INTRODUCTION

How do you design a low-consumption home?
A new EMMETI project in Gualdo Tadino

A low-consumption home does not come from simply choosing technologies, but from **integrated design** between the building and the system.

Heat pump, radiant floor heating, photovoltaic, solar thermal and FEBOS control work as **a single energy system.**

The result is a new **A3-rated** home, designed to improve comfort, efficiency and the use of renewable energy sources.

NEW BUILD

ENERGY CLASS

A3

EPgl,nren

22,880

kWh/m² year

- HEAT PUMP
- RADIANT FLOOR HEATING
- PHOTOVOLTAIC
- FEBOS CONTROL

An efficient system is designed together with the house:
the real result comes from the **integration** of building, system and control.

SYSTEM DESIGNED FOR A LOW-CONSUMPTION HOME

EMMETI

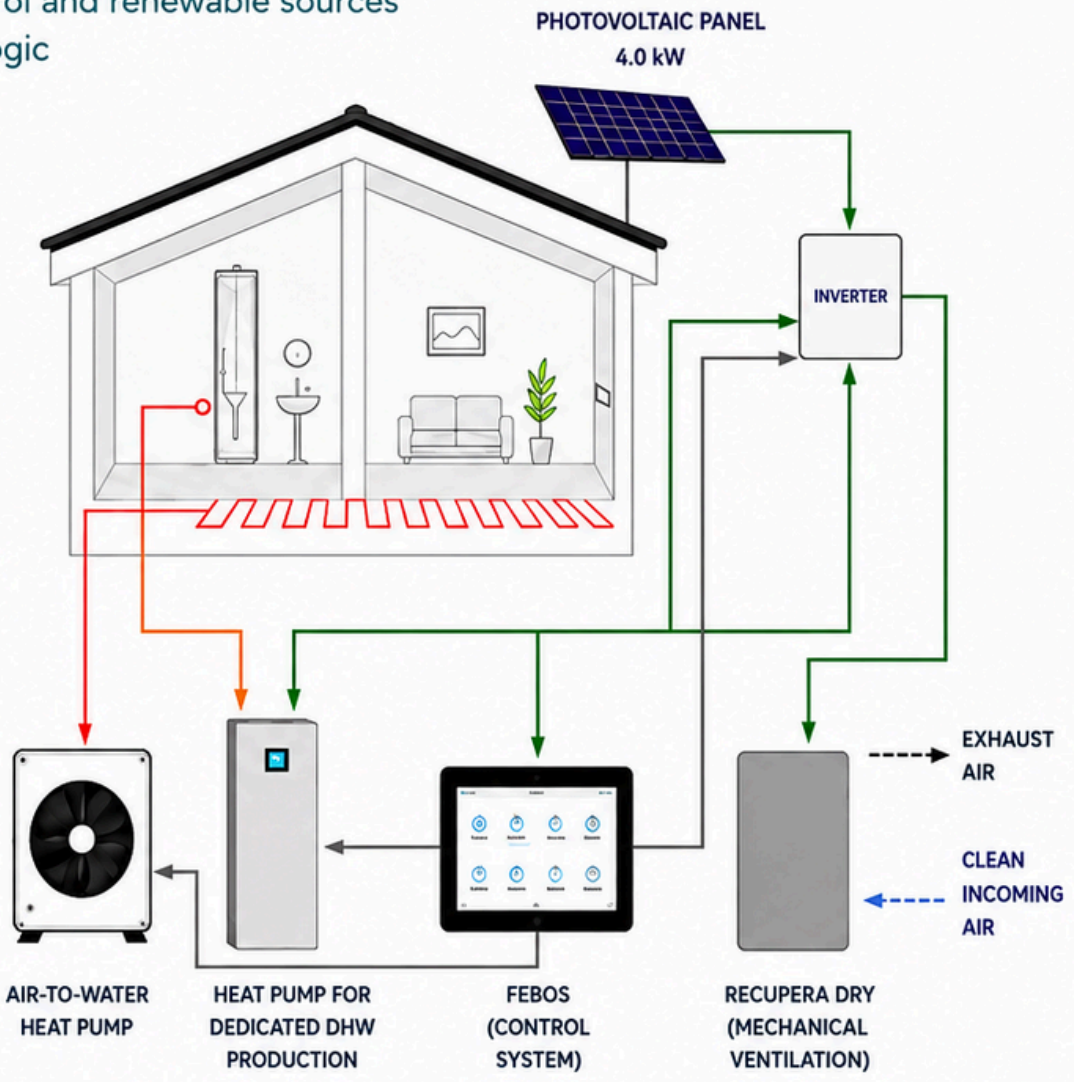
Generation, distribution, control and renewable sources work within a single system logic

Photovoltaic panels produce electricity for the entire system.

The air-to-water heat pump provides heating energy through the radiant floor system.

The heat pump for DHW produces domestic hot water and integrates with the system.

Recupera DRY provides mechanical ventilation with heat recovery.



- HOT WATER SUPPLY
- DHW (DOMESTIC HOT WATER)
- ELECTRICAL ENERGY
- CLEAN INCOMING AIR
- EXHAUST AIR
- DATA / CONTROL CONNECTION

INTEGRATED SYSTEM

- Air-to-water heat pump
- Radiant floor system
- Heat pump for DHW
- FC — FEBOS control
- Photovoltaic 4.0 kW
- Recupera DRY (mechanical ventilation)

COP up to	DHW from renewables	Heat recovery
4,700	85,9%	91% efficiency

An efficient system is designed together with the house:
the real result comes from the **integration** of building, system and control.

WHAT RESULTS DID WE ACHIEVE?

The EPC and technical report confirm a high-performance project

The technical report highlights a **building-system solution designed coherently, with** renewables, heat pump, radiant system and FEBOS integrated into the same operating logic.

The system was designed to **reduce reliance on external energy** and enhance the energy produced on site.

The heat pump, photovoltaic, solar thermal and FEBOS control work together to improve comfort and energy efficiency.

ENERGY PERFORMANCE CERTIFICATE (EPC)

UMBRIA REGION

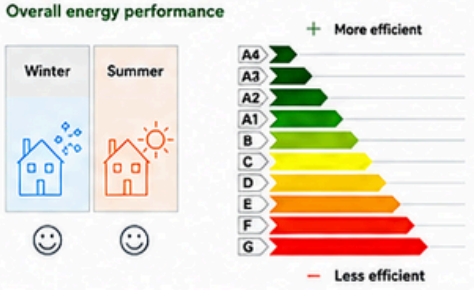
ENERGY PERFORMANCE CERTIFICATE (EPC) OF BUILDINGS

APE

GENERAL DATA

Building use	Property details	
☑ Residential	☑ Entire building	☐ New construction
☐ Non-residential	☐ Single unit	☐ Sale/lease
	☐ Property group of buildings	☐ Renovation
		☐ Major renovation
		☐ Energy retrofit
		☐ Other

Overall energy performance



ENERGY CLASS

A3

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kWh/m² year

EXTRACT FROM THE TECHNICAL REPORT

9.1 - RESULTS

Global primary energy demand (EPgl,nren)	22,880 kWh/m² year
Renewable coverage	
Coverage from renewable sources for DHW	85,9 %
Coverage from renewable sources for winter air conditioning, DHW and summer air conditioning	70,2 %
Coverage of DHW demand from solar thermal	66,4 %

PROJECT RESULTS

ENERGY CLASS
A3

EPgl,nren
22,880
kWh/m² year

DHW FROM RENEWABLES
85,9%

TOTAL RENEWABLE COVERAGE
70,2%
(winter heating, summer cooling and DHW)

SOLAR THERMAL
66,4%
DHW demand

PHOTOVOLTAIC
4,0 kW
installed capacity

CO_2 EMISSIONS
4,560
kg/m² year

The result does not depend on a single technology, but on the ability to design the building and system as one **integrated energy system.**

NEW PROJECT
Gualdo Tadino (PG)
Climate zone E

WHEN EACH COMPONENT COMMUNICATES WITH THE OTHERS, EFFICIENCY BECOMES REAL.

EMMETI

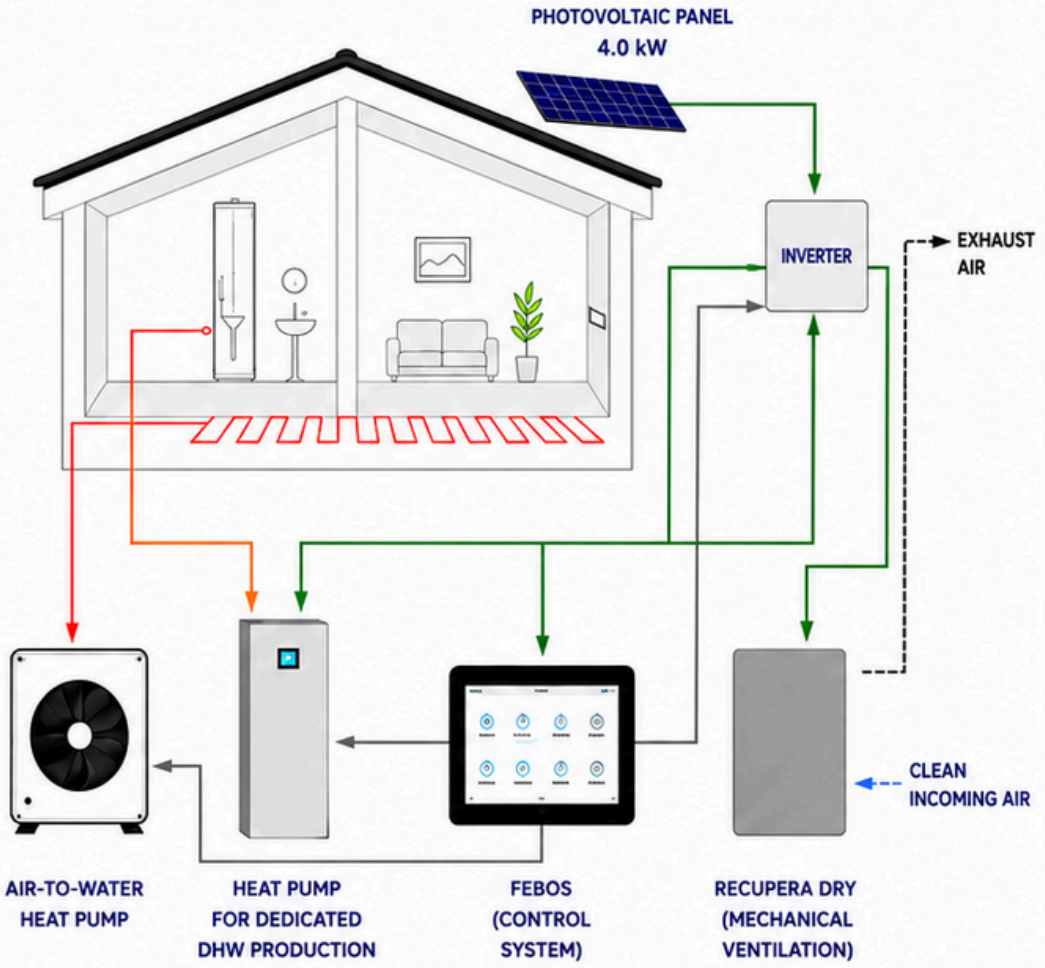
An integrated system for maximum comfort and minimum consumption.

INTEGRATED DESIGN
Each element is selected and sized to work with the others and make the most of resources.

RENEWABLE SOURCES
Photovoltaic and solar thermal reduce reliance on external energy and CO_2 emissions.

SMART CONTROLS
FEBOS manages and optimizes energy flows based on the home's actual needs.

COMFORT AND WELL-BEING
Always comfortable rooms, clean air and maximum efficiency in every season.



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THE BENEFITS OF A SYSTEM DESIGNED TOGETHER

- Maximum efficiency and lower energy consumption.
- High coverage from renewable sources and lower CO_2 emissions.
- Lower utility bills and protection from rising energy costs.
- Consistent comfort and improved air quality.
- Greater property value over time.

One **integrated** system, designed to last, efficient today and **sustainable** tomorrow.

NEW PROJECT
Gualdo Tadino (PG)
Climate zone E