



ZEPHIR PASSIVHAUS ITALIA IN ITALY AND IN THE WORLD



Dr. Francesco Nesi

Kick-off meeting · Málaga

"LET'S build ecologically together" - Partnership for green models in the vocational training of construction workers

KA2 - Agreement Number: 2025-1-BG01-KA210-VET-000362824

Partner presentation (Italy)
ZEPHIR Passivhaus Italia

What we will cover

Two parts (as requested by the coordinator)

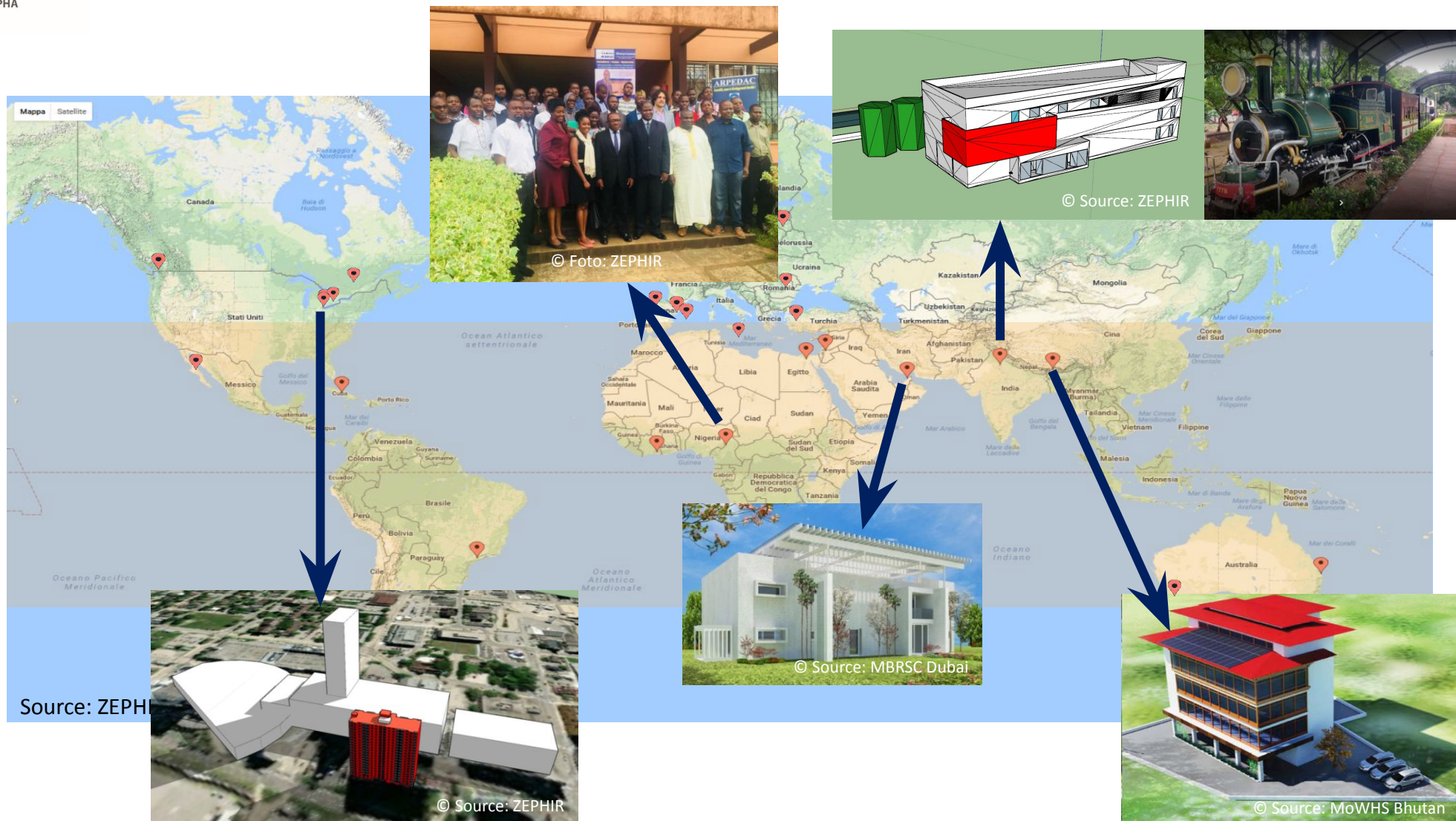
- Who we are: ZEPHIR Passivhaus Italia – experience, relevance and key figures related to the project topic
- Italy today: builders' vocational education and ecological construction education
- Needs & problems this project should address (Italy perspective)
- Kick-off outcomes – How we can contribute: training content, trainers network, and pilot actions

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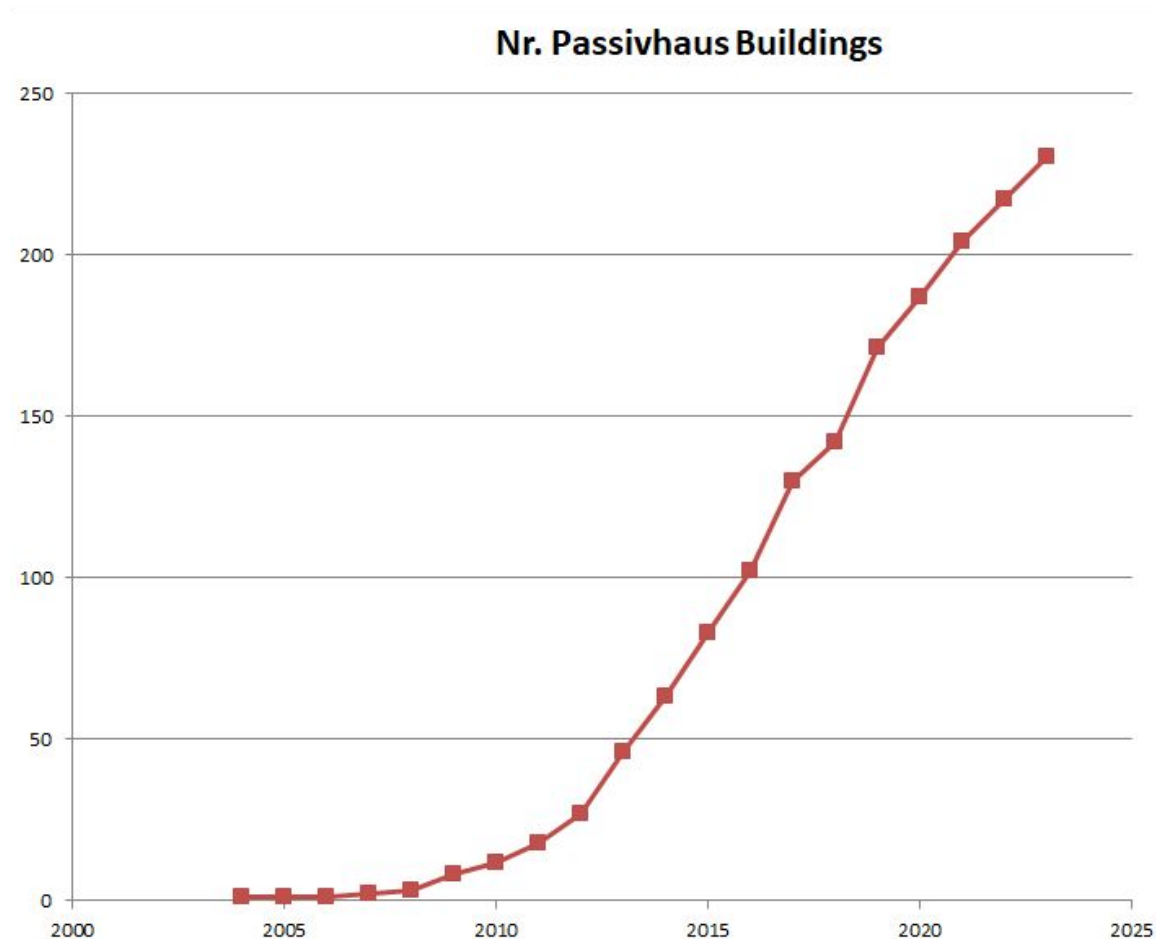
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ZEPHIR'S ACTIVITY IN THE WORLD...



... AND IN ITALY: RAPIDLY GROWING



Source: © ZEPHIR

PASSIVHAUS TYPES IN ITALY



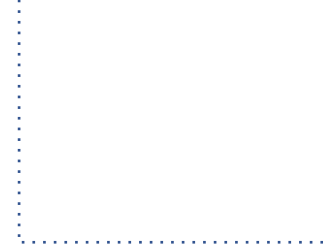
SFH



MFH



Hotel/B&B



Winery



Elderly house



Schools



Pizzeria/hotel



Swimming pool



Offices



Social Housing



Multipurpose bdg.

PASSIVHAUS DEVELOPMENT WITH ZEPHIR



Nov. 2011
Foundation of ZEPHIR



iPHA
Affiliate

Feb. 2012
ZEPHIR iPHA Italian Affiliate



Versione 7 (2012) © Passivhaus Institut

Tool per il bilancio energetico e la progettazione di edifici

Aug. 2012
PHPP 7 Italian version
w/ cooling, retrofit & non-res.

3500+



Sept. 2012
1st CPHD Designer course

PASSIVHAUS DEVELOPMENT WITH ZEPHIR



Oct. 2012
1st National Passivhaus
Conference



Oct. 2012
1st Worldwide roaming PH
module "BiosPHera"



May 2013
1st Italian municipality with PH
incentives



May 2013
1st Italian Passivhaus Hotel

2013-2016 EuroPHit



PASSIVHAUS DEVELOPMENT WITH ZEPHIR

2000+



Mar. 2014
 1st CPHT Tradesperson course



Sept. 2014
 1st PH public building (school)



Jan. 2016
 1st Italian Passivhaus window



Il tool per il bilancio energetico

Apr. 2017
 PHPP 9 Italian version w/ PH
 classes, variants & cost analysis

2014-2016 SEEDPass



2015 BiosPHera 2.0

2016 PH Vancouver-CAN (res)
 2016 PH Dubai-AE (offices)
 2016 EnerPHit Logroño-ES (library)

2017 PH multipurp. bldg. IT
 2017 Project in India
 2017 Project in Bhutan

Málaga, 26.02.2026

PASSIVHAUS DEVELOPMENT WITH ZEPHIR

5000+

□ <https://bit.ly/libroPH>



Oct. 2017
1st Passivhaus book in Italian



Jun. 2019
1st PH MFH in masonry in Southern Italy



Aug. 2019
1st Italian PH office in timber



Feb. 2020
1st EnerPHit skyscrapers retrofit in Italy



PASSIVHAUS DEVELOPMENT WITH ZEPHIR



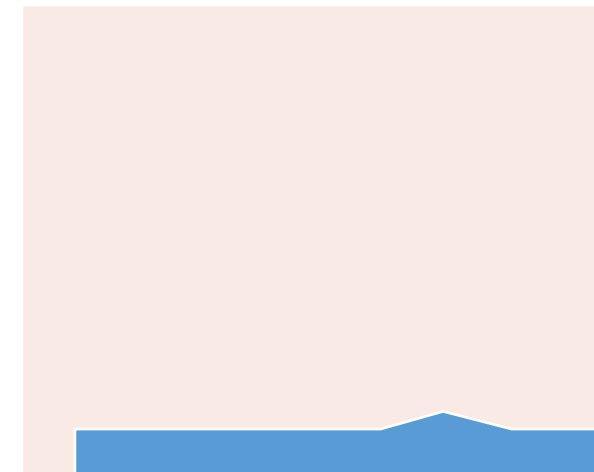
Jan. 2022
1st PH building system in
strawbales



Apr. 2024
1st Worldwide EnerPHit Unit



Mar. 2025
designPH in Italian



XXX
xxx

2023-2025 PASS3D



2022 PH school in Mallorca-ES

2023 PH police station IT

2023 LEED commissioning IT

2024 PH Perth-AUS (res)

2024 hygrom. dyn. simul. Romania

2024 EnerPHit North York-CAN (garage)

2025 PH Alameda-USA (res)

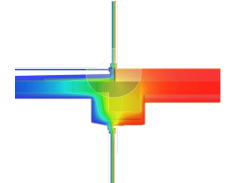
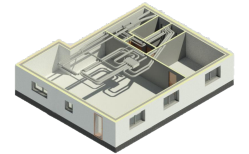
2025 EnerPHit Montréal-CAN (res)

2025 Project in Malta

Málaga, 26.02.2026

KEY CHALLENGES AND HOW TO OVERCOME THEM

☐ Market heavily dependent on incentives ☐ uncertain availability of materials, professionals and companies, budget fluctuations	Analysis of the Italian market and foreign markets to differentiate investments
☐ Preconceptions about energy efficiency measures: extra costs, usage restrictions, higher material costs, too much effort involved in selecting and coordinating the professionals involved	On-site training, accurate economic analyses to support customers throughout the entire construction process, project coordination
☐ Economic accessibility of initial design extra costs	Process automation, BIM and highly profitable system integrated processes
☐ Difficulties encountered by stakeholders in finding technical solutions for window and door connections, joints between building elements, etc.	Accurate thermal bridge calculations, development of certified building systems, installation thermal bridge catalogue
☐ Economic accessibility of the apparent extra total cost of a higher performance building such as Passivhaus	Increasingly managing the entire supply chain as a 'general contractor' in order to keep costs under control
☐ Limits of Italian universities on a 'sales' approach and an integrated approach ☐ Designers do not communicate energy efficiency well: 'everyone in class A' and they don't collaborate	Implement marketing strategies and shift focus to 'business' and 'end customer' buyer personas with integrated design



KEY CHALLENGES AND HOW TO OVERCOME THEM

❑ Market heavily dependent on incentives ❑ uncertain availability of materials, professionals and companies, budget fluctuations

Analysis of the Italian market and foreign markets to differentiate investments



The Passivhaus market in the UK

In the UK, Passivhaus is promoted by the UK affiliate of iPHA (International Passivhaus Association), the Passivhaus Trust.

The aim of the Association is to provide a reference point for Passivhaus in the UK, offering qualified training on Passivhaus and a professional network among its members. Passivhaus Trust has also become a global reference point for its clear brochures and guides that cover various aspects of Passivhaus: consultancy, certification, etc.

In recent years, the UK has seen significant growth in the number of certified Passivhaus buildings and designers/consultants. Currently, there are 763 certified buildings (new builds, renovations, non-residential...) and 738 certified Passivhaus designers active working in the region, with a buildings-to-designers ratio of 1.03.

Certified Passivhaus projects in the UK

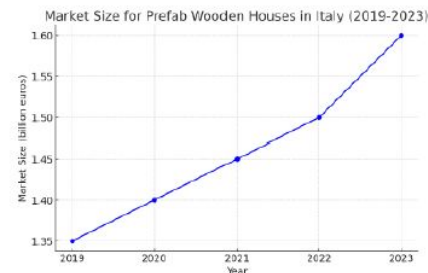


Certified Passivhaus designers in the UK



Overview of the Timber Prefabricated Houses Sector in Italy

The market for prefabricated wooden houses in Italy is growing and gaining popularity due to the increasing demand for sustainable and energy-efficient housing solutions. In 2019, the sector recorded an output of around EUR 1.35 billion, up 2.3 per cent on the previous year. This increase was accompanied by the construction of around 3,300 timber houses, representing 7% of all building permits issued that year (Mordor Intel). Compared to 2019 levels, by 2023 the percentage growth of the market for wooden houses in Italy was 18.5% as shown in this graph, with an average annual growth of 4.6%.



With approximately 2.8 per cent of the housing stock and 8.5 per cent of the entire building stock, pre-assembled timber components represent the segment in the building sector with the highest growth in Italy. Italy overtakes countries with a long history of using wood for construction, such as Austria, Finland, France and the Netherlands, becoming the third largest player in the wood construction sector in Europe after Germany and Sweden.

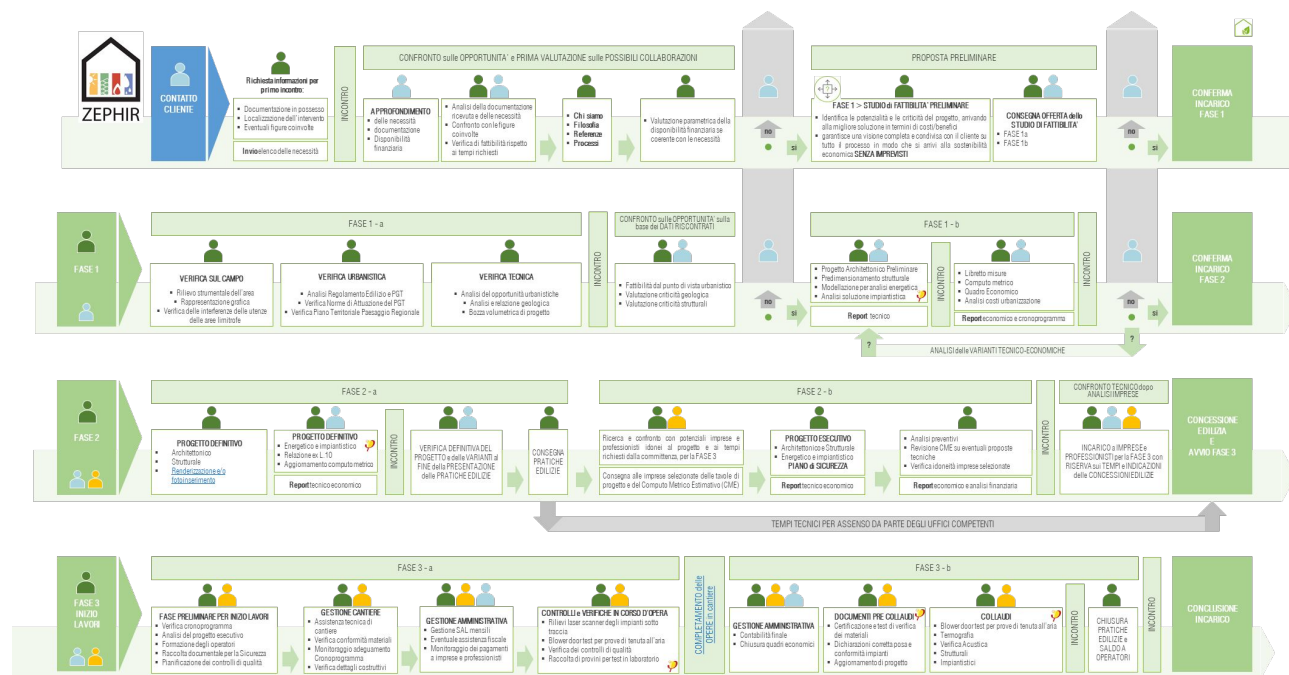
In Italy, Lombardy has the highest concentration of timber construction companies, followed by...



KEY CHALLENGES AND HOW TO OVERCOME THEM

❑ Preconceptions about energy efficiency measures: extra costs, usage restrictions, higher material costs, too much effort involved in selecting and coordinating the professionals involved

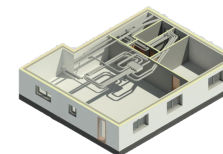
On-site training, accurate economic analyses to support customers throughout the entire construction process, project coordination



KEY CHALLENGES AND HOW TO OVERCOME THEM

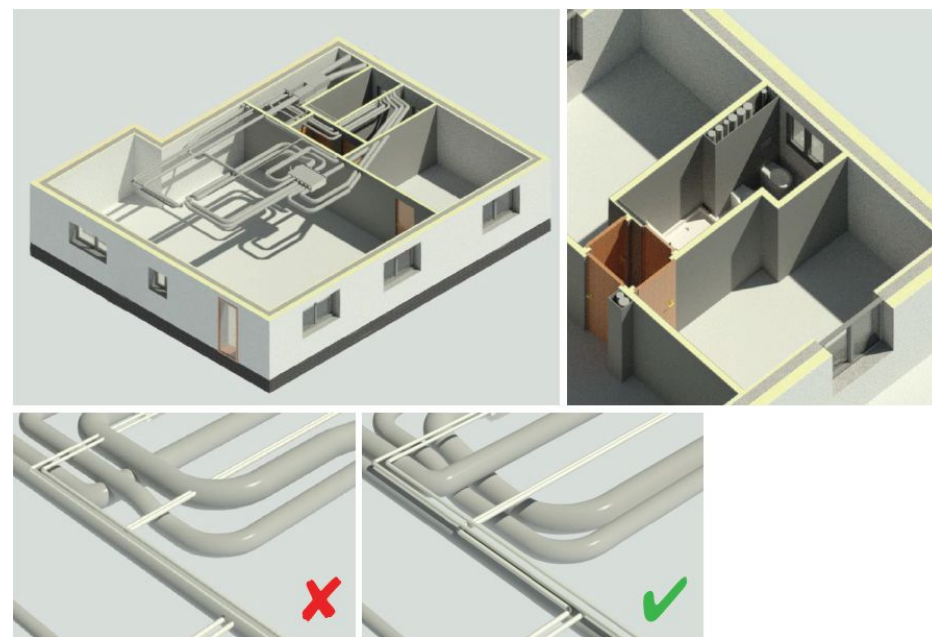
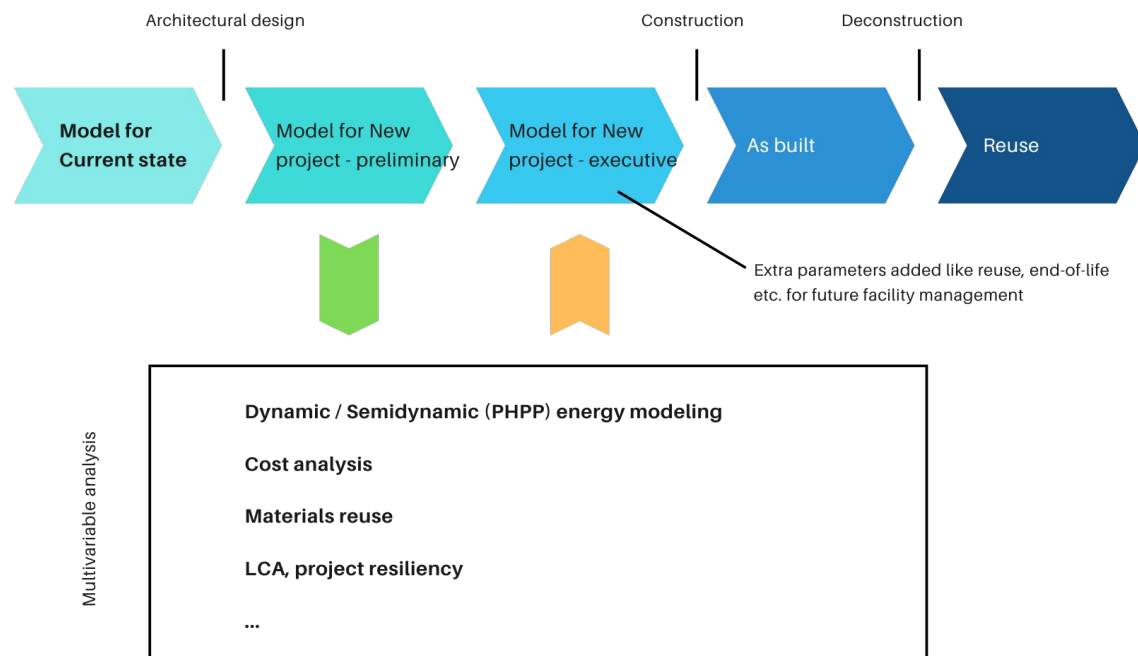
❑ Economic accessibility of initial design extra costs

Process automation, BIM and highly profitable system integrated processes



Expected uniform and unique digital model

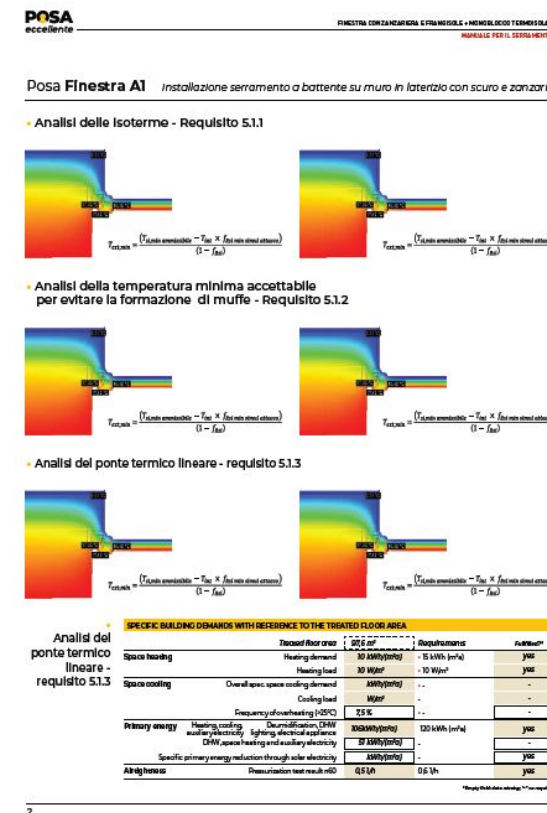
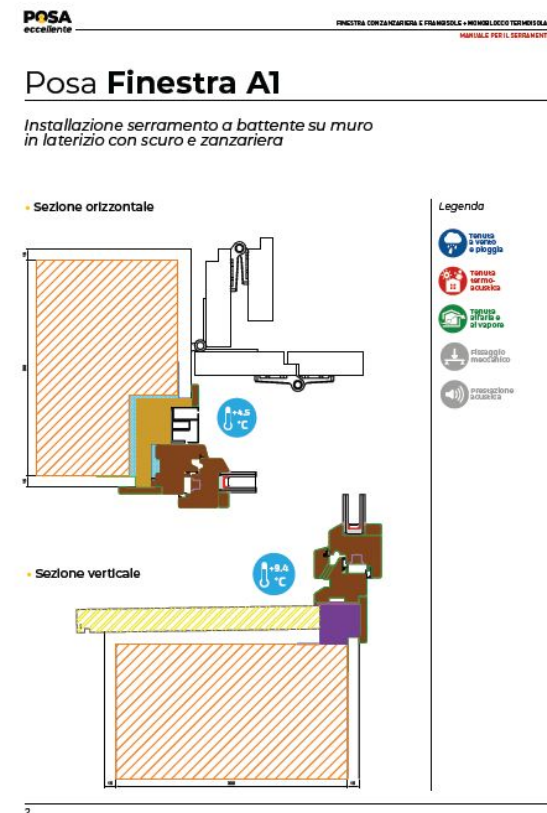
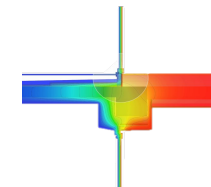
Project idea: digital process



KEY CHALLENGES AND HOW TO OVERCOME THEM

Difficulties encountered by stakeholders in finding technical solutions for window and door connections, joints between building elements, etc.

Accurate thermal bridge calculations, development of certified building systems, installation thermal bridge catalogue



KEY CHALLENGES AND HOW TO OVERCOME THEM

❑ Economic accessibility of the apparent extra total cost of a higher performance building such as Passivhaus

Increasingly managing the entire supply chain as a 'general contractor' in order to keep costs under control



KEY CHALLENGES AND HOW TO OVERCOME THEM

❑ Limits of Italian universities on a 'sales' approach and an integrated approach
❑ Designers do not communicate energy efficiency well: 'everyone in class A' and they don't collaborate

Implement marketing strategies and shift focus to 'business' and 'end customer' buyer personas with integrated design



Target and potential visibility



END CLIENTS

Educate the end client on value and communicate benefits they may not be aware of



TECHNICAL PROFESSIONALS

Provide authoritative information and accurate guidance to prevent mistakes



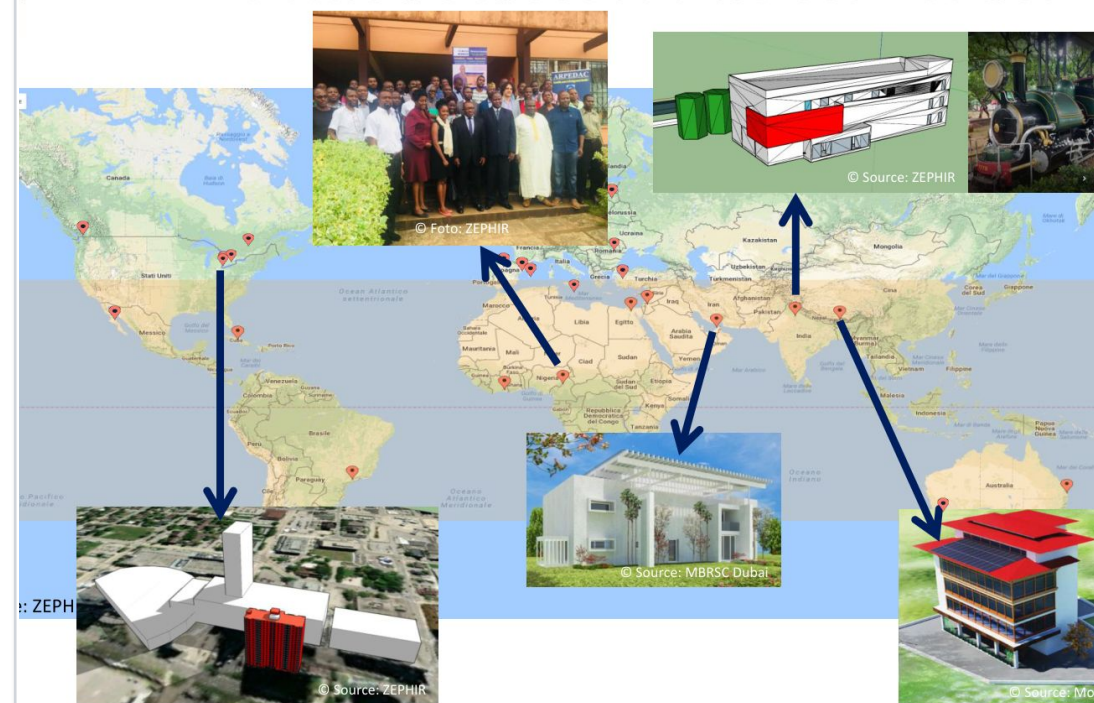
GOAL: 50K VIEWS/MONTH AND 10K REGISTERED PROFESSIONALS

Target audience achievable within the first 12 months of activity

ZEPHIR Passivhaus Italia – resumée

- Italian institute based in Trento, focused on high-performance and low-impact buildings
- Long experience with the Passivhaus approach and nZEB dissemination in Italy and abroad
- Training for designers and tradespeople (hands-on, site-oriented), plus technical tools and resources
- Network of projects, professionals and companies to support pilots and upskilling in construction sites

ZEPHIR'S ACTIVITY IN THE WORLD



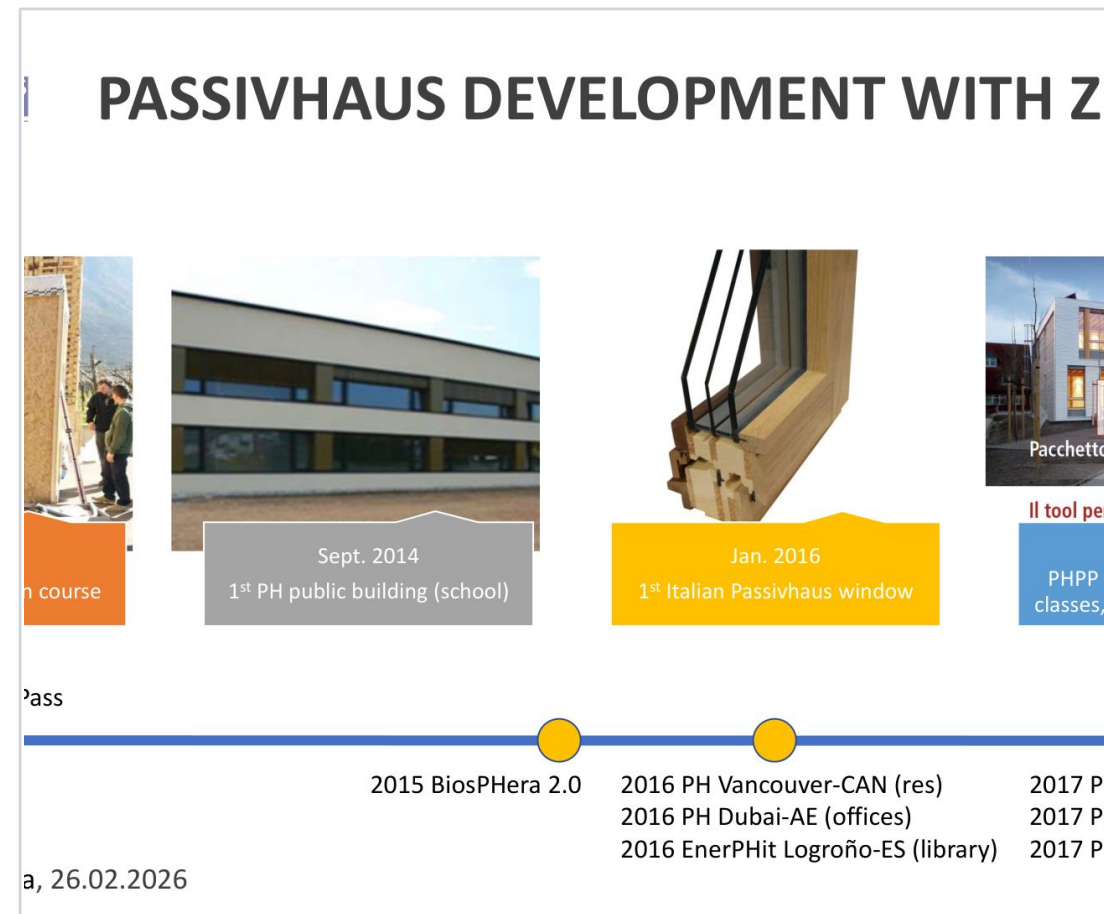
a, 26.02.2026

Francesco Nesi – ZEPH

Examples of international activity

Experience relevant to the project topic – resumé

- Training pathways for designers (CPHD / thermal bridges) and for site professionals (CPHT)
- Translation and dissemination of technical tools (e.g., PHPP Italian versions) and guidance materials
- National conferences, workshops and on-site demonstrations to transfer skills into real projects
- Strong focus on buildability: airtightness, thermal bridges, window connections, workmanship quality



Selected milestones (training, tools, projects)

What slows down green building adoption (Italy): recurring barriers

❑ Market heavily dependent on incentives → uncertain availability of materials, professionals and companies, budget fluctuations

Analysis of the Italian market and foreign markets to differentiate investments



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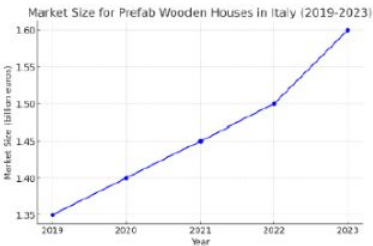
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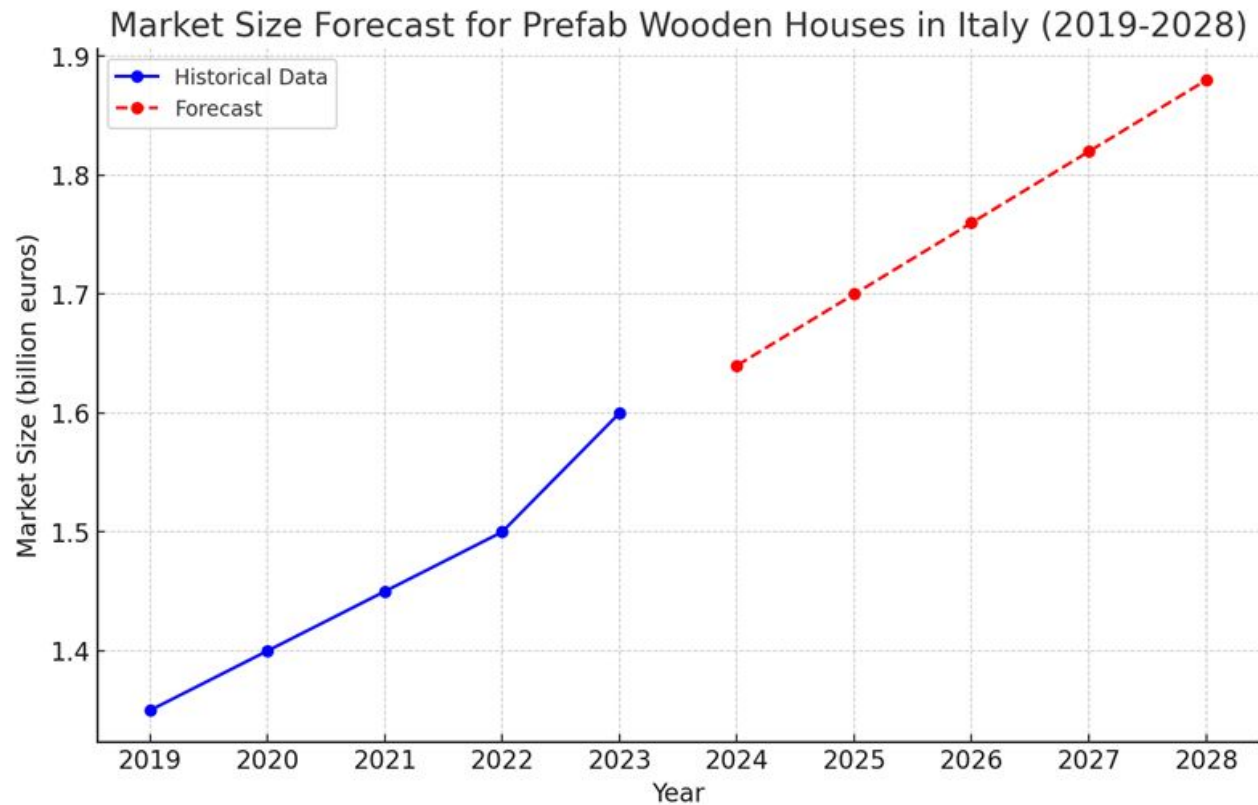
We will translate these barriers into training needs and project actions.

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Second part (as requested by the coordinator)

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Italy context: why VET for ecological construction matters



- Construction is facing a fast shift: energy renovation + decarbonisation targets
- Quality on site is now the main bottleneck (not “products”)
- Skills gaps cause performance gap, defects, and callbacks
- Ecological construction requires new practical competences: airtightness, moisture safety, thermal bridges, integrated insulation/windows, and simple QA routines

Italy: builders' VET ecosystem (today)

Passive House certifications in Italy



Main actors & channels

- Regional VET pathways (IeFP) and vocational schools for construction trades
- Bilateral construction training bodies (CPT / Edilscuole network, Formedil)
- ITS Academy / post-diploma specialisation (still limited focus on site detailing)
- Company-led training: uneven quality, rarely standardised, often incentive-driven
- Private/sector initiatives (e.g., Passivhaus / CasaClima / product-supplier training)

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Italy – builders' VET & ecological construction education: where are we?

What exists today (ecological / low-energy content)

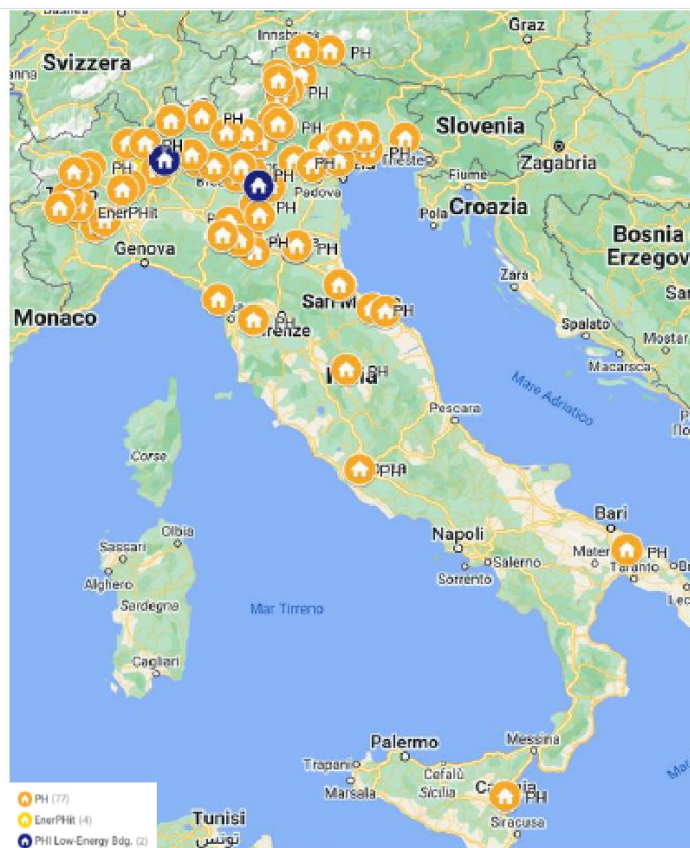
- Many courses focus on regulations and design concepts; fewer hours on hands-on site practice
- Practical modules exist but are scattered (windows/ETICS suppliers, certifications, local schools)
- Limited training on building physics “failure modes”: moisture, mould risk, thermal bridges
- Testing culture is weak: blower door, smoke, infrared and on-site checklists not mainstream

Main gaps (Italy) – specifically for builders/trades

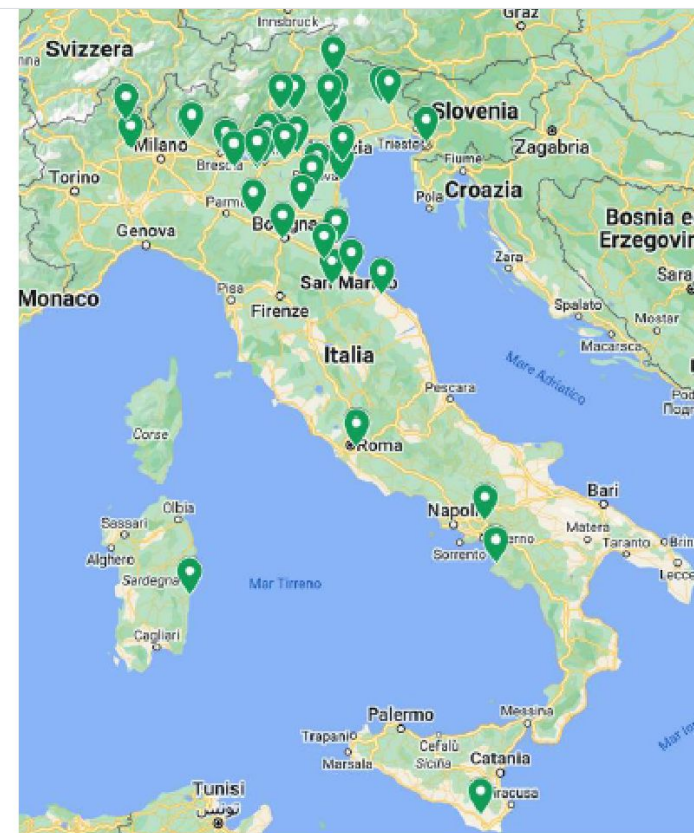
- No shared competence standard for a “green builder” across regions and providers
- Too little training on critical junctions: air barrier continuity, tapes/membranes, interfaces
- Weak bridge between design intent and execution (details not readable/useful on site)
- Shortage of trainers with real site experience in high-performance/eco projects
- Incentive volatility → rush & fragmentation → low learning retention and quality drift

Italy – builders' VET & ecological construction education: where are we?

Needs signal: companies report skilled-labour shortages on airtightness & detailing



Map of certified Passivhaus projects in Italy



Map of Passivhaus certified designers currently active in the IT market.

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Italy – VET needs & problems this project should address

1) Shared competence model

Define a clear competence framework for a “green builder” (skills, learning outcomes, assessment) covering installation quality, moisture safety, airtightness, thermal bridges, site coordination.

2) Practical training for trades

Short, modular, practice-first units with demonstrations and exercises:
windows + interfaces, membranes/tapes, insulation continuity, service penetrations, checks & tests.

3) Train-the-trainer capacity

Upskill VET trainers and in-company mentors; create replicable training kits, mock-ups and simple evaluation rubrics that can be reused by VET providers and companies.

4) Bridge design ↔ site

Improve communication between designers and workers with simple detailing standards, checklists and QA routines.

5) Accessibility & territorial balance

Ensure access to ecological building materials and know-how also outside the most mature Northern clusters (Centre–South / islands / inner areas), by reducing supply-chain and skills barriers.

6) Economic & market realism

Address cost myths and incentives volatility: show cost-optimal detailing, sequencing, and “right-first-time” savings.

Kick-off outcomes (proposal)

What we can agree in Málaga

- Confirm the baseline information we need from each country (VET system, green content, stakeholders)
- Align on the “green builder” competence framework structure and level (EQF / units / learning outcomes)
- Select 2–3 priority on-site topics for the first training prototype (e.g., airtightness, thermal bridges, windows)
- Agree on pilot format: where, with whom, and how we will evaluate learning and site quality impact
- Set the communication plan: common visuals, EU disclaimer use, and repository for shared materials

Thank you – Francesco Nesi (ZEPHIR Passivhaus Italia) · Contact: info@zephir.ph



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LET'S build ecologically together" - Partnership for green models in the vocational training of construction workers (project number: **KA2 - Agreement Number: 2025-1-BG01-KA210-VET-000362824**)



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Francesco Nesi – ZEPHIR Passivhaus Italia