

ARTIFICIAL SURFACE AND SINGLE-FAMILY HOUSING IN SPAIN, IN THE CONTEXT OF THE DEBATE BETWEEN COMPACT AND DISPERSED CITY

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I. THE DEBATE BETWEEN URBAN SPRAWL AND COMPACT DEVELOPMENT

Compact development appears to be better because it occupies less land, consumes less water and electricity and because it encourages the use of public transport. That is why low-density urban developments featuring single-family housing are not recommendable.

This article aims to assess the extent of this type of development in Spain. The majority of researchers that have studied the subject favour the compact model. Others present a more balanced vision of favourable and unfavourable aspects, without clearly choosing between them. However, there are only a few authors who appear to oppose the compact model.

Some authors do not believe that it is necessary to choose between compact and low-density development. On the contrary, they rather seem to be supporters of the theory that both can co-exist. Logically, in areas where construction has already taken place this format cannot be changed, but it does not appear to be the best option for the design of new spaces to be built in the future. Instead, it is advisable to choose whichever option provides the most social, economic and environmental advantages.

In Spain, the majority of autonomous government legislation appears to go against compact development, by establishing a maximum density for new urban developments that ranges from 100 units of housing/ha to 30 units of housing/ha. There are special cases in Catalonia, the Basque Country and Castile and Leon, which as well as establishing a maximum density, also establish a minimum density, which are 50 units of housing/ha (for strategic residential areas only), 40 units of housing/ha (in the case of properties with an average area of 100 m²) and 30 units of housing/ha (for towns and cities with more than 20,000 inhabitants) respectively. It seems that there are very few regulations that combine the establishment of minimum and maximum density construction, which means that its legislation can be considered very innovative.

II. THE ACCELERATION OF URBAN SPRAWL IN SPAIN

According to data from Corine Land Cover in Spain, as is the case of the European Union as a whole, most land is dedicated to agriculture, although the percentage in Spain (49.8%) is 5 percentage points lower than the European average. Forest areas with natural vegetation and open spaces represent the second type of cover by area, in Spain representing a percentage (47%) that is 12 percentage points higher than the European Union. The third group by area is made up of artificial surfaces, which represent 5% in Europe, while the figure in Spain is 2.9%.

Artificial surfaces in Spain are below the average in the European Union. With 2.9% in 2000, they represent a small percentage of the total. However, it is significant that artificial surfaces in Spain grew by 29.5% between 1987 and 2000, while in the other 23 European member countries, the increase was only 5.4%. This indicates that Spain had one of the highest rates of construction of artificial surfaces in the European Union.

Comparing the different types of land use according to urban and rural areas, the highest proportion of artificial surfaces is in large urban areas, where they occupy almost 11% of land. The percentage is not excessively high, although we should take into account the fact that it would be increasingly damaging if this rate were to continue growing. The advantage of still having a high percentage of agricultural areas, even in large urban areas, which have 51.8% of this type of land, as well as a considerable percentage of forest areas, which stand at 35.9%, should not be wasted. This is a legacy for future generations. In any case, the data shows that the starting point is more favourable than one first might think, especially when taking into account the fact that until now hardly any specific policies have been applied in order to make cities more compact and to contain urban sprawl.

The two municipalities with the highest percentages of artificial surfaces are Valencia and Madrid, which exceed 26%. It is also noticeable that artificial surfaces have grown appreciably in some urban areas, above all in Madrid, Alicante-Elche, Valencia and Murcia, which now have 8.7%, 7.9%, 5.8% and 4.4% more artificial surfaces respectively.

The most worrying results appear when the percentage of growth experienced by large urban areas in Spain is analysed. The urban agglomeration of Murcia is the leader of artificial surface growth during the aforementioned years, followed by Alicante-Elche and Madrid, with growth rates of 78.5%, 67.8% and 49.4% respectively. These are very strong growth figures, which lead one to consider the advisability of adopting measures in favour of compact development and against urban sprawl.

For the purposes of this research we are mainly concerned with data regarding individual and/or gated developments, which represent the low-density developments featuring single-family housing, in order to compare them with the continuous urban fabric.

Detached and semidetached houses with/without gardens occupy a major percentage of artificial surfaces, with an average of 21.1% for the whole of Spain, 26% for small urban areas and 24.2% for large urban areas. The highest proportion is located in small urban areas, that is, on land that is closest to rural habitats. In many cases, the expansion of single-family housing may have meant the reduction of agricultural or forest land, as well as the loss of cultural and natural heritage. In more rural areas, that is, not urban areas, continuous urban fabric predominates and detached and semidetached houses with/without gardens represent

14.8%. The most worrying figure is that in large urban areas detached and semidetached houses with/without gardens represent 24.2% of the total of artificial surfaces, when this is the area where they can least be justified.

Discontinuous urban fabric, comprised of scattered apartments blocks and detached and semidetached houses with/without gardens, experienced growth of 26% during the 1987-2000 period. Scattered apartments blocks have grown by almost 30% and detached and semidetached houses with/without gardens by 25%, which in both cases is very strong growth. In absolute terms, it is surfaces of detached and semidetached houses with/without gardens that have experienced the highest growth, doubling the increase of scattered apartments blocks and trebling the continuous urban fabric.

III. SINGLE-FAMILY HOUSING IN SPAIN ACCORDING TO THE 2001 CENSUS

In 2001 there were 6,864,265 single-family units of housing in Spain. In absolute terms, the highest number of single-family properties can be found in the most rural municipalities, especially in the 6,948 that have less than 5,000 inhabitants. In these areas there are 2,904,830 single-family units of housing, 42% of the total. These are followed by municipalities that have populations ranging from 5,000 to 19,999 inhabitants, a total of 841 municipalities, which hold 28.7% of the total of single-family properties. Therefore, the group of municipalities whose population is below 20,000 inhabitants has 71% of single-family housing in Spain.

If, to encourage compact development, a tax were established on single-family housing, it appears logical that it should only be applied to the most urbanised cities, which would be those that have 20,000 or more inhabitants. In 2001 there were 1,985,573 single-family units of housing in the most urbanised municipalities, which are occupying land and consuming water and electricity above what could be considered desirable and which encourage the use of private transport and hinder public transport.

In municipalities with more than 50,000 inhabitants there are 788,816 principal single-family units of housing, 133,511 secondary units of housing and 172,811 empty units of housing, which are very influential figures in this regard.

IV. THE GROWTH OF SINGLE-FAMILY HOUSING IN SPAIN BETWEEN 1997 AND 2007

According to statistics regarding municipal permits, during the period from 1997 to 2007 there was a large annual increase in the number of properties, in both single-family and non single-family housing units.

During the eleven years studied, single-family housing represented 25% of the total of new properties, a very significant percentage given the greater environmental impact of single-family housing. In total, from 1997 to 2007, 1,313,379 single-family properties were built, meaning a greater consumption of resources as well as greater use of private vehicles than if they had been built in a more compact way.

If the single-family housing reported in the 2001 census is added to the single-family housing built between 2001 and 2007, it can be seen that in 2007 there were 7,774,590 single-family units of housing in Spain.

According to construction site management authorisations, 1,685,370 detached and semi-detached single-family properties were built in the 1997-2007 period in Spain. The number of semi-detached houses is noticeably higher compared to detached houses, although the influence of the latter is significant as they represent 31.3% of all new single-family housing. In no year was the number of detached properties less than 26%, reaching its highest level in 2007, when it represented 49.9% of single-family housing.