THE CONTEXT
A big part of Europe’s building stock is inefficient in terms of energy use, mainly as a consequence of massive heat losses through building envelopes and lack of efficiency of the HVAC systems. Very few buildings are undergoing deep renovation, and when it happens it results often more expensive than initially foreseen. Renewable energy production is still often underestimated, even if there is throughout Europe a big availability of RES.

THE PROJECT GOAL
4RinEU will minimize failures in design and implementation, manage different stages of the deep renovation process, from the preliminary audit up to the end-of-life, and provide information on energy, comfort, users’ impact, and investment performance.

The 4RinEU deep renovation strategy to encourage large scale renovation of existing buildings is based on 3 pillars:

- Robust Technologies
- Usable Methodologies
- Reliable Business Models

ROBUST TECHNOLOGIES
Prefabricated Multifunctional Façade
Comfort Ceiling Fan
Smart Operation

TO REDUCE ENERGY DEMAND

TO IMPROVE ENERGY EFFICIENCY
Plug&Play Energy Hub (PPEH)
Early-RENo

TO IMPROVE BUILDING OPERATIONS
Sensible Building Data-Handler
Strategies for Components End-Of-Life

USABLE METHODOLOGIES
Cost-Optimal Energy Audit

TO ACCURATELY UNDERSTAND RENOVATION ISSUES AND POTENTIALS
Investor and Building User-Oriented Design Platform based on BIM

TO ENSURE AN EFFECTIVE AND PARTICIPATED DESIGN

RELIABLE BUSINESS MODELS
Cost-effectiveness Rating System

TO IDENTIFY THE LEVEL OF RISK AND TO ENABLE WELL-FOUNDED INVESTMENTS

STRATEGY VERIFICATION
In order to ensure the broad applicability, 4RinEU approach and technologies will be completely implemented in 3 Early Adopter Buildings and tested with 3 Early Adopter Buildings, placed in 6 different Geo-Clusters throughout Europe.