Architecture, Energy and Climate

Introdução a edifícios mais que sustentáveis

DGERT ENTIDADE FORMADORA CERTIFICADA

Braga
16, 23, 24, 30, 31 de maio
Lisboa
Datas: 13, 14, 15, 21, 22 de junho

Organizadores:

portal de arquitetura pcs e construção sustentável

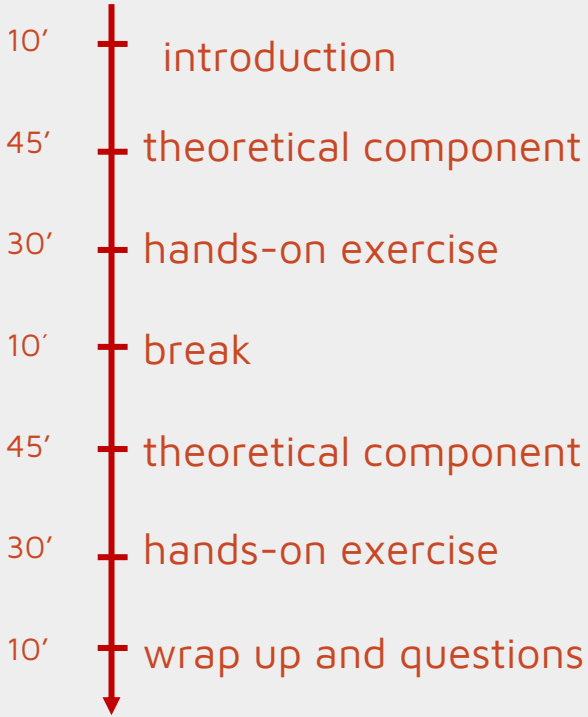
Dosta Tec

Introduction

The Architecture, Engineering and Construction (AEC) industry is responsible for 40% of anthropogenic greenhouse gas emissions globally. Understanding carbon and energy flows in buildings is crucial to combat climate change and create a positive impact on the environment. Life Cycle Assessment is a method that allows balancing between embodied and operational carbon, to minimise overall building emissions. Daylight is one of the elements that influence human health, well-being and productivity within the built environment.

A three-day intensive hands-on course will introduce architects to the concepts related to embodied carbon, operational energy and carbon, and daylight availability. Practical exercises will be complemented with comprehensive theoretical sessions that enable participants to understand good practices and interpret the outcomes of the simulations.

Training methodology



The training is held in a presencial mode, in four sessions of 3hs each over the course of two or four weeks.

Sessions are divided into complementary **theoretical** and practical parts that balance out knowledge and **hands-on work**.

Additional learning materials will be provided to the participants.

Initially we propose two location of the courses in Lisbon and Porto, each course for maximum 25 participants. The course can be in English or Portuguese.

Proposed content

Session 1:
History and evolution of sustainable construction
[PSC]

a) Sustainability applied to buildings Advances and Transformations in Construction
b) State of the Art in Portugal
c) Sustainability and the economy of buildings
d) Circular economy in the building sector
e) More sustainable materials?
f) International Organization for Standardization (ISO)
g) Sustainable Value ISO 14024:2018

Session 2:
Architecture & Climate
[Dosta Tec]

a) Introduction
b) Climate change and architecture
c) Regenerative design
d) IPCC on building challenges
e) Passive measures for different climate zones
f) Nearly-Zero Energy Buildings
g) Biophilia, Bioclimatic & Salutogenesis

Session 3:
Energy in Buildings
[Dosta Tec]

a) Introduction to Energy in Buildings
b) Energy intensity and end uses (stats, indicators, ESG reporting)
c) Introduction to heat flow
d) Carbon intensity of energy sources
e) On-site generation
f) Thermal Comfort
g) Energy simulation tools
h) Efficient lighting
i) Smart Metering and Energy Management Systems

Proposed content

Session 4:
Daylight in Buildings
[Dosta Tec]

a) Daylight and buildings
b) On light and daylight
c) Impact of daylight on health and well-being
d) Daylight and building energy performance
e) Daylight Indicators (Spatial Daylight Autonomy, Continuous Daylight Autonomy, Annual Sunlight Exposure, Daylight Factor, Glare, Alertness)
f) Daylight in certification systems and standards
g) The value of the view
h) Reading simulation

Session 5:
Life Cycle Assessment: Carbon
[Dosta Tec]

a) LCA standard: ISO 14040
b) Embodied carbon and energy
c) Environmental Product Declaration: materials environmental impact (cradle to gate, cradle to grave, cradle to cradle)
d) Material certification and labels (C2C, Declare)
e) Circular Buildings (design to disassembly, modular design)

Instructors

Adrian Krężlik

Architect, PhD student and researcher at the Faculty of Architecture of the University of Porto.

Within the regenerative framework, he researches the impact of architecture on the environment. He graduated from the Technical University of Łódź (Poland), worked for Zaha Hadid Architects in London (UK), and later for Fernando Romero and Rojkind Arquitectos in Mexico City (Mexico).

He has conducted over 150 workshops and lectured in Berlin, Copenhagen, Helsinki, Barcelona, Lisbon, Cairo and Warsaw to list some. He is a Senior Lecturer at SWPS University in Warsaw and was an Assistant Professor at Weißensee Kunsthochschule in Berlin.

Mateo Barbero

Industrial Engineer, specialised in Sustainable Energy Systems through the MIT Portugal program at the University of Porto.

As a Researcher at INESC TEC's Centre for Power and Energy Systems (CPES), he developed research projects in the area of building energy services, energy efficiency, and sustainable cities, in both the private and public sectors.

Graduated from the Buenos Aires Institute of Technology (ITBA, Argentina), he first worked in software development and later in consultancy for the energy sector. He has developed and held training courses and practical workshops on decision support, stochastic analysis, and energy modelling, with experience working on-site in Latin America, China, and Europe.

Aline Guerreiro

Architect since 1995 and pre-Bologna Master by Instituto Superior Técnico de Lisboa. She has frequently been invited to give presentations on "Energy Efficiency in Buildings" and "Sustainable Construction" in Undergraduate and Master's Degrees of various Universities and Polytechnic Institutes. The projects she coordinates respect the premises of sustainability in construction. She was a teaching assistant in the discipline of Architecture for the Degree in Civil Engineering at the Instituto Superior Técnico in Lisbon. She was a consultant at IHRU - Instituto de Habitação e Reabilitação Urbana (Housing and Urban Rehabilitation Institute) in Sustainable Construction.

She founded and coordinates the Sustainable Construction Portal since 2010 (www.csustentavel.com). She is the author of several publications on Sustainable Construction and of a Guide for the selective deconstruction of buildings. She is finishing her PhD at the Architecture School of the University of Minho, in the same area with focus on building rehabilitation.

Details

Place: Lisbon
Price: 275€
(-25% students, members of Ordem de Arquitetos,
members of Ordem de Engenheiros, Members PCS)
Dates:13, 14, 15, 21, 22 de june
Time: 18:00-21:00

Place: Braga, Rua dos Chãos 84
Price: 275€
(-25% students, members of Ordem de Arquitetos,
members of Ordem de Engenheiros, Members PCS)
Dates:16, 23, 24, 30, 31 de maio
Time: 18:00-21:00

Notes:
This training action is certified by DGERT and it is possible to request a certificate via SIGO.
The slides of this action are presented in English, however all trainers speak Portuguese.

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Dosta Tec

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