Sara Parece

Assistente Convidada
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Department of Digital Technologies (ETDA)

Contacts

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Curriculum

Sara Margarida Parece is a PhD candidate at Iscte – Instituto Universitário de Lisboa and a research assistant at ISTAR-Iscte. Her doctoral research, funded by the MIT Portugal Programme, investigates how digital construction technologies can improve environmental performance and material efficiency in the built environment.
Her work focuses on Building Information Modelling (BIM), Open BIM workflows and the integration of Life Cycle Assessment and energy simulation to evaluate embodied and operational carbon in building design.

She has experience in Python programming, Revit API development, BIM-based data workflows and data visualisation using Power BI. Her research interests include Circular Economy, Life Cycle Assessment, BIM-based decision support and digital construction.

Research Interests

- Circular Economy
- BIM
- Life Cycle Asssement
- Decision making

Embodied carbon
Operational Carbon

Academic Qualifications

University/Institution	Type	Degree	Period
University of Texas at Austin Cockrell School of Engineering	Training Session	TechLaunch Program	2025
Iscte - University Institute of Lisbon	PhD	Doctorate Degree (PhD) in Architecture of Contemporary Metropolitan Territories	2025
Iscte Sintra	Training Session	Curso Intensivo de Python Orientado a Objectos	2024
ADENE Agencia para a Energia	Training Session	LEED GA and LEED AP BD+C	2024
Massachusetts Institute of Technology	Other type of qualification	MIT Portugal Inovation Workshop	2024
Associação Passivhaus Portugal	Technical Specialization Course	Passive House Tradesperson	2024
ISCTE-Instituto Universitario de Lisboa	Technical Specialization Course	Seminário de Especialização em Ensino a Distância	2023
Universidade do Minho	Technical Specialization Course	Curso BIM 17º Edição	2023
Information Sciences and Technologies and Architecture Research Center (ISTAR)	Technical Specialization Course	Introdução à Modelação BIM com REVIT	2022
Information Sciences and Technologies and Architecture Research Center (ISTAR)	Technical Specialization Course	Programação gráfica em BIM, Dynamo para REVIT	2021
ISCTE-Instituto Universitario de Lisboa	M.Sc.	Mestrado Integrado em Arquitetura	2020

External Professional Activities

Period	Employer	Country	Description
2023 - 2023	Portuguese Architects Association	Portugal	Trainer in the course 'Bioclimatic Architecture and Energy Efficiency in the Azores' (B-learning), the general aim of which is to provide participants with the knowledge and skills to promote sustainable construction in the Azores, reducing en
2023 - 2023	Zumer Platform	Portugal	Lectured an introductory course on PYTHON and the Revit API

Teaching Activities

Teaching Year	Sem.	Course Name	Degree(s)	Coord.
2025/2026	2º	Sustainable Built Environment	Bachelor Degree in Digital Technology and Sustainable Built Environment;	No

Supervisions

- **M.Sc. Dissertations**

- Concluded

	Student Name	Title/Topic	Language	Institution	Concluding Year
1	Matilde dos Prazeres Cabaço de Carvalho Ferreira	AI-Based Tool for Automatic Hierarchical BIM Objects Classification	English	Iscte	2025

Total Citations

Web of Science®	71
Scopus	81

Publications

- **Scientific Journals**

- Scientific journal paper

1	Parece, S., Resende, R. & Rato, V. (2025). Stakeholder perspectives on BIM-LCA integration in building design: Adoption, challenges, and future directions. Building and Environment. 284 - Times Cited Web of Science®: 4 - Times Cited Scopus: 5 - Times Cited Google Scholar: 7
2	Parece, S., Resende, R. & Rato, V. (2025). BIM-based life cycle assessment: A systematic review on automation and decision-making during design. Building and Environment. 282 - Times Cited Web of Science®: 19 - Times Cited Scopus: 18 - Times Cited Google Scholar: 21
3	Parece, S., Resende, R. & Rato, V. (2024). A BIM-based tool for embodied carbon assessment using a construction classification system. Developments in the Built Environment. 19 - Times Cited Web of Science®: 32 - Times Cited Scopus: 35 - Times Cited Google Scholar: 47

4	Parece, S., Rato, V., Resende, R., Pinto, P. & Stellacci, S. (2022). A methodology to qualitatively select upcycled building materials from urban and industrial waste. Sustainability. 14 (6) - Times Cited Web of Science®: 16 - Times Cited Scopus: 21 - Times Cited Google Scholar: 27

• Books and Book Chapters

- Book chapter

1	Parece, S., Resende, R. & Rato, V. (2025). Current trends and challenges in BIM–LCA integration. In Leonor Marques Mano Domingos, Maria José Sousa (Ed.), Swarm Intelligence applications for the cities of the future. (pp. 187-218). Boca Raton: CRC Press. - Times Cited Scopus: 2 - Times Cited Google Scholar: 3
2	Resende, R. & Parece, S. (2024). Desafios do carbono Incorporado e da avaliação de ciclo de vida nos edifícios. In Joana Mourão, Nadir Bonaccorso (Ed.), Guia de formação em arquitetura bioclimática e eficiência energética dos Açores. (pp. 46-55). Ponta Delgada: Ordem dos Arquitectos – Secção Regional dos Açores.

• Conferences/Workshops and Talks

- Publication in conference proceedings

1	Domingos, L., Parece, S. & Resende, R. (2025). Optimising Sustainability through digital tools: Energy and Carbon Comparative Analysis of Brick, Concrete and Wood Frame construction envelopes in Coimbra Residences. In Formal Methods in Architecture - Proceesings of the 7th International Symposium on Formal Methods in Architecture (7FMA), Porto, 2024.: Springer.
2	Parece, S., Silva Pedro, T., Gonçalves, T., Rodrigues, P. & Resende, R. (2024). Uma ferramenta baseada em BIM para a avaliação expedita do carbono incorporado utilizando o sistema de classificação SECClasS. In António Aguiar Costa, Miguel Azenha (Ed.), 5º Congresso Português de Building Information Modelling. (pp. 223-235). Lisboa: UMinho Editora. - Times Cited Google Scholar: 1
3	Mendez, A., Cale, D., Salgado, F., Almeida, I., Miranda, J. M., Granja, J....Pedro, T. (2022). Projeto SECCLASS: O desenvolvimento de um sistema de classificação da construção com componente de sustentabilidade adaptado ao BIM. In Azenha, M., Lino, J. C., Granja, J., Figueiredo, B., e Martins, J. P. (Ed.), 4º Congresso Português de Building Information Modelling - ptBIM. (pp. 268-278). Braga: UMinho Editora. - Times Cited Google Scholar: 4

- Talk

1	Parece, S. (2024). Uma ferramenta baseada em BIM para a avaliação expedita do carbono incorporado utilizando o sistema de classificação SECClasS. 5º Congresso Português de Building Information Modelling.
2	Parece, S., Resende, R. & Rato, V. (2024). Addressing Material Efficiency in Building Renovation Scenarios A BIM-based decision support tool. Encontro Ciência 2024.
3	Domingos, L., Parece, S. & Resende, R. (2024). Optimizing sustainability through digital tools Energy and carbon comparative analysis of brick, concrete and wood frame constructions in Coimbra residences. Formal Methods in Architecture 2024.

4	Parece, S., Resende, R. & Rato, V. (2024). Addressing Material Efficiency in Building Renovation Scenarios, A BIM-based decision support tool. 2024 MIT Portugal Program Annual Conference: Ideias to Impact.
5	Resende, R. & Parece, S. (2022). Avaliação expedita do carbono incorporado em modelos BIM classificados com o sistema de classificação SECClasS. Seminário Prático - Como fazer uma análise de sustentabilidade com BIM HOJE?.

• Other Publications

- Master's Dissertation

1	Parece, S. (2020). De resíduo a elemento arquitetónico: construção a partir de resíduos industriais e urbanos.

- Newspaper article

1	Parece, S. & Stellacci, S. (2025). A digitalização urbana: novas ferramentas para a análise e intervenção no território. Intelcities. 20, 36-37

- Report

1	Lima,R., Couto, P., Falcão, M.J., Salgado,F., Resende, R. & Parece, S. (2021). Análise de conceitos, normas e sistemas de classificação da informação da construção.

Research Projects

Project Title	Role in Project	Partners	Period
Sustainability Enhanced Construction Classification System	Researcher	ISTAR-Iscte (DLS) - Leader, LNEC - (Portugal), UM - (Portugal), A Lab - (Norway), MC - (Portugal)	2021 - 2022

Awards

Best Poster "Sustainable Cities" | MIT Portugal Program Student Poster Award 2024 (2024)

ISTA TOP TALENT - Mérito académico de estudantes da ISTA (2020)

Research Networks

Research Network Name	Representative Role	Period
BuildingSmart Portugal _ Grupo de Trabalho Sustentabilidade	Membro	2026

Organization/Coordination of Events

Type of Organization/Coordination	Event Title	Organizer	Year
Coordination of non-scientific event	Workshop PTBIM SECCLASS Workshop Part 2 - Digital and Sustainable Construction	PTBIM22	2022

Diffusion Activities

Activity Type	Event Title	Activity Description	Year
Talk/Conference in public diffusion event	Talk on Building Life Cycle Assessment in the Building Systems Curriculum Unit from Digital Technologies and Sustainable Built Environment course		2024