

# TRAIN4SUSTAIN project

## *Experience with developing a skills registry and passport*

Peter Gyuris

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# CONTENT

- Competence Quality Standard developed by T4S
- Passport designed by T4S
- ESR deployed by T4S

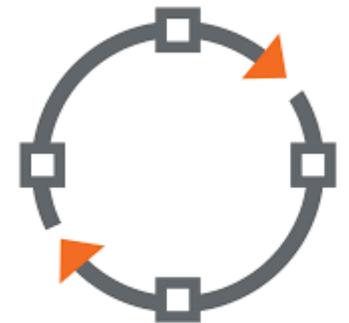


# Structure of the Competence Quality Standard

The T4S Competence Quality Standard is organised in a hierarchic and modular structure.

The higher level of the structure are 4 sustainability **Dimensions**:

- **Environment**
- **Society**
- **Economy**
- **Process**



PROCESS

**Area of Expertise** are described in terms of **Learning Outcomes**, that represent the fifth level of the hierarchic structure. They are the **elementary units** of the T4S Competence Quality Standard.

## Area of Expertise

- ER 1 – Building envelope thermal insulation



## Learning Outcomes

- Understand the importance of insulation in relation to nZEB
- Determine the insulation concept within a nZEB project
- Engineer the insulation concept and thermal bridges
- Specify the insulation concept in tender documents
- Quality assurance of building insulation

Each **Learning Outcome** in an Area of Expertise is associated to a **Level of Competence**. This information specifies for which Levels of Competence each Learning Outcome is requested. For instance, to get a competence score of 5, the professional needs to acquire all the Learning Outcomes of level 5 and lower (1,2,3,4).

Area of Expertise: Building envelope thermal insulation					
Learning Outcome	Requested for the levels of competence				
	1	2	3	4	5
Understand the importance of insulation in relation to nZEB	1	2	3	4	5
Determine the insulation strategy within a nZEB project			3	4	5

1	Has little knowledge and skills with respect to the thematic area. Understands basic principles and is able to take part in project team discussions
2	Understands basic knowledge and has practical skills within the thematic area, is able to solve simple problems by selecting and applying basic methods, tools, materials and information.
3	Has comprehensive, factual and theoretical knowledge and skills within the thematic area, is capable of solving standard 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 specialized 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

Each **Learning Outcome** (LO) is also linked to one or more **Project's Stages**. The reference stages are:

- **Conceptual, Detailed design, Construction**
- **As built, In use**

Each **Learning Outcome** (LO) is linked to one or more **Professions**

Each Learning Outcome (LO) is linked to one or more **Qualification Schemes** (learning process)

Each **Learning Outcome** (LO) is linked to a **Spatial Scale**

- Building (B)
- Neighbourhood (N)

**Filters for the selection of relevant areas of expertise and LO**

Area of Expertise: Building envelope thermal insulation	
Learning Outcome	Stage of the project
Understand the importance of insulation in relation to nZEB	Conceptual design
Determine the insulation strategy within a nZEB project	Detailed design

Area of Expertise: Building envelope thermal insulation	
Learning Outcome	Professions
Understand the importance of insulation in relation to nZEB	All
Determine the insulation strategy within a nZEB project	Architect, Engineer, Building energy consultant
Installation of thermal insulation on the building envelop (coat)	Insulation installer, Constructor

Area of Expertise: Building envelope thermal insulation	
Learning Outcome	Qualification scheme providing the learning outcome
Understand the importance of insulation in relation to nZEB	Consulente Casaclima Junior, Consulente Energetico Casaclima, Esperto Protocollo ITACA, LEED AP, BREEAM Assessor...
Determine the insulation strategy within a nZEB project	Consulente Energetico Casaclima, Passive House Consultant

# COMPLETE DESCRIPTION of an AREA of EXPERTISE

Area of Expertise: Building envelope thermal insulation											
Learning outcome	Stage of the project	Knowledge	Skill	Requested for the levels of competence					Scale	Professions	Qualification scheme providing the learning outcome
				1	2	3	4	5			
<b>Understand the importance of insulation in relation to nZEB</b>	Conceptual design	Has general knowledge on insulation. Understands the basic concept of energy conservation. Is aware of constraints and boundary conditions (regulations, construction)	Is able to take part in discussions within a project.						B	All	Consulente Casaclima Junior, Consulente Energetico Casaclima, Esperto Protocollo ITACA, LEED AP, BREEAM Assessor...
<b>Determine the insulation strategy within a nZEB project</b>	Detailed design	Understands the concept of energy conservation (reduction of losses) in terms of building shape, zoning of rooms, insulation, airtightness etc. Understands the nature of the thermal bridge.	Can discuss and, to some extent evaluate, possible solutions for the thermal bridge problem. Can determine the effect of application of different types of construction elements for the energy performance of the building.	-	-	-	4	5	B	Architect, Engineer, Building energy consultant	Consulente Energetico Casaclima, Passive House Consultant



# T4S European Skill Passport

The T4S Skill Passport is intended to be a transnational document useful to **report and communicate** the level of competence of a professional and blue collar with regards to each pertinent Area of Expertise.

Mr XX XX	Profession: Architect
Area of Expertise	Level of competence
<b>C - COMFORT</b>	
<b>CQ - Quality of air</b>	
CQ1 Low emitting materials	5
CQ2 Natural Ventilation	3
CQ3 Mechanical ventilation	1
CQ4 Radon management	3



Area of Expertise	Level of competence
C - COMFORT	5
CQ - Quality of air	3
CQ1 Low emitting materials	5
CQ2 Natural Ventilation	3
CQ3 Mechanical ventilation	1
CQ4 Radon management	3

Train4Sustain Competence Qualification Standard




European Passport

Max Mustermann

Qualification is equivalent to  
LEED AP Qualification

Skill Level in thematic areas	WLO
Energy Management (EM)	5
Energy Production (EP)	4
Energy Reduction (ER)	2
Sustainable Integrated Design (S)	1
Innovative Digital Solutions (IDS)	1
Neighbourhood Solutions (NS)	5
Interdisciplinary Skills (IS)	4
<b>Total Skill Levels</b>	<b>30</b>
<b>Achieved Skill Score</b>	<b>37 %</b>

T4S European Passport

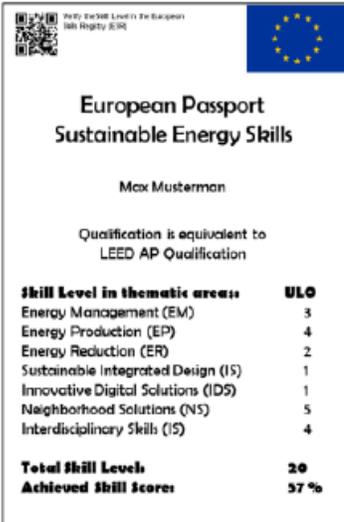
The T4S European Skill Passport allows to compare the competences acquired through different learning processes and qualification schemes

### Sustainability Assessors Qualifications

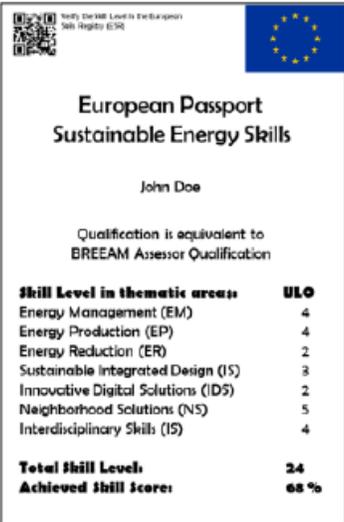
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**VS.**

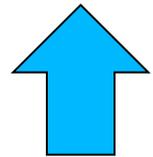


**VS.**



**+**





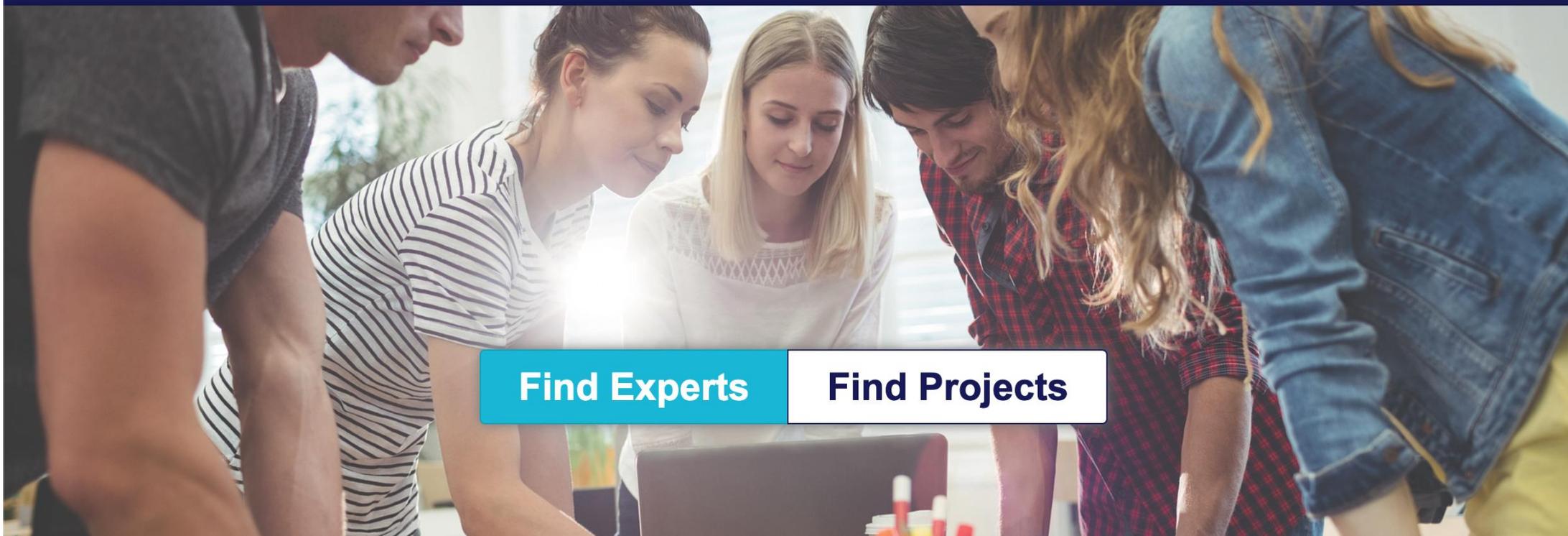
### T4S EUROPEAN SKILL PASSPORT

# Exploitation of the passport the ESR and

EU GPP criteria	TRAIN4 SUSTAIN CQS
<b>A1. Competence of the project manager</b>	-
- The use of holistic assessment tools in the design, appraisal and specification of environmentally improved buildings, including LCC and LCA	<b>MS1</b> Environmental impact of construction materials (LCA) <b>QC2</b> Life cycle cost assessment <b>DI2</b> Use of assessment tools in IDP
<b>A2. Competence of the design team</b>	-
- Water efficient services design, including measured water demand per employee from completed projects	<b>WE2</b> Indoor water use management <b>WM1</b> Rainwater collection and reuse systems
<b>A3. Competencies of the main construction contractor and specialist contractors</b>	-
- The procurement, installation and verification of low environmental impact construction materials	<b>MS1</b> Environmental impact of construction materials (LCA) <b>MS2</b> Environmental labels for construction materials <b>MS3</b> Recycled materials <b>MS5</b> Certified materials

DGNB System2	TRAIN4 SUSTAIN CQS
<b>Environmental quality</b>	-
ENV2.3 – Land use	<b>HL1</b> Site preservation, regeneration and development <b>HL2</b> Efficient use of land
<b>Economic quality</b>	-
ECO2.1 – Flexibility adaptability	<b>QF1</b> Business models preparation <b>QC1</b> Operating and maintenance cost management
<b>Sociocultural and functional quality</b>	-
SOC1.2 – Indoor air quality	<b>CQ1</b> Low emitting materials <b>CQ2</b> Natural ventilation <b>CQ3</b> Mechanical ventilation
<b>Technical quality</b>	-
TEC1.2 – Sound insulation	<b>CA1</b> Passive building acoustic requirements <b>CA2</b> Management of ambient noise conditions
<b>Process quality</b>	-
PRO2.3 – User communication	<b>KC1</b> Motivation and communication – Design Team <b>KM2</b> Community involvement in urban planning activities
<b>Site quality</b>	-
SITE1.2 – Influence on the district	<b>ZM4</b> Integration with the context <b>HL2</b> Efficient use of land



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# European Skills Registry

## Motivation

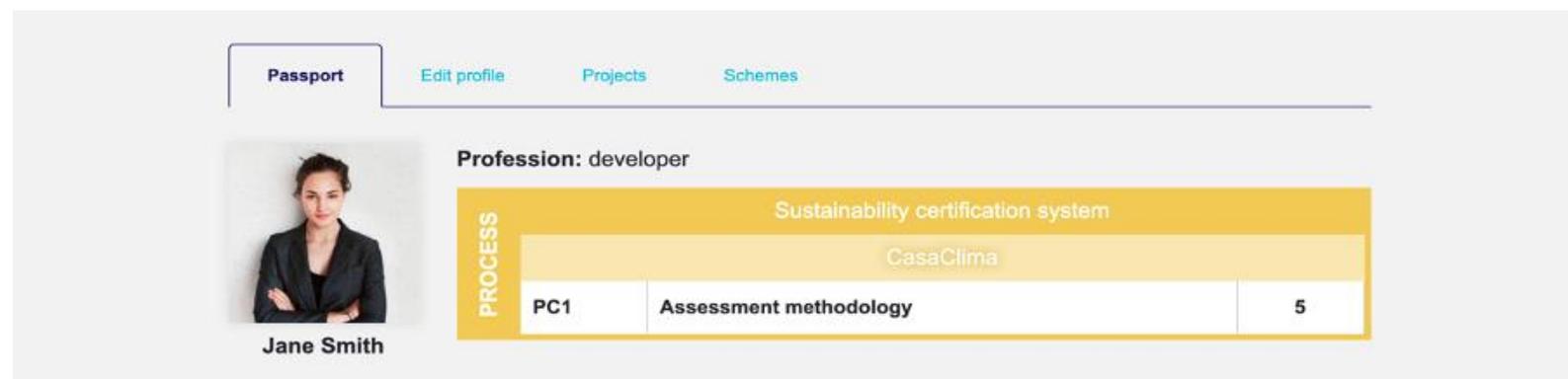
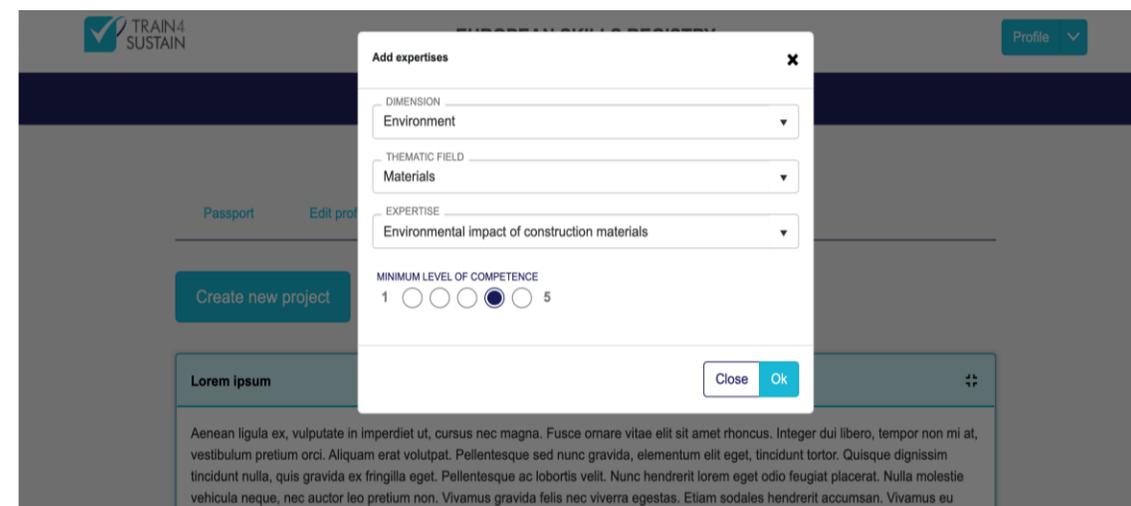
- Existing services of craftsmen portals, building professionals (e.g. online catalogue of engineers) are “rigid”
- European project platforms are very complex for an “average user”
- Challenge: combine the provision of skills and knowledge of construction specialists and match with demand side requirements
- ESR: web application based on the T4S CQS



# European Skills Registry

## Main components

- **Match-making Hub** (Searching for qualified experts, Contacting experts from the registry, Publishing projects / Basic information)
- **Skills Comparison Tool**
- **Scheme Evaluation Tool**
- **Skills Passport** (Passport is displayed by default, LoC evaluated against the CQS)



# Skills Comparison Tool

## Comparing qualification schemes / Selection

### SCHEMES

SEARCH

THEMATIC FIELDS  
Energy X

EXPERTISE  
ER7 - Heating and cooling emission systems X

**CasaClima Energy Consultant**  
<https://www.agenziacasaclima.it/>

EM2 EP0 ER7 MS3 MS4 MS5 DI1 PP1 PC1  
PC2 CQ3 CT1 CV1 CA1 FS2

**CasaClima Junior Expert**

EP0 ER7 DI1 PP1 PC1 PC2 CQ3 CT1 CV1  
CA1

[Load more](#)

### COMPARE SCHEMES

What does the level of competence mean?

		CasaClima Energy Consultant	CasaClima Junior Expert
ENVIRONMENT	Energy		
	Energy management		
	EM2 Domotic systems (homes)	✓	
	Energy production		
	EP0 Heating and Cooling GENERAL	✓	✓
Energy reproduction			
ER7 Heating and cooling emission systems	✓	✓	



# Many more at TRAIN4SUSTAIN ESR platform

Thank you for your attention!

Contact: [peter.gyuris@geonardo.com](mailto:peter.gyuris@geonardo.com)

