

Impact of Building Regulation obligation for Recreational Area in Social Housing in Brazil

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Abstract

Building and Land Use Regulation have a profound impact over housing market. The city of Curitiba, Brazil using these mechanisms require residential constructions to destine from four until twelve square meters per housing unit for Recreational Use exclusively. In that regard this study evaluated the effect of this obligation in Social Housing in terms of sales value and area demand, according to the regulation of the city. A market research was taken, data were categorized and filtered to social housing. The result is that this demand impacts average 17% on the property sales value, which could be transformed in over 7 m of private area. Considering this and that the primary need of social housing is to guarantee the basic demand of shelter, it is concluded that this regulation must be reconsidered. Keywords: Social Housing; Building Regulations; Recreational Areas.

Introduction

Building Regulations interfere severely in architectural patterns, determining minimum indoor areas, as well as outdoor areas. Alongside, Land Use Regulation, also set the maximum density factor for housing units. All of this results in impacts over property value. This study analyses the consequences of Regulations in Social Housing, in the specific matter of Recreational Areas. It is restricted for the city of Curitiba, state of Paraná in Brazil, but many other cities follow this same regulation. This city was chosen because it is a pioneer in qualified Urban Planning in Brazil and sets trends to many other cities in the country and Latin America.

The goal of this study is to evaluate the influence of Regulations regarding Recreational Areas, at the final price of Social Housing. In Curitiba, for every housing unit it is determined by Decree that a specific area must be assigned to Recreational Use only. The size of this space is between 4- 12 m per housing unit [1]. The first time this request was mentioned was in 1988 by the n. 1/1988 Decree in the city of Curitiba and the parameters remain almost the same ever since. (Table 1)

Housing Type	Blocks per Lot	Housing Unit Private Area	Recreational Area
Houses	Over 4	Any dimension	12 m
Apartments	1	Over 30 m	9 m
Apartments	1	Until 30 m	4 m
Apartments	Over 1	Until 60 m	9 m
Apartments	Over 1	Over 60 m	12 m

Table 1. Parameters for Recreational Areas. Source Decree n. 1/1988. Curitiba, Paraná, Brasil.

Today, besides minimum areas, the Ordinance also determines minimum dimensions and prohibited places to this end. (Table 2). The radius of the Recreational Area it is minimum 1.5 meters and cannot be coincident with paths and circulations. Also, cannot be located at the setback of the lot. This demands noble land to be destined to this use. Finally, it must be at least 50% outdoor area and limited by architectural elements. [2]

The request for this specific area it is a result for the lack of Public Areas destined to leisure in Brazil. Public areas at the country usually come

from parceling and this procedure before 1979 was not regulated as it is today [3]. Apart from that, the areas that came from parceling many times were not in fact used for Recreational Areas such as Parks and Plazas. The consequence is that it is hard to find this kind of areas at the country, especially in lower income neighborhoods.

Housing Type	Blocks per lot	Housing Unit Private Area	Recreational Area
Houses	Over 5 until 20	Any dimension	9 m
Houses	Over 20	Any dimension	12 m
Apartments	Until 2	Over 30 m	9 m
Apartments	Until 2	Until 30 m	4 m
Apartments	Over 2	Until 60 m	9 m
Apartments	Over 2	Over 60 m	12 m

Table 2. Parameters for Recreational Areas. Source Decree n. 1020/2013. Curitiba, Paraná, Brasil.

An important issue is that Public Spaces destined to recreational use have a different impact at people’s lives than Private Spaces destined to the same end. As one promotes neighborhood safety, community social life, private spaces tend to stimulate social bubbles. Successful urban development is usually anchored around vital public spaces where people naturally want to gather: a crossroads or a main street, third place business, public market, waterfront wharf, library, rail station, campus, or civic square. These spaces become truly magnetic places as they provide purpose and meaning for broad groups of people they serve. [4]

Regarding the sizes and dimensions demands it is notable that the proportion of Recreational Areas is considerably big relating to Social Houses and does not necessarily result in a good quality space, as can be seen forward in this study.

Methods

The analysis of this subject was based on Real Estate that is being commercialized in Curitiba in August 2019. A market research was taken.

For the delimitation on what Social Housing is, it was used as a parameter the most popular Housing Program in Brazil, that is called “*Minha Casa, Minha Vida*”. It is a Social Housing Program that exists since 2009 [5] and it was responsible for over 75% of the houses built in Brazil in 2018 [6]. This Program sets maximum values for financing according to family’s income. Families attended by the Program have at the most a R\$ 7.000,00 family income and the units financed have a maximum sales price of R\$ 200.000,00 for the city of Curitiba. [5]

To evaluate values of the price per square meter, a market research was taken. Only the Real Estate offered at a maximum price of R\$ 200.000,00 was considered and only houses and apartments with maximum private area of 60 m . This was considered for being this size the notable area for social housing in Curitiba.

Considering this section, it was calculated the sales price of private area considering each category explained at the Table 3 and also sales price of the total area, the one that considers private, shared (among them Leisure Area) and garage areas.

Afterwards the sales price of Leisure Area was calculated and also compared to how much of private area that cost could be transformed in to.

Market Data

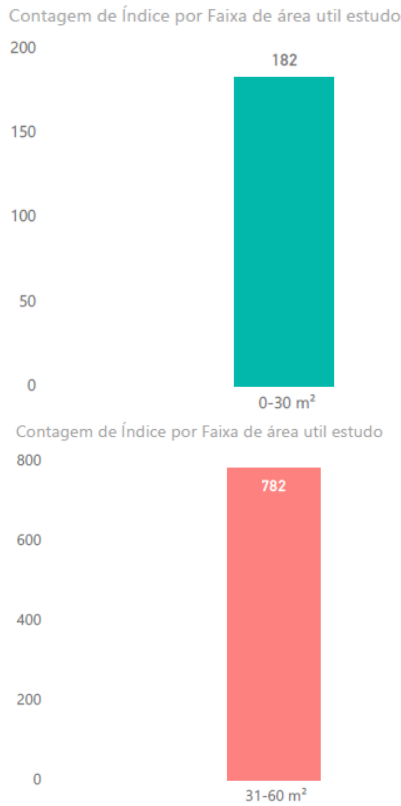
For this market research it was considered Real Estate available for purchasing in August 2019. Taking the Building Regulation that separates units in six categories. (Table 2), the analysis was split in this same classification. However, because this is a Social Housing related study, a section was made based on “*Minha Casa, Minha Vida*” program, see Graph 3. Categories that did not attend the R\$ 200.000,00 top price were disconsidered. Categories are presented as it follows:(Table 3)

Category Type	Housing Type	Housing Unit Size
House A	Houses	Until 59 m
Apartment A	Apartments	Until 30 m
Apartment B	Apartments	From 31 until 60 m

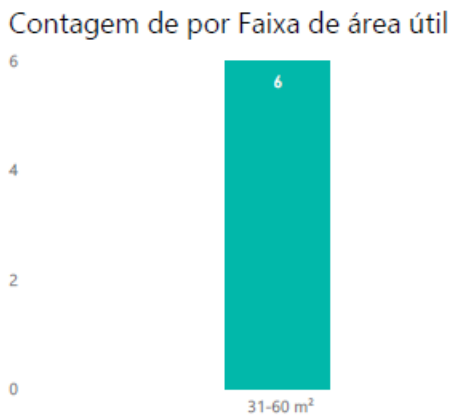
Table 3. Categories for Market Research

The research showed that 964 apartments were offered at a maximum price of R\$ 200.000,00,

between 0-60 m . They are distributed as it can be seen in the next Graph. (Graph 1). Nonetheless, houses at this same range had only 6 units available (Graph 2). This was considered a small sample and sales values not validated.



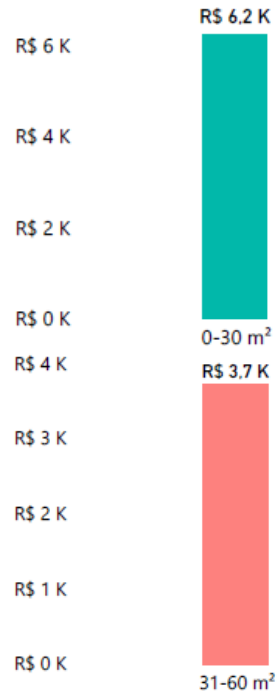
Graph 1: Number of Apartments researched by square meter



Graph 2: Number of Houses researched by square meter

Following, private and total area sales values were analyzed (Graph 3). Taking all of this into account, the average per square meter of

private area was as it follows in the next table. (Table 4)



Graph 3: Private Area Average Sales Value for Apartments according to private area

Category Type	Housing Unit Size	Average Price/ m of private area
House A	Until 59 m	R\$ 3.400,00
Apartment A	Until 30 m	R\$ 6.200,00
Apartment B	From 31 until 60 m	R\$ 3.700,00

Table 4. Market Research Result for private area values

As the recreational area is shared, this study needed to obtain the value of the square meter per total area, which includes shared areas as well. These areas are circulation, elevators, entrance halls, staircases, set back and other common use ares. Therefore, proceeding the analysis, it was collected the total area of each apartment and divided by the total price offered. (Table 5)

In order to obtain the impact of the Building Regulation regarding recreational use in Social Housing these are the values per square meters considered in order to evaluate how much does this regulation affects the prices on properties.

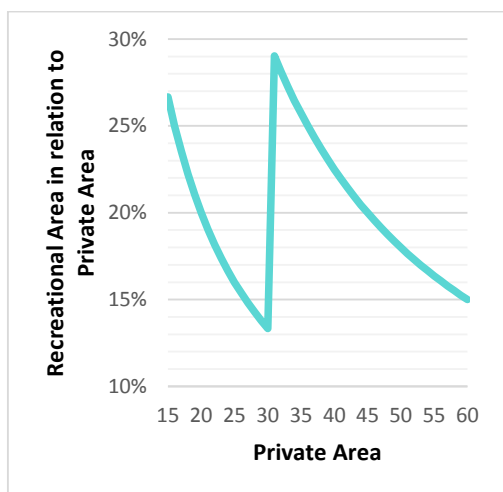
Category Type	Housing Unit Size	Price/ average total area	m
House A	Until 59 m	R\$ 3.400,00	
Apartment A	Until 30 m	R\$ 5.300,00	
Apartment B	From 31 until 60 m	R\$ 3.100,00	

Table 5. Market Research Result for prices of total area of apartments and houses

Results

Results have the intention to indicate the real cost of leisure area in social housing. It is important to point that this is an area that is mandatory, according to Building Regulation [2], and has to be inserted inside the lot in noble areas. As it is required, it is not an option for buyers to purchase a cheaper house or apartment without these amenities (recreational area) by choice.

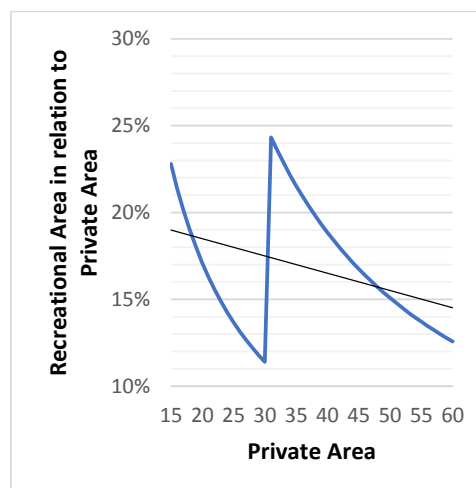
At first it was analyzed relation between areas, so how much leisure area is mandatory compared to the private area available to the owner. (Graph 4)



Graph 4. Recreational Area compared to Private

What can be identified is that the Leisure area required equals from 29% until 13% of the apartment or house private area, a relevant fraction. This brings the question of how much could this property cost without this mandatory area? Or how much of private area could that be converted into?

Following this logic, it was compared how much of the sold value of the apartment or house was due this compulsory Leisure area. Therefore, can be seen in this next Graph (Graph 5).



Graph 5: Leisure Area Impact in Apartment Sales Price

From these results can be concluded that the impact over property sales value is in average 16,75%, ranging from 24,32% until 11,40%. Important to point that the most affected category are apartments with a private area between 31- 45 m , in those, the average impact of Leisure Area value over the property sales value is slightly above 20%.

As a result, the price for Recreational Area for each category is described in the following Table, and also the impact over the total value of the property according to the price per square meter obtained. (Table 6)

Category Type	Housing Unit Size	Price/ average	m	Average Impact at the Property Price (%)
House A	Until 59 m	R\$21.200,00		Not considered
Apartment A	Until 30 m	R\$21.200,00		15,89
Apartment B	From 31 until 60 m	R\$27.900,00		17,21

Table 6. Market Research Result for typical private area

Discussion

Considering the results, it can be implied that the obligation of Leisure Area inside residential lots impacts in a significant way at social housing prices. Important to remind that this is not to be concluded that leisure areas should not be stimulated, but that the cost of it is laying on the ones who look for the basic need of shelter.

Also, public areas, who should be the ones providing recreational spaces for the population, are already donated to the local administration by the developer once a land is parceled into lots. About 5-10% of the total property is donated to that end [3].

Taking a 50,00 m apartment as an example: two-bedrooms, one bathroom, living room, kitchen and laundry. A description of what could be considered a typical one for the “*Minha Casa, Minha Vida*”. Considering the presented market research, this apartment is sold for R\$ 185.000,00, in which R\$ 27.900,00 of it is due to the mandatory Recreational Area. Withdrawing the Leisure Area, the same apartment would cost about R\$ 157.100,00. This, in terms of mortgage could mean either a lower down payment, a lower monthly payment or also and more importantly access to this property to more people with lower income. Analyzing how much of private area could the person afford if that leisure area was not built, the result is 7,54 m . (Table 7)

	m ²	R\$/ m ²	Total Sales Price
Private Area	50,00	3.700,00	R\$ 185.000,00
Recreational Area	9,00	3.100,00	R\$ 27.900,00
Apartment Sales Value – Recreational Area			R\$ 157.100,00
Converted Value difference into Private Area (R\$ 3.700,00/m)			7, 54 m

Table 7. Example for a 50 m apartment

This analysis intends to show possibilities regarding personal choices for houses and apartments. Would people prefer a bigger private area or a lower price at the apartment? The buyer should be the one who chooses what kind of property he or she wants to acquire, not the local administration. Especially when this demand is coming from a lack of management of public spaces. Local administration should be the ones to provide leisure areas with the public spaces they own, but instead, create Regulations that generate more costs to the ones buying their property.

Conclusion

The demand for open space is honorable, it is important that local administrators long to improve life quality of its inhabitants. However, the obligation to locate those areas in private

property, burden people, especially with lower income. The main goal should be providing safe and affordable shelter, [8] instead of imposing a cost for the ones who cannot choose.

The impact of this Regulation over smaller units are significant, ranging from 20% over property sales value, meaning less access to housing ownership. In this matter should be evaluated whether public policies should benefit this private leisure area instead of solving Brazil’s huge housing deficit of 6.7 million units [7]. Combined with the property value, there is a maintenance fee that is monthly charged of homeowners and that is naturally higher in places with more common areas, such as the ones obligated by the Decree [2].

Despite the overvalue, it should also be privileged public areas and its real destination be mandatory.

Finally, this research should be replicated at other cities order to validate values.

Endnotes

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