Two suburbs of Mexico City: Nezahualcóyotl and Tlalnepantla de Baz

By Jan Bredenoord, PhD, urban planner and housing researcher, 2025.

Areal view of Nezahualcoyótl

Aerial view of Tlalnepantla de Baz

Two suburbs of Mexico City: Nezahualcóyotl and Tlalnepantla

Over the years, social housing in Mexico has undergone significant changes, from rental homes to home ownership, from irregular urban development to regulated expansion plans, and from high production of standard homes to a wide range of housing types. The mass production of cheap plots and self-built homes was a phenomenon, and the suburb of Nezahualcóyotl in Mexico City is a prominent example of this. In the suburb of Tlalnepantla de Baz, the results of both self-construction and social housing can be found. The mentioned two suburbs of Mexico City are compared with each other. Nowadays, the role of self-build seems to be more focused on individual home improvements and house splitting. In Mexico, public housing is strongly influenced by a multitude of financing systems with associated actors. There is a high demand for affordable rental housing in the country.

Introduction

Mexico has experienced strong population growth over the past six decades, from 35 million inhabitants in 1960 to 126 million in 2020. At the same time, the urbanization rate increased from 51 percent to 79 percent. This has led to unprecedented urban growth and the formation of metropolitan areas or *Zonas Metropilitanas.* Mexico City is the capital, with 9.2 million inhabitants within the metropolitan zone of the Valley of Mexico (ZMCM), which has a population of 21.8 million. Around 1950, the migration to the city already caused a high demand for cheap rental housing. This led to the emergence of informal settlements on vacant plots and sites on the outskirts of the city. In the 1950s and 1960s, this was referred to as the 'urbanization of poverty' and the government struggled to manage it. It was very difficult to expand cities with affordable housing for low-income families. From 1960 onwards, the 'human settlements' and planned neighborhoods were designed as 'sites-and-services plans' with plots for self-build homes, with or without starter homes.

Before 1970, individual self-build was still the most important form of housing construction in Mexico. In the period that followed, there were roughly three ways to obtain a home: 1) through formal or informal self-build, often in a designed residential area; 2) by participating in a subsidized social housing project with simple 'expandable homes'; and 3) by finding rental space in overcrowded, outdated housing complexes located around the city center. In 1970, new policies for large-scale housing construction were introduced, and within a few years a substantial subsidized housing sector was created.

Since 2000, social housing production has received a further boost and government policy has also focused on encouraging home improvements. The housing sector in Mexico is now quite complex, with many public and private actors implementing a wide variety of housing programs. Housing construction in Mexico also includes a certain supply for lower income groups. The diversity of housing types ranges from simple low-rise buildings to middle-class homes and stacked apartment buildings. Increasingly, higher urban housing densities are being realized.

This paper outlines public housing policy in relation to the development of Mexico City. It then discusses two suburbs that are part of Mexico City but are located in the state of Mexico. These are Nezahualcóyotl, where self-build was the norm, and Tlalnepantla de Baz, where there is also a lot of social housing. Nezahualcóyotl and Tlalnepantla de Baz are then compared on the basis of a number of characteristics.

▪ Public housing in Mexico

Large-scale self-help housing construction was predominant until 1970 and was supported by municipalities with urban development plans that allowed self-build to proceed in a more or less orderly manner. From 1971/1972 onwards, organized social housing construction emerged strongly, which had a major impact on housing production, the housing market, and urban development. Self-building was also carried out by households that had moved into their starter homes, which subsequently led to long-term home improvements. In Mexico, self-building has settled into self-managed housing, while social housing encompasses a wide range of housing products and financing options. For many years, social housing included the production of subsidized owner-occupied homes, with the finishing work left to the families.

Self-help housing

When the urbanization process began in the 1950s, people looking for housing in cities could still be accommodated in collective rental homes. However, the number of poor city dwellers soon became so large that they had to move to vacant plots and the outskirts of cities. Initially, the dwellings were often simple and structurally unsound. The first residents of the informal neighborhoods had little or no drinking water, electricity, or sewage systems. Over time, the government provided many illegal residential areas with utilities, schools, medical centers, and other amenities. It was always a long process of neighborhood improvement, accompanied by individual home improvements and the legalization of land ownership. The construction of the sewerage system was often the final step. These developments were often accompanied by actions of residents' groups. Municipalities also started to develop building sites, divide them into plots, and sell them to families who could build their own homes. Sometimes a municipality or an aid organization (NGO) provided technical assistance, resulting in 'assisted self-construction'.

This is only a rough outline of the development of self-build or *progressive housing* in Mexico, but it was not fundamentally different from other countries in Latin America. However, Mexico's economic situation improved more quickly than in other countries, enabling the growing middle-income group to invest relatively heavily. In the 1970s and 1980s, the legalization process for urban development was not yet completed and informal residential areas were still emerging, but the local government did intervene in private land subdivision plans.

In 2020, self-construction of homes is still commonplace and may be accompanied by the occasional purchase of plots on the outskirts of cities and in the suburbs. This is more of a creeping development in comparison with the large-scale land captures that took place in previous decades. Despite the scale of standardized housing construction after 1972, self-build remained significant in both urban and rural areas. The CIDOC/SHF research group, which reports annually on the state of public housing, reported

that approximately two-thirds of the national housing stock was built through self-construction. According to the National Institute of Statistics and Informatics (INEGI), 24 percent of homes fall into the self-build category. Even today, self-build -including home improvements- accounts for about half of total housing production in the country. The power of the self-build process is clearly evident in the suburb of Nezahualcóyotl. Although self-builds were often messy and shabby at first, they have led to many neighborhoods with relatively high quality and increasing prosperity.

Social housing

Since 1972, Mexico has experienced a growing practice of social housing, made possible by the establishment of housing funds, which were a collaboration between the government and employers and employees organizations. Levies were imposed on workers' wages to fill the construction funds. These levies (then 5 percent of the wage sum) were used for social housing. These include the INFONAVIT fund (for private sector workers) and the FOVISSSTE fund (for public sector workers). This has led to large-scale housing production and enormous suburban growth. Between 1972 and 2000, the total production of social housing solutions in Mexico amounted to 4.95 million. INFONAVIT accounted for 2.1 million of these homes. Other government institutions such as the Mexican Social Security Institute (IMSS) and the state oil company PEMEX also provided construction programs and mortgages for their employees.

In the cities, neighborhoods were built with thousands of simple one- and sometimes two-story housing units. Rental homes were not built. The interest rates that buyers/residents had to pay were relatively low and the repayment period could be 15 years, for example. Households wishing to take out a mortgage had to be permanently employed by a company. Although all employees contributed to the relevant fund, the loans were granted to middle-income households. People working in the informal sector were unable to contribute to an institutional housing fund and therefore could not benefit from it.

In the 1990s, production was increased and inclusive financing for home improvements was introduced. However, access to subsidized housing was limited to heads of households earning two to four times the national minimum wage. This meant that a large part of the population was still excluded. In its early years, INFONAVIT financed the construction of housing, provided loans, and carried out the construction. From the mid-1990s onwards, this changed and the construction funds functioned as providers of mortgages and subsidies, while the implementation of housing construction was outsourced to construction companies and project developers.

Starting in 2000/2001, housing construction in Mexico went through another big change. The government said that everyone should be able to buy, build, improve, or rent a home based on their financial situation and preferences. As a result, additional funds were made available and programs were also introduced for households without permanent employment. Implementation was made possible by government organizations such as the national mortgage fund SHF, the national housing commission CONAVI, and the public housing fund FONHAPO. Implementation was in the hands of private construction companies. Between 2001 and 2009, more than 9 million financing grants were awarded for housing construction, both new construction and improvement, representing more than one million interventions per year.

Housing typology

Over time, various types of housing have been developed in the social housing segment. In 2009, the SHF worked on a classification system for housing. Since April 2010, the housing sector has been using the 'authorized housing value classification' agreed upon by INFONAVIT, FOVISSSTE, SHF, CONAVI, and the major financial institutions. This classification has six housing types: *economic, popular*, and *traditional,* which can be found within 'social housing', and: *medium-sized, residential*, and *residential plus.* The *basic homes* are intended for self-builders.

The financing of social housing was linked to the income of families or households. The minimum wage in Mexico City in 2012 was US$4.75 per day (converted). In order to purchase a simple basic home with 10-30 m2 of floor space and 1-2 rooms, a family would need to have a monthly income of approximately US$475.00 to be eligible for a loan. Other types of housing are more expensive, such as 'economic housing' with 30 m² of floor space, 'popular housing' with 42.5 m², or 'traditional housing' with 62.5 m². Many poor families cannot afford the larger and more expensive basic homes.

Housing types in the subsidized housing market in Mexico in 2012

Housing types	Prices in US$ in 2012	Average floor space m2	Number rooms
Basic house	not known	1	1
Economical dwelling	up to 17,042	30	3
Affordable housing	17,042 - 28,885	42.5	4
Traditional	29,885 - 50,548	62.5	5

A practical classification that can be linked to recognizable types of social housing uses categories A to E. Types A and B are generally small, while the plot size determines the possibilities for subsequent expansion through self-build. Types C, D, and E are apartment complexes with 3, 4, and 5 floors, respectively.

Housing types (a and b). Type a: one floor. Type b: two floors. Type c: three to five floors.

a.

b

c

d

Locations b, c, d: in Tlalnepantla

Growth of Mexico City

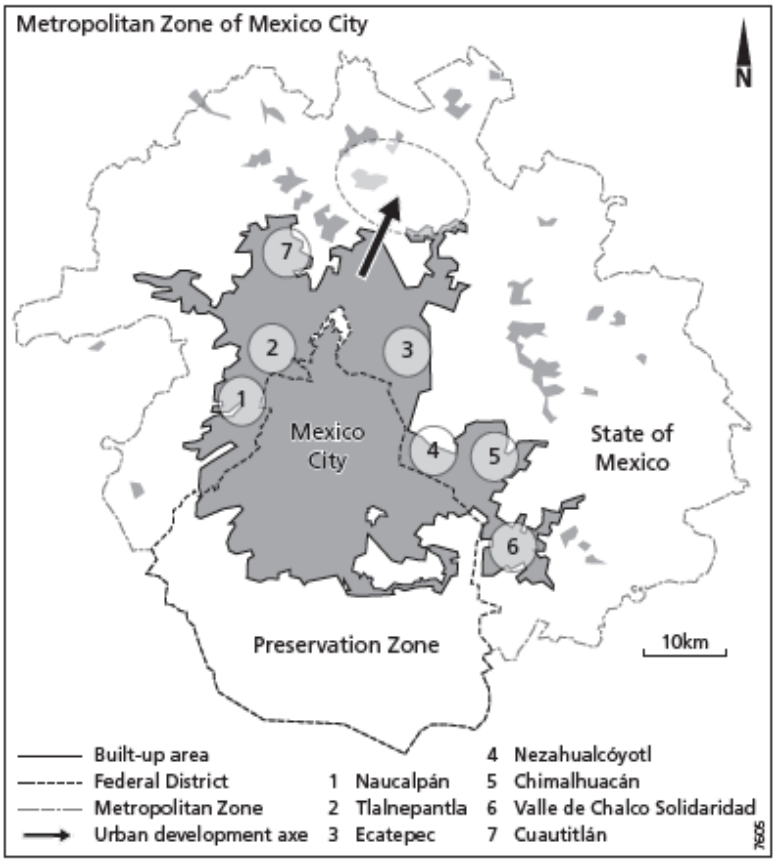
In the 1950s and 1960s, Mexico City was surrounded by a ‘horseshoe of slums’. A major redevelopment with modern high-rise buildings was intended to change this, as was attempted with the large-scale residential complex of Nonoalco Tlatelolco north of Mexico City, which was built between 1957 and 1964 according to modern urban planning principles. In 1974, another complex was developed, called 'Latin American Integration', south of Mexico City in the *delegación* (municipality) of Coyoacán, covering an area of 10.8 hectares. The project comprises 1,460 apartments in buildings of 5, 10, 12, and 16 stories with 16 different housing types, mixing different social classes. More such projects were to replace the slums in the horseshoe. However, the displaced population was unable to access these apartments because they were too expensive. Incidentally, high-rise apartment buildings have not become the norm in Mexico.

High-rise buildings in the Nonoalco Tlatelolco neighborhood

After 1970, it gradually became clear that the federal capital Mexico City could no longer be expanded within its own boundaries, and a metropolitan area emerged that spread out in three directions on the territory of the states of Mexico and Hidalgo. Mexico City itself consists of 16 municipalities in the federal district. The most important suburbs of the Mexico City Metropolitan Area are Naucalpán, Tlalnepantla, Ecatepec de Morelos, Nezahualcóyotl, Chimalhuacán, Valle de Chalco Solidaridad, and Cuautitlán. The distance between new residential areas and the city center was often considerable—as seen from the suburbs—but Mexico City's road network and public transport system were greatly expanded.

Around 1950, the growth of Mexico City was still limited to the east by the presence of Lake Texcoco. This shallow lake dried up during the 20th century, creating an open area that was not yet suitable for housing. The areas north of the Mexico City however, were suitable for urban development. The remaining direction of development is still mainly 'north' – see the arrow in the figure below. Many poor families were interested in the area east of Mexico City, where development was initiated by private land developers, land dealers, and groups of poor households. From the late 1950s, Nezahualcóyotl became the first suburb of Mexico City, while the suburbs of Chimalhuacán and Valle de Chalco Solidaridad were developed later. These three areas were established as informal residential areas where self-build housing was dominant. South of Mexico City lies a landscape conservation zone that is still threatened by creeping urbanization with negative consequences for the natural environment.

Schematic map of the Mexico City metropolitan area



Source: Verkoren and Bredenoord

Large numbers of low-rise houses were built on small plots in the suburbs, creating unprecedented suburbanization that has now reached its limits. In 2020, it is difficult to make land available for new suburban growth. The focus of local authorities is now more on improving public spaces, playgrounds, green spaces, and the like. Mexico City's policy has changed considerably in favor of making the city center and other parts of the city more livable.

▪ Nezahualcóyotl

Ciudad Nezahualcóyotl – or 'Neza' for short – is a suburb bordering Mexico City. It is located between 8 and 14 kilometers from the city center. The international airport forms a barrier between the city center and Neza, but the roads and public transport links between the two are good. Neza, an early self-built city, is currently considered as being 'consolidated'. This means that the infrastructure and utilities are present and are in reasonably good condition. In 1954, approximately 40,000 people lived in the area. In the 1970s and 1980s, the area grew very rapidly. In 2020, the population was 1.077 million. Neza had already become a separate municipality in 1963.

In 1983, Neza was still described as "the largest urban area for low-income households located next to Mexico City." At that time, there were still many shortcomings in terms of utilities, roads, and social services. According to researchers Buchhofer and Aguilar, in 1983 the area was a huge slum with the worst living conditions imaginable. However, this situation changed for the better and Neza was gradually integrated into Mexico City. The municipal government improved the infrastructure, enabling large-scale land development. Self-build was the predominant form of housing. Meanwhile, living conditions in Neza improved thanks to the efforts of homeowners, municipal registration of land ownership, and improved municipal services. In 2020, 41.3 percent of the population lived in moderate poverty and 5.14 percent still in extreme poverty.

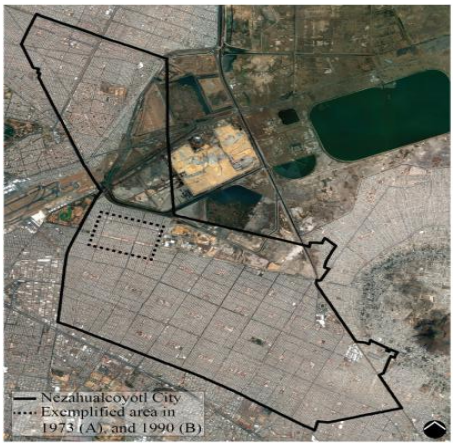
Urban structure and housing

Neza covers an area of 63.44 km2. The population density is approximately 21,000 inhabitants/km2. Neza consists of 101 neighborhoods or 'colonias', divided into 5,165 residential blocks and approximately 220,000 plots. Neza consists of two parts, the northern zone and the larger southeastern zone. The northern zone covers an area of 12.5 square kilometers and is more or less separated from the rest of the municipality. In 1963, the state of Mexico began land development in Neza and wide roads were built, parallel to the road from Mexico City to Puebla and the avenues perpendicular to it, creating 'super building blocks' measuring approximately 1 by 1.1 km to 1 by 1.5 km. These super building blocks became the basic module for subdividing the area into districts and neighborhoods. Each super block has social amenities and green spaces. The overall urban street plan of Nezahualcóyotl South is rectangular, which is a common urbanization pattern in Latin America.

In 1983, approximately 90 percent of the houses in Neza were single-story; by 2010, the average number of stories was already two. There are 280,000 homes. Sixty-two percent of the homes are owner-occupied and 38 percent are (private) rental properties. The average number of residents per home was 5.2 in 1990 and 3.7 in 2015. The area used for residential purposes is 3,834 hectares, which equates to an average of 73 dwellings per hectare (net residential area), which is a medium urban density.

The housing typology is dominated by 'progressive' single-family dwellings (individual self-builds), which account for 75 percent of the total number of dwellings. Other forms of housing can be found in apartment buildings and small-scale collective residential buildings, which also include rental dwellings. Many family homes are mixed-use, mainly housing with a workplace or shop. There are also multi-family homes with four or five floors, including in *Colonia Avenida del Volga,* in Neza North.

Map of Nezahualcóyotl



Source: Manuel Alejandro Rivero Villar

Aerial photo

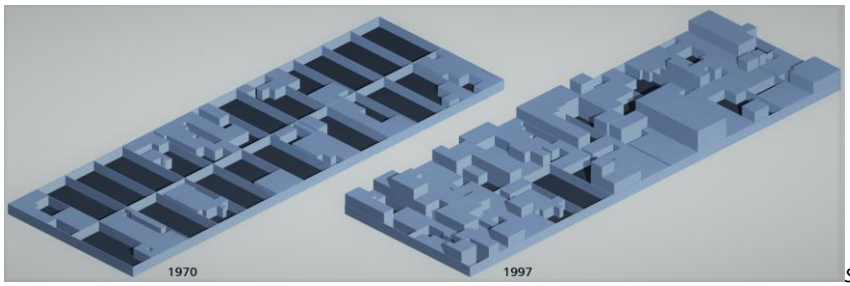
Source: Thomson Reuters Foundation Johnny Miller

In 2002, researcher Ribbeck wrote the following about housing quality in Neza:

"After 20 to 30 years (after 1970), approximately 30 percent of self-built homes still have one floor, 50 percent have two floors, and 20 percent have three floors. Fully developed upper floors are rare, with the third floor usually consisting only of a floor slab or a temporary roof structure. Fully developed three-story houses are often already 'special building blocks', i.e., buildings for residential rental or commercial use, which are professionally and capital-intensively constructed. On average, 70 percent of the plots are built on."

The figure below is based on Ribbeck's analysis method and shows how the dwellings grew between 1970 and 1997. These are enormous changes to a standard block of 30 by 75 meters. Some building blocks in Neza's building blocks and residential streets are 150 meters long. The individual residential plots are on average 140 m2 in size. The intensification continued after 1997.

Schematic representation of the growth of a standard building block in Neza

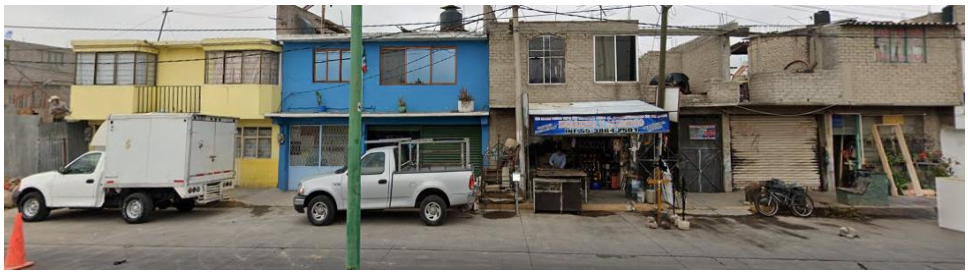


Source: Verkoren and Bredenoord

Living environments.

The following images provide an overview of housing solutions in Nezahualcóyotl. Many homes are still undergoing long-lasting renovations or have been unfinished for years. This has a major impact on the streetscape, with many facades still unfinished. The streetscape shows many differences in the height of the facades because each home is at a different stage of completion.

Street scene in Jose López Portillo, in Nezahualcóyotl North



Source: Google Street View.

The gradual growth of housing construction in Nezahualcóyotl is illustrated by the street scenes, which can be very varied. The author visited Nezahualcóyotl several times between 2008 and 2015 and observed that consolidation processes were continuing.

Housing types in Nezahualcóyotl

Locations in Nezahualcóyotl: self-built housing. a: normal self-built housing; b: self-built housing completed; c: high-density self-built housing

Facilities and public transport

The level of services is good, with a cathedral, churches, sports and cultural facilities, primary schools, secondary education, a technical university, other higher education, and medical facilities, including two hospitals and clinics. In 2009, 'Ciudad Jardín Bicentenario' was opened on the former Neza I and II landfill sites. A shopping center was built there, followed by a sports center, a technological institute for higher education, a specialized hospital, medical offices, a community center, and an entertainment center.

Mexico City's metropolitan transport system has a terminus with transfer options at 'Metro Pantilán', almost 2 kilometers from the western border with Neza. For Neza, this is the starting station that provides direct access to three metro lines (1, 5, and 9). People traveling from Neza to Mexico City must first take a metro bus to reach this station. Nezahualcóyotl is also further integrated into the ZMCM metropolitan transport system by Line 'A' between Pantitlán station and La Paz, in a southeasterly direction. This line has been in operation since 2000 and runs alongside the Calz. Ignacio Zaragoza, there are four stations that are easily accessible for many residents of Neza. Internal public transport in Neza is provided by various bus lines and there are two metrobus lines. The northern part of Neza has its own station, Nezahualcóyotl, on metro line B, which provides a direct connection to the center of Mexico City.

▪ Tlalnepantla de Baz

Tlalnepantla de Baz - Tlalnepantla for short - is a suburb of Mexico City located in the state of Mexico. The territory of Tlalnepantla consists of two separate parts, a western part with an area of 62 km2 and an eastern part with an area of 21 km2. Tlalnepantla is physically connected to Mexico City. Between 1960 and 1980, it was a reception municipality for the many migrants who moved to Mexico City. The number of inhabitants grew from 105,000 in 1960 to 778,000 in 1980. According to the municipal planning institute IMPLAN, Tlalnepantla had approximately 700,000 inhabitants in 2015. Between 1940 and 1970, many large industrial companies established themselves in Tlalnepantla, providing employment for many people. The National Council for Social Development (COVENAL) estimated in 2015 that 30.7 percent of the population of Tlalnepantla la Baz lived in poverty, of which 26.8 percent in moderate poverty and 4 percent in extreme poverty, while the percentages were higher at the national level. Furthermore, 32.8 percent of the population is vulnerable to social exclusion, 7.1 percent is vulnerable due to irregular income, and 29.3 percent is neither poor nor vulnerable.

Map of Tlalnepantla

Source: INEGI

Location and urban structure

To the north of Tlalnepantla de Baz lie extensive urbanized landscapes that are hilly, where the neighboring municipalities of Cuautitlán Izalli and Tultitlán are located. To the northeast of the city lies the valuable nature park "Sierra de Guadeloupe," which is protected by the state of Mexico. The mountainous green area is attractive and has high ecological value. It is also of great importance for recreation in the surrounding urban areas, including Tlalnepantla.

Tlalnepantla is geographically divided in two ways. First, there is the physical separation between the western and eastern areas. Second, the western area is separated by several north-south main roads and the railway line from Mexico City to Cuautitlán. The railway lines take up a lot of space, with the extensive marshalling yard for freight trains. Then there is the north-south zone with industrial estates that continues northward into the neighboring municipality. Tlalnepantla is quite fragmented by these dividing lines, which has led to each urban expansion having its own design, in keeping with the characteristics of the local landscape with its rivers and differences in elevation.

Administratively, the municipality of Tlalnepantla de Baz is divided into 4 'delegations', 14 sectors, and 265 residential communities of various kinds. According to IMPLAN, there are 96 'colonies' (*colonias)*, 71 'housing fractions' (*fraccionamientos habitacionales)* and 63 housing units (*unidades*

habitacionales), as well as 16 industrial areas. The industrial belt consists of several separate industrial estates. Mixed commercial use is scattered throughout some residential areas, including the *colonias.* The image below (a) shows that some residential locations in are located in the center of Tlalnepantla, right next to industrial companies. The image on the right (b) is an aerial photo of the 'Unidad Habiatacional El Cortejo', which has three types of housing.

Aerial photos of Tlalnepantla de Baz

a: Self-built neighborhood.

b. El Cortejo social housing project

Housing

In 2015, there were 198,653 homes in Tlalnepantla. The average occupancy rate is 3.5 people. The percentage of owner-occupied homes is 50%, while the percentage of rental homes is 44.3%. Ninety-five percent of private homes have utilities, including water, drainage, sewerage, and electricity. The homes in the *colonias* (informal neighborhoods) were mostly built by the residents themselves. In *fraccionamientos habitacionales*, homes were usually built on formal plots, probably partly due to self-management. The homes in *unidades habitacionales* are mainly apartments built as part of social housing projects. The standard apartment building has between three and five floors. Seventy percent of homes are suburban, but there are also high-density residential areas, some of which are very luxurious. It is estimated that at least 50 percent of homes were built through self-build or private commissioning. Housing expansion took place on an individual basis for decades. Step-by-step self-build—or incremental housing construction—still occurs in both *colonias* and *fraccionamientos habitacionales* (residential neighborhoods).

Below is a description of typical housing units in Tlalnepantla, including the types of dwellings found there. This section was produced in collaboration with the municipal department for social housing.

Avenida de Ferrocarril and the La Romana residential area

On both sides of a freight railway line running through the Tabla Honda neighborhood are long rows of houses, all of which were built individually by families according to the principles of incremental self-build. The La Romana residential neighborhood borders the city center of Tlalnepantla, where family homes are mainly found on plots of 250-300 m². These are houses that have been built over time by individual households under their own management. The quality of the houses is fairly good and the public space is green. Some plots contain apartment buildings with 3-4 floors for rent. The streetscape shows different building heights. Theoretically, the area could be further densified through individual private investments.

Homes along the Av. de Ferrorarril railway line and in the La Romana residential area

Residential areas Tabla Honda and El Cortijo

The Tabla Honda residential unit is a residential area with detached residential buildings that was built in the 1970s. The residential buildings are located in a green park landscape. The residential unit is designed as a gated community, which is common in Tlalnepantla. The apartments were built in compact residential buildings with a maximum of five floors. The living area of the apartments is 40-50 m². The El Cortijo residential unit is located south of Avenida Mario Colin, near the city center. This urban residential complex consists of single-family homes and apartments in three- and four-story residential buildings. The average living space is approximately 50 m² (between 40 and 70 m²).

House types stacked a: Tabla Honda and b: El Cortijo

Residential complexes 'Tejavanes'; La Cañada; Unidad Residencial Natural

The Tejavanes neighborhood consists of five-story apartment buildings built in the 1970s. The floor space of the apartments is approximately 50 m2. There are no elevators. This residential complex appears outdated. La Cañada is a residential complex for middle and higher income groups. It has a central green space. 'Unidad Residencial Naturalis' is an apartment complex. It has facilities such as a swimming pool, community room, and parking garage. There are larger apartments of, for example, 135 m². These apartments are beyond the reach of the urban poor and middle-income groups.

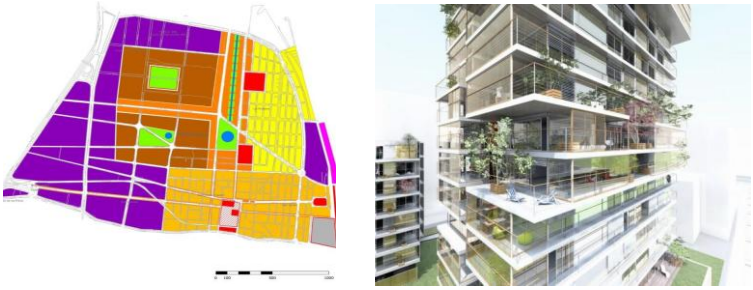
Photos: a: Tejavanes, b: La Cañada, c: Residencial Natural

Living in the city center (future plan)

The urban space in Tlalnepantla is largely utilized. Expansion at the city's edges is virtually impossible. In the future, industrial space may become available for repurposing. This is possible near the city center, for which the municipal government has commissioned a renovation and densification plan. The focus is on stacked urban housing and high-quality forms of commerce, services, and culture. Urban planner Ismael Mejía designed mixed-use buildings with commerce, services, and high-quality housing in a

stacked form along the Radial Toltecas in the center of Tlalnepantla. In 2013, the international advisory group UPAT of the International Society of City and Regional Planners (ISOCARP) made design recommendations on this project. The author was a member of the design team.

Urban plan and vision for the center of Tlalnepantla



Source: UPAT 2013, ISOCARP.

The residential complexes for middle-income groups have apartments averaging 50 m2. In the future, a growing middle class may create demand for larger apartments. There are generally no elevators in buildings with up to five floors. Parking problems have increased due to growing car ownership. The housing stock in Tlalnepantla ranges from simple self-built homes and public housing to the most expensive apartments.

Employment

Between 1940 and 1970, many companies were established in Tlalnepantla, including those involved in the production and processing of cement, glass, paper, plastics, metal, agricultural products, textiles, and food. The 16 industrial zones comprise more than two thousand companies. A total area of 10.23 km2 is used as industrial land, which is 12.2 percent of the municipal territory. Many of these areas are now being converted into commercial and service functions. In other cases, distribution companies are being developed.

Facilities and public transport

Another important economic sector in the municipality is trade, with many shops and shopping centers—such as Mundo E—all easily accessible. There are department stores, cinemas, restaurants, entertainment centers, hotels, banks, and a wide variety of specialty shops and services, making them an important source of employment for residents of the municipality and its surroundings. Tlalnepantla has a high level of amenities, with several specialized hospitals and private clinics. Many workers in Tlalnepantla have jobs in the medical sector. The sports and cultural sectors are also present at all levels and serve the surrounding municipalities. In terms of higher and university education, Tlalnepantla plays a central role thanks to the presence of several universities and higher education institutions.

Next to the center of Tlalnepantla is the train station of the north-south suburban rail line from Cuautitlán to the Buenavista metro station in Mexico City. At Buenavista station, passengers can transfer to line B of the Mexico City Metro and lines A1, A2, A3, and A5 of the Metrobus. Since 2011, line 3 of the Metrobus has been operating in Tlalnepantla as an alternative for the large number of people who travel to the city center every day. For local transport, there are many minibus and bus lines. Tlalnepantla is not optimally integrated into the metropolitan public transport network because it has no direct metro connection to Mexico City.

▪ Comparison between Nezahualcóyotl and Tlalnepantla

Nezahualcóyotl and Tlalnepantla experienced enormous population growth between 1960 and 1980. As such, they contributed to the absorption of migrants from other regions. In the early years, Nezahualcóyotl provided workers for industry and services in Mexico City, while Tlalnepantla was developed as an industrial area that needed its own workforce.

Tlalnepantla is a central municipality northwest of Mexico City. Possible changes in the function of outdated industrial estates could strengthen Tlalnepantla's central role. The addition of stacked residential functions could contribute to this. Tlalnepantla has a range of residential environments, from self-build zones on the outskirts of the city to extensive residential areas for middle-income groups and high-quality urban housing. Housing production in Tlalnepantla is still relatively high; according to IMPLAN, approximately 24,800 detached houses and 1,214 apartments were added between 2010 and 2015.

Neza is a sprawling residential area consisting mainly of single-family homes. There is no more space available for new single-family homes. However, gradual developments are expected, such as individual and collective densification of residential areas and the construction of offices and shopping centers in the zone near Ciudad Jardín. The table below compares Nezahualcóyotl and Tlalnepantla based on a number of characteristics.

Table: *Tlalnepantla and Nezahualcóyotl compared on the basis of several criteria*

Items	Tlalnepantla	Nezahualcóyotl	Remarks
surface	83,7 km2	63,4 km2	acc. to municipality
urbanized area	83,7 km2	68,4 km2	acc. to municipality
industry	10,2 km2	O,7 km2 (estimated)	industrial area in Neza is limited
housing area gross	55,55 km2	49 km2	estimation by author
inhabitants in 2015	700.734	1.034.687	number of residents growing
inhabitants /km2 in 2015	12.625	21.116	calculated by author
Projection of population in 2030	784.390	1.334.201	acc. to UN-Habitat in 2018 (*)
average number of residents per km2; 2017	10.959	20.569	calculated for urban area (*)
homes in 2015	198.653	280.391	housing production was limited (*)

Sources: Municipalities where indicated. (*) Data from UN-Habitat and Infonavit (2018)

In terms of urban planning, the two cities are completely different. Nezahualcóyotl is located on flat land that was once the bed of Lake Texcoco and has a monotonous rectangular street pattern. Tlalnepantla is located on gently to moderately sloping terrain (gradients of 15-25%) and is spatially fragmented by the main infrastructure and numerous industrial estates. In both municipalities, there is still high demand for affordable housing. The only option for building affordable social housing is to further densify the urban fabric. There are growth opportunities on individual plots, but the willingness to densify or sell for densification plans is probably not high.

In Nezahualcóyotl, individual home improvement is still ongoing, which can sometimes take a long time. Similar processes of individual home improvement are also underway in Tlalnepantla. Both suburbs

still have remaining problems, such as limited access to utilities. Nezahualcóyotl demonstrates the power of the self-built city, where self-built plots have gradually been built up and densified. The average density is higher than in Tlalnepantla. In socio-economic terms, there are some differences between the populations of Neza and Tlalnepantla. Poverty is slightly higher in Neza, while higher income groups are more prevalent in Tlalnepantla.

A municipal forecast predicts that the population of Tlalnepantla will rise again to 750,000 by 2050. An increase in the number of inhabitants is also expected in Nezahualcóyotl. This would mean that a considerable number of homes would have to be built each year. There is hardly any space left in Tlalnepantla for large-scale new-build single-family homes, and none at all in Nezahualcóyotl. Many changes of use are expected in outdated industrial estates in Tlalnepantla, including in the center. There is potentially a lot of space for new multi-story homes.

In Nezahualcóyotl, successful consolidation processes have gradually led to more intensive land use and improved living environments. Nezahualcóyotl has long since ceased to be a dormitory town for Mexico City, but is now fully integrated into the extended metropolitan area. The current situation in Neza with regard to public works is fairly good, but there are still some backlogs that require attention. Some environmental problems reported by residents to the municipal authorities in 2017 were as follows: air pollution, motorized traffic nuisance, garbage collection does not always work properly, and there is a shortage of green spaces.

Stacked housing is already common in Tlalnepantla in the form of 4-5-story residential complexes. These complexes are mainly mono-functional. Similar stacked housing types can be found in the northern part of Neza, but in smaller numbers. When new construction becomes possible in the future, both municipalities could aim for higher housing densities and mixed residential functions in integrated projects with employment opportunities and good amenities.

Challenges for public housing in Mexico

Over time, self-managed housing and subsidized housing have become intertwined in Mexico. This is due to the complex financing system for public housing, which allows even low- and middle-income families to claim subsidies, loans, and mortgages for the construction or purchase of a home. Social rental housing based on collective ownership of land and buildings is rare. Private institutions do manage rental housing complexes, but these are generally in the more expensive segment. Investors in the social segment of the housing market are still the funds and institutions that have statutory responsibilities in the field of public housing, such as INFONAVIT and FOVISSSTE. In March 2025, INFONAVIT has announced to grow the access to affordable housing by realizing 500,00 houses for lower-income families, and also to refurbish abandoned properties.

Mexico has an extensive system of 'social housing production' that brings together the parties responsible for financing, organization, and implementation. New policy objectives aim to achieve sustainable and integrated urban development, urban renewal and densification, and the promotion of eco-technologies in housing construction. Another policy objective is to promote housing projects that incorporate sustainable urban solutions through community participation. An example of such a development is located in the Guadalajara Metropolitan Area, within easy reach of a light rail and a macrobus. This project, called 'Terralta', includes plans for 4,800 affordable homes on a 74-hectare site. The concept offers stacked housing of varying heights, bike paths, green public spaces, and all utilities. This could become a development model for future housing construction. However, there is no room for

new suburban developments within the metropolitan area of Mexico City. There, the focus is on urban renewal and intensification of land use. The principles of 'social production of housing and habitat' also apply there, such as involving residents in the planning process. Other actors such as housing cooperatives, housing NGOs, project developers, construction companies, and social entrepreneurs are also closely involved.

Collective housing solutions are not widespread, but cooperative housing is on the rise in Mexico. There are two cooperative forms:

- *Housing cooperatives,* in which the members implement a construction plan (or have it implemented) and divide the land so that each plot becomes individually owned; and
- *Housing cooperatives,* in which the members jointly implement a construction plan, while the land and the homes remain collectively owned.

In the second form, the residents have individual rights of use and the cooperative can become a community. Several Mexican cooperative housing projects are based on the principles of the mutual self-help housing cooperative movement, that has been developed elsewhere in Latin America according to the FUCVAM model from Uruguay, and in other countries as described elsewhere on this website.

In terms of policy, new urban development aim to make more efficient use of land. This applies primarily to Mexico City and other large cities. Efficient use of space in housing construction leads to smaller individual plots, more stacked housing, hybrid housing (shell construction with individual finishing) and the use of the potential of communal 'building and living'. The architects at Elemental built 70 hybrid pilot homes—shell construction with individual finishing—in a housing project in Santa Catarina, Monterrey, in the state of Nuevo Leon. It is up to the major financial institutions and governments to develop further policies and corresponding pilot projects for adequate housing solutions for the future.

Where housing is being built in Mexico, continuous attention must be paid to the technical construction quality, including in regions where earthquakes can be expected. Offering technical assistance for self-building families can help to make their homes earthquake-resistant.

Epilogue

Between 1970 and 1990, the federal government played a major role in the production of land-for-housing programs that made home ownership possible for people with permanent jobs. However, the mass production of cheap housing led to massive suburbanization. New residential areas were often developed on land that was too far from urban centers, where there were initially no jobs or adequate facilities. Partly as a result, some of these homes have become vacant, causing some residential areas to fall into disrepair. In some cases, this has led to unsafe living conditions.

Since 2000, the government has also made housing finance for new construction available for the purchase of existing homes and for home improvements. Public-private funds were the driving force behind social housing production, leaving its implementation to private parties. In Mexico's housing market, many private and public actors work together to provide a variety of housing products. The rental segment of urban housing markets is served by private actors, individual and institutional owners, and investors.

Since 2010, policymakers have emphasized making the housing stock more sustainable. Technical sustainability includes earthquake-resistant construction, which is necessary in many Mexican regions. Ecological sustainability relates to the use of sustainable building materials that can be reused after the end of a building's life cycle. Green mortgages were introduced years ago and new construction techniques emerged.

Between 2010 and 2015, the concept of 'social production of public housing' became commonplace, which involves a focus on housing construction and the living environment. Mexican architect Enrique Ortiz is a major advocate of this concept. Experiments are made possible with the help of government institutions and financiers. One example is the work of INFONAVIT with its 'Housing Research Laboratory', which developed prototypes of low-rise social housing, including in the innovative community of Apan in the state of Hidalgo. However, the future of public housing in Mexican cities will be more focused on multi-story housing, including social rental housing.

Acknowledgments

The author has collaborated with Otto Verkoren of Utrecht University and Lorena Cabrera Montiel of the Universidad Iberoamericana Puebla on several publications on public housing in Mexico, see the list of references below. In addition, the author collaborated with Luis Salgado and other employees of the municipality of Tlalnepantla de Baz during the advisory mission of ISOCARP's Urban Planning Advisory Team (UPAT) in Tlalnepantla de Baz in 2013.

References

- Ayuntamiento de Tlalnepantla de Baz (2013) Plan Parcial de Desarrollo Urbano del Centro Urbano regional de Tlalnepantla (2013). Tlalnepantla de Baz, Estado de México y Centro de Estudios Urbanos A.G.
- Ayuntamiento de Nezahualcóyotl (2019) Plan de Desarrollo Municipal 2019-2021 Nezahualcóyotl. Estado de México, Edición Marzo 2019.
- Bredenoord, J. & Verkoren, O. (2010) Between self-help– and institutional housing: a bird’s eye view of Mexico’s housing production for low and (lower) middle-income groups. Habitat Intern. 34 (3): 359–365.
- Bredenoord, J. & Cabrera Montiel, L. (2010) Affordable housing for low-income groups in Mexico and urban housing challenges of today. In: Affordable Housing in the Urban Global South; in: Bredenoord, J., Van Lindert, P., Smets, P., Eds.; Earthscan: New York, NY, USA, 2014; [pp. 223-240.]
- Bredenoord, J., & Sánchez Hurtado, L. (2022) Organized self-help housing in Pachacútec, Peru: Training women's groups in earthquake resistant housing construction. World Journal of Engineering and Technology Research, 2022, 02(01), 018–030.
- Buckland, E. (2016) Study of Social Entrepreneurship and Innovation Ecosystems in the Latin American Pacific Alliance Countries. Case Study: Echale a tu casa, Mexico. Inter-American Development Bank.
- CIDOC/SHF (2006) The current situation of housing in Mexico 2006. Mexico City: CIDOC/SHF
- CIDOC/SHF (2012) Current State of Housing in Mexico 2012. CIDOC/SHF: Mexico.
- CONAVI (2010). Estadísticas de Vivienda. Comisión Nacional de Vivienda. (Historical statistics on the number of Housing Actions 1973-2010, CONAVI)

- Connolly, P. (2003) The case of Mexico City, in: UN-Habitat Understanding Slums: Case Studies for the Global report 2003.
- Infonavit (2018) Infonavit contribution to WUF 9 Kuala Lumpur. Infonavit; UN-Habitat.
- IMPLAN (2019) Tlalnepantla Nuestra Ciudad 2019-2021, Estadística Municipal 2019. IMPLAN Municipal Planning Institute, Tlalnepantla de Baz City Council.
- INEGI (2015) Delimitation of metropolitan areas in Mexico 2015. Secretariat of Agrarian, Territorial and Urban Development National Population Council National Institute of Statistics and Geography. Mexico.
- ISOCARP (2013) A proposal for Tlalnepantla Centro. Urban Planning Advisory Team. Conclusions May, 2013. The Hague, ISOCARP
- ISOCARP (2013) Current Housing Typology in Tlalnepantla and Ideas for Housing Policy in the City Center. Municipality of Tlalnepantla de Baz and ISOCARP Urban Planning Advisory Team. ISOCARP.
- Infonavit and UN-Habitat (2019) City Prosperity Index, CPI 2018. Tlalnepantla de Baz, State of Mexico, Mexico. Infonavit/UN-Habitat
- García Peralta, B. (2010). Social housing in Mexico (1940-1999): public, economic, and social actors? Cuadernos de Vivienda y Urbanismo Vol. 3, No. 5, 2010: 34–49. UNAM.
- Ribbeck, E. (2002). Die informelle moderne spontanes bauen in Mexiko-Stadt. Stuttgart/Heidelberg: awf-verlag.
- Platform for Knowledge for Urban Transformation/Tlalnepantla (2017)
- Ortiz Flores, E. (2011) Producción social de vivienda y hábitat: bases conceptuales para una política de vivienda. In: El Camino Posible. Producción del Hábitat en América Latina. Arébal, M. et al. (Eds.) Ediciones Trilce/Centro Cooperativo Sueco: San Juan, Costa Rica.
- Quintera Soto, L. (2017) Housing, Environment, and Employment Issues in the Municipality of Nezahualcóyotl, State of Mexico: Challenges for Growth. Autonomous University of the State of Mexico and Castellanos Editores S.A. de C.V.
- Rodríguez Buendía, A. (2019) Palo Alto and Housing Cooperatives in Mexico. Mexico City. Redacción Centro Urbano
- UN-Habitat (2011b) Housing Finance Mechanisms in Mexico. Nairobi, Kenya.
- UN-Habitat (2011a) Affordable land and housing in Latin America and the Caribbean. Nairobi, Kenya.