

CHECK LIST FOR BUILDING MANAGER / OWNER

ENERGY RECOVERING REFURBISHMENT CHECKUP FOR MULTI-FAMILY DWELLINGS

DO I HAVE TO MODERNISE MY MULTI-FAMILY DWELLING IN TERMS OF ENERGY EFFICIENCY?

Building energy demand*

**1. Is the building's energy demand known already
(does i.e. an energy certificate exist)?**

- Yes: _____ kWh/m²a → question **5**
- No → question **2**

2. Is there an internal technical office in your company?

- Yes → question **3**
- No → question **4**

3. Can this technical office calculate the energy demand?

- Yes, the technical office can calculate the energy demand!
_____ kWh/m²a → question **5**
- No, the technical office can not calculate the energy demand!
→ question **4**

**note:* „building energy demand“ is defined as the overall end energy requirement for heating, hot water generation and cooling, if necessary.

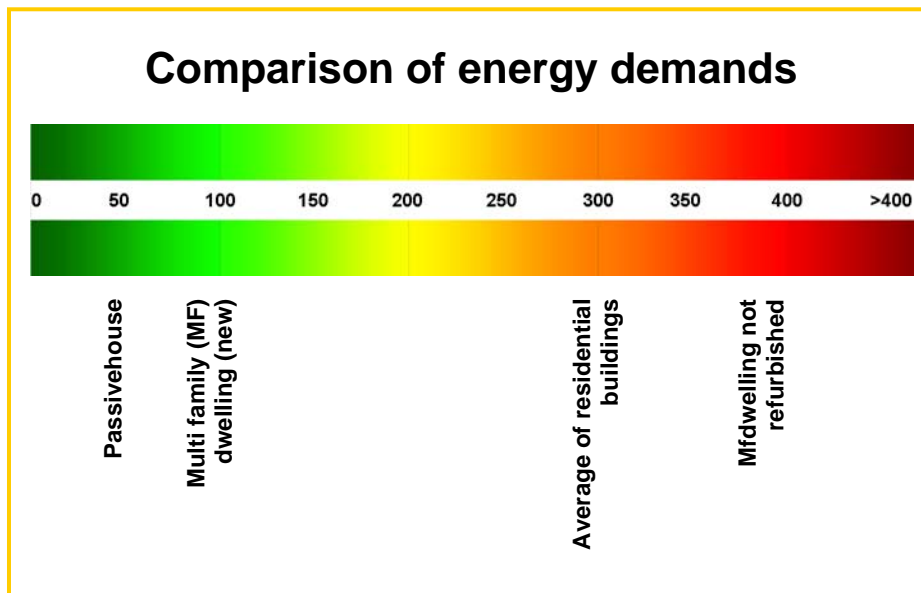
Calculation of building's energy demand

4. Please ask a qualified expert to calculate the energy demand of your building, respectively energy performance certificate, to get an energy profile of your building.

_____ kWh/m²a

→ question 5

Comparison of energy demands in different building types



Graph: Comparison of energy demands;
from left to right: Passive house, new multi-family dwelling, new single family dwelling, refurbished energy-efficient single family dwelling, average existing buildings, multi-family dwelling with no particular energy-efficient refurbishment, single family dwelling with no particular energy-efficient refurbishment

5. Energy requirement for hot water, heating and cooling amounts to:

- < 100 kWh/m²a → point 6
- 100 – 300 kWh/m²a → point 7
- 300 – 400 kWh/m²a → point 8
- ≥ 400 kWh/m²a → point 9

Assessment of building energy demand

6. New building standard

Your energy demand meets the standard of new multi-family dwellings and does not need to be modernised in terms of energy efficiency.

7. Average standard

Your energy demand equals the energy demand of partly or well modernised multi-family dwellings (average energy requirements). Further refurbishment measures need to be planned in detail and adjusted to already implemented ones. Feasibility, technical options and cost-effectiveness of possible refurbishment measures need to be checked as well.

→ Point **10**

8. Partial modernisation standard

Your building energy demand amounts to that of partially modernised multi-family dwellings (average or high energy requirement). Energy-efficient modernisation makes sense both from a technical and economical point of view; especially if other constructional measures are planned in any case. Please, ask a qualified consultant for support and an overall energy strategy for your house!

→ Point **10**

9. Non modernisation standard

Your building energy demand amounts to that of a non- or poorly modernised multi-family dwelling (high energy requirement). Energy-efficient refurbishment is recommended. Please, ask a qualified consultant for support and an overall energy strategy for the respective building!

→ Point **10**

Depending on the current energetic standard of your house and the energetic standard you actually want to reach, it is recommended to seek expert advice on appropriate measures and possible further steps.

For further information on modernization measures please take a look at the second part of our check list „refurbishment measures – for a better understanding“.

Analyses of weak points in the building

10. Are certain defects and shortcomings (i.e. humidity, mould formation) in the building existent (known already)?

- Yes → Point **11**
- No → Point **12**

11. Have the causes for these defects been detected yet and is it a question of energy-, respectively heat protection?

- Yes → Point **12**
- No → Please, ask a qualified consultant for support!

12. Possible weak points in the building in terms of energy-efficiency

- Little or no thermal insulation of the exterior wall → Point **13, 18**
- Thermal bridges → Point **13, 18**
- Little or no roof/ top floor thermal insulation → Point **15**
- Little or no thermal cellar ceiling insulation → Point **16**
- Outdated heating system → Point **17, 19**
- Outdated/defect windows → Point **18, 13**

Possible measures of energy recovering refurbishment

13. Exterior wall insulation may be recommended.
14. Replacement of windows may be appropriate.
15. Roof/ top floor thermal insulation may be needed.
16. Cellar ceiling insulation may be sensible.
17. Installation of new/centralised heating system may be necessary.
18. Installation of ventilation system may be recommended.
19. Installation of solar plant may be advisable.

Note:

The here given recommendations for modernisation measures only mean to inform and provide a first overview. They are no substitute for energy consultancy. It is necessary to get qualified support for planning and implementing different refurbishment measures as the whole building needs to be taken into consideration.

The necessity of co-ordination and adjustment between single measures needs to be checked by an expert. This is crucial for avoiding defects, for extending the durability of the building, for achieving high energy savings as well as for keeping investment and operating costs low.

Please take a look at www.rosh-project.eu