

Nueva Democracia Ten Years Later: An Affordable Housing project in Venezuela.

Pablo La Roche¹, Marina Gonzalez², Andrés Echeverría², Daniel Velazco²

¹ *California State Polytechnic University Pomona, Department of Architecture,
3801 West Temple Avenue, CA 91768. tlf 909 869 2700 fax 909 869 4331
pmlaroche@csupomona.edu*

² *Universidad del Zulia, Facultad de Arquitectura y Diseño, Maracaibo,
Venezuela*

Abstract

Nueva Democracia is a 900 unit affordable housing project in Maracaibo, Venezuela. The Community, the State Government and the University worked together between 1994 and 1996 in the design and construction of this project, which was built in several phases and promoted social organization of the communities at the urban, neighborhood, and dwelling levels. The possibility for controlled growth was an important part of the project and at all three levels the project was designed so that it could be habitable with the smallest possible investment by the government and the owners, permitting distribution of funds to more families, opening more possibilities to lower income families. Another design objective was to reduce the amount of public land while increasing the amount of semi-private land owned by groups of families. The jointly owned spaces, condominiums, have been modified by its owners, which are the families around them, while serving as spaces for social interaction. Houses were designed to grow from small 30 m² houses with multiuse spaces, up to two-story 140 m² dwellings, depending on the possibilities and needs of the families. Unlike many affordable housing projects in Venezuela, Nueva Democracia is thriving ten years later, most houses have grown with the families, and the condominiums are a very important component of social life. This paper describes the project, its current state and a few ideas for its continuous healthy evolution.

1. Introduction

Until recently, traditional schools of thought perceived urbanization in developing countries as a positive process in which surplus labor from rural areas would move into the cities to work in industrial projects which would help develop the country. "The conventional ecological perspective assumes an equilibrium model in which very rapid city growth and the various types of urban imbalances are transitional phases on the path to modernity" (Smith, 1996).

Venezuela's urban population now accounts for more than 90% of the total and of these more than 60% live in precarious human settlements. Most of this population was originally the product of migrations from the countryside, but beginning in the nineties urban growth in Venezuela was the product of its own natural growth and slowed down from 4.45% in the seventies to 2.7% in the early nineties (CEPAL, 1995). The modern urban dweller in Venezuela is not the poor migrant peasant anymore. Instead the cities of Venezuela are inhabited by a new urban poor with specific practices and social and cultural values which are essentially urban. This urban dweller has also generated mechanisms for appropriation and construction of the urban soil different from the traditional urban dwellers (Echeverría, Chourio, 1999). One of the most common mechanisms for the appropriation of empty land being by squatting or "invasiones" as they are called in Venezuela.

The distribution of income, amenities and opportunities inside cities is very uneven. Increased poverty levels have transformed cities into infraurbanized, informal, violent, autogenerated spaces with a precarious and marginalizing pattern of urban development (Echeverría, Chourio,

1999). In Maracaibo the neighborhoods or “barrios”, which were created by these “invasiones” account for 65% of the population (Echeverría, 1995). This housing which is generally self built or built by local people without construction documents, generally lacking sanitary services is called informal housing. The informal sector of construction dominates the housing sector in Venezuela and is now also generating a “city” with more strength than the formal sector.

2. Nueva Democracia

Nueva Democracia was born as an informal settlement. The 25 hectare lot which was occupied by a squatter group on the 25th of January, 1994, was the property of the National Urban Development Fund (FONDUR). IDES negotiated with the community the peaceful withdrawal from the lot, and in exchange committed to develop a project and to help them organize a Civil Association so that they could negotiate with FONDUR, with legal figure, the acquisition of the lot. This simple act of dialogue permitted this large extension of land to become part of the formal city instead of the informal city.

When the project was designed the city of Maracaibo had a housing deficit of more than 85.000 residential units (Conzuplan, 1994). With such a deficit, in any serious attempt to solve the housing problem the communities had to assume a leading paper in the search for solutions. Community involvement and participation in all phases of the project was a key component of the project. The community requested that the University of Zulia (School of Architecture) develop the project. "Nueva Democracia" (New Democracy) was developed as a collaboration between the Social Development Institute (IDES) of the State Government, the Community, and the School of Architecture of the University of Zulia.

Under this approach, three intervention, or domain project levels were established: 1) the urban level, represented physically by the whole lot and socially by the Civil Association of New Democracy (ACINDE); 2) the intermediate level represented physically by housing groups of 12 to 30 units surrounding a collective use space called a Condominium, and socially by a Community Housing Organization (OCV); 3) the third level was physically represented by the basic urban cell, the dwelling, and socially represented by the basic cell of civil society, the family. Thus each architectural level was specifically related to a social organizational level.

The initial dwellers of the project were mostly young (between 25 and 40 years) and with an average monthly family revenue between US \$75 and US \$350 at the time (1995). They were not the poorest of the poor in Venezuela, but were in the bottom half.

2.1. Urban Design in Nueva Democracia

The urban complex was divided in two single family rowhouse sectors –north and south- with a higher density band running roughly east-west that served these two (Fig 1). This band would have multifamily dwelling above and commerce on the ground floor, but was not developed as such.

The following criteria summarize the basic urban design principles:

- Rationalization of the occupation and use of the space, to optimize infrastructure and reduce costs. Before this project, most government projects in Venezuela were based on the concept of pre-fabricated apartment houses in macro-blocks, loosely based on Le Corbusier’s radiant city concept. This design generated much un-maintained space that became very dangerous no man’s land. A detailed analysis was done by Gonzalez (1997) that determined the savings of this type of layout compared to a typical grid layout.
- To achieve a better quality of life, the amount of public and semipublic areas which are difficult to maintain and control was reduced, while the amount of private and semi private spaces which can be properly maintained and secured, was increased. There is 61.28%

private space, 11.23% semi-private space, and only 14.24% semi-public and 14.87% public which is mostly streets. The maximization of private and semiprivate spaces has proven to be an asset to the dwellers that are now also collective owners of the "condominium" spaces, with additional value to their houses. The condominium concept has been repeated, but deformed, in many areas of Maracaibo, in which the semi private spaces have been converted into isolated urban islands, separated from the rest of the city by blank walls. In Nueva Democracia these spaces are articulated and connected with the rest of the city through other dwellings that face the streets. There are no blank walls.

- For security and maintenance reasons a very clear definition of the borders between the private/semi private spaces and the public spaces was implemented. The transition between the private lot and the condominium is established but not strongly controlled because we wanted the dwellers of the homes to open up to the common shared space. The borders between the condominiums and the public space have been reduced to a minimum and can be easily controlled. They are clearly defined and all condominiums have installed some sort of controlled access to their common spaces, such as a gate.
- The sense of community was strengthened by the design of the condominium space and social organization. A well organized community will evolve better. Proof that this has happened is that practically all of the dwellings that face the condominiums are open to the common space instead of having walls as in most of contemporary Maracaibo. This has helped to increase relationships between neighbors. In the few cases in which condominium houses have tried to build front walls the rest of the neighbors have opposed it ferociously.



Figure 1: Urban Layout of Nueva Democracia

2.2. Condominium

The Condominium, represents an organizational model that reinforces the spatial limits and sense of ownership of the families in a territory that is their own and recognizable. This space is an extension of the private space into a shared common space, but shared and owned only by a group of identifiable neighbors. These spaces are used by the neighbors for different purposes and activities at different times of the day. The communities that live in these spaces are responsible for their conservation and their improvement (Echeverría, Gonzalez, La Roche, 1995) and these spaces have been developed according to their needs, capacity and income. But even though all of the condominiums are well maintained there has not been any major design change or improvement, and all of them maintain their initial design, which was supposed to simply be one of many possible options.

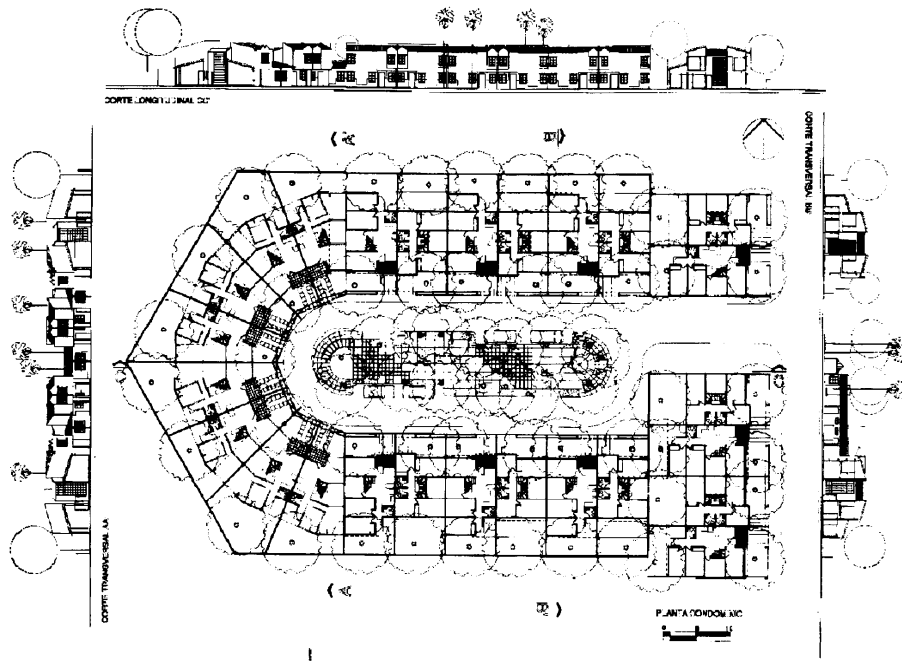


Fig 2. Plan and image of a typical condominium in Nueva Democracia

The concept of condominium has worked very well, most of Nueva Democracia's dwellers have a strong sense of belonging to their specific condominiums. They have expressed that they are happy with their layout, one of the main reasons being the additional level of security created by having a single entry point and by the fact that the condominiums are small enough that the neighbors know each other well and immediately recognize strangers (Fig 2). An indicator of the sense of belonging is that in December there are competitions between the different condominiums to determine which has the best decorations.

2.3. The dwellings

The dwellings are conceived as a unit that can grow. They are designed to evolve from 30 m² with a multiple use living/sleep space, a bathroom and laundry space, up to a 130 m² house with five bedrooms, living room, dining room, kitchen, laundry room, backyard, front yard and internal patio, porch and a place to park the car (see Fig. 3).

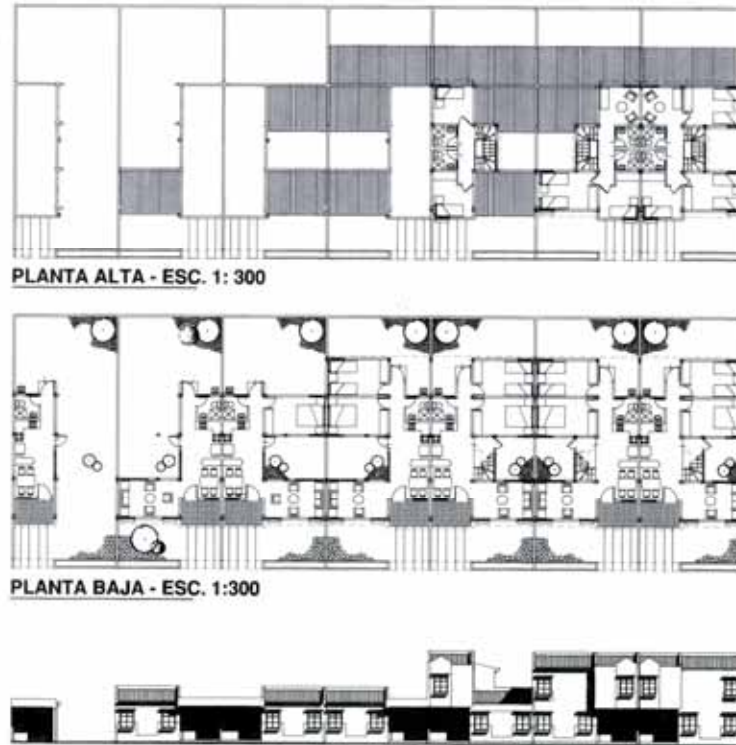


Fig 3. Different stages of the houses and Interior view of one of the dwellings

Depending on the form of the lot, two types of houses were proposed: in the rectangular plot the house had seven stages of growth while in the trapezoidal it had four. In the first stage the house is an "I"; then a living room is added to convert it into an "L"; and then a bedroom, to generate a "C", which encloses an internal courtyard that contributes to ventilate spaces. Growth in stages 5, 6 and 7 is in the second level. Many variations can be done without much problem due to the flexibility of the plan. Bathrooms, kitchen, and laundry are grouped together and the plumbing and electrical connections for the second floor were installed in the first stage. The structure was proposed, by petition of the IDES, with concrete structure and clay/concrete blocks. This is typical of Venezuela, where anybody can build (and modify) a block wall. The structure was designed to support a second story in future stages.

The houses were designed to grow with the owner and there is no doubt that this has happened. Practically all of the houses have grown way beyond their initial phases and some of them way beyond recognition. In their quest for individualization the owners have personalized them and made them their own. This is the purpose of a project such as this one, to provide a home for the family and a framework for growth as the family evolves.

Adapting to the hot and humid climate of Maracaibo was an important project consideration. The houses did have some thermal capacity but unfortunately no insulation. Only in 2005 was an energy code approved for Maracaibo and insulation was not used in buildings before this, much less in affordable housing. The most important strategies implemented to achieve thermal comfort were natural ventilation through windows to promote evaporative cooling from the body and shade to reduce solar gains inside the house. Key components were the interior courtyard and the shaded "condominium" open spaces. These two strategies have worked well but unfortunately when many of the owners have covered the courtyard or back yard to convert them to interior spaces, reducing air circulation inside the houses. Many of these spaces are now air conditioned, but because they are poorly insulated they require a lot of energy for cooling, so the owner can't always afford to operate them. The increase in enclosed air conditioned spaces also reduces air flow overall and increases air temperatures around the houses.

By being flexible and permitting growth, the design has been successful, but some limits should have been established in cases in which the modifications would negatively affect the performance of the house (e.g. not permitting them to close the internal courtyard).

Due to the increase in the heat island effect, and construction of more apartment towers that block the cooler northeasterly lake breezes, the people that live in Nueva Democracia are increasingly dissatisfied with thermal conditions inside dwellings. To improve them several solutions have been proposed and detailed through construction documents. There are five main strategies that can be implemented, the first four in their homes and the last one in the condominium spaces.

- 1) Reduce heat gain through windows. Several strategies are proposed which include internal or external shading elements, pergolas, trees, or extending the roof.
- 2) Increasing insulation through the roof. In equatorial latitudes the highest thermal gains are in the roof so it is important to reduce the thermal gains through it. A proposal for internal insulation was prepared.
- 3) Increase cross ventilation by adding shaded windows.

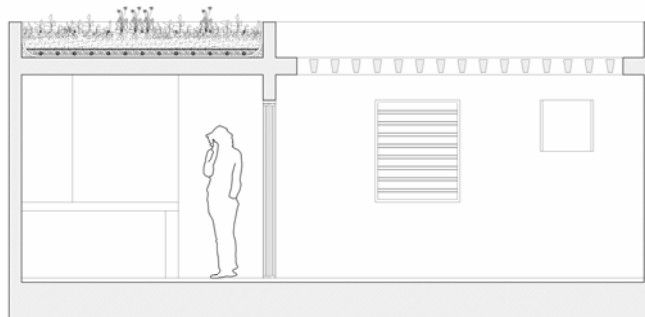


Figure 4: Implementation of Green Roofs in Nueva Democracia Houses

- 4) Install an extensive vegetated roof in the horizontal concrete slab or in sections of this slab (see fig 4). This is easily done because the flat section of the house was designed to support

a second story. This green roof will act as solar protection for the slab with all the additional benefits of green roofs. Furthermore research indicates that in milder climates the thermal mass of the green roof can be used for cooling (La Roche, 2006).

- 5) Increase the area of exterior green surfaces while reducing paved heat absorbing areas and promote the planting of more trees. This will also reduce the temperature of the surfaces close to the houses, while increasing the amount of water that goes to the water table.

There is no need for public intervention except possibly for financing. All of these measures will also contribute to the public good by reducing the heat island effect, improving thermal comfort in unconditioned houses and reducing electricity consumption in air conditioned spaces.

3. Conclusion

This project is about people, about providing a solid support system that would evolve and adapt to different family and environmental conditions over time. The house had to be affordable, flexible while growing easily. People had to be able to interact at different levels, with their families inside and outside their houses, with their neighbors in the condominium group and with the rest of the community through the neighborhood association. There is a connection between the architectural levels and the social levels of interaction which has worked out very well and there is a sense of place and community in Nueva Democracia that is not usually found in these projects. Unfortunately a lack of guidance and clear rules on what “not to do” has also reduced the performance of some of the features of these houses. A set of guidelines is under preparation to address some of these problems.

This proposal demonstrates that it is possible for the government, the community and the designers to work as a team to generate solutions adapted to local problems. Dialogue and hard work by the community and the designers permitted to integrate an area of the city that was heading for the informal sector into the formal city. This is a simple idea that if repeated more often could generate more interesting architectural solutions in other cities of developing countries.

4. References

CONZUPLAN Reporte, Maracaibo, Venezuela (1994).

ECHEVERRIA A, LA ROCHE P, GONZALEZ. “El Condominio como Espacio para la Participación Comunitaria: Caso Nueva Democracia”. Urbana. 16-17. p. 107 (1995).

ECHEVERRÍA A. “Los asentamientos irregulares en el proceso de urbanización de la ciudad de Maracaibo. La formación de la ciudad precaria”, Universidad del Zulia, Facultad de Arquitectura, Mimeo (1995).

ECHEVERRIA A., CHOURIO M, Hacia una reinterpretacion de la dinamica barrial en Maracaibo. Encuentro Nacional de Vivienda. San Cristobal, (1999).

LA ROCHE P, Green Cooling: Combining Vegetated roofs with Night Ventilation. Proceedings of the Conference of the American Solar Energy Society ASES. Denver, Colorado (July 2006).

NACIONES UNIDAS, COMISIÓN ECONÓMICA PARA AMÉRICA LATINA Y EL CARIBE (CEPAL). “Alojar el desarrollo. Una tarea para los asentamientos humanos”, Reunión Regional de América Latina y el Caribe preparatoria de la Conferencia de las Naciones Unidas sobre los Asentamientos Humanos (HÁBITAT II), Santiago de Chile (1995).

SMITH D. Third World Cities in Global Perspective. The Political Economy of Uneven Urbanization. (1996). Westview Press. USA.