

**SUSTAINABLE  
PLACES**



# **HAPPEN: Holistic APproach & Platform for the deep renovation of the Med residential built Environment**

*MedZEB certified*

Integrated Home Renovation Services Workshop – 27 October 2020

Roberto Malvezzi (ITC-CNR)

# HAPPEN . General information



Core of the HAPPEN project is the development of the **MedZEB approach**, which is conceived for supporting the deep energy retrofitting of residential buildings in the Mediterranean area.

The MedZEB approach will be implemented by means of a one-stop-shop digital environment, namely **the HAPPEN platform** (*currently under development*).

- **Lead Partner: CNR** (Italy)
- **Duration: 36 months** (from 1<sup>st</sup> april 2018)
- **Partners: 13** (from 7 Med countries)



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1 (LP)	Consiglio Nazionale delle Ricerche	CNR	IT
1.1	SVILUPPO TECNOLOGIE E RICERCA PER L'EDILIZIA SISMICAMENTE SICURA ED ECOSOSTENIBILE S.c.ar.l.	STRESS	IT
2	CERTIMAC SOC. CONS. A R. L.	CERTIMAC	IT
3	Harley & Dickinson Finance s.r.l.	H&D	IT
4	Universidad de Sevilla	USE	ES
5	Instituto Valenciano de la Edificacion	IVE	ES
6	Entidad de Infraestructuras de la Generalitat	EIGE	ES
7	GIP Agence Française pour des Villes et Territoires Méditerranéens Durables	AVI	F
8	Etablissement Public d'Aménagement Euroméditerranée	EPAEM	F
9	Ethniko Kai Kapodistriako Panepistimio Athinon	NKUA	EL
10	Energeiako Grafeio Aigaioy	AEGEA	EL
11	Gradbeni inštitut ZRMK DOO	GI ZRMK	SI
12	IRENA – Istarska Regionalna Energetska Agencija za energetske djelatnosti d.o.o.	IRENA	HR
13	Energeiako Grafeio Kypriou Politou	CEA	CY



The MedZEB approach aims at tackling unsolved and shared challenges of the retrofitting markets, such as **reconnecting** the fragmented value chain, rebuilding a **framework of trust** and increasing **convenience and appeal** of the deep renovation market. The MedZEB approach is defined through the following features:

- ***Tailored***: specifically conceived for fostering deep retrofitting in the Med area;
- ***Holistic***: integrating the most relevant fields for the retrofitting markets;
- ***Transparent***: proposing novel tools for increasing quality and reliability of renovation markets;
- ***Adaptive***: enhancing soft added-values of the retrofitting (such as flexibility and well-being).



# HAPPEN . The pilot sites



# The MedZEB approach: why HOLISTIC?

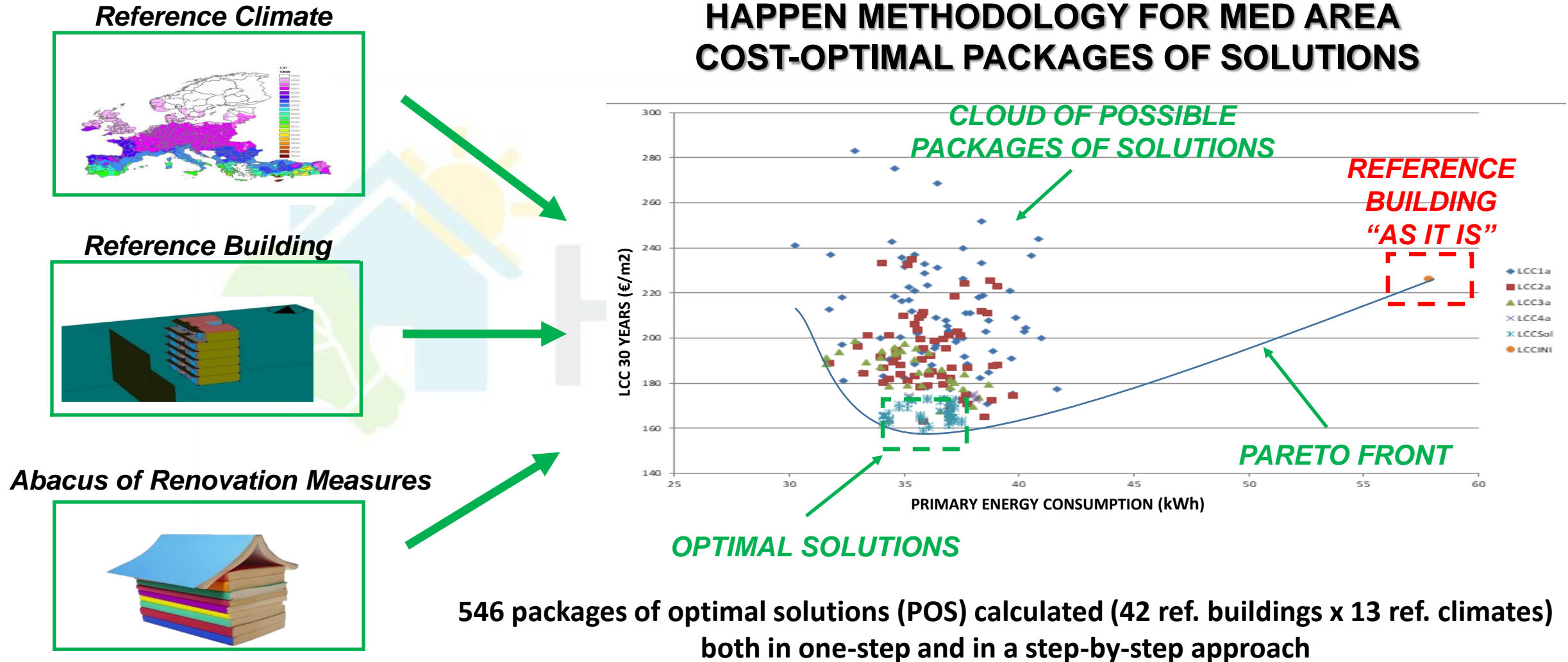
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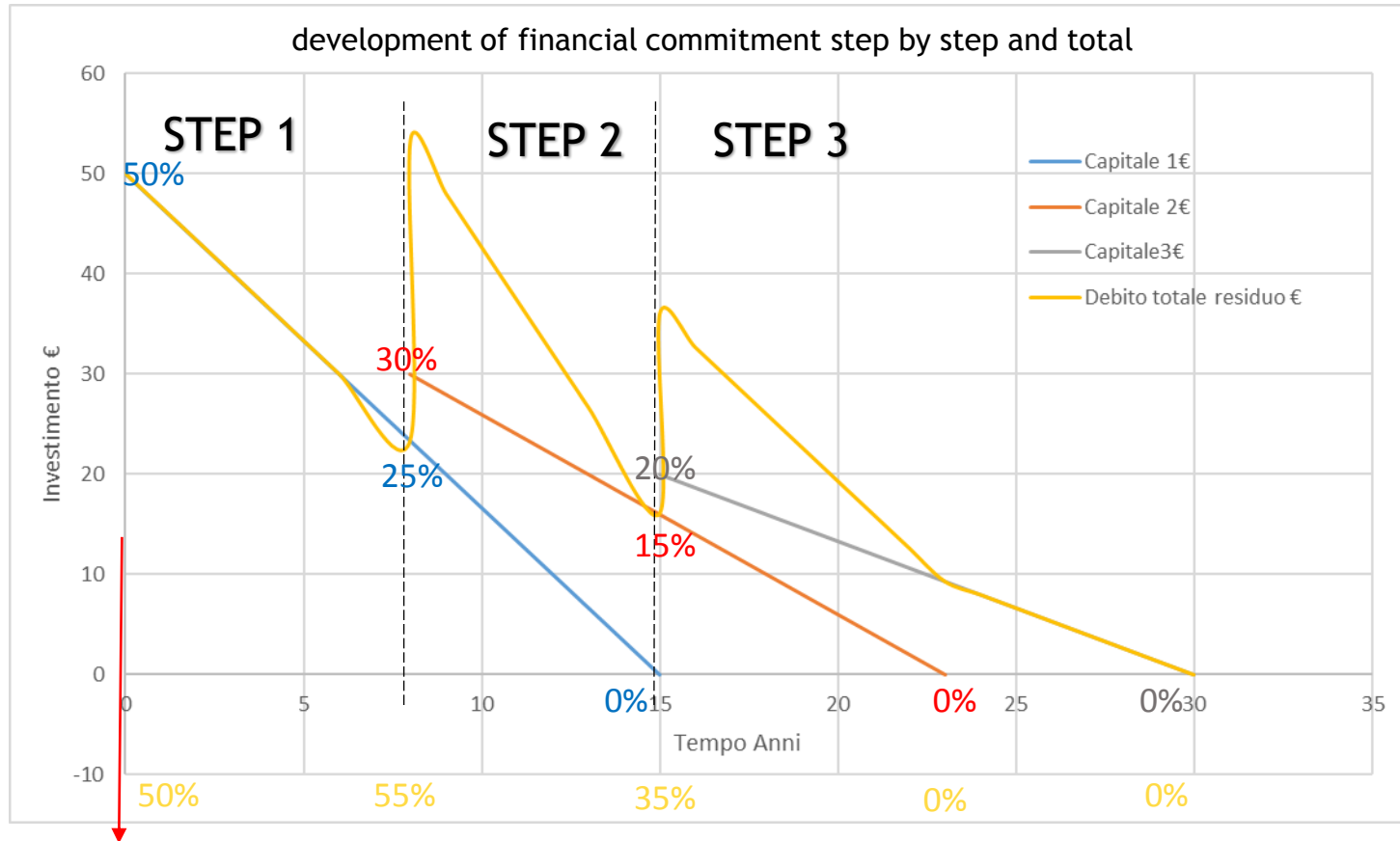
HAPPEN seeks the integration of the following aspects into one OSS model:

- **Social field**, by developing engagement approaches addressing and joining all the actors of the retrofitting supply chain, from final users to market actors.
- **Technical field**, by developing cost-optimal technical packages of solutions (POS) taking into account also step-by-step renovation logics.
- **Financial field**, by developing an innovative financial solution fully integrated with the HAPPEN POS and the step-by-step approach.
- **Procedural field**, by developing the *HAPPEN programme*, that is a comprehensive implementation strategy of the MedZEB approach.

# The MedZEB approach: toward optimal integrated solutions



# The MedZEB approach: toward optimal integrated solutions



Single MORTGAGE registered at year 0

The **Versatile Energy Loan (VEL)** is an innovative financial solution consisting of a cumulative mortgage issued at year zero and entailing multiple disbursement steps, corresponding to the POS. VEL is aimed at diluting and minimizing the renovation costs so to guarantee that the **payback can be funded through the savings achieved**. VEL is tuned with recent evolutions in the renovation market, such as the BPIE's Individual Building Renovation Passport (IBRP).



# The MedZEB approach: toward optimal integrated solutions



VEL pursues **maximum flexibility** as its main guiding principle, with special reference to:

- ***opting for*** an “all-in-one-step” solution, or for a step-by-step one;
- ***opting out*** of the retrofitting pathway at any step, following unpredictable family needs;
- ***accelerating*** the reimbursement by deciding at any time to co-fund some of the steps;
- ***updating*** the Renovation Roadmap on basis of supervening technical innovations.

# The MedZEB approach: why TRANSPARENT?

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**The MedZEB Protocol** is a guarantee scheme ensuring that the retrofitting process will be carried out properly along the whole value chain according to pre-set energetic, financial, environmental and well-being performances. This will allow subjects involved in the retrofitting to cooperate on basis of shared and agreed quality principles, procedures and targets, where responsibilities and control levels will be fully described.

# The MedZEB approach: why TRANSPARENT?

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The MedZEB Protocol includes the following documents:

- The **EPC** of the building as a starting point, plus a **dedicated audit**;
- The **draft renovation project** developed on basis of the HAPPEN POS;
- The **Building Renovation Roadmap** based on the step-by-step breakdown of the POS;
- The **Business Plan** based on the application of the VEL solution to the Roadmap;
- The **MedZEB Voluntary Certification Scheme** which will be issued at the end of the first renovation step and updated at each further step after carrying out proper monitoring.

# The MedZEB approach: why TRANSPARENT?

MedZEB VCS to be updated at each step



10÷30% Primary Energy demand Reduction



31÷50% Primary Energy demand Reduction



51÷70% Primary Energy demand Reduction



> 70% Primary Energy demand Reduction



nZEB

## MedZEB Certificate

Name of the Building  
Address  
Project Team

Castellon de la Plana Building  
Castellon de la Plana  
Happen Team

Building Picture



MedZEB Compliance



*Level achieved*

**Energy aspects :** Final Energy consumption Reduction;  
GHG Reduction  
**Comfort Aspects;**  
**Sustainability Aspects**

# The MedZEB approach: why TRANSPARENT?

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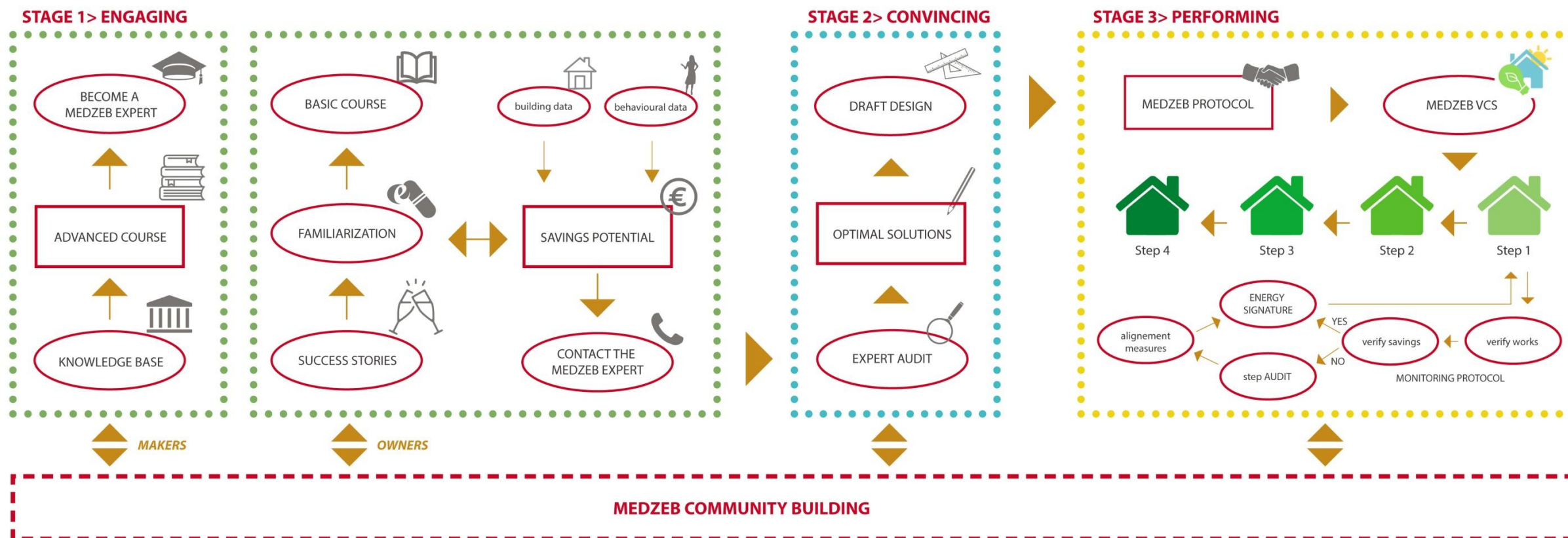


**The HAPPEN platform** is an assisted OSS-like digital marketplace aimed at matching demand and offer within the Mediterranean retrofitting markets. To this end, it will offer to the actors of the supply chains (from clients to professionals) **dedicated support tools** aimed at assisting them in the implementation of the MedZEB approach throughout the whole renovation process, and according to the HAPPEN programme .

<http://medzeb-happen.eu/>



# HAPPEN . The HAPPEN programme



# Thank you for your attention!

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For further information: M. Padula, F. Picenni, R. Malvezzi, L. Laghi et al:

*MedZEB: a new holistic approach for the deep energy retrofitting of residential buildings*

TECHNE, Special Issue 01/2018 "European Pathways for the Smart Cities to come"