SUSTAINABLE ENERGY WEEK

An initiative of the European Commission

Smart and Smart-er:
Architecture and Building Performance
Session 2 June 7, 2018 - Brussels
Data-enabled architecture for a step-change in building performance.

ARCHITECTS' COUNCIL OF EUROPE
CONSEIL DES ARCHITECTES D'EUROPE

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Attractive Acceptable Affordable
deep renovation by a consumers orientated and performance evidence based approach

Acronim:	TripleA-reno
Project ID:	784972
Starting date:	2018-05-01
Ending date:	2021-04-30, ongoing project
Total cost:	EUR 2 000 011,75
EU contribution:	EUR 1 999 968
Coordinated in:	Netherlands
Call for proposal:	H2020-EE-2017-CSA-PPI
Funding scheme:	CSA - Coordination and support action
Topic:	EE-11-2016-2017 - Overcoming market barriers and promoting deep renovation of buildings

EE-11: Overcoming market barriers and promoting deep renovation of buildings

Challenge:
Increase renovation rate
Improve energy performance of renovations
Environmental sustainability, health and well-being

Barriers to overcome:
Non-technological, value-chain based (expl.: packages, finance, performance guarantees)

Expected Impact:
Increased rate of renovation
Increased number of individual deep renovation
Energy Savings and RE triggered
Environmental sustainability
Compliance

HE – PROF/TRAC conference – Getting our homes future ready

In many presentations the role and of the end-user was emphasized, condensed in the barriers for deep renovation from an end-users point of view:

- The European renovation market top-down and supply-driven

- Mismatch between offered renovation products/packages and what end-users' need/can afford.

- Lack of attractive tools on decision-making for them to start or to be involved in a deep renovation process.

- The renovation market is deeply fragmented making consumer navigation painful to master.

- A brokerage service that builds transparently the supply chains could facilitate the process.

- Lack of clear view on the total performances in practice (i.e. energy, indoor environmental quality, health)

- Lack of a solid quality control of the renovation process and a fully qualified and equipped workforce.

- Lack of data on the real building performance after the renovation process

TripleA-reno
Building upon results of previous projects

Technologies:
- MORE-CONNECT, BERTIM, iNSPiRe, ProGETonE, P2Endure etc. etc.

Market barriers:
- REFURB, ABRACADABRA, ENERFUND

Quality control, labeling:
- QUALiCHECK, ALDREN, INSITER, BIMplement

CPD, training and skills:
- BUS and CS projects (PROF/TRAC etc.)

User awareness, behavior change:
- MOBISTYLE, encompass, TRIBE, TRIME, etc.

TripleA-reno will bring the most important results together:
- ✓ giving access to recent relevant project results
- ✓ 'translating' these valuable results for practical application
- ✓ involving different kinds of end-users in the gamified platform and for community building of residents

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The overall aim of TripleA-reno is to make acceptation and decision making on deep and nZE renovation attractive for residential consumers and end-users.

TripleA-reno will achieve this by:

- clear, unambiguous and meaningful data-enabled information and communication
- real, proven performances on energy, Indoor Environmental Quality and personal health
- consumer centred business models

Demand side:
- condominiums
- social housing companies/municipality owned - tenants
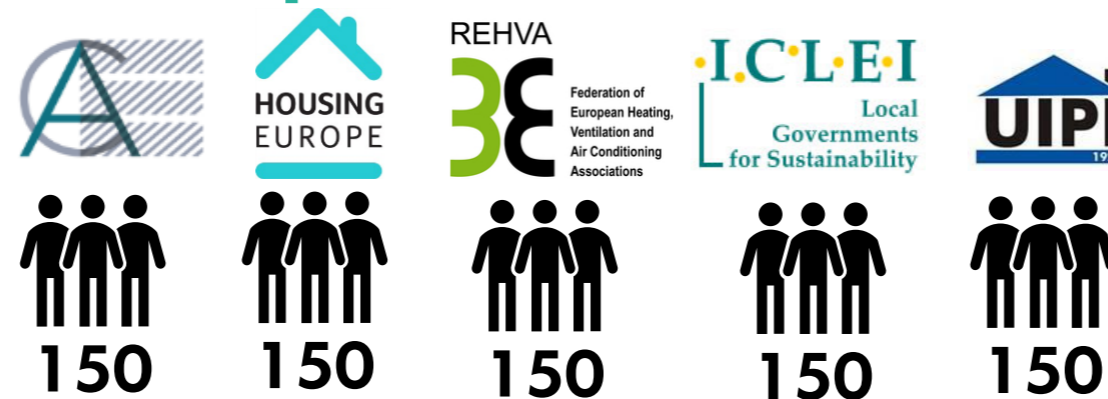- privately owned single family dwellings – occupant/owner

Supply side:
- ESCO's and construction companies as potential investor
- concept developers for individual house owners
- architects

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The TripleA-reno Road Show

5 EU umbrella organisations
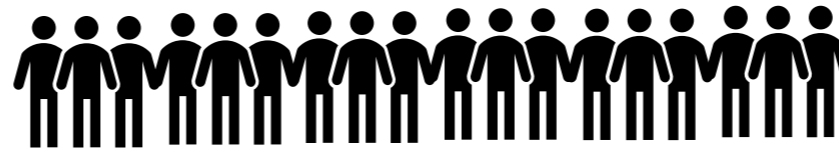4 Awareness raising events each throughout Europe.

Reach min 750 stakeholders with increased competencies
on energy issues, building their capacities and skills

Meetings with Member Association representatives, seminars/webinars
National trainings or demonstrators organised by Member Associations
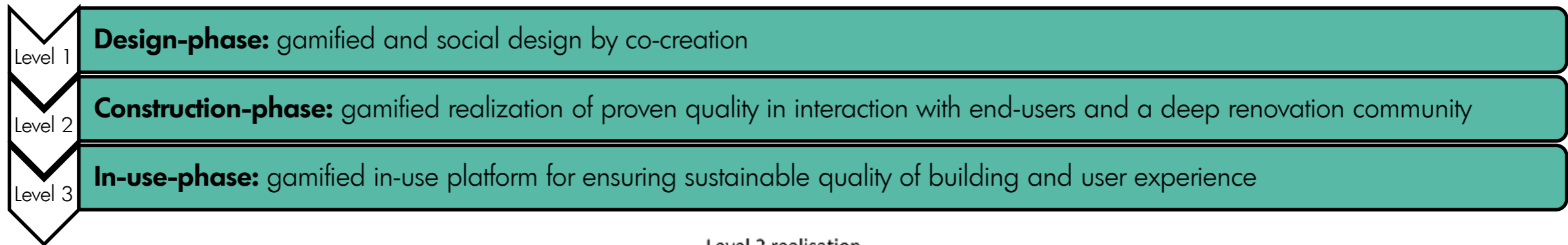
The TripleA-reno Road Show

600 000 European architects

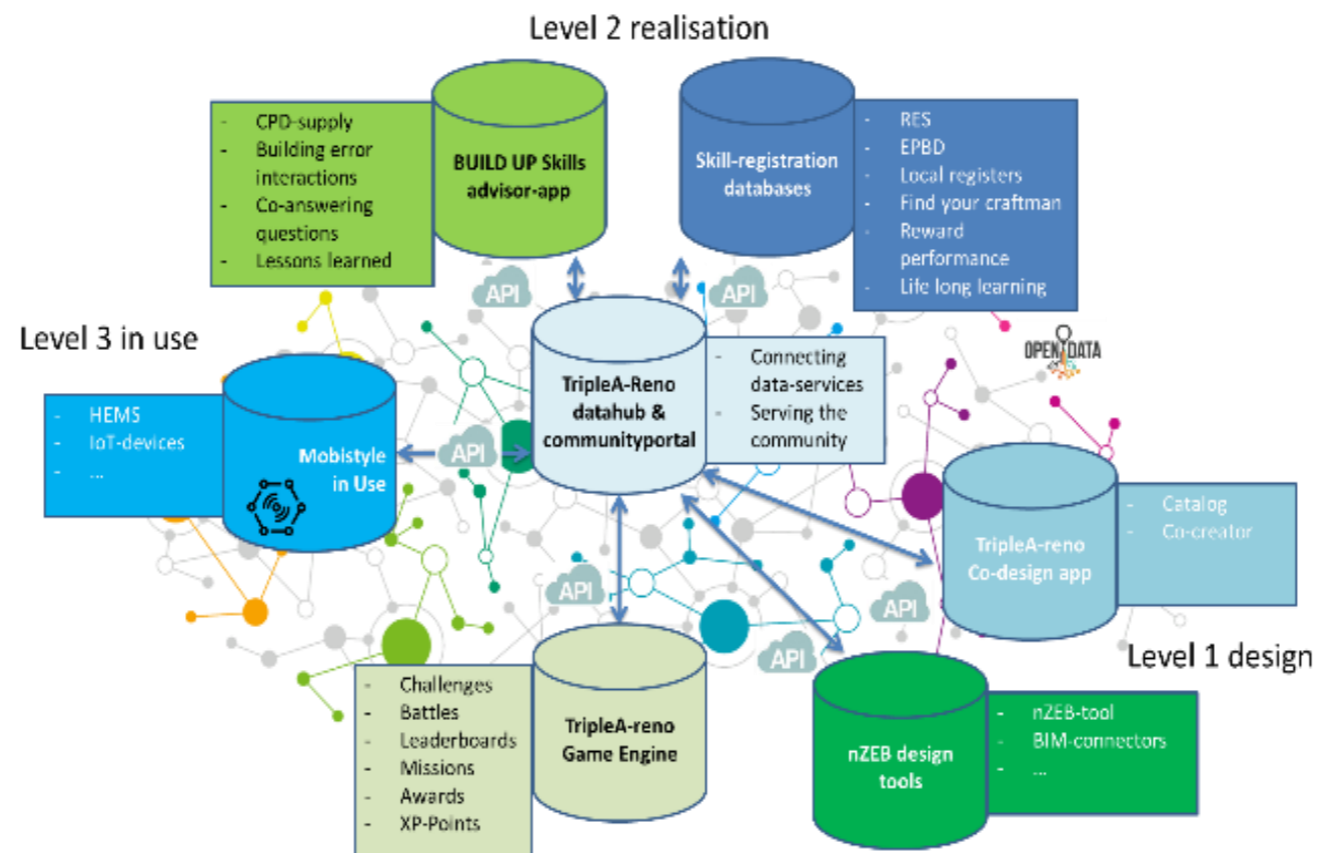|			
Architects	How to guarantee the performance in use and close the performance gap, while raising the architectural value during the energy retrofit.	Architects approach to a retrofit from a holistic point of view, not only EP and IAQ, but also looking at flexibility and adaptability of design to the occupants' needs.	This large group of 600 000 EU architects is covered by ACE
Architect chambers	Awareness of quality control aspects in design process. Understanding of roles of other trades in realizing quality in relation to architectural design. BIM is an important tool for architects to combine it with quality control.	Direct communication with ACE, as consortium partner	European (ACE), National by ACE members, i.e. 44 regulatory and associations in 31 countries

The TripleA-reno Gamification Platform

Level 1 | **Design-phase:** gamified and social design by co-creation

Level 2 | **Construction-phase:** gamified realization of proven quality in interaction with end-users and a deep renovation community

Level 3 | **In-use-phase:** gamified in-use platform for ensuring sustainable quality of building and user experience

Visual design guidelines to be implemented into the gamification engine
Design-phase: gamified and social design by co-creation

The game engine triggers, facilitate and reward sense making dialogues

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Training and qualification schemes should ensure that worker qualifications keep pace with the technical complexity of renovation process of the buildings and building components

TripleA-reno will focus on:

- Using just in time and just in place learning tools to deliver self-instruction content and to foster self-inspection
- Triggering and encouraging workers and professionals to use the data collected to enable learning loops
- Create awareness of workers and professionals about each other's responsibilities and required skills
- Make sure that workers are tuned to technological development also educational seminars.

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Implementing a general approach for quality improvement enabled by CPD and qualification schemes

TripleA-reno will tackle this issue by:

- involving the occupants/consumers in the project and collect real performance data in use
- implementing methodologies on enhanced quality control of related projects (IEE QUALiCHECK)
- Implementing (digital) tool (Model nZEB Cross-trade Quality, BIM-Skills Matrix)
- employing existing labelling schemes (LEVEL, WELL)
- deriving (voluntary) labelling schemes (ALDREN)

TripleA-reno
Expected Impacts

7 Demonstration project, Country	Number of units	Total net floor area for renovation (m²)	Energy use in existing situation (kWh/m² y)	Energy use after deep renovation (kWh/m² y)	Percentage of primary energy saving by deep renovation	Renewable energy production (GWh/y)	Amount of primary saving by deep renovation (GWh/y)
Peristeri GR	24	2040	160	64	60	0,04	0,20
Valencia ES	32	3069	127	51	60	0.02	0.23
Reggio Emilia IT	12	631	190	72	62	0,01	0,07
Zagorje SI	51	2960	148	59	60	0,01	0,26
Tilburg NL	20	2400	215	26	88	0,05	0,45
Brasov RO	16	1120	140	56	60	0,01	0,09
Pest County HU	60	3887	283	92	67	0,05	0,74
Total	215	16107			min 60%	0,19	2,04

Increased rate of renovation in the residential sector
Proven performances on energy, IEQ and health
11% of existing dwellings in the EU
Min 60% primary energy saving

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Thank you for the attention
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