Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: **CULTURAL-E- Climate and cultural based design and market valuable technology solutions for Plus Energy Houses**

FUNDING PROGRAMME: **Horizon 2020 - NMBP**

CALL: **H2020-NMBP-ST-IND-2018-2020**

SCIENTIFIC FIELDS: **Energy efficient buildings**

HOST DEPARTMENT: **Department of Environmental Sciences, Informatics and Statistics**

SCIENTIFIC RESPONSIBLE: **Wilmer Pasut**

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 9.641.336,25	€ 292.872,50

ABSTRACT:
CULTURAL-E aims to define modular and replicable solutions for Plus Energy Houses (PEHs), accounting for climate and cultural differences, while engaging all key players involved in the building life cycle; to create comfortable, efficient, and affordable indoor environments. CULTURAL-E will develop technologies and solution sets that are tailorable to specific contexts and energy demands, as well as performing a comprehensive optimization of the value/cost ratio of PEHs. Sets of design-for-assembly technologies will be produced and driven by a careful mapping of European climates, building archetypes, and cultural energy habits; going beyond the positive by maximizing the share of the demand covered by renewable sources (toward Ø emissions in the operational phase). The CULTURAL-E solution sets are the result of a usercentric design process and aim to achieve and affordably maintain the best indoor environmental conditions. The houses become regenerative for the indoor and outdoor environment in the life cycle, with minor extra costs compared to nZEB, thus guaranteeing a sound return of investment. E-mobility is dealt through a dedicated management strategy to avoid energy demand peaks coming from the simultaneous fast-charging of multiple vehicles. Despite an "agnostic approach" to technology selection, CULTURAL-E will enhance the TRL of specific key technologies, such as air movement for summer thermal comfort, natural and mix-mode ventilation, packed and modular HVAC units, industrialized active window systems for natural ventilation and solar control, cloud-based house management system, and user involvement in the continuous building control, optimized envelope (tailored thermal features). Finally, to increase the replicability of the solutions and the adoption of a "cultural-centric" design, key market players involved in the PEH development are supported by dedicated tools and guidelines that will assist the development of robust, inclusive business models.

Planned Start date	Planned End date

October 1, 2019	September 30, 2024

PARTNERSHIP:

1.	ACCADEMIA EUROPEA (EURAC), the Coordinator	IT	Coordinator
2.	ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY SPAIN SL (RMIT)	ES	Partner
3.	UNIVERSITÀ CA' FOSCARI VENEZIA (UNIVE)	IT	Partner
4.	UNIVERSITAET STUTTGART (USTUTT)	DE	Partner
5.	BRUNEL UNIVERSITY LONDON (BRUNEL)	UK	Partner
6.	CONSEIL DES ARCHITECTES D'EUROPE (ACE)	BE	Partner
7.	NOBATEK/INEF 4 (NBK)	FR	Partner
8.	SINTEF AS, represented by its institute SINTEF Community (SINTEF)	NO	Partner
9.	STEINBEIS INNOVATION gGmbH (SIZ-EGS)	DE	Partner
10.	ISTITUTO COOPERATIVO PER L'INNOVAZIONE SCRL (ICIE)	IT	Partner
11.	VILOGIA SA (VILOGIA)	FR	Partner
12.	OSLO KOMMUNE BOLIGBYGG OSLO KF (BBY)	NO	Partner
13.	WILHELM NUSSER GmbH SYSTEMBAU (NUSSER)	DE	Partner
14.	UNICOOP IMMOBILIARE S.r.l. (UNICOOP)	IT	Partner
15.	ADVANTIC SISTEMAS Y SERVICIOS SL (ADSYS)	ES	Partner
16.	VENTIVE Ltd (VENTIVE)	UK	Partner
17.	EUROFINESTRA SAS DI ECOSISTEMA SRL (EUROFIN)	IT	Partner
18.	VORTICE ELETTROSOCIALI SPA (VORTICE)	IT	Partner