

**MEXICO**  
INFRASTRUCTURE &  
SUSTAINABILITY REVIEW



**HIGHLIGHTS**  
**2019**



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# MEXICO

## INFRASTRUCTURE & SUSTAINABILITY REVIEW 2019

President Enrique Peña Nieto's term wound down in 2018, after six years that greatly impacted the country's infrastructure industry and sustainability drive. Peña Nieto was able to position Mexico's thriving industrial, tourism and real-estate sectors globally while also successfully launching the construction of the New Mexico International Airport (NAIM). The country demonstrated its attractiveness to international investors not only for real-estate developments but for transport and social infrastructure through the stock market and the establishment of PPPs. As the year ends, Peña Nieto will hand over a stable economy with many challenges but even more opportunities to boost the country's infrastructure competitiveness, one of the areas successor Andrés Manuel López Obrador has prioritized.

2017/18 also saw an abundance of uncertainty, with global trade friction rattling investors and the Mexican presidential election itself impacting project progress. Meanwhile, verticalization and transparency became the industry's new buzzwords as cities began looking inward to accommodate not only growth but also the quality of life demands of citizens. With a new president waiting in the wings, Mexico Infrastructure & Sustainability Review 2019 looks at the accomplishments and setbacks of the past year as viewed through the lens of the industry's top private and public stakeholders.

# YEAR IN REVIEW

2018 marks the end of Enrique Peña Nieto's administration and welcomes Andrés Manuel López Obrador's team to Los Pinos. AMLO has already announced ambitious infrastructure projects but before beginning his National Development Plan, his team will analyze the conditions in which it receives the country

Uncertainty hovered over the Mexican economy in the latter half of 2017 and through the first half of 2018, mainly due to the renegotiation of NAFTA, trade-related actions from north of the border and the Mexican presidential elections in July that swept a populist into office. Despite the disconcerting conditions, the infrastructure industry continued to attract private investment although the country still faces an infrastructure spending gap estimated at US\$544 billion. With budget austerity tying the government's hands, it started exploring further options for PPPs, which could prove pivotal as President-elect Andrés Manuel López Obrador takes office at the end of 2018. AMLO, as the new president is known, has already stated his desire to work closely with the private sector to see through his ambitious development plans, all of which bodes well for the sector.

At the city development level, a key word for the industry throughout the past year was verticalization, a trend that became entrenched as the favored building option for cities, with new skyscrapers transforming skylines in major metropolises and secondary cities taking their cue from their bigger counterparts. Transparency was also a buzzword, especially in the wake of the Sept. 19, 2017 earthquake that shook the capital, Puebla and Morelos states, leaving a devastating trail of fallen buildings that resulted in 370 deaths.

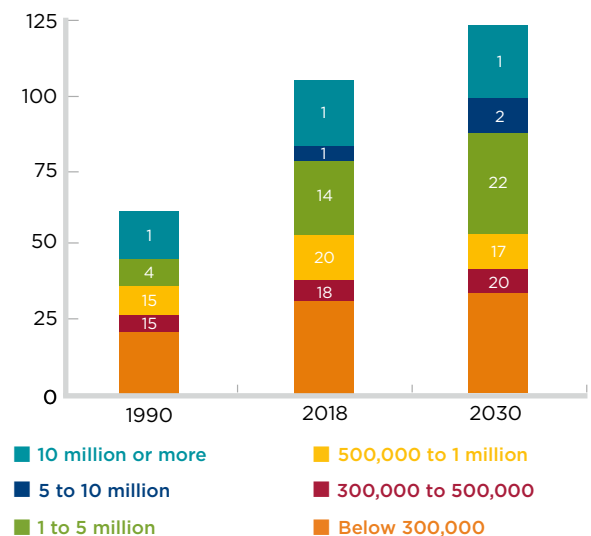
## TRANSFORMING CITIES

Mexico's cities are understanding that planning is key to regenerating areas that have been allowed to grow haphazardly, such as Mexico City. Rather than look to the outskirts - a past mistake that continues to haunt some of the country's biggest metropolises - city governments and developers are embracing a more modern urban planning that emphasizes height and density. Gabriel Ballesteros, Partner at Ballesteros y Mureddu, says a strong urban development plan is the first step in reinvigorating cities while also helping authorities keep abreast of changes and predict new needs. "Urban development plans should estimate how many hectares cities need to regenerate, fill in and expand to better define the incentives and maintain balance. The outcome is a living, compact and working city." Ballesteros gives two examples of cities achieving this balance, Mexico City being the best. "Mexico City, with all its problems, has done a great job in rescuing, regenerating and reconnecting public spaces," he says. "It has created the right amount of verticalization." Another city working for connectivity and re-planning is Aguascalientes. Other cities Ballesteros highlights include

Guadalajara, which he says has focused on rehabilitating and regenerating urban spaces. On the other hand, Queretaro is an example of what not to do, as Ballesteros argues that it has grown with no planning. Mexico City, for all its recent advances, still requires the development of more urban infrastructure with a growing demand for water and waste infrastructure and mobility options. Guadalajara, Jalisco, is also thriving with growing industrial and agroindustry development and a flourishing real-estate sector leaning toward residential housing. The municipality in the Guadalajara metropolitan area with the most investment is Zapopan, concentrating the commercial and corporate real estate of the state's growing "Mexican Silicon Valley." Monterrey, the Sultan of the North, continues to attract industrial development on its peripheries and is developing symptoms similar to Mexico City when it comes to traffic congestion and basic services. The city is expanding beyond its most developed and prosperous region, San Pedro Garza Garcia, to the downtown area in search of better mobility solutions for commuters. It is pushing for higher densification, with a current population of approximate 4.7 million and a density of 108.3 hab/ha.

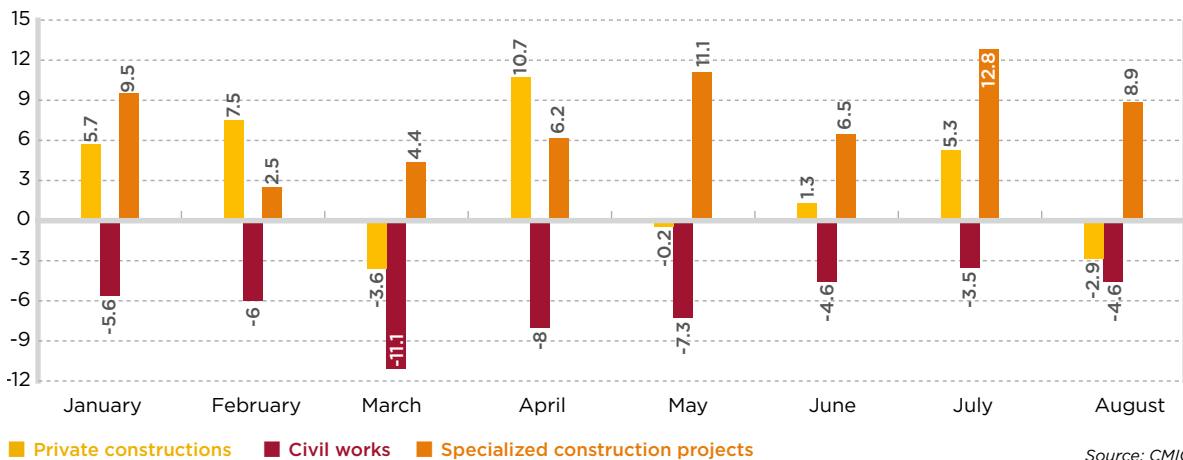
The country's emerging urban areas with the highest growth rates between 2010-2015 are the Queretaro Metropolitan Area (2.8 percent), Puebla Metropolitan Area (1.6 percent) and Tijuana Metropolitan Area (1.1 percent). These cities are booming due to automotive and manufacturing industrial development but share the same challenge related to urban

MEXICO'S URBAN POPULATION BY SIZE CLASS OF URBAN SETTLEMENT (million)



Source: UN World Urbanization Prospects 2018

## CONSTRUCTION SECTOR PERFORMANCE IN 2018



density. Each has a density between 77 and 96 hab/ha, and populations about to hit 2 million people. These cities are looking to increase their infrastructure development to meet the demands of its citizens and not fall into the same mistakes as their megacity counterparts.

### CONSTRUCTION PERFORMANCE

According to INEGI, activity of the construction sector from January to August 2018 rose 1.9 percent in comparison to the same period in 2017. This growth was fostered by strong dynamics within the specialized works subsector (7.7 percent growth), which included reconstruction efforts after the September earthquakes. The private sector construction subsector registered accumulated growth of 2.9 percent through the construction of commercial and industrial real estate. The civil works subsector dropped 6.3 percent during this period due to a slowdown in transport and water infrastructure projects.

Overall, the 2018 forecast for construction GDP was for 1-2 percent growth, according to CMIC. The sector's activity in 2018 slowed, however, due to the election and resulting change in government administration, project delays and inflationary pressures on construction materials. "At the end of 2017, we expected the construction industry to remain steady, neither decrease nor increase. Nevertheless, the sector experienced a 1.1 percent decrease in comparison to 2016. If the projects that are scheduled for this year are completed as planned, such as the Mexico-Toluca Interurban Train or Mexico City New Airport (NAIM) and housing subsidies continue, the sector could grow 1-3 percent in 2018. If this does not happen, we could see negative numbers once again," says Alejandro Ruíz, Head of Construction at KPMG in Mexico. PPPs continue to play an increasing role, particularly in real estate with the arrival of new domestic and international entities. In CIMIC's 2018 Top 20 Construction Companies Ranking, Spanish companies OHL Mexico and Grupo ACS took the first two spots, followed by CICSA, IDEAL and Fibra Uno. In 2012, Mexico's Top 20 construction companies included three international firms: Grupo ACS, Grupo Aldesa and

OHL Mexico, while 2017 featured these, as well as Mota-Engil Mexico and Techint Ingeniería y Construcción.

### REAL ESTATE STAYS ACTIVE

Since 2016, the real-estate sector has kept the construction industry busy as private sector investment in the commercial, residential and corporate segments boomed throughout Mexico's developing cities. 2018 was a good year for housing in the country as local governments embraced the 2014 National Housing Plan. Real estate was the industry's most active segment with a focus mostly on urban areas. The National Housing Plan stipulates the construction of vertical and more compact cities. With the 2016 amendment to the Human Settlements Law, public entities received the basic norms and management tools to organize the development of their territories and human settlements. The results of these policy changes were felt in full in 2017 as local governments adopted these changes in policies and began modifying zoning permits to design more livable cities and bring people back into the city centers. The main trend observed, particularly in urban areas, was the development of multifamily rental housing. "There is a requirement for 40-60 percent more houses because people are living alone or with roommates," says Eduardo Orozco, former Country Manager of Greystar. Although housing development increased, most of the homes being constructed are within the middle-residential plus sectors, when the main housing deficit exists in the lower income segments. The highest demand in 2017 was in the State of Mexico, Jalisco, Nuevo Leon and Mexico City. "CONAVI is also striving to promote social housing verticalization through subsidies for over 8,000 families that will buy apartments in city centers," says Jorge Wolpert, Director General of CONAVI.

After housing, commercial real estate received the most investment in 2018, especially in relation to mixed-use developments. Given land scarcity and changing consumer trends, real-estate players are looking at these projects to increase their returns and create a bigger impact on their surroundings. Overall, 857,360 m<sup>2</sup> were added to the national inventory in 2017, mainly in the ZMVM, Bajío and northern

## | ANALYSIS

regions. The 2018 inventory is expected to reach 1.8 million m<sup>2</sup>, 300,000m<sup>2</sup> of which will be developed throughout 2018, according to ADI, through projects such as Mitikah, Parque las Antenas, La Isla Merida, The Harbor Merida and Explanada Puebla.

The industrial sector, meanwhile, faced uncertainty as NAFTA was renegotiated although the USMCA deal that replaces the previous FTA has somewhat settled the air. Although the new deal must still be ratified by all three countries, industrial entities are turning their attention to logistics and warehouse development for e-commerce players. "There was a great deal of uncertainty related to NAFTA and the 2018 presidential elections and nobody knew how the real-estate market would perform. While uncertainty can lead investors to postpone decisions, markets have behaved more or less the same as in 2017. Growth in consumer sales has decreased slightly but demand for distribution centers is still highly dynamic," says Luis Gutiérrez, President Latin America of Prologis.

### PRIVATE SECTOR BRIDGES BUDGET GAP

Both public infrastructure investment and the number of public works projects declined throughout 2018, as the outgoing government concentrated on placing all efforts on its foremost priorities. Enter the private sector, which helped cover the declining budget as the government pushed for the development of more PPP projects. Peña Nieto's administration embraced PPPs to bridge its financial gaps and began exploring applications in different subsectors. During 2018, SCT, along with BANOBRAS, tendered maintenance, operation and rehabilitation (MROs) projects for various roads throughout the country to ensure the quality and safety of the network. PPPs were also used to develop new ISSSTE and IMSS hospitals and to address issues in the water and waste sector. According to the World Bank, in 2017, Mexico attracted its highest level of private investment in infrastructure in the last 25 years with US\$8.6 billion and was one of the Top Five infrastructure investment destinations in Latin America. "Years ago, approximately 5 percent of the GDP was destined to infrastructure development. Right now, the government is only investing 2.8 percent of GDP, which totals MX\$625 billion for the construction of public infrastructure. Private works have increased in the last few years and it is predicted that MX\$2 billion will be invested by the end of 2018," says Eduardo Ramírez, National President of the Mexican Chamber of the Construction Industry (CMIC).

In terms of investment destinations, the infrastructure and real-estate segments have grown more attractive to international and national investors, especially through the BMV and investment coming in from Afores, according to Gutiérrez. "New financial products such as CKDs, Fibras and CerPIs are channeling Mexican savings to the construction sector and

this will continue," he says. As of October 2018, there were 11 Fibras, two CerPIs, three Fibra E's and 73 CKDs in the BMV. Mexico also welcomed its second stock market in 3Q17, the Bolsa Institucional de Valores (BIVA) to provide SMEs with more access to the market and for Fibras to continue growing their portfolios.

### KEY INFRASTRUCTURE PROJECTS

Among the most representative of Peña Nieto's projects, the two emblematic developments that will be inherited to the incoming administration are the Mexico-Toluca Interurban Train and NAIM, both still under construction. The Mexico-Toluca Interurban Train has been delayed due to constant battles for rights of way in the La Marquesa-Observatorio segment, not only setting back deadlines but also increasing construction costs. Work at NAIM is advancing. The foundation for the terminal building is 65 percent complete while airstrips 2 and 3 are 69 and 52 percent finished, respectively. According to Mexico Evalúa, both these projects have suffered time delays and cost overruns due to a need for more structured planning and a requirement for longer tender assignment periods. As these projects go beyond the sexennial presidential term, AMLO's administration will receive them with an expected completion date for the Mexico-Toluca Interurban Train in 2019 and a 2021 first-phase completion of NAIM, provided the projects keep their original timelines.

### PLANNING, TRANSPARENCY

After the 2017 incident related to the Cuernavaca Paso Expressway, when a large sinkhole opened shortly after the official opening, and the September earthquake disaster, both public and private industry players have an increased interest in transparency in infrastructure and real estate development. During 2018, stricter construction regulations and standards were enforced and developers found themselves in the spotlight to ensure the development of safe and resilient buildings and structures in Mexico. According to a consensus among Mexico Infrastructure & Sustainability Review interviewees, the country's Achilles' heel for infrastructure development continues to be long-term planning and transparency. "The country desperately needs a long-term planning strategy. Government priorities mean an administration generally creates projects for its own political term only, leaving the country with unfinished projects. Infrastructure gives a country credibility in terms of productivity and competitiveness," says CMIC's Ramírez. He adds that the sector must work with public entities to create a long-term infrastructure plan that not only incorporates the country's needs but that interconnects with the needs and duties of state and local governments. This would in return ensure project continuity, financing and quality of projects developed.

# SUBSIDIZED HOUSING PROVIDING RETURNS

**JORGE WOLPERT**

Director General of CONAVI



**Q: What is your assessment of the national housing policy and its impact on Mexicans' ability to acquire homes?**

A: I think we have made significant progress in managing incentives for social housing. We now have a progressive subsidy program whereby, for each MX\$1 invested by the government as a subsidy, MX\$4-5 is returned to the economy. Our welfare policy applies to people who have a previous mortgage, helping the industry generate more supply and benefiting federal finances as it also represents an investment. Our main objective is to put the lowest income families at the center of housing policies.

In our 12 years of operation, subsidies have become more progressive. The New Housing Public Policy, implemented around five and a half years ago, differs from previous policies as it establishes a territorial view. A new ministry, SEDATU, was created for housing policy to follow an urban development view. By evaluating the successes and failures of our past policies, we were able to focus on two aspects that have had very positive results. First, to make housing solutions more environmentally friendly and sustainable. Second, we have evaluated the quality of the spaces that social housing provides, so houses accompanied by a social incentive have at least two bedrooms, providing a better quality of life to residents. This has proven to be effective so we want to encourage bigger living spaces.

I think it is essential to design specialized programs targeting the poorer part of our Mexican population to give them the opportunity to buy a house or to build one on their own land. Also, we should enable their ability to enhance and extend their existing homes. The self-production model implies self-construction with the guidance of experts helping users build their house on their own land. This subsidy model was put on the back burner, as only 9-10 percent of our budget was allocated to it, but we decided to double it to 20 percent in 2017. The result has been amazing. There was substantial demand and an equivalent supply to ensure our subsidy was progressive.

In 2018, we launched a different model to allow nonaffiliates to buy a house. These people have no savings account in

INFONAVIT and FOVISSSTE and are the largest and most overlooked segment in the country. The next social housing revolution represents the people who need a house and have the human and constitutional right to it. These people have the means and the need but lack access to credit. It is our duty to make sure they get it, which is the legacy that I want to leave to Mexicans. By the end of 2018, we expect to have provided more than 5,000 subsidies under this model and while now it is a special program, we hope that it becomes a mainstay in the future.

**Q: What is CONAVI's shared agenda with developers, constructors, development banks and other public institutions?**

A: I believe the development of the national housing policy is a team effort. We are in constant communication with housing developers, banks and financial institutions. This allowed us to provide larger loans, as the average price of a social house varies from US\$16,000-US\$20,000. The banking system has become more involved in providing credit to low-income and nonaffiliated families. We hope this collaboration will continue in the future to give more Mexicans the possibility to meet their housing needs.

Also, CONAVI maintains a daily dialogue with INFONAVIT and holds a weekly meeting with FOVISSSTE, among other government institutions. I think we are all very well-coordinated under SEDATU, which yields a robust general public housing policy. We work the closest with INFONAVIT, as we focus our incentives on lower-income families. For example, in 2018 we developed a program for the lower income INFONAVIT beneficiaries. Those people who earn less than 2.2 times the Unit of Measurement and Update (UMA) in Mexico cannot afford a house even with INFONAVIT's credit and our subsidy, so we increased it from MX\$67,000 to MX\$100,000. We will also add about 12,000 subsidies a year to this program.

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*National Housing Commission (CONAVI) is in charge of the implementation of the National Housing Law and coordinates financing programs for housing subsidies. It aims to boost the development of sustainable social housing in Mexico*



## ENSURING INVESTMENT STAYS IN THE BAJIO

**MIGUEL MÁRQUEZ MÁRQUEZ**

Governor of the State of Guanajuato

**Q: What would you consider the highlights of your administration regarding new investment?**

A: During this administration, we have consolidated Guanajuato as the biggest automotive cluster in Latin America. We have manufacturing facilities belonging to OEMs such as Mazda, Honda, GM, Ford and Volkswagen, while Toyota will shortly finalize the construction of its new venture in the country. By 2020, we expect Guanajuato will be the main vehicle producer in Mexico and Latin America. In terms of FDI, we had projected a total of US\$5 billion by the end of the administration but we will close our six-year period with almost US\$13 billion in new projects. Consequently, we have had a great impact on the state's unemployment rate. Guanajuato has recently been among the main states regarding job creation and by the end of the administration, we will have generated 300,000 new positions. In 2017 alone, 62,000 new jobs were created, leading to an average of 50,000 new positions per year.

**Q: How are you ensuring continuity in Guanajuato's investment promotion strategies?**

A: Investment promotion is not only dependent on state policies as all the investment projects are approved by a Citizen's Council. That being said, Guanajuato offers legal certainty above anything else. According to the National Institute for the Consumer, we are among the Top 3 states for contract fulfillment. As a result, companies know that whatever contracts they sign with this administration will stand once the new government arrives. We also offer certainty based on the development plan we have structured for 2040, which helps investors understand where the country will be in the next couple of decades. Lastly, according to INEGI's latest census, Guanajuato is the region with the least corruption in the country, thus providing transparency in every process a company must follow with the government.

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*Miguel Márquez Márquez is a Mexican politician affiliated with the PAN party. He has been Governor of Guanajuato since 2012. Previously, Márquez was mayor of the Purísima del Rincón municipality*

We expect all these factors will offer the certainty required for investment to continue arriving to Guanajuato after we leave office. We have 100 pending projects to attract new investment to the state, 70 percent of which are oriented to the automotive industry.

**Q: Considering the recent USMCA agreement, what is Guanajuato's position regarding international trade?**

A: We are confident that the agreement reached by the government will return certainty to the market. Nevertheless, when negotiations looked precarious, we were prepared for a scenario with or without NAFTA. We know that if NAFTA were to be canceled or changed to a bilateral agreement there would be an impact on our operations but it would also open an opportunity to further diversify those operations.

The CPTPP, for example, opens new possibilities for our products to be exported to Asia and South America. Right now, Guanajuato exports to over 125 countries representing US\$22 billion per year when 20 years ago we only exported to three countries representing production worth US\$200 million. If we consider this administration alone, we started 2012 with US\$11 billion yearly in exports and we have doubled that number. We need to diversify our operations but not compromise the good relationship we have with our North American neighbors.

**Q: Considering Guanajuato's 2040 vision, what advice would you give to the next administration to maintain the state's growth momentum?**

A: Creating and maintaining the trust of new investors should be a priority. Our administration was built on trust and delivering on our promises regardless of the contracts we might sign. Especially in an uncertain environment, the best thing we can offer companies is confidence regarding their investment, no matter what. Furthermore, we must consider ourselves as account managers, which means that we must follow up on any relationship we establish with new investors. We are allies and partners throughout the lifetime of their investment and not just while the plant is being built. Education must also be at the top of the list for the new administration.



# QUERETARO'S GROWING ROAD NETWORK

**EFRAÍN ARIAS**

Director General of SCT State Office Queretaro



**Q: What new needs has SCT Centro Queretaro identified to boost the competitiveness of its road network and industries?**

A: Conservation and maintenance is also an important part of a road network. SCT Centro Queretaro's role is to optimize resources and distribute them throughout the entire state. Highway 57, for instance, is the main artery that interconnects the state to the rest of the country, but it has reached its maximum capacity. This is one of the reasons why the capacity of the Paseo de la Republica section was expanded to its full capacity to 12 lanes and the Queretaro-Mexico section is being expanded to six lanes. Although the macrobeltway has been in operation for only a year, it already has a traffic volume of 11,000 vehicles a day. This beltway should be expanded to 12 lanes but the ROW is complex and it is not possible. The northwest and southwest beltways could also be expanded to increase capacity. The State of Queretaro is also analyzing the development of another circuit toward the Queretaro International Airport.

**Q: How are most road and highway projects funded in the State of Queretaro?**

A: Most projects are funded through public financing from the Federal Expenditure Budget (PEF). SCT receives an annual budget that it then distributes among the states and to different projects. Nevertheless, the public budget varies greatly each year. Five years ago, we would construct MX\$22 billion in federal roadways and in 2018 we were construction only MX\$16 billion due to Congress' policies. Throughout 2018, the State of Queretaro will use MX\$1.07 billion to develop the new road network that includes presidential commitments such as Bernal-Higuerillas, Portezuelo-Palmillas and Paseo de la Republica.

When we do have highways that are profitable, the private sector is invited to participate. There are many projects in Mexico that are not necessarily profitable but they are socially important. The country always wants to make sure there is a balance. Each state proposes its projects and the Ministry of Finance approves the resources. In Queretaro we currently do not have PPAs, although our neighbor, San Luis Potosi, has the PPA for the maintenance and

conservation of the Queretaro-San Luis Potosi section of Highway 57. The macrobeltway was also constructed under a PPA scheme.

**Q: What is the main challenge SCT Centro Queretaro encounters when developing new or improving existing road infrastructure?**

A: I believe the country is well-managed and that there are enough monetary resources. I believe that the country does have the financial capacity to construct; there are other factors that are causing projects to increase in costs and time. One of the main problems transport infrastructure projects face is right of way, especially when developing projects for the Mexican highway network. For instance, when a highway is modernized and expanded, the project may need to adjust its path. Years ago, the modifications were far more modest and roads were constructed with high slopes for a much faster and cheaper construction. Today, many communities are claiming the historical ROW from highways that already exist. ROW has the power to derail a project, especially since now many ejidos do not even have the proper documents to accredit the property.

An example in neighboring Guanajuato is the Toyota manufacturing plant. The company had problems with the ROW for the El Castillo elevated highway crossing. Companies must hire large teams of lawyers and technical experts to obtain the rights. There are communities that are noble and cooperate and then there are many that want to abuse the system. The government allows us to tender projects if a certain percentage of the ROW has been liberated but projects are forced to a halt when the remaining ROW cannot be obtained. The construction teams must have a great deal of conviction to overcome all of the obstacles that they will face to finish a project.

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*Ministry of Communications and Transport (SCT State Office Queretaro) is responsible for the planning, design, construction and conservation of transport and communications infrastructure throughout the state of Queretaro*



## PUBLIC, PRIVATE INVESTMENT NECESSARY TO BOOST DEVELOPMENT

**SERGIO RAMÍREZ**

Director General of Acciona Infraestructuras México

**Q: What are the main challenges construction companies are facing to develop the country's most pressing projects and what is Acciona's role?**

A: There needs to be clarity in the regulatory framework so both public and private investment continues. Topics such as right of way need to be addressed so that investment continues to flow into the sector and country as a whole. Projects must be thoroughly valued in terms of both cost and impact. The cheapest option is not necessarily the best choice. Security is another issue that must be addressed. Construction companies must be able to guarantee the safety of their workers throughout the country.

Acciona is present in over 40 countries and we have been operating in Mexico since 1978. We have become a Mexican company building the country's most important infrastructure and we will continue investing in the nation's development in the years to come. We have expertise in the delivery of all kinds of infrastructure and we have developed our engineering skills greatly through various transport, water and social infrastructure projects.

**Q: How has the country advanced in terms of infrastructure development?**

A: Mexico's infrastructure industry has experienced a transcendent change thanks to the collaboration of the public and private sectors in the delivery of large public works. This has allowed for greater infrastructure development. Many of the roadways developed and the concessions offered in the last few years have not only given work to the construction sector but unified the country. Public private partnerships (PPP) have boosted development greatly but there is still a great amount to do in terms of airports, ports, rail and roads to interconnect the country even more. Railroads should be given priority

and they are needed not only to transport people but also cargo and boost the country's logistics.

Peña Nieto's administration passed various important structural reforms including for telecommunications, public works, energy and education. We need to work together to identify proposals and present them to the government. There are many necessary projects that need to be built and now the private sector can promote their development on the local, state and federal levels. If there is a clear balance between public and private investment in infrastructure, the government will be able to allocate more money to social projects that the country desperately needs and more financially-viable projects can be concessioned to the private sector.

**Q: How important is the integration of more PPPs and USPs in the Mexican infrastructure industry?**

A: The country has a large infrastructure gap and the government does not have the funds to bridge it by itself. There needs to be a close coordination between the public and private sectors to identify the projects that can be developed through PPPs. We must figure out how to transform PPPs into a business incubator.

As for USPs, although companies get their investment back if they do not win the tender, few companies want to invest the amount of time and labor that goes into a proposal. If the public and private sectors can work together on a list of infrastructure priorities, and then develop these through PPPs, USPs and other schemes, this would create jobs and deliver much needed progress.

**Q: What role does NAIM play in the future development of the country and how is Acciona participating in it?**

A: Construction of Mexico City's new international airport is already underway and it is creating thousands of jobs. Funding has been raised and is specifically tied to the project, which is vital to the future of the country. Acciona is part of the consortium that is building the terminal. Over 120,000 tons of steel are being used in this structure alone. The manufacture of the steel, its transport and installation has given work to more than 5,000 Mexicans.

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*Acciona Infraestructuras is a leading company for developing sustainable solutions around the world through its different activities, comprising construction, concessions, water, industrial and service*

# BOOSTING MEXICO'S INFRASTRUCTURE FROM EVERY ANGLE

**ENRIQUE ALONSO ZÚÑIGA**

Director General of Sacyr Ingeniería e Infraestructuras México



**Q: How have Sacyr's operations evolved in recent years in Mexico?**

A: Globally, Sacyr is divided into four divisions: Engineering and Infrastructure, Concessions, Services and Industrial. Sacyr is present in 29 countries and is driven by over 30,000 people who seek to create a more prosperous and sustainable world. We operate 3,800km of highways throughout the world and have constructed more than 700km of 40 different high-speed rail projects. Sacyr also manages more than 40 waste-treatment plants, 2,500 beds in various hospitals and more than 900MW in electricity generation and cogeneration projects.

Mexico is a strategic country for us and we believe that we can add value to the development of infrastructure from a technical point of view, integrating innovative and efficient solutions, and as private investors in project financing through PPPs. We believe that PPPs can be an important mechanism for the country's economic development in the coming years. We also believe that the development of transport projects for people and goods will contribute to the generation of new business opportunities, especially to improve conditions in less favorable regions. There is great potential in developing social projects, such as schools, universities and hospitals.

Sacyr is committed to improving the quality of life of Mexicans through the development and operation of various infrastructure projects such as the Queretaro Regional Hospital, the Pediatric Gynecology Hospital, the Regional General Hospital in San Alejandro, the Ciudad Acuña General Hospital and the Specialty Hospital in Pachuca. Sacyr is also participating in the construction of the New Mexico International Airport (NAIM) and Line 3 of the Guadalajara Light Train. Through concession contracts, we are also participating in the Piramides-Tulancingo-Pachuca highway and the Tlahuac General Hospital in Mexico City.

**Q: What project would you highlight as your main achievement due to its technical difficulty?**

A: One of the most emblematic projects we have developed in Mexico is Line 3 of the Guadalajara Light Train. The most

difficult aspect of the project was the construction of the tunnel. However, thanks to our experience in other countries we were able to complete it successfully with a TBM tunneling machine. The project consisted of a 5km underground structure that would pass under the historic city cathedral. Of the entire project, 680m were in a trench and the remaining 4km were executed across a tunnel with a diameter of 11.55m. This was necessary to screen and improve the soil through the jet-grouting technique to protect historical buildings. The project has five underground stations (Normal, Mayor, Catedral, Independencia and Plaza de la Bandera) with structures that are 110m in length and 20m in width, double access, waiting areas, distributors and platforms, as well as technical and ventilation rooms in both headers.

**Q: Sacyr México recently won the tender for the San Alejandro Hospital in Puebla. What key factors should construction companies consider when bidding for a hospital in Mexico?**

A: Hospital projects are highly complex due to their specialization. They involve a large number of installations with technical specifications that are not required in other types of buildings. In these projects, executive design must be exceptional and use of spaces must be well defined so the future operation of the hospital and its services are efficient. Definitely, the user must be the main focus of the project. The San Alejandro Hospital involved the replacement of the 210-bed Pediatric Gynecology Hospital and the 205-bed Regional General Hospital, both located in San Andres Cholula, Puebla. Sacyr's was in charge of the design and development of the executive project, construction of civil works and the supply, installation and testing of start-up equipment and permanent installations. We also took over the design, manufacturing and installation of furniture, as well as the signaling, atmosphere, institutional image and civil protection of the hospital.

*Sacyr Ingeniería e Infraestructuras México is a global construction and engineering company with presence in 29 countries. It is participating in the construction of NAIM, hospital projects and the Piramides-Tulancingo-Pachuca highway*



## INTEGRATING URBAN PLANNING AND TRANSPORT FOR BETTER MOBILITY

**MAXIMILIANO ZURITA**

Director General of CAF México

**Q: What is the root cause of Mexico's mobility problems?**

A: Mobility is a right and it must be understood as a way to facilitate movement while supplying the social, cultural and economic needs of the people. Currently, the country lacks an integral public policy for passenger transport. With such a policy in place, the country could plan and execute a strategy that outlines and provides efficient mobility solutions. At the same time, these projects must be part of the whole. The projects created to this day have been developed in isolation and they sometimes do not interconnect, creating general solutions only for certain zones.

The selection of projects should be based on the quantity and type of passengers that will be transported and from there the most efficient and appropriate Metropolitan Transport System (MTS) should be chosen. Projects are planned according to the latest trends that may not necessarily add value to an area. This is why many routes become saturated quickly. MTS networks should be designed to complement each other and not compete among themselves. The urban development codes do not contemplate urban transportation systems. When a city grows and is in need of an MTS, there is no space for it. This obligates cities to look for subterranean and elevated solutions, which make the project much more expensive than it needs to be.

**Q: Who should design and plan public transportation systems in Mexican cities?**

A: In metropolitan areas there should be one single transport authority, as is done in large cities across the world. In Mexico, no such government body exists. For instance, the Metropolitan Area of Guadalajara (MAG) consists of five municipalities with perhaps five different political parties that differ in the types of policies

and projects that should be developed. There is no consistency or coordination. Mexico City alone has five different entities that participate in mass transportation: SEMOVI, STC, the Light Train, Metrobús and the Suburban Train. For example, the STC Metro System makes decisions almost autonomously even though SEMOVI is part of the board. The only private entity is the Suburban Train, which is concessioned by CAF. The others are public organisms but they are not coordinated. Mexico City has a population of 9 million but the Metropolitan Area of the Valley of Mexico (ZMVM) has 22 million. Most people come into Mexico City on a daily basis from the surrounding areas.

**Q: How would you rate CAF's concession of the Mexico City Suburban Train?**

A: The Suburban Train is the only concessioned MTS in the ZMVM. It has been in operation for more than 10 years and it is the best transportation system in the country. The cost of the train is not subsidized but it competes with the cost of the public transport of the State of Mexico. This system demonstrates that it is possible to have an efficient and affordable MTS in cities. Users have consistently graded the system between an 8.5-8.9 every year in our annual surveys. When the tender for the Suburban Train was launched, the company decided that it was a great opportunity to invest in Mexican infrastructure and move from being a train provider to an operator. The client today demands an integral service and offers various services and products. The tender called for the lowest price tag and CAF offered the lowest tariff. We constructed the project with a loan from commercial banks and it took us approximately a year and a half to finish construction of 27km of double tracks with six stations. In comparison to other projects where the concessionaire is the constructor, we wanted to quickly put the train into operations. The private sector is more efficient and has fewer limitations than the public sector when developing new projects. Mexico is a great country to implement new business models. The concession opened opportunities to contribute to mobility in this country.

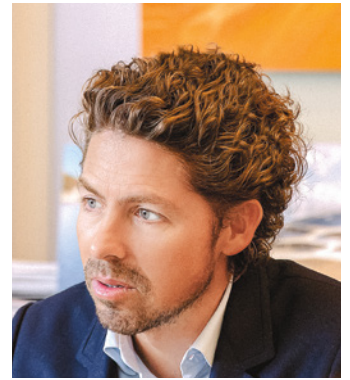
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*Construcciones y Auxiliar de Ferrocarriles (CAF) has provided trains for the Mexico City Metro System, MetroRey and the Mexico-Toluca Interurban train. It is also the concessionaire of the Mexico City Suburban Train*

# THE EVERLASTING ESSENCE OF ARCHITECTURE

**FERNANDO ROMERO**

Founder and Director of FR-EE



**Q: How are your designs redefining contemporary architecture to incorporate sustainable techniques?**

A: Architecture is always carried out with collaborators, which enables it to be done more efficiently. I like to think about the architect as an orchestra conductor that moves all the parts in harmony to solve the technical details of a project with the lowest environmental impact and the most efficient use of resources. I think the last 30 years in architecture have been about acknowledging the environmental impact that humans have and today it is about exploring the use of technologies to diminish impact. For example, NAIM is the first LEED Platinum airport in the world. We worked with our global collaborators to design an efficient use of energy in a building whose architecture is as user-friendly as possible. I do not think that architecture has really changed in its essence, as it ultimately is about building for the needs of the human being. But intergenerational changes are forcing architecture to become more flexible. Humans are demanding easy adaptability to multiple uses, as technology is enabling more multitasking in one place. Typologies used to be separated; people slept in one place and cooked in another. But the use of space is increasingly overlapping, with many people work from their homes or even from airports. So, architecture must become better adapted to humans' needs. To me, the best architecture is about translating each historic moment and the evolution of civilizations. Architecture is the only art that ever lasts and that nobody can erase or hide; it is immovable and permanent.

**Q: Which kinds of projects are in FR-EE's pipeline and why is the firm pursuing these?**

A: We are pursuing a new generation of projects, of smaller scale, like small museums, houses and cultural centers. After a huge project like NAIM, we want to go back to projects that allow us to recover the energetic efficiency of the arc and dome applied to contemporary construction techniques. We are also venturing into industrial design of furniture and objects. For example, we are designing a sustainable catamaran. This allows us to expand the way in which FR-EE operates within different contexts.

**Q: How likely is the development of MexLoop with Hyperloop One and in what time frame?**

A: I think Hyperloop is a technology that is here to stay as there has been a lack of innovation in transportation over the last century. Hyperloop presents a highly energy-efficient technology, immune to the environment and able to connect cities in the lowest commute times. Our project was selected from 2,800 participants as one of the 10 most viable Hyperloop corridors in the world. We know that this is a long-term project that will not become a reality for a decade at least. But our proposal advocates the use of national materials, such as Mexican concrete for the pillars and Mexican plates for the tube. The first tests have started in the Middle East, in Dubai and Abu Dhabi. Finland and the Netherlands are also betting a lot on this technology.

**Q: What is your forecast for the future of FR-EE's projects such as NAIM and Border City under AMLO's administration?**

A: I think that a project of NAIM's transcendence is the consequence of several previous studies and years of work. In this case, a significant investment has been already made. We are convinced that this is the right project to boost Mexico's' growth. NAIM is the door to one of the most visited countries in the world and it is meant to potentialize the Mexican economy. I think that infrastructure represents an investment for the future of millions of Mexicans. As such, it should have a long-term vision and planning. Infrastructure projects should be immune to political changes, as they are closely related to the economic growth of the country. I have always been very interested in the US-Mexico Border. In my Hyperborder book, we analyze migration movements around the world. Trump's administration has significantly impacted the project's agenda on the border. Previous to this administration, we designed Border City as a very viable project to meet the needs of making migration flows between both countries more efficient by combining shared-services in one city.

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*FR-EE is a global architecture and industrial design firm founded by Fernando Romero. Its commitment to translating historic, social and environmental contexts into contemporary urban destinations has impacted cities and communities*



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## FIBRAS READY TO INNOVATE AND CONTINUE GROWING

**GONZALO ROBINA**

Co-CEO of Fibras Uno (FUNO)

**Q: How do fluctuating interest rates impact the performance of Fibras in the Mexican market?**

A: What gives the sector relief is that the intention and measures to lower the interest rates are being implemented by Banxico. The presidential elections generated volatility within the market. Some measures and precautions were implemented by the authorities and financial institutions to ensure that the peso would not be affected. The cost of money has become more expensive for the real estate market and developers are advancing cautiously in terms of financial leverage. Previously, financing cost 3.3-3.5 percent and now it is close to 8 percent.

In other years of high volatility, such as in 1994 or 2007, 2008 and 2009, many developers were overleveraged. As a result, they had to auction off their assets to recover funds. This is not happening in the Mexican market because both developers and banks learned from those experiences. As a Fibras, we have been preparing ourselves for this situation by creating additional credit lines to ensure we have the liquidity to seize the opportunities that may arise. In 2018 and 2019 everybody will be cautious. FUNO will continue to focus on delivering long-term sustainable value in the real estate sector.

**Q: How does FUNO view the presidential election results?**

A: When Andrés Manuel López Obrador was Mayor of Mexico City, he boosted the real estate sector. The skyline that we see today in Reforma is thanks to the policies he implemented. He provided the first incentives to build the first skyscraper, Torre Mayor, on Reforma. He provided incentives for construction, such as making property tax deductible for the first 10 years. I believe that he will continue to boost the sector in the years to come. He seems to support the development of organized real estate growth. This implies changes in the use of land, licensing

and population density to make more organized processes but they will not become a constraint.

**Q: How will the Mexican Fibras perform in the next year compared with the US REIT market?**

A: It is very difficult to compare Fibras with REITs. Real estate in Mexico is in an earlier stage and the US market is bigger than that in Mexico. The first REITs were created in the 1960s in the US and the first Fibras in Mexico in 2011. The US market is 50 years more mature than our market and it is difficult to compare the two. The REIT boom took place in the 1990s. As of June 2017, there are 13 Fibras operating in the Mexican market. If there are no large jumps in the Mexican economy in the next year, we will see the entrance of a couple more Fibras. Before the presidential elections, two new Fibras joined the market, Fibras Educa and Fibras Upsite. They decided to launch operations regardless of the volatility present in the market, which means that the sector is being viewed positively by investors.

**Q: What are the main factors that have helped FUNO to be successful in Mexico's real estate sector?**

A: FUNO has the best commercial real estate portfolio in Mexico and Latin America. Our business model supports all our operations and assures that we deliver the optimal locations for our tenants. Throughout the years, FUNO has been the trailblazer within the Fibras sector. Our goal is clear: to generate the maximum amount of value over time.

FUNO will continue to grow as much as the markets allow us to. FUNO has been able to add to its portfolio over 8 million m<sup>2</sup> in such a short period of time by seizing the opportunities offered by the economy and the real estate market. We know it is important to consider both factors because it is not enough to have for instance a lot of liquidity within the market, but not enough opportunities in real estate projects. The main characteristic FUNO has demonstrated to be successful is to find the right time to merge both markets. The size and footprint of FUNO's assets are accompanied by an even larger focus on sustainable practices. We have created a world-class sustainability strategy to have a positive impact on people, cities and surrounding communities.

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*FUNO is the first and largest real estate trust fund in Mexico. It began operations in 2011 with 13 properties. It now has more than 552 properties and over 8 million m<sup>2</sup> in the office retail real estate segments*



# STANDARD REAL ESTATE BOLSTERED BY STRONG EXECUTION

**“Real estate is completely cyclical and to be able to withstand all those economic cycles, a developer must be disciplined”**

*Elías Mizrahi, Director of Investor Relations at Fibra Danhos*

Unlike its northern neighbors, Mexico lacks public recreational spaces and entertainment, says Elías Mizrahi, Director of Investor Relations at Fibra Danhos, adding that it is up to developers to transcend their role of building infrastructure and also build community. “As developers, we try to make the lives of people within the communities in which we invest much easier. We create shopping malls as community centers where we include stores, restaurants, cinemas and services,” he says.

Fibra Danhos is a Mexican developer dedicated to building, renting, operating and managing iconic commercial properties and high-quality office complexes in Mexico City and Puebla. The group focuses on investing in safety, architecture and good design to transform citizen dynamics through its projects. “The first factors are very basic, such as security, safety, architecture and clean design. The second set of factors make shopping malls very particular,” Mizrahi says. For example, population density, consumer spending and the availability of other malls in the area.

Danhos has thrived as a public entity for five years and as a private company for over 40 years. “Real estate is completely cyclical and to be able to withstand all those economic cycles, a developer must be disciplined. When looking at all the Fibras in the market, the average loan-to-value is 35 percent; ours is 10 percent,” says Mizrahi.

To withstand market cycles, it is crucial to invest in healthy macro environments that offer good interest rates, GDP growth and consumer confidence. “Danhos is not doing anything complicated. For us, this is standard vanilla real estate, but our execution is extremely strong,” Mizrahi says. “We buy land at cheap prices and look at superior assets and locations.” Mizrahi gives the example of Iztapalapa as an overlooked municipality in Mexico

City with a huge need for living services. “Sometimes people underestimate the consumption capacity of people in this area,” he says. “Despite official figures that suggest Iztapalapa is not one of the city’s most affluent neighborhoods, informal labor in the borough is common, meaning the official figures do not accurately reflect the purchasing power of the people living there.” In fact, Fibra Danho’s Parque Tezontle is credited with the highest spend per person compared to the rest of the group’s portfolio.

But Fibra Danho’s recipe for developing successful projects is based on more than just discipline and a good eye for overstated markets. An asset-by-asset approach is critical to take full advantage of any portfolio, making each project unique. “It is really about viewing each project as a standalone asset and identifying what adds the most value in that particular location,” he says. “We try to incorporate uniqueness into each of our developments. For example, in the case of Parque Tezontle, it is the only location in Iztapalapa that provides a terrace with restaurants. Reforma 222 is one of the only open areas on Paseo de la Reforma, a street with many office buildings.”

There is one final factor, Mizrahi says. “The community-building characteristics we incorporate into our designs at Danhos, with the inclusion of banks, gyms, cinemas and green spaces, gives us the edge in that we do not exclusively provide retail.” Parque Las Antenas, for example, includes an entertainment park that stretches over a 23,000m<sup>2</sup> area of the shopping mall’s roof.

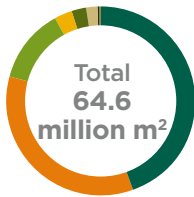
While there is no infallible recipe for navigating all market cycles, the strategies deployed by Fibra Danhos help to better shield and keep its commercial real estate portfolio healthy. This is increasingly important when dealing with the changes in retail management as new segments gain share, such as e-commerce. “I think e-commerce has not yet fully arrived to Mexico, although sooner or later this will happen,” Mizrahi says. “Having said that, we are better positioned than the US, where there was over-expansion. Also, in the US, private equity is a common form of financing and there is a lot of debt. Mexico is not a very leveraged market.”

Mizrahi does not think e-commerce poses a risk to the firm’s business model, although he says it will transform retail. “Traditional retail will disappear and it will now be all about experience. The Danhos experience is all about creating an ‘Instagrammable’ mall by investing in experience.”

# DESIGNING A MIXED-USE SKYLINE

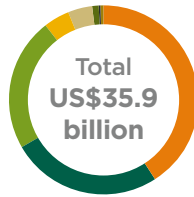
Mexican real estate developers are not only reaching for the sky but adding new uses to their projects to offer a unique value proposition. In a competitive market, the traditional commercial or corporate space requires innovation in the types of spaces offered. Location, location, location continues to be a top factor that makes a project successful, but developers are also reacting to the new rules of the game.

## M<sup>2</sup> BUILT IN MEXICO PER SECTOR



- **44.7%** Residential  
28,868,423 m<sup>2</sup>
- **34.7%** Mixed-Use  
22,445,320 m<sup>2</sup>
- **12.6%** Commercial  
8,174,746 m<sup>2</sup>
- **3.2%** Corporate  
2,077,352 m<sup>2</sup>
- **2.5%** Industrial  
1,609,201 m<sup>2</sup>
- **1.9%** Tourism  
1,204,412 m<sup>2</sup>
- **0.3%** Infrastructure  
195,000 m<sup>2</sup>
- **0.1%** Hospital  
66,330 m<sup>2</sup>

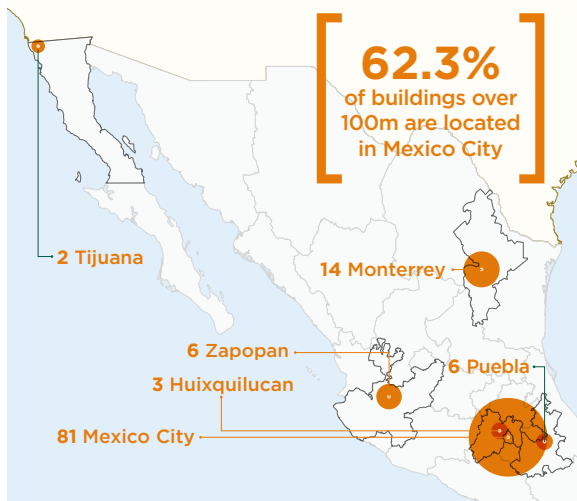
## NATIONAL INVESTMENT PER SECTOR



- **40.9%** Mixed-Use  
US\$14.7 billion
- **25.9%** Residential  
US\$9.3 billion
- **22.8%** Commercial  
US\$8.2 billion
- **4.5%** Corporate  
US\$1.6 billion
- **4.3%** Tourism  
US\$1.5 billion
- **1.0%** Industrial  
US\$366.8 million
- **0.4%** Infrastructure  
US\$143.2 million
- **0.3%** Hospital  
US\$98 million

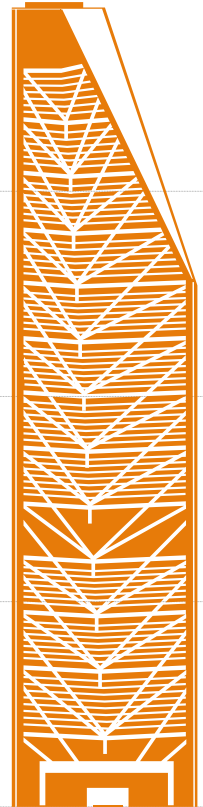
*\*Investment between 2013-2018 from ADI Associates*

## GEOGRAPHIC DISTRIBUTION (Buildings above 100m)



## TORRE REFORMA

- Developer: **Fondo Hexa**
- Architect: **LBR&A Arquitectos**
- Extras: **Sky Lobby Robotized parking spaces**
- Structural Engineer: **Arup**
- Certification: **LEED Platinum BD+C: Core and Shell v2 - LEED 2.0**
- Auditorium: **100-person capacity**



Height: **246m** Floors: **57**

Commercial Space: **2,500m<sup>2</sup>**

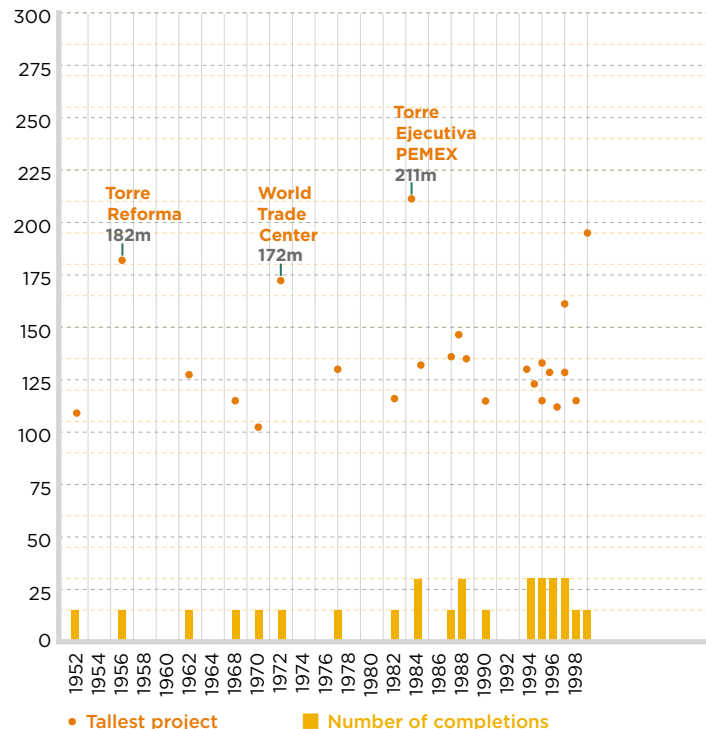
Office Space: **45,000m<sup>2</sup>**

Investment **US\$130 million**

### What makes it successful?

Torre Reforma broke the skyline with a sustainable and unique design. A 20<sup>th</sup> century INBA-protected house was moved to make way for the skyscraper. Although not a strictly mixed-use construction, the location gave the office tower an edge and attracted the first Mac Store to Mexico, along with a 2,500m<sup>2</sup> Sport City and a unique food court concept, thus incorporating mixed-use elements.

## EVOLUTION OF MEXICO'S SKYLINE (100m+)



## TORRE MANACAR

- Developer: **Pulso Inmobiliario**
- Extras: **Sky Lobby and Robotized parking spaces**
- Architect: **Teodoro González de León**
- Certification: **LEED Gold BD+C: Core and Shell v3 - LEED 2009**

- Auditorium: **100-person capacity**
- Structural Engineer: **Arup**

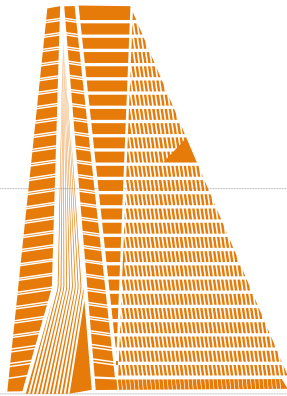
Investment  
**US\$100 million**

Height: **140m** Floors: **29**

Commercial Space: **25,000m<sup>2</sup>**

Office Space: **44,000m<sup>2</sup>**

Total Construction: **180,000m<sup>2</sup>**



## PABELLON M

- Developer: **Proyectos 9**
- Architect: **Landa Arquitectos**

Investment  
**US\$106.5 million**

Total Construction  
**200,000m<sup>2</sup>**

- Extras: **Sky Bar and Heliport**
- Auditorium: **4,500-person capacity**
- Certification: **None but constructed with sustainable materials to decrease energy consumption**

- Convention Center: **3,800-person capacity**

- Hotel: **178 rooms**

Structural Engineer:  
**VSL México**

Commercial Space  
**25,000m<sup>2</sup>**

Office Space  
**30,000m<sup>2</sup>**

Height  
**206m**

Floors  
**50**

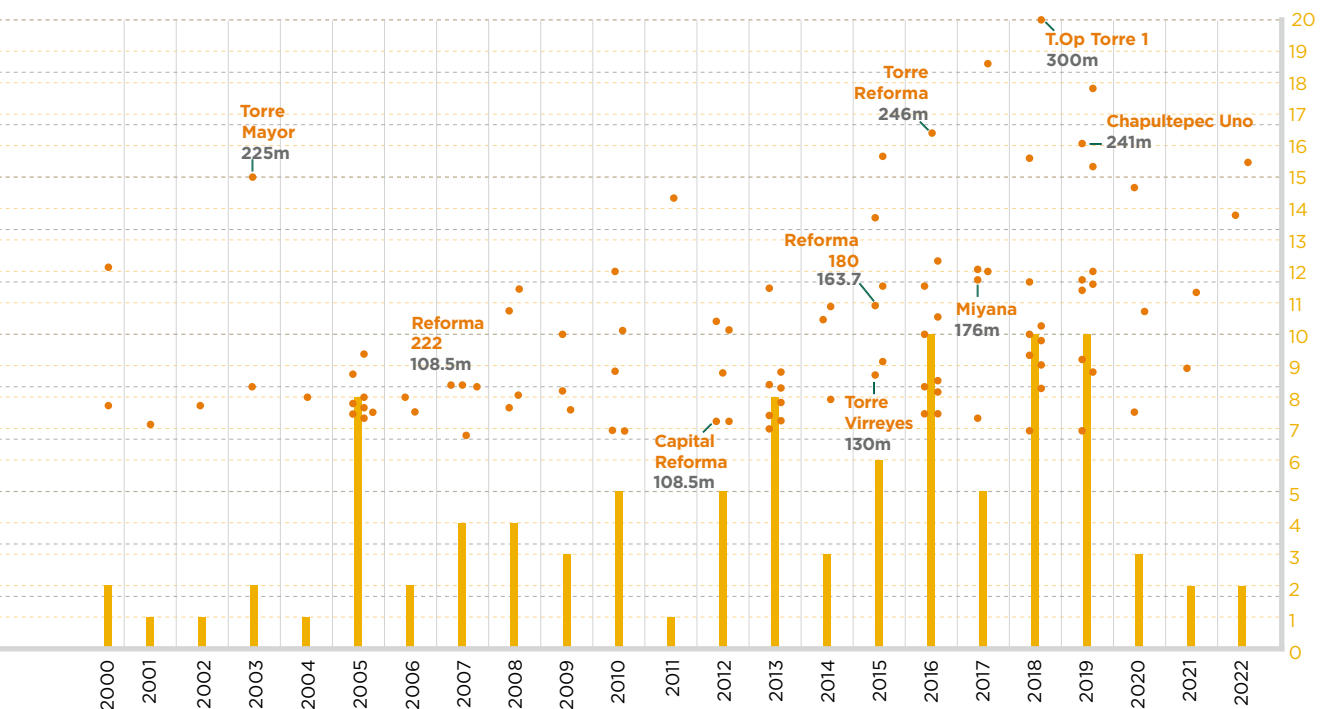


### What makes it successful?

Torre Manacar brought the Insurgentes Sur Corridor back to life with a mixed-use project that rekindled both commercial and office flames. The project restored a community legacy, Cine Manacar, and kept it as part of the project itself. Its anchor stores are H&M and Cinemex, bringing a new value to the area. The project is surrounded by a variety of mobility choices making it a sustainable option for corporates.

### What makes it successful?

This mixed-use mega-construction incorporates the traditional commercial and office space concept with an auditorium, convention center and hotel to increase traffic. This development sparked construction in the Monterrey downtown district, a step away from the traditional San Pedro Garza Garcia district. Part of the project restored public infrastructure and created a corridor connecting to the Macroplaza.



Source: LBR&A, Pulso Inmobiliario, SkyscraperPage, Landa Arquitectos, ADI



## USING FINANCIAL INSTRUMENTS TO BRIDGE INFRA GAP

**JOSÉ-ORIOI BOSCH**  
CEO of BMV Group

**Q: How can the BMV help to bridge Mexico's infrastructure gap?**

A: The BMV has already helped a great deal as there are many infrastructure companies that are listed on the stock exchange. We also have companies financing themselves through debt, and these are the most traditional instruments in the market. In 2009, CKDs were created and since then around 100 issues have raised about MX\$170 billion. Of this, infrastructure represents about 30 percent, both in the number of issues and in value.

Fibras were first raised in real estate in 2011, and the numbers continue growing. We are looking at new Fibras and we are about to raise a Fibra in the education sector, which will be the first of its kind. Also, Fibra Es were created in 2015, and the first infrastructure Fibra E was raised by Pinfra in 2016. Since then, we have had various infrastructure Fibra Es, the latest one being that of GACM, as well as a first Fibra E on the energy side, issued by CFE. We have a range of products for the industry to choose from and last year we created the first Special Purpose Acquisition Corporation (SPAC), which is very common in other markets.

**Q: Given that GACM recently raised a Fibra E on the BMV, what will be the implications of the elections on this?**

A: The Fibra E was created in 2015 for financing of energy and infrastructure projects. There have been some Fibras since then but the most recent was that of the airport on March 26, 2018. The airport is a large, long-term project so I trust the infrastructure plans would not change with different administrations. It is clear to anyone who has traveled through the current airport that the people of Mexico need the NAIM project.

**Q: Why has there been such a lack of demand for CerPIs compared to other products?**

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*BMV Group operates a stock exchange, derivative products, an OTC securities and derivatives brokerage company, a securities clearing house and a derivatives clearing house to facilitate the operation of the stock market in Mexico*

A: In comparison to the Fibra, which was a new asset class, the CerPI is a product that is similar to the CKDs but with some different management rules, including the role played by the administrator. We had the first CerPI issued in real estate and I think now we will start to see much more demand for the product. There are already various CerPIs that will be launched in the coming months. It is always difficult to be the first, but now that the first CerPI has been successful, the door has been opened and we will begin seeing more demand. It was the same story as the Fibras - the first real estate Fibra was raised by FUNO in 2011 and it was extremely complex, but it was more easily understood after the first issuance.

**Q: What are the implications of the new BIVA stock exchange for your strategy?**

A: We are not yet sure what the BIVA's strategy will be so I cannot comment much on that. However, we hope that the strategy will involve developing the trading market as it has great potential. If, instead of focusing on growing the market, it cannibalizes itself, the market will be equally as small, or even smaller. And with two stock exchanges, this makes no sense.

**Q: How can the International Quotation System (SIC) help to position international companies in Mexico?**

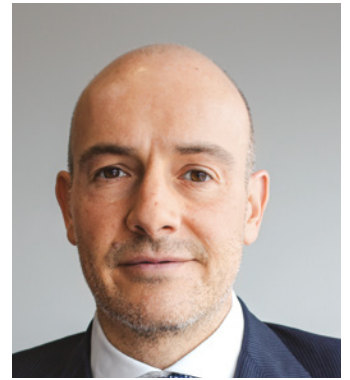
A: The SIC is a system that caters to foreign companies that are operated in Mexico. There are approximately 1,500 shares listed on the SIC, and of these, half are stocks and half are ETFs. Within those shares, there are companies from different countries and different sectors. In terms of mining, we have companies from the US, Canada, the UK and Latin America listed on this index. This means any investor in Mexico can buy these shares. Rather than being listings, they can be seen more as a registry of international companies that allow Mexican investors to buy shares.

The SIC represents more than a third of the total volume of the BMV and the local exchange represents two-thirds. There is a lot of interest because a Mexican investor can buy shares in an international company, pay in pesos and sell in pesos, while maintaining a fiscal advantage compared to buying the shares in Canada directly.

# A RICH FUTURE AHEAD FOR INFRASTRUCTURE INVESTORS

**FELIPE DUARTE**

Deputy Director General of Infrastructure and Energy at Grupo Financiero Banorte



**Q: How has the infrastructure industry evolved in the last years and how has the financial market evolved with it?**

A: I do not see a financial gap within the Mexican infrastructure industry. I do see a vibrant market in which the selection and professionalization of projects has improved drastically in the last years. I also see a financial market that has evolved in the last 10 years, both in equity and debt. The creation of new equity funds and financial instruments such as CKDs has become important tools to finance the country's infrastructure development. Several commercial banks have also began participating more in the industry. Banorte has specialized in both infrastructure and energy sectors and we have seen that the market is becoming stronger. We see that the infrastructure financing market is becoming more intricate as years go by and this is good news for the project, for the banks and for the people.

**Q: How has Banorte participated in the financing of infrastructure projects in the last few years?**

A: Banorte provides a complete array of financial products to clients and one of our strengths is that we know the market and we are local players, which is something international companies always look for when investing in Mexico. We are actively providing financial products and services to various participants in the construction of NAIM and airports are a large area of interest for us. In the last 18 months, PPPs have been more active in the country's road sector when it comes to conservation and maintenance contracts. We believe that the port sector will also continue to grow in the next five to 10 years, mainly to Lazaro Cardenas and Veracruz. We are currently not participating in passenger rail projects but we are open to new opportunities that may arise. PPPs are a relevant tool for governments to build and maintain infrastructure. Although it is a relatively new law, it has great potential in the next few years. It is a very good tool for the market, but it closes the gap for some uncertainties or circumstances that the government sometimes encounters.

**Q: How will Banorte's purchase of Interacciones impact its role infrastructure industry and what are what types of projects does it want to invest in?**

A: Banorte's purchase of Interacciones will have a positive impact on the company's portfolio and results. It will help us understand the infrastructure needs of local governments and together we can best meet Mexico's infrastructure and energy needs. Interacciones is an important player within the country's infrastructure market and has been a flagship of the banking industry in the last 10-12 years. It is very good in understanding the infrastructure needs of local governments. Project selection is important when providing financial services to local governments and municipalities. For a project to be sustainable it must generate productivity gains. Otherwise the project may be compromised in the long term. Sustainability refers to social, financial and environmental sustainability. This makes the selection of a project much easier.

NAIM is one of the best examples of a bankable project. There are various commercial and development banks, as well as financial instruments being used, apart from the fact that it is also an environmentally sustainable project. For investors to feel confident investing in an infrastructure project in Mexico, the project must prove that it is sustainable, that it fulfills a need and that it is also a good anchor for investment in impoverished areas.

**Q: How has the participation of pension funds and Afores impacted the country's financial sector when it comes to infrastructure?**

A: Almost all major funds are now operating in the Mexican market. This is a good thing because that means that there are more professional investors in the market that bring with them set of skills that complement the existing players. There is this need to develop managers that can deliver on the investments, including the operation and maintenance of those facilities. Having stronger partnerships in the market allows us to provide financial structuring that is more efficient to specific assets or projects.

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*Grupo Financiero Banorte is one of the four largest commercial banks in Mexico. It has participated actively in financing infrastructure projects such as NAIM and various highway projects. It recently acquired Banco Interacciones*



## NATIONAL COMPANY GAINING INTERNATIONAL POSITIONING

### ENRIQUE ESCALANTE

CEO of Grupo Cementos de Chihuahua (GCC)

**Q: How is GCC impacted by the Mexican and the US governments' infrastructure commitments?**

A: We remain fairly optimistic about the US market. It is a market experiencing a natural growth cycle, which we believe will last at least three to four more years. According to industry data, between today and 2021, the US economy will continue growing, which means that the construction sector will expand too. In addition to this natural growth, the Trump administration outlined a National Infrastructure Plan that would also boost the construction sector, although the authorization and implementation of this plan has been delayed. However, we remain optimistic the plan will be implemented given that the US has a real need to modernize and replace its infrastructure to remain competitive.

In Mexico, business has a different rhythm. Given the political environment, there is a great deal of uncertainty, which halts infrastructure investment. But we see this as a transitory factor. Regardless of the political environment, we believe that Mexico continues to require infrastructure investment in airports, roads, railroads, ports, and housing. We feel that in the medium and long terms, expectations are favorable for the country's construction and cement industries.

**Q: How is GCC mitigating the risks associated with the volatility resulting from the Mexico-US relationship?**

A: Our Samalayuca plant has always been oriented to export. Even when we were faced with antidumping sanctions from the US government, this plant continued exporting cement to the US thanks to its proximity to the border and to its very competitive production cost.

In the event that NAFTA renegotiations failed, we would have had to abide by the WTO's rules. Under these rules, cement would fall into a 0 percent tax bracket to enter the

US. In a more pessimistic situation in which there would be no NAFTA and the WTO's rules would not be followed, we have proven in the past that cement from our plants is extremely competitive so we would not be too worried on the export side.

We would be more worried if we were facing a renegotiated NAFTA that does not favor Mexico, which could impact foreign investments coming to Chihuahua, and then our sales in the local market could suffer. The border of Ciudad Juarez with Texas and New Mexico depends heavily on the manufacturing industry for exports to the US. Whenever there is a local industrial project, such as warehouses, we participate. Employment levels improve and housing and commercial construction follow. It is a virtuous cycle. Should the uncertainty continue or NAFTA's renegotiation fail, these investments for industrial warehouses would be delayed, which would impact us negatively.

**Q: How is GCC adapting its portfolio and innovating in its solutions to comply with your vision of being the best company in solutions related to cement and concrete?**

A: GCC is a regional company that can easily compete with the largest global cement companies. Due to our size and our strategy, we can be faster in the development of innovative solutions that can better serve our clients' needs. Part of our strategy is to continually discover innovative solutions. By this we mean not only innovative products but also innovative processes and services.

We have a specific area for R&D and an innovation area that work jointly to solve problems for either clients or for the industry in general. This is how several of the products and solutions we sell were developed. For instance, for the mining industry, we have developed different products such as Fraguamax, which is used in many mines on a national level and that we also export to Central and South America. These types of products are not sold in large volumes but are specialized, high value-added solutions that allow us to differentiate ourselves from global competitors that are mostly focused on volume or on the traditional construction sector.

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*Grupo Cementos de Chihuahua is a vertically-integrated company with operations in Mexico and the US. It manufactures and sells cement products, mortar, concrete, aggregates and other construction materials*

# GLASS SECTOR ON STANDBY WITHOUT GOVERNMENT REGULATIONS

**HÉCTOR SERRANO**

Country Manager Mexico of Guardian Glass



**Q: What are the main factors that could promote the growth of the glass market in Mexico?**

A: Energy monitoring is impacting demand for our products. There are many products that facilitate the reduction of energy consumption in buildings, while allowing natural light to enter the building. The performance of glass has evolved a great deal to meet sustainability objectives and this is something that we must promote through norms. We need to demand more from the industry and its providers to ensure the sustainability of future projects. We see that the demand for tempered glass is growing rapidly, with laminated glass showing high growth rates. But the only thing that will truly promote the use of these types of products is a boost from the government.

**Q: How have sustainability and energy efficiency trends impacted your product portfolio?**

A: Some countries are establishing Net Zero initiatives, which means that buildings must be able to produce enough energy to meet their own needs. These technologies have a cost, of course, and we need to continue creating new products that will allow us to reach these goals, from illumination to solar control. I am convinced that these technologies will grow much faster when they are accompanied by the right norms and regulations. We are working arduously to raise awareness among our clients. Buildings that strive for LEED or other certifications focused on sustainability are a perfect match to our vision.

**Q: Why should buildings incorporate your product over those of your competitors?**

A: Guardian Glass is focused on innovation, with significant investments in R&D for the different glass segments. In architectural products, we are a world leader in the development and manufacture of high-performance coated products that offer attractive aesthetics, allowing natural light while at the same time reducing the amount of energy consumed. We are convinced that this strategy gives us a competitive advantage and the preference of our customers.

**Q: How has the country's residential real estate sector adapted to sustainable glass products?**

A: Mexico is a fast adopter of new technology. As an example, before tempered glass began expanding in Mexico more than 15 years ago, various technologies already existed in other countries. But Mexico jumped straight to the newest tempered glass technology in the market. The issue is that so far, the high-performance glass market in Mexico is just too small. Residential real estate represents 70 percent of the total glazing market and so far, is using the most basic products. An important part of the market is also the independent architects who build single homes.

**Q: How has Guardian Glass' presence in the market evolved?**

A: We opened our plant in Queretaro in 2004. We had some operations in Mexico through distribution before 2003, but no manufacturing operations at the time. When we entered the market, there was a surplus of material in Mexico. We were a new player and it was difficult to start off on the right foot, especially with the crisis of 2009. Our goal as a company was to maintain employment and we focused ourselves on our long-term growth strategy.

After 2010, we saw significant growth in the market and our domestic sales have increased in the ensuing years. Guardian Glass is a global company and we have vast experience in markets all over the world. The company had always belonged to one owner, who passed away in 2009 and had a vision of what would happen to his company in the future. His family became partners of the company and in 2012 we entered into a partnership with Koch Industries, which took over 44 percent of our shares and subsequently acquired 100 percent. Guardian Glass had in the past grown organically, with its own resources and talent. Koch's acquisition ensures steady growth going forward. We have been constantly investing to enhance our operations, with recent investments in Jumbo coating facilities in the US and in Europe, as well as expanding our float capacity in Europe.

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*Guardian Glass is a manufacturer of high-quality glass products for use in the automotive and construction sectors. It is part of Koch Industries and has had a manufacturing plant in Queretaro since 2004*



## CAN YOU AFFORD TO MISS OUT?

### MEXICO MINING *forum*

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February 12, 2020

### MEXICO ENERGY *forum*

February 20, 2019  
February 26, 2020

### MEXICO TALENT *forum*

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### MEXICO HEALTH *summit*

September 5, 2019  
September 3, 2020

### MEXICO AUTOMOTIVE *summit*

October 2, 2019  
September 30, 2020

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