



POLITÉCNICA



THINK TANK SUSTAINABLE BUILDINGS
EUROPEAN SPACE AGENCY
EUROPEAN SPACE ASTRONOMY CENTRE
SUSTAINABLE BCC EELISA COMMUNITY



THINK TANK ESA-ESAC - SUSTAINABLE BCC : SUSTAINABLE BUILDINGS



What is EELISA
European University



EELISA
European University

The **European Engineering Learning Innovation and Science Alliance (EELISA)** is the first alliance of Higher Education Institutions from different countries in Europe meant to define and implement a **common model of *European engineer*** rooted in society.

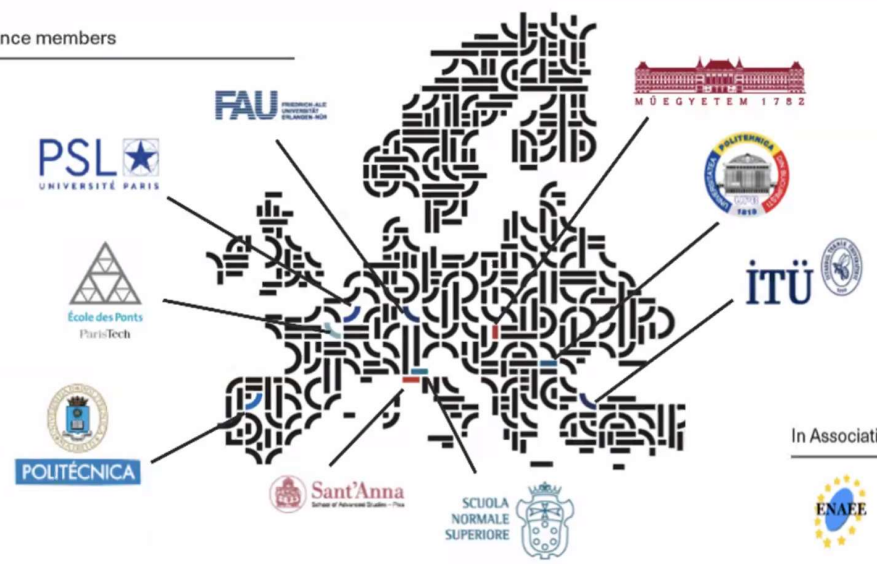


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Who is EQUIS European University

Alliance members



In Association with



Alliance Members

"Where Knowledge, Technical Innovations and Social Commitment Meet" is the motif of this alliance, led by Universidad Politécnica de Madrid, that brings together nine of the most prestigious universities of Europe. All with different sizes, history and disciplines but same goal – to transform European Tech Higher Education.



Budapesti Műszaki és Gazdaságtudományi Egyetem



École des Ponts ParisTech
Ecole des Ponts ParisTech, created in 1747 under the name Ecole Royale



Friedrich-Alexander-Universität Erlangen-Nürnberg



İstanbul Teknik Üniversitesi



Scuola Normale Superiore



Scuola Superiore Sant'Anna



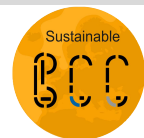
Universitatea Politehnica din București



Université Paris Sciences et Lettres



Universidad Politécnica de Madrid



What are the EELISA communities European University

Diverse and ever-expanding nodes where education, research, professional experience, and societal challenges merge.

The EELISA communities are mission-driven working groups that bring together students, teachers, and researchers from all partner universities with prestigious professionals, grassroots organizations, citizens, private companies, and public institutions to find innovative solutions to real-world challenges.

Each community will define its main elements: mission, challenges, people/organization, activities, and evaluation criteria.





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Our community SUSTAINABLE BCC

SUSTAINABLE BCC. TECHNICAL AND SOCIAL CHALLENGES FOR SUSTAINABLE BUILDINGS, CITIES AND COMMUNITIES



Foster a European university ecosystem to leverage synergies, to innovate and educate by stimulating technical and social challenges for more efficient and sustainable buildings, cities and communities.



UNIVERSIDAD
POLITÉCNICA
DE MADRID



Our community SUSTAINABLE BCC



- Around **120 professors & Researchers**
 - UPM — 65 (From 8 schools and 13 Departments)
 - BUDAPEST — 10
 - ITU — 19
 - PARIS TECH — 9
 - PSL 5
 - S. NORMALE SUPERIORE — 2
 - S. SUPERIORE ST' ANNA — 2 (5-6)
 - FAU — Pending confirmation
- 5 Big Professional associations
- 2 Foundations (EEF) + Non-profit organization (GBCE)
- 2 Research Centres in Spain + 1 in Turkey
- 9 companies + 10 professionals
- ITU ARI — 400 companies



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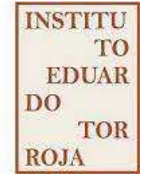


Our partners in SUSTAINABLE BCC

Professional associations



Research institutions



Companies



Foundations



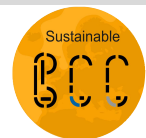
energy endeavour FOUNDATION



Fundación Miguel Aguiló

Non-profit organization





THINK TANK ESA–ESAC - SUSTAINABLE BCC : **SUSTAINABLE BUILDINGS**



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Our activities in **SUSTAINABLE BCC**



With **BOTTOM-UP** initiatives

NOT studying BUT..... **Imagining, creating, solving, doing, exploring, participating.....**

A bottom-up activity :**THINK TANK SUSTAINABLE BUILDINGS ESA – ESAC - SUSTAINABLE BCC**



With **TOP-DOWN** projects

Solar Decathlon: SDE25 +

Shared Solar Decathlon - SUSBCC infrastructure

IUR-LAB Integrated Urban Regeneration Living-Lab

GESLAB Global Energy & Sustainable Laboratory in Building



To support more efficient and sustainable buildings, cities and communities



THINK TANK SUSTAINABLE BUILDINGS ESA – ESAC - SUSTAINABLE BCC EELISA COMMUNITY

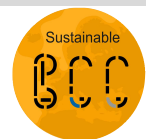


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23rd to 27th January 2023

**Welcome to the environment in which you will be operating in the coming years
of your professional career: SUSTAINABLE&DIGITAL BUILDINGS**



THINK TANK ESA-ESAC - SUSTAINABLE BCC : SUSTAINABLE BUILDINGS



The Activity:

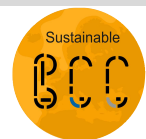
The ESA-ESAC - SUSTAINABLE BCC think tank is an educational activity to promote innovation and generate fresh ideas to launch a comprehensive sustainable refurbishment of the European Space Agency (ESA) building “A” in Spain. Together with ESA-ESAC (partner of SUSBCC) we will organise a high impact activity consisting of a large think tank, with the participating students and the support of professors, researchers, and professionals, to undertake a comprehensive rehabilitation operation in the spirit of the New European Bauhaus and with the triple bottom line approach of sustainability (social, economic, and environmental).

This activity is a very good opportunity for students who participate both in person and virtually, to acquire a global and integrative vision from the spirit of the New European Bauhaus and sustainability, gaining awareness and commitment to social, economic, energy, and environmental concerns, as well as discovering the potential offered by current digital trends to support and promote them from a perspective of efficiency.

This activity will take place in a creative and collaborative international environment with the participation of an estimated 300 international students and more than 100 international professors, researchers and professionals.



[https://www.esa.int/About Us/ESAC](https://www.esa.int/About_Us/ESAC)



THINK TANK ESA—ESAC - SUSTAINABLE BCC : SUSTAINABLE BUILDINGS



What participating students gain:

Lifetime experience in Madrid

Enjoy a special and exciting experience collaborating with other EELISA students in Madrid, working together with our experts and professionals, enjoying our party, with a visit to the control and monitoring headquarters for ESA's space telescopes and planetary missions... Unforgettable

Knowledge:

Students will work in a fully international event conducted in English. Students will receive an extensive background information with knowledge on all topics related to social, economic, energy and environmental sustainability, digital tools, and integration according to the New European Bauhaus for more efficient and sustainable buildings

Skills and competences:

Students will develop multiple skills and abilities beyond the linguistic ones, such as learning to think analytically, working and reflecting in diffuse environments, teamworking, collaborative work, ability to reach agreements, capacity for integration and synthesis, and **multidisciplinary enrichment** by the participation of students, professors, researchers, and professionals from many different disciplines (architects, engineers, economists, sociologists, facility managers, psychologists, ...).

Global awareness and commitment

Most importantly, global awareness and commitment to the need to foster more efficient and sustainable buildings, cities and communities. Welcome to the action!!

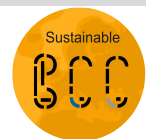
Acknowledgements:

Participating students will have a recognition of 2 ECTS credits of free configuration by the UPM (local validation to be carried out in each home university by students).

Students will receive from 2 to 4 badges for their EELISA credentials according to their active fully participation in the ESA-ESAC - SUSBCC Think tank.

Students participating in at least two workshops of your choice will receive 1 badge (no ECTS recognition)

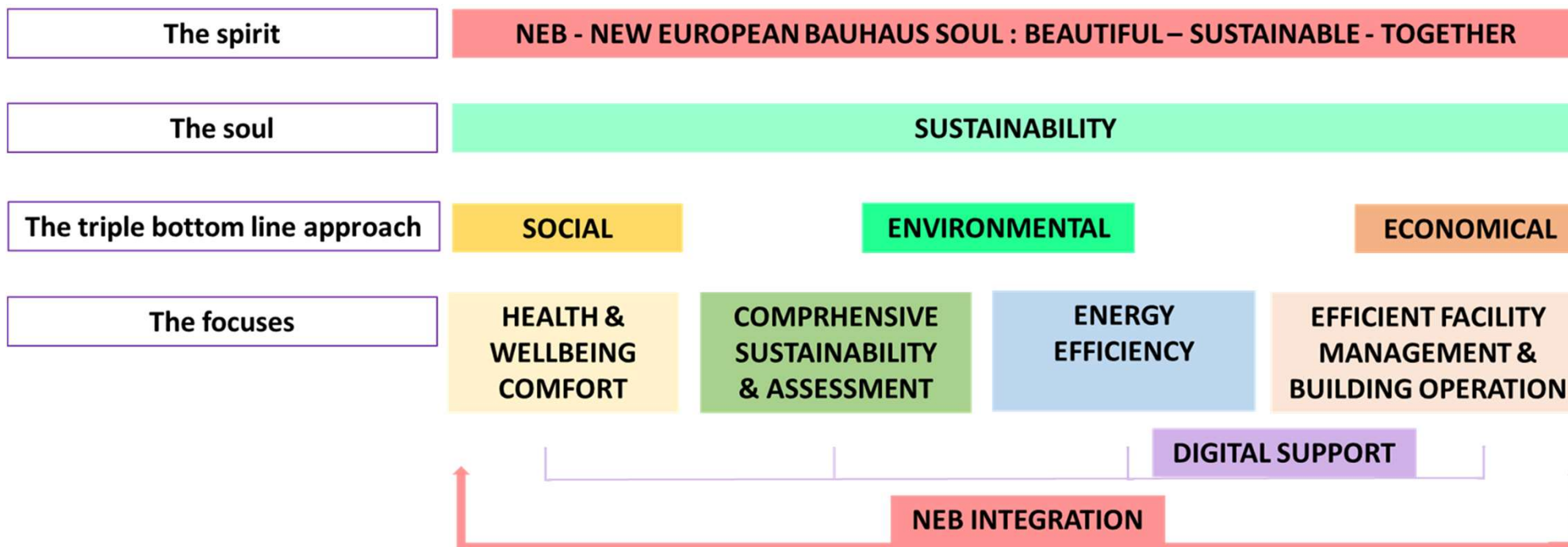
Students will be welcome as member of the EELISA community SUSTAINABLE BUILDINGS CITIES AND COMMUNITIES.

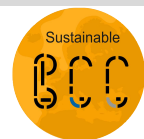


The Think Tank:

The development of this ESA-ESAC-SUBCC think tank will take place in a hybrid format in the last week of January 2023 (23-27 January) at the ESA-ESAC headquarters in Villanueva de la Cañada, with the participation of around 300 international students (50 on-site). The scope of development will cover the entire academic year 2022-2023, with activities in both the first and second semester.

The think tank is actually composed of **6 different think tanks: 4 working in thematical parallel sessions** from the three pillars of sustainability, **1 cross-cutting** think tank on digitalisation, and **1 collective think tank on integration** through the New European Bauhaus Spirit.





The Workshops:

Each of the parallel think tanks consists of **8 thematic workshops of 2h each** in which the different **collaborative working groups** (4 to 8 per parallel think tank) will be proposed **specific challenges** to discuss and generate ideas, analysing and trying to reach common conclusions. In addition to this, there will be four workshops for analysis, recapitulation, and integration of conclusions and lessons learned.

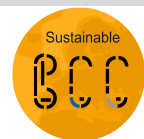
Prior to the development of the activity, the students will have access to a repository of teaching and informative material on each of the topics under analysis, in the form of a flipped classroom.

Every thematic workshops of each of the think tanks will be organised with 30 minutes of a master class to unify criteria, resolve doubts and define the specific challenges proposed to each working group. These challenges will be the object of collaborative work and reflection for 1 h (mixed face-to-face-virtual groups) and an additional half hour of sharing the findings and conclusions consolidated in the workshop.

The integration workshops are to share the partial and final conclusions of each of the think tanks in the different thematic workshops.

PARALLEL THEMATIC THINK TANKS

Think tank	COMPREHENSIVE SUSTAINABILITY	HEALTH AND WELLBEING	ENERGY EFFICIENCY	EFFICIENT FACILITY MANAGEMENT
Workshops	Code	Code	Code	Code
1	CSA1	H&W1	EE1	EFM 1
2	CSA2	H&W2	EE2	EFM 2
3	CSA3	H&W3	EE3	EFM 3
NEB 1	NEB 1	Sustainable Building Retrofitting		
4	DS4	Digital Twins & BIM		
5	DS5	Data Governance & Prioritisation		
6	DS6	Internet of Things & Artificial Intelligence		
7	CSA7	H&W7	EE7	EFM 7
8	CSA8	H&W8	EE8	EFM 8
NEB 2	NEB 2	Innovation in Buiding Retrofitting. Towards NZEB and NZEC		
9 Wrap up	ES9 WUP	H&W9 WUP	EE9 WUP	EFM 9 WUP
NEB wrap up	NEB WUP	Think Tank Wrap up conclusions and Lessons Learned		

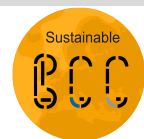


The Workshops:

PARALLEL THEMATIC THINK TANKS. WORKSHOPS AND TOPICS

Think tank Workshops	COMPREHENSIVE SUSTAINABILITY & ASSESSMENT		HEALTH - WELLBEING & COMFORT		ENERGY EFFICIENCY		EFFICIENT FACILITY MANAGEMENT & BUILDING OPERATION	
	Code	Topic	Code	Topic	Code	Topic	Code	Topic
1	CSA1	What? Sustainability Assessment	HWC1	Vegetation and outdoor space	EE1	Passive strategies	EFM 1	Facility Management in a nutshell
2	CSA2	Circular Economy - 6R in new building	HWC2	Physical activity and health at the workplace	EE2	Thermal Energy. Active technologies	EFM 2	Integration of FM in daily operations
3	CSA3	Circular Economy - Use of building waste	HWC3	Comfortable and natural lighting	EE3	Renewable electrical energy - BIPV	EFM 3	Application of sustainability in FM
NEB 1	NEB 1	Sustainable Building Retrofitting						
4	DS4	Digital Twins & BIM						
5	DS5	Data Governance & Prioritisation						
6	DS6	Internet of Things & Artificial Intelligence						
7	CSA7	When? Life Cycle Perspective	HWC7	Air quality and hygrothermal comfort	EE7	NZEB - Net Zero Energy Buildings	EFM 7	Technology as part of the FM model
8	CSA8	How? Sustainability strategies	HWC8	Acoustic comfort	EE8	NZEC - Net Zero Energy Clusters	EFM 8	Human centric Models in FM
NEB 2	NEB 2	Innovation in Buiding Retrofitting. Towards NZEB and NZEC						
9 Wrap up	CSA9 WUP	Think Tank Wrap up conclusions and Lessons Learned	HWC9	Think Tank Wrap up conclusions and Lessons Learned	EE9 WUP	Think Tank Wrap up conclusions and Lessons Learned	EFM 9 WUP	Think Tank Wrap up conclusions and Lessons Learned
NEB wrap up	NEB WUP	Think Tank Wrap up conclusions and Lessons Learned						

(*) Since we are in the planning and development phase, the title and/or content of some workshops may be adjusted.



THINK TANK ESA-ESAC - SUSTAINABLE BCC : SUSTAINABLE BUILDINGS



The Agenda:

Students who register for the activity (fees' free) can apply to participate in the entire think tank in face-to-face or virtual format, prioritising one or more of the parallel think tanks (2 ECT+2-4 Badges). Students will also have the opportunity to only sign up for individual workshops of their interest (with 1 badge for 2 to 3 workshops, and 2 badges for 4 workshops or more). The agenda scheduled for the think tank is:

ESA-SUSBCC PLANNING	Monday 23				Tuesday 24				Wednesday 25				Thursday 26				Friday 27			
	CS&A	H&W	EE	EFM	CS&A	H&W	EE	EFM	CS&A	H&W	EE	EFM	CS&A	H&W	EE	EFM	CS&A	H&W	EE	EFM
8h00'																				
9h00'					Bus Transfer				Bus Transfer				Bus Transfer				Bus Transfer			
10h00'	Welcome & Organization				Parallel Session 2				CS&A4	Digital Support 4			Parallel Session 7				Wrap up Parallel Sessions			
11h00'	Coffee break				Coffee break				Coffee break				Coffee break				Coffee break			
12h00'	Bus Transfer				Parallel Session 3				CS&A5	Digital Support 5			Parallel Session 8				Wrap up NEB Integration			
13h00'	Visit to ESA facilities																			
14h00'	Lunch time				Lunch time				Lunch time				Lunch time				Lunch time			
15h00'	Parallel Session 1				NEB Integration 1				CS&A6	Digital Support 6			NEB Integration 2				Visit to ESAC, the European Space Astronomy Centre (control and monitoring headquarters for ESA's space telescopes and planetary missions).			
16h00'																				
17h00'	Bus Transfer				Bus Transfer				Bus Transfer ESA-CEDINT				Bus Transfer				Bus Transfer			
18h00'									Visit UPM's Facilities - CEDINT											
									Bus Transfer CEDINT-ETSAM											
20h00'													Final Party							
22h00'																				



THINK TANK ESA-ESAC - SUSTAINABLE BCC : SUSTAINABLE BUILDINGS



23rd to 27th January 2023

Hybrid format International Think Tank:

50 International students face to face on ESA Campus - Madrid

200-300 international students virtual:

.- Full think tank

.- In the workshops you are more interested in

More than 100 international professors & professionals

Challenge based learning from a multidisciplinary approach

Mixed teams: students, professors, researchers, professionals

4 parallel, 1 cross-cutting, 1 NEB integration Think Tanks

30 thematic workshops with its focus challenges

New European Bauhaus: SUSTAINABLE, BEAUTIFUL, TOGETHER



Register now!!

Updated information at

bit.ly/3Xw7nRB



Our partners participating in this activity:

