Olatz Irulegi Garmendia
PhD Architect, Associate Professor

Head of the Architecture Department ay
University of the Basque Country EHU
www.ehu.eus

Academic background

PhD Architect (2011, University of the Basque Country - EHU), Master in Sustainable Construction and Energy Efficiency (2009, University of the Basque Country - EHU) Master in Architectural Design (2007, University of Navarra). Architect (2004, University of the Basque Country EHU). during 2000-2002 she studied at the University of Stuttgart (Germany).

Teaching experience

Since 2006 he has been teaching in the area of Architectural Construction (Department of Architecture. Since 2010 she has taught the subject "Environmental Tools" in the Master in Research on Energy Efficiency and Sustainability in Industry, Transport, Building and Urban Planning (EHU). She has directed 3 Doctoral Thesis:

- Evaluation of the Passive House construction standard and its application in the climate context of the Basque Autonomous Community and the Autonomous Community of Navarre. The case of social housing.

-Design of positive energy buildings, energy self-sufficiency, and solar photovoltaic integration

-Advanced daytime radiative cooling: worldwide potential in the built-environment

Research experience

Member of CAVIAR Quality of Life in Architecture Research Group. https://caviarehu.eus

Leader of ongoing research projects:

-ETXELAGUN I - Housing prototype to mitigate and prevent unwanted loneliness (2024-2025).
-ETXEADIN: innovation study for adaptation of housing for active and independent aging (2025-2026).
- oPEN Lab: Open innovation living labs for Positive Energy Neighbourhoods. https://openlab-project.eu

Publications:

-Irulegi O., Ruiz-Pardo Á., Serra A., Salmerón J.M. Potential of night ventilative cooling strategies in office buildings in Spain - Comfort analysis. (2014) International Journal of Ventilation, 13 (2), pp. 193 – 210.

-Boemi S.-N., Irulegi O. The hotel industry: Current situation and its steps beyond sustainability (2015) Energy Performance of Buildings: Energy Efficiency and Built Environment in Temperate Climates, pp. 235 – 250.

-Barrutieta X., Kolbasnikova A., Irulegi O., Hernández R. Decision-making framework for positive energy building design through key performance indicators relating geometry, localization, energy and PV system integration (2023) Energy and Buildings, 297, art. no. 113442.

-Irulegi O., Serra A., Hernández R. Data on records of indoor temperature and relative humidity in a University building (2017) Data in Brief, 13, pp. 248 - 252

-Barrutieta X., Kolbasnikova A., Irulegi O., Hernández R. Energy balance and photovoltaic integration in positive energy buildings. Design and performance in built office case studies (2023) Architectural Science Review, 66 (1), pp. 26 - 41

-Barrutieta X., Gainza J., Irulegi O., Hernández R. The zero building: an exemplary nearly zero energy office building (NZEB) and its potential to become a positive energy building (PEB) (2023) Architectural Science Review, 66 (3), pp. 214 - 225

-Perez-Bezos S., Grijalba O., Irulegi O. Proposal for Prioritizing the Retrofitting of Residential Buildings in Energy Poverty Circumstances (2020) Environmental and Climate Technologies, 24 (3), pp. 66 - 79

-Irulegi O., Torres L., Serra A., Mendizabal I., Hernández R. The Ekihouse: An energy self-sufficient house based on passive design strategies (2014) Energy and Buildings, 83, pp. 57 - 69

-Irulegi O., Serra A., Hernández R., Ruiz-Pardo A., Torres L. Ventilated active façades to reduce heating demand in office buildings. The case of Spain [Fachadas ventiladas activas para reducir la demanda de calefacción en los edificios de oficinas. El caso de España] (2012) Informes de la Construccion, 64 (528), pp. 575 - 585

-Irulegi O., Serra A., Hernández R. Ecoefficient façades for office buildings (2014) Construction and Building Research, pp. 225 - 232

-Uriarte U., Irulegi O., Hernández R.J. Assessment of Shading Systems with Advanced Windows at Restaurants Under Sunny Climates in Spain (2025) Buildings, 15 (7), art. no.

-Carlosena L., Ruiz-Pardo Á., Feng J., Irulegi O., Hernández-Minguillón R.J., Santamouris M. On the energy potential of daytime radiative cooling for urban heat island mitigation (2020) Solar Energy, 208, pp. 430 - 444

-Cornago I., Ezquer M., Sorbet F.J., Kalms A., Diarce G., Irulegi O., Zaversky F. New approach of PV and thermal modeling to develop feasible cooling solutions for PV in buildings (2025) EPJ Photovoltaics, 16, art. no. 19

-Irulegi O., Serra A., Hernández R., Ruiz-Pardo A. Ventilated active façades to reduce the cooling demand of office buildings - The case of Spain (2011) International Journal of Ventilation, 10 (2), pp. 101 - 113

-Boemi S.-N., Irulegi O., Santamouris. Energy performance of buildings: Energy efficiency and built environment in temperate climates (2015) Energy Performance of Buildings: Energy Efficiency and Built Environment in Temperate Climates, pp. 543

-Grijalba O., Urrutia N., Eizaguirre-Iribar A., Irulegi O., Hernández R. Impact of the Public Management Model on the Implementation of Urban Regeneration Policies: Evidence of the Case of the Basque Country, Spain (2020) Planning Practice and Research, 35 (3), pp. 302 - 319

-Irulegi O. Tools and strategies for microclimatic analysis of the built environment (2015) Energy Performance of Buildings: Energy Efficiency and Built Environment in Temperate Climates, pp. 485 – 498

-Guillén-Mena V., Martin-Escudero K., Irulegi O. Integration of building archetypes and typological urban forms to assess energy performance and thermal comfort: Proposal of suitable parameters for Latin America (2025) Journal of Building Physics, 48 (6), pp. 1008 - 1048

-Kalms A., Cornago I., Ezquer M., Diaz de Garayo S., Arias A., Torres L., San Emeterio D., Irulegi O., Bouchotrouch F., De Groote M. "oPEN Lab" project as an underpin innovation for Positive Energy District solutions in Pamplona (2023) Journal of Physics: Conference Series, 2600 (8), art. no. 082029

-Carlosena L., Andueza Á., Torres L., Irulegi O., Hernández-Minguillón R.J., Sevilla J., Santamouris M. Experimental development and testing of low-cost scalable radiative cooling materials for building applications (2021) Solar Energy Materials and Solar Cells, 230, art. no. 111209

-Irulegi O., Ruiz-Pardo A., Serra A., Salmerón J.M., Vega R. Retrofit strategies towards Net Zero Energy Educational Buildings: A case study at the University of the Basque Country (2017) Energy and Buildings, 144, pp. 387 - 400