

## Building stock characteristics

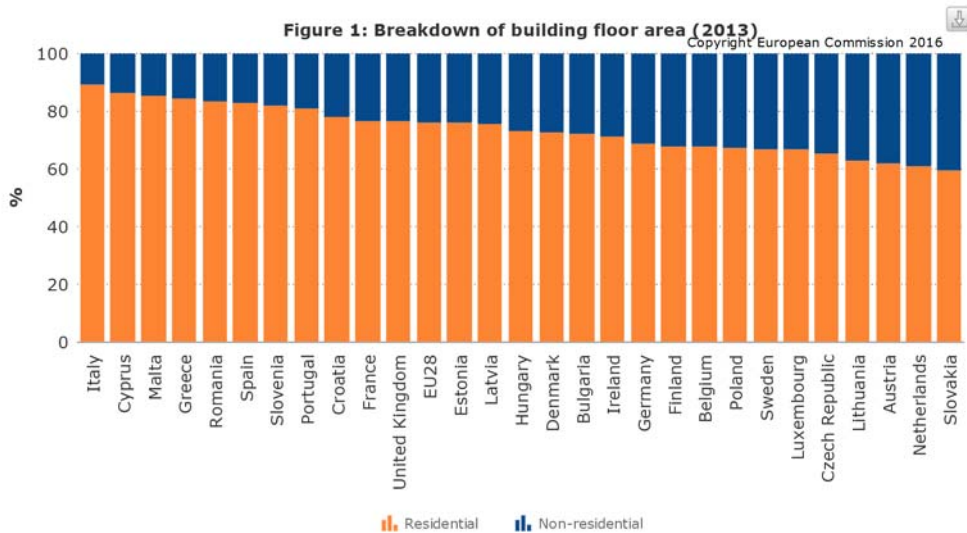
Disclaimer: The graphs below show data available in the EU Building Stock Observatory: a country not represented only means data was not available for this specific country.

### Introduction

EU policy makers have for a long time recognised the importance of building performance in the effort to mitigate climate change - starting with the Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED) - but capturing the energy saving potential of the building stock has posed a challenge. While the efficiency of new buildings has steadily improved over time, most of Europe's existing building stock has yet to be affected by energy performance requirements. Reliable data on the composition of the building stock is required, in order to increase the effectiveness of building policies and to be able to evaluate if these policies had the intended result.

The main characteristics of the building stock are defined by the following indicators:

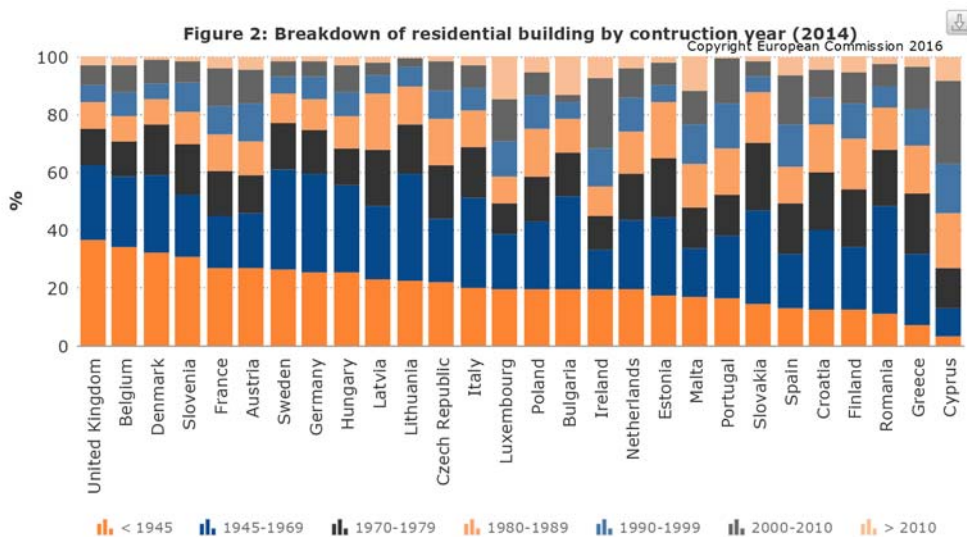
- Floor area per sector
- Residential buildings by construction period
- Building typology for residential and non-residential buildings



Sources: Calculation [Notes](#)

### Most residential buildings were built before thermal standards were introduced

The average age of existing buildings and the share of new buildings from the total stock are good indicators, indicative of the overall efficiency of the building stock. The higher the share of new dwellings (built with higher efficient standards) the higher the overall energy performance of the building stock generally will be. In most EU countries, half of the residential stock was built before the first thermal regulations (built before 1970). In some other countries, such as Cyprus, Spain and Ireland, the share of new dwellings (built after 2000) is significant.

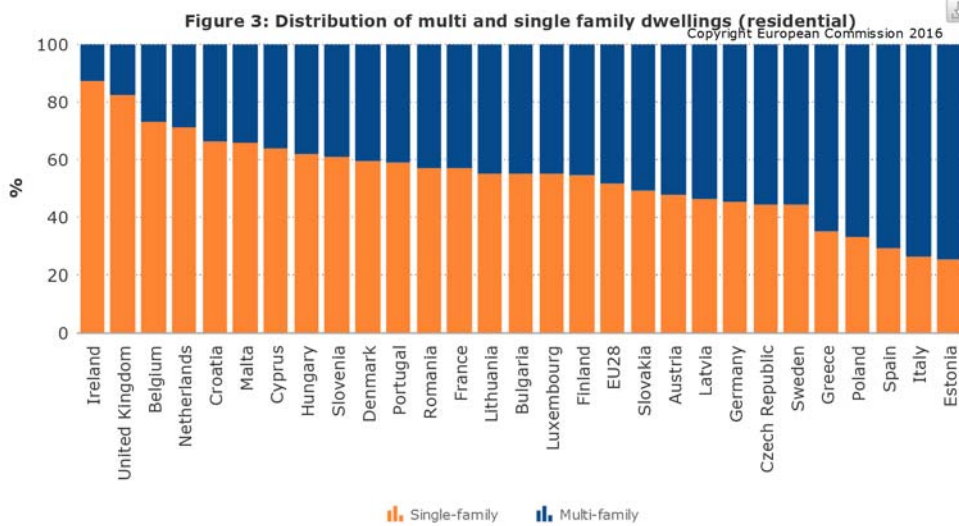


Sources: CBS - CZSO - Cystat - DESTATIS - GUS - INE - INSEE - ISTAT - NIS - National Plan - Odyssee - REN - SCB - STATBELECON - STATEC - Statistical Yearbook - Statistics DK - Statistics EE - Statistics FI [Notes](#)

### Different structure of residential buildings' classification

The building typology is fundamental to draw an accurate portrait of the EU building stock. The type of dwelling has an impact on the space heating energy performances, since different insulation characteristics imply different specific space heating consumption (due to different wall area in contact with the outdoors). For example, a semidetached house consumes in theory less per m<sup>2</sup> than a detached dwelling.

The building stock by type of dwellings differs significantly across the EU. In the United Kingdom and Ireland, single-family dwellings are the dominant type (above 80%), while in Spain and Estonia, multi-family dwellings represent more than 70% of all dwellings. If we look at the EU average, there is almost an equal share of both types of dwellings, with an average of 49% for multi-family dwellings.



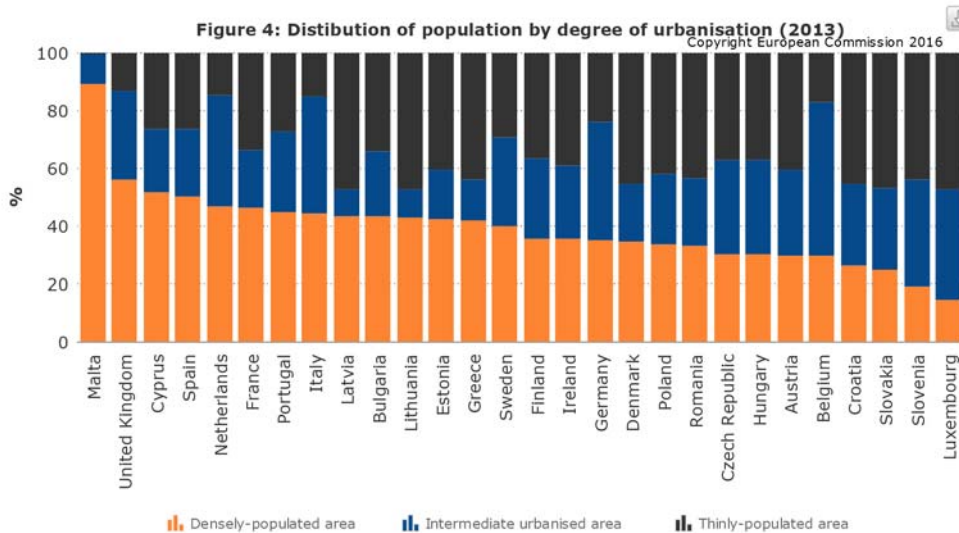
Sources: Estimation - INSEE - Ministerio de Fomento - Odyssee - STATEC - Statistics AT - Statistics DK - Statistics FI [Notes](#)

### Degree of urbanisation differs a lot between Member States

The degree of urbanisation is a classification based on a combination of geographical contiguity and minimum population thresholds applied to a 1 km<sup>2</sup> population grid cells. This indicator reflects the number of residential buildings/dwellings per location:

- High-density cluster/urban centre: contiguous grid cells of 1 km<sup>2</sup> with a density of at least 1 500 inhabitants per km<sup>2</sup> and a minimum population of 50 000;
- Urban cluster: cluster of contiguous grid cells of 1 km<sup>2</sup> with a density of at least 300 inhabitants per km<sup>2</sup> and a minimum population of 5 000;
- Rural grid cell: grid cell outside high-density clusters and urban clusters.

The average distribution of residential buildings is 42% in the urban centre, 30% in intermediate urban areas, and the remaining 28% in rural areas. Of course, this distribution differs among countries. While Germany, Sweden and Italy the degree of urbanisation is aligned with the EU average distribution, in Malta the population is mainly concentrated to the urban centre.



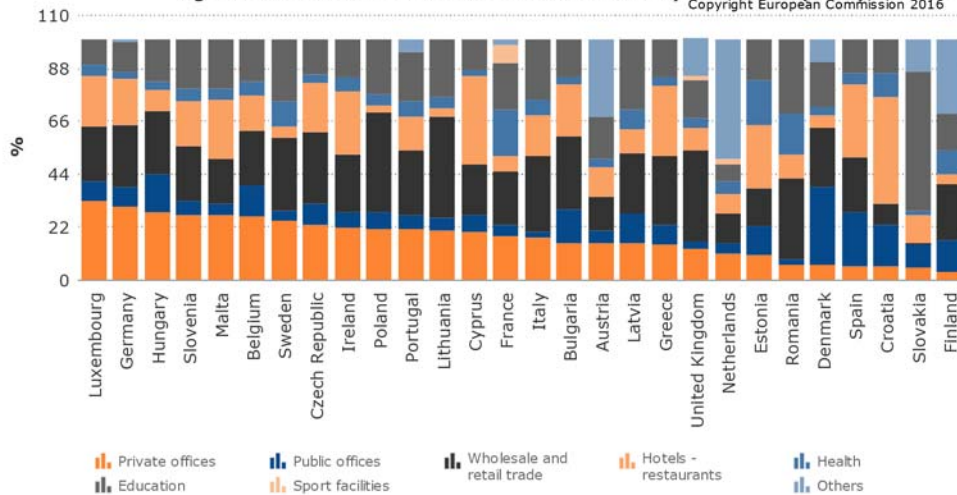
Sources: Eurostat [Notes](#)

### Breakdown of non-residential buildings by branches

The distribution of floor areas by branch is not homogeneous and depends on the economic structure of each sector. On average, three quarters of the service floor area is covered by offices (including both private and public; 30%), wholesale (27%) and education (16%).

Figure 5: Distribution of non-residential floor area by area of use (2013)

Copyright European Commission 2016



Sources: BMVBS - Estimation - National renovation strategy - Odyssee - Statistics DK - Statistics FI

[Notes](#)