

Sustainable Energy Skills

in the Construction Sector
Joint Workshop 3.0

Room **1A36**, IAE Nice, UCA
5 rue du 22e B.C.A, 06300 Nice, FR

Day **4** Fri. 09 Sep. 09.00 - 12. 30 CEST

Session Chair: Mohaddeseh Maktabifard,
EU project manager, R2M Solution



Hybrid
workshop

Projects

- PRO-Heritage •
- TRAIN4SUSTAIN •
- INSTRUCT •
- BUSLeague •
- The nZEB Roadshow •
- SEetheSkills •
- ARISE •
- BUSGoCircular •
- nZEBready •





SUSTAINABLE PLACES 2022

#SUSTAINABLEPLACES2022



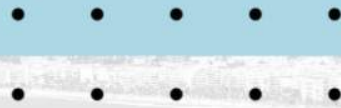
SUSTAINABLEPLACES.EU



ENERGY SKILLS IN CONSTRUCTION

“Sustainable Energy Skills in the Construction Sector 3.0”

SEP. 6TH – SEP 9TH, 2022; NICE, FRANCE



Previous editions



Sustainable Energy Skills in Construction Sector 1.0

Introduction to the projects

120min - Registrants: 27 - Attendees 17 - Avg. Attendance Rate: 63% - Avg. Interest rate: 60%



Sustainable Energy Skills in Construction Sector 2.0

Targets, Current Status, Future Plans

90min - Visitors: 34 - Avg. Visit Time (min): 82.47 - Comments: 11



Sustainable Energy Skills in Construction Sector - BUILS UP

Best Practices & Digital Learning Tools

90min - Registrants: 78 - Attendees: 49 - Attendance rate 63% - Avg. Interest Rate: 60%



Open Research Europe

Peer-reviewed articles are optional, they can be submitted by any SP2022 contributor and will be published by ORE in a specific collection dedicated to Sustainable Places 2022

Agenda

Phase 1: Opening



09.05 Opening . Workshop overview
Mohaddeseh Maktabifard
R2M Solution



09.15 Welcome statement: “Project management and policy background: update from the agency”
Luca Angelino
European Commission, EASME

Phase 2: Overview of older projects



09.15 PRO-Heritage, end date: 31 July
Gerald Wagenhofer
UBW



09.30 TRAIN4SUSTAIN, end date: 31 October
Uli Jakob
JER



09.45 INSTRUCT, end date: 30 November
Łukasz Wilczyński
ASM



10.00 BUSLeague, end date: 28 February 2023
Jan Cromwijk (Conecting virtually)
ISSO



10.15 The nZEB Roadshow, end date: 31 May 2023
Horia Petran (Conecting virtually)
NIRD URBAN-INCERC

Agenda



10.30 Break

Phase 3: Overview of the newer projects



11.00 SEEtheSkills, end date: 31 May 2024
Lihnida Stojanovska-Georgievska (Conecting virtually)
UKIM



11.15 ARISE, end date: 29 Feb 2024
Paul McCormack (Conecting virtually)
Belfast Met



11.30 BUS-GoCircular, end date: 29 February 2024
Jan Cromwijk (Conecting virtually)
ISSO



11.45 The nZEB Ready, end date: 31 August 2024
Horia Petran (Conecting virtually)
NIRD URBAN-INCERC



12.00 Q&A
3 main lessons learned in a nutshell
All the projects

Agenda

Phase 4: Closing



12.20 Conclusion

Luca Angelino
European Commission, EASME



12.25 Close

Mohaddeseh Maktabifard
R2M Solution



Welcome remarks and Introduction to BUILD UP Skills

Sustainable Energy Skills in the Construction Sector Workshop 3.0:
Energy Efficiency Competencies and Qualifications: Sharing expertise,
lessons learned and developed methodologies

Sustainable Places 2022
Nice, France

Luca Angelino, Project Adviser

09 September 2022

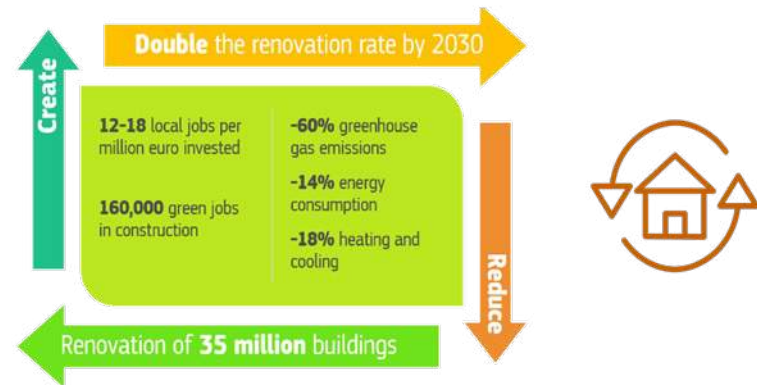
Luca.ANGELINO@ec.europa.eu



Policy developments



Renovation Wave – Oct. 2020



Revision of the EPBD/EED/ Renewable Energy Directive (on-going)



REPowerEU (May 2022)



Renovation Wave Priorities



Tackling **energy poverty** and **worst-performing buildings**



Renovation of **public buildings**



Decarbonisation of **heating and cooling**

- More ambitious targets
- Measures to strengthen energy performance in existing buildings

- Measures to reduce natural gas consumption
- 10 million HP installed in the next five years



BUILD UP Skills: the journey since 2011



2011-2012

Initial analysis and strategy (National Platforms and Roadmaps)

2012-2013

Training + qualification (national)

2014-2018

Training + qualification (national + EU)

2019-2020

Demand-side measures (procurement, campaigns...)

2021

Updating the strategy

2022

Strategy + training interventions

77 (+ 13) projects funded

49 million euros EU funding

13 European exchange meetings



„Cultural Heritage Management“



PRO-Heritage



"Energy Efficiency Competencies and Qualifications: Sharing expertise, lessons learnt and developed methodologies – Cultural Heritage"

Sustainable Places 2022

Gerald Wagenhofer

9th September 2022

- the need to keep Cultural Heritage in shape and available for future generations
- the need to keep historic sites “accessible and adequate for current and future generations requirements”
- Traditional buildings ...
 - ... do have an enormous added-value
 - ... need traditional crafts
 - ... do have a positive impact on climate protection
 - ... are part of circular economy
 - ... are different
- Research questions
 - What are appropriate energy efficient measures?
 - Which craft do need an upskilling?
 - What learning outcomes have to be covered?

- Common understanding
- Skills card „Energy Expert for Cultural Heritage“
- Training course & material for „Energy Expert for Cultural Heritage“
- Exam questions „Energy Expert for Cultural Heritage“
- eLearning and Exam Portal operated by The European Heritage Academy
- Certificates issued by ECQA
- Videos and best practice examples of traditional crafts and ...
- Awareness

Traditional Buildings – Definition



PRO-Heritage

- These are understood to be buildings constructed before 1919. Modern materials and techniques were used widely in the construction industry from around this time onwards.
- Traditional buildings are often referred to as being of ‘breathable construction’. This means that the construction materials used can absorb and release moisture.



Basic rules regarding interventions

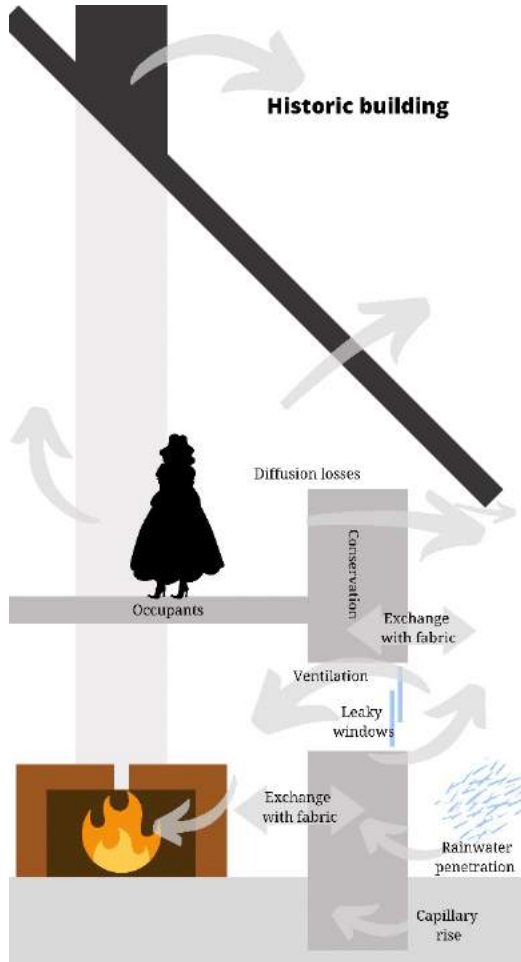


- Stay in the system as long as possible
- Do not worsen the initial situation for the next intervention
- Life cycle of a traditional building should also take into account the future need to dispose of old, traditional and new (brought in with a planned intervention) materials
- Life cycle also mean keep everything in use for as long as it lasts (including regular care and maintenance)
- Identify and solve the cause of a poor performance and not a symptom
- A holistic approach to energy efficiency



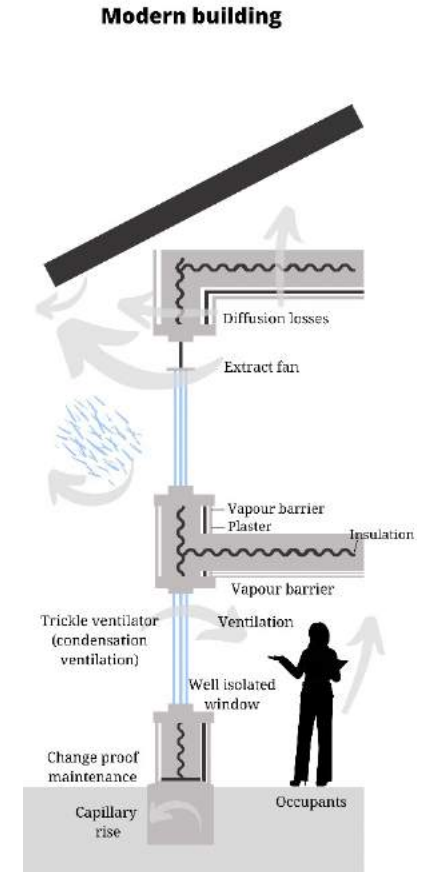
- „Traditional building has always bad energy performance“
- „Traditional buildings cannot be part of circular economy“
- „Traditional buildings are part of the problem and causing changes of climate“

Concept of embedded energy



Energy which is embodied in the building

Energy needed for destroying



Energy which is embodied in the building



Allgemeines

PRO-Heritage – Your Energy Expert



PRO-Heritage

U2.E3 Sustaina

U2.E4 Signif

U3 Understand

U4 Resisting I

Energy Efficiency Impact by Selected Craft (Condensed Documents)

Energy Efficiency Impact by Selected Crafts

SL Supervisory Levels	Le Leadworker / Plumber
Bl Blacksmith	Li Limeworker
Br Bricklayer / Brickmaker	Mw Millwright
Ca Carpenter	Pl Plasterer
De Decorator	Ro Roofer / Roof Element Maker
El Electrician	St Stonemason
Gl Glazier	

SL Energy Efficiency Impact by Supervisory Levels

Bl Energy Efficiency Impact by Blacksmith

Bl Energy Efficiency Impact by Blacksmith
Watch the video of a blacksmith.

Br Energy Efficiency Impact by Bricklayer / Brickmaker

Br Energy Efficiency Impact by Bricklayer / Brickmaker
Watch the video of a brickmaker.

Ca Energy Efficiency Impact by Carpenter

De Energy Efficiency Impact by Decorator

El Energy Efficiency Impact by Electrician

Gl Energy Efficiency Impact by Glazier

Gl Energy Efficiency Impact by Glazier
Watch the video of a glazier.

Search icon

Language dropdown

Navigation arrows

Download icon

LinkedIn icon

Mobile navigation icons

Results – eLearning Portal (1)



PRO-Heritage

Course Content Kursbeginn: 20.05.21 Kursbereich: Cultural Heritage (Asset) Management

Fortschritte (1)

Allgemeines	▼
U1 Introducing to Cultural Heritage Management	▼
U2 Respecting Significance of Traditional Buildings	▼
U3 Understanding Traditional Buildings	▼
U4 Repairing Building Parts	▼
U5 Evaluating Use of Renewables for Traditional Buildings	▼
U6 Application of Appropriate Energy-Efficient Measures and of Renewables	▼
Energy Efficiency Impact by Selected Craft (Condensed Documents)	▼
Durchsicht, Prüfung und Zertifizierung der Kompetenzen	▼
Dissemination & Other Materials	▼
Partners	▼
Acknowledgement	▼

courseAreaId=2#mod_E

Results – eLearning Portal (2)



PRO-Heritage

Chronik Lesezeichen Extras Hilfe

ergy Exp: × Kurs: Energy Expert for Cultural × +

https://learn.european-heritage-academy.eu/course/view.php?id=3 90% ☆

the european heritage academy DEUTSCH (DE) ▾

Fortschritte ?

- Allgemeines ^
- U1 Introducing to Cultural Heritage Management ^
- U2 Respecting Significance of Traditional Buildings ▾
 - U2.E1 Intervention
 - U2.E2 Traditional Materials
 - U2.E3 Sustainability Principles
 - U2.E4 Significance & Heritage Values

Results – eLearning Portal (3)



Leesezeichen Extras Hilfe

Kurs: Energy Expert for Cultural X +

https://learn.european-heritage-academy.eu/course/view.php?id=3

DEUTSCH (DE) v

Energy Efficiency Impact by Selected Craft (Condensed Documents)

SL Supervisory Levels	Le Leadworker / Plumber
Bl Blacksmith	Li Limeworker
Br Bricklayer / Brickmaker	Mw Millwright
Ca Carpenter	Pi Plasterer
De Decorator	Ro Roofer / Roof Element Maker
Ei Electrician	St Stonemason
Gl Glazier	

SL Energy Efficiency Impact by Supervisory Levels

Bl Energy Efficiency Impact by Blacksmith

Bl Energy Efficiency Impact by Blacksmith
Watch the video of a blacksmith.

Br Energy Efficiency Impact by Bricklayer / Brickmaker

Br Energy Efficiency Impact by Bricklayer / Brickmaker
Watch the video of a brickmaker.

Ca Energy Efficiency Impact by Carpenter

De Energy Efficiency Impact by Decorator

Ei Energy Efficiency Impact by Electrician

Gl Energy Efficiency Impact by Glazier

Gl Energy Efficiency Impact by Glazier
Watch the video of a glazier.

Le Energy Efficiency Impact by Leadworker / Plumber

Energy Efficiency Impact by Selected Craft (Condensed Documents)

Energy Efficiency Impact by Selected Crafts

SL Supervisory Levels	Le Leadworker / Plumber
Bl Blacksmith	Li Limeworker
Br Bricklayer / Brickmaker	Mw Millwright
Ca Carpenter	Pi Plasterer
De Decorator	Ro Roofer / Roof Element Maker
Ei Electrician	St Stonemason
Gl Glazier	

SL Energy Efficiency Impact by Supervisory Levels

Bl Energy Efficiency Impact by Blacksmith

Bl Energy Efficiency Impact by Blacksmith
Watch the video of a blacksmith.

Br Energy Efficiency Impact by Bricklayer / Brickmaker

Br Energy Efficiency Impact by Bricklayer / Brickmaker
Watch the video of a brickmaker.

Ca Energy Efficiency Impact by Carpenter



Coordinator:	BHOe, AT
Responsible person:	Reinhold Sahl / Burghauptmann BHOe
Project lead:	Elisabeth Bauer / BHOe
Contact person: (+43 676 3273024)	Gerald Wagenhofer / UBW, AT gerald.wagenhofer@ubw-consulting.eu
Project website:	pro-heritage.eu
Certification organisation (ECQA):	https://jobcertification.eu/

Thanks for your attention!

TRAIN4SUSTAIN project

09.09.2022 at Sustainable Places Conference
Nice, France
Uli Jakob, JER

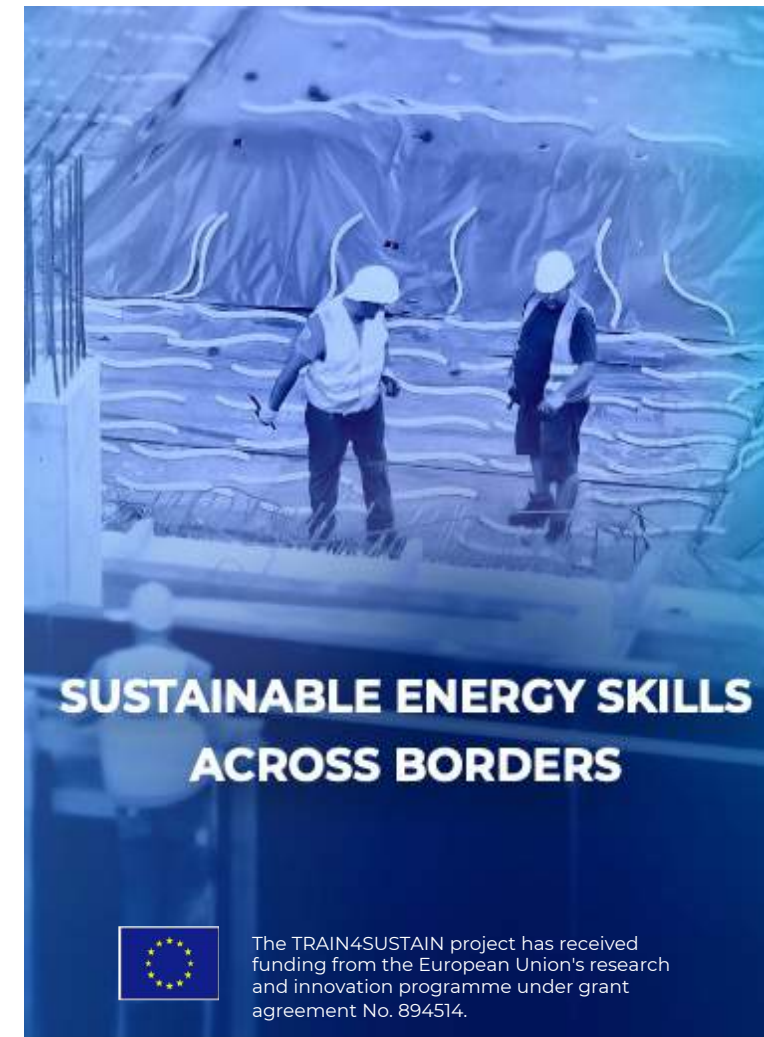


T4S Project factsheet

- Start date 1 May 2020
- End date 31 October 2022
- Overall budget: € 994,375
- EU contribution € 994,375
- Coordinated by: Geonardo, Hungary
- Topic(s): LC-SC3-EE-3-2019-2020 - Stimulating demand for sustainable energy skills in the construction sector

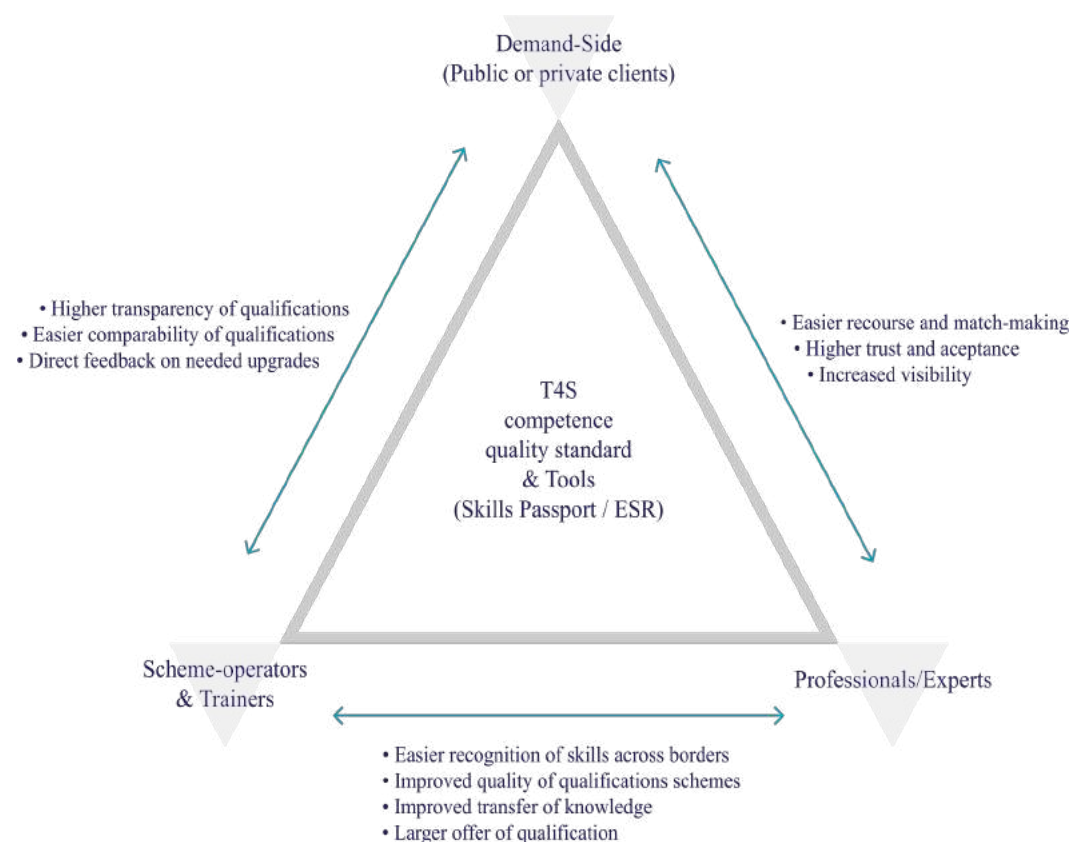
**Consortium of 7 partners
from 5 EU countries**

Goal: Raising acceptance of regional and national qualifications and skills on the EU construction market



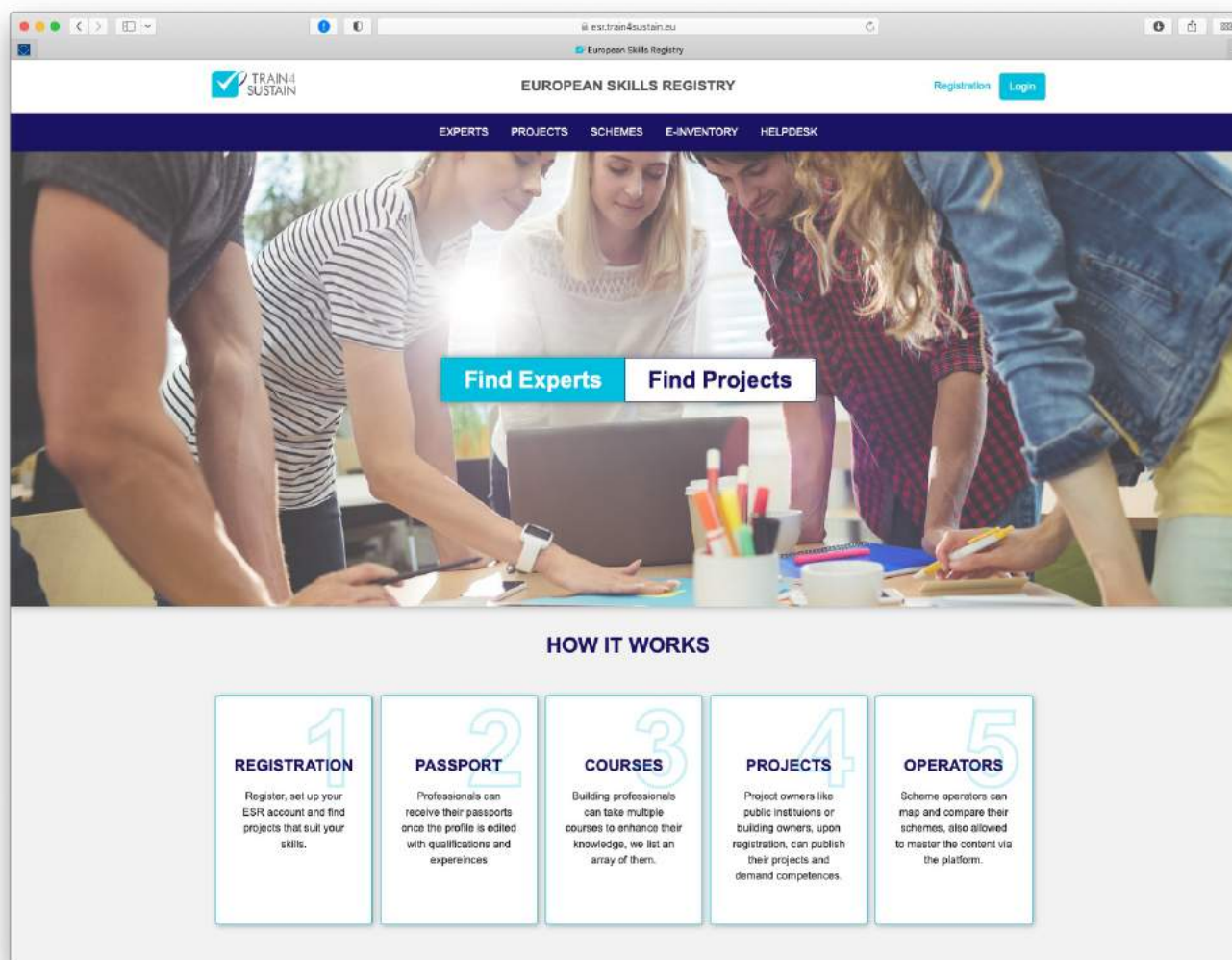
T4S Project concept

- **European Skills Registry (ESR)** web application based on the **T4S Competence Quality Standard (CQS)**
- Mapping / analysing of over 300 **Qualification Schemes (QS)** including 10 EU and 2 non-EU countries
- Finally, **67 QSs were included** in the **CQS**, including **1,335** described **Learning Outcomes (LO)**



T4S ESR platform

<https://esr.train4sustain.eu>



The screenshot shows the website interface with a navigation bar containing 'EXPERTS', 'PROJECTS', 'SCHEMES', 'E-INVENTORY', and 'HELPDESK'. A main banner features a group of people working at a table with a laptop, overlaid with 'Find Experts' and 'Find Projects' buttons. Below the banner is a 'HOW IT WORKS' section with five numbered steps:

- 1 REGISTRATION**: Register, set up your ESR account and find projects that suit your skills.
- 2 PASSPORT**: Professionals can receive their passports once the profile is edited with qualifications and experiences.
- 3 COURSES**: Building professionals can take multiple courses to enhance their knowledge, we list an array of them.
- 4 PROJECTS**: Project owners like public institutions or building owners, upon registration, can publish their projects and demand competences.
- 5 OPERATORS**: Scheme operators can map and compare their schemes, also allowed to master the content via the platform.



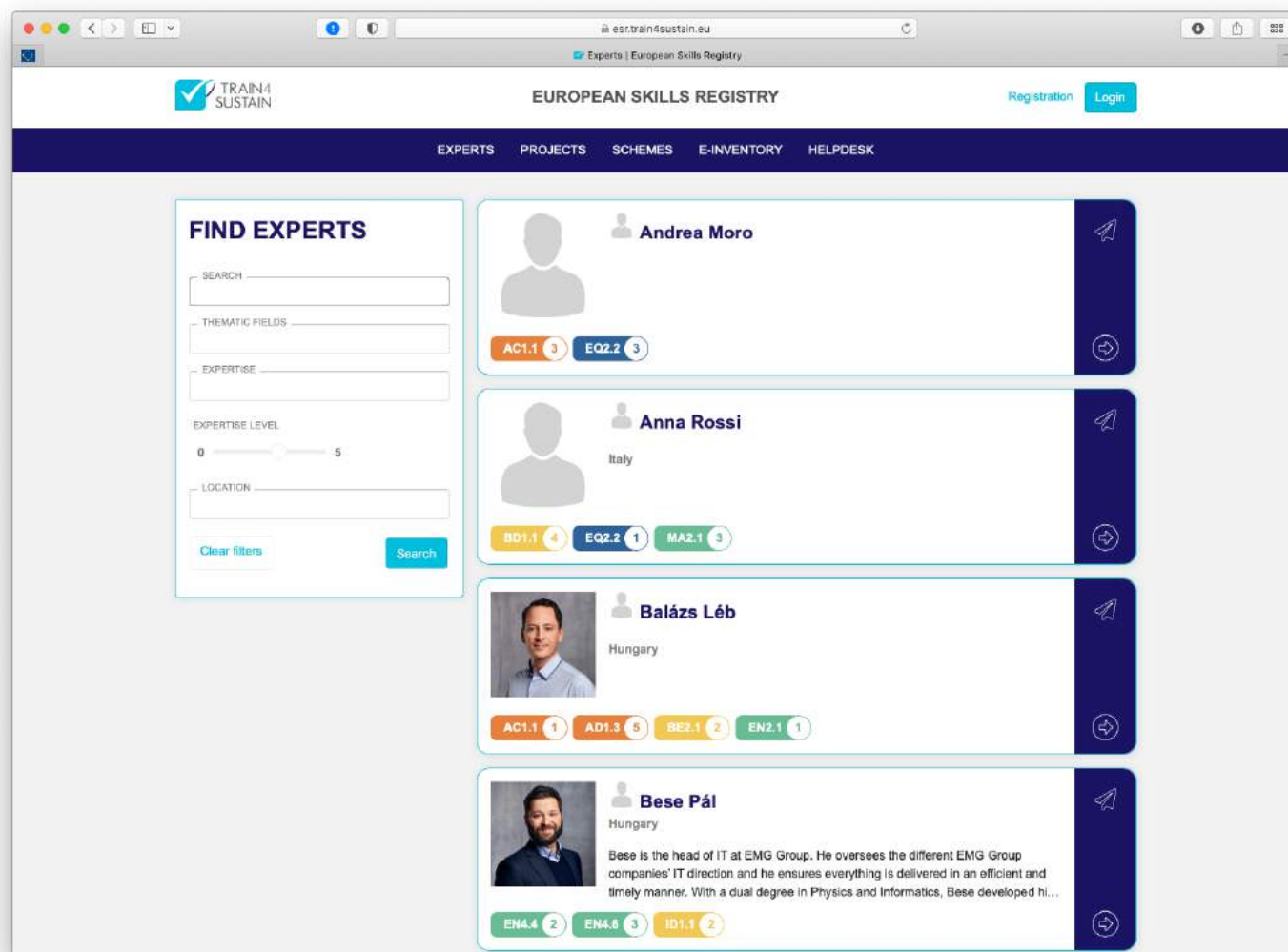
The screenshot shows the 'DIMENSIONS' section with four categories:

- ENVIRONMENT**: Protect the planet from degradation, through sustainable consumption and production, managing natural resources and taking urgent action on climate change.
- SOCIETY**: Let all human beings can fulfil their potential in a safe and healthy environment adapted to the climate change.
- ECONOMY**: Ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social, and technological progress occurs in harmony with nature.
- PROCESS**: Deployment and management of effective processes during the design, construction and operation of buildings.

Below this is the 'THEMATIC FIELDS' section, which includes a grid of tags such as: Accessibility, Adaptation and resilience to climate change, Built Environment Certification systems, Comfort and well being, Commissioning, Economical quality, Energy, Habitat, Innovative Digital Solutions, Interdisciplinary Skills, Listed Buildings, Maintenance and operating, Materials, Mobility, Safety, Services, Sustainable Building Design, Sustainable construction, and Water.



T4S ESR platform – Experts



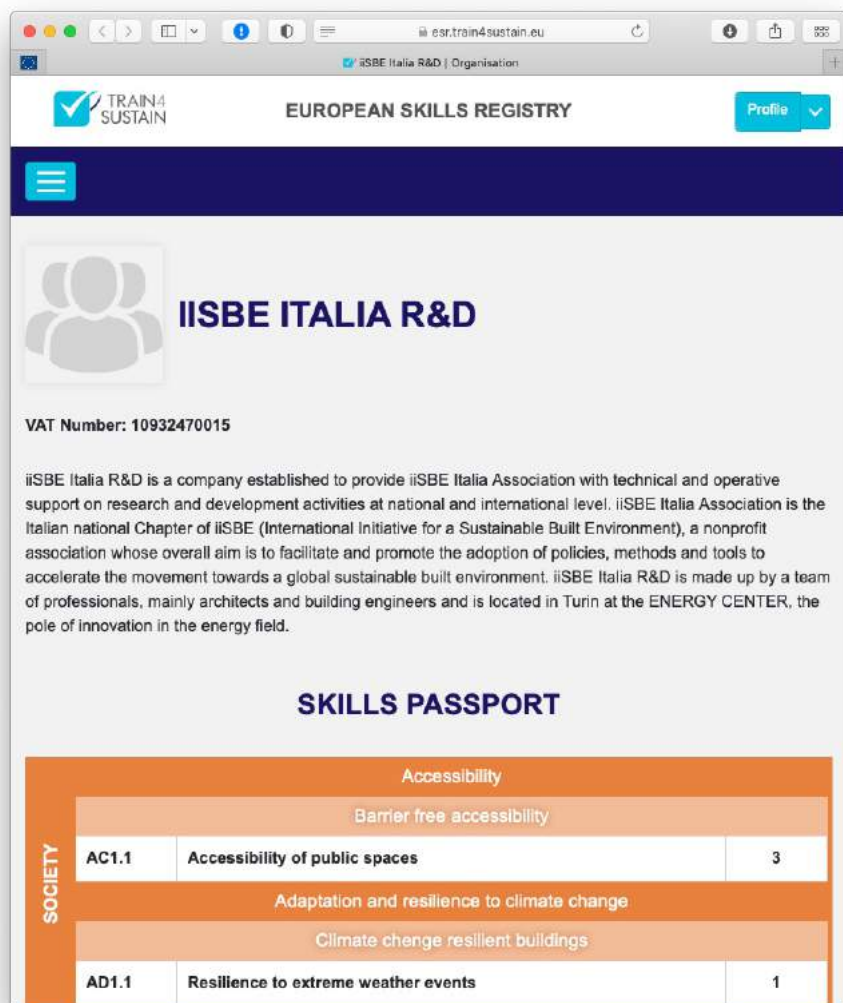
The screenshot displays the 'EUROPEAN SKILLS REGISTRY' website. On the left, there is a 'FIND EXPERTS' search panel with fields for 'SEARCH', 'THEMATIC FIELDS', 'EXPERTISE', 'EXPERTISE LEVEL' (a slider from 0 to 5), and 'LOCATION'. A 'Search' button is at the bottom of this panel. The main content area shows a list of expert profiles:

- Andrea Moro**: Profile with skills AC1.1 (3) and EQ2.2 (3).
- Anna Rossi**: Profile with skills BD1.1 (4), EQ2.2 (1), and MA2.1 (3).
- Balázs Léb**: Profile with skills AC1.1 (1), AD1.3 (5), BEZ.1 (2), and EN2.1 (1).
- Bese Pál**: Profile with skills EN4.4 (2), EN4.6 (3), and ID1.1 (2). A bio snippet follows: "Bese is the head of IT at EMG Group. He oversees the different EMG Group companies' IT direction and he ensures everything is delivered in an efficient and timely manner. With a dual degree in Physics and Informatics, Bese developed hi..."

- Expert database
 - searching by keyword, thematic fields, level of competence and location
- Sending messages
- Accessing profile details + Skills Passport



T4S ESR platform – Skills passport



TRAIN4 SUSTAIN EUROPEAN SKILLS REGISTRY Profile

IISBE ITALIA R&D

VAT Number: 10932470015

iISBE Italia R&D is a company established to provide iISBE Italia Association with technical and operative support on research and development activities at national and international level. iISBE Italia Association is the Italian national Chapter of iISBE (International Initiative for a Sustainable Built Environment), a nonprofit association whose overall aim is to facilitate and promote the adoption of policies, methods and tools to accelerate the movement towards a global sustainable built environment. iISBE Italia R&D is made up by a team of professionals, mainly architects and building engineers and is located in Turin at the ENERGY CENTER, the pole of innovation in the energy field.

SKILLS PASSPORT

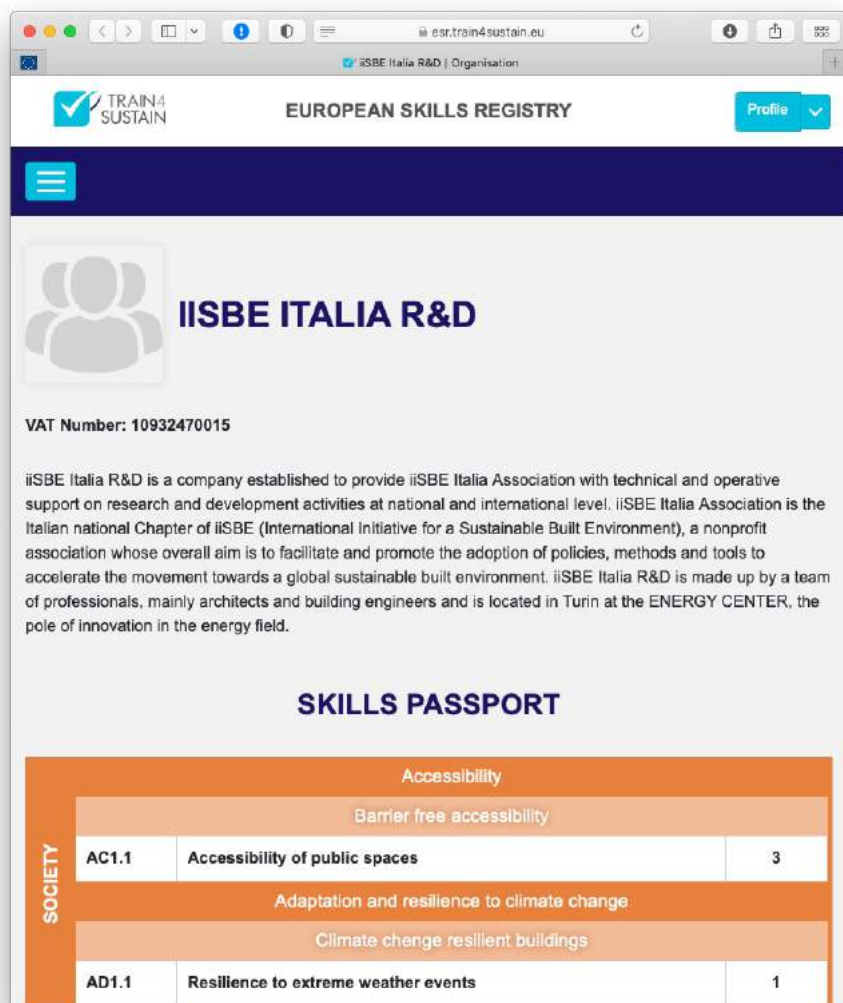
SOCIETY	Accessibility		
	Barrier free accessibility		
	AC1.1	Accessibility of public spaces	3
SOCIETY	Adaptation and resilience to climate change		
	Climate change resilient buildings		
	AD1.1	Resilience to extreme weather events	1

SKILLS PASSPORT

SOCIETY	Accessibility		
	Barrier free accessibility		
	AC1.1	Accessibility of public spaces	3
SOCIETY	Adaptation and resilience to climate change		
	Climate change resilient buildings		
	AD1.1	Resilience to extreme weather events	1
ECONOMY	Economical quality		
	Green value		
	EQ2.2	Communication of green building value	3
PROCESS	Sustainable Building Design		
	Integrative design		
	BD1.1	Integrated Design Process	4
ENVIRONMENT	Materials		
	Sustainable materials		
	MA2.1	Life Cycle Assessment (building scale)	5
	Energy		
	Energy Reduction		
	EN4.4	Solar shading systems	1
	Energy Management		
EN2.1	Smart grid systems	5	
Energy Production and HVAC systems			
	EN3.1	Heating and cooling systems	4



T4S ESR platform – Skills passport



EUROPEAN SKILLS REGISTRY Profile

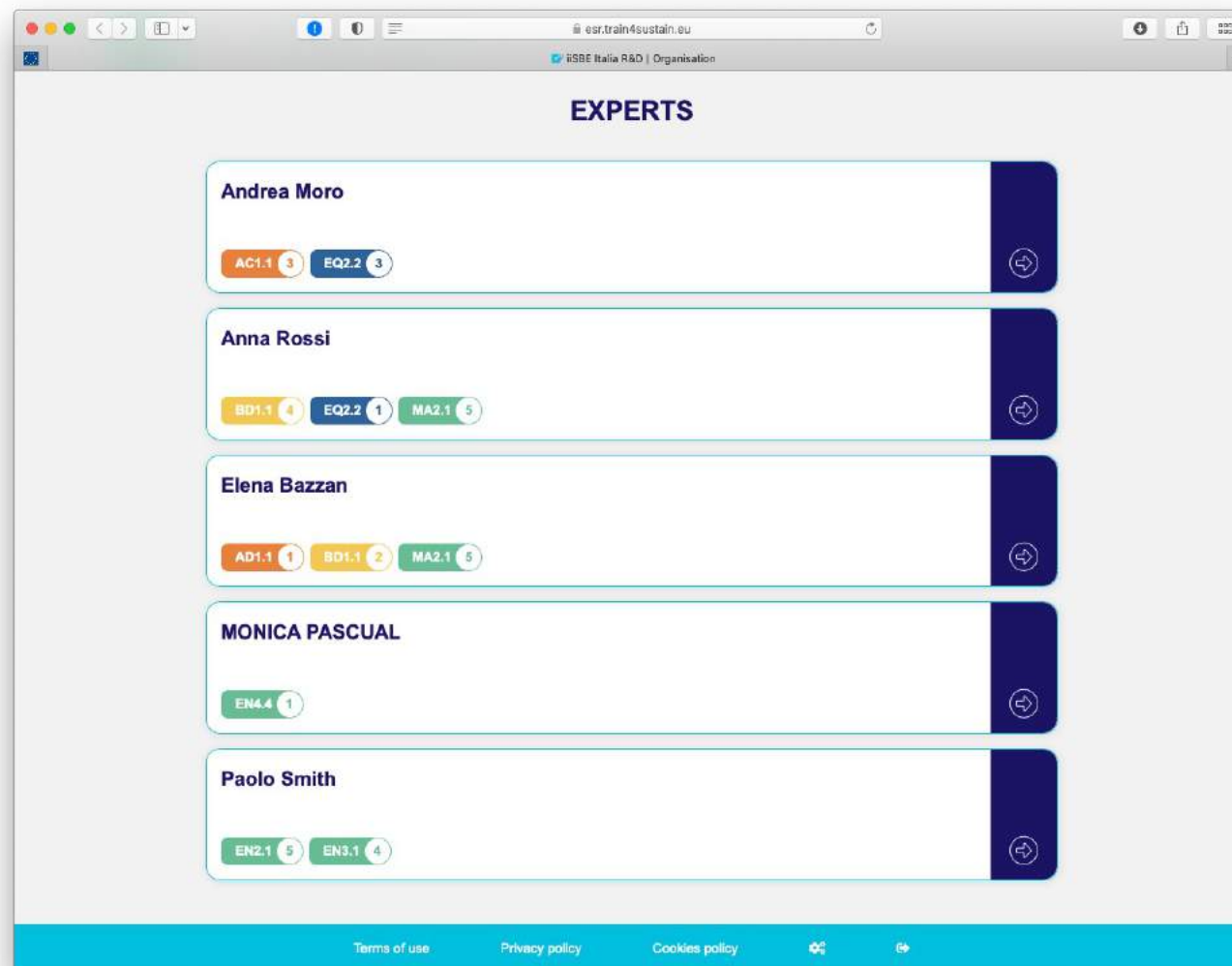
IISBE ITALIA R&D

VAT Number: 10932470015

iISBE Italia R&D is a company established to provide iISBE Italia Association with technical and operative support on research and development activities at national and international level. iISBE Italia Association is the Italian national Chapter of iISBE (International Initiative for a Sustainable Built Environment), a nonprofit association whose overall aim is to facilitate and promote the adoption of policies, methods and tools to accelerate the movement towards a global sustainable built environment. iISBE Italia R&D is made up by a team of professionals, mainly architects and building engineers and is located in Turin at the ENERGY CENTER, the pole of innovation in the energy field.

SKILLS PASSPORT

SOCIETY	Accessibility		
	Barrier free accessibility		
	AC1.1	Accessibility of public spaces	3
	Adaptation and resilience to climate change		
Climate change resilient buildings			
AD1.1	Resilience to extreme weather events	1	



EXPERTS

Andrea Moro
AC1.1 3 EQ2.2 3

Anna Rossi
BD1.1 4 EQ2.2 1 MA2.1 5

Elena Bazzan
AD1.1 1 BD1.1 2 MA2.1 5

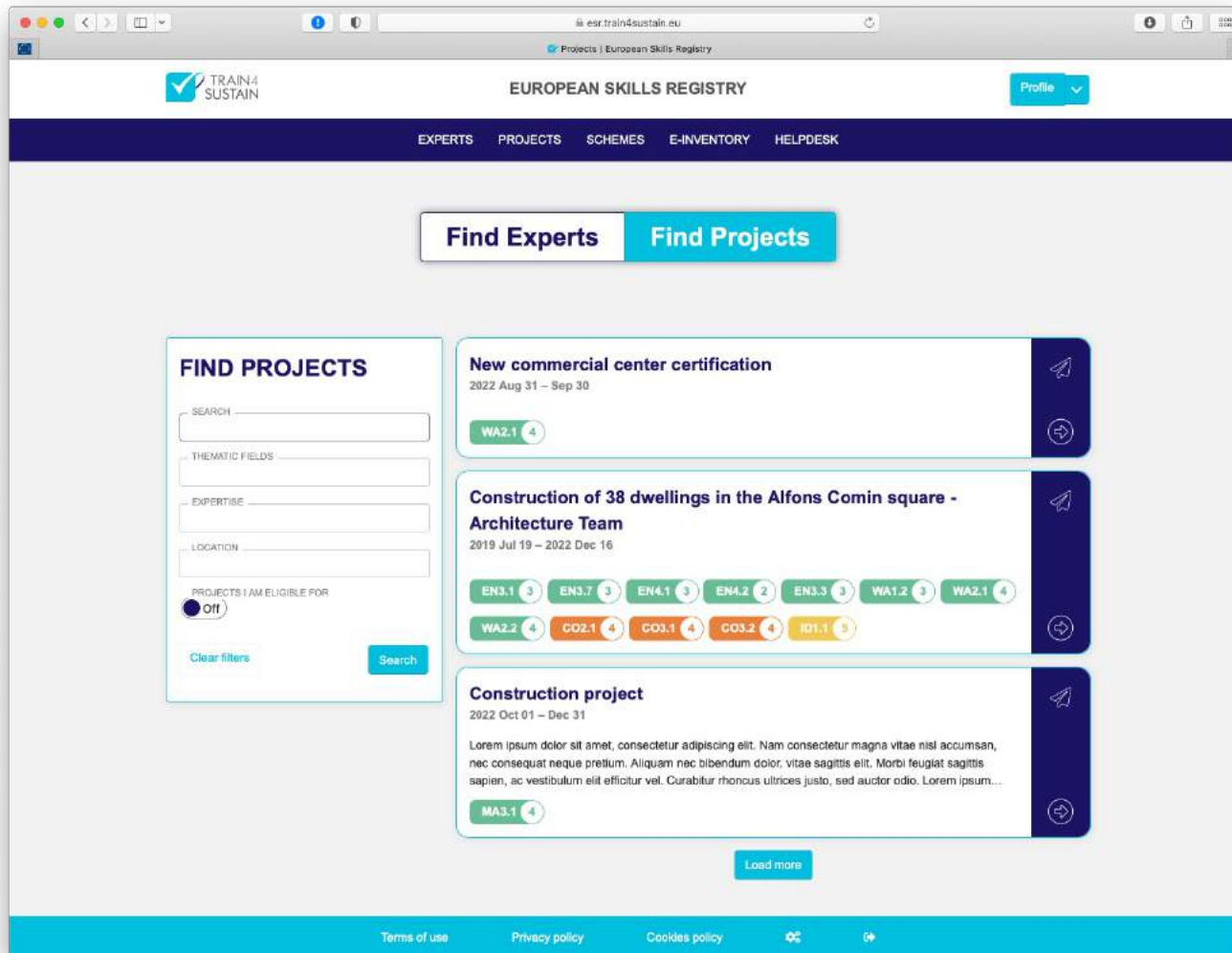
MONICA PASCUAL
EN4.4 1

Paolo Smith
EN2.1 5 EN3.1 4

Terms of use Privacy policy Cookies policy



T4S ESR platform – Projects



The screenshot shows the 'EUROPEAN SKILLS REGISTRY' interface. At the top, there is a navigation bar with 'EXPERTS', 'PROJECTS', 'SCHEMES', 'E-INVENTORY', and 'HELPDESK'. Below this, there are two main buttons: 'Find Experts' and 'Find Projects'. The 'Find Projects' section is active, displaying a search form on the left and a list of project cards on the right. The search form includes fields for 'SEARCH', 'THEMATIC FIELDS', 'EXPERTISE', and 'LOCATION', along with a 'PROJECTS I AM ELIGIBLE FOR' dropdown set to 'Off'. The project cards are:

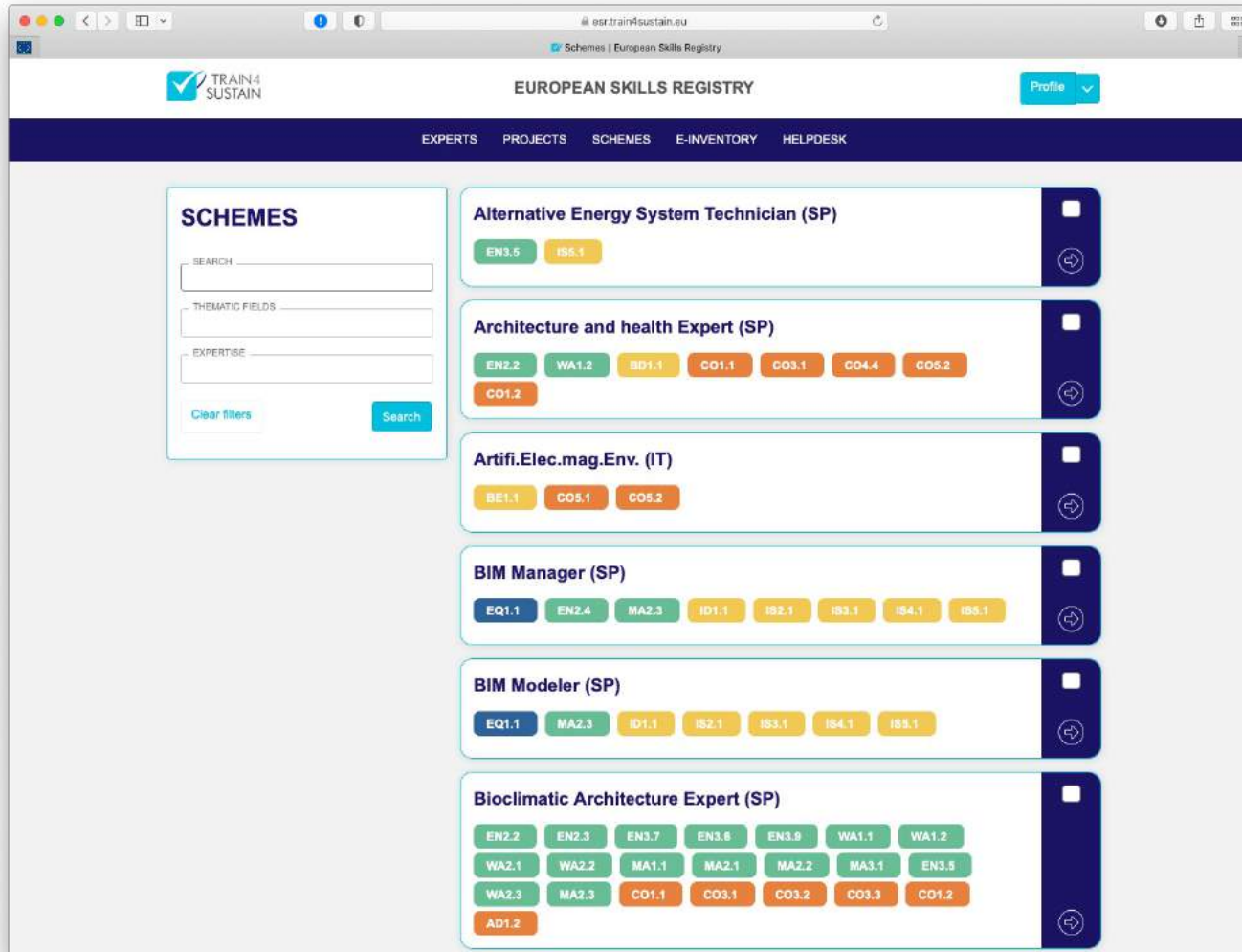
- New commercial center certification** (2022 Aug 31 – Sep 30) with skill tag WA2.1 (4).
- Construction of 38 dwellings in the Alfons Comin square - Architecture Team** (2019 Jul 19 – 2022 Dec 16) with skill tags EN3.1 (3), EN3.7 (3), EN4.1 (3), EN4.2 (2), EN3.3 (3), WA1.2 (3), WA2.1 (4), WA2.2 (4), CO2.1 (4), CO3.1 (4), CO3.2 (4), and ID1.1 (5).
- Construction project** (2022 Oct 01 – Dec 31) with skill tag MA3.1 (4).

A 'Load more' button is located at the bottom of the project list. The footer contains links for 'Terms of use', 'Privacy policy', and 'Cookies policy'.

- Project database
 - Searching by keyword, thematic fields, level of competence and location
- Contacting the project lead
- Accessing project details and requirements



T4S ESR platform – Schemes



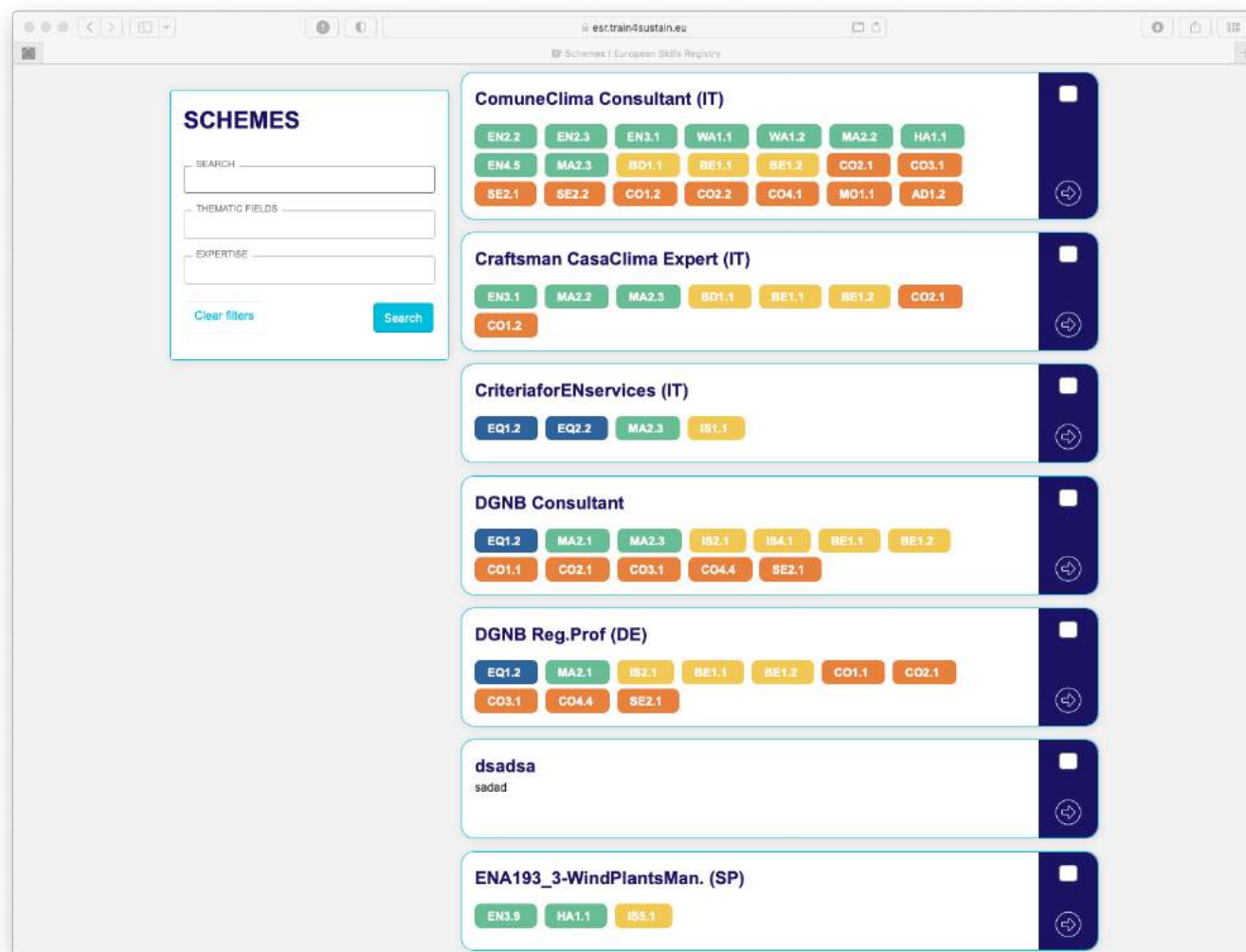
The screenshot shows the 'EUROPEAN SKILLS REGISTRY' interface. On the left, there is a 'SCHEMES' sidebar with search filters for 'SEARCH', 'THEMATIC FIELDS', and 'EXPERTISE', along with 'Clear filters' and 'Search' buttons. The main content area displays a list of six schemes, each with a title, a set of colored tags representing expertise areas, and a 'Profile' button on the right. The schemes are:

- Alternative Energy System Technician (SP)**: EN3.5, ISS.1
- Architecture and health Expert (SP)**: EN2.2, WA1.2, BD1.1, CO1.1, CO3.1, CO4.4, CO5.2, CO1.2
- Artifi.Elec.mag.Env. (IT)**: BE1.1, CO5.1, CO5.2
- BIM Manager (SP)**: EQ1.1, EN2.4, MA2.3, ID1.1, IS2.1, IS3.1, IS4.1, IS5.1
- BIM Modeler (SP)**: EQ1.1, MA2.3, ID1.1, IS2.1, IS3.1, IS4.1, IS5.1
- Bioclimatic Architecture Expert (SP)**: EN2.2, EN2.3, EN3.7, EN3.8, EN3.9, WA1.1, WA1.2, WA2.1, WA2.2, MA1.1, MA2.1, MA2.2, MA3.1, EN3.5, WA2.3, MA2.3, CO1.1, CO3.1, CO3.2, CO3.3, CO1.2, AD1.2

- Scheme database
 - Searching by keyword, thematic fields, level of competence
 - Listing available area of expertise's
 - Comparing schemes



T4S ESR platform – Scheme example



SCHEMES

SEARCH _____

THEMATIC FIELDS _____

EXPERTISE _____

Clear filters Search

- ComuneClima Consultant (IT)**
 - EN2.2, EN2.3, EN3.1, WA1.1, WA1.2, MA2.2, HA1.1
 - EN4.5, MA2.3, BD1.1, BE1.1, BE1.2, CO2.1, CO3.1
 - SE2.1, SE2.2, CO1.2, CO2.2, CO4.1, MO1.1, AD1.2
- Craftsman CasaClima Expert (IT)**
 - EN3.1, MA2.2, MA2.3, BD1.1, BE1.1, BE1.2, CO2.1
 - CO1.2
- CriteriaforENservices (IT)**
 - EQ1.2, EQ2.2, MA2.3, IS1.1
- DGNB Consultant**
 - EQ1.2, MA2.1, MA2.3, IS2.1, IS4.1, BE1.1, BE1.2
 - CO1.1, CO2.1, CO3.1, CO4.4, SE2.1
- DGNB Reg.Prof (DE)**
 - EQ1.2, MA2.1, IS2.1, BE1.1, BE1.2, CO1.1, CO2.1
 - CO3.1, CO4.4, SE2.1
- dsadsa**
 - sadad
- ENA193_3-WindPlantsMan. (SP)**
 - EN3.9, HA1.1, ISS.1

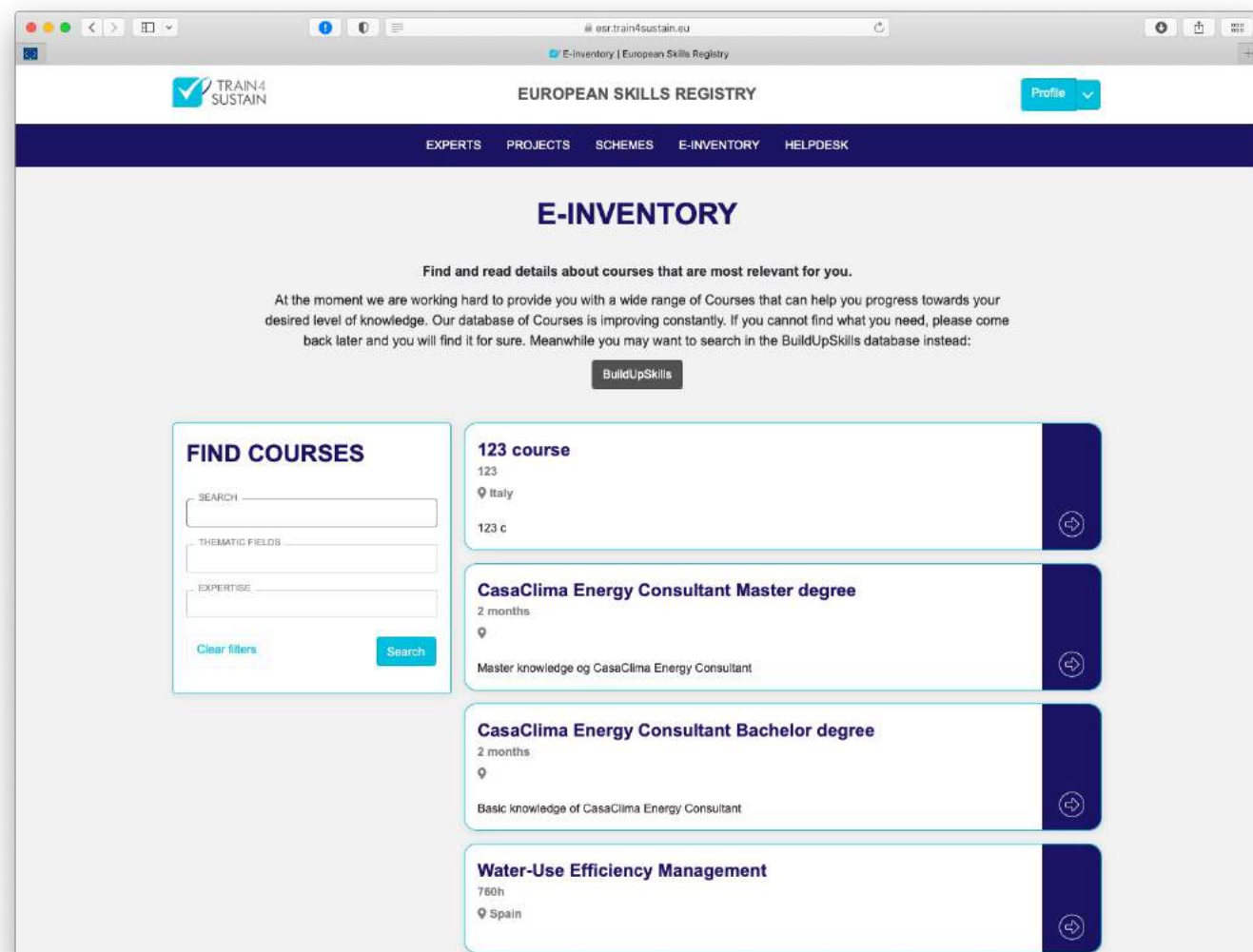
DGNB CONSULTANT

What does the level of competence mean?

ECONOMY	Economic quality			
	Cost planning and management			
EQ1.2	Life cycle cost assessment		5	
ENVIRONMENT	Materials			
	Sustainable materials			
	MA2.1	Life Cycle Assessment (building scale)	5	
MA2.3	Regenerative materials and technologies		5	
PROCESS	Interdisciplinary Skills			
	Quality assurance			
	IS2.1	Quality assurance planning and management		5
	Information management			
	IS4.1	Management of information in a design process		5
	Built Environment Certification systems			
Building sustainability certification				
BE1.1	Energy Performance Certification		1 2 3 5	
BE1.2	Building sustainability certification systems		5	
SOCIETY	Comfort and well being			
	Quality of air			
	CO1.1	Low Emitting materials		1 2 5
	Thermal comfort			
	CO2.1	Indoor Thermal Comfort		5
	Visual comfort			
	CO3.1	Daylighting		5
Acoustic comfort				
CO4.4	Environmental noise management		5	
Services				
Services for inhabitants				
SE2.1	Functional mix		5	



T4S ESR platform – e-Inventory



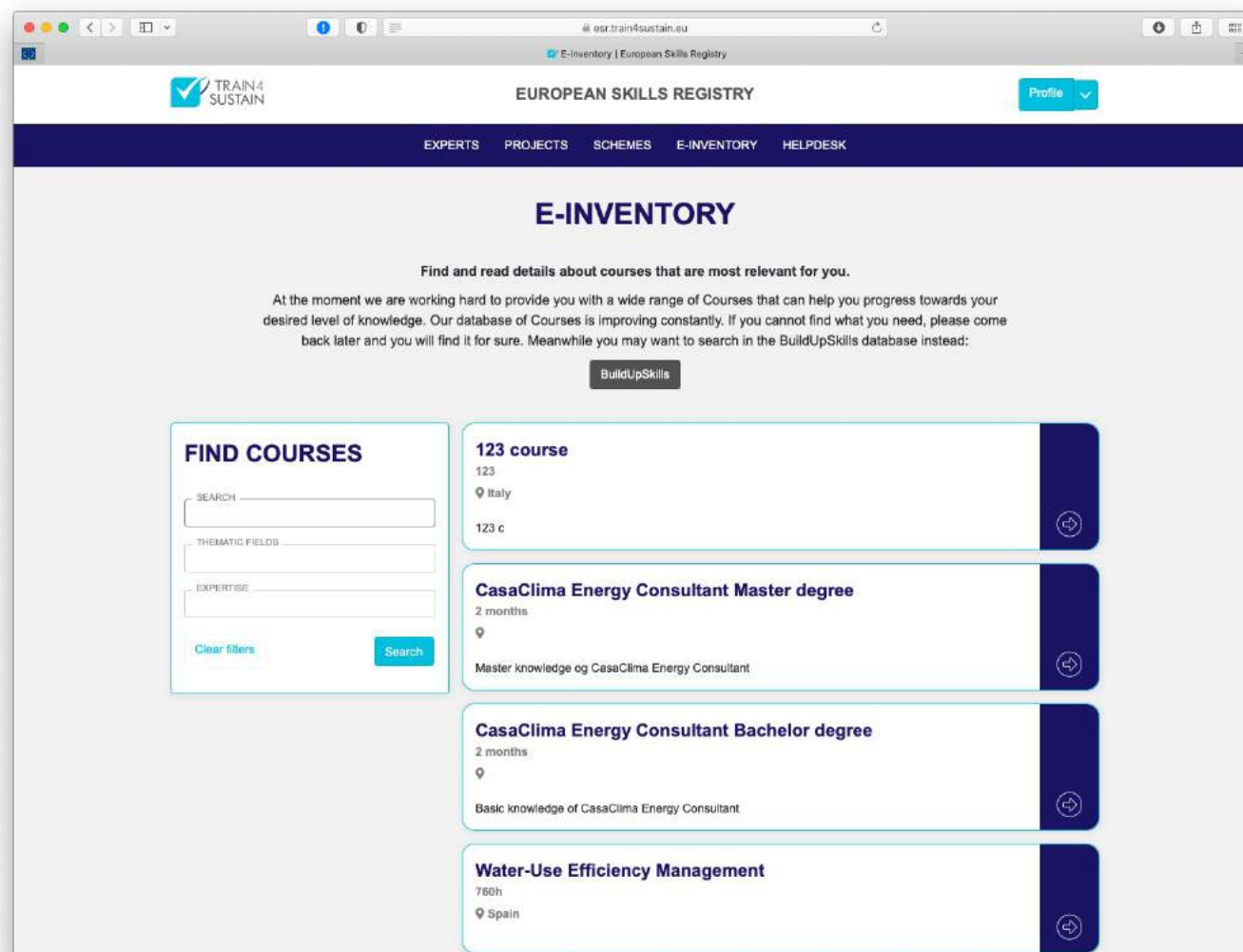
The screenshot shows the 'E-INVENTORY' section of the TRAIN4 SUSTAIN EUROPEAN SKILLS REGISTRY. The page features a search filter on the left with fields for 'SEARCH', 'THEMATIC FIELDS', and 'EXPERTISE', along with 'Clear filters' and 'Search' buttons. The main content area displays a list of courses:

- 123 course**
123
Italy
123 c
- CasaClima Energy Consultant Master degree**
2 months
Master knowledge og CasaClima Energy Consultant
- CasaClima Energy Consultant Bachelor degree**
2 months
Basic knowledge of CasaClima Energy Consultant
- Water-Use Efficiency Management**
760h
Spain

- e-Inventory
 - Searching by keyword, thematic fields, level of competence
 - Accessing course details
 - Searching in BuildUpSkills database



T4S ESR platform – Course details



EUROPEAN SKILLS REGISTRY

E-INVENTORY

Find and read details about courses that are most relevant for you.

At the moment we are working hard to provide you with a wide range of Courses that can help you progress towards your desired level of knowledge. Our database of Courses is improving constantly. If you cannot find what you need, please come back later and you will find it for sure. Meanwhile you may want to search in the BuildUpSkills database instead:

[BuildUpSkills](#)

FIND COURSES

SEARCH

THEMATIC FIELDS

EXPERTISE

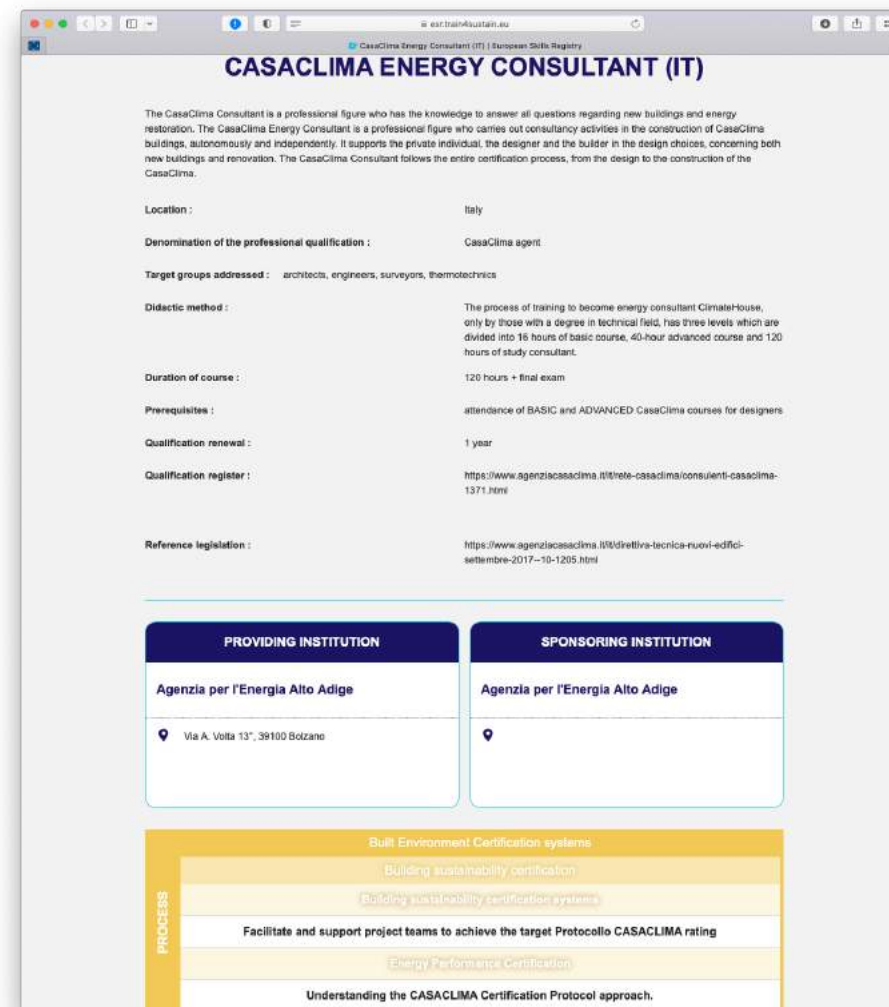
[Clear filters](#) [Search](#)

123 course
123
Italy
123 c

CasaClima Energy Consultant Master degree
2 months
Master knowledge og CasaClima Energy Consultant

CasaClima Energy Consultant Bachelor degree
2 months
Basic knowledge of CasaClima Energy Consultant

Water-Use Efficiency Management
760h
Spain



CASA CLIMA ENERGY CONSULTANT (IT)

The CasaClima Consultant is a professional figure who has the knowledge to answer all questions regarding new buildings end energy restoration. The CasaClima Energy Consultant is a professional figure who carries out consultancy activities in the construction of CasaClima buildings, autonomously and independently. It supports the private individual, the designer and the builder in the design choices, concerning both new buildings and renovation. The CasaClima Consultant follows the entire certification process, from the design to the construction of the CasaClima.

Location : Italy

Denomination of the professional qualification : CasaClima agent

Target groups addressed : architects, engineers, surveyors, thermotechnics

Didactic method : The process of training to become energy consultant ClimateHouse, only by those with a degree in technical field, has three levels which are divided into 16 hours of basic course, 40-hour advanced course and 120 hours of study consultant.

Duration of course : 120 hours + final exam

Prerequisites : attendance of BASIC and ADVANCED CasaClima courses for designers

Qualification renewal : 1 year

Qualification register : <https://www.agenziacasaclima.it/it/rete-casaclima/consulenti-casaclima-1371.html>

Reference legislation : <https://www.agenziacasaclima.it/it/direttiva-tecnica-nuovi-edifici-settembre-2017-10-1205.html>

PROVIDING INSTITUTION
Agenzia per l'Energia Alto Adige
Via A. Volta 13", 39100 Bolzano

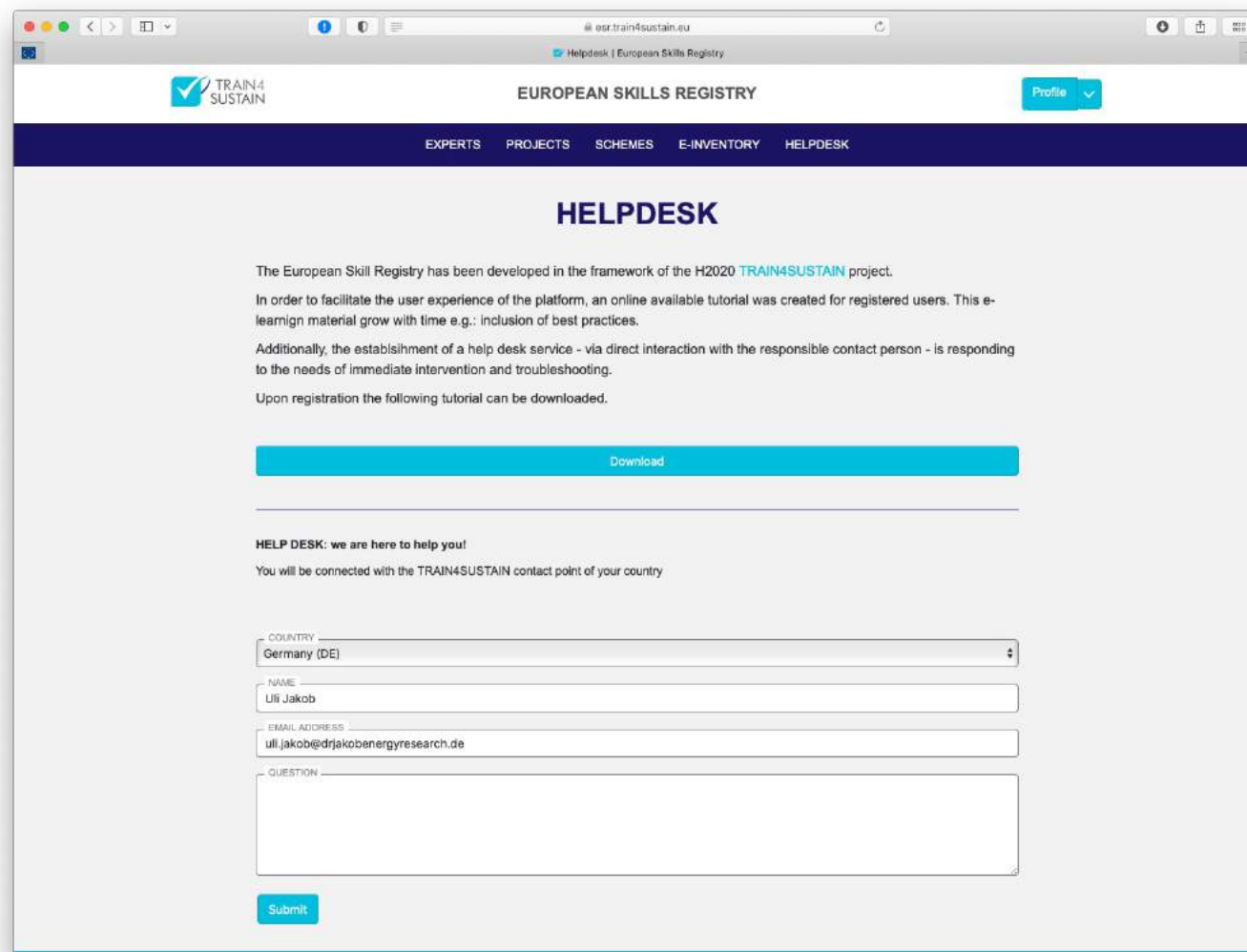
SPONSORING INSTITUTION
Agenzia per l'Energia Alto Adige

PROCESS

- Build Environment Certification systems
- Building sustainability certification
- Building sustainability certification systems
- Facilitate and support project teams to achieve the target Protocollo CASA CLIMA rating
- Energy Performance Certification
- Understanding the CASA CLIMA Certification Protocol approach.



T4S ESR platform – Helpdesk



The screenshot shows the 'HELPDESK' page of the European Skills Registry. The page header includes the TRAIN4 SUSTAIN logo, the text 'EUROPEAN SKILLS REGISTRY', and a 'Profile' dropdown menu. A navigation bar contains links for EXPERTS, PROJECTS, SCHEMES, E-INVENTORY, and HELPDESK. The main content area is titled 'HELPDESK' and contains the following text:

The European Skill Registry has been developed in the framework of the H2020 TRAIN4SUSTAIN project.

In order to facilitate the user experience of the platform, an online available tutorial was created for registered users. This e-learning material grows with time e.g.: inclusion of best practices.

Additionally, the establishment of a help desk service - via direct interaction with the responsible contact person - is responding to the needs of immediate intervention and troubleshooting.

Upon registration the following tutorial can be downloaded.

Below this text is a large blue 'Download' button.

Below the button, the text reads: 'HELP DESK: we are here to help you!' and 'You will be connected with the TRAIN4SUSTAIN contact point of your country'.

The form contains the following fields:

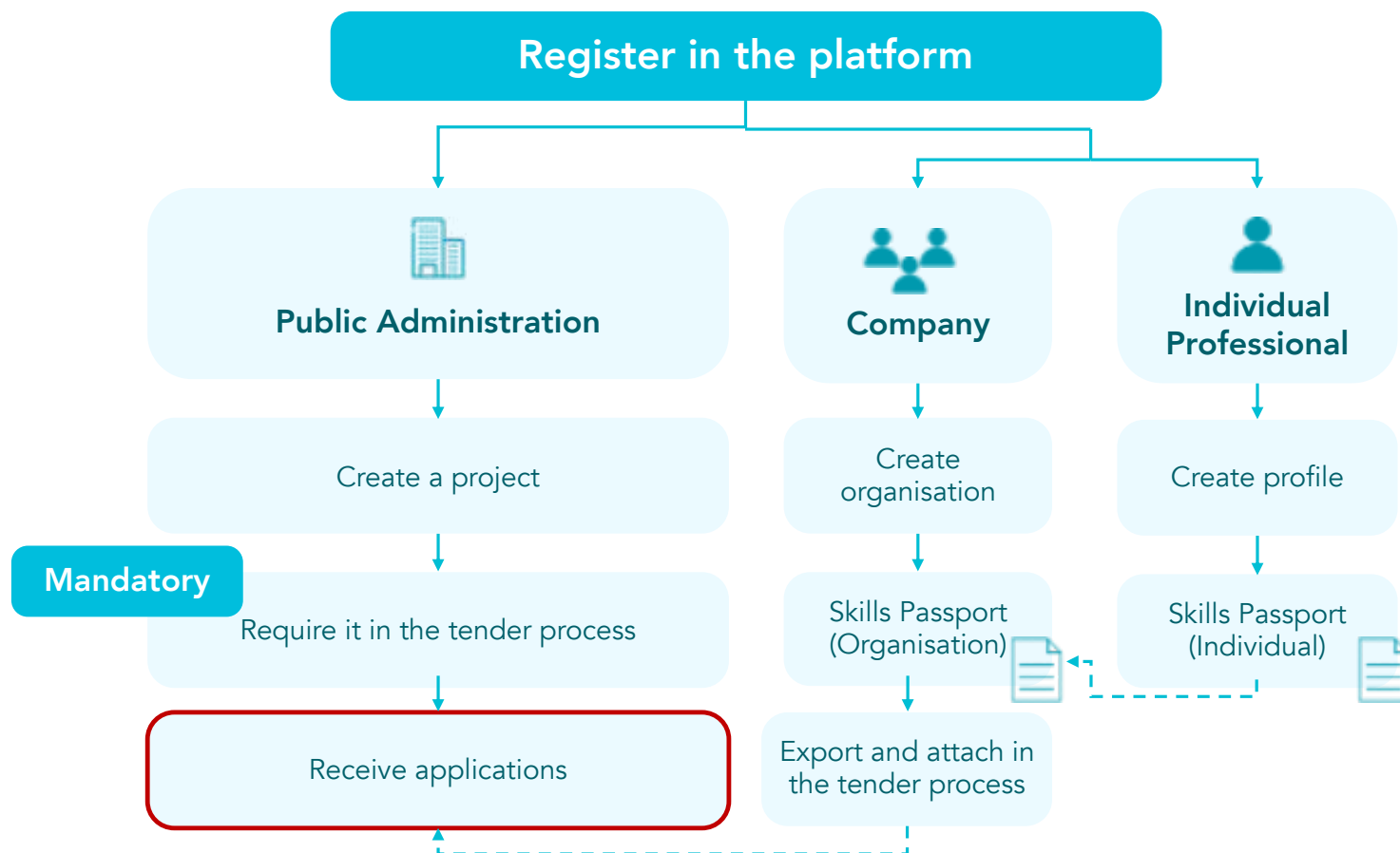
- COUNTRY: A dropdown menu with 'Germany (DE)' selected.
- NAME: A text input field containing 'Uli Jakob'.
- EMAIL ADDRESS: A text input field containing 'uli.jakob@drjakobenergyresearch.de'.
- QUESTION: A large text area for entering the user's question.

A blue 'Submit' button is located at the bottom of the form.

- Helpdesk
 - devoted to provide technical assistance and support to the ESR's users
 - Questions concerning possible future collaborations?
 - Technical issues related to the operation of the ESR?



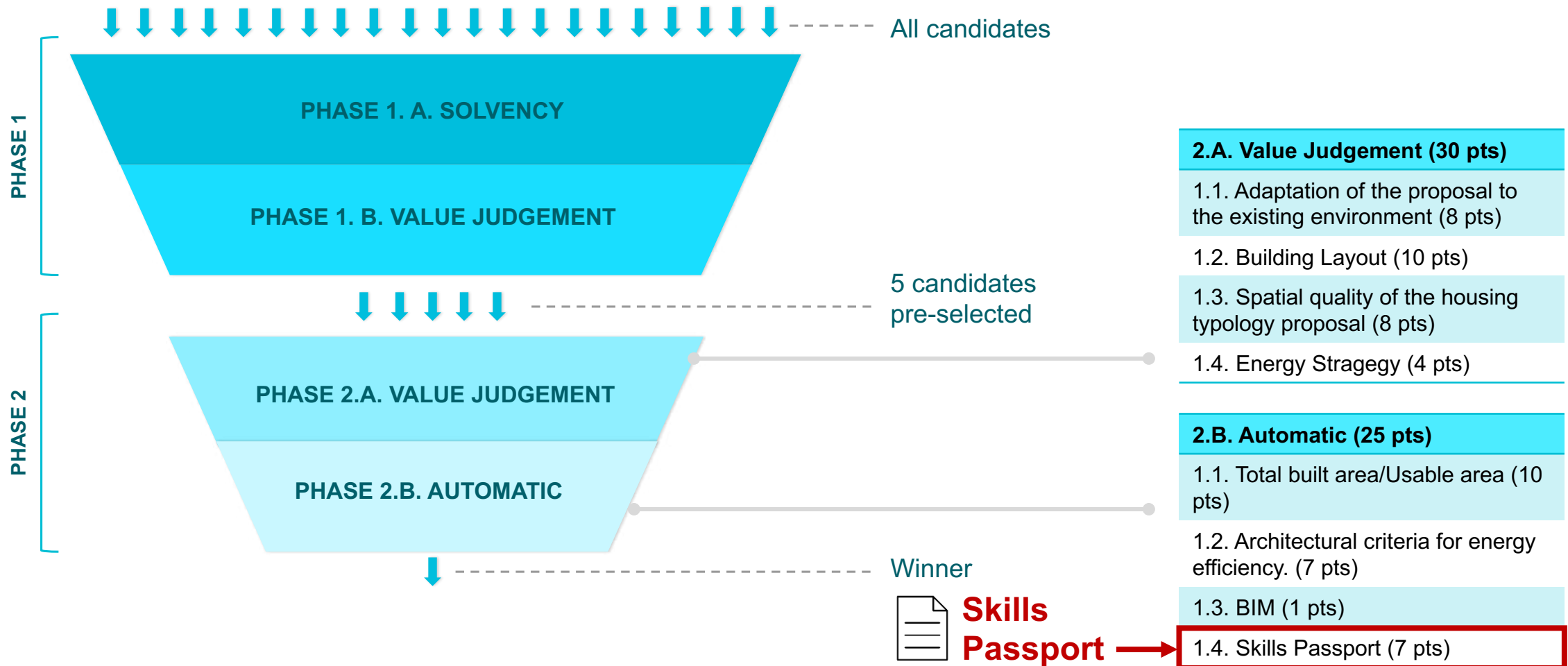
T4S Green Public Procurement



- GPP and ESR platform
 - Spanish pilot case study
 - Contracts needed
 - Tender announcement
 - Comparison and adjudication of applications
 - Influence of Skills Passport score



T4S GPP process pilot case



T4S Local training activities



TO WHOM ? The target group is represented by **staff of public bodies having experience in procurement processes for the construction and refurbishment of buildings** (civil servants, technicians, managers, decision-makers).



WHAT ? The objective of the course is to provide participants with the **knowledge and skills necessary to include and manage sustainable skills in GPP processes using the TRAIN4SUSTAIN tools and methodology.**



WHEN ? Courses will be delivered in each project partner country in the period **between 19th September and 7th October 2022.**



T4S CEN Workshop Agreement (CWA)



The CWA is a **regulatory document** that works as **pre-standardization process**, leading to get a **technical deliverable** which can be the basis for a **European or international standard** at a later stage.

Title : "TRAIN4SUSTAIN
Competence
Quality Standard"

Final CWA should be delivered
by **end of September 2022**



Public Consultation
TRAIN4SUSTAIN CEN Workshop Agreement
Submit your comments by September 8, 2022



Thanks for listening!

Check us out on

<https://train4sustain.eu/>

Watch us on YouTube

<https://train4sustain.eu/news/3/train4sustain-video-is-out>

LinkedIn

<https://www.linkedin.com/company/train4sustain-project/>

Twitter

<https://twitter.com/Train4Sustain>



Contact

uli.jakob@drjakobenergyresearch.de





SKILLS
INSTRUCT
INSTRUMENTS
CONSTRUCTION

INSTRUCT – SP2022

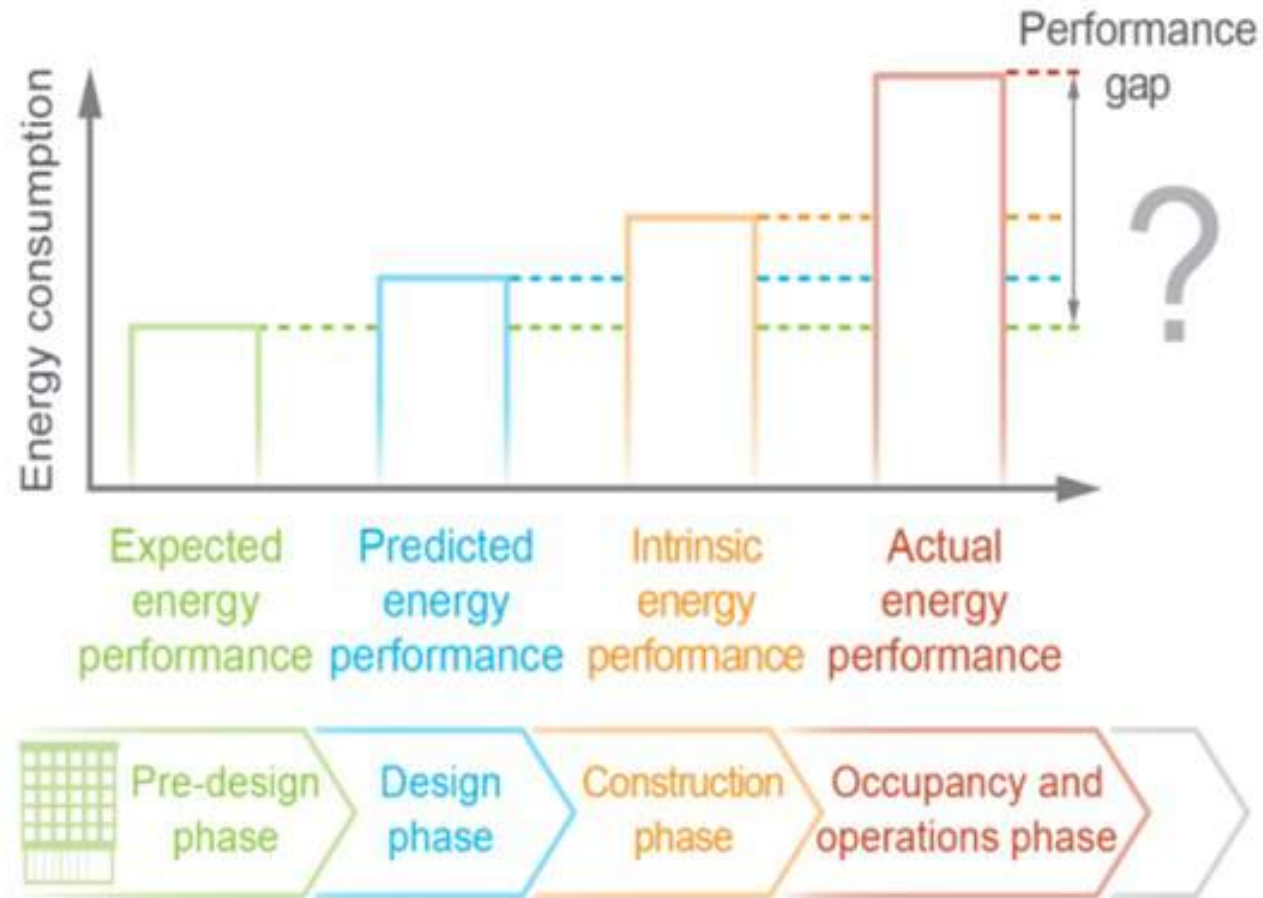
Toward better energy efficiency

Łukasz Wilczyński, ASM research solution strategy



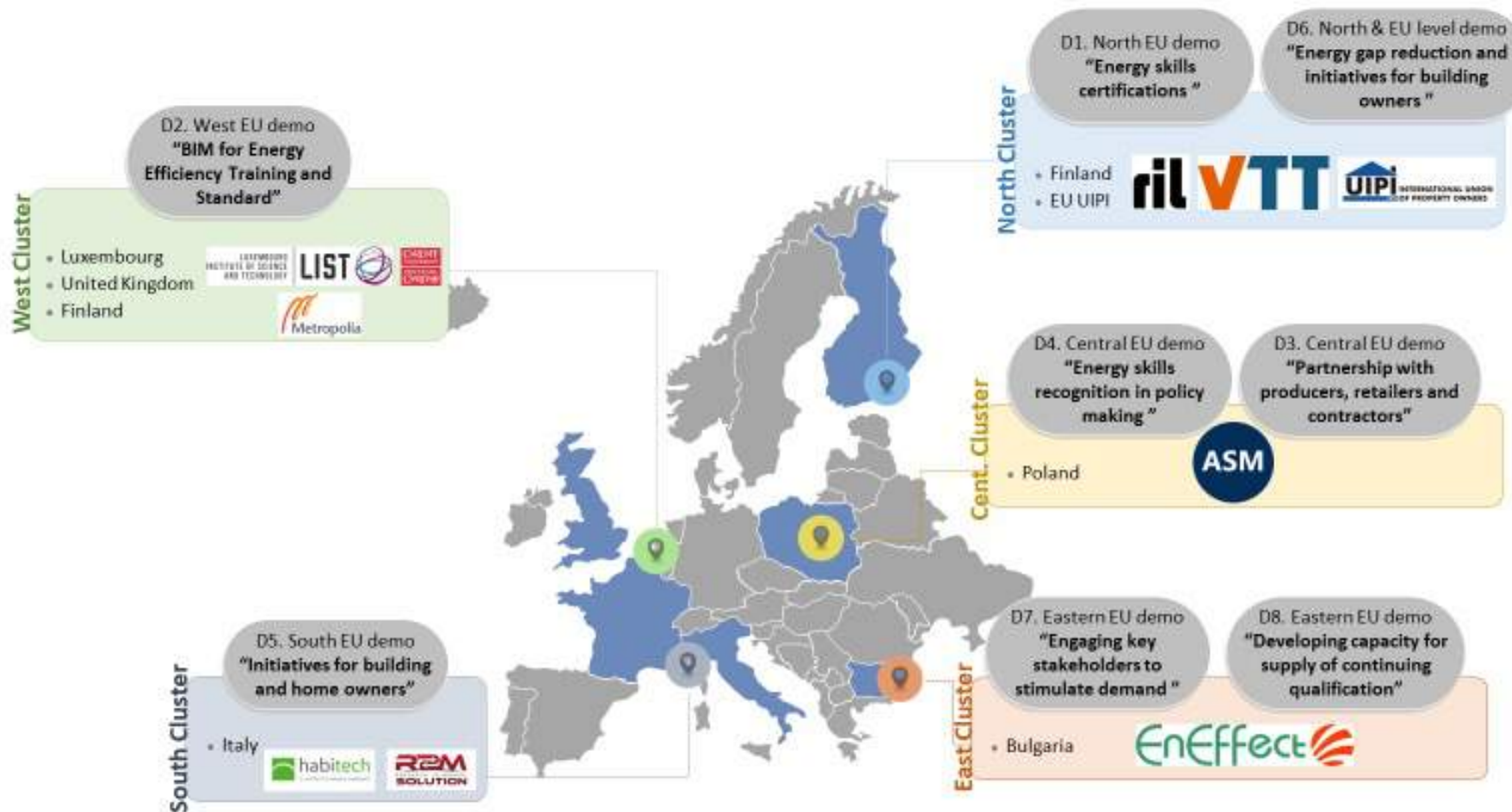
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 894756.

Main goal: reducing the energy gap.



Energy Performance Gap across Lifecycle

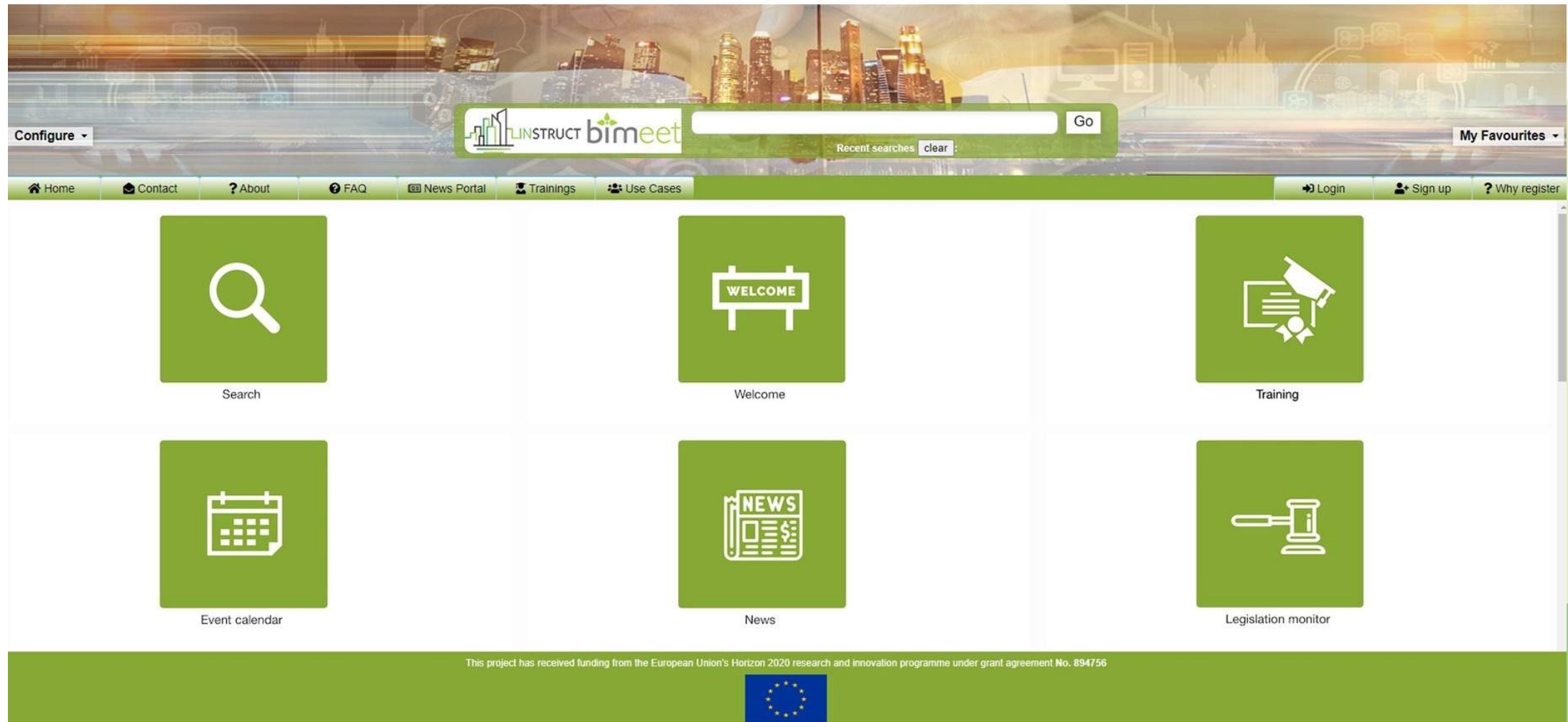
What we have done to reach our goal? Establishing clusters.



What we are doing to reach our goal? Research and Demonstrations.

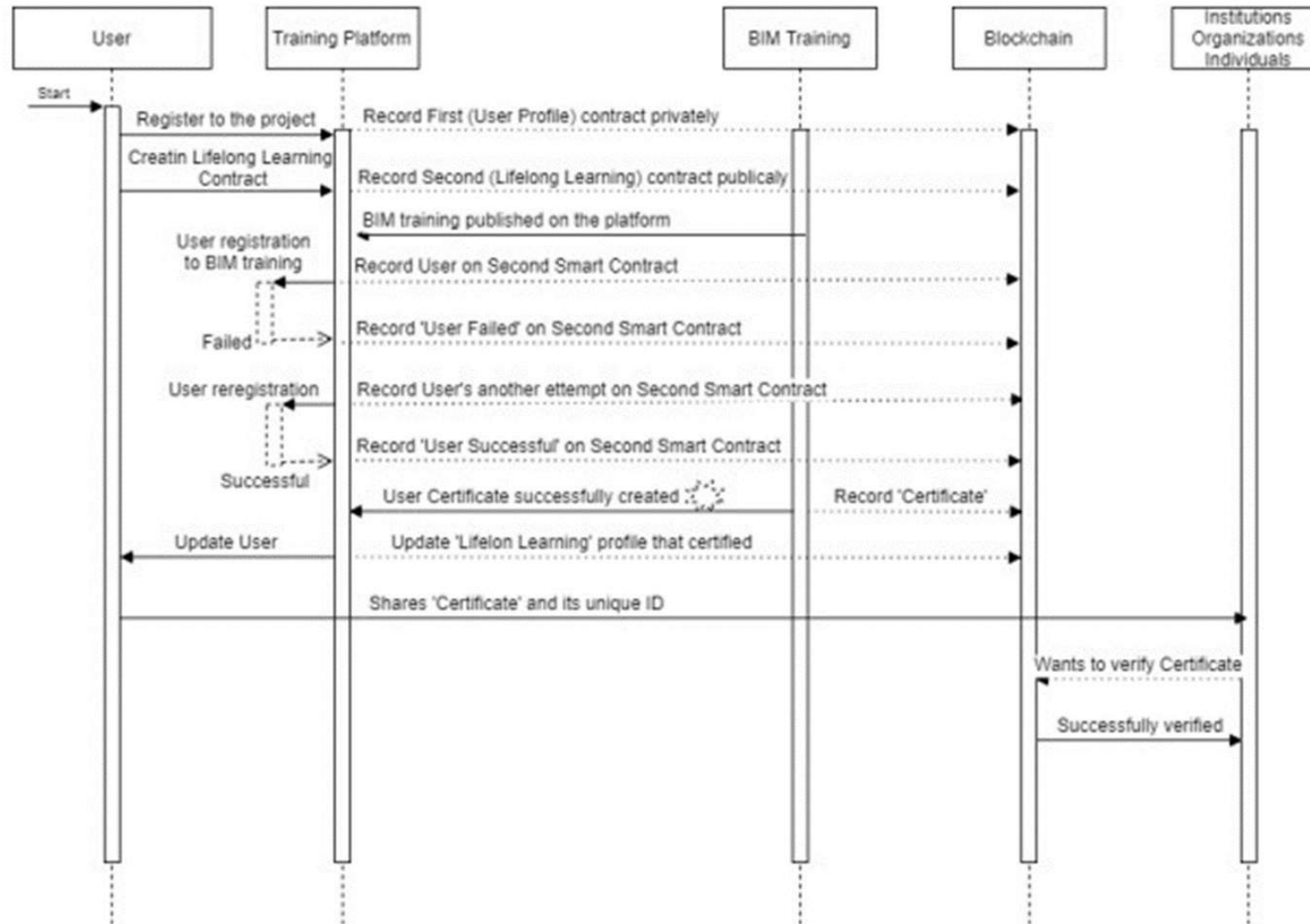
- ▶ Organising workshops, presentations dedicated to each of our 8 Demos in each cluster
- ▶ Gathering recommendations from different stakeholders
- ▶ Gathering database of the good practice examples and use cases (currently on the platform we have more than 60 UC's)
- ▶ Building huge database in the platform

What we are doing to reach our goal? On-line platform



The screenshot displays the INSTRUCT bimeet online platform interface. At the top, there is a navigation bar with a "Configure" dropdown menu, a search bar with a "Go" button, and a "My Favourites" dropdown menu. Below the navigation bar is a horizontal menu with links for Home, Contact, About, FAQ, News Portal, Trainings, Use Cases, Login, Sign up, and Why register. The main content area features six large green icons on a grid, each with a corresponding label below it: Search (magnifying glass), Welcome (signpost), Training (document with cursor), Event calendar (calendar), News (newspaper), and Legislation monitor (gavel). At the bottom of the page, there is a footer with the text: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 894756" and the European Union flag logo.

What we are doing to reach our goal? Innovation



What we are expecting? Results

- ❑ sustainable energy skills passports/registers
- ❑ new legislative frameworks, public procur. Practices
- ❑ Initiatives for home and building owners
- ❑ new partnerships with producers and retailers
- ❑ INSTRUCT tangible application already implemented in BIM4VET and BIMEET projects
- ❑ Guide for the establishment of energy skills passports, registers
- ❑ guide for new legislative frameworks, public procurement
- ❑ Procurement methods for demanding energy skills in project
- ❑ INSTRUCT platform and database

PROJECT PARTNERS



www.instructproject.com



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 894756.

#SUSTAINABLEPLACES2022

SUSTAINABLE PLACES 2022

PRO-Heritage

BUS LEAGUE

TRAIN4 SUSTAIN

JLL INSTRUCT

nZEB ready

nZEB Roadshow

BUS GoCircular

EEvtSkills

arise

ENERGY SKILLS IN CONSTRUCTION

“Sustainable Energy Skills in the Construction Sector 3.0”

SEP. 6TH – SEP 9TH, 2022; NICE, FRANCE

R2M SOLUTION

iae nice

UNIVERSITÉ CÔTE D'AZUR

MÉTROPOLE NICE CÔTE D'AZUR

VILLE DE NICE

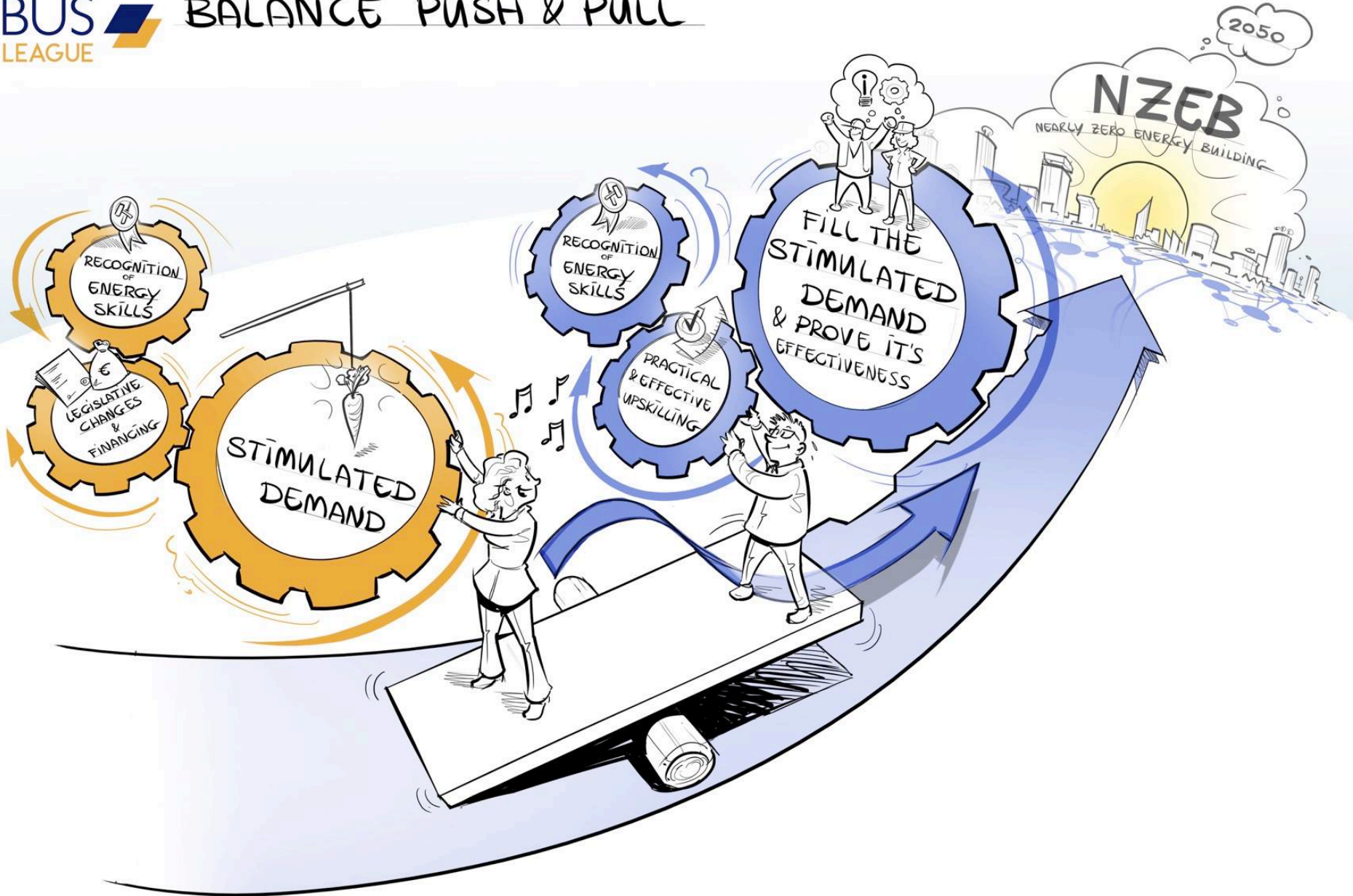
SUSTAINABLEPLACES.EU



Experience from the Netherlands with task-based Unit of Learning Outcomes replicated on topic Installation of Heatpumps.

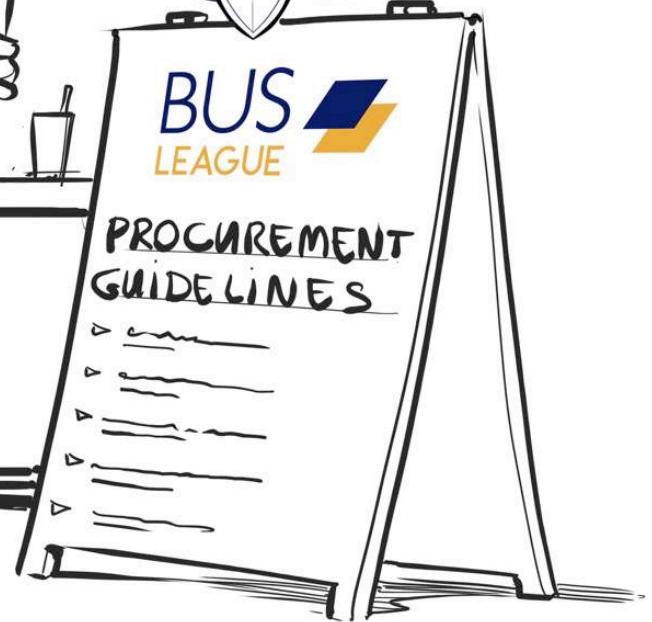
Sept 9, 2022, ISSO, Jan Cromwijk

BUS LEAGUE BALANCE PUSH & PULL









SCOPE of the BUSLeague EE-skills Qualification

1 Fundamental knowledge and skills – ‘level based’
Focus on the ‘Why’ of sustaining the built environment.

And ‘competence based’
Key Skills Craft and Construction Workers
Key Skills Professionals

PROF / TRAC

TECHNOLOGY AND INTERDISCIPLINARY SKILLS PER WORK FIELD

WORK FIELD	ARCHITECTURE	CIVIL ENGINEERING	ELECTRICAL ENGINEERING	MECHANICAL ENGINEERING	BUILDING MANAGEMENT	CONSTRUCTION MANAGEMENT	FINANCIAL PROFESSIONAL
Architecture professionals	Architect	Civil Engineer	Electrical Engineer	Mechanical Engineer	Facility Manager	Project Manager	Business
	Construction Engineer	ICT Engineer	Building Services Engineer	Technical Energy Engineer	Chief Engineer	Project Engineer	
	Structural Engineer	Energy Engineer	Operations	Quality Assurance			

EIP	ENERGY ENGAGEMENT						
	1	2	3	4	5	6	7
EN1	2	1	1	1	1	1	1
EN2	2	1	1	1	1	1	1
EN3	2	1	1	1	1	1	1

2 Cross-craft – ‘Task based’

Focus on shared knowledge, skills and responsibility
With a focus on integral quality of nZEB and retrofitting towards nZEB. Including the use of digital means and innovative measurement technologies



~~**3 Occupation specific** not in scope – link later knowledge, skills, competence needed for professional practice with a focus on a specific occupation~~

~~Examples: NSS Plastering from Ireland, Craft-Edu Windows installer~~

~~**4 Technology specific** not in scope – link later knowledge, skills, competence needed to install/realise...~~

~~With a focus on application on a specific technology~~

~~Examples: NSS NZEB Ventilation assured, Heatpumps-RES,-NL SolarPV-RES-NL~~

Impression of main tasks I/4

Why [economy, project management, importance]

1. Explain the impact of EU climate change and energy policy on sustaining the built environment
2. Explain the characteristics of energy use in existing buildings
3. Explain in general how to improve the energy efficiency of a building
4. Explain the value of energy renovation in relation with the building users' needs
5. Provide adequate information to building occupants in achieving adequate levels of ventilation, lighting, acoustic and thermal comfort
6. Explain the consequences of having poorly insulated pipes, vessels and ducts which transport or store heated water or air

Impression of main tasks 2/4

How [Generic Cross-craft skills]

1. Perform a careful inventory as input for an integrated improvement process
2. Design and apply step-by-step retrofit plans
3. Ensure achievement of ecology and sustainability criteria
4. Ensure comfort, health and safety requirements in buildings
5. Analyse cost effectiveness of energy efficiency improvements
6. Engage with other crafts to meet design demands - Work together onsite to achieve quality low energy buildings
7. Ensure quality of work
8. Interpret thermographic images (both for building and installation issues)
9. Provide the homeowner with information needed to ensure that the building is operated and maintained to its optimum

Impression of main tasks 3/4

What [Building envelope - from cross-craft point of view]

1. Reduce heat loss through the building envelope (as a responsibility, not the actual isolation activity)
2. Identify and prevent common air leakage points
3. Address potential thermal bridges during construction / maintenance / retrofit
4. Address potential airtightness issues

Impression of main tasks 4/4

What [Building services - from cross-craft point of view]

1. Identify when adjustment on the type of ventilation system is needed
2. Install necessary electrical services without compromising the effectiveness and continuity of the insulation layer
3. Install necessary plumbing / ventilation services required without compromising the effectiveness and continuity of the insulation, airtightness and vapour control layer
4. Minimise heat losses from the heat source and distribution pipes
5. Identify and prevent poor hot water circulation systems
6. Ensure proper functioning of the heating system
(Question: is this occupation specific / is generic understanding needed?)
7. Keep an eye on the importance of windows in relation to thermal protection, solar gains and ventilation
8. Keep an eye on the need for or effectiveness of shading systems and passive solar systems

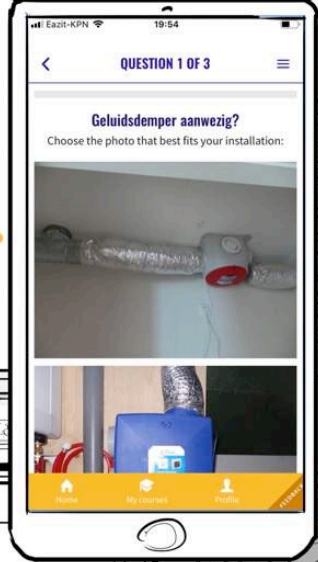
Impression of some Key subtasks

Key BUSLeague subtasks [Linked to several of the Main tasks]

1. Subtask: Identify key information presented on both a CE label and in the associated Declaration of Performance
2. Subtask: Identify if insulation materials are fit for purpose
3. Subtask: Identify and label insulation layer(s) in construction details
4. Subtask: Identify and label airtightness layer(s) in construction details
5. Subtask: Repair and / or reinstate of insulation where it has been damaged or removed
6. Subtask: Apply techniques and types of materials that are commonly used to create the airtight layer
7. Subtask: Apply correct taping approaches and materials to create a permanent airtight connection

**IN STORE
TEST
LEARNING CENTER**

THIS IS A
GOOD IDEA!



COOPERATION HARDWARE STORES



Why task-based Unit of Learning Outcomes

ULO are statements regarding what a learner knows, understands and is able to do (including responsibility) on completion of a learning process, which are defined in terms of knowledge, skills and responsibility (attitude).



Practical perspective on required skills in the valuechain & required overlaps between actors



Increased recognition of learned skills



Clear Learning outcomes for development of training materials



Flexible for future improvements such as alternative refrigerants

How do task-based learning outcomes work?

Tasks and subtasks addressing all phases in construction covering the whole valuechain

New task ?

en nl es de sk hu fr it


Title

Subtasks

-
-
-




Type here to search for a subtask or create a new one.




How do task-based learning outcomes work?

New subtask 

en nl es de sk hu fr it

Title

ULO   

Type here to search for an ULO or create a new one.

Professions

Specialisms and technologies

Learning goals related to the subtask

How do task-based learning outcomes work?

ULO ?

en nl es de sk hu fr it

en

Competence
Responsible for

Identify the main components of the heat pump in order

Assessment

Theoretical test
 Practical test
 Silhouetted by colleague

Skills
Able to

Explain the operation of the main components of the heat pump

Search icon

Type here to search for Skills or create a new one.

Knowledge
to know

Main components of the heat pump: compressor, condenser, evaporator, expansion valve

The mutual and sequential functioning of the main components of the heat pump

What competence is expected for performing the subtask?

What skills does one need to be competent in the subtask?

What Knowledge does one need to apply skills for showing competence with regards to the subtask?

How do task-based learning outcomes work?

New subtask ?

en nl es de sk hu fr It

⚠ This subtask is used in 2 tasks. Changes are applied to all tasks!

Title

ULO

Type here to search for an ULO or create a new one.

ULO ?

en nl es de sk hu fr It

⚠ This ULO is used in 3 subtasks. Changes are applied to all subtasks!

Competence
Responsible for

Assessment Theoretical test
 Practical test
 Silhouetted by colleague

Skills
Able to ⚡
 ⚡

Type here to search for Skills or create a new one.

Knowledge
to know ⚡

Type here to search for Knowledge or create a new one.

What do you get as result?

Tasks	Sub-tasks	ULO Nr.
Advise about heat pump installation		
	Advise on the technical aspects of climate control systems	4;5
	Identify points for attention and risks surrounding the heat pump system	6
	Advise solutions around the heat pump system	6
Advise on the heat pump installation (work manager)		
	Advise on the operation and interaction of different types of heat pumps and their areas of application	1;2;7;8;9
	Advise on the technical aspects of climate control systems	10;4;11
	Advise on the technical feasibility of a heat pump system	1;2;3;12
	Identify points for attention and risks surrounding the heat pump system	6
	Advise solutions around the heat pump system	1;6;13;21
Advise on the heat pump installation - preconditions (work manager)		
	Apply the applicable legislation and regulations (soil energy systems)	14;15
	Applies the applicable laws and regulations (other)	16;14
	Determine energetic and economic feasibility of the heat pump system	17
	Determine and recommend about the energy performance and monitoring	18;22
	Determine and advise on the critical parameters (construction and comfort) of the home/object	1;19
Designing and dimensioning the heat pump installation/ heat pump system (work manager)		
	Determine the structural situation and collects necessary data about the space required by the installation, the necessary measures regarding noise, ventilation and supply temperature	19;7;20

Unit of Learning Outcomes (ULOs)

What do you get as result?

ULO Nr.	Id	Competence	Skills	Knowledge
1	1115522	Determine which heat pump system is suitable for which architectural and technical preconditions	Estimate the feasibility for a heat pump system; Assess the general Program of Requirements on aspects relevant to the heat pump installation	Operation of the different types of heat pumps including physical principles
2	1166680	Investigates in the event of complaints (not hot, high energy consumption) whether a heat pump system is suitable	Estimating feasibility for a heat pump system ; Advise the client on the actions to be taken in relation to the maintenance of a new or existing heat pump installation	Possibilities of the different heat pump systems and field of application ; Operation of the different types of heat pumps (air-water, water-water) including physical principles ; Difference in application in the architectural situation (insulation values, gap sealing), new construction, existing construction
3	1166815	Explain the design and/or functioning of individual heat pump installations	Explain the operation of the different types of heat pumps (air-water, water-water) including physical principles	Possibilities of the different heat pump systems and field of application ; The operation of the different types of heat pumps (air-water, water-water) including physical principles ; Difference in application in the architectural situation (insulation values, gap sealing), new construction, existing construction
4	1197223	Checks whether the hydraulic circuit of the installation concept is satisfactory	Reading and interpreting technical drawings of the hydraulic integration of the heat pump installation	Possible hydraulic circuits for delivery/distribution and generation ; Preconditions and limitations for every hydraulic circuit
5	1197322	Identify the main components of the heat pump in order of operation and briefly explains their operation	Explain the operation of the main components of the heat pump	Main components of the heat pump: compressor, condenser, evaporator, expander, protections ; The mutual and sequential functioning of the main components of the heat pump
6	1197408	Identify the points for attention and risks, advise solutions and how bottlenecks can be solved	Dealing with points of attention and risks ; Indicate how bottlenecks in heat pump systems can be solved	Points of attention and risks in heat pump systems



What competence does one need for performing the subtask?




What should one be able to do in order to gain competence?



What is prerequisite knowledge to become competent?

How can you take them in use?

Publish qualification scheme 

Country x v

Profession x v

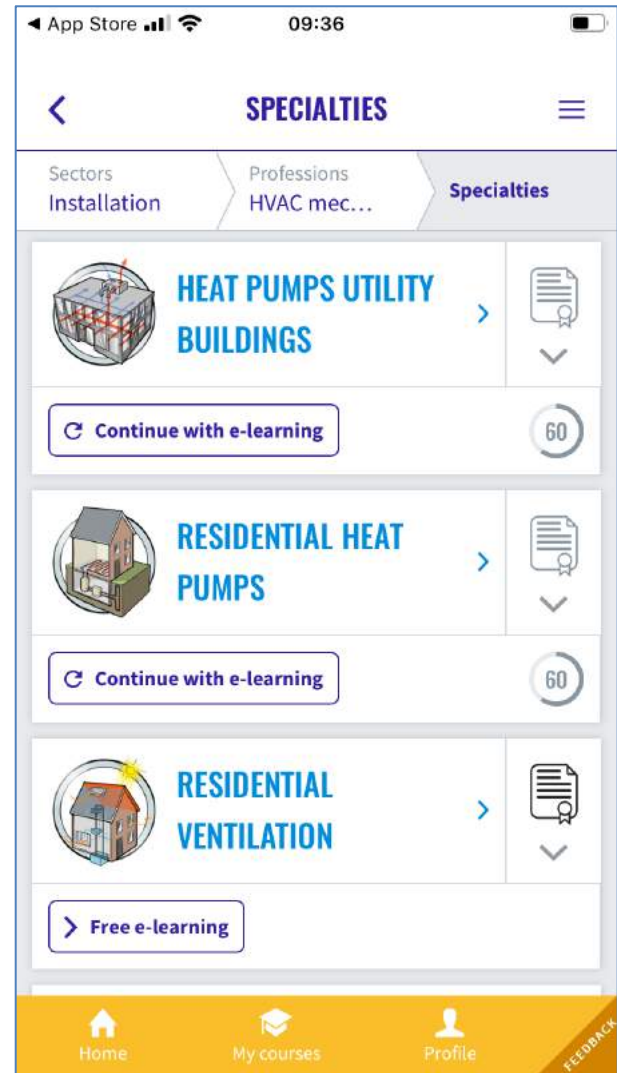
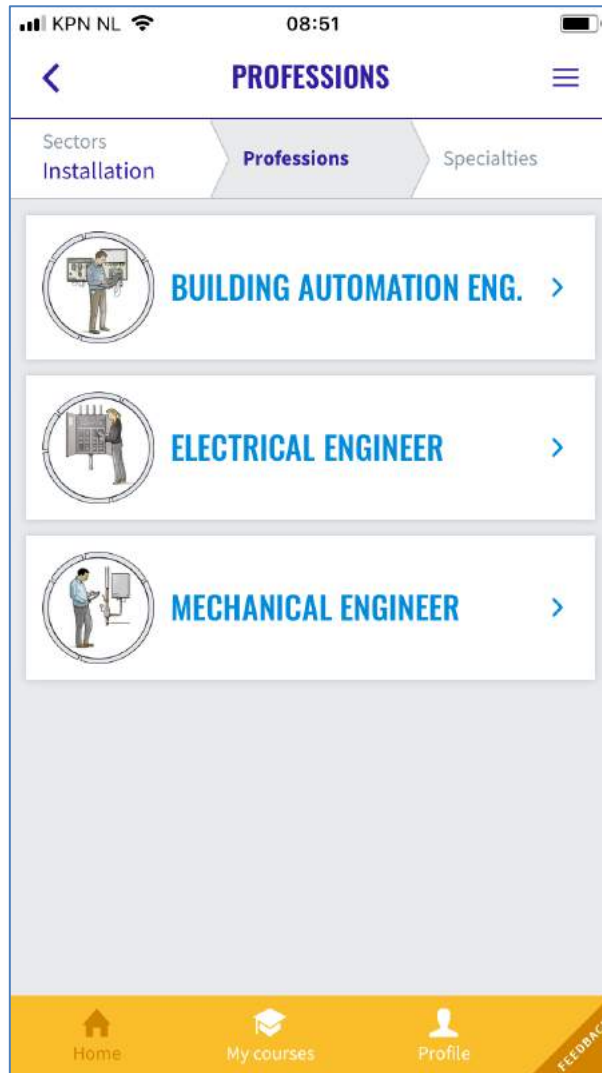
en nl es de sk hu fr it

Name

Select the tasks, subtasks and ULOs to be included in this publication:

- Advise about heat pump installation
 - Advise on the technical aspects of climate control systems
 - Checks whether the hydraulic circuit of the installation concept is satisfactory
 - Identify the main components of the heat pump in order of operation and briefly explains their operation
 - Identify points for attention and risks surrounding the heat pump system
 - Identify the points for attention and risks, advise solutions and how bottlenecks can be solved
 - Advise solutions around the heat pump system
 - Identify the points for attention and risks, advise solutions and how bottlenecks can be solved
- Advise on the heat pump installation (work manager)
 - Advise on the operation and interaction of different types of heat pumps and their areas of application
 - Determine which heat pump system is suitable for which architectural and technical preconditions
 - Investigates in the event of complaints (not hot, high energy consumption) whether a heat pump system is suitable

ULO's power advice on suitable upskilling content



ULO's power Personal recognition

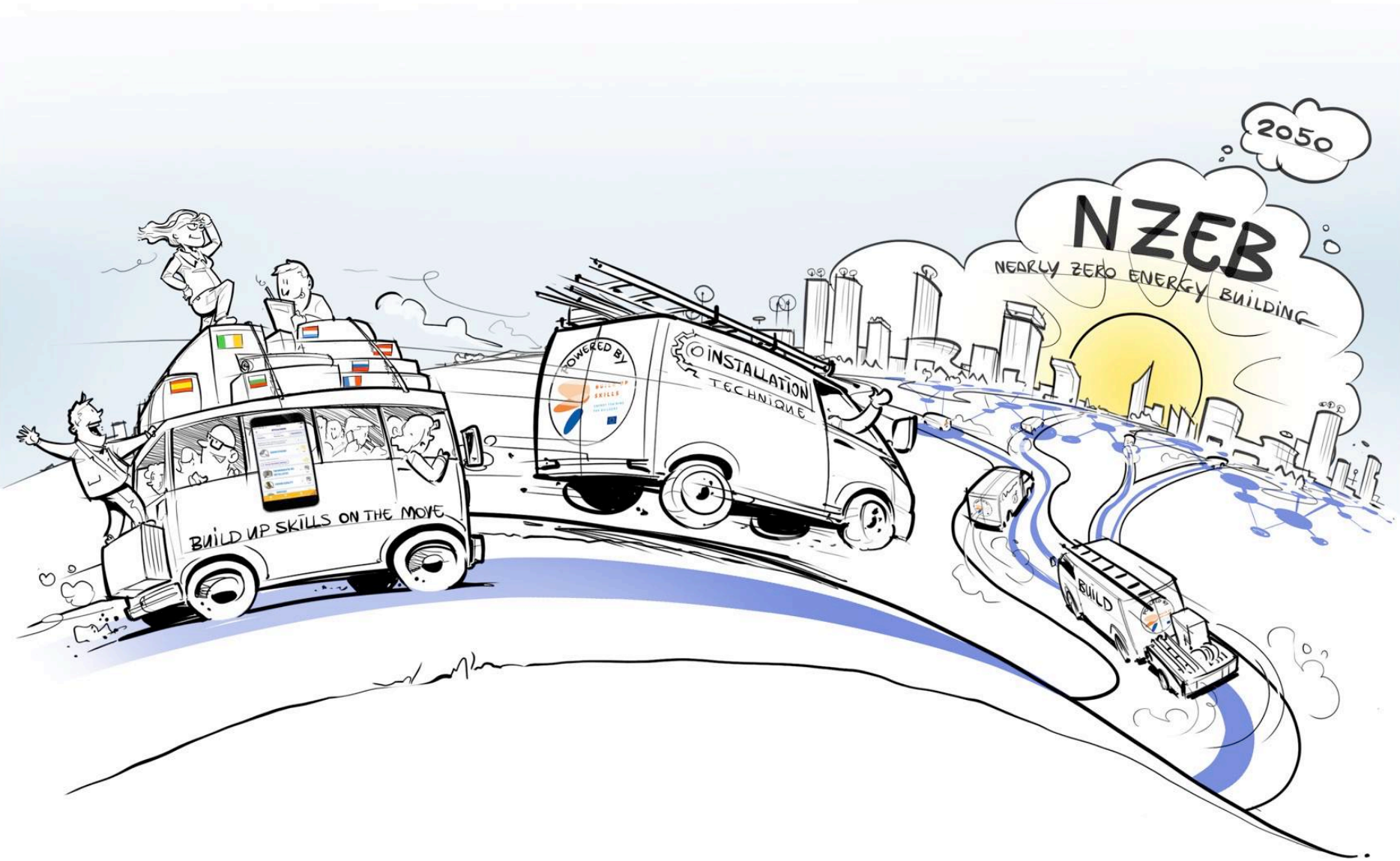


BUS
LEAGUE



& LifeLong Development

BUS LEAGUE ON THE MOVE!



FOLLOW US



busleague.eu



[@Busleague1](https://twitter.com/Busleague1)



[busleague](https://www.linkedin.com/company/busleague)



This project has received funding from the European Union's h2020 framework programme for research and innovation under grant agreement **no 892894**.

The information in this publication does not necessarily represent the view of the European Commission. © BUSLeague. All rights reserved. Any duplication or use of objects such as diagrams in other electronic or printed publications is not permitted without the author's agreement.

THE NZEB ROADSHOW



The nZEB Roadshow: Stimulating demand for skilled workers in the building sector

Horia Petran, NIRD URBAN-INCERC | Pro-nZEB Cluster

WORKSHOP Sustainable Energy Skills in the Construction Sector 3.0 | September 9th, 2022

Logic of the action



Topic:

Stimulation the demand for nZEB-relevant construction skills



Thesis:

No skills demand without demand for quality buildings



Basis:

BUILD UP Skills EU Exchange sessions, outcomes from Technical Working Group on Market Acceptance, Train-to-nZEB and Fit-to-nZEB projects



Goal:

To increase the understanding of the benefits of nZEB and skilled labour within the stakeholders' groups shaping the real estate market

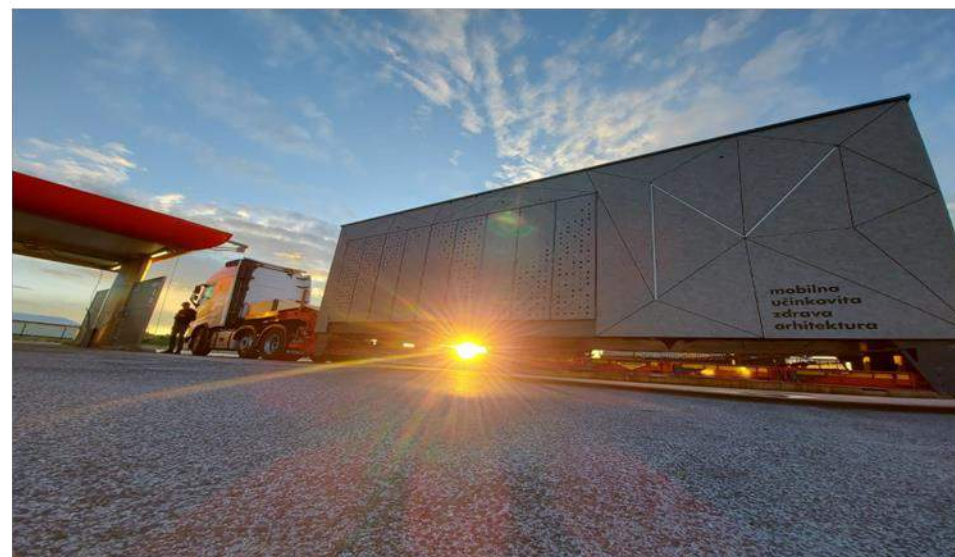


Design and build mobile housing units aiming at training visitors about: energy efficiency, materials and comfort;

Offer visitors the possibility to directly experience the high internal comfort;

Demonstrate real-time energy efficiency performances.

Main results: MUZA project, Croatia



Main results: gamification



Simplify the idea of nZEBs through games

Communicate and explain the basic principles of energy design of buildings



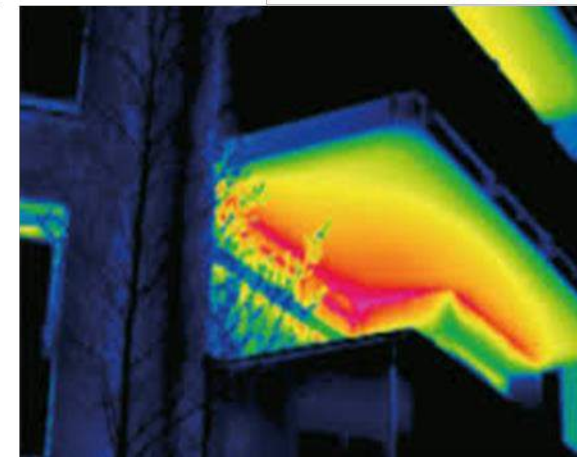
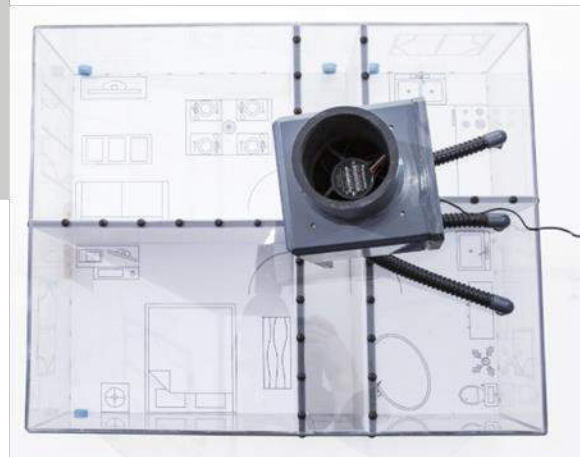
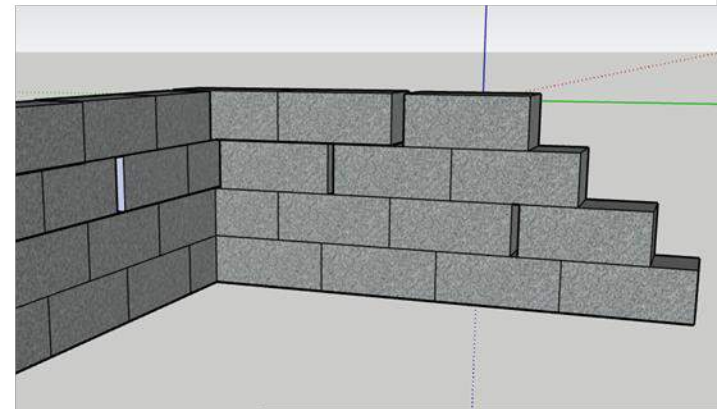
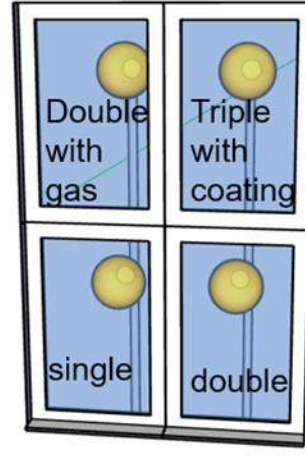
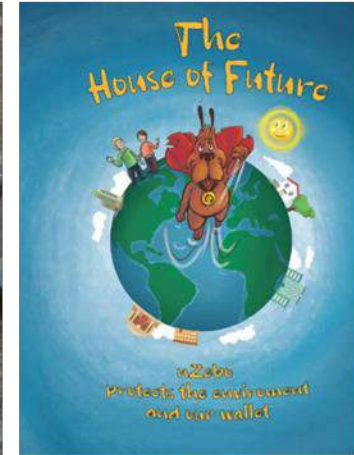
Get a rough result on savings comparing measurable data

Explain how the buildings affect the environment

Main message: nZEBs are easy and achievable for everyone

Main results: gamification

Mockups based on safe materials to give the opportunity to children to play with.



Main results: nZEB days

Coordinate the execution of the marketing and stakeholder engagement strategies

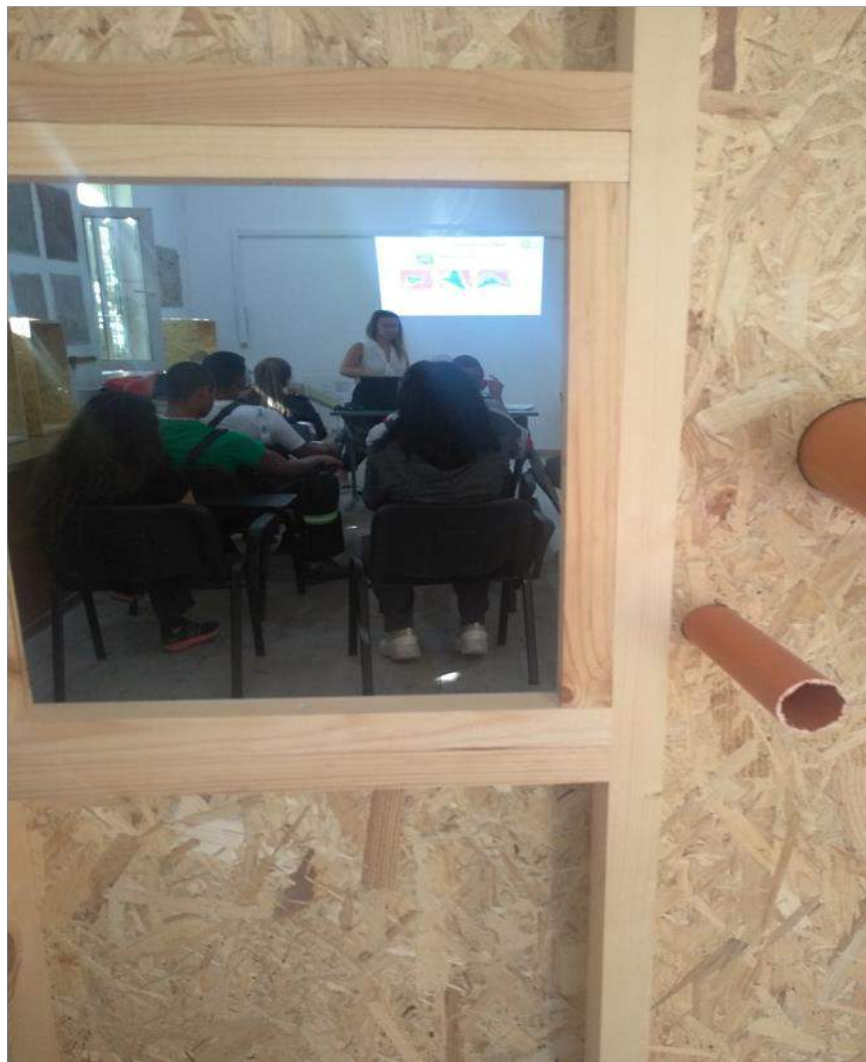
Rigorously apply the monitoring and evaluation scheme

Document and develop case studies of the national cases

Deliver a monitoring report with recommendations for replication of the campaigns



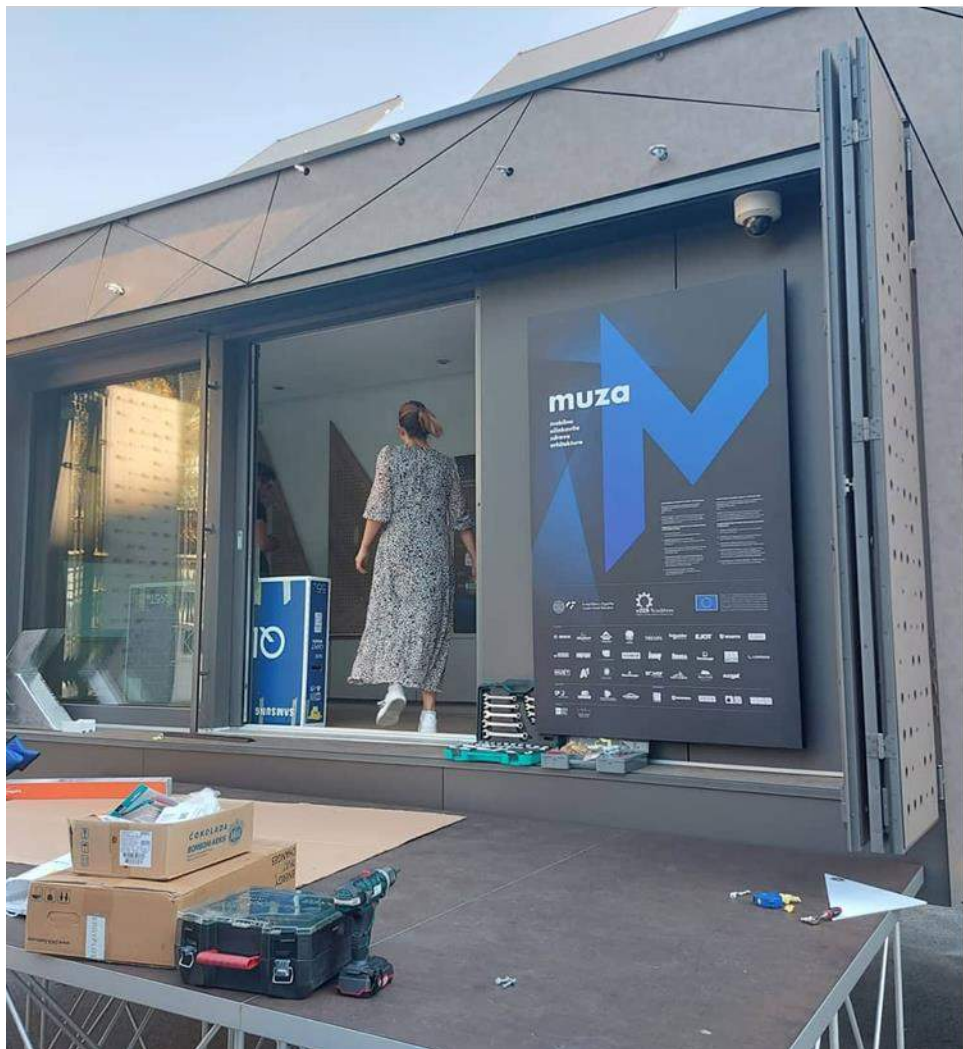
Main results: nZEB days Bulgaria



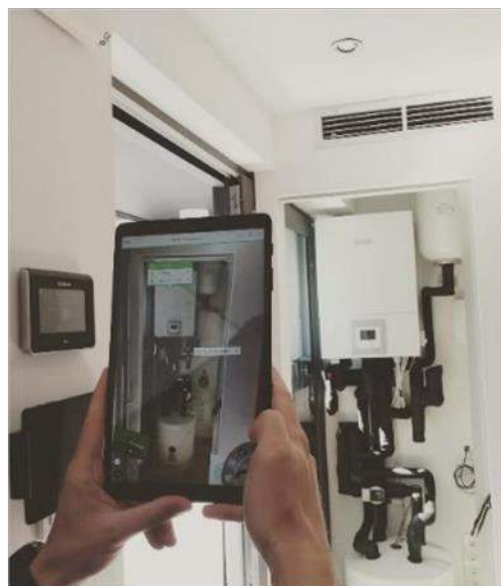
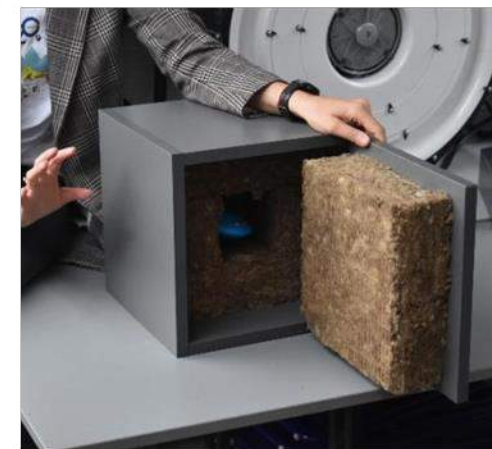
Main results: nZEB days Bulgaria



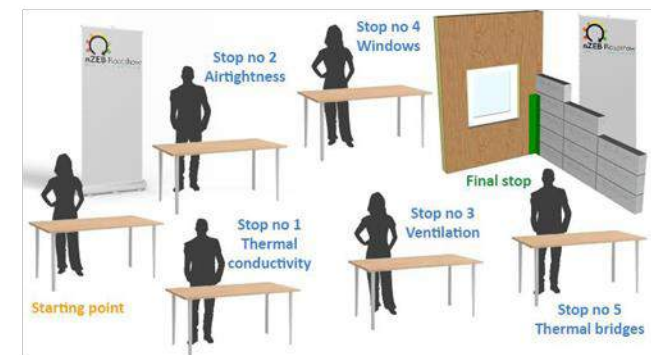
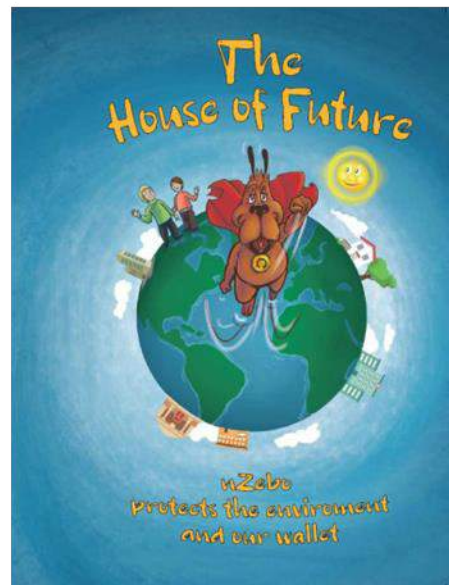
Main results: nZEB days Croatia



Main results: nZEB days Croatia



Main results: nZEB days Greece



Main results: nZEB days Greece



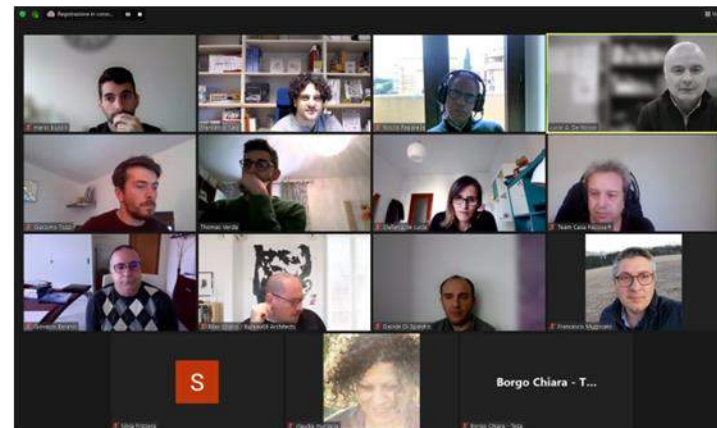
Main results: nZEB days Italy



San Daniele del Friuli
nZEB/Passivhaus



Main results: nZEB days Italy



NZEB Roadshow
17 luglio 2021

Zephir - Passivhaus Italia
Pubblicato da Francesco Nesi · 16 luglio 2021

Oggi prende il via il 2° NZEB Roadshow a San Daniele del Friuli. Visiteremo un cantiere di una Passivhaus in costruzione seguito dalla carissima Federica, coadiuvata per la progettazione Passivhaus proprio da noi di Zephir - Passivhaus Italia a guida del Dr. Francesco Nesi. Scopriremo insieme i trucchi nascosti che permettono di fare efficienza energetica con estrema cura del dettaglio anche in fase esecutiva. Per maggiori informazioni, seguitemi sulla nostra pagina Facebook o scrivete a info@zephir.ph. #nzebroadshow #zephir #Passivhaus #nZEB



NZEB Roadshow si trova presso San Daniele del Friuli.
15 luglio 2021

San Daniele del Friuli, Italy, is going to host the 2nd Italian #nzebroadshow. The nZEB and Passivhaus concepts are going to be promoted to the attendants, including



METTI AL CENTRO L'EFFICIENZA ENERGETICA

GIOCA CON NOI E VINCI IL LIBRO PASSIVHAUS

REALIZZA LA TUA CASA PASSIVA!

1 MIRA AL CENTRO! HAI 5 SACCHETTI PER 5 LANCI **2 STAI ATTENTO! ALCUNI SACCHETTI "PESANO" PIÙ DI ALTRI**

ENERGIE RINNOVABILI **MATERIALI** **INVOLUCRO TERMICO E FINESTRE** **IMPIANTI** **TENUTA ALL'ARIA**

PASSIVHAUS ITALIA
Affiliato IPHA

PASSIVHAUSITALIA.COM
f i t in y

Main results: nZEB days Romania











Main results: personal engagement



The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither CINEA nor the European Commission are responsible for any use that may be made of the information contained therein.

Thank you for your attention!

 www.nzebreadshow.eu

 www.facebook.com/nzebreadshow/

 [@NZEBRoadshow](https://twitter.com/NZEBRoadshow)

COORDINATOR:



PARTNERS:





ENERGY SKILLS IN CONSTRUCTION

"Sustainable Energy Skills in the Construction Sector"

SEP. 6TH – SEP 9TH, 2022; NICE, FRANCE



#SUSTAINABLEPLACES2022

SUSTAINABLEPLACES.EU



Sustainable Energy Skills in the Construction Sector Workshop 3.0

"Energy Efficiency Competencies and Qualifications: Sharing expertise, lessons learned and developed methodologies" - Project **SEetheSkills** insider view

Prof. Lihnida Stojanovska-Georgievska,
University Ss Cyril and Methodius - UKIM, North Macedonia
SEetheSkills, Project Quality Assurance Manager
lihnida@feit.ukim.edu.mk

SEetheSkills' - actions toward sustainability of construction

Topics covered:

- ✓ Where is SEetheSkills now with realization of project objectives
- ✓ Lessons learned from so far actions
- ✓ Defining specific approach for further activities
- ✓ Planned innovative products

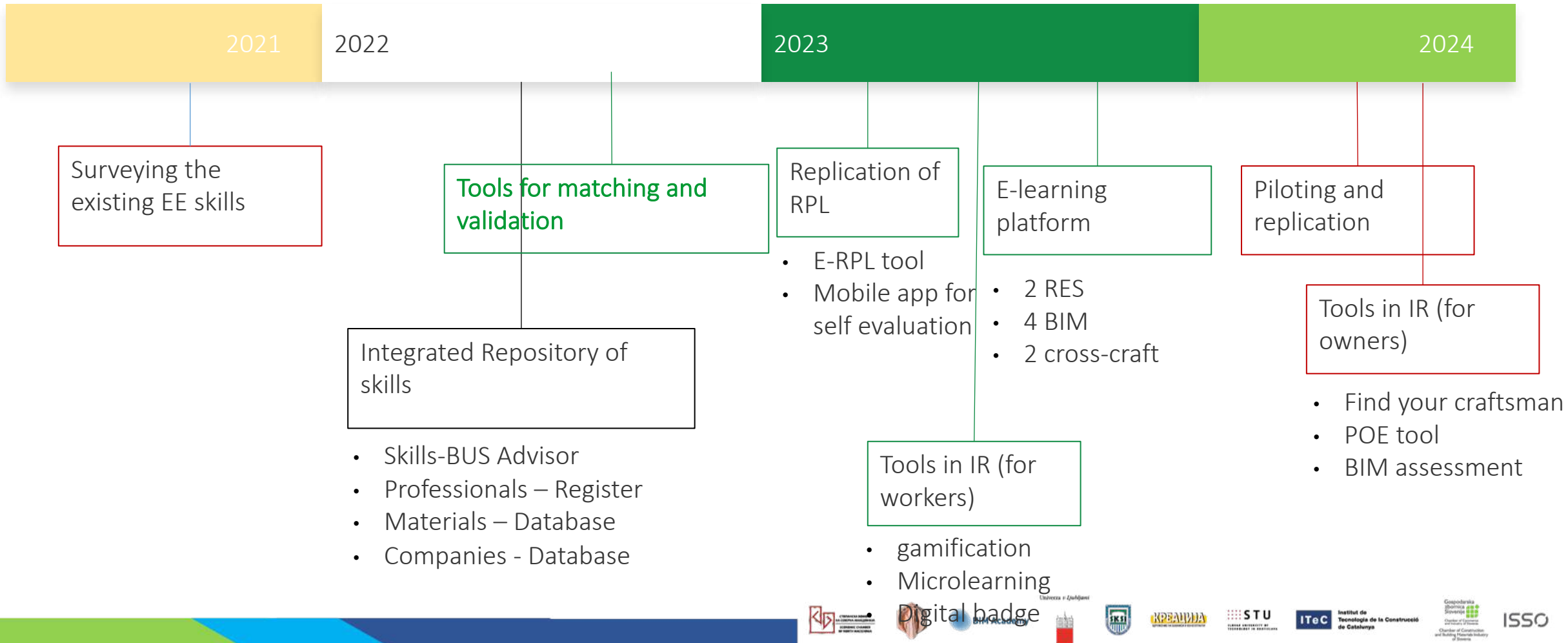
SEetheSkills' - actions toward sustainability of construction



First in-person meeting of the team, Barcelona 29-30 June 2022

Visit of a site for preparation of concrete from recycled construction material

SEetheSkills now – the timeline of realization of actions



Lessons learned from surveying EE skills - methodology for research



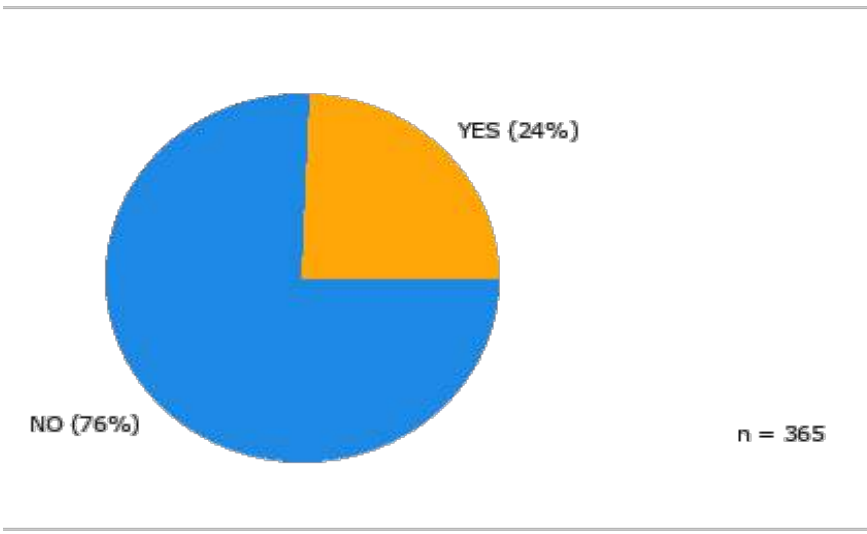
The key areas the research were focused on:

- Skills defined in national roadmaps
- Skills developed as part of previous BUS projects
- The developed training schemes
- The number of trained workers and professionals
- Companies who design and produce EE materials

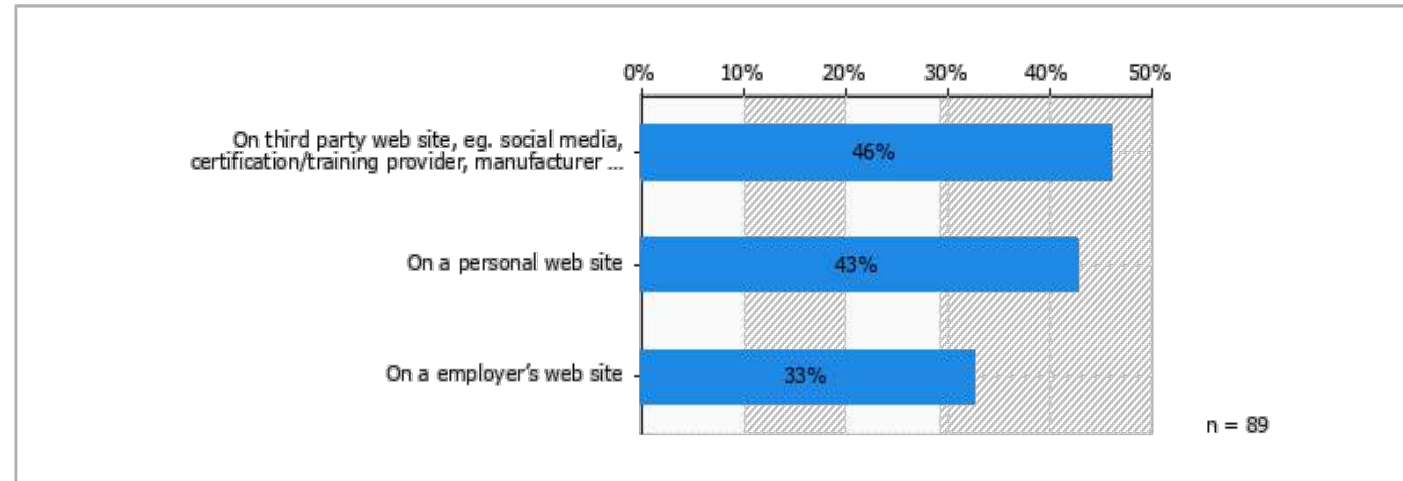
- Status of Recognition of Previous Learning (RPL)
- Status of demand for energy skills
- Level of awareness of energy skills
- Available certifications
- Legal obligations promoting use of energy skills and their timelines
- Predictions for future development of energy skills

Lessons learned from surveying EE skills

- Lack of registers of skilled person – the need for VISIBILITY



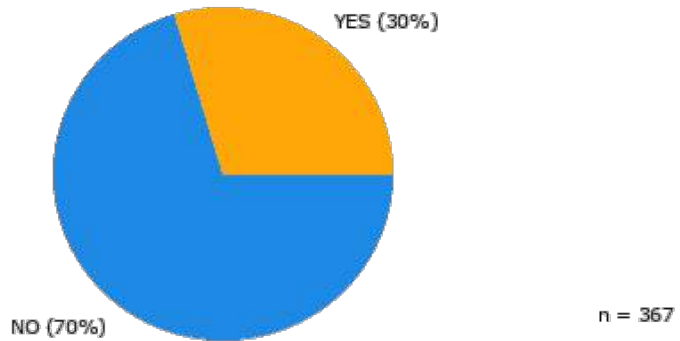
Are your skills publically visible?



Where are the skills listed/announced?

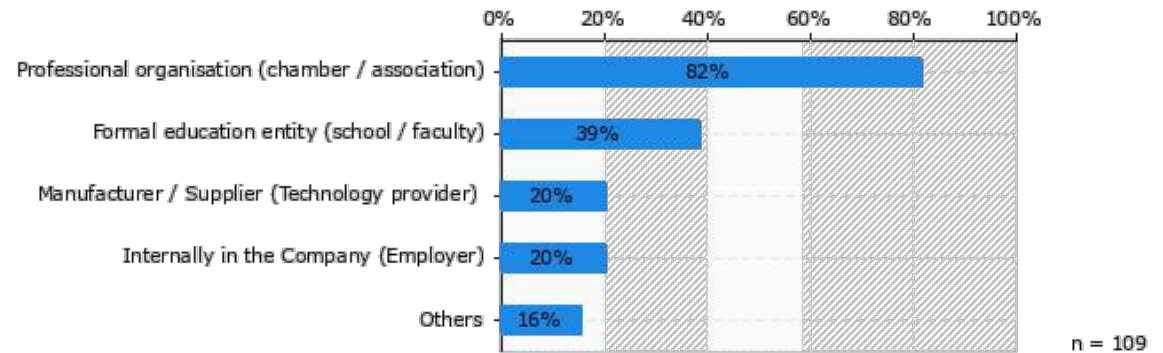
Lessons learned from surveying EE skills

- Lack of formal certification of skills– the need for VALIDATION



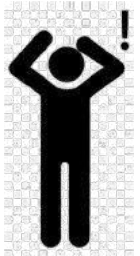
Do you have certificate for your skills?

Where do you build your skills?



Lessons learned from surveying EE skills

- Crucial actions are needed to increase the AWARENESS of the VALUE of skills



When lacking EE and digital skills

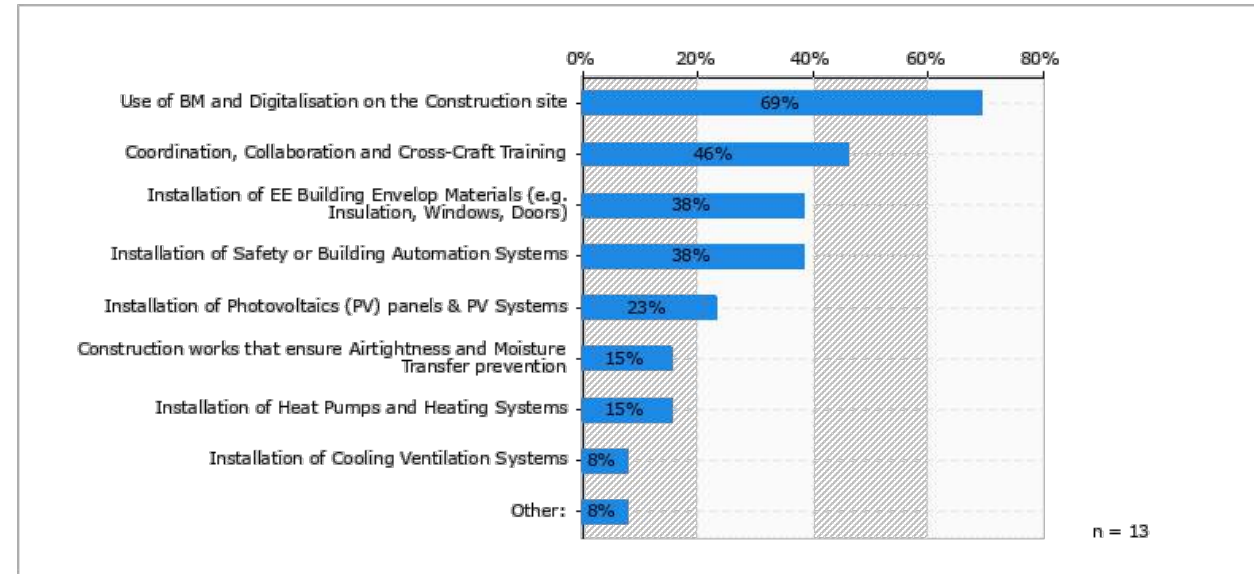
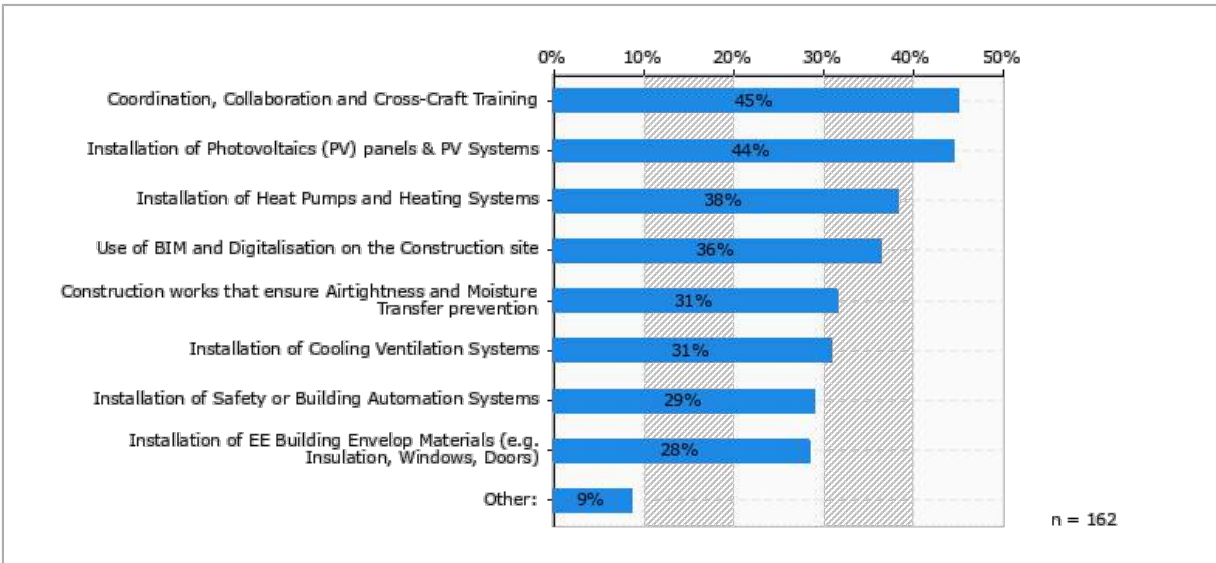
- Only 33% will reskill existing employed workers
- Only 11% will redeploy existing workforce
- More than 50 % will hire external experts (skilled professionals)

ACTION REQUIRED

Supporting the long term vision for supplying skills and skilled professionals

Lessons learned from surveying EE skills

➤ Identified scope of skills' need



Developing Integrated Repository of EE Skills



Tool box



e-Tools

Company Culture

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore

DATABASES

Databases

→ Go to Integrated Search Platform



Professionals

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

VIEW DETAILS



Companies & EE materials

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

VIEW DETAILS



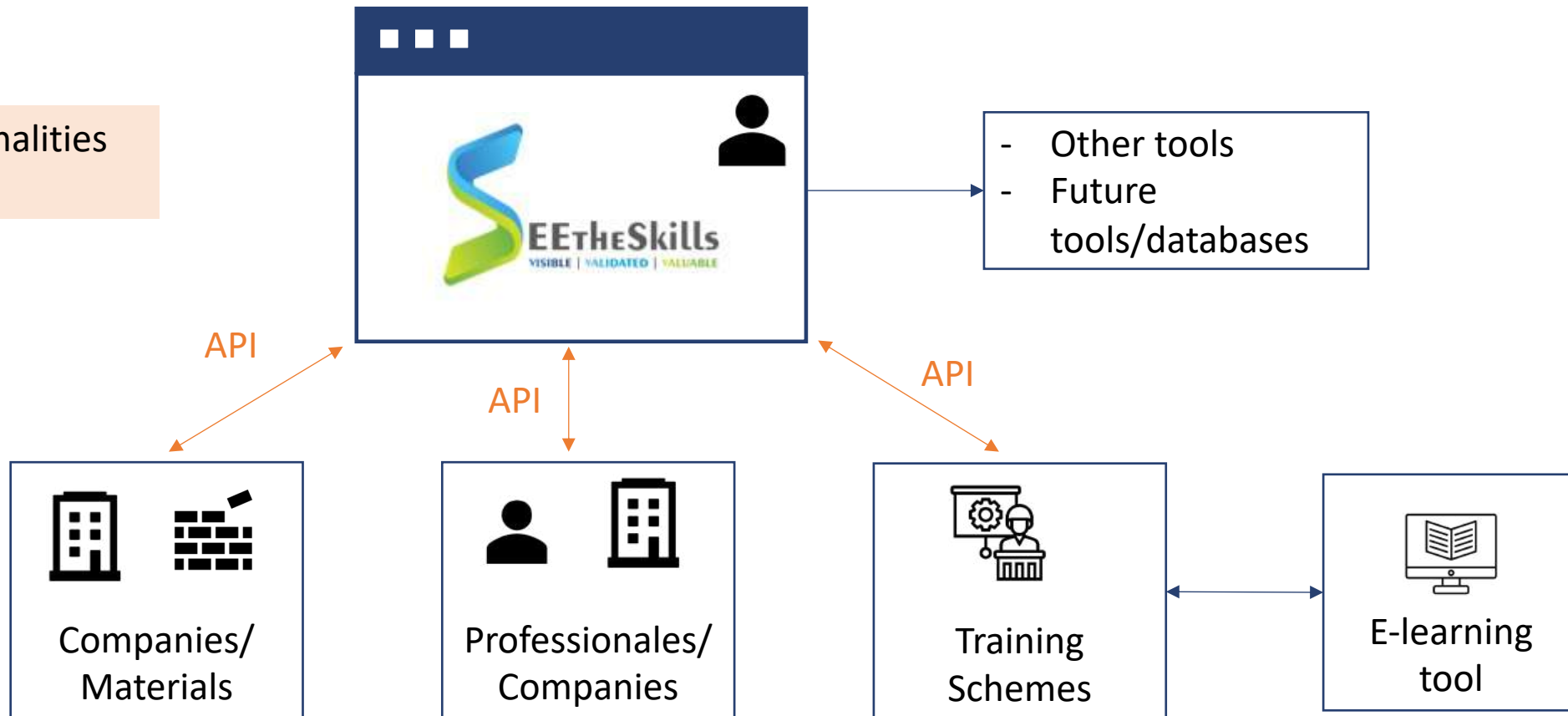
Training Schemes

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

VIEW DETAILS

Developing Integrated Repository of EE Skills

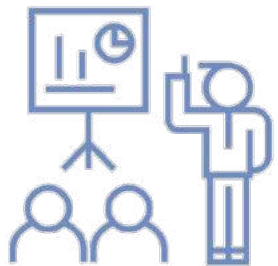
Main functionalities in STS web



Defined approach for matching and leveling of skills



Defined procedure for mutual recognition, comparison and leveling of **EE SKILLS OF PROFESSIONALS**, based on achieved ULOs, by comparing with the **standard of minimum requirements**



Defined procedure for comparison of **different TRAINING COURSES** and matching the resulting qualifications, based on planned ULOs, by proposed methodology for **mutual recognition of qualifications**

Defined approach for matching and leveling of skills



Two different approaches for skills validation

- **e-learning platform**, that will include the following e-trainings in form of webinars created by project partners:
 - 2 webinars on RES qualification
 - 2 webinars on BIM qualifications for blue collars
 - 2 webinars on BIM qualifications for white collars
 - 2 webinars on cross-craft skills qualifications

- **Creation of e-RPL tool**. The process of recognition of previous learning RPL, based on defined steps of identification, documentation, evaluation and certification adjusted as on-line process, including:
 - communication to identify the necessary skills
 - submitting documentation for evaluation
 - evaluation of submitted documents and
 - issuing certification

realized through web-based platform for e-learning. Besides the necessary documents to be filled by the applicants, the tool will include guidelines for explaining the process to ensure successful applications.

Further actions: The link between energy skills and the quality of construction

It can be easily presented by conducting case studies for measuring reduction of performance gap



Proper implementation of proposed EE measures with SKILLED workers

proper insulation,
avoiding thermal bridges,
proper installation of dwellings,
integration of RES in buildings
sustainable design



Measurable energy savings



Promotion of the **value** of energy skills

Further actions: The value of energy skills

The tools used to express these benefits are usually digital tools like BIM

By using BIM modelling, different scenarios for reduction of performance gap while implementing EE measures can be proposed.



SEetheSkills outputs with innovation potential

No	Innovative solution
11	Integrated repository of energy skills a) Database of training schemes b) Database of skilled workers c) Database of EE materials
12	e-RPL tool
16	POE web tool



INTENSE PROMOTION !!!

INCREASED VISIBILITY !!

EASY UPTAKE OF RESULTS !

VALUABLE IMPACT

Skills for Green Construction

The project group Skills for Green Construction specifically addresses the topic of training and skills for sustainable and green construction. Their outputs are relevant for industrial and public operators as well as policy actors at various levels.

Challenges

- Sustainable energy upskilling for construction professionals
- Accreditation recognised across borders
- Adoption of Building Information Modelling
- Nearly Zero Energy Buildings

Results

- Training modules
- E-Learning Platforms
- Qualifications
- Standards

Stakeholders

- Training Providers
- Policy Makers / Policy Experts
- Building Professionals


 Capture QRcode or follow this URL: www.horizonresultboost.eu

The HRB - Horizon Result Booster is an initiative funded European Commission, Directorate General for Research and Innovation, Unit J5, Common Service for Horizon 2020 Information and Data.

Skills for Green Construction

Meet the Projects

- HP4ALL** - Improving capacity and skills within the Heat Pump (HP) industry and securing the energy efficiency benefits that HP technology offers. hp4all.eu
Grant Agreement No.891775
- nZEB ready** - Increasing market readiness for an effective nearly Zero Energy Building (nZEB) implementation by addressing the main barriers in Bulgaria, Croatia, Portugal, Poland and Romania and supporting skills enhancement with a mutual recognition training and certification scheme. nzereready.eu
Grant Agreement No.101033743
- SEETheSkills** - Collecting best practices in meeting needs for energy efficiency in the building sector and promoting the visibility of sustainable energy skills in the construction of new and renovation of existing buildings by creating an online repository. seetheSkills.eu
Grant Agreement No.101033743
- arise** - Developing a recognition scheme of digital energy efficient Building Information Modelling (BIM) construction skills in an innovative system of universal learner focused stackable micro-credentials for micro module units of learning supported by a blockchain-based micro-credentialing system. ariseproject.eu
Grant Agreement No.101033864
- PRO-Heritage** - Establishing a permanent education resource for professionals and craftsmen providing excellent competences and skills for built heritage and support the exchange of those competences and skills across Europe. pro-heritage.eu
Grant Agreement No.785211
- BUS LEAGUE** - Addressing and controlling the challenges created by the rise in demand for energy-skilled and experienced workers for the building planning, operation and support value chain. busleague.eu
Grant Agreement No.892894
- INSTRUCT** - Providing an operational framework for workers, in order to enhance their skills and provide them with a certification. instructproject.eu
Grant Agreement No.894756
- CraftEdu** - Setting up the national qualification and training scheme for craftsmen and on-site workers in the field of energy efficiency and use of renewable energy sources in buildings in the Czech Republic. It will also develop the training offer delivered via Slovak national scheme STAVEDU. craftedu.eu
Grant Agreement No.785836
- TRAIN4SUSTAIN** - Establishing future-oriented training and qualification quality standards to foster a broad uptake of sustainable energy skills in the European construction sector, also addressing the issue of mutual recognition of qualifications between countries. train4sustain.eu
Grant Agreement No.894514


 Capture QRcode or follow this URL: www.horizonresultboost.eu

The HRB - Horizon Result Booster is an initiative funded European Commission, Directorate General for Research and Innovation, Unit J5, Common Service for Horizon 2020 Information and Data.

Thank you



www.seetheskills.eu



info@seetheskills.eu



SEetheSkills – EU Project



@seetheskills



awakening | relevant | innovative | scalable | equitable

**SP2022 | ENERGY SKILLS
WORKSHOP 3.0**

**"ENERGY EFFICIENCY
COMPETENCIES AND
QUALIFICATIONS: SHARING
EXPERTISE, LESSONS
LEARNED AND DEVELOPED
METHODOLOGIES".**

Paul McCormack

9th September 2022



Co-funded by the Horizon 2020
Framework Programme of the European Union

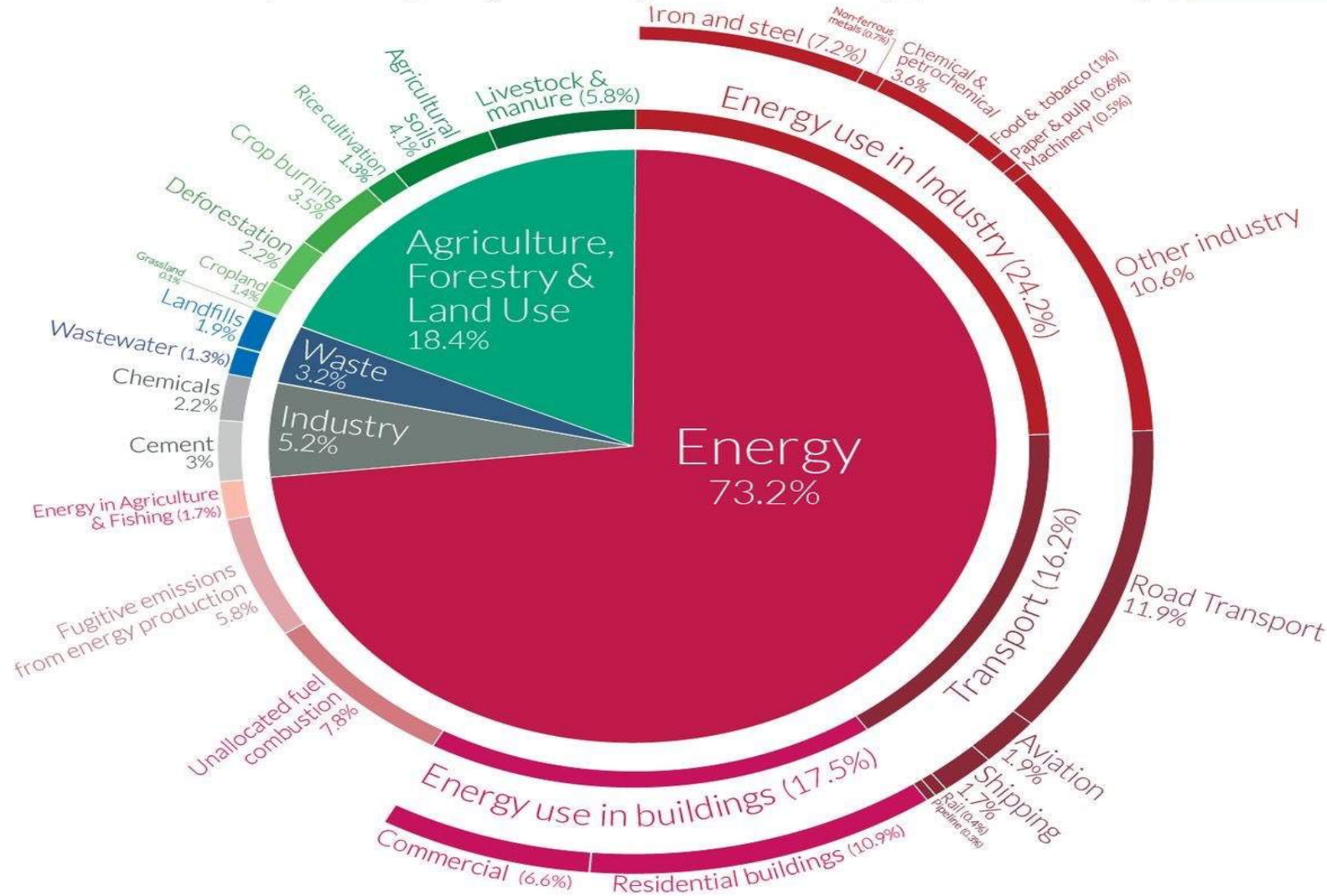
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033864.

SP2022 | Energy Skills Workshop 3.0

Global greenhouse gas emissions by sector

This is shown for the year 2016 – global greenhouse gas emissions were 49.4 billion tonnes CO₂eq.

Our World
in Data



Global Challenge

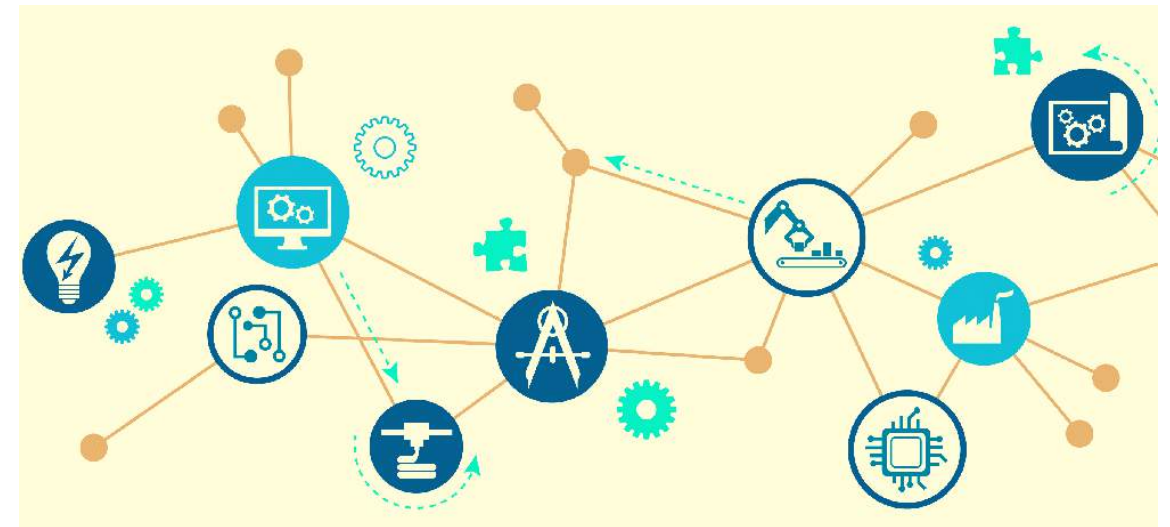
In order to achieve climate neutrality by 2050, the design and construction workforce must be up-skilled to deliver comfortable, energy efficient and high quality buildings, while evolving in digitalising their work.

DIGITALISATION APPROACH



awakening | relevant | innovative | scalable | equitable

1. Energy efficiency - is no longer matter of why, but how –
2. Digitalization as the unavoidable and necessary tool to leverage clean transition of the energy sector, reshaping it towards the future targets and expectations
3. How do we get there : SKILLS - we need to have all stakeholders upskilled in digital supporting sustainable energy, in a triple helix model - synergy of public administration, industry, society.
4. ARISE Union of over 100 partners from 24 countries, having over 10 years of experience; digital delivery of micro modules, individual learning accounts, digital passports, international transferability and appreciation of skills, field tested and confirmed measurable (GWh, EUR) impacts, in: increased energy performance (cost effective reduced consumption in all life cycle phases), improved share of energy generated from clean renewable sources, reduction of gap between designed and achieved and maintained performance of buildings.



DIGITAL UPSKILLING

- Energy transitions in the construction sector are primarily driven by a skilled workforce
 - digitalisation can be harnessed to stimulate and empower all workers in the built environment.
 - a learning interface of micro modules, segmented accreditation and digitalised individual learning accounts will provide accelerated access to learning for the education sector
 - a dual pathway of reward exchange of certification and/or recognition will increase the vocational mobility and opportunity for workers in the sector



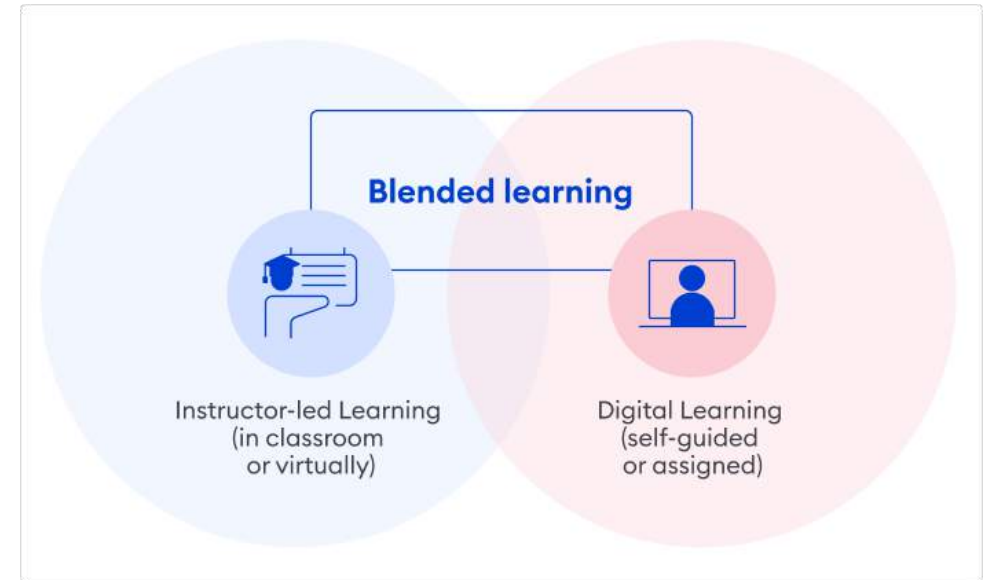
Digitalisation Transition



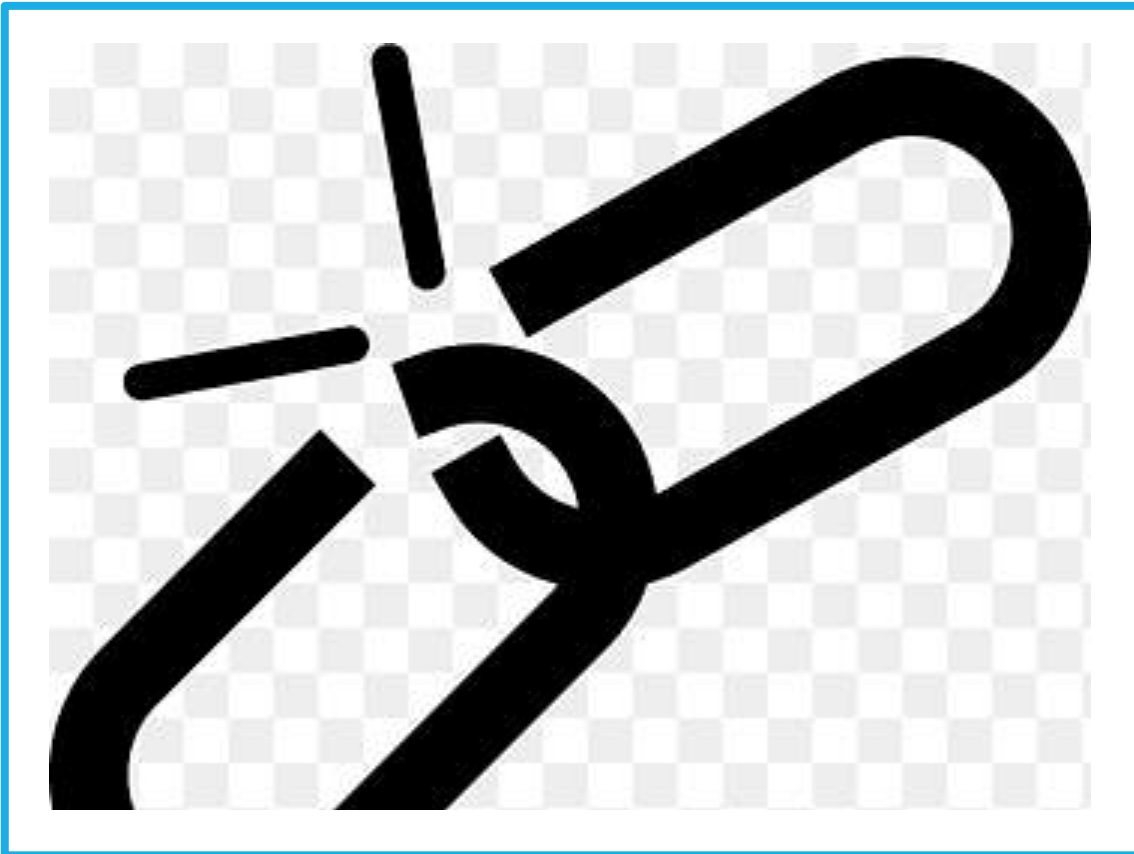
awakening | relevant | innovative | scalable | equitable

The ARISE methodology utilizes a structured blended accreditation and digital delivery/certification model for vocationally excluded building professionals with a specific focus on the engagement of those caught in the skills/qualifications void.

Using segmented course content, ease of access and innovative delivery and a choice of recognition and/or accreditation is a genuinely innovative circular approach to delivering training and raising the skill levels for those beyond traditional learning access routes.



DISCONNECTION



- Despite significant progress in digitalisation at planning and design stages of built assets, activities on-site have frequently not evolved. This results in ongoing low productivity, high costs, and energy-related inefficiencies. The same failure has also led to the ‘disconnection’ of Blue-Collar and No-Collar construction workers from the evolution of the industry.

DIGITAL DISSONANCE



- Digital information is essentially the wavelength of construction
- But is currently beyond the ability of the majority of the construction workforce because they lack the opportunity, skills and digital vision to detect, interpret and use in their work.
- Digital Literacy is key



Skills Innovation



awakening | relevant | innovative | scalable | equitable

Through a highly innovative approach the projects are deploying system coupling methodologies and approach encompassing;

- 1) Skills delivery method;
- 2) Learning accounts transaction and recognition;
- 3) Matrix of skills maturity, leading to new qualifications and jobs,
- 4) Profession –based learning content,
- 5) Impacts of skills on buildings' energy performance,
- 6) New market and regulatory models of skills demand and
- 7) Stimulation of investments in high energy performance buildings.



Construction Transition



awakening | relevant | innovative | scalable | equitable

- Building Information modelling (BIM) involves the production, development and management of digital 3D construction models in collaborative work flow involving designers, contractors and facilities managers.
- Whilst the UK government introduced a mandate for the use of BIM on its construction projects in 2016, the benefits of BIM are recognised across the industry with increasing uptake.
- Central to the BIM process is the development and exchange of information models within a Common Data Environment (CDE), an online space of storing, sharing and managing information. Whilst the skills required to develop the information models are discipline specific, all members of the construction process will be required to access the CDE.



Skills Exchange Mechanism



awakening | relevant | innovative | scalable | equitable

- Digitalisation in construction from the 4 projects;
- utilise a circular economy approach specifically utilising digital skills stimulation and delivery across the entire building life cycle and assets to decarbonise the complete energy cycle.
- This approach harnesses the market drivers from the demand side and matches these with impact targeted strategies and objectives required to achieve comprehensive success.
- This plural approach represents a multi faceted approach to tackle the carbon footprint of the construction sector.
- Pioneering training scheme and a powerful socio-economic cross sectional influencer, affecting the multiple sectors of education, industry, market and policy by delivering a dynamic training and market uptake model.”



Digitalisation Skills Exchan



awakening | relevant | innovative | scalable | equitable

Digitalisation of Skills is;

1. Revolutionising the learning process by changing the face of delivery and recognition of sustainable energy skills in the construction sector
2. inspiring demand for sustainable energy skills, by providing clear learning interactions, transparency of upskilling transactions and recognition of qualifications achieved.
3. Changing the learning process by monetizing skills development and learning exchange with a digital system based on skills recognition rather than accreditation. The training and transaction system developed by the project will reward learners as they achieve competence at a certain level with the crypto currency for skills exchange - *CERT*coin – the innovative currency of skills and learning of the construction sector embracing today's digital transformation benefits.



THE CONNECTIVITY IMPERATIVE



awakening | relevant | innovative | scalable | equitable

- Skills connectivity is key, ensuring workers are equipped, informed and skilled to deliver energy efficiency across the building sector. Connectivity will stimulate and inspire the demand for sustainable energy skills, augment access to appropriate upskilling transactions, recognition of upskilling, enhance smarter work practices and develop transformational competences.



SKILLS PATHWAY -

delivering the internal and external connectivity



awakening | relevant | innovative | scalable | equitable

- The skills exchange
- Skills quantification
- Skills energy quantum
- Energy algorithm
- *digiCONEX*



OUR CHALLENGES?



- The **purpose** of this event is to facilitate an interactive discussion between policy makers, academics/ educators and students/ professionals from the design and construction industry by encouraging them to reflect on accomplished EU projects on capacity building.
 1. How can construction education be influenced to contribute to climate neutrality and digitalisation at the same time?
 2. What does it really take to bring everyone on board and accomplish the green deal together?
 3. What did we learn from past projects and what do students and professionals need to thrive?



TIBL - LEARNING



awakening | relevant | innovative | scalable | equitable



Digitalisation and need has ensured that training and learning constantly needs to evolve

Task and impact based learning

Current tradition learning methodologies do not allow us to predict or guarantee what the students will learn.

Ultimately a wide exposure through task and impact based learning is the best way of ensuring that students will acquire knowledge efficiently and effectively..



KEY RECOMMENDATIONS

awakening | relevant | innovative | scalable | equitable

Training that is supported by digital platforms, gamification, and quality interventions support better delivery toward delivery against climate targets.

- Digital is the New Normal
- Digital has become central to every interaction, forcing both organizations and individuals further up the adoption curve almost overnight.



Paul McCormack

E-mail

paulmccormack@belfastmet.ac.uk

Twitter

<https://twitter.com/PaulNewry>

LinkedIn

<https://www.linkedin.com/in/paul-mccormack-80354a13/>



awakening | relevant | innovative | scalable | equitable

<https://www.ariseproject.eu/>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033864.



Jan Cromwijk, Project Coordinator

#SUSTAINABLEPLACES2022



ENERGY SKILLS IN CONSTRUCTION

“Sustainable Energy Skills in the Construction Sector 3.0”

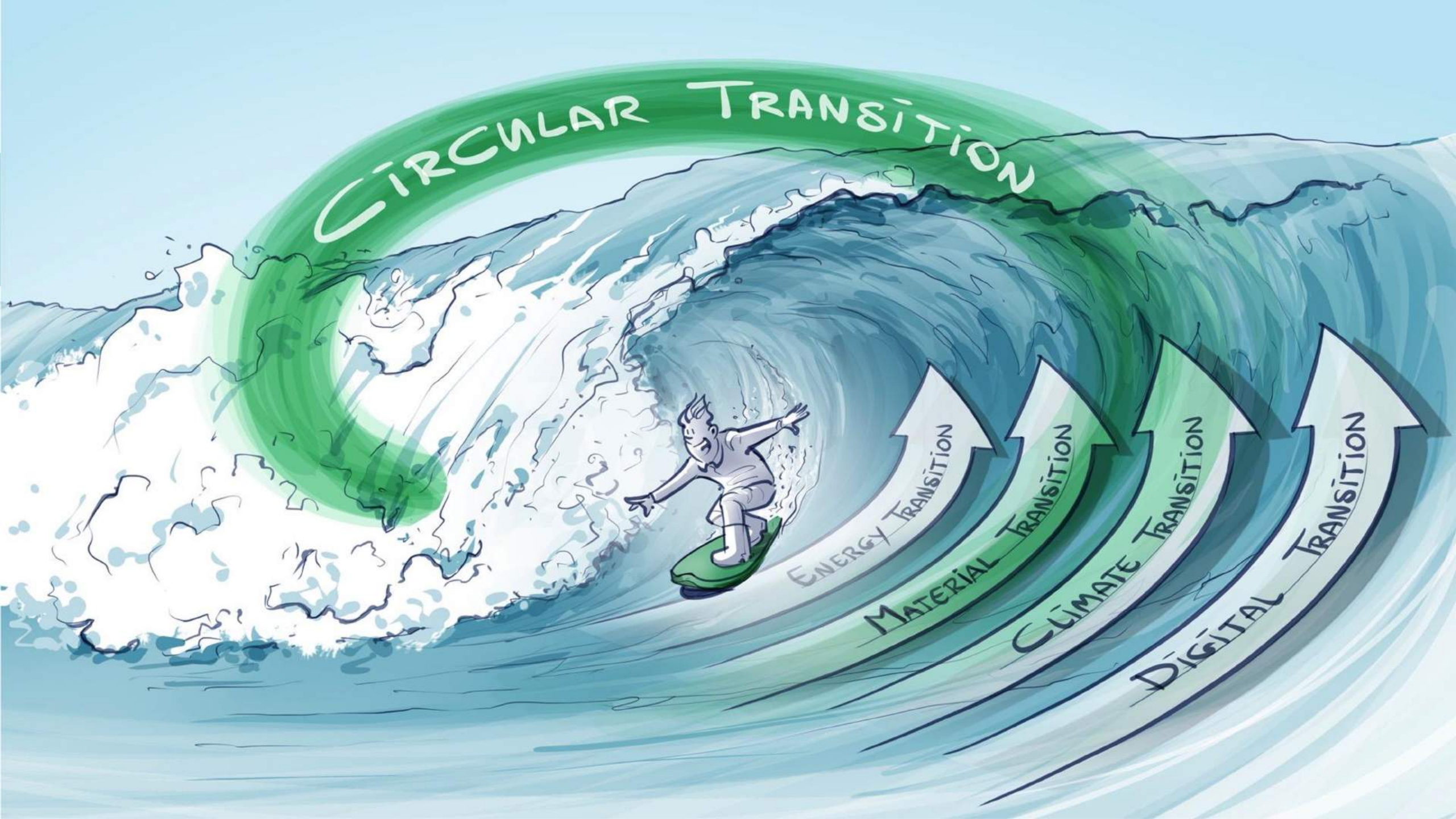
SEP. 6TH – SEP 9TH, 2022; NICE, FRANCE



SUSTAINABLEPLACES.EU



Shaping a **Circular**
Sustainable Future



CIRCULAR TRANSITION

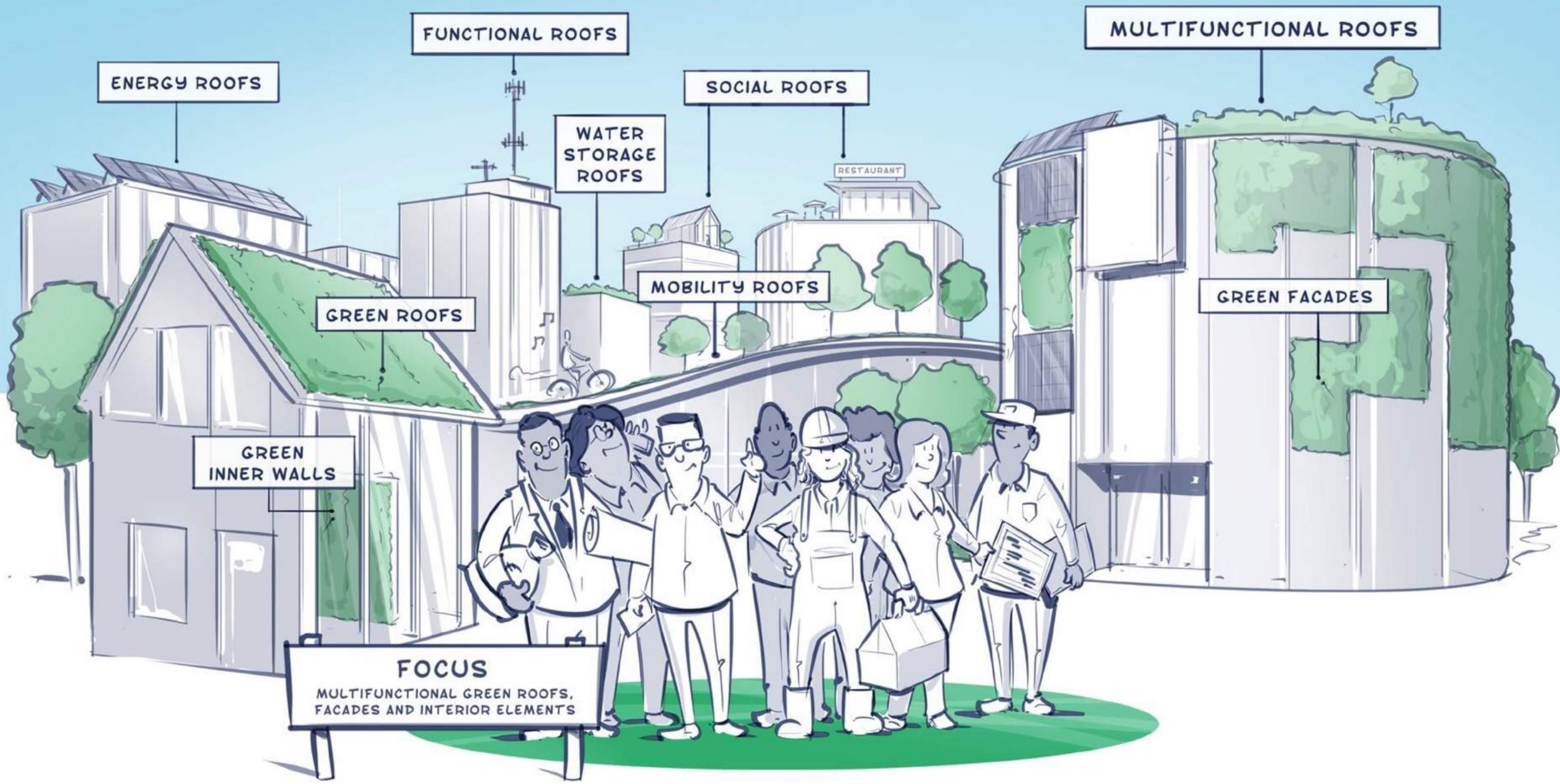
ENERGY TRANSITION

MATERIAL TRANSITION

CLIMATE TRANSITION

DIGITAL TRANSITION





RECOGNIZE & MEASURE



DISMOUNTABLE & MODULAR



CHAIN COLLABORATION



RETHINK THE BUSINESS MODELS



DIGITALIZATION



STRETCH THE LIFETIME



HIGH QUALITY REUSE

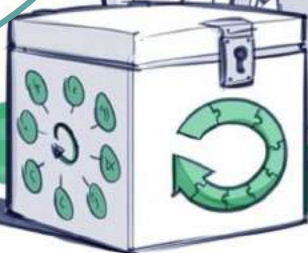


STRENGTHEN KNOWLEDGE





DEVELOPING A CIRCULAR CONSTRUCTION SKILLS QUALIFICATION FRAMEWORK



Skills Mapping



Why?

- Skills mapping to **better understand the skills gap** existing within the construction industry in relation to Circular Economy and MGRFIE.

How?

- By **interviewing frontrunner professionals** and asking them to rate their **current and future skills levels** based on a skills levels table and a skills table.



Professions and trades



Step 1 – create a list of professionals which relate to sustaining the built environment while applying circular principles.

- Circular Economy for sustaining the built environment

Reference Profession / Trade	Enter national name for profession / type of profession	Definition of the professions (proposal, change if necessary)
Architect	Architect / building designer, project manager, building construction manager, director of the execution of the works, urban architect, structures' calculist, health and safety coordinator, Building Energy Auditor, Building Energy Chief Auditor) technical architect	Architects investigate, design and oversee the implementation of buildings taking into account functional, architectural, aesthetic, structural, technical, regulatory, cost and contextual requirements with due regard to public health and safety.
Civil Engineer	Designer, Mechanical engineer, Electronics engineer , Electrical engineer, Structural/Building/Installations engineer, Energy engineer, Management engineer, technical engineer	Designer of materials and structures, considering the limitations imposed by practicality, regulation, safety, and cost. Specialization is possible on topics like construction safety, thermal performance, acoustics, building physics.
Mechanical Engineer	Energy engineer, Multifunctional use for solar PV / Urban wind turbines	Designer of materials and systems for HVAC and sanitary equipment, considering the limitations imposed by practicality, regulation, safety, and cost.
Electrical Engineer	ICT engineer, Building automation engineer, Sensoring and Building Management Systems	Designer of power, lighting, data and or communication installations, considering the limitations imposed by practicality, regulation, safety, and cost. Designer of building automation systems, system engineer / system integrator, considering the limitations imposed by practicality, regulation, safety, and cost.



Skills



Step 2 – Create a list of skills

These skills have been split into:

- Circular Economy for sustaining the built environment specific skills
- Skills relating to sustaining the built environment when working towards circularity
- Skills relating to Multifunctional Green Roofs Facades and Inner Elements when working towards circularity



Skills relating to sustaining the built environment when working towards circularity

Not specific to Circular Economy		Including all relevant skills involved in Circular Economy but not necessarily specific to CE within the construction industry.
Preserve and extend what is already made		
PE1	Maintenance of building components	Share information and knowledge on how to maintain building components e.g. DIY painting. Knowledge specific to maintenance work.
PE2	Upgrade of building components	Use expertise to upgrade elements. Knowledge specific to maintenance work.
Use waste as a resource		
UWR5	Grey Water Collection and Use	Understanding/use of closed and open loop knowledge of water (Closed loop - all resources created or used are kept within a continuous cycle. Open loop - not all resources created or used are kept within a continuous cycle)
UWR6	Rain Water collection and use	Rainwater harvesting to be used for certain applications e.g. washing, toilets, gardening.



Circular Economy for sustaining the built environment specific skills

	Specific to Circular Economy	Table including all relevant Circular Skills either solely related to Circular Economy or prominently related to CE.
DF	Design/Build for the future	Designing for building adaptability and to design for extended future use.
DF1	Design/Build for Reuse	Designing for easy dismantling and re-use of built elements, equipment or materials.
DF2	Design/Build for repurpose of materials	The use of Circular materials. Reuse, recycle and repurpose of all materials in construction.
DF3	Apply material passports	Apply material passports to enable more timely upgrading and life-time extension.

Skills relating to MGRFIE when working towards circularity

	Circular Economy specific to MGRFIE	To include all relevant CE skills which relate directly to MGRFIE specifically.
MF	Multi-functional Green Roofs Facades and Interior Elements	The design, construction and maintenance of MGRFIE.
MF1	Solar power systems for electricity generation	Installation, maintenance and electricity production.
MF2	Solar thermal systems for domestic hot water and/or heating generation	Installation, maintenance and heat production.
MF4	Insulation Installation	More efficiently use thermal energy e.g. insulation and draught-proofing, The use of building materials with lower thermal conductivity coefficient ideally with reused, recycled, regenerative or bio-based materials.
MF5	Establishing the cooling and heating function of green roofs	In depth understanding of cooling and heating systems (Micro Climate) in regard to MGRFIE.
MF6	Horticulture	Plant and soil understanding and expertise in relation to heating and cooling, insulation, shading, weight distribution, water collection and use.



Skills Levels



Step 3 – The skills level is based on responses from professionals working within the construction industry. Ask each of your professional frontrunner experts to rate their current and future skills levels in relation to these levels.

0	Not applicable / no knowledge and skills required
1	Has little knowledge and skills with respect to the relevant field / technology
2	Understands basic knowledge and has practical skills within the field, is able to solve problems by selecting and applying basic methods, tools, materials and information
3	Has comprehensive, factual and theoretical knowledge, is capable of solving problems within the field
4	Has advanced knowledge involving a critical understanding of theories and principles and skills, required to solve complex and unpredictable problems in the field and is aware of the boundaries
5	Has specialised knowledge and problem-solving skills, partly at the forefront of knowledge in the field, in order to develop new knowledge and procedures and to integrate knowledge from different fields



Skills Gap

- Once you have collated a European average the skills gap can be noted. As seen here with Landscape Architect a jump from a current skill of 2 to a desired skill of 4 can be seen for Priorities Regenerative Resources.

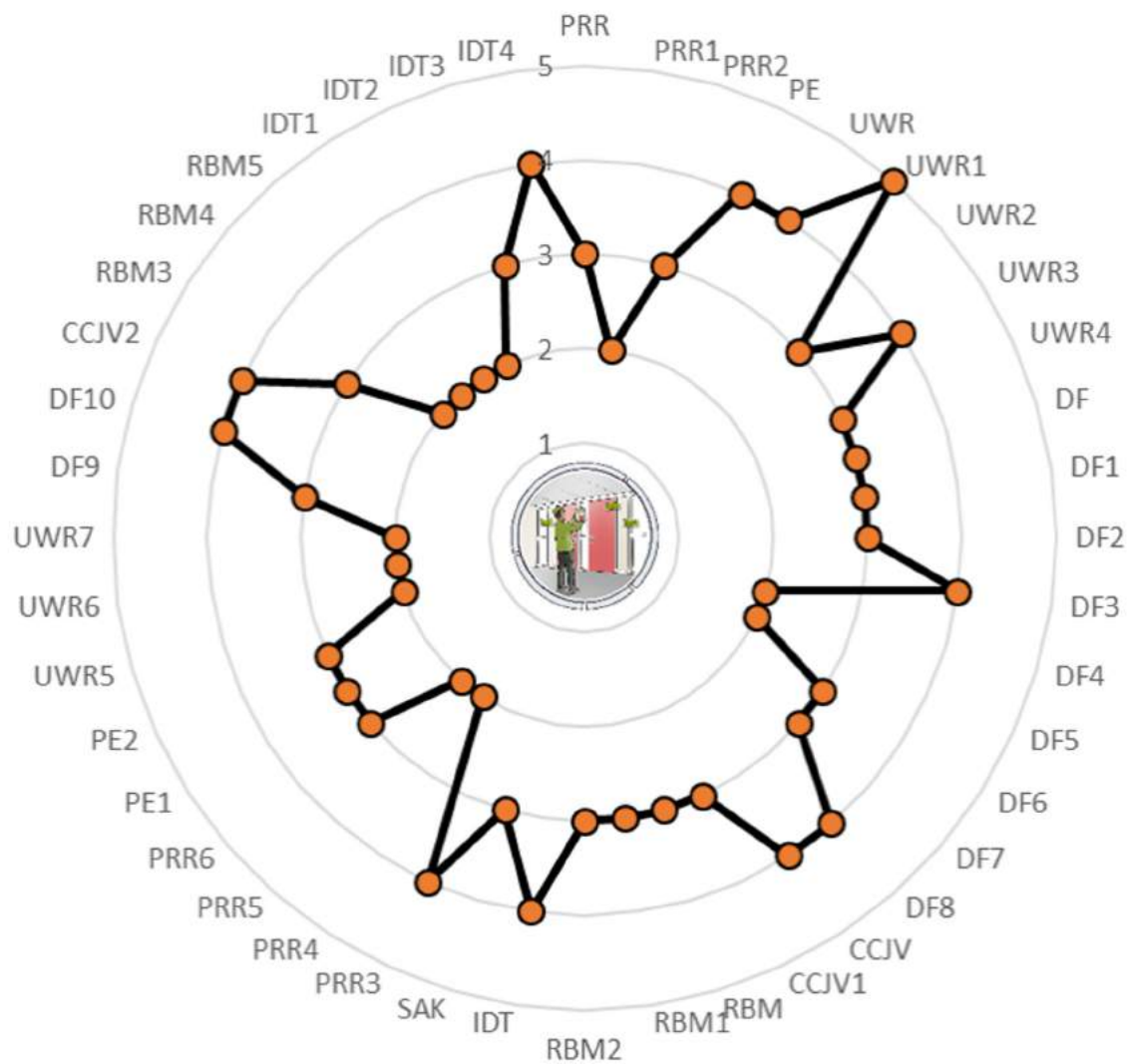
Landscape Architect

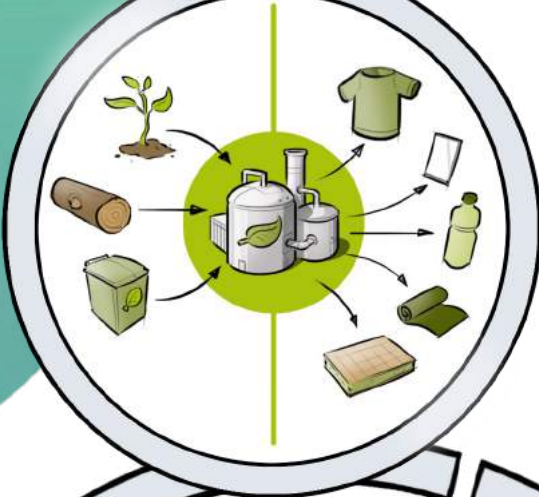
CODE	TECHNOLOGY, INTERDISCIPLINARY SKILLS AND PROFESSIONS		
	Specific to Circular Economy	C	F
PRR	Prioritise regenerative resources	2	4
PRR1	Bio-Based and regenerative material application	2	4
PRR2	Reusable material application	2	4
PE	Preserve and extend what is already made	2	4
UWR	Use waste as a resource	3	4
UWR1	Deconstruction for reuse	3	3
UWR2	Material Innovation	2	3
UWR3	Reclaiming Energy	1	3
UWR4	Continuous reuse of energy with little or no waste	2	4
DF	Design/Build for the future	3	4
DF1	Design/Build for Reuse	3	4
DF2	Design/Build for repurpose of materials	2	4



Visualise

Demolition/Deconstruction auditors





Scope of the BUS-GoCircular Circular construction skills qualification



Included

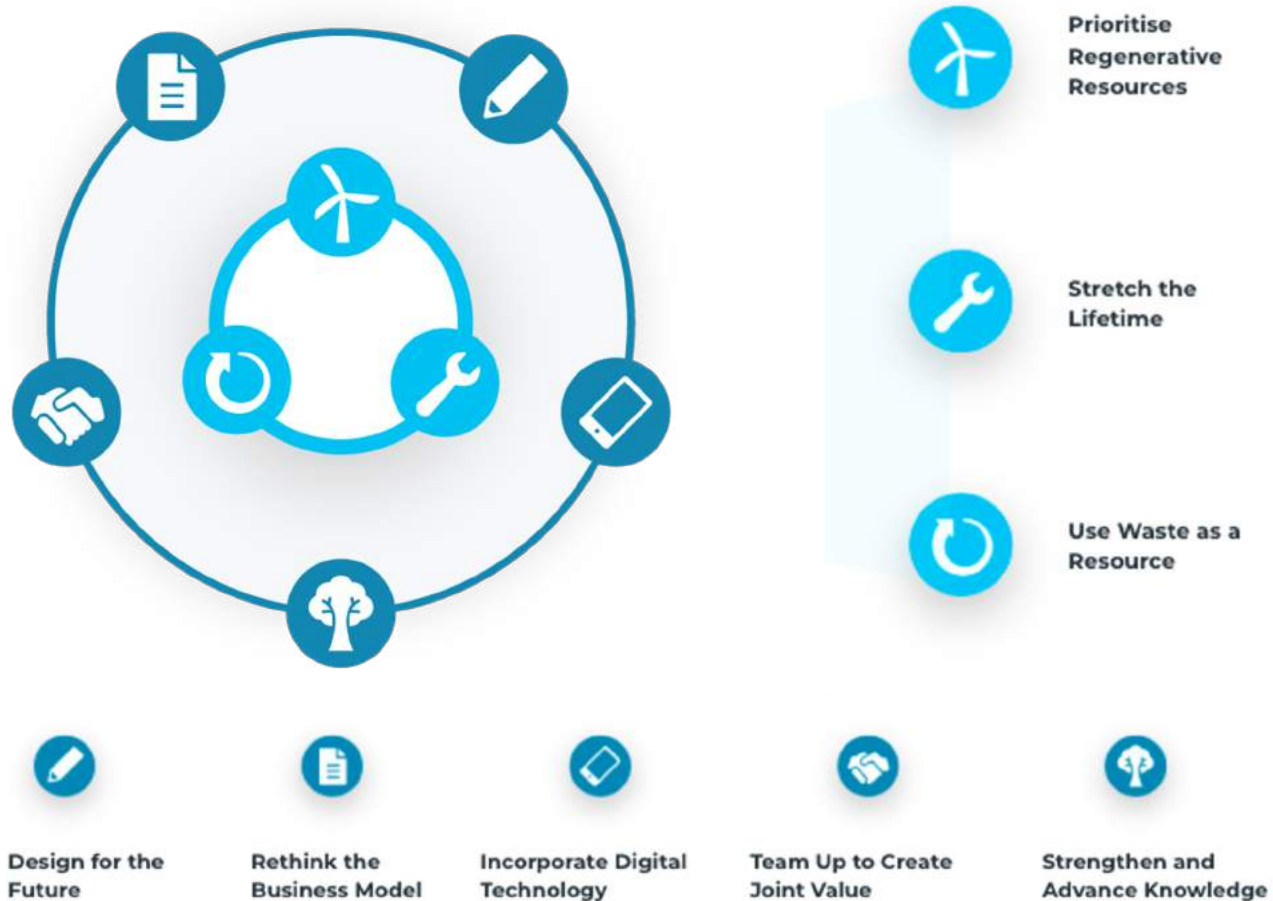
- Integrating circular principles in existing work activities
- Focus on working as a member of the construction value chain
- Including interdisciplinary skills:
 - Collaboration
 - Research and evaluation
 - Education

Not included

- ~~Detailed skills and knowledge~~
- ~~Technology specific (e.g. details of installing heat pumps, specifics of designing pre-fabricated structures)~~



Principles addressed



Task 2

2	Design for the future		81
2.1		Design to reduce waste during production and use	2, 26, 27, 28
2.2		Design with materials that enable multiple uses	5
2.3		Design buildings and installations that are made to last and to ensure longer use	31
2.4		Design products and building structures to enable reuse and recycling	29
2.5		Design products and building structures that make repair accessible	30
2.6		Design with use of pre-fabricated solutions	26
2.7		Design modular construction solutions	28
2.8		Design using secondary materials not initially intended for reuse	1, 14, 20, 23, 55, 78
2.9		Design to use and store energy more efficiently in buildings	24
2.1		Compile and provide deconstruction / demolition specifications at the commissioning stage	59

Task 3



3	Assemble/construct for the future		15
3.1		Install energy efficiency measures in buildings	56
3.2		Install renewable energy systems in buildings	63
3.3		Reduce waste during production and construction	58
3.4		Build modular structures	60
3.5		Build with bio-based, reusable, non-toxic and non-critical materials	68



Task 7

7	Incorporate digital technology		
7.1		Employ digital marketplaces to improve circular allocation of resources between stakeholders	48
7.2		Employ material passports throughout each phase of the building/project	47
7.3		Employ technologies to gather and analyse data to provide and gain insights on resource use (procure, operate, end of service life)	46, 47
7.4		Trade secondary materials and products on digital marketplaces	16, 48, 79
7.5		Use drones to collect data about building and analyse building for renovation	84

What's next?...



EXTRA EXTRA
READ ALL ABOUT IT!



STIMULATE MARKET DEMAND
FOR CIRCULARITY SKILLS



DEVELOPING A CIRCULAR CON-
STRUCTION SKILLS QUALIFICA-
TION FRAMEWORK



EXTRA EXTRA
READ ALL ABOUT IT!



STIMULATE MARKET DEMAND
FOR CIRCULARITY SKILLS

DEVELOPMENT OF RECOGNITION
SCHEMES AND DELIVERY OF
'TRAIN THE TRAINER' COURSES



DEVELOPING A CIRCULAR CON-
STRUCTION SKILLS QUALIFICA-
TION FRAMEWORK



EXTRA EXTRA
READ ALL ABOUT IT!



STIMULATE MARKET DEMAND
FOR CIRCULARITY SKILLS

DEVELOPMENT OF RECOGNITION
SCHEMES AND DELIVERY OF
'TRAIN THE TRAINER' COURSES



IMPROVING THE REPUTATION OF
THE CONSTRUCTION SECTOR TO
BECOME MORE DIVERSE AND
INCLUSIVE



MENTORING



DEVELOPING A CIRCULAR CON-
STRUCTION SKILLS QUALIFICA-
TION FRAMEWORK



EXTRA EXTRA
READ ALL ABOUT IT!



STIMULATE MARKET DEMAND
FOR CIRCULARITY SKILLS

DEVELOPMENT OF RECOGNITION
SCHEMES AND DELIVERY OF
'TRAIN THE TRAINER' COURSES



IMPROVING THE REPUTATION OF
THE CONSTRUCTION SECTOR TO
BECOME MORE DIVERSE AND
INCLUSIVE



MENTORING

EXPAND BUS-GOCIRCULAR
AT NATIONAL- AND EU-LEVELS



REPLICATE
ON OTHER
DOMAINS



DEVELOPING A CIRCULAR CON-
STRUCTION SKILLS QUALIFICA-
TION FRAMEWORK





Follow us



<http://www.busgocircular.eu/>



<https://twitter.com/BusGoCircular>



<https://www.linkedin.com/company/busgocircular>



<https://www.youtube.com/channel/UCXu4Rjs5WDXBE-yqda5kt5A>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033740

Colophon

Copyright © 2021 by BUSGoCircular consortium

Use of any knowledge, information or data contained in this document shall be at the user's sole risk. Neither the BUSGoCircular Consortium nor any of its members, their officers, employees or agents shall be liable or responsible, in negligence or otherwise, for any loss, damage or expense whatever sustained by any person as a result of the use, in any manner or form, of any knowledge, information or data contained in this document, or due to any inaccuracy, omission or error therein contained. If you notice information in this publication that you believe should be corrected or updated, please get in contact with the project coordinator.

The authors intended not to use any copyrighted material for the publication or, if not possible, to indicate the copyright of the respective object. The copyright for any material created by the authors is reserved. Any duplication or use of objects such as diagrams, sounds or texts in other electronic or printed publications is not permitted without the author's agreement



Partners



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101033740

nZEB Ready – Enhancing Market Readiness for nZEB Implementation



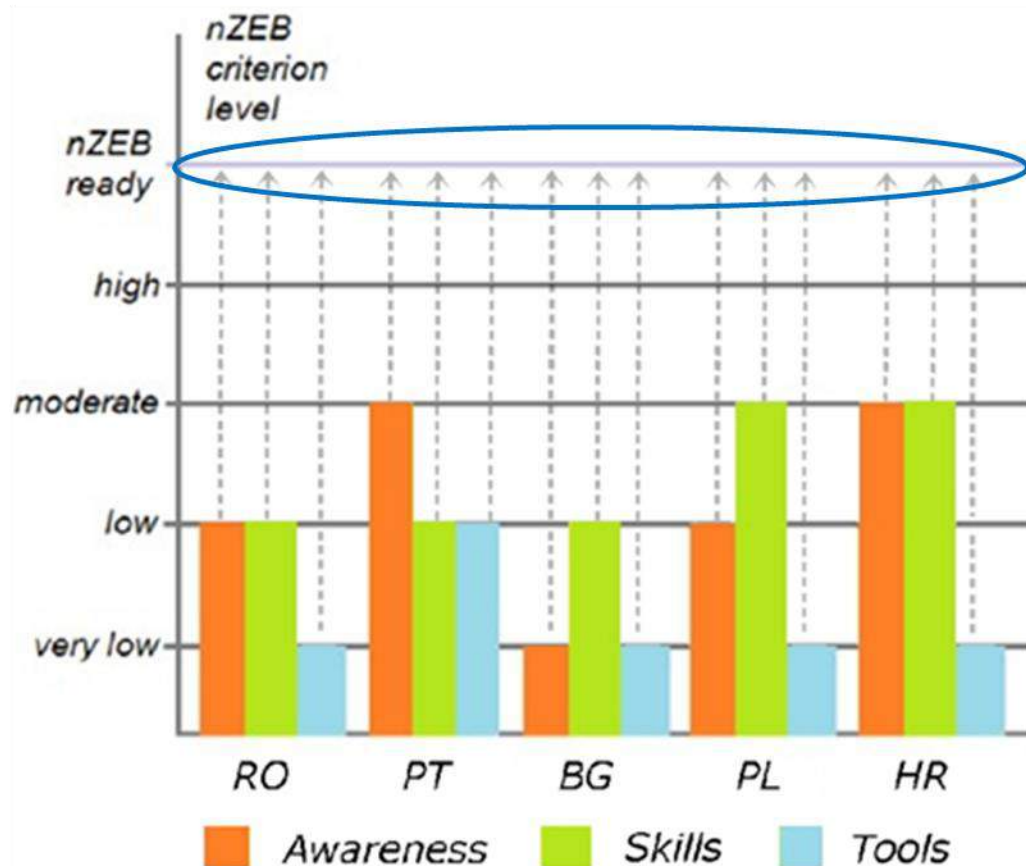
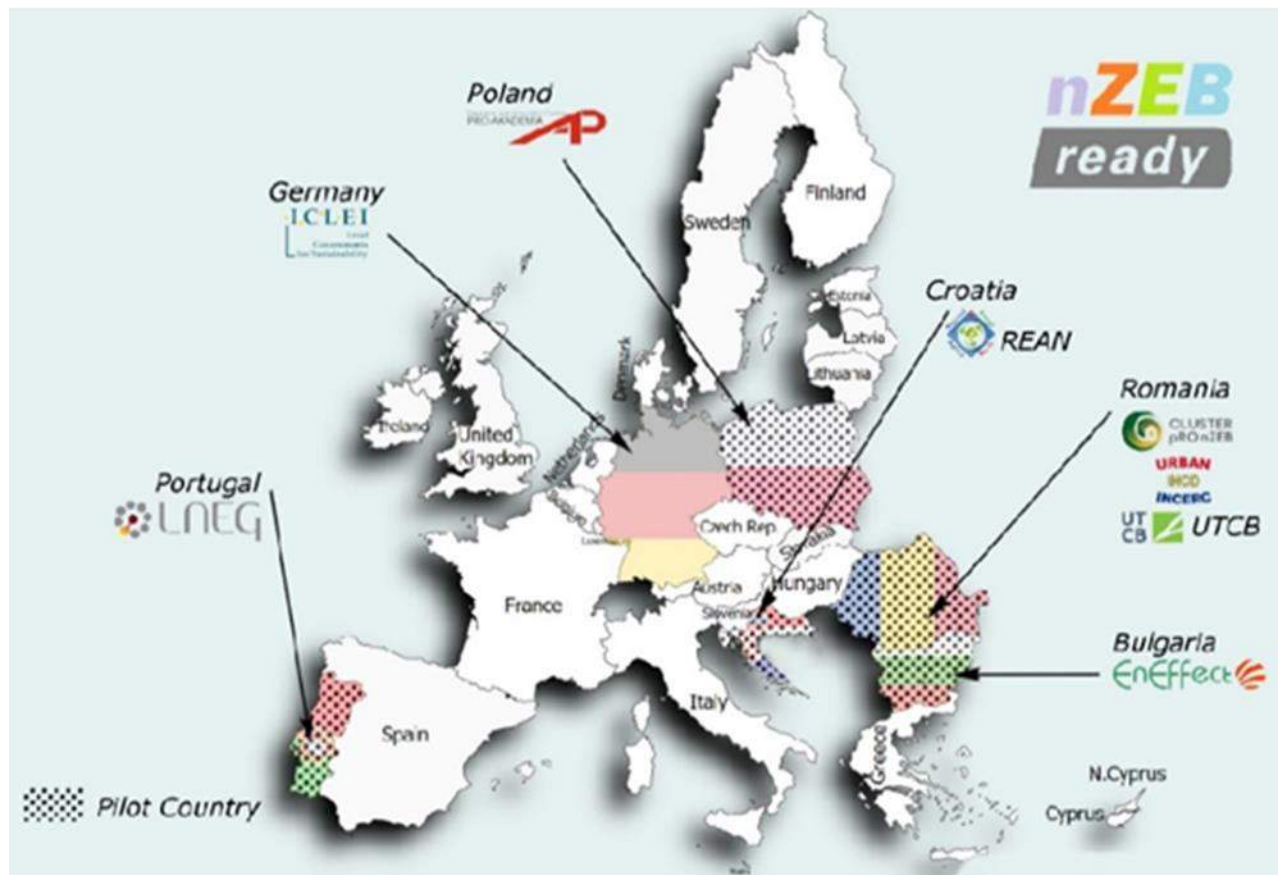
Horia Petran, NIRD URBAN-INCERC | Pro-nZEB Cluster

WORKSHOP Sustainable Energy Skills in the Construction Sector 3.0 | September 9th, 2022



ENHANCING MARKET READINESS FOR NZEB IMPLEMENTATION

September 2021 – August 2024

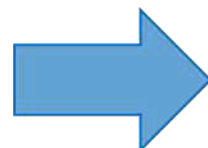




ENHANCING MARKET READINESS FOR NZEB IMPLEMENTATION

September 2021 – August 2024

“Why nZEB?”
 “Who can provide nZEB?”
 “How to reach nZEB?”



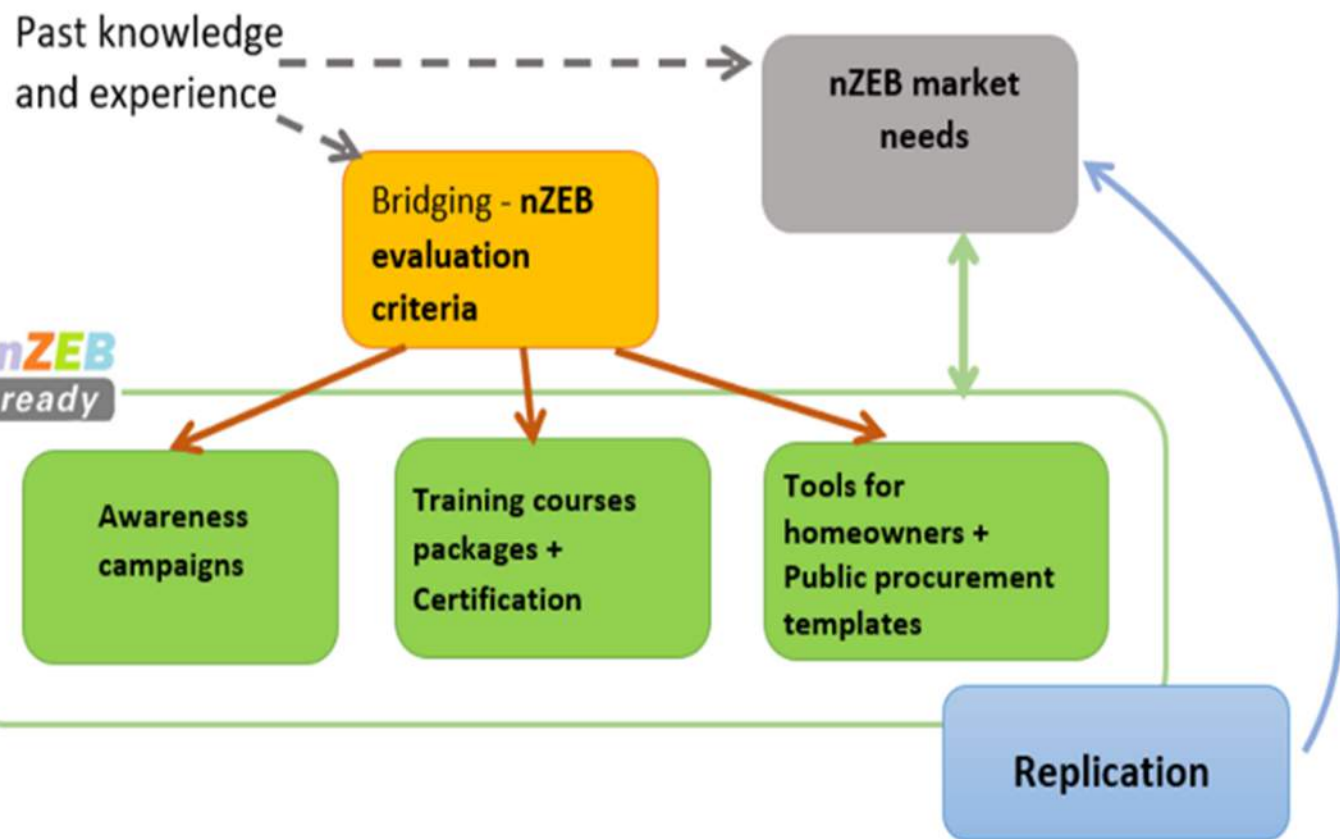
Prepare **ready to use frameworks** to answer the needs related to lack of **awareness**, lack of **skilled professionals** and lack of **support instruments**, implementing the **nZEB ready labelled procedures** in **5 pilot countries (BG, HR, PL, PT, RO)**



Overarching goal

To support the increase of the market readiness for an effective nZEB implementation and to stimulate the demand for energy related skills

Impact



- 10 municipalities trained for municipal projects (procurement procedures)
- 840 upskilled (nZEB) energy auditors, designers and execution engineers
- 300 new key nZEB specialists trained (Blower-door tester / Thermal bridges evaluator / Infrared inspector)
- > 2 new certification schemes defined (on-site training and validation of skills)
- 25 MoUs signed with nZEB product suppliers
50 documented joint actions
15 national & local authorities involved
- Reduced gap between designed and actual energy performance (measured airtightness)

- Needs identification of key target groups to become nZEB ready
- Awareness campaign for new generations - university and high school students: “Why nZEB?”
- Extensive awareness campaign for beneficiaries’ engagement: “How to go nZEB?”
- Extensive awareness campaign through testimonials: “Who is nZEB?”
- National nZEB brokerage events – bringing together all process chain participants under nZEB Marketplace umbrella
- nZEB Ready platform web content development: Creating and developing awareness content tailored for different target groups and stakeholders specific for each country

- Strategic Professionals: Continuous Learning Training and Certification Program for Mutual Recognition
- Training courses for specialisation, general 12-16h, microcredits

Target Category		Learning Program
White Collars	1. Designers (Architects and Engineers)	<i>Thermal bridges calculation</i>
		<i>Mechanical ventilation system with heat recovery</i>
		<i>Building air tightness evaluation</i>
		<i>Solar shading systems</i>
	2. Energy Auditors and Assesors	<i>Bioclimatic design</i>
		<i>Renewable energy sources</i>
		Execution Engineers
<i>MEP Skills for nZEB Execution</i>		
Public Authorities		<i>nZEB Concept in practice</i>
Key specialists for nZEB Certification		<i>Blower-door tester</i>
		<i>Thermal bridges evaluator - infrared evaluator</i>
Blue Collars		<i>General skills related to nZEB construction</i>
		<i>General skills related to nZEB MEP</i>

- Development of tools and instruments for use of public sector actors to stimulate market demand for nZEB skills in construction projects.
 - ✓ special focus on local authorities' (public) procurement actions
 - ✓ other policy and regulatory levers for boosting demand for nZEB skills further within private construction projects - including financing
- Facilitate peer to peer learning on best practice between public owners of nZEB
- Stimulate demand of skilled nZEB key professionals as a requirement or award criteria in public procurement for nZEB works
- Promote use of skilled nZEB professionals by public authorities, both through their role as construction client and through urban management and regulation
- Establish and develop key guidance and tools to give direct support for implementation of nZEB projects, specifically targeting remaining barriers
- Integrate developed tools into the all-in-one platform to enable their use by public authorities across Europe.

nZEB ready

The nZEB Ready platform is currently being developed under the [nZEB Ready project](#) and is expected to be fully completed in September 2024.

Modules will be made available step by step in order to offer access to useful information, training and pilot certification programmes, financing schemes and various other tools that are relevant to those interested in better understanding nearly zero energy buildings and how to reach a high energy efficiency level in buildings.

nZEB Support Initiatives

Find out about previous relevant nearly zero energy buildings related initiatives that were funded under European Union programmes

Better understanding nZEB

Coming soon

Education and Training

Coming soon

Support Tools

Coming soon

Replication Map

Coming soon

Previous Initiatives

Search for previous EU initiatives that support nZEB deployment

Add keywords to search

Category
All

Output Type(s)	Language(s)	Initiative Funding Programme
<input type="checkbox"/> Educational materials (e-learning, trainings, brochures) <input type="checkbox"/> Reports <input type="checkbox"/> Schemes and frameworks <input type="checkbox"/> Trainings and learning materials for professionals <input type="checkbox"/> Videos and webinars <input type="checkbox"/> Web application / platform	<input type="checkbox"/> Croatian <input type="checkbox"/> Czech <input type="checkbox"/> Danish <input type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> German <input type="checkbox"/> Greek <input type="checkbox"/> Hungarian <input type="checkbox"/> Italian <input type="checkbox"/> Polish <input type="checkbox"/> Portugese <input type="checkbox"/> Slovenian <input type="checkbox"/> Spanish	<input type="checkbox"/> Erasmus+ <input type="checkbox"/> Horizon 2020 <input type="checkbox"/> Interreg Central Europe <input type="checkbox"/> LEONARDO DA VINCI

Search Refresh

European Skills Registry & Skills passport for professionals

Initiative Output

TRAIN4SUSTAIN Matchmaking Hub

Initiative Output

web application / platform

TRAIN4SUSTAIN e-Inventory

Initiative Output

web application / platform

Search our platform

Add keywords to search

Search

Explore

- nZEB Support Initiatives
- Better understanding nZEB
- Education and Training
- Support Tools
- Replication Map

Become nZEB Ready

- Products and Systems
- Buildings
- People
- Municipalities
- Communities

Shortcuts FOR

- Building Owners and Investors
- Construction Workers
- Experts, Designers and Auditors
- Financial Institutions
- Knowledge Providers
- NGOs and Civil Groups
- Producers and Suppliers
- Public Authorities
- Real Estate
- Students

online repository with:

- 19 bibliographical notes of previous initiatives,
- 43 linked outcomes. (further initiatives and additional information are welcomed)

users can filter the database to find relevant materials

<https://platform.nzebready.eu>

Coordinator:  

Partners:  



Thank you for your attention!

<https://platform.nzebready.eu/>



<http://www.nzebready.eu/>



<https://www.facebook.com/nzebreadyeu/>



<https://twitter.com/nzebready>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 101033733.

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the CINEA nor the European Commission is responsible for any use that may be made of the information contained therein.



#SUSTAINABLEPLACES2022

ENERGY SKILLS IN CONSTRUCTION
“Sustainable Energy Skills in the Construction Sector 4.0”
SEP. 6TH & 7TH SEP 2022, NICE, FRANCE

Q & A

- • • • •
- • • • •

LIFE CET Call 2022

- Deadline **16 November 2022**
- **EUR 98m** available for grants
- 18 policy-driven, **prescriptive** funding topics with **detailed guidance**
- **95% co-funding rate** (no infrastructure cost, mostly labour)
- Apply electronically via the EC's [Funding & Tender opportunities portal](#)
- 2 scopes under **LIFE-2022-CET-BUILDSKILLS**
 - Full topic text available [here](#)



BUS Scope A: Rebooting the BUILD UP Skills National Platforms and Roadmaps

- Expected project duration: **18 months**
- Indicative EU contribution/project: **EUR 0.4 million**
- Expected: **single-country applications - one action per country**
- Proposals may be submitted by a **single applicant from an eligible country**

Objectives (extracts)

Not legally binding

- support the **revitalisation of the National Platforms** created in the first phase of the BUILD UP Skills initiative (2011-2012), gathering all key national stakeholders [...] expanding their scope by involving new stakeholders.
- **update the Status Quo Analyses and National Roadmaps** to reflect the new realities of the building sector [...]

Note: Provided the contracts are successfully signed, and projects start in Autumn 2022, the update of the BUILD UP Skills national roadmap for the following countries will already be covered: Austria, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Ireland, Lithuania, the Netherlands, Poland, Romania, Slovakia, Spain.



Scope B: Upskilling and reskilling interventions enabling a decarbonised building stock

- Indicative EU contribution/project: **EUR 1 million**
- “Applications by a single applicant or applications covering a single eligible country are not considered appropriate under scope B. Therefore, the Commission considers relevant that consortia gather a minimum of 3 applicants from 3 different eligible countries.”

Develop new and/or upgrade existing **training and qualifications** for all types of professionals involved in the building value chain ('blue collars' and/or 'white collars')

Addressing **one or several** of the following focus areas:

Deep renovation

(nearly) Zero Energy Buildings

RES + efficient heating and cooling technologies; heat pumps

Whole life carbon, circular construction, resource efficiency, Level(s)...

Digital skills (e.g. BIM)

Building smartness (e.g. SRI, sensors, building controls and building management systems)



Not legally binding



Thank you



© European Union 2022

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.





#SUSTAINABLEPLACES2022

SUSTAINABLEPLACES.EU



ENERGY SKILLS IN CONSTRUCTION

Thank you

Sustainable Energy Skills in the Construction Sector 3.0
SEP. 6TH – SEP 9TH, 2022, NICE, FRANCE





SUSTAINABLE
PLACES 2022