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Data Article

Data on European non-residential buildings



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ABSTRACT

This data article relates to the research paper Energy consumption and efficiency technology measures in European non-residential buildings (D'Agostino et al., 2017) [1]. The reported data have been collected in the framework of the Green Building Programme that ran from 2006 to 2014. The project has encouraged the adoption of efficiency measures to boost energy savings in European non-residential buildings. Data focus on the one-thousand buildings that joined the Programme allowing to save around 985 GWh/year. The main requirement to join the Programme was the reduction of at least 25% primary energy consumption in a new or retrofitted building. Energy consumption before and after the renovation are provided for retrofitted buildings while, in new constructions, a building had to be designed using at least 25% less energy than requested by the country's building codes. The following data are linked within this article: energy consumption, absolute and relative savings related to primary energy, saving percentages, implemented efficiency measures and renewables. Further information is given about each building in relation to geometry, envelope, materials, lighting and systems.

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Specifications Table

Subject area	<i>Engineering</i>
More specific subject area	<i>Buildings</i>
Type of data	<i>Table</i>
How data was acquired	<i>Data collection</i>
Data format	<i>.xls</i>
Experimental factors	<i>no data pretreatment</i>
Experimental features	<i>Data on non-residential European buildings collected between 2006 and 2014 in the framework of the Green Building Programme</i>
Data source location	<i>European Member States</i>
Data accessibility	<i>Data are provided in supplementary materials directly with this article</i>

Value of the data

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- The data give quantitative information on European non-residential buildings.
 - The data provide information on energy savings and implemented solutions in new and existing buildings.
 - The data can be used for comparison with other building data or further analysis.
 - The data support energy efficiency and energy policies implementation at European level [2].
 - The data give insight on technological measures adopted across Europe in buildings.
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1. Data

An excel spreadsheet reports the collected data related to the buildings that joined the Green Building Programme between 2006 and 2014. About one-thousand buildings have been welcomed by the project during its operation collecting both new and refurbished buildings.

Data refer to both new and existing non-residential buildings. Data include the main building characteristics starting from its general description. Geometrical and geospatial building features are also included (e.g. partner, area, year of construction, building type and category). The data collected comprise energy consumption, energy savings and implemented measures. These are reported in absolute (kWh/y) and relative terms (kWh/m²/y) as well as in terms of percentage of savings (%). In the linked database, more details are given on envelope, systems, technologies, lighting, and renewables.

2. Experimental design, materials and methods

Non-residential buildings account for 25% of the European building stock [3] and represent a heterogeneous sector compared with the residential [4]. The data reported in this article have been collected in the framework of the Green Building Programme during nine years: from 2006 to 2014. The project encouraged the adoption of measures to boost energy savings in European non-residential buildings on a voluntary basis. The data collection was managed by the Joint Research Centre (JRC) of the European Commission and it has been operational in European Member States as well as European Economic Area countries [5].

The Programme welcomed both new and refurbished buildings. The main requirement to join the project was the reduction of at least 25% primary energy in a new or retrofitted building. Refurbishing

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