

Contributions of the vernacular heritage in the current city. Case study: Santo Domingo Neighborhood, Tuxtla Gutiérrez, Chiapas, Mexico

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Abstract

The situation of marginality and vulnerability in the historic center of the capital of Chiapas is latent despite its location in the area of the greatest supply of services and urban facilities of the city. Specifically in Santo Domingo neighborhood in Tuxtla Gutiérrez, Chiapas, one of the oldest neighborhoods in the city, there has been a gradual loss of inhabitants since the 90s causing the decline of vernacular heritage and local identity. The commitment to sustainable development in cities worldwide sets as goals various actions that promote a look at the vernacular heritage and its relationship with the environment. However, the model of expansive growth of the city in an uncontrolled manner, moving away from the central city, also moves away from the Sustainable Development Goals. This article is part of a broader investigation in which the development of a methodology is proposed that establishes a specific cataloging system of the earthen architectural heritage of Santo Domingo neighborhood to provide guidelines for its preservation, strengthening and, in turn, of the historic city center, as a basis for redirecting the current city towards sustainable development. Through the analysis and characterization of the buildings built with raw earth and their inhabitants, it deepens in the analysis of the vernacular heritage, in its construction and consolidation of the urban environment, as well as its way of contributing to economic, social, and environmental links. However, the future of the vernacular heritage in urban areas, in this case, Santo Domingo neighborhood, depends not only on the patrimonial valuation in society but also on its economic revaluation by public and private institutions.

Keywords: earthen architecture, sustainable development, integrated communities, historic urban areas.

1. Introduction

Santo Domingo neighborhood, located in District I Center of Tuxtla Gutiérrez city, capital of the State of Chiapas, is one of the four oldest neighborhoods in the city that is part of the historic center without being decreed as such by the institutions.

As well as other historic urban areas of the city, Santo Domingo includes a set of buildings with precise characteristics, very different from the rest of the city and the new urban growth, "conditioned by a physical structure from the past, recognizable as representative of the evolution of a town." (International Council on

Monuments and Sites, 1977). As part of a previous investigation, an analysis of the neighborhood buildings has been carried out, of which 50 buildings constructed using traditional construction systems have been cataloged, specifically with raw earth contemplated as vernacular heritage (Parra Zebadúa & Genís Vinyals, 2017).

However, the loss and abandonment of this heritage since its identification in 1999 to date puts at risk this type of buildings, specially, because of the lack of protection by the administration or by financial institutions, which is the case nationwide in general (Guerrero Baca, 2008).

TYPE OF HERITAGE	1999	2015	2022
Monumental	1	1	1
Relevant	1	1	1
Traditional	96	61	48
Total	98	63	50
Heritage lost since 1999		35%	48%

Table 1. Count of heritage buildings in Santo Domingo neighborhood (Source: Parra Zebadúa & Genís Vinyals, 2017)

Also, since the 1990s there has been a gradual depopulation of the historic center, especially Santo Domingo neighborhood.

According to the 2020 population census, the city has 578,830 inhabitants and a total of 199,918 homes, 20% of which are uninhabited; in the polygon called the Historic Center by the Partial Program of the Historic Center of Tuxtla Gutiérrez of 1999 it has 23,169 inhabitants and 9,033 homes, 24% of which are uninhabited, a figure higher than the local average.

However, in Santo Domingo neighborhood there are 481 inhabitants and 246 homes, 36% of which are uninhabited, a higher percentage of uninhabited homes than in the rest of the historic center and the city.

Concept	Tuxtla Gutiérrez	Historical Center	Santo Domingo Neighborhood
Extension	10 015 ha	299 ha	11 ha
Inhabitants	578 830	18 255	481
No. Households	199 918	8 876	246
No. Inhabited Housing	159 617	6 787	157
Percentage of Uninhabited Houses	20%	24%	36%
Inhabitants per Housing	3,62	3,4	2,95

Table 2. Population and housing data (INEGI, 2020)

The age of the resident population in the historic center and especially in Santo Domingo neighborhood increases compared to the rest of the town. 12% of the population is aged 60 years and over in the city, compared to 17% in the neighborhood, in contrast to the decrease in the population aged 0–14 years of 25% in the city and 17% in the neighborhood. The percentage of adults aged 30 to 59 years remains at 35% and there is a slight increase in the ages between 15 to 29 years of 28% in the city to 31% in the neighborhood.

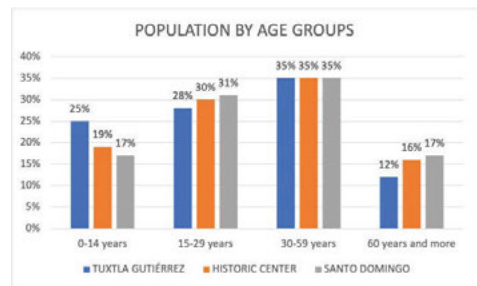


Table 3. Comparative graph of population by age groups in the city, the historic center, and Santo Domingo neighborhood (INEGI, 2020).

In terms of local efforts aligned with sustainable development goals, the Urban Development Plan of Tuxtla Gutiérrez 2015–2040 estimates an average annual growth rate of 2.3% in the city, for which a minimum population density of 80 persons per hectare is set as a goal to increase the current density of 66 persons per hectare and thereby reduce the territory to be occupied. Furthermore, in Mexico's 2030 Agenda, specifically

in Goal 11 on sustainable cities and communities, only the proportion of the urban population living in precarious housing has been taken into account as an indicator, in which Chiapas ranks 2nd in the country with 26.44% and within the State of Chiapas, Tuxtla Gutiérrez with 27.63%. (Gobierno de México; INEGI, 2021). This indicates a pressing need for decent housing for the local population and an opportunity for housing developers. These data indicate that the return to the historic center is essential for sustainable development, but the way it should be done is different from the rest of the city as it is a historic urban area in which one of the pillars of sustainable development must be taken into account, which is culture, interconnected to economic growth, social inclusion and environmental balance, (United Cities and Local Governments, 2010), as the climate emergency also threatens cultural heritage, affecting ways of life that maintain a strong link with nature or the urban environment. This also demonstrates the interdependence between the health system and the cultural system in the current COVID pandemic (Martinell Sempere, 2021). Therefore, the analysis of the vernacular heritage of Santo Domingo neighborhood includes not only the buildings as independent entities but also the link between them and their physical and cultural environment that represent the identity of the people in Tuxtla Gutiérrez. In addition to the previous analysis of the immediate urban context, which shows that the existing traditional buildings are mostly related to their neighborhood center (Parra-Zebadúa & Genís-Vinyals, 2019), which represents the point of origin of the neighborhood and the meeting place for the resident population, demonstrating that "for centuries they preserved an urban network with great harmony thanks to the balance of their civil and religious adobe buildings..." (Guerrero Baca, 2008). Related in their immediate urban context directly to the neighborhood dynamics around public space. However, the gradual changes in the urban fabric and the disposition of the new buildings give certain spatial and functional consequences of

marginality and vulnerability despite its location in the area of the greatest supply of services and urban facilities of the city that reveal a lack of analysis in the dynamics of compatible land uses in Santo Domingo neighborhood (Zenteno Hernández, 2022). Therefore, the need for a review of the quality of life in the historic center, specifically in Santo Domingo neighborhood, has become evident. For this purpose, surveys were carried among the resident population of the neighborhood, specifically among those who inhabit the houses identified as vestiges of the existing vernacular heritage, in order to find out their position regarding their neighborhood and their housing. As well as a more in-depth analysis of the architectural typologies of the neighborhood in relation to its immediate urban environment.

2. Methodology

The survey was designed specifically for those who live in the neighborhood's vernacular heritage in order to emphasise the importance of the user, their perception of the value of both their home and the neighborhood they live in, in the aim of answering some of the hypothetical questions posed as to why these homes have been abandoned and, on the contrary, why those who still live in them remain, and what factors influence the value of this heritage in its inhabitants. The surveys were carried out with the support of the Academic Body of Urban Development and the Academic Body of Heritage, Territory, and Sustainability of the Faculty of Architecture of the Autonomous University of Chiapas. In addition, both physical and psychological variables were considered for the measurement of adaptation and quality of life of inhabitants of social housing in Mexico (Mercado Doménech, Ortega Andeane, Luna Lara, & Estrada Rodríguez, 1995). Due to the small resident population and the distrust of the inhabitants, only 12 surveys were carried out, which were more like interviews, so it was possible to deepen into their needs and concerns regarding their housing, as well as to know the feelings about their housing

and the neighborhood they live in. On the other hand, based on the typological analysis of the vernacular buildings and their relationship with the urban environment, it has been observed the features that still exist in the urban fabric that contribute to neighborhood dynamics.

3. Results

The people who live in the vernacular heritage of Santo Domingo neighborhood are mostly older people, especially women over 60 years of age, engaged in commercial activities that they carry out in their own homes, among which the following were identified: hairdressing, shoe repair, locksmithing, elaboration of handmade soaps, sale of homemade food or groceries, renting of commercial premises as part of their homes, renting rooms, art gallery, activities that are characteristic and help promote neighborhood community life (Gómez Crespo, 2013). In terms of their urban environment, they mainly appreciate its central location and proximity to the various urban facilities where they carry out their daily activities, such as public markets, the Marimba Park, churches, administrative buildings, museums, as well as the proximity to their relatives. Among the negative aspects regarding their housing, they highlighted the lack of continuous drinking water service, since in some cases they do not have a water storage tank to supply water on days when they do not have service. In addition to the lack of construction technicians with the necessary knowledge to maintain their homes. In a few cases, the owners themselves are in charge of the maintenance, and in others they simply decide to replace traditional construction materials with industrialised ones that are the ones that the technicians do know how to handle, as is the case of the curved tile roofs with metal sheet (Fig. 1), solid wood beam systems with steel, in the case of the traditional baseboards of limestone slabs or brick with ceramic tiles or traditional lime plaster with cement mortar.



Fig. 1. Replacement of curved clay tile roof with galvanized sheets. (Parra Zebadúa., 2021)

As for the negative aspects of their environment, they complain of having difficulty walking due to the bad physical state of the sidewalks (Fig. 2), inadequate pedestrian crossings, and the lack of road safety education by drivers of vehicles who do not give the right of way to pedestrians, especially in the case of elderly people. They also deplore the abandonment of the neighborhood and the presence of transgender women sex workers, a non-regulated activity due to the fact that they are transgender, which is mainly concentrated in the streets of Santo Domingo neighborhood, with the consequences that this entails, such as acts of violence against workers and feeling of insecurity on the part of the inhabitants (Gutiérrez Gamboa, Evangelista García, & Anne Winton, 2018).



Fig. 2. Sidewalk of the neighborhood in deplorable condition. (Source: Parra Zebadúa, 2021)

The dwellings in the best state of conservation are those that have been inherited and inhabited by the same heirs since they were born, they ensure their continuous maintenance, they know the materials used in its construction, they consider it to be of good quality and they value the climatic and interior comfort, as well as its living space and configuration. In contrast to unoccupied dwellings, which are in a deteriorated state and many of them are for sale. Unfortunately, throughout the research, the outcome of many of the abandoned buildings or those for sale can be observed, which are completely demolished, leaving an empty site and giving it the use of a public parking lot (Fig. 3) while another new building is being planned or while it is being sold, since these buildings built with raw earth cannot be sold through bank loans, giving value only to the plot.



Fig. 3. A public parking lot where previously there was a vernacular building. (Source: Parra Zebadúa, 2021)

Traditional buildings in the neighborhood are one level, with the façades aligned with the street and backyard. Maintaining the configuration of aligned façades has remained in the neighborhood to the present day, with the exception of newer built dwellings that are separated from the street by means of a front garden. However, in other parts of the historic center, the recessing of facades for private car parking is observed, a change that can seriously affect neighborhood dynamics by allowing vehicles to intrude into pedestrian space, especially for commercial use.

4. Conclusions

Buildings constructed with raw earth are especially undervalued by banks and government entities, making it difficult for them to survive after they pass to the hands of their descendants who wish to sell them, either in whole or in parts. Unless one of them is willing and able to keep it as their main home, which creates closer ties with the property. The people who inhabit the dwellings which are part of the vernacular heritage of Santo Domingo neighborhood recognise the heritage values of the buildings; however, the problems they face are related to the deficiencies of the urban environment that influence their daily lives, which directly detracts from their quality of life. On the other hand, the lack of technicians with the appropriate knowledge for the maintenance of their homes has repercussions on the safeguarding of the vernacular heritage, since in practice, despite the existence of specialised professionals, most people go directly to construction technicians who are not familiar with traditional construction techniques due to the loss of ancestral knowledge through the generations. The alignment of street facades gives rise to the neighborhood activities, provides pedestrians with greater safety and ease of access to the various services and products offered, mostly by the inhabitants of the neighborhood themselves, thus stimulating the local economy. The fact of aligning the facades to the street should be one of the urban policies that should be maintained in the neighborhood, since by recessing them for the benefit of vehicular parking directly affects and alters the dynamics of neighborhood uses, as well as promoting motorised mobility, instead of encouraging and protecting pedestrians. The repercussions of safeguarding the vernacular heritage in the current city are closely related to the Sustainable Development Goals, through culture, traditional construction systems with ecological values, community relations around neighborhood activities, as well as the non-motorised mobility that the urban fabric itself generates.

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