

# PROGRAMME

## 2<sup>nd</sup> Edition of the International Conference on Zero Carbon Built Environment

---

8 - 10 July 2026

Lisbon, Portugal



ORGANIZATION:



WITH THE SUPPORT OF





## CONFERENCE CHAIRS

Laura Aelenei  
National Energy and Geology Laboratory – LNEG  
PORTUGAL

Daniel Aelenei  
NOVA University Lisbon  
PORTUGAL

Yupeng (Jack) Wu  
University of Nottingham  
UK

Mattia de Rosa  
University of Genoa  
ITALY

## ORGANIZATION COMMITTEE

Helder Gonçalves, Susana Viana, Henriqueta Teixeira, Filipe Barreira, David Loureiro (LNEG, Portugal)

Evdokia Bairampa (Three o'clock, France)

Vicky Albert-Seifried (Fraunhofer ISE, Germany)

Joaquim Teixeira, Guilherme Coelho, André Francisco (NOVA FCT, Portugal)

Saveria Boulanger (University of Bologna, Italy)



# Welcome

Dear colleagues,

It is our great pleasure to welcome you to Lisbon and to the 2nd International Conference on Zero Carbon Built Environment — ZCBE 2026.

Jointly organized by the Portuguese National Laboratory of Energy and Geology (LNEG), NOVA School of Science and Technology (NOVA FCT), and the University of Nottingham, with the support of the European projects SHERLOCK, WeGenerate, and SOLACE, this second edition brings together researchers, professionals, students, and decision-makers committed to advancing the transition towards a zero-emission built environment.

Following the success of the first edition, ZCBE 2026 offers a forum for sharing knowledge, discussing emerging research, and strengthening collaboration across disciplines and sectors. Over these three days, the programme includes student workshops, keynote lectures, technical sessions, and opportunities for informal exchange among participants.

The built environment plays a central role in addressing climate change, reducing energy demand, and accelerating the integration of renewable energy solutions. Through the contributions presented at this conference, we hope to promote new ideas, practical strategies, and lasting partnerships that support the path towards carbon-neutral and resilient buildings and communities.

We thank all authors, speakers, session chairs, reviewers, sponsors, partners, and delegates for their valuable contribution to ZCBE 2026.

We wish you a productive and enjoyable conference, and we hope you enjoy your time in Lisbon.

Laura Aelenei, Daniel Aelenei, Yupeng (Jack) Wu and Mattia de Rosa

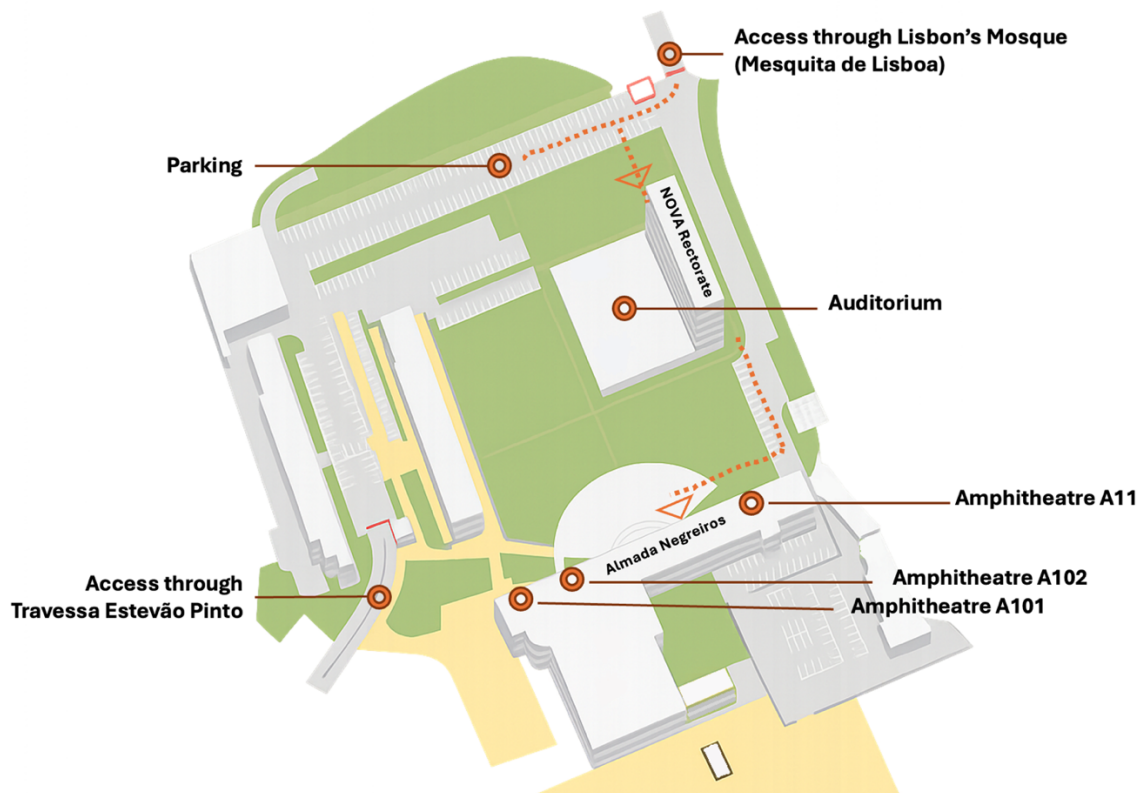
## Venue

**Location:** Rectorate of Universidade NOVA de Lisboa, Travessa Estevão Pinto 1099-085 Lisbon

**Registrations and welcome desk:** 9 and 10 July, NOVA Rectorate

**Sessions:** 9 and 10 July

Plenary sessions will take place in the Rectorate Auditorium. Parallel sessions will take place in the Rectorate Auditorium and Amphitheatres A11, A101 and A102 in the Almada Negreiros building.



## Tracks, Special Sessions and Session Codes

| Code     | Track/Session                                           | Scope                                                                                                  |
|----------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| CES      | Climate, Environment and Society                        | Climate resilience, health, wellbeing, indoor environmental quality, urban microclimate and adaptation |
| DMC      | Design, Materials and Construction                      | Building design, materials, construction systems, envelopes, façades, circular economy and LCA         |
| TI       | Technology and Innovation                               | HVAC systems, renewable energy, digitalisation, AI, BIM, digital twins and data-driven approaches      |
| PGS      | Policy, Governance and Skills                           | Policy frameworks, governance models, skills, education and emerging research                          |
| SHERLOCK | Supporting the Energy Transition for the Building Stock | SHERLOCK Project Special Session                                                                       |
| WEG      | People-Centric and Sustainable Urban Regeneration       | WeGenerate Project Special Session                                                                     |

| Session Code | Session Title                                                              |
|--------------|----------------------------------------------------------------------------|
| DMC-1A       | Building Performance and Decarbonisation                                   |
| DMC-2A       | Building Envelopes and Façades I                                           |
| DMC-2B       | Building Envelopes and Façades II                                          |
| DMC-3A       | Retrofit, Rehabilitation and Renovation                                    |
| DMC-4A       | Circular Economy, Materials and LCA I                                      |
| DMC-4B       | Circular Economy, Materials and LCA II)                                    |
| DMC-5A       | Adaptive Façades, Passive Systems and Bioclimatic Design                   |
| DMC-6A       | Sustainable Materials and Digital Retrofit Workflows                       |
| TI-1A        | HVAC, Cooling and Low-Carbon Systems I                                     |
| TI-1B        | HVAC, Cooling and Low-Carbon Systems II                                    |
| TI-2A        | Renewable Energy and PV I                                                  |
| TI-2B        | Renewable Energy and PV II                                                 |
| TI-3A        | Energy Communities, Flexibility and Smart Grids                            |
| TI-4A        | Digitalisation, AI and Forecasting                                         |
| TI-4B        | Artificial Intelligence and Data-Driven Approaches                         |
| TI-5A        | Digital Twins, BIM and Data-Driven Approaches                              |
| MIX-1A       | Emerging Technologies and Digital Workflows                                |
| CES-1A       | Low-Carbon Communities and Energy Communities                              |
| CES-2A       | Health, Wellbeing and Indoor Environmental Quality                         |
| CES-3A       | Climate Resilience and Urban Microclimate                                  |
| CES-4A       | Climate Adaptation, Heat Risk and Resilience                               |
| PGS-1A       | Policy, Governance, Skills and Emerging Research                           |
| SHERLOCK     | Supporting the Energy Transition for the Building Stock - SHERLOCK Project |
| WEG          | People-Centric and Sustainable Urban Regeneration - WeGenerate Project     |

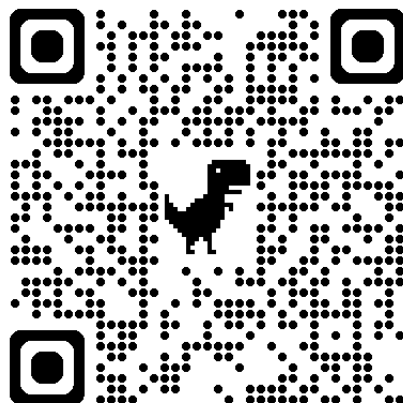
## ZCBE 2026 Programme

Note: Numbers in the timetable refer to paper IDs. Full paper titles and authors' names will be included in the detailed programme, which will be made available at a later stage.

| 9 July, Thursday |         |                                                                                                                                       |            |             |             |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------|
| 8:00-9:00        | 60 mins | Registration and Welcome Desk (NOVA Rectorate)                                                                                        |            |             |             |
|                  |         | Opening and Welcome Addresses (Auditorium A - NOVA Rectorate)                                                                         |            |             |             |
| 9:00             | 30 mins | Dr. Laura Aelenei, Prof. Daniel Aelenei, Prof. Yupeng (Jack) Wu, Prof. Mattia de Rosa, Prof. Teresa Ponce de Leão, Prof. Júlia Seixas |            |             |             |
| 9:30             | 60 mins | Keynote Lecture – Prof. Paulo Ferrão (Auditorium)                                                                                     |            |             |             |
|                  |         | Keynote Lecture – Prof. Vasco Rato (Auditorium)                                                                                       |            |             |             |
| 10:30-11:00      | 30 mins | Coffee Break                                                                                                                          |            |             |             |
| Tracks/Rooms     |         | TI-1A/Auditorium                                                                                                                      | DMC-1A/A11 | TI-4A/A102  | DMC-2A/A101 |
|                  | 15 mins | 162                                                                                                                                   | 15         | 10          | 27          |
|                  | 15 mins | 170                                                                                                                                   | 20         | 32          | 73          |
| 11:00-12:30      | 15 mins | 199                                                                                                                                   | 28         | 52          | 84          |
|                  | 15 mins | 200                                                                                                                                   | 99         | 21          | 90          |
|                  | 15 mins | 215                                                                                                                                   | 115        | 74          | 94          |
|                  | 15 mins | 5                                                                                                                                     | 136        | 126         | 97          |
| 12:30-13:30      | 60 mins | Lunch (NOVA Rectorate)                                                                                                                |            |             |             |
| 13:30-14:00      | 25 mins | Keynote Lecture – Prof. Koen Steemers (Auditorium)                                                                                    |            |             |             |
| Tracks/Rooms     |         | WEG/Auditorium                                                                                                                        | DMC-4A/A11 | TI-1B/A102  | DMC-4B/101  |
|                  | 15 mins | 24                                                                                                                                    | 141        | 25          | 36          |
|                  | 15 mins | 26                                                                                                                                    | 145        | 54          | 38          |
|                  | 15 mins | 30                                                                                                                                    | 151        | 59          | 96          |
| 14:00-16:00      | 15 mins | 47                                                                                                                                    | 152        | 167         | 33          |
|                  | 15 mins | 49                                                                                                                                    | 194        | 112         | 34          |
|                  | 15 mins | 63                                                                                                                                    | 210        | 142         | 204         |
|                  | 15 mins | 65                                                                                                                                    | 211        | 17          | 175         |
|                  | 15 mins | 216                                                                                                                                   | 202        | 41          | 89          |
| 16:00-16:20      | 20 mins | Coffee Break (NOVA Rectorate)                                                                                                         |            |             |             |
| 16:20-16:45      | 25 mins | Keynote Lecture – Prof. Wangda Zuo (Auditorium)                                                                                       |            |             |             |
| Tracks/Rooms     |         | DMC-5A/Auditorium                                                                                                                     | CES-2A/A11 | PGS-1A/A102 | CES-3A/A101 |
|                  | 15 mins | 117                                                                                                                                   | 88         | 184         | 6           |
|                  | 15 mins | 51                                                                                                                                    | 111        | 209         | 56          |
| 16:45-18:15      | 15 mins | 138                                                                                                                                   | 219        | 22          | 103         |
|                  | 15 mins | 153                                                                                                                                   | 174        | 60          | 132         |
|                  | 15 mins | 198                                                                                                                                   | 182        | 201         | 150         |
|                  | 15 mins | 3                                                                                                                                     | 118        | 218         | 163         |
| 18:30-19:30      | 60 mins | Cocktail (NOVA Rectorate)                                                                                                             |            |             |             |
| 19:30-20:30      | 60 mins | Musical Performance (Auditorium)                                                                                                      |            |             |             |

| 10 July 2026 |          |                                                                                                                                                   |            |             |             |
|--------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|-------------|
| Time         | Duration |                                                                                                                                                   |            |             |             |
| 8:30-9:00    |          | <b>Registration and Welcome Desk (NOVA Rectorate)</b>                                                                                             |            |             |             |
|              |          | <b>SHERLOCK (Auditorium – NOVA Rectorate)</b>                                                                                                     |            |             |             |
| 9:00         | 15 mins  | Introduction – Prof. Mattia de Rosa                                                                                                               |            |             |             |
| 9:15         | 25 mins  | Keynote Lecture – Prof. Veronica Soerbato                                                                                                         |            |             |             |
| 9:40         | 25 mins  | Keynote Lecture – Prof. Christos Markides                                                                                                         |            |             |             |
| 10:05        | 15 mins  | Smart Management for Energy Efficiency and Indoor Environmental Quality:<br>the IBIS-ECO project experience (110) – Dr.Carmelina Cosmi            |            |             |             |
| 10:20        | 15 mins  | A Framework for Advancing Energy Transition through Local Renewable Energy Integration<br>in Small Urban Systems (9) – Prof. Carlos Varga Salgado |            |             |             |
| 10:35-11:00  | 25 mins  | <i>Coffee Break</i>                                                                                                                               |            |             |             |
| Track/Rooms  |          | Sherlock/Auditorium                                                                                                                               | DMC-3A/A11 | CES-1A/A102 | TI-5A/A101  |
|              | 15 mins  | 147                                                                                                                                               | 134        | 48          | 57          |
|              | 15 mins  | 58                                                                                                                                                | 173        | 62          | 95          |
| 11:00-12:30  | 15 mins  | 44                                                                                                                                                | 177        | 107         | 116         |
|              | 15 mins  | 168                                                                                                                                               | 195        | 108         | 128         |
|              | 15 mins  | 104                                                                                                                                               | 208        | 109         | 78          |
|              | 15 mins  | 125                                                                                                                                               | 146        | 164         | 31          |
| 12:30-13:30  | 60 mins  | <i>Lunch and Group Photo</i>                                                                                                                      |            |             |             |
| 13:30-14:00  | 25 mins  | Keynote Lecture – Prof. Soteris Kalogirou (Auditorium)                                                                                            |            |             |             |
| Tracks/Rooms |          | TI-2B/Auditorium                                                                                                                                  | DMC-2B/A11 | TI-3A/A102  | DMC-6A/A101 |
|              | 15 mins  | 185                                                                                                                                               | 7          | 2           | 120         |
|              | 15 mins  | 12                                                                                                                                                | 42         | 14          | 133         |
|              | 15 mins  | 69                                                                                                                                                | 119        | 35          | 157         |
| 14:00-15:45  | 15 mins  | 50                                                                                                                                                | 80         | 53          | 188         |
|              | 15 mins  | 72                                                                                                                                                | 83         | 75          | 85          |
|              | 15 mins  | 113                                                                                                                                               | 8          | 76          | 139         |
|              | 15 mins  | 70                                                                                                                                                | 217        | 87          | 18          |
| 15:45-16:00  | 15 mins  | <i>Coffee Break</i>                                                                                                                               |            |             |             |
| 16:00-16:25  | 25 mins  | Keynote Lecture – Prof. Denia Kolokotsa (Auditorium)                                                                                              |            |             |             |
| Tracks/Rooms |          | TI-2A/Auditorium                                                                                                                                  | CES-4A/A11 | TI-4B/A102  | MIX-1A/A101 |
|              | 15 mins  | 137                                                                                                                                               | 135        | 178         | 187         |
| 16:25-17:25  | 15 mins  | 105                                                                                                                                               | 140        | 186         | 212         |
|              | 15 mins  | 129                                                                                                                                               | 149        | 171         | 158         |
|              | 15 mins  | 130                                                                                                                                               | 165        | 179         | 191         |
| 17:30-18:00  | 30 mins  | Closing Ceremony (Auditorium)                                                                                                                     |            |             |             |
| 20:00        |          | Official Dinner (Páteo Velho Restaurant)                                                                                                          |            |             |             |

The full programme and session details are available in the online extended programme.



ORGANIZATION:



WITH THE SUPPORT OF

