

Name Fernando del Ama Gonzalo

Academic rank: Assistant Professor
Department of Sustainable Product Design and Architecture
Keene State College, New Hampshire, USA

Email: Fernando.delama@keene.edu

Date and Place of Birth: Madrid

Citizenship: Spain

Education

2011 Master in Renewable Energy. CEU San Pablo University. Madrid, Spain.

2005 Ph.D. in Architecture with an emphasis on Architectural Acoustics. Polytechnic University of Madrid, Spain.

1997 Bachelor of Architecture from the Polytechnic University of Madrid, Spain.

Postgraduate certifications:

3D Video Creation, editing and manipulation. Instituto de Ciencias de la Educación. Barcelona, Spain.

Course for advanced web designers. Instituto de Ciencias de la Educación. Madrid, Spain.

Teaching Experience

2018 Assistant Professor at the Department of Sustainable Product Design and Architecture, Keene State College, New Hampshire, USA.

2016-2018 Chairman of Department of Architecture at American University of Ras Al Khaimah, UAE.

2014-2016 Associate Professor. Architectural Engineering Department. College of Engineering. Alfaisal University. KSA.

2012-2014 Chair of the Architecture and Design Department at Polytechnic School. CEU San Pablo University. Madrid, Spain.

2010-2013 Associate Professor. Polytechnic School. CEU San Pablo University.

2005-2010 Assistant Professor. Polytechnic School. CEU San Pablo University.

1998-2005 Lecturer. CES CEU Architecture School. Madrid.

The teaching experience is related to construction technology, building physics, acoustics and energy management in buildings.

RESEARCH AND SCHOLARLY WORK

Publications (listed chronologically with most recent first)

JOURNAL ARTICLES

- **del Ama Gonzalo, F.**; Griffin, M.; Laskosky, J.; Yost, P.; González-Lezcano, R.A. Assessment of Indoor Air Quality in Residential Buildings of New England through Actual Data. *Sustainability* **2022**, *14*, 739. <https://doi.org/10.3390/su14020739>
- **del Ama Gonzalo, F.**; Moreno Santamaria, B.; Ferrándiz Gea, J.A.; Griffin, M.; Hernandez Ramos, J.A. Zero Energy Building Economic and Energetic Assessment with Simulated and Real Data Using Photovoltaics and Water Flow Glazing. *Energies* **2021**, *14*, 3272. <https://doi.org/10.3390/en14113272>
- Santamaria, B.M.; **Gonzalo, F.d.A.**; Griffin, M.; Aguirregabiria, B.L.; Ramos, J.A.H. Life Cycle Assessment of Dynamic Water Flow Glazing Envelopes: A Case Study with Real Test Facilities. *Energies* **2021**, *14*, 2195. <https://doi.org/10.3390/en14082195>
- **Del Ama, Fernando** et al. A Methodology for Optimal Design and Simulation of Deployable Structures. *IOP Conf. Ser.: Mater. Sci. Eng.* **960** 022007
- **Del Ama, F.**, Davis, H., Moreno Santamaria, B., Lauret Aguirregabiria, B., Hernandez Ramos, J.A. Building energy simulation. Case studies with water flow glazing. *IOP Conf. Ser.: Mater. Sci. Eng.* **2020**, 960 022006 doi:10.1088/1757-899X/960/2/022006
- Moreno Santamaria, B.; **Ama Gonzalo, F.**; Lauret Aguirregabiria, B.; Hernandez Ramos, J.A. Evaluation of Thermal Comfort and Energy Consumption of Water Flow Glazing as a Radiant Heating and Cooling System: A Case Study of an Office Space. *Sustainability* **2020**, *12*, 7596.
- Moreno Santamaria, B.; **del Ama Gonzalo, F.**; Pinette, D.; Lauret Aguirregabiria, B.; Hernandez Ramos, J.A. Industrialization and Thermal Performance of a New Unitized Water Flow Glazing Facade. *Sustainability* **2020**, *12*, 7564.
- Moreno Santamaria, B.; **del Ama Gonzalo, F.**; Lauret Aguirregabiria, B.; Hernandez Ramos, J.A. Experimental Validation of Water Flow Glazing: Transient Response in Real Test Rooms. *Sustainability* **2020**, *12*, 5734.
- Moreno Santamaria, B.; **del Ama Gonzalo, F.**; Pinette, D.; Gonzalez-Lezcano, R.-A.; Lauret Aguirregabiria, B.; Hernandez Ramos, J.A. Application and Validation of a Dynamic Energy Simulation Tool: A Case Study with Water Flow Glazing Envelope. *Energies* **2020**, *13*, 3203.
- González Lezcano R.A., Ros Garcia, J.M., **Del Ama Gonzalo, F.**, Influence of Envelope Colour on Energy Saving in Different Climate Zones in an Emergency HouseContemporary Engineering Sciences, Vol. 13, 2020, no. 1, 69 - 87 HIKARI Ltd, www.m-hikari.com <https://doi.org/10.12988/ces.2020.91244>
- Maria-Mar Fernandez-Antolin , José-Manuel del-Río, **Fernando del Ama Gonzalo**, Roberto-Alonso Gonzalez-Lezcano. The Relationship between the Use of Building Performance Simulation Tools by Recent Graduate Architects and the Deficiencies in Architectural Education. *Energies* **2020**, *13*(5), 1134; <https://doi.org/10.3390/en13051134>

- Moreno, B., **Del Ama Gonzalo, F.**, Ferrandiz, JA., Hernandez, J.A., A Building energy simulation methodology to validate energy balance and comfort in zero energy buildings, *Journal of Energy Systems*, Volume 3 , Issue 4, Pages 168 – 182, 2019.
- **Del Ama, Fernando** et al. Numerical Simulation and Experimental Study of a Deployable Footbridge. 2019, IOP Conf. Series: Materials Science and Engineering. 603, 022101, doi:10.1088/1757-899X/603/2/022101
- **Del Ama Gonzalo, F.**, Ferrandiz, JA., Moreno, B. Building Energy Modeling by means of BIM software. A case study with Water Flow Glazing. 7th Eur. Conf. Ren. Energy Sys. 10-12 June 2019, Madrid, Spain.
- **Del Ama Gonzalo, F.**, Molina M., Lorenzo C, Castilla M.I., Gomez Pulido D., Garcia Millan J. and Sancho J.C. Geometric Analysis of a Modular, Deployable and Reusable Structure. *Key Engineering Materials* 2019, ISSN: 1662-9795, Vol. 805, pp 155-160, doi:10.4028/www.scientific.net/KEM.805.155
- **Del Ama Gonzalo, F.**, Ferrandiz, J., Fonseca, D., Hernandez, J.A. 2019. Non-intrusive electric power monitoring system in multi-purpose educational buildings. *International Journal of Power Electronics and Drive Systems*, Vol. 10, No. 3, 2019
- José Ferrándiz, **Fernando Del Ama Gonzalo**, Monica Sanchez-Sepulveda and David Fonseca. (2019) Introducing a New ICT Tool in an Active Learning Environment Course: Performance Consequences Depending on the Introduction Design. *International Journal of Engineering Education* Vol. 35, No. 1(B), pp. 360–371, 2019.
- **Del Ama Gonzalo, F.**, Moreno, B., Hernandez, J.A. 2019. Designing a wireless sensor with ultra-capacitor and PV microcell for smart building energy management. *Int. J. Embedded Systems*, Vol. 11, No. 1, 2019 pp.1 – 10. DOI: 10.1504/IJES.2017.10009297.
- Attia, H.A., **Del Ama Gonzalo, F.**, 2019. Stand-alone pv system with mppt function based on fuzzy logic control for remote building applications. *International Journal of Power Electronics and Drive Systems*, Volume 10, Issue 2, June 2019, Pages 842-851.
- **Del Ama Gonzalo F.**, Moreno, B., Hernandez J.A. (2018) Dynamic Solar Energy Transmittance for Water Flow Glazing in Residential Buildings. *International Journal of Applied Engineering Research* ISSN 0973-4562 Volume 13, Number 11 (2018) pp. 9188-9193.
- **Del Ama Gonzalo F.**, Ferrandiz J.A., Escudero D.F., Hernandez J.A. (2018) Field Measurements of Electrical Consumption in a Multi-purpose Educational Building. *WorldCIST'18 2018. Advances in Intelligent Systems and Computing*, vol 745. Springer, Cham. Print ISBN 978-3-319-77702-3
- **Del Ama Gonzalo, F.**, Hernandez, J.A., Moreno, B., 2017. Thermal Simulation of a Zero Energy Glazed Pavilion in Sofia, Bulgaria. *New Strategies for Energy Management by Means of Water Flow Glazing*. IOP Conf. Series: Materials Science and Engineering 245 (2017) 042011 doi:10.1088/1757-899X/245/4/042011.
- **Del Ama, F.**, Saenz de Tejada, C., Hernandez Ramos, J.A. 2017. Water-flow Gazing Curtain-wall and Ground Source Heat Pump as an Energy Saving Strategy in Buildings. *Indian Journal of Science and Technology*, Vol 10(18), DOI: 10.17485/ijst/2017/v10i18/94671, May 2017. ISSN (Print): 0974-6846.

- **Del Ama Gonzalo, F.**, Hernandez, J.A., Moreno, B., 2016. Wireless low cost temperature and humidity sensors with PV microcells. Determination of design parameters by means of experimental measurements. Publisher: IEEE. DOI: 10.1109/ICEDSA.2016.7818532. Electronic ISSN: 2159-2055.
- **Del Ama Gonzalo, F.**, Hernandez, J.A., 2016. Testing of Water Flow Glazing in Shallow Geothermal Systems. *Procedia Engineering*. Vol. 161, Pages 887–891, October 2016.
- **Del Ama Gonzalo, F.** 2015. Efficient energy use in buildings by means of water flow glazing and ground source heat pump. *International Journal of Current Research*. Vol. 7, Issue, 05, pp.15996-16000, May, 2015
- **Del Ama Gonzalo, F.** 2015. Performance of New Active Water flow double-pane windows for Energy management in buildings. *International Journal of Scientific Research*. P66-67.
- Hernandez, J.A., **Del Ama, F.**, (2014) Thermal simulator for HVAC systems based upon polymorphic components connected by graphs. *Mathematical Thinking Research Journal*, October 2014. P91-104, Madrid, Spain. ISSN: 2174-0410.
- Hermanns, M., **Del Ama, F.**, Hernandez J.A., (2012) Analytical solution to the one-dimensional non-uniform absorption of solar radiation in uncoated and coated single glass panes. *Energy and Buildings* Volume 47, April 2012, Pages 561–571.

BOOKS and BOOK CHAPTERS

- **Fernando del Ama Gonzalo**, Belen Moreno, Matthew Griffin, Juan Antonio Hernandez Ramos. Advancements in Sustainable Architecture and Energy Efficiency (June 2021). Chapter 2: CONTRIBUTION OF WATER FLOW GLAZING TO NET-ZERO ENERGY BUILDINGS: VALIDATION OF ANALYTICAL AND NUMERICAL MODELS THROUGH EXPERIMENTAL DATA. pp.21-48. Publisher: IGI Global. Hershey, Pennsylvania, USA ISBN10: 1799870235; DOI: 10.4018/978-1-7998-7023-4.ch002
- **Fernando del Ama Gonzalo**. Innovación Docente e Investigación en Ciencias, Ingeniería y Arquitectura. Avanzando en el proceso de enseñanza-aprendizaje. Book chapter: ESTUDIO DE LA DOCENCIA DE DISCIPLINAS TÉCNICAS EN EL GRADO DE ARQUITECTURA EN CUATRO UNIVERSIDADES DE PAÍSES DIFERENTES, pp.235-248. Publisher: DYKINSON, S.L. Meléndez Valdés, 61. 28015 Madrid, Spain. ISBN: 978-84-1377-216-5
- **Fernando del Ama Gonzalo**, Roberto A. Gonzalez, Sonia Cesteros Garcia. Title: "Acoustics in building Design". Publisher: Ediciones Asimetricas. 2018. Madrid, Spain. ISBN: 9788494917851.
- Roberto A. Gonzalez, Juan B. Echevarria, **Fernando del Ama Gonzalo**, Javier Gonzalez, Susana Hormigos. Title: "ABECE de las instalaciones de aire" (Basic Mechanical Systems. Indoor Air Quality). Publisher: Munilla-Leria. 2018. Madrid. Spain. ISBN: 9788494239243.
- Roberto Alonso Gonzalez Lezcano; **Fernando del Ama Gonzalo**; Felix Aramburu Gaviola; Juan Bautista Echeverria Trueba; Rodrigo Nuñez Carrasco; Santiago Vela Heredia. "ABECÉ de las instalaciones (Tomo 2)" "Theory and Practice in Building Systems (Volume 2)". 2012. Publisher: Editorial Munilla-Lería. ISBN 9788489150997.
- Federico de Isidro, Roberto Alonso Gonzalez Lezcano; **Fernando del Ama Gonzalo**; Felix Aramburu Gaviola; Juan Bautista Echeverria Trueba; Rodrigo Nuñez Carrasco; Santiago Vela Heredia. "ABECÉ de las instalaciones (Tomo 1)" "Theory and Practice in Building Systems (Volume 1)". 2011. Publisher: Editorial Munilla-Lería. ISBN 9788489150805.

PATENTS

- Modular deployable structure. Patent Number(s): ES2646420
Inventor(s): María Dolores Gómez Pulido; Juan Carlos Sancho Arellano; Juan García Millán; Mariano Molina Iniesta; **Fernando Del Ama Gonzalo**.
Patent Assignee Name(s) and Code(s): CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS (CSIC), UNIVERSIDAD SAN PABLO CEU.
Derwent Primary Accession Number: 2015-30747Q [43]
- Intelligent symbiotic system for saving energy in construction of building or house, has automatons connected to phase and neutral lines of electrical installation, where automatons send and receive data to and from hub
Patent Number(s): ES2533198-A1
Inventor(s): HERNANDEZ RAMOS J A, **DEL AMA GONZALO F**

Patent Assignee Name(s) and Code(s): UNIV MADRID POLITECNICA (UYMA-Non-standard)

Derwent Primary Accession Number: 2015-30747Q [43]

- Lightweight fabric enclosure used as envelope tents, tents or canopies in emergency social housing and other temporary shelter, comprises two layers of lightweight fabric made of polyethylene terephthalate polyester or polyvinylchloride.

Patent Number(s): ES1117231-U

Inventor(s): ROS GARCIA J M, CAMACHO DIEZ J J, **DEL AMA GONZALO F**

Patent Assignee Name(s) and Code(s): UNIV FUNDACION SAN PABLO CEU (UYSA-Non-standard)

Derwent Primary Accession Number: 2014-Q82213 [74]

- Smart wireless device for use with electrical switches or switches for home automation and control, has power miniaturized plate, integrated circuit chip for communicating radio-frequency and two power cords.

Patent Number(s): ES1082529-U

Inventor(s): HERNANDEZ RAMOS J A, MORENO SANTAMARIA M B, ALONSO GONZALEZ A, GARCIA DAROCA C, FERNANDEZ SANCHEZ A, **DEL AMA GONZALO F**.

Patent Assignee Name(s) and Code(s): DEL AMA GONZALO F (GONZ-Individual)

Derwent Primary Accession Number: 2013-L91975 [55]

- Active transparent or translucent enclosure, has hydrostatic pressure reducing device reducing thicknesses of transparent sheets which contain liquid, where control of building lighting is performed by adjustable transparency of liquid.

Patent Number(s): US2010044006-A1 25 Feb 2010 F24D-003/12.

Inventor(s): HERNANDEZ RAMOS J A, HERMANN S M, **DEL AMA GONZALO F**, HERNANDEZ JIMENEZ C J.

Patent Assignee Name(s) and Code(s): UNIV MADRID POLITECNICA (UYMA-Non-standard).

CONFERENCE PAPERS

- **Del Ama Gonzalo, F.**, Ferrandiz, J.A., Moreno, B. Building Energy Modeling by means of BIM software. A case study with Water Flow Glazing. 7th Eur. Conf. Ren. Energy Sys. 10-12 June 2019, Madrid, Spain.
- **Fernando del Ama Gonzalo**, Belén Moreno, Juan A. Hernández. (2018) The use of Water Flow Glazing with variable g value in Net Zero Energy residential and office buildings. International Conference on Sustainable Energy and Environment Sensing. University of Cambridge, Cambridge city, United Kingdom. June 2018.
- **Del Ama Gonzalo F.**, Ferrandiz J.A., Escudero D.F., Hernandez J.A. (2018) Field Measurements of Electrical Consumption in a Multi-purpose Educational Building. WorldCIST'18 2018. Advances in Intelligent Systems and Computing, vol 745. Springer, Cham. Print ISBN 978-3-319-77702-3

- Jose Ferrándiz, **Fernando del Ama Gonzalo**, David Fonseca, Khaled Galal Ahmed. (2018) BIM implementation at the construction courses in the architectural engineering in the United Arab Emirates University. AIC. 12th BIM Academic Symposium. Orlando, Florida, USA.
- **Del Ama, F.**, Del Ama, J.C., (2017) Social Media and Academic Performance: a cross-cultural study. International Conference on New Horizons in Education (INTE). July 17-19 2017, Berlin, Germany.
- **Del Ama, F.**, (2017) Thermal simulation of a Zero Energy glazed pavilion in Sofia, Bulgaria. New strategies for energy management by means of Water flow Glazing. World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium WMCAUS 2017. Prague (Czech Republic).
- **Del Ama Gonzalo, F.**, Hernandez, J.A., Moreno, B., 2016. Wireless low cost temperature and humidity sensors with PV microcells. Determination of design parameters by means of experimental measurements. ICEDSA congress. American University of Ras Al Khimah. December 2016.
- **Del Ama, F.**, (2016) Testing of Water Flow Glazing in Shallow Geothermal Systems. World Multidisciplinary Civil Engineering-Architecture-Urban Planning Symposium WMCAUS 2016. Prague (Czech Republic). ISBN: 978-80-260-9947-5.
- **Del Ama, F.**, Del Ama, J.C., Saenz de Tejada Granados, C., (2015) Social Media in Higher Education: Penetration, Impact. *Proceedings of International Congress on education, innovation and learning technologies*, Granada, Spain. ISBN: 978-84-944311-3-5, p. 164.
- **Del Ama, F.**, Moreno, B., (2015) Energy savings in buildings by means of water flow active envelope and ground source heat pump. *Proceedings of 6th International Congress on Energy Environment and Management*, Paris, France. ISBN: 978-84-944311-2-8.
- **Del Ama, F.**, Moreno, B., (2015) Acoustic properties of active curtain walls with circulating water chamber. *Proceedings of 22nd International Congress on Sound and Vibration, Florence, Italy*. ISBN ISBN 978-88-88942-48-3.
- **Del Ama, F.**, Saenz de Tejada, C., (2014) Energy production and management in buildings. Active glazing with water flow chamber. *Proceedings of 5th European Conference on Energy Efficiency and Sustainability in Architecture and Planning*, P81-88, San Sebastián, Spain. ISBN: 978-84-9082-003-2.
- Diaz, J.M., Hernandez, J.A., **Del Ama, F.**, (2014) Active Double and Triple Glazing Thermal Shield in Façades. *Proceedings of ASHRAE's First International Conference on Energy and Indoor Environment for Hot Climates*, P195-202, Doha, Qatar. ISBN 978-1-936504-69-5 94037.
- **Del Ama, F.**, Ariolfo, I., Hernandez J.A., (2012) Energy production and management in buildings. Active glazing with water flow chamber. *Proceedings of Energy Forum on Advanced Building Skins*, P49-53, Bressanone, Italy. ISBN: 978-3-98120535-0.
- **Del Ama, F.**, Sanchez, A.M., (2011) Acoustic behavior of Active Glazing facades with circulating water chamber. *Proceedings of III Congress on Geothermal Engineering and Buildings*. P117-124. Madrid, Spain. ISBN 978-84-615-8177-1.

External Funding

- Industrial Development of Water Flow Glazing Systems (InDeWaG). Grant number 680441 (H2020-EE-2015-1-PPP). SAVIOR VENTURE CAPITAL (GMAE TRANSFORMA S.L.) (SVC). Start Date: 01/09/2015. Duration: 42 Months.

- Ministry of Science and Technological Innovation, Spain. INNPACTO Program. Reserch Grant: 2,300,789.87€. 2011-2014. Intelligent System for Energy Management in Building Envelopes Rehabilitation based on IntelliGlass technology.
Participants and Budget:
STRUNOR CONSTRUCCIONES METÁLICAS, S.L. € 967,595.59
UNIVERSIDAD POLITECNICA DE MADRID € 493,800.00
INTELLIGLASS S.L. € 284,264.00 (**PI Fernando del Ama Gonzalo**)
SVAM ARQUITECTOS Y CONSULTORES, S.L.P. € 278.250,00
ZONA DE EXPERTOS 2009, S.L. € 276.880,28
- Ministry of Industry, Energy and Tourism. Avanza Competitividad I+D+I program. Reserch Grant: 2,764,341.37€. 2010-2013. Energy Management System in Buildings with RadiaGlass Technology.
Participants and Budget:
SEPARATOR, S.A € 437,333.00
UNIVERSIDAD POLITECNICA DE MADRID € 251,994.37
AMETSLAB S.L. € 616,092.00
ZONA DE EXPERTOS 2009, S.L. € 403.400,00
INTELLIGLASS S.L. € 377,186.00 (**PI Fernando del Ama Gonzalo**)
RUIZ-LARREA&ASOCIADOS S.L. € 310,736.00
EBCONSULTORES PROYECTOS E INGENIERÍA DE TELECOMUNICACIÓN SL € 367,600.00

HONORS

- | | |
|-------|---|
| 2011. | Best Patent: Active Transparent and Translucent Enclosures with Energy Control Capacity, madri+d awards in Madrid. |
| 2008. | Best Business Plan madri+d in Madrid Region. |
| 2007. | Best Business Plan of the IV Business Development Program for Technology Base Companies "ActúaUPM". |
| 2007. | Best Entrepreneurship Idea of the IV Business Development Program for Technology Base Companies "ActúaUPM". |
| 1997 | Faculty development grant CES CEU Arquitectura, Madrid. |
| 1996. | 1st Prize: Architectural Competition for the New Polytechnic School Building of San Pablo University. |
| 1996. | 1st Prize: 1st Competition for Young Architects LARCOVI. |
| 1993. | School of Architecture of Madrid annual award for the best Academic Performance. |

PROFESSIONAL EXPERIENCE:

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|------------|---|
| 2007-2014: | CEO of IntelliGlass S.L., spin off company founded by University researchers, architects and engineers. The company was born with the purpose of exploiting the active glazings technology developed by the founders of IntelliGlass. The second objective of the company was to simulate and design advanced HVAC systems for Net Zero Energy Buildings. |
| 2005–2009: | Secretary General. CES CEU Arquitectura. San Pablo CEU University. |
| 1998–2005: | Co- founder of CazorlaDelAma S.L., Architectural Bureau. |
| 1996–2000: | 3D Designer for videogame: "Blade, the Edge of Darkness".
Rebel Act Studios S.L. |

LICENCES / REGISTRATION:

Registered Architect. Colegio Oficial de Arquitectos de Madrid.