



# How Can We Build an Accessible and Inclusive Built Environment?



## “Part 1: Introduction to the Universal Accessibility Suite Initiative – the AccesS Suite”

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# AccessS Vision

- Cultivating a culture that values diversity and promoting solutions for accessible built environments is imperative to **ensure inclusivity and equal access for all individuals**.
- Creating accessible smart cities involves comprehensive **urban planning, integrating infrastructure, transportation, and public spaces under a user-centered approach**.
- Comprehensive and user-friendly digitalization tools addressing the **relationship between comfort, energy consumption, and user needs while also meeting the enhanced accessibility requirements of people with disabilities** should enable designers to optimize energy efficiency without compromising user comfort and accessibility.
- **Adapting smart buildings to accommodate disabled individuals** is essential for fostering inclusivity and equal access.
- The development of **a comprehensive and harmonized certification framework** would aim to provide a standardized and integrated approach for evaluating and promoting accessibility in buildings.



# AccessS Vision

**AccessS** envisions to create barrier-free environments, facilitate smooth mobility and revolutionize the accessibility and inclusivity of smart buildings and smart cities, enabling equal access to essential services and facilities.

AccessS aims to provide:

- customization and personalization;
- sustainable and energy efficient infrastructure design;
- operation management and optimization;
- universal design principles in products;
- simulation-based testing and compliance with accessibility guidelines;
- a common classification system for accessibility features.



# AccessS Consortium

## 22 Partners from 9 Countries



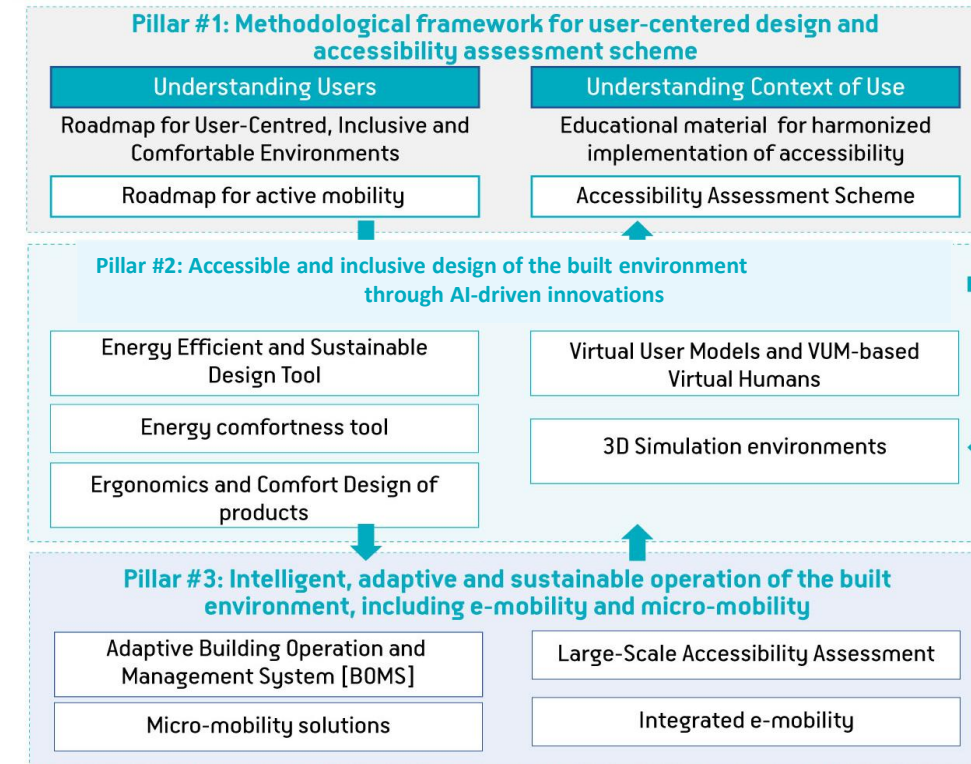
- 5 innovative SMEs (E@W, QUE, DMO, MIW, HIVE)
- 2 software industry and technology providers (UNIS, VAIMOO)
- 4 research centres and academia (CERTH, FRC, FORTH, CETEM)
- 2 non-profit organizations (LAMA, EUD)
- 1 standardization body (ASRO),
- 7 end-user representatives (MoG, MHS, MUR, Bari, FLO, AEM, BHA)



# AccessS Key Results & Innovations

The novel elements of the AccessS concept are based on:

- 1. A methodological framework formulating the basis of a user-centered design approach** that will enhance the capability of AccessS partners to effectively address and leverage social inclusion and accessibility.
- 2. A comprehensive accessibility assessment scheme** for the built environment which will address physical accessibility, usability, safety, comfort, and social inclusion in the standards and define clear and measurable criteria, guidelines, and performance indicators for assessing accessibility.
- 3. Digital innovations** supporting both accessible and inclusive design as well as adaptive and sustainable operation of the built environment, integrated all together under an inclusive toolbox, the Universal Accessibility Suite.



# AccessS Digital Innovations

1. **Energy Efficient and Sustainable Design Tool (EESDT)** is a comprehensive platform designed to enhance building energy performance by facilitating the evaluation and optimization of renovation scenarios.
2. **Energy Comfortness Tool (ECT)** offers a holistic approach to optimizing energy efficiency while maintaining occupant comfort.
3. **ErgoFlow** aims at aiding in the design and evaluation of ergonomically adapted products.
4. **Virtual User Models and VUM-based Virtual Humans** represent aging individuals and people with disabilities. These models integrate anthropometric data and human factors, which will be used to generate Virtual Humans (VHs) for simulating and evaluating accessibility in 3D environments.
5. **3D Scenarios Simulator** orchestrating the synthesis of 3D environments, the integration of virtual humans, and the generation of simulation scenarios.



# AccessS Digital Innovations

6. **Building Operation and Management System (BOMS):** This tool is intended to improve building energy efficiency by dynamically balancing comfort levels, user behavior patterns, and cost savings;
7. **EV Charging Optimizer:** The primary objective is to develop an inclusive and accessible EV charging infrastructure that caters to the needs of all users, particularly people with disabilities and the elderly. This involves analyzing user behaviors, identifying accessibility requirements, and integrating these considerations into charging schedule optimizations;
8. **Universal Accessibility Assessment Tool** aiming to assess the design and operation of building and infrastructure according to the developed Accessibility Assessment Scheme. This will encompass not only physical accessibility but also usability, safety, comfort, and the crucial aspect of social inclusion.



# AccessS Pilots

## Case of Cultural Heritage Buildings

- Demo site #1: The Christo and Jeanne-Claude Center, Gabrovo, Bulgaria
- Demo site #2: The Brancacci Chapel, Florence, Italy

## Case of People Care Facilities

- Demo site #3: Droom je Thuis Foundation, Naaldwijk, Netherlands
- Demo site #4: Casa Girasole, Massagno, Switzerland

## Case of Public Services Buildings

- Demo site #4: The Palazzo di Città, Bari, Italy
- Demo site #5: Mercado de Veronicas, Murcia, Spain



Demo site 1: The Christo and Jeanne-Claude Center



Demo site 2: The Brancacci Chapel



Demo site 3: Droom je Thuis Foundation



Demo site 4: Casa Girasole



Demo site 5: The Palazzo di Città



Demo site 6: Mercado de Veronicas





# Thank you for your attention!



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