

**Mould**



**Draughts**



**Cold walls**



**Poor air quality**



## Draughts

Draughts are natural air movements. When felt in a home, they can make you feel cold.

Source : Ecologie,gouv / Photo : Shutterstock



## Mould

Mould is a microscopic fungus that settles on the walls of a home. They are a health hazard for residents, as mould contributes to the deterioration of air quality in the home.

Source : Santé,gouv / Photo : Facirénov



## Poor air quality

Poor indoor air quality can have harmful effects on our health, ranging from simple discomfort to respiratory allergies. Humidity and the build-up of carbon dioxide in the home are two major sources of air pollution.

Source : Santé,gouv / Photo : Shutterstock



## Cold walls

The cold wall effect is an uncomfortable phenomenon that results from a difference in temperature between the walls and the ambient temperature in the centre of a room. As a general rule, the impression of cold is felt as soon as there is a difference of 3°C or more between the centre of the room and the walls.

Source : Ecologie,gouv / Photo : Shutterstock





**Humidity**



**Water infiltration**



**Low indoor/outdoor temperature difference**



**Improvement of the ventilation system**



## Water infiltration

Water infiltration refers to rainwater penetrating through the roof, paving or walls and soaking the interior walls. Water infiltration is one of the most serious causes of humidity and can cause major damage to a building's structure.

Source : Ecologie,gouv / Photo : Shutterstock



## Humidity

When humidity gets a foothold in a home, the property starts to deteriorate: blisters and mould on the walls, condensation on the windows, an unpleasant smell... Water damage, poor ventilation or infiltration in the walls may be at the root of the problem.

Source : Santé,gouv / Photo : Facirénov



## Improvement of the ventilation system

Improving the ventilation system allows better air circulation, creating a healthier environment for occupants. Several types of MCV can be installed, such as humidity-controlled MCV, which adjusts the airflow according to humidity, or dual-flow MCV, which ensures heat exchange between extracted air and new air, thereby reducing heating or air-conditioning requirements.

Source : Santé,gouv / Photo : Shutterstock



## Low indoor/outdoor temperature difference

In both winter and summer, a temperature difference that is too small between the inside and outside of a building causes discomfort for its occupants and indicates that the building is poorly insulated.

Source : Ecologie,gouv / Photo : Shutterstock





**Poorly insulated walls**



**Insufficient ventilation**



**Old joinery**



**Spalling on the façade**



## Insufficient ventilation

Indoor air must be renewed regularly to ensure the health of the occupants. The absence of ventilation or inefficient natural ventilation degrades indoor air quality.

Source : Ecologie.gouv / Photo : Shutterstock



## Poorly insulated walls

When wall insulation is old or missing, a feeling of cold walls can be felt in the home and contribute to the development of thermal bridges, the junction points in a building where the insulation is not continuous.

Source : Ecologie.gouv / Photo : Facirénov



## Spalling on the façade

Spalling is a surface defect caused by impact, deterioration or weathering on the facing or edge of a hardened concrete element or stone block. Spalling occurs with age and lack of maintenance.

Source : Unikalo / Photo : Facirénov



## Old joinery

Window seals are often the cause of cold air leaks: they accelerate leakage and heat loss. Single-glazing and old double-glazing also contribute to heat loss.

Source : Ecologie.gouv / Photo : Shutterstock





**Roof in disrepair**



**Poorly insulated floor**



**Poorly sealed balconies**



**Ageing heating system**



## Poorly insulated floor

Poorly insulated floors can be responsible for up to 10% heat loss and increase the thermal discomfort of residents by making them feel cold and creating a sense of humidity.

Source : Ademe / Photo : Shutterstock



## Roof in disrepair

A poorly insulated roof can lose up to 30% of its heat. In addition, poor roof maintenance can lead to waterproofing problems.

Source : Ademe / Photo : Photo Stock



## Ageing heating system

An ageing heating system, whether collective or individual, can have serious repercussions on thermal comfort and electricity or gas bills. Heating is the biggest energy consumer in the home, accounting on average for 62% of energy costs.

Source : Ademe / Photo : Facirénov



## Poorly sealed balconies

Poorly sealed balconies and terraces can lead to water infiltration, but can also cause thermal bridges, i.e. insulation defects that lead to heat loss and reduce a home's thermal resistance.

Source : Mon Immeuble / Photo : Facirénov





**Global retrofit**



**External thermal insulation  
(ETI)**



**Internal thermal insulation**



**Replacement of external  
joinery**



## External thermal insulation (ETI)

ETI refers to all the methods used to improve the insulation of the external envelope of a dwelling, generally by means of rendering and the installation of insulation. It improves the aesthetics of the building and limits heat loss caused by thermal bridges.

Source : Ecologie,gouv / Photo : Energie Sprong FR



## Global retrofit

An energy retrofit project is considered global when it achieves an A or B class rating according to the DPE and the following items of work are carried out: insulation of walls, lower floors and roof, replacement of external joinery, ventilation, production of heating and domestic hot water and associated interfaces.

Source : Ecologie,gouv / Photo : Energie Sprong UK



## Replacement of external joinery

Insulating doors and windows, known as replacing external joinery, is an important step in limiting heat loss, reducing parasitic air infiltration and improving thermal comfort in the home.

Source : Ecologie,gouv / Photo : Adobe Stock



## Internal thermal insulation

When external thermal insulation is not possible, internal thermal insulation can be a solution to limit heat loss and the sensation of cold walls in dwellings. Installing insulating material on the inside does, however, lead to a slight reduction in living space.

Source : Ecologie,gouv / Photo : Shutterstock





**Low-floor insulation**



**Roof insulation**



**Refurbishment of balconies**



**Improvements to the heating system**



## Roof insulation

Roof insulation provides insulation for the attic and/or the roof. It helps to keep the heat in the building and helps to reduce energy bills.

Source : Ecologie,gouv / Photo : Adobe Stock



## Low-floor insulation

Low floor insulation involves applying insulation to the floor. This limits heat loss and helps prevent the sensation of cold walls.

Source : Ecologie,gouv / Photo : Hellio



## Improvements to the heating system

Improving your heating system, whether individual or collective, can involve a number of energy-efficient solutions, ranging from the installation of thermostatic valves for gas heating to the connection to a heating network or the installation of a heat pump.

Source : Ecologie,gouv / Photo : Pixabay



## Refurbishment of balconies

Renovating balconies involves applying a waterproofing material to the external surface and/or an insulating material to limit heat loss due to thermal bridges.

Source : Ecologie,gouv / Photo : Shutterstock





**Joint owners' syndicate**



**Social landlord**



**Owners**



**Energy audit**



## Social landlord

In France, social landlords own 5 million homes. However, this stock is ageing and in need of energy renovation. Social landlords therefore have a threefold objective: to combat fuel poverty, to speed up energy renovation and to adapt their properties to the new needs and expectations of their occupants.

Source : Isover / Photo : Le Monde



## Joint owners' syndicate

In a co-ownership property, all the co-owners automatically form the joint-owners' syndicate without any formalities. The syndicate votes on all decisions concerning the co-ownership at the general meeting (provisional budget, works, etc.).

Source : Service public,fr / Photo : Nexity



## Energy audit

The energy audit provides an estimate of the building's energy performance before any work is carried out and is combined with several renovation scenarios to improve its energy label.

Source : Economie,gouv / Photo : Facirénov



## Owners

There are currently 8 million low-efficiency buildings in France. These are homes that consume a lot of energy, with a DPE rating of E, F or G. These homes will gradually be banned from being rented out from 2025. There is therefore an urgent need to renovate them.

Source : FNAIM / Photo : Adobe Stock





**Co-ownership trustee**



**Thermal/technical design office**



**Project management assistant**



**Project manager**



## Thermal/technical design office

The thermal design office carries out a study of heat loss in a building. The technical/thermal design office delivers the energy audit and carries out work simulations to promote energy savings.

Source : Effy / Photo : Adobe Stock



## Co-ownership trustee

The trustee is the legal representative of the Joint owners' syndicate, chosen to administer and manage the finances of a co-ownership. He is responsible for carrying out the decisions taken at the general meeting.

Source : Service public.fr / Photo : Adobe Stock



## Project manager

As the conductor of the renovation orchestra, the project manager is responsible for the technical design and implementation of a renovation project right through to acceptance of the work. He is the guarantor of deadlines, costs and compliance with specifications.

Source : Facirénov / Photo : Adobe Stock



## Project management assistant (AMO)

The project management assistant provides co-owners with guidance and advice on their renovation project, from design to acceptance of the work. The AMO plays an important financial and administrative role, drawing up the provisional financing plan, assisting the co-ownership in choosing the contractors, and advancing the grants.

Source : Facirénov / Photo : Adobe Stock





## Multiannual works plan



## Design of the overall renovation project



## Individual financing plan



## General Meeting to vote on works



## Design of the overall renovation project

The design phase enables the co-ownership to choose several work scenarios to be studied. The project manager's technical recommendations and the AMO's financing plans will enable the co-ownership to decide on a renovation scenario.

Source : Ecologie,gouv / Photo : Adobe Stock



## Multiannual works plan

In condominiums, the Multiannual works plan anticipates and plans works over a 10-year period. It meets three main objectives: conservation of the building, protection of residents and energy renovation.

Source : Hellio / Photo : Batiprix



## General Meeting to vote on works

Before starting any work, the co-owners must first vote on the energy renovation project at the general meeting. The work can be carried out by a simple majority (e.g. work in the communal areas) or by an absolute majority (e.g. installation of energy-saving equipment in the private areas).

Source : Heero / Photo : Adobe Stock



## Individual financing plan

The AMO draws up a financial model for each type of flat and household, based on the different work scenarios proposed, including the calculation of collective and individual aid.

Source : Facirénov / Photo : Canva





## Financial engineering



## Works supervision



## Acceptance of work



## Raising awareness among occupants



## Works supervision

Monitoring is essential to ensure that renovation work runs smoothly. It ensures that the worksite is properly organised and executed, and that safety, health and environmental standards and obligations are met.

Source : FFB / Photo : Shutterstock



## Financial engineering

The role of the AMO is to secure the project financially. It assists the co-ownership in obtaining collective and individual grants. It can also propose solutions for financing and advancing financial assistance for the work.

Source : Facirénov / Photo : Shutterstock



## Raising awareness among occupants

Raising awareness of the rebound effect is the final step in a renovation project. Saving energy can encourage people to consume more. Occupants need to be well informed about the right ways to avoid this paradox.

Source : Rexel / Photo : Adobe Stock



## Acceptance of work

Acceptance of the works means that the project owner takes possession of the property. It takes place as soon as all the work specified in the contract has been completed and must be signed by the end customer and the project manager. This formality allows a period of one year in which to rectify any defects or lack of conformity.

Source : FFB / Photo : Shutterstock

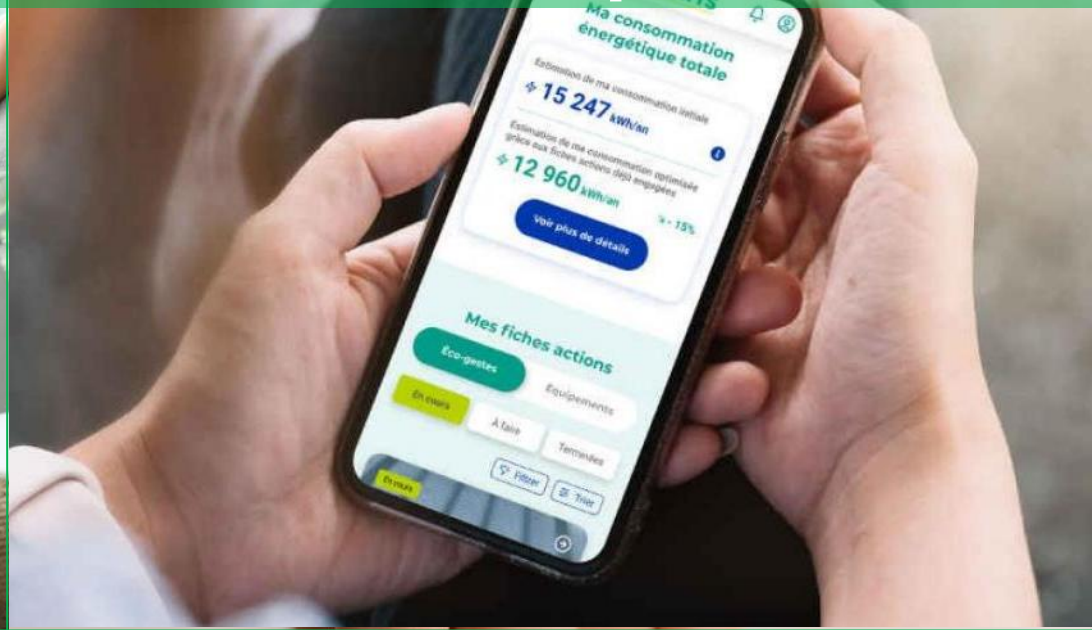




## Improvement of thermal comfort



## Reduction in energy consumption



## Reduction in energy bills



## Regulatory compliance



## Reduction in energy consumption

The work carried out will reduce energy loss from the buildings, thereby cutting energy consumption for the same purpose.

Source : Ecologie,gouv / Photo : Francenum,gouv



## Improvement of thermal comfort

Renovating a building improves the thermal comfort of its occupants by eliminating the problems associated with poor insulation, such as humidity, draughts, cold walls and poor air quality.

Source : Ademe / Photo : Adobe Stock



## Regulatory compliance

A thermal renovation project will enable a building to emerge from its low-efficiency building status, i.e. homes with an energy label of G, F or E on the DPE, which will gradually be banned from being rented out from January 2025.

Source : Ecologie,gouv / Photo : Shutterstock



## Reduction in energy bills

An energy renovation project reduces a building's energy bill as a result of the work carried out. The energy gains are specific to each building and are estimated during the project design phase.

Source : Facirénov / Photo : Adobe Stock





**Increase in property value**



**Reducing GHG emissions  
from buildings**



**Construction companies**



**Mon Accompagnateur  
Rénov**



## Reducing GHG emissions from buildings

Renovating a building reduces energy consumption and greenhouse gas emissions.

Source : Ecologie,gouv / Photo : Adobe Stock



## Increase in property value

Energy renovation work significantly increases the value of a property. On average, a class A or B flat is sold for up to 22% more than a similar class D flat.

Source : Notaires de France, 2018 / Photo : Adobe Stock



## Mon Accompagnateur Rénov

Mon Accompagnateur Rénov' is a trusted partner who helps households with their energy renovation projects. To ensure a secure path, households must use Mon Accompagnateur Rénov' to qualify for MaPrimeRénov' Parcours accompagné support.

Source : France Rénov / Photo : France Rénov



## Construction companies

To qualify for support, tradespeople must be certified as 'Environmentally Responsible'. Energy renovation work requires specific know-how in order to take into account the interactions between the various parts of the project as a whole.

Source : Stop Exclusion Energétique / Photo : Adobe Stock





## Individual financing plan



## Design of the overall renovation project



## Mon Accompagnateur Rénov'



## Design of the overall renovation project

The design phase enables homeowners to choose several renovation scenarios to study. The technical recommendations and financing plans of the AMO and MAR will enable all homeowners to decide on a renovation scenario.

Source : Ecologie,gouv / Photo : Adobe Stock



## Individual financing plan

The AMO draws up a financial model for each type of dwelling and household, based on the different work scenarios proposed, including the calculation of collective and individual aid.

Source : Hellio / Photo : Batiprix



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Source : Heero / Photo : Adobe Stock



Source : Facirénov / Photo : Canva





# Energy retrofit workshop

*Game manual*

## Part 1

The building



Consequences



Causes



Solutions

## Part 2

The steps of a renovation project



Internal stakeholders



External stakeholders



Actions



Benefits



Cards specific to condominiums



Cards specific to private owners