

**CURRICULUM VITAE ABREVIADO (CVA)**
**Fecha del CVA**
**06/07/2024**
**Part A. PERSONAL INFORMATION**

First name	Sergio Jesús		
Family name	Gómez	Melgar	
Gender	Male	Birth date (dd/mm/yyyy)	19/07/1974
Passport	PAG753128	ID number	44203312A
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Open Researcher and Contributor ID (ORCID)	0000-0003-0865-3607		

**A.1. Current position**

Position	Associate Professor (Profesor Titular de Universidad)		
Initial date	22/03/2024		
Institution	University of Huelva (UHU)		
Department/Center	DIMMEC	ETS Ingeniería	
Country	Spain	Teleph. number	687880714
Key words	Architecture and Urban design, Sustainable Building, Sustainable Cities, Energy Efficiency in Buildings and Urban spaces		

**A.2. Previous positions (research activity interruptions, indicate total months)**

Period	Position/Institution/Country/Interruption cause
2000-09-01 to 2023-05-02	CEO Architect (main position)/LAR Arquitectura SAP
2004-03-17 to 2004-10-28	Exceptional hire (partial time)/UHU
2004-10-29 to 2023-05-02	Adjunct Professor (partial time)/UHU
2017-09-27 to 2017-12-08	Visiting Associate Professor/Nanjing University
2018-10-01 to 2018-12-10	Visiting Associate Professor/Nanjing University
2022-09-01 to 2022-12-30	Visiting Associate Professor/Wentworth Institute of Technology
2023-05-02 to 2024-03-21	Associate Professor (Profesor Contratado Doctor)

**A.3. Education**

PhD, Licensed, Graduate	University/Country	Year
Ph.D	University of Huelva (UHU)	2017
Master Degree	University of Distanced Education (UNED)	2009
Bachelor Degree	University of Sevilla (US)	2000

**Part B. CV SUMMARY** (max. 5000 characters, including spaces)

My professional experience combines both Architectural design practice and Academia. I do research on sustainable architectural design and energy efficiency in buildings, communities and cities. I Work on [uhuMEB](#) and [uhuMEBr](#), a new methodology for the design, construction and operation of Minimum Energy Buildings (MEB), both new and retrofitted. I promote the standard [BIM/BEM](#) from the first steps of the architectural design

as part of the necessary holistic approach. I use on-site real measurements of physical variables (temperature, humidity, air quality, solar radiation, energy, etc.) and renewable sources ([solar](#), [geothermal](#) and hydrogen) integrated in the architecture of the building. I am experimenting with [UAV's](#) for improving the green [design of urban spaces](#). I am experienced in international collaborations and research all over the world.

I have full expertise and skilled experience conducting working teams as the CEO-Architect of [LAR Arquitectura](#) design company, with more than 500.000 m<sup>2</sup> of buildings and urban developments projected for public and private clients. Since 2024, this architecture firm has become part of the Technology, Energy and Sustainability Research Center ([CITES](#)), as a spin off company that transfers the results of the research developed by CITES to the industry and society. I am the director of the energy efficiency lab of CITES.

I have twenty years of experience as associate professor in University of Huelva UHU, teaching construction materials, resistance of materials, concrete structures, structures theory, calculus of foundations, etc. I have taught sustainable oriented design studios for architecture graduate and postgraduate students at [Nanjing University](#) NJU (Nanjing, China) in 2017 and 2018, and [Wentworth Institute of Technology](#) WIT (Boston, USA) in 2022.

I am co-directing three Ph.D. thesis, two of them in the final stage for publication. I have worked on four research projects. I have directed more than 25 master and final grade thesis. I have participated in 12 teaching innovation projects, three of them coordinated by me. I have conducted during 20 years an architectural company, leading its design team. I have co-edited three [special issues](#) for [Energies](#) and [Applied Sciences](#) journals. I have revised research papers for five different journals.

I have been awarded with two international distinctions for [Casa Zaranda](#) and [Aulario Universitario Isidoro Morales](#) (Maxiaulario UHU) for their contribution to energy efficiency in buildings.

## Part C. RELEVANT MERITS (sorted by typology)

### C.1. Publications (see instructions)

1. [Validation of Dynamic Natural Ventilation Protocols for Optimal Indoor Air Quality and Thermal Adaptive Comfort during the Winter Season in Subtropical-Climate School Buildings](#). Appl. Sci. 2024, 14, 4651. <https://doi.org/10.3390/app14114651>
2. [Design recommendations for the rehabilitation of an urban canyon in a subtropical climate region using aerial thermography and simulation tools](#). Energy and Buildings.2023-09.DOI: 10.1016/j.enbuild.2023.113525 Part of ISSN: 0378-7788
3. [Assessment of aerial thermography as a method of in situ measurement of radiant heat transfer in urban public spaces](#). Sustainable Cities and Society. 2022-12. DOI: 10.1016/j.scs.2022.104228 Part of ISSN: 2210-6707
4. [New Research Trends and Topics for Achieving Energy Efficiency in Buildings: Both New and Rehabilitated](#). Energies. 2022-01-25. DOI: 10.3390/en15030851
5. [A Critical Review of Unmanned Aerial Vehicles \(UAVs\) Use in Architecture and Urbanism: Scientometric and Bibliometric Analysis](#). Applied Sciences 2021-10-25. DOI: 10.3390/app11219966
6. [Impact of Global Warming in Subtropical Climate Buildings: Future Trends and Mitigation Strategies](#). Energies 2020-11-25. DOI: 10.3390/en13236188
7. [Matching Energy Consumption and Photovoltaic Production in a Retrofitted Dwelling in Subtropical Climate without a Backup System](#). Energies 2020-11-18. DOI: 10.3390/en13226026

8. [uhuMEBr: Energy Refurbishment of Existing Buildings in Subtropical Climates to Become Minimum Energy Buildings.](#) *Energies* 2020-03-05. DOI: 10.3390/en13051204
9. [Green Building Rating Systems and the New Framework Level\(s\): A Critical Review of Sustainability Certification within Europe.](#) *Energies* 2019-12-21. DOI: 10.3390/en13010066
10. [UhuMEB: Design, construction, and management methodology of minimum energy buildings in subtropical climates.](#) *Energies* 2018. DOI: 10.3390/en11102745. EID: 2-s2.0-85055505026
11. [A new metre for cheap, quick, reliable and simple thermal transmittance \(U-Value\) measurements in buildings.](#) *Sensors (Switzerland)*. 2017. DOI: 10.3390/s17092017. EID: 2-s2.0-85028710249
12. [Ground thermal diffusivity calculation by direct soil temperature measurement. application to very low enthalpy geothermal energy systems.](#) *Sensors (Switzerland)* 2016. DOI: 10.3390/s16030306. EID: 2-s2.0-84959359614

**C.2. Congress**, indicating the modality of their participation (invited conference, oral presentation, poster)

1. *Validation of numerical simulation of Mean radiant temperature using aerial thermography.* 19th Conference on Sustainable Development of Energy, Water and Environment System-[SDEWES2024](#). In press (September 8-12 2024. Rome, Italy)
2. *Comparative analysis of the thermal transmittance (U-Value) of a multilayer brick cladded facade in hot and cold periods.* [REHABEND2024](#) Congress on 'Construction Pathology, Rehabilitation Technology and Heritage Management' (May 07-10 2024, Gijón, Spain).
3. *The effect of Covid-19 natural ventilation protocol on winter season indoor comfort in schools at subtropical climate.* 5th International Conference on Civil Engineering, Architectural and Environmental Engineering ([CEAEE2021](#)) 2021/04/23-25 - China·Chengdu
4. *Remotely piloted aircraft system (RPAS) use in construction: a thermography inspection case study.* [ICIDAE 2021](#) March 17-19, 2021, Suzhou, China
5. *Social criteria to develop an in use holistic urban sustainability assessment tool: UHU2SAT.* 3rd International Symposium on Architecture Research Frontiers and Ecological Environment ([ARFEE 2020](#)) December 18-20, 2020, Zhangjiajie, China

**C.3. Research projects**, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. Title: [EREBA2020](#). Long-term strategy model to mobilize investments in the renovation of the national park of residential buildings in Andalusia aimed at saving 20% energy by 2020 (G-GI3000/IDI\_TEP192). Main researcher: José Manuel Andújar.  
Lines of research Sergio G. Melgar has been responsible: passive design, retrofit project and urban analysis.  
Funding Body: Andalusian Government, Regional Research Plan. Funding: 213.834,59 €. Project duration: 15-11-2013 – 30-06-2015.
2. Title: [AURORA](#). Autonomous Mobile Renewable Energy Generation Unit (ITC-20151392). Main researcher: José Manuel Andújar.  
Lines of research Sergio G. Melgar has been responsible: design and conditioning, according to the strictest energy efficiency parameters, of the containers housing the conditioning and control systems, battery storage and hydrogen systems.  
Funding Body: Feder Interconecta, CDTI. Funding: 2.042.822,43 €. Project duration: 01-12-2015 – 31-12-2017.
3. Title: Expansion of the Autonomous Hybrid Renewable Energy Systems Laboratory (UNHU15-CE-3264). Main researcher: José Manuel Andújar.  
Lines of research Sergio G. Melgar has been responsible: design, conditioning and equipment of the part of the laboratory (independent physical location) dedicated to "Energy

Efficiency in Buildings”, following parameters of energy efficiency, multifunction (application to diverse requirements), instrumentation and home automation of the latest technology.

Funding Body: Ministry of Economy and Competitiveness. Funding: 535.204,78 €. Project duration: 01-06-2016 – 31-12-2017.

4. Title: master plan for energy efficiency, generation of renewable energy and optimization of the thermal envelope of the project and construction works (Ref. 29/2018 Id. 1504).

Main researcher: José Manuel Andújar.

Lines of research Sergio G. Melgar has been responsible: passive optimization, energy efficiency and green spaces.

Funding Body: Otium Home S. L. Funding: 71.176,47 €. Project duration: 01-07-2018 – 31-06-2019.

**C.4. Contracts, technological or transfer merits**, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

1. Teaching contract at [Wentworth Institute of Technology](#), Boston, Massachusetts, US. 2022-09-01 to 2022-12-30 | Associate Visiting Professor ([School of Architecture and Design](#)). Employment. Name of the design studio (graduate senior students): Adaptive interventions. Role: Professor in charge.

2. Teaching contract at [Nanjing University](#): Nanjing, Jiangsu, CN. 2018-10-01 to 2018-12-10 | Visiting Associate Professor ([School of Architecture and Urban Planning](#)). Employment. Name of the design studio (postgraduate students): New green building strategies in China. From heritage to contemporary architecture (Architectural Technology Design). Role: Professor in charge.

3. Teaching contract at [Nanjing University](#): Nanjing, Jiangsu, CN. 2017-09-27 to 2017-12-08 | Visiting Associate Professor ([School of Architecture and Urban Planning](#)). Employment. Name of the design studio (postgraduate students): Sustainable architectural design, Smart building construction and Energy efficiency research. Role: Professor in charge.

4. Architectural design contract: City of seafood. Industrial building for the settlement of Huelva Port Industry related to fish and seafood transformation. Client: Huelva Port Authority. Role: Architect in charge (author of the concept design and construction design). Date: 2017. Location: [37°15'59.0"N 6°57'35.8"W](#)

5. Architectural design contract: Lepe central Library. Integral renovation of a 19 and 20th Century historical library and social house. Client: Lepe Municipality. Role: Architect in charge (author of the concept design and construction design). Date: 2021. Location: [37°15'11.2"N 7°12'11.7"W](#)

6. Architectural design contract: Casas del Carmen in Huelva (Spain). Dwellings energy retrofit associated to research project [EREBa2020](#). Pilot project of uhuMEBr methodology. Client: Andalucía Government. Role: Architect in charge (author of the concept design and construction design). Date: 2015. Location: [37°16'33.4"N 6°56'53.7"W](#)

7. Architectural design contract: [Isidoro Morales University Building](#) in Campus El Carmen, Huelva (Spain). Classroom building for High Technical School of Engineering. Architectural competition (1st). 72 kWp PV curtain wall, architectonically integrated. Client: University of Huelva. Role: Architect in charge (author of the concept design and construction design). Date: 2009. Location: [37°16'19.7"N 6°55'28.7"W](#)

8. Urban design contract: [Muelle de Levante Masterplan](#) in Huelva Port (Spain). Water front urban design project with 80.000 m<sup>2</sup>. Client: Huelva Port Authority. Role: Architect in charge (author of the concept design). Date: 2020. Location: [37°15'23.7"N 6°57'37.2"W](#)

9. Urban design contract: [Templetes urban space](#) in Huelva (Spain). Urban design project focused in the design of new open spaces for citizens (new park, childish games, pedestrian and bike ways, etc). Client: Huelva Municipality of Huelva. Role: Architect in charge (author of the concept design). Date: 2020. Location: [37°16'56.5"N 6°56'41.0"W](#)

10. Urban design contract: [Andalucía urban space](#) in Huelva (Spain). Urban design project focused in the design of new open spaces for citizens (new park, childish games, pedestrian and bike ways, etc). Client: Huelva Municipality of Huelva. Role: Architect in charge (author of the concept design). Date: 2020. Location: [37°16'57.1"N 6°56'34.9"W](#)

11. Urban design contract: Santa Marta pedestrian zone in Huelva (Spain). Urban design project focused in the design of new open spaces for citizens (new park, childish games, pedestrian and bike ways, etc). Client: Huelva Municipality of Huelva. Role: Architect in charge (author of the concept design). Date: 2020. Location: [37°16'37.9"N 6°56'22.1"W](#)