

## Article

# New Temporary Public Housing Typology in the Basque Country: A Legislative and Design Response to the New Requirements of the 21st Century Society

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**Abstract:** The Administration of the Basque Country has been responsible for public housing since 1981. Since then, more than 104,000 protected housing units have been built for 2,200,000 inhabitants, 34,000 of which have been directly promoted by the Basque Government. To better adapt its policies to the requirements of a new contemporary society, the Housing Department of the Basque Government has developed a new Habitability Decree in 2022. This Decree aims to update housing to the new ways of living in Basque society and to incorporate new social requirements regarding housing, such as universal accessibility, gender perspective, productive housing, and remote work, while trying to open new ways to improve flexibility of the housing stock. This article analyses some of the key aspects of the new Decree and one of the newly regulated typologies for temporary housing aimed at young and older populations. In addition to the critical selection of the most relevant aspects of the Decree, this article aims at contextualising its requirements in the European context and the broader reference framework of the housing crisis in the Basque Country. To that end, the most notable novelties of the Decree are presented alongside the analysis of 13 temporary housing projects developed by the Housing Department before the approval of the Decree, placing special emphasis on the issue of over-occupation. The analysis makes it possible to typologically characterise the temporary accommodation built to date and to compare the new minimum living space requirements per person with other international regulations. As a conclusion, a discussion is offered about the usefulness of the Decree for adapting new housing in the Basque country to the 21st century, and for preventing the issue of overcrowding.

**Keywords:** social housing; housing policy; housing design; over-occupation



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## 1. Introduction

Access to adequate housing is a right, as enshrined in Article 47 of the Spanish Constitution [1], which states that “Public Authorities shall promote the necessary conditions and establish the relevant rules to make this right effective, regulating the use of land in accordance with the general interest in order to prevent speculation” [1]. Spain’s public administrations are responsible for ensuring compliance with this guiding principle of social and economic life through the development of regional plans, which, with shared responsibility with other institutions in the sector, guarantee access to housing for all social sectors and improve the quality of the citizens’ lives.

Studies affirm that the central reference point for housing today is no longer conventional family units, but individuals themselves [2]. The COVID-19 pandemic has put the spotlight on housing issues [3,4], not only with regard to accessibility or housing shortage, but also to the quality of living spaces themselves: their size and spatial configuration and the undeniable need for outdoor spaces, which provide the possibility of enjoyment of light and air. Despite highlighting the problems of the housing stock built up to that time, this event in turn opens new discussions on the role that housing should play, from

new ways of living to the indeterminacy of spaces [5]. Therefore, the housing project must reflect these new conditions, advocating diversity as opposed to homogeneity, flexibility and versatility of spaces, occupation, and personalisation.

This article intends to share with the international academic community the latest developments in the Basque Country in the domain of housing and public housing. To that end, the next section provides context and background to the article, while Section 3 introduces the methodological approach, and Section 4 presents the results for the analysis that was carried out. Finally, Section 5 offers a final discussion.

## 2. Research Context and Background

### 2.1. Socioeconomic Context: Rental vs. Purchase Temporariness

The demand for housing in the Basque Country prior to 2008 was 80% in favour of purchase. After the 2007–2014 economic crisis and before the pandemic it had changed to exactly the opposite. However, it is not clear at all that the social aspiration is actually in favour of rental, but rather, this trend seems to respond to the mood of resignation to the precariousness and declassification of broad strata of society [6]. This trend can be observed more clearly at the European level. With a total of 69 social-rented residential units per 1000 inhabitants, France is in an intermediate position compared to other European countries, between the Netherlands (155/1000) and England (106/1000) on the one hand, and Germany (30/1000) and Italy (16/1000) on the other hand [7]. Spain has 1.6% of its social housing stock allocated to social renting, compared to 16.8% in France and 30% in the Netherlands, and spends almost four times less per inhabitant on housing policy than the European Union as a whole [8].

In Spain, although starting from very low levels in comparison with other European countries, the promotion of subsidised housing for rent at a national level has grown substantially in recent years, reaching 21% of completed subsidised housing in 2019. In this regard, the Basque Country occupies a relevant and growing position, where 38% of new social housing is destined for rent, a much higher percentage than in Madrid, Navarre, or Catalonia, which follow at a distance. In terms of social housing, in 2019 there were 240,000 homes owned by the autonomous communities, of which 178,493 were for rent. The increase in rental prices in recent years is due to the relative scarcity of rental housing supply in the face of a notable increase in demand among certain groups [9]. In a report published by the Bank of Spain, they state that the different regulatory measures can be divided into three main groups: control of rental prices, the public provision of a supply of rental housing, and a heterogeneous set of indirect measures aimed at encouraging the private supply of rental housing while at the same time containing the increase in household spending caused by the rise in rental prices themselves. In Spain, the experience of the Basque Country stands out for giving greater relevance to the public provision of rental housing. The housing stock of the Basque Government [10] constitutes a total of more than 26,000 dwellings, including both publicly owned housing and the management and regulation of rental in dwellings whose owners cede rental management to the public sector in exchange for certain considerations (fixed rents, insurance in case of contingencies, etc.) [9]. Within this context, the main commitment of the government in trying to contain the upward dynamics of prices is to double the public rental stock by 2036, approaching a total of 50,000 rental dwellings [11]. This is to be achieved through the public promotion of subsidised housing, the promotion of social housing, mobilising the rehabilitation of uninhabited dwellings, and exploring public–private partnerships.

In addition to those already mentioned, there are other vectors that cut across architecture and therefore regulate the technical and design conditions of housing. These include environmental sustainability, energy efficiency, universal accessibility and now also the gender perspective. The Basque Institute of Statistics reported in a press release that women spend twice as much time on housework as men in the Basque Autonomous Community [12]. It is therefore clear that users are to be accounted for in housing policy, and gender must be included as a design variable.

Within this context, in which new needs and problems are emerging and need to be addressed, the Housing Department of the Basque Government has developed a Decree to regulate the minimum conditions of habitability and design standards for housing in general and temporary *alojamientos dotacionales* (AD) in the Autonomous Community of the Basque Country [13]. *Alojamientos dotacionales* are a publicly owned residential typology located on land originally destined to be used for public facilities (*suelo dotacional*) in cities, and therefore constitutes a sort of Public Facility. Unlike protected public housing (VPP), AD are small in size, being between 25 and 60 useful square metres, and of a temporary nature, with a maximum stay of five years. They are one of the most recent typologies within the Basque residential stock, which is why they are still in an early process of definition and have been recognised as one of the 50 innovative solutions at European level by Housing Europe [14]. The new regulation not only aims to conclude with their definition, but also to put them on par with social housing in terms of standards, minimum habitability requirements, and sizing of spaces.

This article analyses the fit between the needs of the population, which have evolved along with the progressive reduction in the size of housing and new forms of coexistence. The most relevant regulatory aspects of the new decree are presented, analysing developments of this typology built prior to the approval of the regulation. The article now presented is the result of a joint study by researchers from different disciplines within architecture, in order to provide a positive response to the Decree of Habitability of 2022 on the regulation of the minimum conditions of habitability of dwellings and public housing in the Basque Autonomous Community.

## 2.2. *Public Housing and Minimum Housing*

Studying minimum housing is a means of advancing toward the housing of the 21st century. Although not understood as an ideal, minimum housing can be an opportunity to substantially improve existing housing. The AD cannot be understood as the reduction of a regular sized dwelling, so it needs methods and instruments to face a new paradigm. In any case, their small size and programmatic simplicity should not be understood as impediments to good habitation, but as an incentive for their versatility [15].

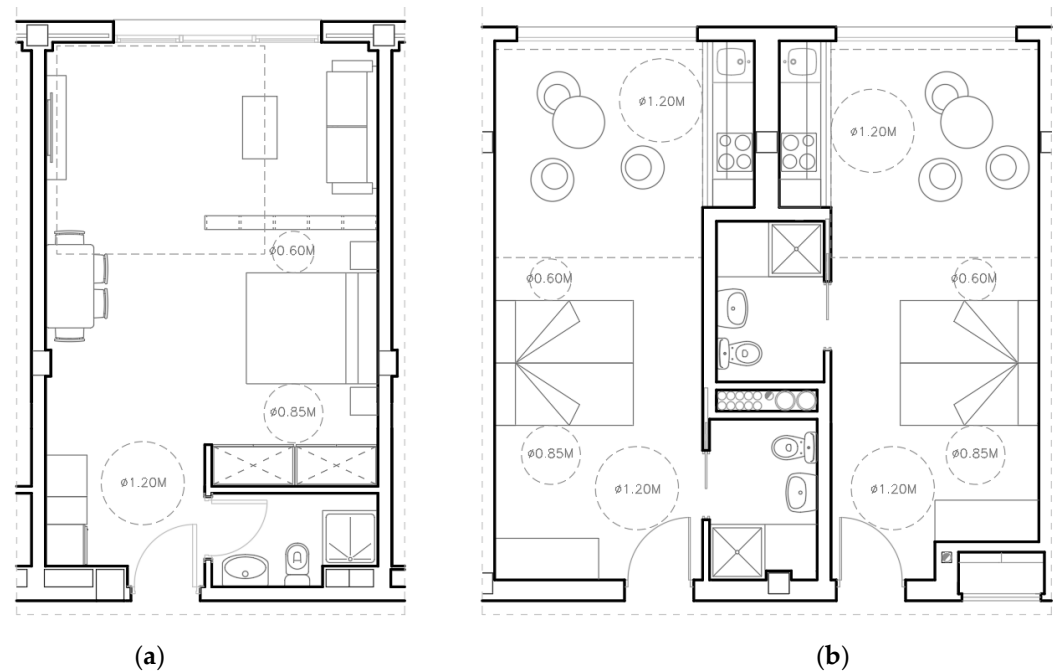
Families, or rather cohabitation units, have experienced a radical reduction, which can be observed at European, national, and regional level. The average for European Union [16] Member States is 2.3 persons per dwelling. France and Switzerland have average values of 2.1 and 2.2, respectively [16]. In Spain in 1991, the average size was 3.28 occupants per dwelling, while in 2011 this figure was reduced to 2.50 persons per household as a national average [17]. According to the latest census carried out by the INE, the Autonomous Community of the Basque Country currently stands at 2.44 inhabitants per household, a value below the national average, along with the Principality of Asturias and the region of Castile and Leon, with figures of 2.34 and 2.42, respectively [17].

In 2011, primary dwellings in Spain accounted for 71.7% of the total national residential stock, compared to 14.6% for secondary dwellings, and the remaining 13.7% of empty dwellings [6]. Studying the growth trends, we see that the number of primary dwellings has grown since 1991 by 27.5%, while the increase in population is less pronounced, at 14.6% [18]. This disparity in relative growth may be the cause of the decline in average household size, which has been on a downward trend for more than thirty years, and which predicts what the main demand for housing will be in the near future. In Spain, the relative growth of households of less than 46 m<sup>2</sup> in the last six years is negative, equivalent to 6.87% [18]%. In 2014, this household typology constituted a total number of 561,900 dwellings, while in 2020, this figure has decreased to 523,300. However, this trend is not followed in the Basque Country. The same study reveals that in 2014 in the Basque Autonomous Community there were a total of 14,700 flats whose surface area was less than 46 m<sup>2</sup>, while in 2020 it increased by 22,600 households, which represents a positive relative growth of more than 53.7% [18].

According to the Decree presented by the Basque Government, the minimum housing unit shall be designed for the usual occupancy of two persons, and shall consist of a room designed for living (E for *estar* in Spanish), eating (C for *comedor*), and cooking (K), a compartmentalised space for sleeping (H for *habitación*), a compartmentalised space for a complete bathroom, and an outdoor space. The dwelling shall have a space for washing and a space for drying clothes. Many of the Decree's mechanisms seek to increase the size of dwellings by combating the general trend towards downsizing, starting by fixing the minimum size of the dwelling, increasing the minimum size of rooms, or requiring more square metres in compensation when the main options are not chosen, when outdoor space is omitted, when space for the laundry cycle is omitted, and so on.

According to the new Decree's Annex 4, the minimum useful surface area of the dwellings shall be 35 m<sup>2</sup>. In the specific and particular case of the *Alojamientos Dotacionales*, the minimum living accommodation shall consist of a living, eating, and cooking space (ECK), a sleeping space (H), and a compartmentalised toilet space. The minimum useful floor area shall be 25 m<sup>2</sup>, which may be reduced to 20 m<sup>2</sup> when the building has communal services available, such as shared kitchens, dining rooms, washing and drying areas, lockers, etc., at a rate of 3 m<sup>2</sup> per accommodation unit, and when the sleeping space is integrated into the single living–dining–kitchen–bedroom (ECKH), with flexible or movable partitioning.

As mentioned earlier, the experience with ADs on endowment plots, a kind of public housing building such as a student residence, has served as a model for the practice of this new concept of housing that is included in the new Decree. The initial aspiration of these projects was to be able to use plots of land that the municipalities did not develop with public buildings (due to lack of financial capacity or other reasons) and at the same time to be able to offer a greater amount of rental housing. The common feature of these projects is the reduction in living space in exchange for the provision of buildings with collective spaces, e.g., removing the washing machines from the flats and creating a common laundry space. Figure 1 shows two examples of the minimum AD built in Txurdinaga and Lekeitio (Vizcaya), both of which pre-date the Decree.



**Figure 1.** Minimum AD typology prototypes (ECKH), by Azpetegui Architects (a) and Oneka Arquitectura (b). Source: authors.

### 2.3. European Social Context

Housing must be able to respond flexibly to constant social change. At present, some of these changes correspond to the need to anticipate the age of emancipation of young people, the increase in the number of separated or divorced people, single-parent households, the growth of the immigration phenomenon, and the progressive ageing of the population, all of which have led to the development of a new residential typology that until now has had, in our country, a minority presence. Table 1 illustrates the evolution of family nuclei in Spain.

**Table 1.** Evolution of the number of households by type of household in Spain (in thousands).

Type of Household	2014	2015	2016	2017	2018	2019	2020	% Over Total, 2020	Change (%)
Single person	4480.4	4562.4	4611.1	4663.8	4705.4	4771.4	4827.0	25.9	+7.7
Single parent	1740.9	1827.7	1937.6	1907.2	1864.2	1886.8	1916.8	10.3	+10.1
Couple without children	3962.9	3926.6	3867.3	3890.7	3915.8	3920.1	3921.3	21.1	−1.0
Couple with 1 child	2954.9	2925.1	2891.9	2922.1	2954.4	2926.8	2904.1	15.6	−1.7
Couple with 2 children	2785.3	2785.4	2777.5	2783.0	2785.4	2765.8	2754.2	14.8	−1.1
Couple with 3 children	588.0	578.3	564.9	583.2	589.8	551.6	548.6	2.9	−6.7
Two or more family nuclei	443.4	405.2	361.1	354.4	368.4	375.7	372.9	2.0	−15.9
Total	18,330.4	18,363.9	18,338.9	18,441.4	18,543.3	18,544.2	18,612.5	100	+1.5

As can be seen, the trend over the last seven years has been for single-person households to increase by 7.7 points, and for single-parent households to increase by more than 10 points, while traditional family structures, such as couples with children, have suffered the biggest falls, with a negative growth of 6.7% in large families. This corresponds directly to the intensified demand for one- and two-bedroom dwellings.

The incorporation of the AD as a new type of subsidised housing by the Basque Government Housing Department is a response to the housing demands of Basque society. The main beneficiaries of the Decree on Habitability, and in particular of the typology of endowed housing, are entitled to priority protection and include those groups at risk of social risk or exclusion, young people up to the age of 36, senior citizens over 65, large families, single-parent families, and victims of terrorism or gender violence (art. 3).

### 2.4. Public Housing for Aging and Young People

In Spain, there were 4,793,700 people living alone in 2019. Of this figure, 2,009,100 (41.9%) were aged 65 or over. Furthermore, of these, 1,452,300 (72.3%) were women [18]. Alokabide, the public company dependent on the Basque Government in charge of the development of social housing in rental regime [19], runs specific programmes aimed at people over 65. The Bizigune programme [20] promotes the acquisition of unoccupied flats to put them on the market through protected renting, mainly aimed at people over 65. According to the Population and Housing Census, there are more than 1.7 million households in which only one person over 65 years of age lives (25.8% more than in the previous decade), of which three out of every four households were inhabited by a widowed woman [17]. The European Commission, through its statistical agency Eurostat, studies the relationship between people of dependency age and working people. In 2001 [21], the dependency ratio was 25.9%, which corresponds to minus four working persons per dependent person over 65. In 2020 [18], the highest ratios are concentrated in predominantly rural regions [22] (EC, 2021). The projection of the dependency ratio for 2050 shows that in Spain it exceeds 70.1% on average, while in the Basque Country it remains between 63.4% and 70.1%, which is equivalent to almost three working people to support two elderly people [22].

Another major target group for housing policies is young people under the age of 35. In the EU, more than one in four adults aged 25–34 (28.5%) were living with their parents in 2016 (EC, 2018). In 2020, the average European age at which young people emancipated themselves from their parents' homes stood at 26.4 years. Together with Spain, Croatia (32.4), Malta and Italy (30.2), and Portugal (30.0) have the highest averages in the European Union. In Spain, 52.8% of 25–29-year-olds lived with their parents or with one of them in 2019. This percentage has grown by 4.3 points in the last six years [18].

### 2.5. Historical and Regulatory Background

Royal Decree 801/2005, of 1 July, which approves the 2005–2008 State Plan to promote citizens' access to housing, was published with the aim of increasing the weight of subsidised housing in the housing market, encouraging renting as opposed to ownership and promoting a rational use of building land. In addition to setting amounts such as the maximum sale price, the amount of the basic national price set at 695.19 euros per square metre of usable surface area, according to the Basic National Price, maximum values are also established for the usable surface areas of dwellings. In general, the maximum useful surface area of the dwelling will be 90 m<sup>2</sup>, and adapted dwellings may exceed this limit by 20%. Housing for large families will have a maximum of 120 m<sup>2</sup> and will constitute less than 5% of public housing developments (art. 11, RDL 801/2005). A separate chapter is dedicated to the housing programme for young people, promoting transitional rentals (art. 73, chap. VIII). In these promotions, common services will constitute a maximum of 20% of the total useful surface area of the dwellings. This surface area shall be between 30 and 45 m<sup>2</sup>, including the surface area for the corresponding common services.

The Basque Autonomous Community has the highest penetration of social and protected housing in Spain, with an average of 30% of the housing market between 2002 and 2005 (Land and Urban Planning Act 2/2006). In the last decade, between 2011 and 2019, the proportion of social housing compared to all built dwellings was 37.9%, only surpassed by the Autonomous Community of Navarre, with 52.8%. However, the national proportion stands at 3.2%, a drop of 7.5 points compared to the previous decade (2001–2010), according to data from the Ministry of Transport, Mobility, and Urban Agenda (2020), [23].

In the Basque Autonomous Community, the concept of the AD appears in Law 3/2015 [24] on housing, in which it is defined as “a residential facility in part of a construction that is intended to resolve, on a temporary basis and through the payment of rent or fees, the need for housing for people or cohabitation units” [24]. Furthermore, it is specified that, despite being located on land destined for publicly owned facilities, they will be assimilated to housing use in terms of the application of technical regulations. Therefore, these conditions imply that the aim of the appearance of the AD is to increase the reserves of social housing. However, due to their public endowment character, the legal standards and reserves defined in Law 2/2006 [25] do not apply to them, thus distancing the definitions of housing and accommodation. Nor will they be susceptible to sale, with the administration being responsible for their compulsory and free transfer between tenants (art. 17).

The main objective of the Draft Decree is to develop the 2015 Housing Law in matters relating to the habitability conditions of dwellings, to unify the design criteria applicable to dwellings scattered in different decrees, to promote new flexible and versatile housing concepts, to introduce the obligation of private outdoor spaces, and to conclude with the definition of AD.

### 2.6. The New Habitability Decree, AD, and SDGs

Housing is one of the key components of the Agenda for Sustainable Development [26], as reflected in the 2030 Sustainable Development Goals [27], which can be succinctly summarised as to protect the environment, reduce poverty, and improve the lives of citizens in a sustainable manner. Some of the SDGs directly incident in the issue of housing are those related to clean water and sanitation (SDG 6) [28], which might be of lesser urgency in the Basque Country; or that of affordable and clean energy (SDG 7) [29]. The

central theme addressed by the new Habitability Decree of the Basque Country, however, can be considered to be Sustainable Development Goal 11 [30], relating to sustainable cities and communities, and with a particular focus on 11.1, 11.3, and 11.7. Table 2 lists some of the SDGs that can be considered to be directly related to the new decree on habitability and the promotion of the typology of temporary Endowed Housing:

**Table 2.** SDGs and their implicit treatment in the new Habitability Decree of 2022.

Target	Target Description	New Decree [13]
5.4	Recognise and value unpaid care and domestic work through the provision of public services, infrastructure, and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	Article 3
7.1	By 2030, ensure universal access to affordable, reliable, and modern energy services	Article 3,
7.2	By 2030, substantially increase the share of renewable energy in the global energy mix	I-B.5
11.1	By 2030, ensure access for all to adequate, safe, and affordable housing and basic services, and upgrade slums	I-A.1, I-A.3, I-A.4, I-B.1, I-B.2, I-B.3, I-B.4
11.3	By 2030, enhance inclusive and sustainable urbanisation and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries	Article 3
11.7	By 2030, provide universal access to safe, inclusive, and accessible green and public spaces, in particular for women and children, older persons, and persons with disabilities	Article 3

As defined by the United Nations Report on Human Settlements of 1996, “*Adequate shelter means more than a roof over one’s head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure ( . . . ); adequate basic infrastructure, such ( . . . ); suitable environmental quality and health related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost*” [31]. In line with this, the Decree [13] defines habitability as “*insofar as it is configured as a condition of a space that allows the people who occupy it to develop a life project, it is linked to basic requirements of surface and height, thermal comfort, equipment, healthiness, natural lighting, accessibility, use and maintenance, without forgetting the flexibility or versatility to adapt it to the different stages of life, as well as to new needs and modern lifestyles*”. It can therefore be considered that there is an important alignment between the different social and sustainable development programmes and the new decree, and that the latter can be considered an instrument for the implementation of the SDGs in the Basque Country, together with other previous ones, such as the Housing Law [24] and the public housing price regulations [32,33].

### 3. Materials and Methods

This section presents the methods followed to study the matter presented in this article. First, the text of the new Decree was studied, as well as the precedent related legal texts, which are outlined below, and that conform a global legal framework for the production of housing in the Basque Country, from territorial planning to building construction and awarding of contracts for subsidised sale or social rentals. In this respect, an executive summary of the most relevant aspects will be presented in the results section below. This section then presents the guiding methodologies used to analyse the 13 case studies, which are then shown in the results section, taking one of the developments and analysing it in a manner analogous to that of the other 13 that were used to produce the sheets.

#### 3.1. Analysis of Housing Regulations

There are a number of state regulations regarding public housing. These include those regulations that are autonomous in nature. It is important to point out that Spain’s Constitution [1] establishes that the State is organised territorially into municipalities, provinces, and Autonomous Communities, all of which have different legal powers in the field of housing. The autonomous regions, 17 in this case, enjoy wide regulatory margins.

Article 10.31 of Organic Law 3/1979 of 18 December 1979 on the Statute of Autonomy for the Basque Country establishes that the Autonomous Community of the Basque Country has exclusive competence in matters of housing, spatial and coastal planning, and urban development. In relation to the competence of the municipalities in matters of housing, Article 25.2 (a) of Law 7/1985 of 2 April 1985 [34] on the Bases of Local Government establishes that the municipalities will in any case exercise their own competences, under the terms of the State and the Autonomous Communities, in matters of urban planning.

In the Autonomous Community of the Basque Country, Law 2/2006 of 30 June [25] on Land and Town Planning established a new legal framework for public subsidised housing, including municipal subsidised housing, re-regulating aspects that affected them, without prejudice to the recognition that the law itself gave the local councils the right to regulate certain aspects of the public subsidised housing system by means of the corresponding local ordinance. The Land Law [25] established a new framework that includes both a general extension of the municipalities' obligation to reserve land for this protected residential use and the establishment of new types of temporary housing facilities, as well as extending the legal regime of subsidised housing to other types of municipal subsidised housing, thus configuring a legal framework of public protection as opposed to the traditional exclusive framework of official protection. In this way, a framework of institutional co-responsibility of the Basque Government and the local councils in the area of subsidised housing is set up, as established in the Explanatory Memorandum of the law itself. Therefore, both the autonomous administration and the local administrations are heavily involved in defining the final characteristics of public housing. This implies a wide variety of regulations that have been analysed according to their different degrees of implication in the final definition of the typology studied, which will be mentioned throughout the study.

### *3.2. Analysis of the Decree on Habitability and Contextualisation with Other European Standards*

The Decree on Habitability is the main source of information for this study. The drafting of this Decree, under the responsibility of the Basque Government Department of the Environment, Territorial Planning and Housing, has taken a long time, from its first public exhibitions in 2018 to its final approval in June 2022 and its definitive entry into force on 1 September 2022. During this process, interviews and consultations have been carried out with the drafters, comparing the draft with European regulations to ensure that it complies with the most advanced housing standards.

### *3.3. Statistic Data Sources*

Housing has strong implications for the way citizens relate to society. This is widely reflected in all the statistical study bases of society, both at European level (Eurostat) [16,22,35], at state level (National Statistics Institute, INE, Madrid, Spain) [17,18,21,36], and at regional level (Basque Statistics Institute, Eustat, Luxembourg, Luxembourg) [12,37]. These sources are essential in order to confirm the reality of living and even of interpersonal relationships when it comes to understanding the functioning of current and future housing.

### *3.4. Analysis of Subsidised Housing Promoted by the Housing Department of the Basque Government*

During the years prior to the drafting of the Decree on Habitability, the Housing Department continued to promote a series of actions for the development of temporary housing. These have served as a point of departure, evaluation, and comparison of the regulations. Thirteen execution projects of temporary apartments that have served as a model for the development of the Decree were analysed in terms of their geometric, functional, and constructive characteristics. This analysis led to the creation of files for each housing development, which contained geometric information on the ground plan (morphology); the types of housing in terms of the number of bedrooms and their number in each development; and in which numerical parameters, such as the gross construction area, the useful area, the surface area destined for common spaces, the ratio between private surface area and common elements, the typology of the exterior spaces (balconies,



terraces, laundry rooms, patios, etc.), the provision for bicycle storage, etc., were recorded. Each sheet of card also contained information about the orientation and situation of each development.

## 4. Results

### 4.1. Definition of the Decree and Design Conditions

The decree, approved by the governing council last June and published in September 2022, consists of an explanatory part, eighteen articles, one additional provision, four transitional provisions, three repealing provisions, six final provisions, and four annexes.

Chapter I establishes the purpose of its approval, which is none other than to regulate the minimum conditions of habitability of dwellings and housing facilities in the Autonomous Community of the Basque Country, to be taken into account from the moment it is approved. The Director of Housing and Architecture of the Basque Government, defines habitability as “a condition of a space that allows the people who occupy it to develop a life project” [11]. To achieve this end, it defines the basic conditions based on the principle of social sustainability, rationally adapting the size of the living unit to its inhabitants, the principle of equal treatment and opportunities, the principle of versatility, considering the plural diversity of needs and functions according to the living unit, the principle of healthy housing, and finally, the principle of environmental sustainability, in terms of energy efficiency, thermal and acoustic comfort, reduction in emissions, and control of the life cycle of the dwelling (art. 3, chap. I). Article 5 defines the obligations of the owners and users of dwellings and serviced accommodation. The seriousness of overcrowding, defined as a “failure to fulfil the social function” of the dwelling or accommodation, is emphasised. In addition, the decree defines the minimum usable areas according to the number of resident persons on the basis of the following ratios: 25 m<sup>2</sup> for one person per dwelling, 35 m<sup>2</sup> for two persons, 50 m<sup>2</sup> for three persons, 60 m<sup>2</sup> for four persons, and by the inequality  $S > 20 + (10 \times N)$  for five or more persons, where N is the number of persons and S the minimum usable area (art. 5, Chap. I).

Chapter II defines the minimum conditions of habitability and design, differentiating these two concepts according to whether they apply to existing dwellings, dwellings undergoing renovation or newly built dwellings (art. 7). These standards will also apply to privately owned, free, or subsidised developments. One of the improvements introduced by the decree is to point out, in chapter III, those obvious problems such as over-occupation of the dwelling, and the declaration of uninhabitability and substandard housing. An anomalous use of the dwelling or accommodation is assumed in the case of over-occupation, which also constitutes a “danger to the safety or health” of its inhabitants, together with other phenomena, such as non-compliance with health conditions or permanent unoccupancy (art. 11). Royal Legislative Decree 7/2015 [38], which approves the revised text of the Law on Land and Urban Rehabilitation, defines substandard housing as “the building, or part of it, intended for housing, which does not meet the minimum conditions required in accordance with the applicable legislation”. It concludes that those that do not meet “the requirements of surface area, number, size and characteristics of the habitable parts” will not comply with these minimum conditions, in addition to those with deficiencies in the minimum services and facilities to guarantee the principles defined by the LOE of safety of use, habitability, and universal accessibility (art. 2).

Finally, Chapter IV, under the title of “responsibility and sanctioning regime”, notes that compliance with this regulation will be the responsibility of the local council in whose jurisdiction the dwelling or endowed accommodation is located, together with the competent body of the Basque Government (art. 16).

The technical regulations concerning the definition of the dwelling are mainly to be found in the annexes. Measures to reinforce the perception of security stand out, through the prohibition of recesses, dark corners, and dead angles, and by demanding a minimum of transparency in partition doors, including those of entrances and lifts. With regard to health conditions, optimal sunlight conditions must be guaranteed, and dwellings facing

north-west, north, and north-east must be prohibited. To this end, it must be guaranteed that 30% of the façade surface of the main areas (living room, dining room, kitchen, and bedrooms) face a different orientation to those mentioned above. In addition, dwellings facing south-east, south, or south-east must receive at least two full hours of sunlight during the winter solstice.

This same point defines the minimum ventilation conditions, which can be resolved by means of courtyards: block courtyard, courtyard open to the façade, plot courtyard, or courtyard of lights. Each of these spaces will have a minimum surface area and appropriate proportions. The most restrictive characteristics are those relating to the courtyard, as the diameter of the circle inscribed in the courtyard is restricted, depending on the height of the courtyard and the room that opens onto it, always being a minimum of 3 metres for kitchens, dining rooms, and bedrooms, and 2 metres for staircases, laundry drying spaces, and bathrooms.

The conditions of accessibility are based on the bases established in Decree 68/2000 of 11 April [39], which approves the technical standards on accessibility conditions for urban environments, public spaces, buildings, and information and communication systems, and the Technical Building Code Basic Document SUA [40]. In addition, in developments of housing units, the number of housing units adapted for people with reduced mobility will be one for every 25 units or fraction thereof. This type of unit shall have a minimum programme of two rooms.

Small-sized housing developments must be complemented by quality community services and uses. For this purpose, there are cleaning rooms with dimensions of 1.5 m by 2 m, and rooms for bicycles, pushchairs, and auxiliary products for people with reduced mobility, together with the usual parking spaces and storage rooms. In developments especially dedicated to ADs, there will be a storage area for utensils, replacement materials, and maintenance, with a minimum surface area of 0.25 m<sup>2</sup> per accommodation unit. In addition, common service areas shall be provided for cooking, eating, washing, drying, lockers, mailboxes, etc. If these services are provided in the building, the private units may have a single space for living, cooking, eating, and sleeping (ECKH), together with a properly compartmentalised toilet area. In this case, the common services shall have a ratio of 3 m<sup>2</sup> per accommodation unit, and the surface area of the accommodation unit may be reduced by up to 5 m<sup>2</sup>.

#### 4.1.1. Design Conditions of the Rooms and Units

The minimum design conditions of the housing units are also regulated, depending on five main parameters: the minimum free height, the openings to the façade, the minimum useful surface area, the minimum amplitude in terms of its proportions, and the relationship established between units and rooms. In general, the minimum clear height inside the dwelling, measured between finished floor and finished ceilings, is 2.50 m. In the living space and bedrooms, this height may be reduced to 2.20 m for 10% of the floor plan occupancy. In the circulation spaces and toilets, the clear height shall be no less than 2.20 m, and 2.30 m in kitchens and washing areas.

The spaces that must necessarily be naturally lit are the living, eating, cooking, and sleeping spaces, with natural lighting not required in the entrance, bathroom, pantry, and storage room. The surface area of the openings shall be a fraction of the useful surface area of the illuminated room, according to the specifications in Table 3. The minimum usable area shall be between 0.50 and 2.20 m in height, and the practicable part of the window shall not be less than one third of the minimum illuminated area.

In cases where an overhang casts a shadow over the lighting opening, the depth of the illuminated space shall be measured from the outer edge of the overhang to the outer face of the interior wall that delimits the room. To prevent the entry of unwanted solar radiation, shading elements, such as blinds, shutters, or louvres, shall be installed, giving priority to those systems that do not involve thermal or acoustic bridges.

**Table 3.** Minimum opening area for natural lighting in relation to the useful area of illuminated space, in percentage.

Room Depth	Open to Exterior	Open to Patios, etc.
<4 [m]	10 [%]	15 [%]
≥4 [m]	15 [%]	20 [%]

At the entrance to every dwelling, there shall be a vestibule as a transitory space with a minimum usable area of 1.60 m<sup>2</sup>, in which a square with a side of 1.20 metres can be inscribed. The main living space of the dwelling (living–dining–living room) shall have a usable area of not less than 13 m<sup>2</sup>. A square with a side of 3.00 metres may be inscribed in it. The cooking area must have a minimum surface area of 7 m<sup>2</sup>. A square with a side of 2.20 metres shall be inscribed, unless the equipment is located on a single wall, in which case the rectangle shall be 3.10 metres long by 1.60 metres wide. Preferably linked to the kitchen, there shall be a specialised washing space with a minimum surface area of 2 m<sup>2</sup>, sized to house a washing machine, a tumble dryer, a storage area for dirty linen and an ironing surface. If these facilities are located on a single wall, the minimum width shall be 1.60 metres, while if they are located on opposite sides, the minimum width shall be 2.20 metres. In turn, this space should preferably be linked to an outdoor space or courtyard for hanging clothes to dry. If it faces the façade, the views from the public space must be protected. If it is located on the terrace or balcony, a floor area of 1.50 m<sup>2</sup>, a width of 0.95, and a height of 2.00 metres shall be reserved for this task, which shall not interfere with the minimum natural lighting of any of the rooms in the unit.

As mentioned above, the 2019 pandemic has shown the contrasts in living conditions between, for example, those who enjoy a small garden and those who live in a flat without balconies. Therefore, the Decree emphasises the obligation for all dwellings and accommodation to have quality outdoor space. The minimum area of such a space must be 4 m<sup>2</sup>, in which a circle of 1.50 metres in diameter can be inscribed. When planning permits, this space may be replaced by an enclosed veranda with identical conditions, or by increasing the living area by 8 m<sup>2</sup>.

As far as private living spaces are concerned, the bathroom shall be appropriately compartmentalised, while the bedroom may be compartmentalisable. If the room is arranged within a single space E-C-K-H and is subsequently compartmentalised, each resulting space must have its own lighting openings, complying with the provisions of section I-B.2. If the accommodation has two bedrooms, both must be properly compartmentalised, maintaining their privacy and independence. This standard promotes the de-hierarchisation of bedrooms, as it does not distinguish between main and secondary bedrooms in terms of minimum dimensions, thus converting them into multi-purpose rooms (García-Astrain, 2020). The minimum surface area of bedrooms shall be 10 m<sup>2</sup>, increased to 11.5 m<sup>2</sup> if the mandatory storage space (wardrobe) is located inside the room. The configuration of the room shall allow for the placement of auxiliary furniture, for which purpose circles of 0.85 m and 0.60 m shall be respected on the sides of double beds, and 0.85 m on one side of single beds. The toilet space in one- and two-bedroom accommodation shall be complete and have at least one washbasin, toilet, and bathtub (minimum dimensions 1.40 m by 0.70 m) or shower (minimum dimensions 0.80 m by 0.80 m). The minimum usable area shall be 3.50 m<sup>2</sup>. The minimum separation between walls shall be 1.20 metres if the appliances are arranged in parallel, and 1.60 metres if they are arranged on opposite sides, and must comply with the accessibility conditions. Table 4 summarizes the minimum area of the spaces in VPO dwellings and ADs.

Another improvement introduced by the Decree is the considerable extension of the accommodation storage space standards. Storage is set at a minimum of 2 m<sup>3</sup> per person. Considering that there are two occupants per room, the personal storage space in the rooms will be 1.50 m long by 0.65 m deep and 2.20 m high. The general storage space will be of the same dimensions and will grow proportionally to the number of rooms.

**Table 4.** Minimum area in square metres of basic-use spaces of dwellings and Ads and their maximum and minimum areas according to the number of rooms.

Type of Household	N Bedr.	N Bath.	K	K+E	E	E+C	E+C+K	Storage	Area Min.	Area Max.
AD	1 (ECKH)	1	7	11	13	14	20	1.95	20	25
	1 (ECK+H)	1	7	11	13	14	20	1.95	25	45
	2	1	8	13	14	16	22	3.90	40	60
VPO	3	2	9	14	16	18	24	5.85	70	90
	4	2	10	16	18	20	26	7.80	90	120
	5 +	2	12	18	20	22	28	9.75	90	120

#### 4.1.2. Working at Home: The Flexibility of Space

Social housing must be able to adapt to new contemporary needs and ways of life. As was previously the case with the disappearance of domestic service and the incorporation of women into the workplace [41], nowadays the performance of professional activities within the home has become a new reality to which to respond. In 2019, approximately one in 20 people (5.5%) between 20 and 64 years of age worked from home. Due to the impact of COVID-19, this ratio has almost doubled in 2020, increasing by 6.9 points to 12.4% [22].

The Decree states in its sole additional provision that those dwellings that incorporate workspaces and are productive dwellings may be classified as Public Protected Housing, with preference being given to applicants who carry out a professional activity compatible with the use of the dwelling [13]. When a unit is a productive dwelling, the working space will be used exclusively for tertiary activities. Access to this area shall be direct from the outside or from the common areas of the building, regardless of whether there is direct access from inside the dwelling. The surface area of the space shall be between 8 m<sup>2</sup> and 12.5 m<sup>2</sup>, and its minimum clear height shall be 2.50 m. If a secondary toilet is included, the total shall not exceed 15 m<sup>2</sup> [13].

#### 4.2. Rental Regime Financing

Although it is not the object of this study to analyse the economic profitability of housing developments, it is important to mention that, although the square metre is more expensive than that of other larger dwellings, it is still a more accessible form of housing than conventional housing [15]. However, non-construction costs are difficult to quantify due to the lack of experience in the execution of this type of complex.

In recent years, social demands have resurfaced due to the strong growth in rental prices. The authorities with competences in the housing market have responded to this demand by taking measures limiting the maximum growth of rental prices, and even setting limits on price levels [9]. In 2010, the Order of 3 November was published in the Official Bulletin of the Basque Country, the purpose of which was to determine the maximum annual prices and rents for subsidised housing and the monthly fee to be paid for the occupation of autonomous regime housing. Recently, a new Order of 30 June of 2022 has been published, which modifies some aspects of the pricing scheme, but leaves the AD rents intact. Table 5 contains the current pricing scheme.

**Table 5.** Monthly fee in euros to be paid for the occupation of one- and two-bedroom autonomous regime housing, depending on the income of the household or cohabitation unit.

No. Bedr.	<15,000	15,000–21,000	21,000–25,000	25,000–35,000	>35,000
1	150	200	250	300	350
2	180	240	300	360	420

Note: Sixty euros per month are added to the fee if the accommodation has a garage attached to it.

### 4.3. Typological Characteristics and Case Studies

The Habitability Decree was published on 1 September 2022, coming into force 90 days later. However, the typology of AD has been built prior to the approval of the regulation in public housing developments in the Basque Country, not all of which comply with the minimum surface area requirements and design criteria set out above. Some 2042 dwellings have been built or are in the tendering phase in 39 developments, 13 of which have been analysed under different parameters. These range from a general description in terms of number of storeys, number of dwellings per floor, and number of communication cores, to parameters that directly influence their energy performance, such as average occupancy per dwelling, surface area of façade and openings, and the main orientations of the dwellings.

As for the general layout of the building plan, it is usually governed by urban planning parameters, such as maximum allowed built area, percentage of occupancy, and urban use, rather than by the designer's ability to fit it in. The location of the communication core is fundamental to the general layout of the complex. The obligatory lighting and natural ventilation required by the staircase means that its location in the central core is immediately ruled out, so that it is usually placed at one of the ends of the block. There is usually an interior and central gallery, generally poorly lit, from which access to the different accommodation units is made, thus reducing the surface area of common and meeting areas. This decision therefore means that most of the accommodation is mono-orientated. As analysed in the previous section, the minimum one-bedroom accommodation has a useful surface area of between 25 and 45 m<sup>2</sup>.

For two-bedrooms, this surface area ranges between 40 and 60 m<sup>2</sup>, which can be increased to 70 m<sup>2</sup> in adapted accommodation. Of the AD analysed, the proportion of two-bedroom accommodation is between 12% and 18%, so that the weighted average surface area of the accommodation is 35.90 m<sup>2</sup>, and the gross average surface area is 40.20 m<sup>2</sup>. The buildings dedicated to ADs have been all built with reinforced concrete frame structures, so that the height of these developments is generally not limited by structural conditions, but by other factors. The average height of the cases analysed is between three and four stores.

The defense of industrialised construction has typological consequences, such as the rationalisation of the floor plan or the standardisation of housing. The rise in recent years of wood as a construction material limits structural spans. The typology of public housing seems appropriate for this type of construction, since the maximum spans in the transversal direction (X) do not exceed 6 m in most cases for a room, while in the perpendicular direction to the façade (Y), the span is between 6 and 8 m, an issue studied by the Higher Technical School of Architecture of San Sebastián [42].

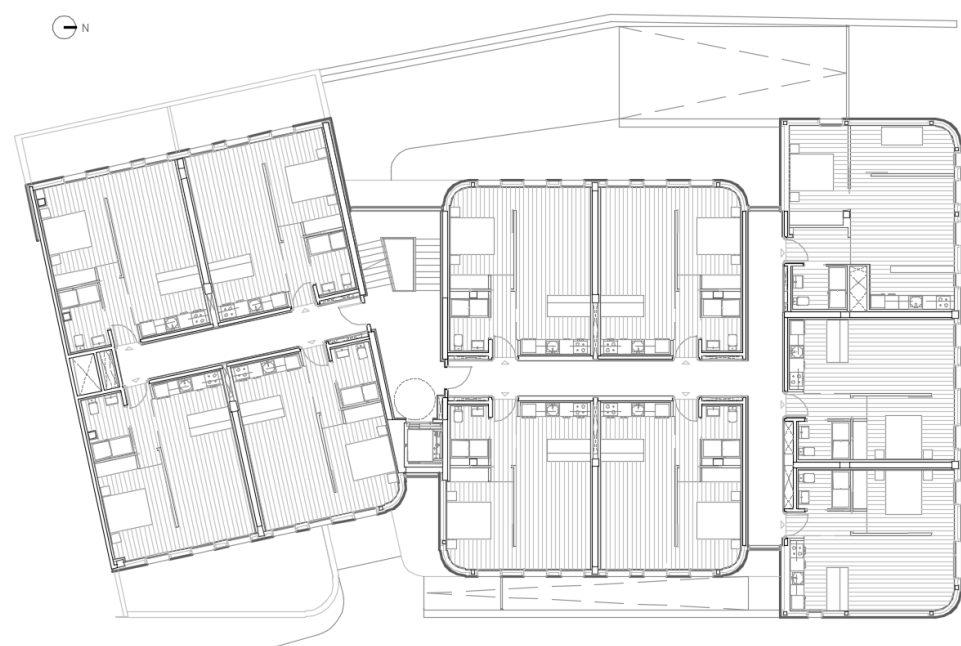
It should be noted that the greatest limitations to the structure are imposed by the adapted and two-bedroom ADs, as they require a greater transverse dimension, normally between 8 and 10 m. These are generally located on the corners, taking advantage of the changes in direction of the blocks and the double collateral orientations so that the three main rooms, ECK and the two bedrooms, enjoy first light. The following (Figure 2) is a typical building typology of the 13 cases analysed for the provision of accommodation for the public sector. An example of an analysis sheet carried out in this study is presented in the Supplementary Materials to this article.



**Figure 2.** General floor plan of the project for 107 housing units in Txurdinaga by Oneka Arquitectura studio. Source: authors.

### Example of a Case Study Analysed

The case study presented here (Figure 3) is in the municipality of Irún, designed by the architect Asier Acuriola. The complex consists of four floors above ground level and one floor below ground level for parking, with one parking space for each accommodation unit. Of the total of 43 units, 38 correspond to the one-bedroom typology, another one-bedroom unit is an adapted unit, and the two-bedroom typology makes up only 9.3% of the total, with four units. In terms of communal spaces, there is a 57.25 m<sup>2</sup> bicycle storage space in the basement. Together with the entrance hall, the communication nucleus and the access gallery to the apartments, the usable area of communal space is 556.71 m<sup>2</sup>, representing 22.8% of the total area of the development. The orientation of the complex is east–west, with the pedestrian entrance through the main street located in the east, and the road access through the secondary street in the north. Three units per floor are mainly oriented to the north, which is prohibited by the new decree. Further, 72.09% of the accommodation units are mono-orientated and the remaining 27.9% are double-sided, and cross orientation is not achieved in any of the units. The ventilation system aims to compensate with a natural supply and a mechanical exhaust located in the wet rooms located on the side close to the interior gallery.



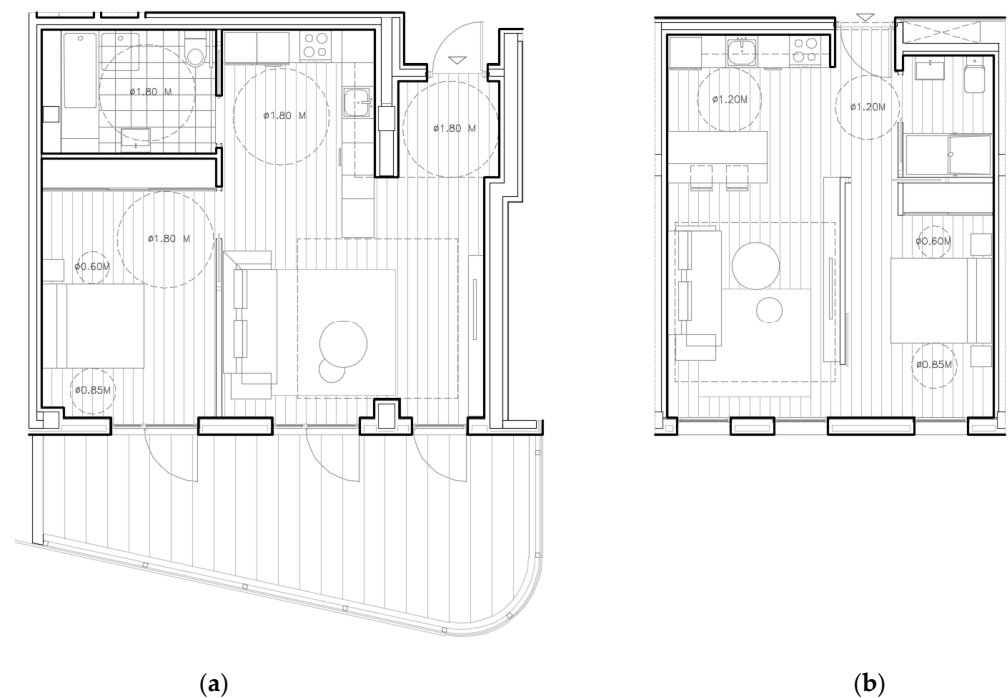
**Figure 3.** General floor plan of the project for 43 housing units in Irún-Larzabal, by the architect Asier Acuriola.

Table 6 summarises the floor areas of the studied typologies.

**Table 6.** Surface areas per room and type, in square metres.

Living Room	Type I (1 Bedr.)	Type II (1 Bedr., Accessible)	Type III (2 Bedr.)
Hall	3.14	3.37	4.13
Bathroom	3.76	6.57	4.35
Bedroom 1	12.21	15.88	10.93
Bedroom 2	0.00	0.00	9.26
ECK	23.50	29.76	24.61
Balcony	0.00	25.25	0.00
Living area	42.61	55.58	53.28
Ext. space	Yes	No	No

The simple average area per accommodation is 48.46 m<sup>2</sup>, while the weighted average is 43.82 m<sup>2</sup>. Figure 4 presents the floorplans of types I and II.



**Figure 4.** Type II (a) accessible AD and Type I (b).

Within the typological characteristics of these types of accommodation, the lack of façade surface area stands out. In this case, the percentage of façade with respect to the perimeter of Type I is 26.7%, and that of Type II is 29.71%. The average for the accommodation is higher at 38.65%, since those with double collateral orientation are also analysed. For single-facing dwellings, it must be ensured that this single orientation is adequate (primarily, south) and that the dwelling has some mechanism that favours forced ventilation, given that a single façade does not necessarily induce draughts. Locating the services adjacent to the gallery is most common. The services are concentrated at the back and the façade is freed up for the living spaces: bedroom and living room.

#### 4.4. Analysis of the Risk of Overcrowding in Minimum Housing

One of the great challenges of minimum housing and public rental housing in general is the possibility of overcrowding. This is a risk that is accentuated in the case of small dwellings. This section analyses how the Decree is drafted to avoid over-occupation.

Firstly, the problem of over-occupation is contextualised, and secondly, the normative actions introduced in the Decree to prevent over-occupation are described. It is understood that over-occupation is a problem with broad socioeconomic aspects. This section only analyses how the Decree addresses the problem and contextualises it at the European level.

#### 4.4.1. Context of the Problem

The reduction in the size of the dwelling seems to be an immediate consequence of the reduction in the size of the household. However, this reduction in space brings with it numerous problems, among which overcrowding is one of the most important. Overcrowding occurs when the number of occupants exceeds the capacity of the living space. The level of occupancy relates to the number and size of rooms, in addition to the size, design, and typology of the dwelling. To measure the occupancy level of a space, both conditions must be studied; that is, both the dwelling (container) in terms of its typology, design, size, and number of rooms; and the occupant (content) in terms of their number, age, gender, and type of living relationship.

The World Health Organization (WHO) [43] warns about the risk associated with living in overcrowded housing and has established a series of housing health principles. It establishes the relationship between housing conditions and health in four of its six fundamental principles: protection against communicable diseases; protection against injuries, poisoning, and chronic diseases; reduction in social and psychological stresses; improvement of housing conditions; protection of people at risk; and, most importantly for the purposes of this paper, ensuring sufficient space to avoid overcrowding. Overcrowded housing, especially in households with inadequate or poor facilities, leads to a higher rate of transmission of communicable diseases, such as pneumonia, bronchitis, and gastrointestinal infections [44]. People sleeping in proximity in poorly or insufficiently ventilated rooms are more likely to spread airborne diseases. The COVID-19 pandemic has brought to light the inequalities that exist both between and within EU member countries. While some people have been able to continue working from home (many of them maintaining their usual income levels), essential workers have faced higher risks of illness. An interesting case study is that of the United Kingdom, the country with the highest number of deaths in Europe and the second highest in the world. Data provided by Inside Housing establish a direct correlation between COVID-19 deaths and housing overcrowding in England and Wales. Both death and over-occupancy rates are drawn from analyses conducted by the ONS [45]. While a myriad of factors is responsible for this situation, it is certain that the quality and conditions of accommodation have played a key role in the spread of the virus. The easy spread of the disease has been one of the most worrisome features of COVID-19. If people spend long periods of time together, adding to this fact poor ventilation as an aggravating factor, the risk of spreading or contracting the disease increases dramatically. Crowded housing conditions are therefore the perfect environment for the spread of the virus [46]. According to data published by the ONS [47–49], the East London borough of Newham has the highest percentage of over-occupancy (25.2% of dwellings) and the highest rate of deaths (144.3 deaths per 100,000 population). Many of these over-occupied dwellings are multi-occupancy dwellings or so-called HMOs (House in Multiple Occupation), rented to five or more unrelated people sharing kitchen and toilet facilities. HMOs are the most economical form of rental, usually owned by private landlords, in places with problems in obtaining affordable housing. A similar study was carried out in France, in which a direct relationship was established between mortality caused by the virus and overcrowding in urban residential areas in different municipalities.

Overcrowding is a fundamental factor in the transmission of the disease, which by multiplying the probability of social contact (both inside and outside the dwelling) increases this transmission with a standard deviation of 0.25 and increases mortality by 14% [50]. In the United States, a nationwide study conducted in April 2020 illustrated that by increasing the number of households with inadequate housing conditions by 5%, the risk of becoming infected with COVID-19 increased by 50%, and the risk of death



by 42% [51]. In the European Union, 17.1% of the population lived in over-occupied households in 2018, meaning that they did not have enough rooms in relation to the size of the household [52]. According to Eurostat, 24.1% of the population under 18 years of age lived in over-occupancy in 2018, compared to 6.9% for those over 65 years of age [22,35].

Many households in contemporary societies experience over-occupancy, even though compared to other societies, our levels of overcrowding are lower. Lack of privacy is caused by an excessive or high ratio of people per room, and not only by the number of inhabitants. Overcrowding occurs in a situation characterised by the inevitability of contact between people and the inability to control the presence of other people. In an overcrowded household, since everyone's daily activities can be easily observed by others, the most intimate aspects are exposed [53].

#### 4.4.2. Regulation of Overcrowding in the Habitability Decree and European Context

According to Article 11 of the Basque Decree included in Chapter III "Declaration of uninhabitability", an anomalous use of the dwelling or accommodation is assumed in the event of overcrowding, which also constitutes a "danger to the safety or health" of its inhabitants, together with other phenomena, such as permanent unoccupancy. Article 5 "Obligations of the owners and users of dwellings and housing facilities", belonging to Chapter I "General Provisions" defines overcrowding as a "failure to comply with the social function" of the dwelling. In addition, it defines the minimum useful surface areas according to the number of resident persons, setting the limit of the minimum conditions of habitability. This article directly relates the useful square metres required per person rather than by type of housing or by type of bedroom. The square metres per person are assigned directly for the first two types of housing (A and B, both with one bedroom), while for an occupancy of more than two persons per dwelling, the result of the total useful surface area (S) responds to the inequation (1), where N is the number of persons. By studying the inequation, we can deduce the form proposed by the BG for sizing the minimum useful surface area of the dwelling or housing.

$$S(N) > 20 + 10N \quad (1)$$

Coefficient 10 is the only value that varies according to the number of people, so we can conclude that it corresponds to the square metres of private space per person, i.e., space for storage, room, personal hygiene, etc. On the other hand, the independent term 20 corresponds to the square metres of common space in the dwelling, i.e., the access hall where general storage is generally located, the kitchen space, living room, dining room, etc. This value is fixed according to the function (1), which indicates that this space will not vary according to the number of people in the dwelling. It is important to note that, for these purposes, the surfaces of terraces, balconies, or clotheslines will not be counted for the calculation of S(N). In the case of ADs, if communal services are provided (e.g., a laundry), the minimum programme can be reduced by 5 m<sup>2</sup>. Table 7 summarises this analysis.

In the 13 studied developments, the average number of persons per housing unit at the regional level according to the subsidised housing projects studied is 2.15 people per household. The values of the minimum useful area of the dwelling and the corresponding square metres per person associated with this value to avoid over-occupation, using the inequation (1), would be the following:

$$\begin{aligned} S(N) &= 20 + 10N, \\ S(2.15) &= 41.5 \text{ (m}^2 \text{ per person)}, \end{aligned} \quad (2)$$

However, in the 13 studied developments, the weighted average useful area per lodging is 35.90 m<sup>2</sup>, less than the value obtained of 41.5 m<sup>2</sup>. The average square metres per person is 15.02 m<sup>2</sup>, also less than the 19.30 m<sup>2</sup> obtained. In this sense, the new Decree

extends the useful surfaces per person with respect to the prototypes made in the years prior to the approval of the new habitability regulations.

**Table 7.** Comparative between minimum surface definition in article 5 and the minimum basic programme in chapter III-B.4.

Type	A (1D)	B (1D)	C (2D)	D (2D)	E (3D)	F (3D)	G (4+D)	H (4+D)
Occupants	1	2	3	4	5	6	7	8
Limit for substandard housing General	25	35	50	60	70	80	90	100
Limit for substandard housing Endowment	20	30	45	55	65	75	85	95
Minimum programme area Endowment	20	25	40	40	-	-	-	-
Minimum m <sup>2</sup> per person Endowment	20	12.5	13.33	10	-	-	-	-
Maximum programme area General	60	60	70	70	90	90	120	120
Maximum programme area Endowment	25							

#### 4.4.3. Minimum Housing in Europe

At this point, we can see how in other regulations at the European level, the minimum dimensions of dwellings differ from those proposed by the new Decree, especially with regard to low-occupancy housing with one or two inhabitants. While in Switzerland [54,55] the minimum is 40 m<sup>2</sup>, in France it is 14 m<sup>2</sup>. Tables 8 and 9 show two of the models studied as the most representative ones.

**Table 8.** Swiss dwelling definitions [55].

Type	A	B	C	D	E	F	G	H
N rooms without K and WC	1	2	3	3	4	4	5	5
Occupants	1	2	3	4	5	6	7	8
Individual rooms	-	14	24	28	36	40	48	52
Shared rooms	-	18	19	20	21	22	23	24
Kitchen modules	4 to 5	4 to 5	5 to 6	5 to 6	6 to 7	6 to 7	7 to 8	7 to 8
WC and [m <sup>2</sup> ]	3	3	4.5	4.50	6.5	6.5	6.5	6.5
WC separated	no	no	no	no	yes	yes	yes	yes
Minimum surface	40	50	60	70	80	90	100	110
Maximum surface	40	55	66	77	88	99	110	121

**Table 9.** French dwelling definition [56]. Surfaces and volumes per person and type.

Type	A	B	C	D	E	F	G	H
Occupants	1	2	3	4	5	6	7	8
Minimum surface	14	28	42	56	66	76	86	96
Minimum volume	33	66	99	132	155	178	201	224
m <sup>2</sup> per person	14	14	14	14	13.2	12.97	12.29	12
m <sup>3</sup> per person	33	33	33	33	88	99	110	121

Figure 5 compares these regulations graphically.

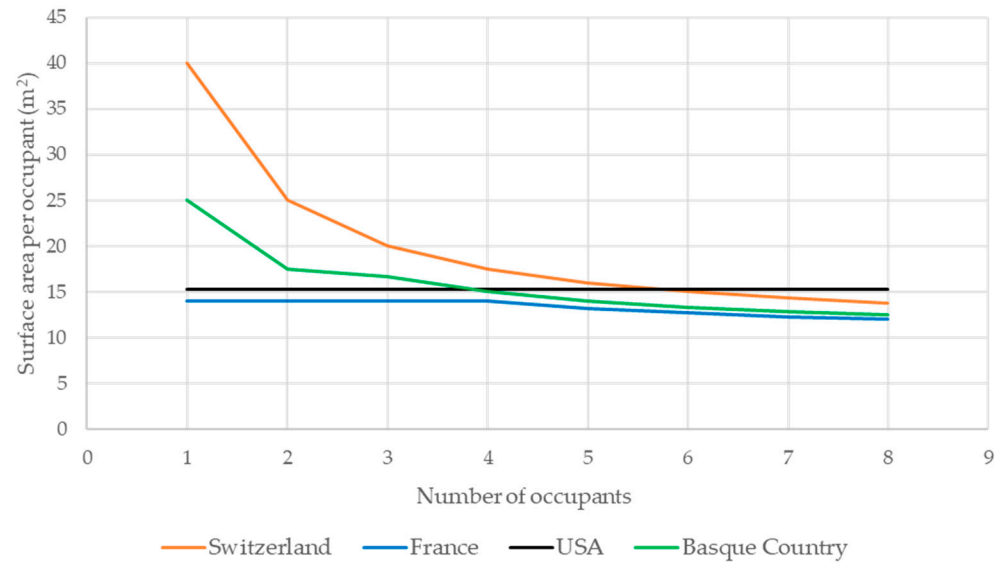


Figure 5. Comparative graph of minimum surface area per inhabitant in the analysed standards.

Analysing the following graph, we observe that it is in the interval  $(n, 1, 4), \dots$ , where we observe the greatest differences in space per person, going from 40 m<sup>2</sup> per person in the Swiss standard for single-person households to 14 square metres in the French standard. However, from four persons per household, a figure corresponding to the traditional family standard that is becoming less and less frequent, we see how the variations are reduced to a minimum, tending to stabilise around 13.56 square meters per person.

Temporary housing adapted to the new housing needs follows a unique trend both nationally and internationally, and its characteristics are included in the various regulations governing social housing. However, as it is a new typology in the process of premature maturation, there are still discrepancies regarding the quantification of minimum housing (Table 10). Considering the surface area or living space as a principle of quality, the problem is studied reduced to a unitary criterion, i.e., how much space the individual needs to lead a full, dignified, and healthy life.

Table 10. Living space per person [m<sup>2</sup> per person], according to different regulations.

Type	A	B	C	D	E	F	G	H
Occupants	1	2	3	3	4	4	5	5
Switzerland (S) <sup>1</sup>	40	25	20	17.5	16	15	14.29	13.75
France (F) <sup>2</sup>	14	14	14	14	13.2	12.67	12.29	12
United States (US) <sup>3</sup>	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3
Basque Country <sup>4</sup>	25	17.5	16.67	15	14	13.33	12.86	12.5
>m <sup>2</sup> per person	40 (S)	25 (S)	20 (S)	17.5 (S)	16 (S)	15.3 (US)	15.3 (US)	15.3 (US)
<m <sup>2</sup> per person	14 (F)	14 (F)	14 (F)	14 (F)	13.2 (F)	12.67 (F)	12.29 (F)	12 (F)
Maximum difference	26	11	6	3.5	2.8	2.63	3.01	3.3

<sup>1</sup> Directive 1.3. Loi du 9 septembre 1975 sur le logement (LL) [54]. Aide à la Pierre linéaire. Conditions techniques. Services de l'économie, du logement et du tourisme (SELT); 2011. <sup>2</sup> Code de la construction et de l'habitation [56]; version 2022. <sup>3</sup> Measuring Overcrowding in Housing. US Department of Housing and Urban Development Office of Policy Development and Research; 2007 [57]. <sup>4</sup> Decreto 28/2022, de 28 de junio, por el que se regulan las condiciones mínimas de habitabilidad y normas de diseño de las viviendas y alojamientos dotacionales en la Comunidad Autónoma del País Vasco [13].

## 5. Discussion and Conclusions

This article presents the new Decree on Habitability of the Basque Country and delves into the most relevant aspects, and also presents to the academic community one of the typologies that will mark public housing policy in the Basque Country in the immediate future.

The Housing Department of the Basque Government, both through its direct action and other public companies devoted to housing developments, is immersed in updating its housing policies. The new typology of *Alojamientos Dotacionales* is an attempt to adapt to the changes observed in terms of the decrease in the size of housing, new cohabitation forms, and other current problems linked to housing, such as rental policies.

The experience carried out over more than a decade in the development of temporary housing typologies, adapted to urban plots destined for endowment uses (public residential), has served as the basis for the drafting of a new Decree on temporary housing. The complex regulatory framework and the implications of the definition of minimum housing and its geometric characteristics (for both public and private housing) have meant that the development has been prolonged over time. In any case, a new concept of housing with strong social implications is regulated: temporary housing, reduced in size. This reduced size is associated with a series of risks, such as overcrowding and the previously studied overheating [58,59]. Although this is a problem that is difficult to evaluate from an architectural point of view alone, it is clear that it is easier for a small dwelling to suffer from this problem than a large one.

Other issues that can arise from the reduction in housing size are the proliferation of single-facing units, with difficulties in terms of proper natural ventilation and the greater likelihood of overheating problems, as well as the high cost of these units due to the ratio of technical rooms and common elements to usable living space.

In any case, the new Decree represents a step forward in matters such as improved orientation, the extension of the surface area of outdoor spaces for priority uses, design including gender perspective, and universal accessibility. Apart from the geometrical aspects, other social implications are also important, for example the need to cater to the recipients of the temporary housing after the end of the temporary cycle, currently set at five years.

Time will allow us to know the physical materialisation of the provisions of the new Decree, and future analyses will allow us to quantitatively and qualitatively assess the impact of this piece of legislation on the design and construction of residential buildings in the Basque Country. Typological analysis, as a tool of the architectural discipline, will allow us to assess the effectiveness of the new Decree in favouring housing adapted to our times, and to what extent the legislator's intentions in terms of gender equality or gender perspective will produce an architecture that is truly in line with these aims.

Once the new Basque Country Decree and the typology of temporary accommodation are released, avenues will open up for future research involving the evaluation of the new exterior spaces attached to the dwelling that will arise from this piece of legislation.

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## References

1. Constitución Española, Cortes Generales, Madrid. 1978. Available online: <https://www.boe.es/buscar/act.php?id=BOE-A-1978-31229> (accessed on 17 November 2022).
2. Alcocer, A.A.; Alcaraz, A.C.; Maruri, N. Lugares sin Nombre. Dignidad, Habitabilidad y Sostenibilidad, Sociabilidad y Hedonism. *Temas Arquít.* **2015**, *18*, 13–15.
3. Navas-Martín, M.; Oteiza, I.; Cuervo-Vilches, T. Dwelling in times of COVID-19: An analysis on habitability and environmental factors of Spanish housing. *J. Build. Eng.* **2022**, *60*, 105012. [CrossRef]
4. Cuervo-Vilches, T.; Navas-Martín, M.; Oteiza, I. Working from Home: Is Our Housing Ready? *Int. J. Environ. Res. Public Health* **2021**, *18*, 7329. [CrossRef] [PubMed]
5. Soler-Montellano, A. Housing flexibility by spatial indeterminacy: The case of the Casa de las Flores in Madrid. *Int. J. Archit. Res. Archmet* **2015**, *9*, 4–19. [CrossRef]
6. Dirección General de Arquitectura. Observatorio de Vivienda y Suelo. Boletín Especial Censo 2011—Parque Edificatorio, Madrid. 2014. Available online: <https://cvp.mitma.gob.es/observatorio-de-vivienda-y-suelo-bolet%C3%ADn-especial-censo-2011-parque-edificatorio> (accessed on 17 November 2022).
7. Whitehead, C.; Scanlon, K. *Social Housing in Europe*; London School of Economics and Political Science: London, UK, 2007.
8. Munárriz, Á. El Alquiler Avanza en España y ya Alcanza un Cuarto de la Población Pese al Histórico Déficit de Ayudas, InfoLibre. 2022. Available online: [https://www.infolibre.es/politica/alquiler-avanza-espana-llega-cuarto-poblacion-pese-historico-deficit-ayudas\\_1\\_1216368.html](https://www.infolibre.es/politica/alquiler-avanza-espana-llega-cuarto-poblacion-pese-historico-deficit-ayudas_1_1216368.html) (accessed on 17 November 2022).
9. López-Rodríguez, D.; de los Llanos Matea, M. La Intervención Pública en el Mercado del Alquiler de Vivienda: Una Revisión de la Experiencia Internacional. Documentos Ocasionales No. 2002; Madrid, Spain. 2020. Available online: <https://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesSeriadadas/DocumentosOcasionales/20/Fich/do2002.pdf> (accessed on 17 November 2022).
10. Vasco, G. Plan Director de Vivienda 2018–2020. 2018. Available online: [https://www.etxebide.euskadi.eus/x39-ovad01/es/contenidos/informacion/ovv\\_pdv\\_2018\\_2020/es\\_def/index.shtml](https://www.etxebide.euskadi.eus/x39-ovad01/es/contenidos/informacion/ovv_pdv_2018_2020/es_def/index.shtml) (accessed on 23 November 2022).
11. García-Astrain, P. Beyond the controversy: The draft decree of habitability and rules for the design of housing in the autonomous community of the Basque Country. *Ciudad. Y Territ. Estud. Territ.* **2020**, *52*, 139–150. [CrossRef]
12. Las Mujeres Dedicar el Doble de Tiempo a las Tareas Domésticas que los Hombres en la C.A.P.V., Eustat (Instituto Vasco de Estadística) Press Release. 2016. Available online: [https://www.eustat.eus/elementos/ele0013200/las-mujeres-dedicar-el-doble-de-tiempo-a-las-tareas-domesticas-que-los-hombres-en-la-ca/not0013296\\_c.html](https://www.eustat.eus/elementos/ele0013200/las-mujeres-dedicar-el-doble-de-tiempo-a-las-tareas-domesticas-que-los-hombres-en-la-ca/not0013296_c.html) (accessed on 17 November 2022).
13. Rentería, I.U. Decreto 80/2022, de 28 de junio, de Regulación de las Condiciones Mínimas de Habitabilidad y Normas de Diseño de las Viviendas y Alojamientos Dotacionales en la Comunidad Autónoma del País Vasco, Gobierno Vasco, Vitoria-Gasteiz. 2022. Available online: <https://www.euskadi.eus/bopv2/datos/2022/09/2203803a.pdf> (accessed on 17 November 2022).
14. Clark-Foulquier, C.; Causse, E.; Newey, M.; Kaakinen, J.; Sumeghy, G.; Kulenovic, S.; Unterholzner, D.; Mallants, B.; van Vooren, D.; Nasarre-Aznar, S.; et al. 50 Out-of-the-Box Housing Solutions to Homelessness & Housing Exclusion. 2019. Available online: [www.housing-solutions-platform.org](http://www.housing-solutions-platform.org) (accessed on 17 November 2022).
15. Moya, L. *VR. Vivienda Reducida*; Mairera: Madrid, Spain, 2007.
16. Strandell, H.; Wolf, P. (Eds.) *Key Figures on Europe. Statistics Illustrated: 2019 Edition*; Publications Office of the EU: Luxembourg, 2019. [CrossRef]
17. Censos de Población y Viviendas 2011. Resultados Definitivos. 2011. Available online: [https://www.ine.es/censos2011\\_datos/cen11\\_datos\\_microdatos.htm](https://www.ine.es/censos2011_datos/cen11_datos_microdatos.htm) (accessed on 17 November 2022).
18. Encuesta Continua de Hogares (ECH). Año 2020., Nota de Prensa Del Instituto Nacional de Estadística. 2021, pp. 1–9. Available online: [https://www.ine.es/prensa/ech\\_2020.pdf](https://www.ine.es/prensa/ech_2020.pdf) (accessed on 17 November 2022).
19. Alokabide. Sociedad pública de alquiler del Gobierno Vasco, (n.d.). Available online: <https://www.alokabide.euskadi.eus/inicio> (accessed on 23 November 2022).
20. Bizigune, P. Tranquilidad. Seguridad. Confianza. Manual de la Persona Propietaria, Alokabide. (n.d.). Available online: [https://www.alokabide.euskadi.eus/contenidos/informacion/aa10\\_documentos/es\\_def/adjuntos/bizigune/Informacion-del-programa-y-manual/Manual-de-la-personas-propietaria-ES.pdf](https://www.alokabide.euskadi.eus/contenidos/informacion/aa10_documentos/es_def/adjuntos/bizigune/Informacion-del-programa-y-manual/Manual-de-la-personas-propietaria-ES.pdf) (accessed on 23 November 2022).
21. Censos de Población y Viviendas 2001. Resultados Definitivos. 2001. Available online: <https://www.ine.es/censo/es/inicio.jsp> (accessed on 17 November 2022).
22. Kotzeva, M. *Eurostat Regional Yearbook 2021 Edition*. Luxembourg. 2021. Available online: <https://op.europa.eu/en/publication-detail/-/publication/b95b8f93-227b-11ec-bd8e-01aa75ed71a1/language-en> (accessed on 17 December 2022).
23. Mendiola, A. Euskadi Cuenta con el Segundo Parque Público de Vivienda en Alquiler más Importante de España, Crónica Vasca. 2020. Available online: [https://www.cronicavasca.com/economia/euskadi-cuenta-con-segundo-parque-publico-vivienda-en-alquiler-mas-importante-espana\\_416712\\_102.html](https://www.cronicavasca.com/economia/euskadi-cuenta-con-segundo-parque-publico-vivienda-en-alquiler-mas-importante-espana_416712_102.html) (accessed on 17 November 2022).

24. Renteria, I.U. Ley 3/2015, de 18 de Junio, de Vivienda., Parlamento Vasco—Eusko Jaurlaritza, Vitoria-Gasteiz. 2015. Available online: [https://www.boe.es/diario\\_boe/txt.php?id=BOE-A-2015-7802](https://www.boe.es/diario_boe/txt.php?id=BOE-A-2015-7802) (accessed on 17 November 2022).
25. Markuartu, J.I. Ley 2/2006, de 30 de Junio, de Suelo y Urbanismo., Parlamento Vasco—Eusko Jaurlaritza, Vitoria-Gasteiz. 2006. Available online: <https://www.boe.es/buscar/doc.php?id=BOE-A-2011-17400> (accessed on 17 November 2022).
26. The Sustainable Development Agenda—United Nations Sustainable Development, (n.d.). Available online: <https://www.un.org/sustainabledevelopment/development-agenda/> (accessed on 20 December 2022).
27. THE 17 GOALS | Sustainable Development, (n.d.). Available online: <https://sdgs.un.org/goals> (accessed on 20 December 2022).
28. Goal 6 | Department of Economic and Social Affairs, (n.d.). Available online: <https://sdgs.un.org/goals/goal6> (accessed on 20 December 2022).
29. Goal 7 | Department of Economic and Social Affairs, (n.d.). Available online: <https://sdgs.un.org/goals/goal7> (accessed on 20 December 2022).
30. Goal 11 | Department of Economic and Social Affairs, (n.d.). Available online: <https://sdgs.un.org/goals/goal11> (accessed on 20 December 2022).
31. An Urbanizing World. *Global Report on Human Settlements 1996*; Oxford University Press, 1996. Available online: <https://mirror.unhabitat.org/downloads/docs/GRHS.1996.0.pdf> (accessed on 19 December 2022).
32. Arriola, I. ORDEN de 3 de Noviembre de 2010, del Consejero de Vivienda, Obras Públicas y Transportes, Sobre Determinación de los Precios Máximos de las Viviendas de Protección Oficial, Gobierno Vasco, Vitoria-Gasteiz. 2010. Available online: <https://www.euskadi.eus/y22-bopv/es/p43aBOPVWebWar/VerParalelo.do?cd2010005448> (accessed on 17 November 2022).
33. Arriola, I. ORDEN de 30 de Junio de 2022, del Consejero de Planificación Territorial, Vivienda y Transportes, Sobre Determinación de los Precios y Rentas Máximas de las Viviendas de Protección Pública y el Canon de los Alojamientos Dotacionales, Gobierno Vasco, Vitoria-Gasteiz. 2022. Available online: <https://www.euskadi.eus/bopv2/datos/2022/07/2203202a.pdf> (accessed on 17 November 2022).
34. Ley 7/1985, de 2 de abril, Reguladora de las Bases del Régimen Local, Jefatura del Estado, Madrid. 1985. Available online: <https://www.boe.es/buscar/act.php?id=BOE-A-1985-5392> (accessed on 23 November 2022).
35. When do Young People Leave the Nest? Eurostat—*Estimated Average Age of Young People Leaving the Parental Household by Sex*. 2021. Available online: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20210812-1> (accessed on 17 November 2022).
36. Censos de Población y Viviendas 1991. Resultados Definitivos. 1991. Available online: <https://www.ine.es/censo91/es/inicio.jsp> (accessed on 17 November 2022).
37. Viviendas y Edificios, (n.d.). Available online: [https://www.eustat.eus/estadisticas/opt\\_0/tema\\_437/ti\\_Viviendas\\_y\\_Edificios/temas.html](https://www.eustat.eus/estadisticas/opt_0/tema_437/ti_Viviendas_y_Edificios/temas.html) (accessed on 23 November 2022).
38. Gobierno de España, Real Decreto Legislativo 7/2015, de 30 de Octubre, Por el Que se Aprueba el Texto Refundido de la Ley de Suelo y Rehabilitación Urbana, Gobierno de España. 2015. Available online: <https://www.boe.es/buscar/doc.php?id=BOE-A-2005-12049> (accessed on 17 November 2022).
39. Markuartu, J.I. Decreto 68/2000, de 11 de Abril, Por el que se Aprueban las Normas Técnicas sobre Condiciones de Accesibilidad de los Entornos Urbanos, Espacios Públicos, Edificaciones y Sistemas de Información y Comunicación, Gobierno Vasco, Vitoria-Gasteiz. 2000. Available online: <https://www.legegunea.euskadi.eus/eli/es-pv/d/2000/04/11/68/dof/spa/html/webleg00-ctnfich/es/> (accessed on 18 November 2022).
40. CTE DB SUA—Seguridad de Utilización y Accesibilidad, Ministerio de Transportes, Movilidad y Agenda Urbana, Madrid. 2022. Available online: <https://www.codigotecnico.org/pdf/Documentos/SUA/DBSUA.pdf> (accessed on 18 November 2022).
41. Paricio, I. La Norma o la Vida, *Arquitectura Viva*. 2007, p. 21. Available online: <https://arquitecturaviva.com/publicaciones/av/vivienda-normal> (accessed on 17 November 2022).
42. Rico-Martínez, J.; González-Quintanilla, F. *Habitar en Madera. Guía Para la Construcción en Madera de Alojamientos Dotacionales*, 1st ed.; Servicio Editorial de la Universidad del País Vasco: Leioa, Spain, 2022.
43. World Health Organization (WHO). Recommendations to Promote Healthy Housing for a Sustainable and Equitable Future. 2018. Available online: <https://www.who.int/publications/i/item/9789241550376> (accessed on 23 November 2022).
44. Children Living in Homes with Problems of Damp. 2009. Available online: [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0005/97007/3.5.-homes-with-problems-with-damp-EDITING\\_layouted\\_V2.pdf](https://www.euro.who.int/__data/assets/pdf_file/0005/97007/3.5.-homes-with-problems-with-damp-EDITING_layouted_V2.pdf) (accessed on 23 November 2022).
45. Deaths Involving COVID-19 by Local Area and Socioeconomic Deprivation—Office for National Statistics, (n.d.). Available online: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsinvolvingcovid19bylocalareasanddeprivation/latest> (accessed on 23 November 2022).
46. Inside Housing—News—Overcrowding has Affected Households' Ability to Protect Themselves during Pandemic, Study Finds, (n.d.). Available online: <https://www.insidehousing.co.uk/news/news/overcrowding-has-affected-households-ability-to-protect-themselves-during-pandemic-study-finds-69086> (accessed on 23 November 2022).
47. Better Housing is Crucial for our Health and the COVID-19 Recovery—The Health Foundation, (n.d.). Available online: <https://www.health.org.uk/publications/long-reads/better-housing-is-crucial-for-our-health-and-the-covid-19-recovery#1f-section-110861-anchor> (accessed on 23 November 2022).
48. Curl, A.; Kearns, A. Can housing improvements cure or prevent the onset of health conditions over time in deprived areas? Environmental health. *BMC Public Health* **2015**, *15*, 1191. [CrossRef] [PubMed]

49. Holt-Lunstad, J.; Smith, T.; Baker, M.; Harris, T.; Stephenson, D. Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review. *Perspect. Psychol. Sci.* **2015**, *10*, 227–237. [CrossRef] [PubMed]
50. Brandily, P.; Brébion, C.; Briole, S.; Khoury, L. A Poorly Understood Disease? The Unequal Distribution of Excess Mortality Due to COVID-19 Across French Municipalities\*. *MedRxiv* **2020**. [CrossRef]
51. The state of Housing in Europe in 2021 | Housing Europe, (n.d.). Available online: <https://www.housingeurope.eu/resource-1540/the-state-of-housing-in-europe-in-2021> (accessed on 23 November 2022).
52. Is your Home too Crowded?—Products Eurostat News—Eurostat, (n.d.). Available online: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20200422-1> (accessed on 23 November 2022).
53. Gove, W.; Hughes, M.; Galle, O. Overcrowding in the Home: An Empirical Investigation of Its Possible Pathological Consequences. *Am. Soc. Rev.* **1979**, *44*, 59. [CrossRef]
54. Loi du 9 Septembre 1975 sur le Logement, Canton de Vaud, Lausanne. 1975. Available online: [https://www.vd.ch/fileadmin/user\\_upload/themes/vie\\_privree/logement/fichiers\\_pdf/directive\\_1-3\\_lineaire\\_cond-techniques\\_lineaire.pdf](https://www.vd.ch/fileadmin/user_upload/themes/vie_privree/logement/fichiers_pdf/directive_1-3_lineaire_cond-techniques_lineaire.pdf) (accessed on 23 November 2022).
55. Ordonnance Concernant la Surface Nette Habitable, le Nombre et la Dimension des Pièces (programme), L'aménagement de la Cuisine et L'équipement Sanitaire du 12 mai 1989 (Etat le 1 er Janvier 2013), Le Département Fédéral de L'économie, de la Formation et de la Recherche. 1989. Available online: [https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/1989/1202\\_1202\\_1202/20130101/fr/pdf-a/fedlex-data-admin-ch-eli-cc-1989-1202\\_1202\\_1202-20130101-fr-pdf-a.pdf](https://fedlex.data.admin.ch/filestore/fedlex.data.admin.ch/eli/cc/1989/1202_1202_1202/20130101/fr/pdf-a/fedlex-data-admin-ch-eli-cc-1989-1202_1202_1202-20130101-fr-pdf-a.pdf) (accessed on 23 November 2022).
56. Code de la Construction et de L'habitation—Légifrance, (n.d.). Available online: <https://www.legifrance.gouv.fr/codes/id/LEGITEXT000006074096/> (accessed on 23 November 2022).
57. Blake, K.; Kellerson, R.; Simic, A. Measuring Overcrowding in Housing, Fairfax. 2007. Available online: [https://www.huduser.gov/publications/pdf/measuring\\_overcrowding\\_in\\_hsg.pdf](https://www.huduser.gov/publications/pdf/measuring_overcrowding_in_hsg.pdf) (accessed on 23 November 2022).
58. Otaegi, J.; Hernández, R.; Oregi, X.; Martín-Garín, A.; Rodríguez-Vidal, I. Comparative Analysis of the Effect of the Evolution of Energy Saving Regulations on the Indoor Summer Comfort of Five Homes on the Coast of the Basque Country. *Buildings* **2022**, *12*, 1047. [CrossRef]
59. Vidal, I.; Otaegi, J.; Oregi, X. Thermal Comfort in NZEB Collective Housing in Northern Spain. *Sustainability* **2020**, *12*, 9630. [CrossRef]

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