Poças Martins, Bárbara Rangel, Vitor Abrantes
- 152 USE OF BIM FOR THE PLANNING OF MAINTENANCE ACTIONS IN A HISTORICAL-MONUMENTAL BUILDING
Santi Maria Cascone, Nicoletta Tomasello
- 218 BIM-BASED MULTI-MODEL FRAMEWORK FOR ENERGY EFFICIENT BUILDING DESIGN
Peter Katranuschkov, Raimar Scherer, Constantinos Balaras
- 243 BIM METHODOLOGY APPLIED TO THE MANAGEMENT OF A WASTEWATER PUMPING STATION
Hugo Pina, Fernanda Rodrigues, Hugo Rodrigues
- 244 A BIM-BASED FRAMEWORK FOR SAFETY INTEGRATION DURING DESIGN
Fernanda Rodrigues, Joel Estrada, Paul Swuste
- 288 TOWARDS TO GIS-BIM INTEGRATION ON CONSTRUCTION LOGISTICS
Adem Emre Cengiz, Alper Çabuk, Osman Aytekin, Ilker Ozdemir
- 304 A BIM-BASED SOLUTION TO SUPPORT EARNED VALUE MANAGEMENT IN CONSTRUCTION
Anne-Marie Mushamaliwa, André Reis Antunes, António Aguiar Costa
- 329 COLLABORATION AND BIM SUPPORTIVE PROJECT EXECUTION MODEL FOR THE CONSTRUCTION INDUSTRY
Øystein Mejlænder-Larsen, Cecilie Flyen, Bjørn Erik Lie
- 347 INCORPORATING PARAMETRIC TOOLS TO GENERATE AND ANALYZE THE BUILDING VIRTUAL MODEL INTO THE TECHNICAL DEGREE STUDENT'S FORMATION
José Vázquez-Rodríguez, Dolores Otero-Chans, Javier Estévez-Cimadevila, Félix Suarez-Riestra
- 391 CRITICAL FACTORS FOR THE SUCCESSFUL IMPLEMENTATION OF AN INTEGRATED BUILDING INFORMATION MODELLING AND ENTERPRISE RESOURCE PLANNING IN THE SOUTH AFRICAN CONSTRUCTION INDUSTRY
Mphumi Mathegu, Clinton Aigbavboa
- 489 BIM DEVELOPMENT IN PORTUGAL: ROADMAP PROPOSAL FOR A CONTRIBUTION TO A SUSTAINABLE AECO SECTOR
Maria João Falcão Silva, Filipa Salvado, Paula Couto, Álvaro Vale e Azevedo
- 490 STANDARDIZED BIG DATA IN BIM OBJECTS FOR A SUSTAINABLE FACILITY MANAGEMENT OF BUILDINGS
Filipa Salvado, Maria João Falcão Silva, Paula Couto, Álvaro Vale e Azevedo
- 491 IFC INTEROPERABILITY FOR BIG DATA INTEGRATION IN A BIM COLLABORATIVE ENVIRONMENT
José Barateiro, Paula Couto, Maria João Falcão Silva, Filipa Salvado

OS: Enabling Smart Buildings: ICT for Energy-efficient Buildings

Org. EEBERS clusters, Isabel Pinto Seppä (VTT - Intelligent Built Environment, Smart Energy and System Integration, Finland)

ID

- 134 EFFECTS AND MEANS OF ENERGY SAVING TECHNOLOGY IN AN INNOVATIVE SMART HOUSE
Yasushi Ikeda, Yuto Sasaki, Kei Watanabe
- 320 NEW KPIS AND TOOLS FOR PLANNING ENERGY EFFICIENT BUILDINGS AND NEIGHBOURHOODS
Aapo Huovila, Krzysztof Klobut, Juha Hyvärinen
- 325 MOEEBIUS ENERGY PERFORMANCE OPTIMIZATION FRAMEWORK IN BUILDINGS FOR URBAN SUSTAINABILITY
Ander Romero, Borja Tellado, Tasos Tsitsanis
- 328 APPLICATION OF SEMANTIC MEDIA WIKIS FOR TECHNOLOGY MONITORING IN THE CONSTRUCTION INDUSTRY
Jonathan Masior, Stephan Schüle

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 342 **EEBERS – ICT FOR ENERGY EFFICIENT BUILDINGS**
Esa Nykänen, Isabel Pinto-Seppä, Stephan Schüle, Javier Royo, Joaquin Gomez, Farid Fouchal, Tarek Hassan,
- 348 **ORBEET ORGANIZATIONAL BEHAVIOUR IMPROVEMENT FOR ENERGY EFFICIENT ADMINISTRATIVE PUBLIC OFFICES**
Jon Martínez, Konstantinos Tsatsakis, Eleana Hatzoplaki
- 370 **DESIGN SPECIFICATION AND SYSTEM ARCHITECTURE OF A DECISION SUPPORT OF ENERGY EFFICIENCY BUILDING RETROFIT AND MAINTENANCE INSTRUCTIONS**
Farid Fouchal, Tarek Hassan, Steven Firth, Shen Wei, Vanda Dimitriou
- 432 **DEMONSTRATION OF MANAGEMENT AND DECISION SUPPORT SYSTEMS FOR ENERGY POSITIVE NEIGHBOURHOODS**
Janne Rasi, Olli Nummelin, Kalevi Piira, Esa Nykänen
- 433 **ICT-TECHNOLOGIES FOR ENERGY EFFICIENT BUILDINGS AND DISTRICTS**
Krzysztof Klobut, Max Boegli, Yves Stauffer, Itzal del Hoyo, Alfredo Samperio
- 436 **UNDERSTANDING ENERGY FUTURES THROUGH EVERYDAY LIFE OBSERVATION FOLLOWING AN ETHNOGRAPHIC APPROACH**
Sarah Pink, Yolande Strengers, Marta Fernandez, Amalia Sabiescu

OS: Experimental Research on Building Rehabilitation

Org. Marco Ludovico-Marques (Polytechnic Institute of Setúbal, Portugal) and Hugo Biscaia (University NOVA of Lisbon, Portugal)

ID

- 327 **A NEW BONDING TECHNIQUE FOR THE REHABILITATION OF OLD TIMBER FLOORS WITH CFRP COMPOSITES**
Hugo Biscaia, Carlos Chastre, David Cruz, Noel Franco
- 465 **BEHAVIOR OF THE MOMENT-ROTATION CURVES OF BOLTED T-STUB CONNECTIONS**
Mahyar Maali, Mahmut Kılıç, Merve Sağiroğlu, Abdulkadir Cüneyt Aydın
- 483 **EXPERIMENTAL ANALYSIS OF REINFORCED CONCRETE BEAMS STRENGTHENED WITH INNOVATIVE TECHNIQUES**
Carlos Chastre, Hugo Biscaia, Noel Franco, António Monteiro
- 492 **STRUCTURAL MORTAR FOR REPAIR VAULTS OF HISTORICAL HERITAGE. THE ROMAN TEMPLE OF DIANA IN MÉRIDA (SPAIN)**
José-Carlos Salcedo, Manuel Fortea, Rubén Cabecera, Juan Saumell
- 504 **DURABILITY ASSESSMENT OF CONSOLIDATION EFFECT ON SANDSTONE MONUMENTS**
Marco Ludovico-Marques, Carlos Chastre
- 505 **DURABILITY IN STRAIN HARDENING CEMENTITIOUS COMPOSITES ACCORDING TO EUROCODE**
Zehra Canan Girgin, Cihan Yolcu, Muhammed Marasli

OS: Green Roofs and Living Facades

Org. Nuno Simões (University of Coimbra, Portugal) and Francesca Olivieri (Technical University of Madrid, Spain)

ID

- 57 **VERTICAL LANDSCAPING IN THE DENSE CITY - PROMOTING ECOSYSTEM SERVICES AND ARCHITECTURAL QUALITIES**
Ann-Charlott Eriksen
- 64 **PROPOSAL OF A TOOL FOR FEASIBILITY EVALUATION, DESIGN CONTENTS DEFINITION AND PERFORMANCE ASSESSMENT FOR THE IMPLEMENTATION OF GREEN ROOFS ON EXISTING BUILDINGS**
Carlo Antonio Stival, Raul Berto, Giovanni Cechet, Nicola Strazza, Edino Valcovich
- 149 **EXPERIMENTAL ANALYSIS OF THE WATER CONTENT INFLUENCE IN THE THERMAL PERFORMANCE OF SUBSTRATE USED IN GREEN WALLS**
María del Mar Barbero-Barrera, Jorge Adán Sánchez-Reséndiz, Francesca Olivieri, María Ángeles Navacerrada-Saturio
- 453 **SURVEY OF IN-SERVICE GREEN ROOFS IN PORTUGAL**
Vera Pontes, Cristina Matos Silva, Inês Flores-Colen

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 493 GREEN FAÇADE OPTIMIZATION (GFO): A PARAMETRIC STUDY
Roberta Cocci Grifoni, Maria Federica Ottone, Angela Leuzzi
- 521 WATER PERMEABILITY OF INSULATION CORK BOARD
Ricardo Almeida, António Tadeu, Nuno Simões

OS: Innovating the Home: Innovative Perspectives on the US Housing Market

Org. Andrew McCoy (Virginia Tech, USA)

ID

- 367 THE IMPLICIT VALUE OF TREE COVER IN THE U.S.: A META-ANALYSIS OF HEDONIC PROPERTY VALUE STUDIES
Shyamani D. Siriwardena, Kevin J. Boyle, Thomas P. Holmes, Eric Wiseman
- 371 TRANS-ATLANTIC TRANSFORMATIONS: CHALLENGES OF TRANSLATING SUCCESSFUL HIGH-PERFORMANCE BUILDING TECHNOLOGIES ACROSS CONTINENTS
Georg Reichard, Marvin Queke, Robert Burgaß, Stefan Schäfer
- 372 THE DIFFUSION OF ENERGY STAR CERTIFICATIONS INTO US HOUSING MARKETS 2002-2013
Andrew Sanderford, Andrew McCoy, Matthew Keefe, Charles Theodore Koebel
- 388 MIXED PUBLIC POLICY AND MARKET PROVISION OF AFFORDABLE HOUSING: BUILDING, COST AND PROGRAM CONSIDERATIONS
Theodore Koebel, Andrew McCoy
- 472 IMPACTS OF HOUSING TECHNOLOGY AND BEHAVIOR ON ENERGY EFFICIENCY FOR AFFORDABLE RENTAL HOUSING
Dong Zhao, Andrew McCoy, Philip Agee, Teni Ladipo

OS: Innovative Architecture: Knowledge, Ideas, Experiments and Realizations

Org. Adriana Matei (Technical University of Cluj-Napoca, Romania)

ID

- 37 THE ENGINEERING OF FREE FORMS ENVELOPES: THE CASE OF THE HADID TOWER TWISTING SHAPE FAÇADE
Enrico Sergio Mazzucchelli, Alice Ancillotti, Angelo Lucchini
- 47 THE DYNAMICS OF SPATIAL CONCEPTION AND ITS SEMANTIC IN CONTEMPORARY ARCHITECTURE
Adriana Matei
- 131 ANALYZING SOCIAL HOUSING PRACTICES IN TURKEY
Ezgi Hazar, Pelin Dursun Çebi
- 166 A SEMANTIC ANALYSIS OF MOVEMENT WITHIN CONTEMPORARY ARCHITECTURE
Andreea Moțu
- 171 INNOVATION IN THE PUBLIC SPACES OF HISTORIC CENTRES
Alexandru Tiotiu, Adriana Matei
- 192 AN ANALYTICAL STUDY OF OUTDOOR INTERACTIONAL SPACE FOR CREATING SOCIALLY SUSTAINABLE HIGH-RISE RESIDENTIAL ENVIRONMENT: CASE STUDY FROM INDIA
Soumi Muhuri, Sanghamitra Basu
- 196 LIMITATIONS, CRITIQUES AND INCONSISTENCIES OF THE SPACE SYNTAX METHODOLOGY
Mihai Racu
- 241 ENVIRONMENTAL IMPACT EVALUATION OF THE GEOMAGNETIC FIELD IN A RESIDENTIAL BUILDING
Jose Francisco Glaria Yetano, Ana Sánchez Ostiz Gutiérrez
- 401 THE INCLUSIVE HOUSE. INNOVATIVE TECHNOLOGIES FOR ALL
Marzia Morena, Maria Luisa Del Gatto

OS: Low Embodied Energy Building Materials for Eco-efficient Housing and Rehabilitation

Org. Paulina Faria (University NOVA of Lisbon, Portugal)

ID

- 66 ANALYSIS OF SCIENTIFIC PRODUCTION RELATED TO EARTH CONSTRUCTIONS IN THE LAST 20 YEARS (1996-2015)
Levi T. Pinheiro, Bárbara R. Carvalho, Ana Sofia Guimarães, Adeildo C. Silva

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 105 THE GREAT CHALLENGE OF THE DOMESTIC ARCHITECTURE IN A GLOBAL WORLD
Adela Salas Ruiz, María del Mar Barbero-Barrera
- 262 ASSESSMENT OF PHOTOCATALYTIC CAPACITY OF A HYDRAULIC MORTAR
Pedro Castanho, Vitor Silva, Paulina Faria
- 462 AGGREGATES AND BINDERS' INFLUENCE ON THE BEHAVIOUR OF MORTARS WITH IMPROVED THERMAL PERFORMANCE
Andreia Borges, Inês Flores-Colen, Jorge de Brito
- 525 AIR LIME AND NATURAL HYDRAULIC LIME MORTARS WITH CERAMIC RESIDUES FOR REHABILITATION OF OLD BUILDINGS
Gina Matias, Isabel Torres, Paulina Faria

OS: Natural Hazards Mitigation and Seismic Vulnerability of Civil Structures

Org. Rui Carneiro Barros (University of Porto, Portugal) and Manuel Braz-César (Polytechnic Institute of Bragança, Portugal)

ID

- 415 REFURBISHMENT PLANNING OF BUILDINGS AS A PART OF EARTHQUAKE DAMAGE MITIGATION
Jana Šelih, Aleksander Srdić, Matej Kušar
- 431 EFFECT OF THE DISPOSAL OF REINFORCED CONCRETE WALLS IN THE BRACING OF COMPOSITE STRUCTURES
Mokhtar Touati, Rui C. Barros, Mohamed Chabaat
- 438 TRAFFIC SEISMICITY EFFECT IN HERITAGE BUILDING - FREQUENCY DOMAIN IDENTIFICATION
Veronika Valašková, Daniel Papán, Rui C. Barros
- 440 VIBRATION CONTROL OF A TEN FLOOR MDOF BUILDING USING PENDULUM TMD
Rui C. Barros, Catarina M.A. Sousa
- 441 ASSESSMENT OF SEISMIC SAFETY OF F.E.U.P. NEW CAMPUS LIBRARY BUILDING
Rui C. Barros, Sílvia A. Couto
- 484 RESPONSE TIME ANALYSIS OF A SPONGE TYPE MR DAMPER
Manuel Braz César, Kellie Oliveira, Rui C. Barros

OS: Passive House and Nearly Zero Energy Buildings

Org. Julio Bros-Williamson (Edinburgh Napier University, UK) and Romeu Vicente (University of Aveiro, Portugal)

ID

- 36 ZERO ENERGY BUILDINGS: A PROPOSAL OF A SIMPLIFIED TOOL FOR THE ZEB STATUS ASSESSMENT
Enrico Sergio Mazzucchelli, Chiara Porcari
- 82 ARCHITECTURAL FEATURES AND SYSTEMS TO APPLY THE ZERO ENERGY BUILDING (NZEB) CONCEPT IN BRAZIL
Louise L. B. Lomardo, Diego Souza Caetano, Angélica B. Sampaio, Ana Paula da C. Esteves
- 209 THE NEED TO ADVANCE THE ENERGY PERFORMANCE BUILDINGS DIRECTIVE (EPBD) TOWARDS THE EU ENERGY ROADMAP FOR 2050
João Flores, Júlia Seixas, António Mourão, Miguel Cavique
- 251 LOW THERMAL INERTIA CASE STUDY: THERMAL ANALYSIS EVALUATION USING DIFFERENT APPROACHES
Rui Oliveira, António Figueiredo, Romeu Vicente
- 377 THERMAL COMFORT PERFORMANCE OF A PASSIVE HOUSE IN SUMMER UNDER A MEDITERRANEAN CLIMATE
Fábio Vidal, Inês C. Meireles, Romeu Vicente, Vitor Sousa, Fernanda Rodrigues

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings**

OS: Refurbishment of Buildings and Satisfaction of Contemporary Requirements

Org. Eduardo Qualharini (Federal University of Rio de Janeiro, Brazil) and João Carlos Lanzinha (University of Beira Interior, Portugal)

ID

- 112 HOUSING AND HEALTH – PROPOSAL OF A METHODOLOGY FOR RISK ASSESSMENT FOR OCCUPANTS
Marisa Monteiro, João C. G. Lanzinha, M. Ramiro Pastorinho
- 147 POST OCCUPANCY EVALUATION OF VERNACULAR HERITAGE HOUSING IN MADEIRA: A CASE STUDY OF INHABITANTS' SATISFACTION
Jorge S. Carlos, Ana M. T. Martins, Elma Vieira
- 154 THE ROLE OF AN INTEGRATED METHODOLOGY: ASSESSMENT OF HISTORIC RESIDENTIAL BUILDINGS FROM PORTO
Cílisia Ornelas, João Miranda Guedes, Isabel Breda-Vázquez
- 363 REHABILITATION OF ARCHITECTURAL HERITAGE: THE INCESSANT SEARCH OF COMFORT THAT DESTROYS THE HISTORY OR THE SILENT INTERVENTION THAT RESPECTS IT AND VALUES
Tiago Emanuel Castela da Silva
- 368 THE IMPACT OF THERMAL BEHAVIOUR REGULATION ON HOUSING BUILDING REHABILITATION
Teresa Neto, Isabel Teles

OS: Smart Skin Envelope for Housing of the Future

Org. Corrado Trombetta and Martino Milardi (University Institute of Architecture of Reggio Calabria, Italy)

ID

- 140 THE EFFECT OF PARAMETRIC DESIGN ON DESIGNING PERFORMATIVE FAÇADES
Delara Razzaghmanesh, Meltem Aksoy
- 151 TRENDS IN THE BUILDING ENVELOPE SYSTEM
Corrado Trombetta, Martino Milardi
- 191 THE ECO-DESIGN IN WINDOW INDUSTRY
Emilio Antoniol, Massimo Rossetti
- 302 MAPPING OF ENVIRONMENTAL INTERACTION AND ADAPTIVE MATERIALS FOR THE AUTOREACTIVE POTENTIAL OF BUILDING SKINS
Sandra Giulia Linnea Persiani, Philipp Lionel Molter, Claudio Aresta, Tillmann Klein
- 314 INTEGRATION STRATEGIES FOR SMART-ENERGY FUNCTIONING OF THE BUILDING ENVELOPE
Martino Milardi
- 352 ENERGETIC PERFORMANCE OF SMART SKIN ENVELOPES
Maria Teresa Lucarelli, Caterina Claudia Musarella, Nuno Simões

OS: Sustainable and Water Efficient Buildings

Org. Armando Silva Afonso (University of Aveiro, Portugal) and Zuzana Vranayova (Technical University of Košice, Slovakia)

ID

- 11 GREEN ROOFS AS A TOOL TO PROMOTE WATER EFFICIENCY IN BUILDINGS
Cristina M. Monteiro, Cristina S. C. Calheiros, Carla Pimentel-Rodrigues, Armando Silva-Afonso, Paula M. L. Castro
- 100 EVALUATION OF THE WATER EFFICIENCY OF BUILDINGS: THE PORTUGUESE APPROACH
Armando Silva-Afonso, Carla Pimentel-Rodrigues
- 122 RAINWATER HARVESTING AND GREYWATER RECYCLING: GUIDELINES TO PREVENT CONTAMINATION OF POTABLE WATER IN BUILDING SYSTEMS
Marco Fernandes Caetano, Helena Tavares da Silva
- 159 ALTERNATIVE WATER RESOURCES AS A WAY FOR REDUCING DEPENDENCE ON MAINS WATER SUPPLY
Gabriel Markovič, Zuzana Vranayová, Daniela Káposztasová
- 201 CONSTRUCTED WETLANDS AS A TOOL OF ALTERNATIVE WATER TREATMENT SYSTEM
Martina Rysulova, Daniela Káposztasová, Zuzana Vranayová, Joana America Castellar

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal
Proceedings**

- 237 FAILURE OF STORMWATER OF UNDERGROUND INFILTRATION DEVICE - CASE STUDY OF IMPROPER DESIGN
Gabriel Markovič, Martina Zelenakova, Vlasta Ondrejka Harbulakova
- 365 WATER SAVING AND ANTI-LEAKAGE SYSTEM FOR FLUSH CISTERNS
Vitor Costa, João Rocha, Andreia Costa
- 428 STATISTICAL ANALYSIS OF WATER CONSUMPTION PATTERN IN UNIVERSITY BUILDINGS
Inês C. Meireles, Vitor Sousa, Armando Silva-Afonso
- 461 ECONOMICAL CRITERIA TO SIZE RAINWATER HARVESTING TANKS: HOW THE RAINFALL DATA CAN INTERFERE?
Marcus André Siqueira Campos, Gabriela Cristina Ribeiro Pacheco
- 486 RAINWATER HARVESTING SYSTEM IN UTAD CAMPUS ONE WAY IN THE PATH TO ECOCAMPUS
Cristina Matos, Isabel Bentes, Sandra Pereira, Amadeu Borges
- 500 COST OF WATER EFFICIENCY MEASURES IN COMMERCIAL BUILDINGS
Cristina Matos Silva, Vitor Sousa, Pedro Teixeira, Inês C. Meireles, Armando Silva-Afonso

OS: Timber Structures and Construction

Org. João Negrão and Alfredo Dias (University of Coimbra, Portugal)

ID

- 258 DESIGN PARAMETERS FOR SELF-TENSIONED LONG-SPAN WOODEN FLOORS
Dolores Otero-Chans, Javier Estévez-Cimadevila, Juan Pérez-Valcarcel, José Vázquez-Rodríguez, Isaac López-César
- 274 CLT STRUCTURES FOR LONG SPAN FLOORS AND ROOFS – OPTIMIZING THE CROSS-SECTION PROPERTIES
João Negrão, Luís Jorge
- 346 AN INNOVATIVE SYSTEM FOR POST-EMERGENCY TIMBER HOUSING
Valentina Sumini, Claudio Chesì, Roberto Zedda

OS: Urban Risk Reduction and Resilience

Org. Tiago Ferreira and Romeu Vicente (University of Aveiro, Portugal) and Maurizio Indirli (Italian National Agency for New Technologies, Italy)

ID

- 76 INNOVATIVE FLAT ROOF SOLUTIONS FOR EXISTING BUILDINGS: FROM ENERGY EFFICIENCY TO IMPACTS MITIGATION
Paola Lassandro, Teresa Cosola
- 97 PROBABILISTIC SEISMIC RISK ASSESSMENT OF ALGERIAN BUILT ENVIRONMENTS IN MODERATE HAZARD REGIONS
Allaeddine Athmani, Tiago Miguel Ferreira, Romeu Vicente
- 127 THE IMPACT OF AWARENESS AND INFORMATION IN DISASTER RISK REDUCTION FOR THE MUNICIPALITY OF AMADORA
Luís Carvalho, Ana Freitas, António Farinha, Carlos Rocha, Sandra Neves
- 273 "URBAN PLANNING FOR URBAN RESILIENCE" AS A COMPONENT OF ISTANBUL'S RESILIENT URBAN DEVELOPMENT
Zeynep Deniz Yaman Galantini, Azime Tezer
- 284 SAFETY ASSESSMENT OF MULTI-STOREY BUILDINGS IN CASE OF FIRE: DEVELOPMENT OF A DECISION TOOL BASED ON SCENARIO ANALYSIS TO IMPROVE RISK MANAGEMENT
Anass Rahouti, Selim Datoussaïd, Thierry Descamps
- 305 ON THE APPLICATION OF RAPID ENVIRONMENTAL MAPPING METHODOLOGIES (REM) TO SEISMIC RISK UNDERSTANDING AND VULNERABILITY MONITORING
Massimiliano Pittore, Tobias Boxberger, Kevin Fleming, Stefano Parolai
- 316 FUTURE RESILIENCE OF CULTURAL HERITAGE BUILDINGS - HOW DO RESIDENTS MAKE SENSE OF PUBLIC AUTHORITIES' SUSTAINABILITY MEASURES?
Åsne Lund Godbolt, Cecilie Flyen, Åshild Lappegaard Hauge, Anne-Cathrine Flyen, Louise Leren Moen
- 334 VULNERABILITY ASSESSMENT TOOLS: FORECASTING AND ARTIFICIAL INTELLIGENCE
Rocío Ortiz, Juan Manuel Macías-Bernal, Pilar Ortiz

**41st IAHS World Congress on Housing
Sustainability and Innovation for the Future
September 13 to 16, 2016
Albufeira, Algarve, Portugal**

Proceedings

- 355 MUNICIPAL COLLABORATIVE PLANNING AS A KEY FACTOR FOR CLIMATE RESILIENCE IN THE BUILT ENVIRONMENT
Cecilie Flyen, Åshild Lappegard Hauge, Anders-Johan Almås, Åsne Lund Godbolt
- 382 AN IMPROVED MODEL FOR SEISMIC RISK ASSESSMENT IN PORTUGAL
Raimundo Delgado, Mário Marques, Ricardo Monteiro
- 387 THE IDENTITY OF CITIES AND LANDSCAPES: A VALUE AT RISK, A VALUE TO SAFEGUARD
Maria Paola Gatti, Giorgio Cacciaguerra
- 410 RESILIENCE OF WATER SUPPLY SYSTEMS - CASE STUDY OF QUINTA DO LAGO
João Caetano, Miguel Oliveira, Elisa Silva, Helena Fernandez, Rui Lança
- 419 EVALUATION OF INDUSTRIAL POLLUTION WITH THE SAMPLE OF CYPRUS-LEFKE
Vedia Akansu
- 471 RESILIENCE TOWARDS HUMAN INTERVENTIONS IN DISPLAY OF ARCTIC CULTURAL HERITAGE SITES
Anne-Cathrine Flyen, Cecilie Flyen

OS: Wooden Houses, from the tradition to the new possibilities

Org. Tiago Ferreira and Romeu Vicente (University of Aveiro, Portugal) and Maurizio Indirli (Italian National Agency for New Technologies, Italy)

ID

- 162 STRATEGIES TO AVOID HUMIDITY CAUSING DAMAGES IN TALL TIMBER BUILDINGS
Catarina Silva, Jorge G. Branco, Paulo Lourenço
- 189 NONLINEAR LAYERED MODELLING APPROACH FOR CROSS LAMINATED TIMBER PANELS SUBJECTED TO OUT-OF-PLANE LOADING
Vahid MahdaviFar, Andre R. Barbosa, Arijit Sinha
- 285 TIMBER FLOORS: COMPOSITE FLOORS TO OPTIMIZE STRUCTURAL PERFORMANCE AND MATERIAL CONSUMPTION
Bertrand Roensmaens, Coralie Avez, Thierry Descamps
- 403 COMPARISON BETWEEN TWO HISTORICAL TIMBER FRAMED SOLUTIONS REPRESENTING BOTH TRADITION AND PRE-MODERN EARTHQUAKE RESISTANCE CONCEPTS
Sandra Tonna, Nicola Ruggieri, Claudio Chesi
- 404 EXPERIMENTAL ASSESSMENT OF THE MECHANICAL BEHAVIOUR OF TABIQUE WALLS AND TIMBER FLOORS
João Miranda Guedes, Bruno Quelhas, Tiago Ilharco, Andreia Rebelo, José Coelho
- 508 INTRODUCTION WATTLE AND CAMORCANNIA LIGURIAN ARCHITECTURES. EXPERIMENTAL DETAILS FOR CONSERVATION
Daniela Pittaluga, Gerolamo Stagno, Giulia Garibbo