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Analysis and interpretation of public space in the city of Valladolid

I. INTRODUCTION: CITY AND PUBLIC SPACE

Defining urban public space is a complex task, especially if we take into account all the dimensions that this concept encompasses. Its definition has been approached from different disciplines such as urbanism, sociology, geography, architecture, anthropology, etc. All of them having in common the references to the vital functions of space, as well as the possibilities of use by citizens.

Public space is the category of urban space that includes the road network, the park and garden system and urban free spaces, without forgetting its social, collective, or shared representation, with well-defined functions that distance it of its consideration as residual space. In these definitions of public space in the city, its political and social content and issues around its use, its appropriation or representations are always highlighted, in a clear contrast between planned space and lived space. A dichotomy between what is designed and how it is lived and used, where the concepts of accessibility and activity come into consideration: in short, public spaces are the places where people interact, walk, shop, talk to each other, etc.

Private vehicles and the abusive use of the terraces are just two great examples of the privatisation of public spaces in the city, to the detriment of the collective and meeting use that should characterise them.

To achieve a real analysis and interpretation of public space means having to address the multiple dimensions and functions that define it, only in this way will it be possible to have a better understanding of urban dynamics, as well as the needs of the people who inhabit the city. The construction of a methodology for the study and valuation of public spaces must take into account their physical and urban characteristics as well as their uses and social meanings.

II. ANALYSIS AND INTERPRETATION OF PUBLIC SPACES: METHODOLOGICAL ISSUES

1. THE CALCULATION OF LAND USE INDICES AT THE NEIGHBOURHOOD LEVEL

The method used for the analysis and interpretation of urban public space has to do, firstly, with the identification and calculation of what has been agreed to be called land occupation indices, at the area or neighbourhood scale (public space context), including building or housing density, absolute compactness and corrected compactness.

To calculate the building or housing density, the number of dwellings has been related to the total area of the neighbourhood in hectares, using a reference grid of 100 by 100 meters. This index makes it possible to measure the built area, the spatial characteristics, and the land use pattern. Recommendations regarding this index vary: thus, a minimum building density would be between 45 and 80 homes per hectare, while a desirable building density would be between 80 and 100 homes per hectare. Other authors, however, add a percentage of surface to

define the minimum and desirable objective: more than 80 houses per hectare over 50 % of the surface and more than 80 houses per hectare over 75 % of the surface, respectively.

To calculate the compactness index, the built volume, in cubic meters, has been related to the surface, in square meters, in a reference mesh of 200 by 200 meters. Absolute compactness defines the configuration of the public spaces in a given area, the proportionality between these free spaces and the built space, measures the urban physical structure and allows to know more in detail the congestion of the analysed neighbourhoods. In some reference works consulted, values of compactness higher than 5 meters and never higher than 7.5 are recommended. However, other documents relate the values to minimum surface parameters: the lowest absolute compactness values would be related to a dispersed neighbourhood model, with most single-family homes; while higher values would mean more intense occupation.

Corrected compactness, on the other hand, is an index which, as its name indicates, significantly qualifies the previous one, since it compares the volume built only with the mitigating public space, that is, with the public space that allows the relationship between people with green, living and recreational spaces. This index allows knowing the degree of balance between building density and the surface of living spaces, squares, sidewalks, green areas, etc. In this respect, built space should be understood as a pressure factor and open spaces as a means of decompression.

2. THE DIVERSITY OF PHYSICAL INDICATORS AND THEIR MEASUREMENT ON A SQUARE SCALE

Besides to the calculation of housing density, absolute compactness corrected in the neighbourhood context, a series of physical indicators are used and measured on a scale square/ public space, which are related to the distribution of roads and the elements and infrastructures present in each specific place analysed.

The first indicators to be calculated are those related to the distribution of public roads between automobile traffic, parking, and pedestrian use. These calculations will later be used to assess the accessibility and privatisation of the square / public space in question. The percentage of public roads used for car traffic and parking is a form of privatisation of public space, with the understanding that a larger surface area for vehicles worsens the quality of public space, making pedestrian mobility and daily journeys more difficult, thus reducing people's interaction.

Regarding the elements and infrastructures present in the square, the indicators consist of counting the number of benches and measuring the surface occupied by them, the number of trees and tree pits, the streetlights, the green areas, and the children's play areas, both in relation, to the total area of the square.

About public roads for private use, the proposed indicators are related to the calculation of the surface area of the privatised public space in relation to the total area of the square, understanding public space privatisations as terraces, to car parks and the road surface reserved for the circulation of private vehicles. Something similar occurs with the measurement of the indicators referring to the public roads for shops and public facilities, where the proportion of surfaces occupied by this type of facilities and services is linked, based on the overall number of residents in the square, to the total space occupied by the square as a public space to be considered.

3. THE DIAGNOSIS OF THE SOCIAL DIMENSION IN THE LIGHT OF FIELD WORK

Fieldwork is discovered as a fundamental research phase. A powerful process of citizen participation is encouraged, which is consubstantial to the interpretation of the social dimensions of public space and where work with neighbourhood associations, citizen surveys and interviews, as well as collaborative maps become essential tools for diagnosing the situation.

4. THE ASSESSMENT OF THE QUALITIES OF PUBLIC SPACE

The first one refers to the capacity of public spaces to facilitate socialisation and gathering of people. There are many factors that influence this quality of places: the facilities, the location or the activities that take place around the square and that make it a meeting place for the inhabitants of the neighbourhood. These are elements that make the street a living place, being essential for maximizing the use of public spaces.

The perception of safety and fear in the city, as the second quality of public spaces, is complex to analyse, having to be evaluated from different experiences, with

special emphasis on the gender perspective. Fear affects the use and enjoyment of public space, particularly in the case of women. The physical aspects and social dimensions to consider when assessing the safety of public space are lighting (streetlights), the presence of people during the day and at night, the possibility of seeing and being seen and the monopolisation of the space by a particular group.

Starting from the premise that urban mobility is a right, pedestrian, public transport and bicycle accessibility to public spaces is a third fundamental quality so that they can be enjoyed; In the same order, two other related criteria should be considered: permeability, which refers to the connections and transit routes between different places, and proximity, considered by some authors to be one of the most influential factors in the use of public spaces.

Regarding the fourth of the qualities mentioned, the degree of privatisation of public spaces, it goes without saying that these have been undergoing an intense process of appropriation for years, in which the citizen has become a mere consumer and urban life a product. The most obvious examples of this privatisation have been the proliferation of terraces on public streets and, of course, the invasion of private vehicles, in terms of traffic and parking spaces.

III. PUBLIC SPACE IN THE CITY OF VALLADOLID: A CASE STUDY

1. THE SELECTION OF THE STUDY SPACE

The central part of this article delves into the application of the proposed methodology to a square, understood as a public space, in the city of Valladolid; which is inserted, in turn, in one of the most characteristic areas or neighbourhoods of its urban structure: the Ribera de Castilla square, in the Rondilla neighbourhood.

The study area was selected for several reasons. In the first place, because of the uniqueness of this neighbourhood, as it is an area with an urban morphology, structure, history and population, commercial and neighbourhood dynamics with its own identity throughout the city. Secondly, because of the response and very active activity of the neighbourhood association. And, thirdly, because the analysed square is the most important public space in the neighbourhood, being the only practically existing free space in La Rondilla.

2. LA RONDILLA: THE RIBERA DE CASTILLA SQUARE

A) The Rondilla neighbourhood: general features and land use indexes

The Rondilla neighbourhood was formed in the 1960s, as a result of industrial development, in the northern part of the city of Valladolid. Its urban structure reflects the intense process of population growth experienced by Valladolid between 1950 and 1985.

La Rondilla has a total building density of 143.10 homes per hectare. The highest percentage of built area is for residential use (84%), followed by industrial and commercial uses (3.2% and 3%, respectively). As for the space occupied by leisure and hospitality uses barely accounts for 0.82% of the total built area of the neighbourhood. In terms of population, in 2016 the number of residents was 21,936, with 51.3% of the registered residents aged over 50 years and 30% of the population over 65 years of age. The aging rate is 27.5% and the foreign immigration rate is almost 7%.

In terms of mobility, the shortage of parking spaces is estimated at around 600, a clear conflict between vehicles, parking lots and pedestrians. According to own calculations made in the neighbourhood, 20% of the public space is road, 9% parking and 70% pedestrian space (31% of which corresponds to the Ribera de Castilla park).

In order to a better understanding of the land occupation model in La Rondilla neighbourhood, the three indices referred to in the methodological section have been calculated. The first of them is building density. According to the data obtained, 53.49% of the surface of the study area has a building density higher than 85 homes per hectare, with 14.84% and 24.76% of surface, respectively, in figures by over 150 and 250 homes per hectare; these sectors are most congested sectors are in the central part of the neighbourhood, which is to the detriment of quality public space.

The second index to consider is that of absolute compactness. In almost 35% of the area of the neighbourhood, minimum values of less than 5 meters are obtained, especially in the margins, around the Ribera de Castilla square and the public spaces (seminary, civic centre), but in 15.61 % of the surface, again in the most internal sectors, the results clearly point to an excess of pressure of the built fabric, in figures that exceed 7.5 meters, the maximum threshold considered acceptable.

Almost 50% of the surface of the Rondilla neighbourhood has a compactness corrected between 10 and 50

meters, values considered as admissible, although 9.14 % of the surface is above 50 meters, which indicates a very compact urban model: narrow streets, poor distribution of public space for pedestrians and little lack decompression of the urban fabric.

B) The Ribera de Castilla square and its physical indicators

The Ribera de Castilla square is the most important public space in La Rondilla; as well as the homonymous park, in its surroundings are located several of the most important facilities of the neighbourhood. With a total area of 20,456 square meters, the semi-pedestrian square, is crossed by a two-lane paved road, containing inside a children's play area, arcades, several commercial premises, trees, gardens, sidewalks, benches, bar terraces, parking lots and different shady spots.

Regarding the distribution of the public road between traffic, parking, and pedestrians, 2.55 % of the square is occupied by a street with two-way traffic, 11.48 % by various parking areas and the remaining 85.96 % is reserved for exclusively pedestrian use; parameters that can be considered highly recommended and that move this space away from the image of greater congestion that characterises the inner part of the neighbourhood.

The Ribera de Castilla square has 195 trees, 2 public fountains and an ornamental one, 69 benches and 72 lampposts, as well as a bicycle loan point and a bus stop. It also has a garden with an area of 2,792 square meters and a small children's playground of 1,141 square meters. The number of seats is adequate, 1 public seat for every 66.20 square meters, and the number of trees and the location of the benches guarantee shady spots for hot days.

The calculation of the privatised area, that is, the percentage of public space occupied by the road for traffic, parking and terraces is really low, 15.85 %; despite the fact that for every public seat (bench) there are 1.62 private terrace seats. In addition, the layout of the terraces does not hinder the activities that can be carried out in the square, since they are located on the perimeter of it, leaving the centre for stay, benches, gardens, and children's play area.

The same interest has the quantification of the public space for commerce and equipment. In the Ribera de Castilla square the values resulting from the commercial area per resident are very low (0.69 square meters of commerce and catering sector area per inhabitant), which means little activity in this regard. However, if the computed surfaces consider the surfaces dedicated to public use —facilities that provide vitality to the public space—, the figures are significantly higher (4.98 square meters of non-residential or industrial uses per inhabitant). Of the existing commercial premises, almost half are empty now, the most repeated type of activity being that of the bar / inn followed by the hairdressers.

Finally, it is worth mentioning that in the surroundings of the Ribera de Castilla square there are three large facilities of undoubted interest in terms of their interaction with the public space, since they generate many daily journeys in the environment. These facilities are the Ribera de Castilla sports facilities (sports centre and municipal swimming pool), the Rondilla Health Centre 2 and the social services building where the Rondilla-Santa Clara I Social Action Centre and the Rondilla Centre for the Elderly are located.

C) Citizen participation and the diagnosis of the social dimension

The work with the neighbourhood associations, the observation visits, the surveys and interviews and the collaborative mapping have been decisive in understanding the social characteristics, problems, and proposals for improving the public space, as they are perceived by its users and by residents of the neighbourhood, in general.

D) The qualities of the Ribera de Castilla square

The location in the surroundings of the square of several fundamental public facilities, on a neighbourhood scale, such as the health centre, the centre for the elderly, the social action centre, the municipal swimming pools, and the sports centre, guarantees the presence of people and the encounter of them through the daily journeys that are generated. For its part, the elements, and infrastructures it has (benches, playgrounds, garden area, etc.) provide it with an important capacity for socialisation. In turn, the presence of terraces along the entire perimeter, without prejudice to privatizing the space, ensures the concurrence of people during the day and night, giving the place a sense of security. Accessibility is another important quality: there is enough road surface for pedestrians and mobility is ensured by public transport and by bicycle. In short, the Ribera de Castilla square is a high-quality public space, only clouded by commercial deficiencies and the absence of organised activities, for which it would be an extraordinary setting, thereby improving the levels of diversity (gaining attractiveness for certain age groups) and vitality that it suffers from.

CONCLUSIONS

(1) Effective analysis and interpretation of public space implies having to address the multiple dimensions and functions that define it; only in this way can urban dynamics and the needs of the people who live in the city be better understood.

(2) The construction of a methodology for the study and assessment of public spaces must take into account both their physical and urban characteristics —morphology— and their uses and social meanings, proceeding to a quantitative and qualitative evaluation of each of these dimensions from a series of indices, indicators, and qualities.

(3) It has been shown that the context diagnosis, at the neighbourhood level, is essential to understand the functioning and meaning of streets and squares as public roads of reference and relationship. The study on this scale guarantees attention to the particularities of each place. The selected land occupation indices have been a fundamental tool to understand the shape and physiognomy of urban areas and the internal distribution of free spaces.

(4) To the use and calculation of these indices is added the use and measurement of a series of physical indicators, at the scale of the square / public space, which are related to the distribution of the road and the elements and infrastructures present in each specific place analysed.

(5) Field observation, work with neighbourhood associations and the process of citizen participation - surveys and interviews and collaborative mapping - are essential to understanding the social dimensions of public space; evidencing, only in this way, the possible shortcomings and the differences found between some well-designed places from the urban point of view and the use and meaning that they really have for the neighbours.

(6) Studying the physical indicators and being able to contrast them with the social meaning and use that residents make of the place has been vital to being able to make an interpretation of it as closely as possible to reality. The selection of the qualities of the square as criteria for analysis has been fundamental to be able to assess its different facets and functions in its condition of public space.

(7) The work carried out has revealed the potential and weaknesses of the public space analysed. On the basis of this diagnosis, the most outstanding qualities should be exploited, and the weaknesses corrected and addressed: focusing on local commerce and encouraging organised activities to gain vitality and diversity, thus increasing the presence and meeting of people in the Ribera de Castilla Square.