

MANUELA ALMEIDA - CURRICULUM VITAE

PRESENT POSITION: Associate Professor **OFFICIAL ADDRESS:** University of Minho

Civil Engineering Department

4800-058 Guimarães

Portugal

Phone: +351 253 510200 Fax: +351 253 510217

e-mail: malmeida@civil.uminho.pt



ACADEMIC QUALIFICATIONS

- PhD in Mechanical Engineering with a specialization in Thermal Performance of Buildings Building thermal simulation design tools, Porto University 1995.
- MSc in Thermal Engineering with a specialization in Thermal Performance of Buildings Evaluation of Thermal Inertia of Masonry Walls, Porto University 1987.
- Civil Engineering degree (5 years), Porto University 1982.

PROFISSIONAL QUALIFICATIONS

- Building Energy Certification Expert nominated by the Government.
- Sustainable Construction Expert Evaluator iiSBE Portugal (international initiative for a Sustainable Built Environment).

OCCUPATION OR POSITION HELD (DATE OF ENTRY INTO SERVICE)

- Member of the Scientific Council of the UMinho School of Engineering, February 2016.
- Head of the Construction Group of the Civil Engineering Department, 2005.
- Head of the Sustainable Construction Research Group in CTAC (Research Center in Sustainable Construction, Environment and Territory), 2013.
- Vice-Head of the Research Center in Sustainable Construction, Environment and Territory, 2010-2013 and 2016-
- Member of the coordination team of the Research Center in Sustainable Construction, Environment and Territory, 2013-2016.
- Member of the Academic Board of the International PhD Program in Architecture and Urban Planning (IDAUP) of the University of Ferrara, Department of Architecture, Italy, since April 2017.
- Member of the Scientific Board of the International Doctoral Course in Sustainable Built Environment, 2014.
- Member of the Scientific Board of the Doctoral Course in Civil Engineering, 2010.
- Member of the Scientific Board of the International Mater Course in Sustainable Built Environment, 2018.
- Member of the Scientific Board of the Mater Course in Sustainable Construction and Rehabilitation, 2018.
- Member of the Pedagogical Board of the School of Architecture, 2010-2018.
- Energy Expert Adviser of the Rector team, 2005-2017.
- Member of the board of the Energy and Environment Agency of the Minho University, 2007-2015.
- Member of the board and founding member of iiSBE Portugal international initiative for a Sustainable Built Environment, 2007.
- Member of the Scientific Committee of the National Energy Agency, responsible for the implementation of EPBD in Portugal, 2007-2013.
- Director of the Civil Engineering Course, 2005-2011.

MAIN SCIENTIFIC AREAS OF RESEARCH

During the more than thirty years of activity at the University of Minho, and integrated in the Building Physics and Construction Technology Laboratory, she has been responsible for pedagogical and research activities related to:

- Energy Efficiency in Buildings/Buildings Thermal Performance
- Buildings Renovation
- nZEB buildings

- Building Physics/Building Simulation
- Sustainable Construction/Life Cycle Analysis/Sustainable Construction Evaluation.

MOST RELEVANT FUNDED PROJECTS

She is, or was, involved in several research projects, either at national and international level:

- IEA EBC Annex 75 Cost-effective Building Renovation at District Level Combining Energy Efficiency & Renewables, promoted by IEA – International Energy Agency (international coordinator).
- IEA EBC Annex 56 Energy and Carbon Emissions Optimisation in Building Renovation, promoted by IEA International Energy Agency (international coordinator).
- IEA ECBCS Annex 50 Prefabricated Systems for Low Energy Renovation of Residential Buildings, promoted by IEA International Energy Agency (coordinator of the Portuguese team).
- MORE-CONNECT Development and advanced prefabrication of innovative, multifunctional building envelope elements for MOdular REtrofitting and CONNECTion, H2020-EE-2014-2015 (coordinator of the Portuguese team).
- BAMB Developing Buildings as Material Banks (BAMB), eliminating waste and establishing symbiosis in supply industries. H2020 Innovation actions
- INPATH-TES PhD on Innovation Pathways for TES (thermal energy storage technologies) H2020 Research and Innovation Framework Programme.
- SouthZEB nZEB training in the Southern EU countries Maintaining building traditions. European Commission EASME (Executive Agency for Small and Medium-sized Enterprises) IIE Intelligent Energy Europe CIP-IEEPROMO-P. CIP-IEE-PROMO-P, Contract n°IEE/13/393 (national coordinator).
- DAPEEWB Developing and Adapting Professional Programs for Energy Efficiency in the Western Balkans, Reference Number: 543782-TEMPUS-1-2013-1-AL-TEMPUS-JPCR, TEMPUS IV - Joint Projects / Structural Measures (national coordinator).
- IDES-EDU "Master and Post Graduate education and training in multidisciplinary teams implementing EPBD and beyond". European Commission Executive Agency for Competitiveness and Innovation IIE Intelligent Energy Europe CIP-IEE-PROMO-P Contract n°IEE/09/613/ SI2.558225 (national coordinator).
- URBENERE Comunidades URBanas ENERgeticamente Eficientes Formação de recursos humanos para a promoção de bairros urbanos energeticamente sustentáveis financiado pelo CYTED – Ciencia e Tecnologia para el Desarrollo
- H-OPUS Housing Praxis for Urban Sustainability. URBACT Program.
- SB_STEEL Sustainable Building Project in Steel, RFSR-CT-2010-00027, 2010-2013, EC.
- SBTool-STP Development of a Sustainability Assessment Tool to Assess the Sustainability of Office and Tourism Buildings and Urban Planning, 2009-2013, QREN.
- Buildings Thermal Rehabilitation PTDC/ECM/67373/2006 funded by FCT- National Research Council (coordinator).
- Contribution of Thermal Active Mortars for Building Energy Efficiency PTDC/ECM/102154/2008, Funded by FCT- National Research Council.
- Leghouse Modular Prefabrication in Low Cost Buildings QREN 2009 funded by the National Strategic Reference Program.
- SipDeco Development of innovative eco-efficient partitions walls, QREN 2009 funded by the National Strategic Reference Program.
- JEE –Eco Efficient Window, contract nº13-02-03-FDR-01280 funded by FCT- National Research Council -. BES Innovation Prize 2007 in Renewable Energy.
- Energy Technology Laboratory, CONC-REEQ/647/2001, funded by FCT- National Research Council.
- SINALES Development of an industrialized system for Structural Masonry " funded by FCT -Portuguese Research Council contract IDEIA-70-00130-2004.
- Non Conventional Constructive Solutions funded by FCT -Portuguese Research Council contract POCTI/ECM/42706/2001.
- SHE Sustainable Housing in Europe" contract nº EVK4-CT-2002-00104, funded by the European Commission.
- URBVENT2000 Natural Ventilation in Urban Areas Potential assessment and optimal facade design, contract nº ENK6-CT-2000-00316 funded by the European Commission.

※ ○

MANUELA ALMEIDA - CURRICULUM VITAE

• RESHYVENT - Cluster project on Demand Controlled Hybrid Ventilation in Residential Buildings with specific emphasis on Integration of Renewables" - contract nº ENK6-CT-2001-00533 funded by the European Commission.

COOPERATION WITH EUROPEAN COMMISSION

- Expert for proposals evaluation in the ERC (European Research Council) Starting Grant 2017 call for proposals Products and Processes Engineering, May-June 2017.
- Expert for proposals evaluation in the ERC (European Research Council) Starting Grant 2015 call for proposals Products and Processes Engineering, May-June 2015.
- Expert for proposals evaluation in the EU H2020 Program, Call H2020-CIRC-2017 Two Stage, 2017.
- Expert for proposals evaluation in the COST Open Call OC-2015-2 European Cooperation in Science and Technology. November 2015 and June 2016.
- Expert for the review and monitoring of the following FP7 Projects: REEB, funded under FP7-ICT-2009-C-Information and Communication Technologies (2009, 2010), SuPerBuildings (2011, 2013), Open House (2011, 2012, and 2013) funded under FP7-ENV-2009-1-Environment and HIFIVENT (2014, 2016) funded under Research for SMEs, Call FP7-SME-2013.
- Expert for proposals evaluation in the 5th, 6th and 7th Framework Program in the key Actions Rational Use of Energy in Buildings (1999), City of Tomorrow and Cultural Heritage (2000, 2001, 2002), Integrating and strengthening the foundations of the European Research Area, Research for SMEs (2004, 2005, 2007, 2009, 2011, 2012, 2013), Information and Communication Technologies -ICT for Energy Efficiency (2009).
- Expert of the European Commission for the Scientific, Social and Economic impact evaluation of the projects funded under 4th Framework Program Program Joule III Non Nuclear Energies (2000, 2002).
- Expert of the European Commission for proposals evaluation in the ALBAN Program (2003, 2005, 2006, 2007).

NETWORKS

- National Delegate and Member of the Management Committee of the COST Action "TU1403 Adaptive Facades Network".
- National Delegate and Member of the Management Committee of the COST Action "TU1205 Integration of Solar Thermal Systems (BISTS)".
- National Delegate and Member of the Management Committee of the COST Action "TU0802 Next generation cost effective phase change materials for increased energy efficiency in renewable energy systems in buildings".
- National Delegate and Member of the Management Committee of the COST Action "TU0701 Improving the Quality of Suburban Building Stocks".
- Member of the Scientific Committee of the COST Action "C16 Urban Civil Engineering Improving the quality of existing urban building envelopes".
- Member of the Portuguese Construction Technology Platform (active in the Rehabilitation group).

COOPERATION WITH R&D EUROPEAN INSTITUTIONS

- Expert of the Quality Assurance Agency for Higher Education in Albania (ASCAL) for the evaluation and accreditation process of the Master in Architecture and Integrated Master in Architecture from the EPOKA University in Tirana, Albania. May 2018.
- Expert of the Italian Research and University Evaluation Agency (ANVUR) for the evaluation of the Italian Research System between 2011-2014 (2016).
- Expert of the Cyprus Government, Research Promotion Foundation, for the evaluation of project proposals submitted under the program Research, Technological Development and Innovation "Restart 2016 2020, Pilar I Research in Enterprises Enterprises/0618/0125 (2018).
- Expert of the Dutch research council NWO for the evaluation of project proposals submitted under the Open Technology Research Program (2018).
- Expert of the Kazakhstan Government for the evaluation of project proposals submitted to the National Center of Science and Technology (2014).

- Expert of the Croatian Government for the evaluation of project proposals submitted under the Program "Installation Research Projects" (2014).
- Expert of the Romanian Government for the evaluation of project proposals submitted under the Romanian-EEA Research Programme - "Research within priority sectors" (2014).
- Expert of the Polish Government for the evaluation of project proposals submitted under the BIOSTRATEG Research Program (2014).
- Expert of the Dutch Government for the evaluation of project proposals submitted under the The New Delta Research Program (2014).
- Expert of the Polish Government for the evaluation of project proposals submitted under the Polish-Norwegian Research Program (2013).
- Expert of the Cyprus Government for the evaluation of project proposals submitted under the program Sustainable Development in the action Urban and Built Environment and under the Program Technology in the action Energy (2010, 2011).
- Expert of the Greek Government for the evaluation of project proposals submitted under the program Renewable Energy Sources and Energy Saving (2003).

COOPERATION WITH R&D PORTUGUESE INSTITUTIONS

- Expert for proposals evaluation in ANI (National Innovation Agency) in the Calls AAC nº 31/SI/2015, AAC 10/SI/2016 in the scope of Portugal 2020 Program (2017).
- Expert for proposals evaluation in ANI (National Innovation Agency) in the Calls AAC nº 31/SI/2015, AAC nº 32/SI/2015, AAC nº 33/SI/20152016 in the scope of Portugal 2020 Program (2016).
- Expert for proposals evaluation in ANI (National Innovation Agency) in the Call nº8/SI/2015 of the Incentive for Research and Technological Development System (2015)
- Expert of FCT (National Research Foundation) in the competition for the award of doctoral and post-doctoral scholarships in the scope of Exact Sciences and Engineering (2013).
- Expert for proposals evaluation in ADI (National Innovation Agency) in the QREN Call +E+I Research Projects (2013)

EDITOR OF INTERNATIONAL JOURNALS

- Associate Editor of the Energy and Buildings Journal (ISI Elsevier) (2016).
- Member of the Editorial Board of the Civil Engineering Journal. University of Minho, Portugal (2005)
- Member of the Editorial Board of the Mediterranean Sustainable Construction Land Culture, Research and Technology Journal (2013)

PEER REVIEWER OF JOURNALS

- Building and Environment
- Building Research and Information
- Building Simulation
- Buildings
- Cement & Concrete Composites
- Construction & Building Materials
- Ecological Indicators
- Energies
- Energy
- Energy and Buildings
- Energy Efficiency
- Energy Research & Social Science
- Energy Strategy Reviews
- European Journal of Environmental and Civil Engineering
- Heliyon
- Indoor and Built Environment
- International Journal Mediterranean Sustainable Construction Culture, Research and Technology

※ 〇

MANUELA ALMEIDA - CURRICULUM VITAE

- International Journal of Architectural Heritage
- International Journal of Scientific Research and Reports
- Journal of Building Engineering
- Journal of Civil Engineering and Management
- Journal of Construction Engineering and Management
- Solar Energy Journal
- Sustainability
- Sustainable Cities and Society

CONFERENCE ORGANISATION

- Organizer of the webinar "Renovating Buildings with Cost-Effective Reductions in Energy and Carbon Emissions
 Findings from IEA EBC Annex 56". 8 November 2016 (150 participants).
- Organizer of the International Workshop "Cost-effective deep renovation of buildings" integrated in the 12th REHVA World Congress – CLIMA 2016, 25 May 2016, Aalborg, Denmark.
- Organizer of the International Workshop "How to achieve the best performance in the renovation of existing buildings with minimal effort?", 17th September 2015, Vila Nova de Gaia, Portugal.
- Organizer of the Special Session "Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation" integrated in the 6th International Building Physics Conference - IBPC 2015, 15 June 2015, Torino, Italy.
- Organizer of the Special Session "Energy Efficiency" integrated in the 9th International Masonry Conference, 9 July 2014, Guimarães, Portugal.
- Member of the Organising Committee of "Portugal SB10 Sustainable Building Affordable to All, hold in March 2010 in Vilamoura, Portugal.
- Member of the Organising Committee of "Portugal SB07 Sustainable Construction, Materials and Practices: Challenge of the Industry for the New Millennium", hold in September 2007 in Lisbon, Portugal.
- Member of the Organising Committee of "European Symposium on Environmental Acoustics and 4th Ibero-American Conference on Acoustics. 13-17 September 2004, University of Minho, Guimarães.
- Member of the Organising Committee of PLEA 98 International Conference on "Passive and Low Energy Architecture", 31 of May 4 of June 1998, Lisbon.
- Member of the Organising Committee of the VIII Iberian Congress on Solar Energy, 25 28 May, 1997, Porto.

SUPERVISION OF SCIENTIFIC WORKS

- 7 PhD Thesis concluded
- 6 PhD Thesis on going
- 58 MSc Thesis concluded
- 4 MSc Thesis on going
- 65 Final Projects concluded
- 5 Projects ERASMUS concluded

Finished Doctoral thesis

- Helenice Maria Sacht, "Módulos de Fachada para Reabilitação Eco-Eficiente de Edifícios (Façade Modules for the Eco-Efficient Renovation of Buildings)", University of Minho, November 2013, Supervision: Luís Bragança, Manuela Almeida.
- Luciani Somensi Lorenzi, "Abordagem da Avaliação de Desempenho de Edificações Habitacionais de Interesse Social (HIS) Térreas" (Performance Evaluation of Social Housing). Sandwich PhD with Federal University of Rio Grande do SUL (UFRGS), Brazil, Supervision: Luiz Carlos Pinto da Silva Filho, Manuela Almeida.
- Pedro Correia Pereira da Silva, "A Integração de Soluções Inovadoras em Edifícios com Vista à Reabilitação Energética" (The Integration of Innovative Solutions in Buildings towards their Thermal Rehabilitation), University of Minho, September 2013, Supervision: Manuela Almeida, Luís Bragança.

- José Paulo Tavares Coimbra, "Como construir e utilizar de forma sustentável a habitação cooperativa em Portugal" (How to build and use in a sustainable way the cooperative housing in Portugal), University of Minho, September 2013, Supervision: Manuela Almeida.
- Dinis Miguel Campos Leitão, "Taxas e Procedimentos Sustentáveis em Operações Urbanísticas" (Taxes and Sustainable Procedures in urban operations), University of Minho, March 2012, Supervision: Manuela Almeida.
- Luciana Aparecida Neto de Jesus, "Metodologia de aplicação de conceitos de sustentabilidade a Edifícios" (Methodology for applying sustainability concepts to buildings), University of Minho, June 2011, Supervision: Manuela Almeida.
- Sandra Maria Monteiro Gomes da Silva, "A Sustentabilidade e o Conforto das Habitações", (Sustainability and Comfort in Dwellings), University of Minho, December 2009, Supervision: Manuela Almeida.

Ongoing Doctoral Theses:

- Marco António Pedrosa dos Santos Ferreira, "The concept of zero energy balance in the rehabilitation of existing buildings", PhD in Architecture, University of Minho. Supervision: Manuela Almeida.
- Tatiana Santos Saraiva, "Methodology for the Sustainability Assessment of School Buildings". PhD in Sustainable Built Environment. University of Minho. Supervision: Manuela Almeida, Luís Bragança.
- Catarina Brandão Araújo, "Feasibility analysis for the implementation of sustainable construction principles in Portuguese residential buildings", PhD in Civil Engineering, University of Minho. Supervision: Luís Bragança, Manuela Almeida.
- Maria Francisca Lima Carneiro Cavaleiro Barbosa, "School building rehabilitation in Southern European climate combining comfort and low energy consumption", PhD in Eco-Construction and Rehabilitation (EcoCoRe). Supervision: Vasco Freitas (FEUP), Manuela Almeida.
- Júlia Oliveira Pereira, "Thermal, daylighting and energy performance of glazing systems with solar control films and shading devices", PhD in Eco-Construction and Rehabilitation (EcoCoRe). Supervision: Maria Glória Gomes (IST), Manuela Almeida.
- Vítor Emanuel Martins Cardoso, "Optimization of air permeability in modular Eco-Construction", PhD in Eco-Construction and Rehabilitation (EcoCoRe). Supervision: Nuno Ramos (FEUP), Manuela Almeida.

PUBLICATIONS

- 2 patents
- 25 books;
- 16 chapters of books;
- 52 papers in international journals;
- 26 papers in national journals;
- 163 papers in International Conferences Proceedings
- 34 papers in National Conferences Proceedings;

Selected list of publications

- Manuela Almeida, Marco Ferreira, Ricardo Barbosa, "Relevance of embodied energy and carbon emissions on assessing cost effectiveness in building renovation contribution from the analysis of case studies in six European countries". Buildings Journal, ISSN 2075-5309, Special Issue "Building Sustainability Assessment". Buildings 2018, 8(8), 103; https://doi.org/10.3390/buildings8080103. Online since 9 August 2018.
- Manuela Almeida, Marco Ferreira, "Ten questions concerning cost-effective energy and carbon emissions optimization in building renovation". Building and Environment Journal. Volume 143, 1 October 2018, Pages 15-23. https://doi.org/10.1016/j.buildenv.2018.06.036. Online since 27 June 2018.
- Tatiana Santos Saraiva, Manuela Almeida, Luís Bragança, Maria Teresa Barbosa, "Environmental comfort indicators for school buildings in sustainability assessment tools". Sustainability Journal ISSN 2071-1050. Sustainability 2018, 10 (6), 1849. https://doi.org/10.3390/su10061849. Online since 2 June 2018.
- Tiziano Dalla Mora, Fabio Peron, P. Romagnoni, Manuela Almeida, Marco Ferreira, "Tools and procedures to support decision making for cost-effective energy and carbon emissions optimization in building renovation".

※ 〇

MANUELA ALMEIDA - CURRICULUM VITAE

- Energy and Buildings Journal. ISSN 0378-7788. Available on line since 24 February 2018. https://doi.org/10.1016/j.enbuild.2018.02.030, Volume 167, pag 200-215, 15 May 2018.
- Ricardo Mateus, Sandra Monteiro Silva, Manuela Almeida, "Environmental and cost life cycle analysis of the impact of using solar systems in energy renovation of Southern European single-family buildings". Renewable Energy Journal, ISSN: 0960-1481. Online since 12 April 2018. https://doi.org/10.1016/j.renene.2018.04.036.
- Shady Attiaa, Polyvios Eleftheriou, Flouris Xeni, Manuela Almeida, Marco Ferreira, et.al., "Current overview and future challenges of residential nearly Zero Energy Buildings (nZEB) in Southern Europe". Energy and Buildings Journal, Volume 155, 15 November 2017, Pages 439-458. DOI: https://doi.org/10.1016/j.enbuild.2017.09.043
- Manuela Almeida, Marco Ferreira, "Cost Effective Energy and Carbon Emissions Optimization in Building Renovation (Annex 56)". Energy and Buildings Journal, Volume 152, 1 October 2017, pages 718-738. http://dx.doi.org/10.1016/j.enbuild.2017.07.050
- Marco Ferreira, Manuela Almeida, Ana Rodrigues, "Impact of co-benefits on the assessment of energy related building renovation with a nearly-zero energy target". Energy and Buildings Journal, Volume 152, 1 October 2017, Pages 587-601. DOI: https://dx.doi.org/10.1016/j.enbuild.2017.07.066.
- Manuela Almeida, Ricardo Mateus, Marco Ferreira, Ana Rodrigues, "Life-cycle costs and life-cycle impacts on energy-related building renovation assessment". International Journal of Sustainable Building Technology and Urban Development. April 2017. http://dx.doi.org/10.1080/2093761X.2017.1302837
- Teresa Barbosa, Manuela Almeida, "Developing the methodology for determining the relative weight of dimensions employed in sustainable building assessment tools for Brazil". Ecological Indicators Journal, Volume 73, February 2017, Pages 46–51, Doi:10.1016/j.ecolind.2016.09.017 (http://authors.elsevier.com/a/1Tmmk,XRNLRPrl)
- Marco Ferreira, Manuela Almeida, Ana Rodrigues, "Cost optimal energy efficiency levels are the first step to achieve cost effective renovation in residential buildings with a nearly-zero energy target". Energy and Buildings Journal, Volume 133, December 2016, Pages 724–737. http://dx.doi.org/10.1016/j.enbuild.2016.10.017; available online since 13-OCT-2016
- Carlos Oliveira Augusto, Luís Bragança, Manuela Almeida, "Materiais de isolamento térmico de edifícios. Para além da energia operacional". Revista Hábitat Sustentable, Vol. 6, Nº1, June 2016, ISSN 0719-0700
- Sandra Monteiro da Silva, Ricardo Mateus, Marta Ramos, Luís Marques, Manuela Almeida, "Contribution of the solar systems to the nZEB and ZEB design concept in Portugal – Energy, Economics and Environmental Lifecycle Analysis". Solar Energy Materials and Solar Cells Journal, Volume 156, November 2016, Pages 59–74: http://dx.doi.org/10.1016/j.solmat.2016.04.053
- Ove Morck, Manuela Almeida, Marco Ferreira, Nelson Brito, Kirsten Engelund Thomsen, Iben Østergaard, "Shining examples analysed within the EBC Annex 56 project". Energy and Buildings Journal, Volume 127, September 2016, pages 991-998. DOI: http://dx.doi.org/10.1016/j.enbuild.2016.05.091
- Catarina Araújo, Manuela Almeida, Luís Bragança, José Amarilio Barbosa, "Cost-Benefit Analysis Method for Building Solutions". Applied Energy, Volume 173, 1 July 2016, pages 124-133. http://dx.doi.org/10.1016/j.apenergy.2016.04.005
- Manuela Almeida, Alessandro Bencresciuto, Marco Ferreira, Ana Rodrigues, "Cost-effective Energy and Carbon Emission Optimization in Building Renovation – A Case-Study in a Low Income Neighbourhood". Energy Procedia Journal, volume 78, pages 2403-2408, November 2015; doi: 10.1016/j.egypro.2015.203
- Marco Ferreira, Manuela Almeida, "Benefits from energy related building renovation beyond costs, energy and emissions". Energy Procedia Journal, volume 78, pages 2397-2402, November 2015; EGYPRO26569, DOI:10.1016/j.egypro.2015.11.199
- Manuela Almeida, Marco Ferreira, "IEA EBC Annex56 vision for cost effective energy and carbon emissions optimization in building renovation". Energy Procedia Journal, volume 78, pages 2409-2414, November 2015; EGYPRO26571, DOI:10.1016/j.egypro.2015.11.206
- Ove Morck, Manuela Almeida, Marco Ferreira, Nelson Brito, Kirsten Engelun Thomsen, Iben Østergaard, "Shining examples analysed within the EBC Annex 56 project". Energy Procedia Journal, volume 78, pages 2334-2339, November 2015; EGYPRO26559, PII:S1876-6102(15)02125-6; DOI:10.1016/j.egypro.2015.11.393

- Manuela Almeida, Marco Ferreira, Ana Rodrigues, "CO2 zero schools School building renovation towards emissions neutrality". REHVA Journal. Volume 6, "Building Energy Efficient Renovations", December 2015.
 Available online in http://www.rehva.eu/publications-and-resources/rehva-journal/2015/062015/co2-zero-school-building-renovation-towards-emissions-neutrality.html
- Helenice M. Sacht, Luis Bragança, Manuela Almeida, Rosana Caram, "Different Module Placements in a Modular Façade System for Natural Ventilation" in Procedia Economic and Finances, volume 21, 2015, pages 366-373. 8th Nordic Conference on Construction Economics and Organization. Elsevier, ISSN: 2212-5671, Open Access. doi:10.1016/S2212-5671(15)00188-4.
- Marco Ferreira, Manuela Almeida, Ana Rodrigues and Sandra Monteiro Silva, "Comparing cost optimal and net-zero energy targets in building renovation" in Building Research & Information Journal. Available online since the 7th of November 2014 http://dx.doi.org/10.1080/09613218.2014.975412. November 2014. http://hdl.handle.net/1822/31061.
- C. Lamnatou, D. Chemisana, R. Mateus, M. G. Almeida and S. M.Silva, "Review and perspectives on Life Cycle Analysis of solar technologies with emphasis on Building-Integrated solar thermal systems" in Renewable Energy Journal, Volume 75, March 2015, Pages 833–846. http://dx.doi.org/10.10.16/j.renene.2014.09.057. http://dx.doi.org/10.10.16/j.renene.2014.09.057.
- Manuela Almeida, Marco Ferreira, Ana Rodrigues and André Coelho, "Deep energy retrofit of vernacular housing". REHVA Journal. Volume 6, "Innovative HVAC system solutions in high performing buildings", November 2014. http://www.airtradecentre.com/downloads/AA/Rehva/rehva-newsletter-6-2014.pdf
- Manuela Almeida, Marco Ferreira, Ana Rodrigues, "Cost Optimality and Net-Zero Energy in the Renovation of Portuguese Residential Building Stock - Rainha Dona Leonor Neighborhood Case Study" in International Journal of Sustainable Building Technology and Urban Development. http://dx.doi.org/10.1080/2093761X.2014.979268. Available on line since 21 November 2014.
- Helenice M. Sacht, Luis Bragança, Manuela Almeida, Rosana Caram, Glazing Daylighting Performance and Trombe Wall Thermal Performance of a Modular Façade System in Four Different Portuguese Cities, Indoor and Built Environment Journal, available online since the 10th of March 2014 in http://ibe.sagepub.com/content/early/2014/03/09/1420326X14525976.refs. doi: http://dx.doi.org/10.1177/1420326X14525976
- J. Sousa, L. Bragança. M. Almeida, P. Silva, "Research on the Portuguese Building Stock and its Impacts on Energy Consumption – An Average U-Value Approach". Archives of Civil Engineering. Volume LIX, Issue 4, Pages 523–546, ISSN (Print) 1230-2945, doi: 10.2478/ace-2013-0029, December 2013. http://www.scopus.com/inward/record.url?eid=2-s2.0-84891821334&partnerID=MN8TOARS
- Camilla Brunsgaarda, Pavla Dvořákováb, Annemie Wyckmansc, Werner Stuttereckerd, Marina Laskarie, Manuela Almeida, Karel Kabeleb, Zoltan Magyarg, Piotr Bartkiewiczh, Peter Op 't Veldi, "Integrated Energy Design Education and Training in Cross-disciplinary Teams Implementing Energy Performance of Buildings Directive (EPBD)". Building and Environment Journal, volume 72, pp. 1-14, February 2014. Elsevier, ISSN 0360-1323. Available online since 13 November 2013. http://dx.doi.org/10.1016/j.buildenv.2013.10.011; http://sieeum.eng.uminho.pt/publicacoes/pub.aspx?pubid=17146
- Sacht, H.M.a, Bragança, L., Almeida, M, Caram, R. Passive façade solutions: Trombe wall thermal performance and glazing daylighting performance for Guimarães Portugal. Journal from BS 2013: 13th Conference of the International Building Performance Simulation Association, pages 983-989. 2013. http://www.scopus.com/inward/record.url?eid=2-s2.0-84886644346&partnerID=MN8TOARS
 http://sieeum.eng.uminho.pt/publicacoes/pub.aspx?pubid=17244
- José Coimbra, Manuela Almeida, "Achieving cost benefits in sustainable cooperative housing". Buildings
 Journal (ISSN 2075-5309 http://www.mdpi.com/2075-5309/3/1/1. Janeiro 2013, vol 3(1), pg 1-17;
 http://dx.doi.org/10.3390/buildings3010001
- Sandra M. Silva, Pedro P. Silva, Manuela Almeida and Luís Bragança "Operative Conditions Evaluation for Efficient Building Retrofit Case Study" Indoor and Built Environment Journal first published on September 12, 2012 as http://dx.doi.org/10.1177/1420326X12456542. Disponível online (http://ibe.sagepub.com/content/early/recent). elSSN: 1423-0070; ISSN: 1420-326X. Printed in Volume 22, Issue 5, October 2013.

☆ ◇

MANUELA ALMEIDA - CURRICULUM VITAE

- Helenice M. Sacht, Luis Bragança, Manuela Almeida, "Trombe Wall and Glazings Façades: Energy Efficiency for Different Portuguese Climates", Informes de la Construcion Journal, Volume 65 – Extra 1, pag 11-22, Setembro, 2013. ISSN: 0020-0883; eISSN: 1988-3234; http://dx.doi.org/10.3989/ic.11.152.
- Catarina Araújo, Manuela Almeida, Luís Bragança "Analysis of some Portuguese thermal regulation parameters". Energy and Buildings Journal, ISSN 0378-7788, Volume 58, March 2013, pg 141-150. Elsevier, ENB4017, PII: S0378-7788(12)00627-5, http://dx.doi.org/10.1016/j.enbuild.2012.11.024.
- José Coimbra, Manuela Almeida, "Challenges and benefits of building sustainable cooperative housing".
 Building and Environment Journal, ISSN 0360-1323, Volume 62, April 2013, Pages 9–17. Elsevier. Available online since: 12-JAN-2013. http://dx.doi.org/10.1016/j.buildenv.2013.01.003
- Pedro P. Silva, Manuela Almeida, Luís Bragança and Vasco Mesquita, "Development of Prefabricated Retrofit Module towards Nearly Zero Energy Buildings" Energy and Buildings Journal (Elsevier, ISI, fator de impacto de 2.041 e pertence ao quartil 1), ISSN 0378-7788, Volume 56, January 2013, Pages 115–125. http://dx.doi.org/10.1016/j.enbuild.2012.09.034
- Pedro C.P. Silva, Manuela Almeida, Luís Bragança and Vasco Mesquita, "Performance Evaluation of Non-Conventional Constructions: Case Study" Journal of Applied Thermal Engineering, ISSN 1359-4311, Volume 42, Páginas 136 144, Setembro 2012 http://dx.doi.org/10.1016/j.applthermaleng.2012.03.016.
- Sacht, H.M. and Bragança, L. and Almeida, M. and Caram, R.; Trombe wall thermal performance for a modular façade system in different Portuguese climates: Lisbon, Porto, Lajes and Funchal. Journal from IBPSA 2011 the International Building Performance Simulation Association, pages 1444-1450. 2011. http://www.scopus.com/inward/record.url?eid=2-s2.0-84866974099&partnerID=MN8TOARS
- Silva, P. and Silva, S. and Almeida, M. and Bragança, L.; Accuracy of the Portuguese EPBD implemented thermal
 performance calculation procedures RCCTE. Journal from IBPSA 2009 the International Building Performance
 Simulation Association, pages 2106-2113. 2009. http://www.scopus.com/inward/record.url?eid=2-s2.0-79955940064&partnerID=MN8TOARS
- Silva, P. and Almeida, M. and Bragança, L. and Mesquita, V.; Methodology to enhance the Portuguese thermal regulation accuracy for existing buildings. Journal from IBPSA 2009 the International Building Performance Simulation Association, pages 576-583. 2009. http://www.scopus.com/inward/record.url?eid=2-s2.0-84870166496&partnerID=MN8TOARS

Research monographs, chapters in collective volumes and any translations thereof.

Books

- Manuela Almeida, Marco Ferreira, Ana Rodrigues, Nuno Baptista, "Guidebook for Policy Makers on Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-99799-8-7. Edited by Manuela Almeida, University of Minho, October 2017 (42 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Manuela Almeida, Marco Ferreira, Ana Rodrigues, Nuno Baptista, "Guidebook for Professional Home Owners on Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-99799-9-4. Edited by Manuela Almeida, University of Minho, October 2017 (40 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Manuela Almeida, Marco Ferreira, "Executive Summary for Policy Makers on Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-20-7956-1. Edited by Manuela Almeida, University of Minho, October 2017 (18 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Walter Ott, Roman Bolliger, Volker Ritter, Stéphane Citherlet, Sébastien Lasvaux, Didier Favre, Blaise Périsset, Manuela Almeida, Marco Ferreira, Simone Ferrari, Federica Zagarella, "Methodology for Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-99799-0-1. Edited by University of Minho, February 2017 (129 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Manuela Almeida, Marco Ferreira, Ana Rodrigues, "Co-benefits of energy related building renovation -Demonstration of their impact on the assessment of energy related building renovation". ISBN: 978-989-

- 99799-2-5. Edited by University of Minho, February 2017 (95 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Manuela Almeida, Marco Ferreira, Piercarlo Romagnoni, Francesca Cappelletti, Fabio Peron, Tiziano Dalla Mora, Paolo Ruggeri, "Tools and procedures to support decision making for cost-effective energy and carbon emissions optimization in building renovation". ISBN: 978-989-99799-4-9. Edited by University of Minho, February 2017 (80 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Ove Christen Mørck, Iben Østergaard, Kirsten Engelund Thomsen, Jørgen Rose, Søren Østergaard Jensen, Manuela Almeida, Marco Ferreira, Nelson Brito, Nuno Baptista, Rui Fragoso, Karl Höfler, Julia Maydl, David Venus, Jiří Sedlák, Karel Struhala, Federica Zagarella, Simone Ferrari, Tiziano dalla Mora, Piercarlo Romagnoni, Henk Kaan, Jon Terés Zubiaga, Åke Blomsterberg, Stéphane Citherlet, Blaise Périsset, "Shining Examples of Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-99799-5-6. Edited by University of Minho, February 2017 (154 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- David Venus, Karl Höfler, Manuela Almeida, Marco Ferreira, Ana Rodrigues, Roman Bolliger, Walter Ott, Ove C. Mørck and Iben Østergaard, "Evaluation of the impact and relevance of different energy related renovation measures on selected Case Studies". ISBN: 978-989-99799-6-3. Edited by University of Minho, February 2017 (215 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Walter Ott, Roman Bolliger, "Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation Investigation based on parametric calculations with generic buildings and case studies". ISBN: 978-989-99799-1-8. Edited by Manuela Almeida, University of Minho, February 2017 (214 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Walter Ott, Roman Bolliger, "Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation
 Investigation based on parametric calculations with generic buildings and case studies". ISBN: 978-98999799-1-8. Edited by Manuela Almeida, University of Minho, February 2017 (214 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Sébastien Lasvaux, Didier Favre, Blaise Périsset, Samir Mahroua, Stéphane Citherlet, "Life Cycle Assessment for Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation". ISBN: 978-989-99799-3-2.
 Edited by Manuela Almeida, University of Minho, February 2017 (110 pgs). http://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Åke Blomsterberg, Eja Pedersen, Nuno Baptista, Rui Fragoso, "Owners and Residents Acceptance of Major Energy Renovations of Buildings". ISBN: 978-989-99799-7-0. Edited by Manuela Almeida, University of Minho, February 2017 (71 pgs). https://www.iea-annex56.org/index.aspx?MenuID=4&SubMenuID=33
- Teresa Barbosa, Manuela Almeida, "Construção sustentável: contributo das ferramentas de avaliação". ISBN 978-85-444-1245-9. Editora CRV, Curitiba, Brasil. Novembro de 2016 (119 pgs).
- Mateus R., Fernandes J. E. P., Bragança L., Almeida M. G., Silva S. M., Mendonça P., Gervásio H. Livro de Atas do Seminário reVer 2015, Seminário reVer - Contributos da arquitetura vernácula portuguesa para a sustentabilidade do ambiente construído, pp. i - 116, doi:10.13140/RG.2.1.1112.4648, 2015
- Teresa Barbosa, Manuela Almeida, "Ambiente Construído e sua Sustentabilidade". Editora UFJF, Juiz de Fora, Minas Gerais, Brasil. Setembro de 2014.
- Manuela Almeida, Ove Christen Mørck, Karl Höfler et.al. "Shining Examples Brochure". ISBN: 978-989-95961-7-7. Edited by University of Minho, May 2014.
- Walter Ott, Roman Bolliger, Volker Ritter, Stéphane Citherlet, Didier Favre, Blaise Perriset, Manuela de Almeida, Marco Ferreira, "Methodology for Cost-Effective Energy and Carbon Emissions Optimization in Building Renovation (Annex 56) - Methodology and Assessment of Renovation Measures by Parametric Calculations". ISBN: 978-989-95961-6-0. Edited by University of Minho, April 2014.
- Manuela Almeida e Pedro Silva, "Catálogo de Soluções de Reabilitação Energética de Edifícios". ISBN: 978-989-96543-4-1. Universidade do Minho, Setembro de 2012. http://hdl.handle.net/1822/29071
- M. Almeida, L. Bragança, P. Silva, S. Silva, R. Mateus, J. Barbosa, C. Araújo, Livro de Atas do Seminário "Reabilitação Energética de Edifícios". ISBN: 978-989-96543-6-5. Universidade do Minho, Setembro de 2012. http://hdl.handle.net/1822/21740
- Bragança, L.; Pinheiro, M.; Mateus, R.; Amoêda, R.; Mendonça, P.; Almeida, M. G. et al, Proceedings of the international conference "Portugal SB10: Sustainable Building Affordable to All". ISBN 978-989-96543-1-0. Multicomp, Março 2010. http://hdl.handle.net/1822/22824

☆ 〇

MANUELA ALMEIDA - CURRICULUM VITAE

- Federico de Matteis, Manuela Almeida, et al., "Good, Green, Safe, Affordable Housing. The Urbun Act II
 Operation Programme 2007-2013 Working Group HOPUS Housing Praxis for Housing Sustainability, 2009,
 ISBN 978-88-6216-014-8. http://hdl.handle.net/1822/16676
- Manuela Almeida, Ebbe Melgard, George Hadjimichael, Leo Verhoef, "Improving the quality of existing urban building envelops", Research in Architectural Engineering Science, Volume 3. ISBN 978-1-58603-735-2. March, 2007.
- Léa Cristina Lucas de Sousa, Manuela Guedes de Almeida, Luís Bragança; "BÊ-A-BÁ da Acústica Arquitectónica

 Ouvindo a Arquitectura". Fundação Biblioteca Nacional, S. Paulo, Brasil, Outubro de 2003. ISBN 85-903875-1-8.
- T. Brendel, M. G. Almeida, K. Drda-Kühn, G. McNulty, M. Rydehell; "RUE Rational Use of Energy Clean, Safe and Efficient Energy for Europe Impact Assessment of Non-Nuclear Energy Projects Implemented under the Fourth Framework Programme". European Commission, Directorate-General for Research and Directorate-General for Transport and Energy. EUR 20876/2, December 2003, ISBN 92-894-6298-1.
- E. de Oliveira Fernandes, Eduardo Maldonado, Manuela Guedes de Almeida, "Energia Solar e Qualidade de Vida"; VIII Congresso Ibérico de Energia Solar ISES International Solar Energy Society, SPES-RN Sociedade Portuguesa de Energia Solar Região Norte. 1997.

Chapters of Books

- Grobman Y., Chen N., Cory J., Monteiro Silva S., Mateus R., Guedes Almeida, M., "Porter Building, Tel Aviv, Israel". In Building Integration of Solar Systems – Design and Applications Handbook. Soteris A. Kalogirou (ed.). Nicosia: Cyprus University of Tecnology, pp 391-398. ISBN 978-9963-697-22-9, March 2017.
- Mateus R., Monteiro Silva S., Guedes Almeida, M., "Environmental Life-Cycle Analysis of Solar Systems". In Building Integration of Solar Systems Design and Applications Handbook. Soteris A. Kalogirou (ed.). Nicosia: Cyprus University of Tecnology, pp 391-398. ISBN 978-9963-697-22-9, March 2017.
- Laura Aelenei, Manuela Almeida, Vincent Buhagiar, et al., "State of the art on Building Integrated Solar
 Thermal Systems" in Overview of BISTS state of the art, models and applications. Cost Action TU1205 –
 Building Integration of Solar Thermal Systems. Published by Cyprus University of Technology, Department of
 Mechanical Engineering and Materials Sciences and Engineering. ISBN: 978-9963-697-16-8, March 2015.
- Filipa Amorim, Ricardo Gomes, Miguel Carvalho, Carlos Silva, Paulo Ferrão, Manuel Correia de Guedes,
 Manuela Almeida; "Chapter 27 The drive towards near Zero Energy Buildings through Professional Training in
 Southern Europe The SouthZEB Project" in Handbook of Research on Entrepreneurial Success and its Impact
 on Regional Development, edited by Luisa Carvalho. IGI Global, E-Editorial Discovery, pp 655-680, 2015. ISBN
 9781466695672 (hardcover) | ISBN 9781466695689 (ebook). DOI: 10.4018/978-1-4666-9567-2.ch027.
- Almeida, Manuela; Ferreira, Marco; Rocha, Ana; Parte III: "Reabilitação Energética do Património Construído Metodologia para determinação de soluções de custo ótimo", in Ambiente Construído e sua Sustentabilidade.
 Publicado pela Editora da Universidade Federal de Juiz de Fora, Minas Gerais, Brasil. Setembro de 2014.
- Manuela Almeida, Pedro Silva, Part D: Prefabricated Metal Panel Retrofit Modules in the book Prefabricated Systems for Low Energy Renovation of Residential Buildings - Retrofit Module Design Guide. International Energy Agency – ECBCS Program, published by Empa, Building Science and Technology Lab, Switzerland. ISBN 978-3-905594-60-7, March 2011. Pp113-128. http://hdl.handle.net/1822/15390
- Gerhard Zweifel, Pedro Silva; Manuela Almeida, et al.- "Retrofit Simulation Report" —Relatório efectuado no âmbito do projecto IEA ECBCS Annex 50 Prefabricated Systems for Low Energy Renovation of Residential Buildings, International Energy Agency ECBCS program; published by Empa, Building Science and Technology Lab, Switzerland. March 2011. http://hdl.handle.net/1822/15400
- Almeida, M.G; Bragança, L.; Mateus, R. General overview of the problems, needs and solutions in the Portuguese building envelopes. In Melgaard E;. Hadjmichael, G.; Almeida, M.G.; Verhoef, L.G.W. (Eds.), Improving the Quality of Existing Urban Building Envelopes Needs. IOS Press: Amsterdam, The Netherlands. 2007. ISBN: 978-1-58603-735-2. p. 121-129 WOS:000269487700013. http://hdl.handle.net/1822/16914

- Bragança, L.; Almeida, M.G.; Mateus, R. State of the art: Portugal. In Andeweg M. T.; Brunoro, S.; Verhoef, L.G.W. (Eds.) Improving the Quality of Existing Urban Building Envelopes State of the Art. IOS Press: Amsterdam, The Netherlands. 2007. ISBN: 978-1-58603-734-5. p. 147-154 WOS:000269487200012. http://hdl.handle.net/1822/8319
- Bragança, L.; Almeida; M.G.; Mateus, R. Technical improvement of housing envelopes in Portugal. In Bragança, L.; Wetzel, C.; Buhagiar, V.; Verhoef, L.G.W. (Eds.), Improving the Quality of Existing Urban Building Envelopes Façades and roofs. IOS Press: Amsterdam, The Netherlands. 2007. ISBN: 978-1-58603-737-6. p. 115-126 WOS:000269488000012. http://hdl.handle.net/1822/9089
- Manuela Almeida, Eduardo Maldonado, Mat Santamouris, Gerard Guarracino "Optimal Openings Design". Chapter 9 of the book "Ventilation in the Urban Environment: Assessment and Design", by Cristian Ghiaus and Francis Allard. James and James Editors, London 2005. ISBN: 1-844-0712-9-4. Pp 168-194. http://hdl.handle.net/1822/5051.
- Almeida, M. and Bragança, L.; "Thermal Assessment of Mixed Building Technology Solutions". Secção III.5.1. do Livro "Improvement of Building's Structural Quality by new Technologies" - Outcome of the Cooperative Activities of COST Action C12, ISBN 04-1536-610-0, CRC Press / Balkema Publishers, pp. 641-647 (2004). Editor -Christian SCHAUR. http://hdl.handle.net/1822/4987
- Manuela Almeida, Luís Bragança, José Mendes, Sandra Silva, "Layout urbano em função da eficiência energética dos edifícios". "Contribuições para o Desenvolvimento Sustentável em Cidades Portuguesas e Brasileiras" de José Mendes, António Silva, Léa Souza e Rui Ramos. Livraria Almedina. Setembro de 2004, ISBN:972-40-2346-X. pp 66-79. http://hdl.handle.net/1822/2286
- Nicolas Chrysochoides, Thomas Casey; Pépin Cabo, Manuela Guedes de Almeida, Luis Andrada, Annette Cutler, Karin Drda-Kühn, John Olliver, Margarita Salve, Otto Starzer, "Clean and Efficient Energies for Europe Socio-Economic Impact of Energy Research" Report of the independent expert panel. EUR 19464, European Comission Directorate-General for Research. March 2001. ISBN 92-894-1123-6. http://hdl.handle.net/1822/12582
- Nicolas Chrysochoides, Thomas Casey, Pépin Cabo, Manuela Guedes de Almeida, Luis Andrada, Annette Cutler, Karin Drda-Kühn, John Olliver, Margarita Salve, Otto Starzer; "Clean and Efficient Energies for Europe – Results of Individual Projects" – Report of the independent expert panel EUR 19465/1, European Commission – Directorate-General for Research. July 2001. ISBN 92-894-1120-1.

Granted patents.

- Almeida M, Almirante P, Braganca L, Burgess G, Burgess R, Camoes A, Carvalho J, Eires R, Estrada P, Jalali S, Lourenco P, Mateus R, Mendonca P, Vasconcelos G, Vieira J, "Block for building partitions without functional structure and adaptable to walls with load-bearing function, is made from composite material of plaster, expanded cork granules and textile fibers", Patent Number: EP2549027-A2, 2013.
- Miguel Veríssimo, Luís Bragança and Manuela Almeida, "Sistema de Controlo de Energia em Vãos Exteriores de Edifícios Eco-Eficientes", Patent number: 103 579, 2007.

International Prizes/Awards/Academy memberships.

• BES Innovation prize (3rd Edition) - 1º Place – Renewable Energy: Eco-Efficient Window. Promoting Entity: Banco Espirito Santo; 2007.

October 2018