

Construction in Mexico

Golden era Dawns

Shaping the future
with integrity

Mexico's new golden age

Construction in Mexico has had many periods of strong growth. In the late 1800s, there was a huge infrastructure boom, creating thousands of kilometres of rail, new ports and water infrastructure. More recently, the 1994 North American Free Trade Agreement triggered the establishment and growth of a varied and now thriving industrial sector.

Today, Mexico is striding into a new era of construction activity. Digitalisation is driving the development of a strong data centre hub, centred on Querétaro – which is Soben Mexico's home. The move from globalisation to regionalisation, or nearshoring, accelerated by recent geopolitical events, is further boosting investment from our North American neighbours and further afield.

This report aims to provide a snapshot of my country, its characteristics, its strengths and highlight the great opportunities it has to offer. I also share some of the insights I have gained over the past 30 years I spent working on industrial, technology and renewable energy projects here, as well as in the US.

“I am delighted to be heading up Soben's activities in Mexico, which began with the creation of our Americas office in 2021 and continued with my appointment as Country Director in August 2022. These are exciting times for Mexico and for our growing team here.”



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Nearshoring and technology drive construction

The ongoing tension between the US and China is driving a huge wave of nearshoring, which is making companies relocate their manufacturing facilities –even some Chinese ones– to Mexico, in order to be closer to their North American markets.

\$35.3bn
Annually

Nearshoring sees the US, Canada and Mexico striving to shorten their supply chains so that more goods are manufactured in neighbouring countries. According to the Inter-American

Development Bank (IADB), nearshoring could add \$35.3 bn annually to Mexico's economy based on the export of goods alone, with the IADB promising between \$1.75 bn and \$2.25 bn of financing over the next three years¹.

In 2022 alone, foreign direct investment in Mexico was up by 12% compared to the previous year, with 400 companies looking to relocate here, according to Mexico's Minister of Economy² showing a surge in demand for nearshoring.

400 
Companies

Mexico is a country with around 200 years of experience in big industrial projects, which can be traced back to the arrival of the textile industry –now gone due to its environmental impact- and which was followed by the automotive and aerospace industries.

“The change in the construction industry has been radical over that time,” reports Marco Mora, Soben's Mexico Country Director, who returned to his home country from the US in 2013 and has worked on over 60 industrial projects since then. *“Now, thanks to our human capital and high standards of education in several engineering disciplines, we have the capacity to abide by international construction codes.”*

Human Capital

Compared to many developed countries, Mexico has a very youthful population with larger families still being the norm here. The median age in Mexico is 29.2 years³, compared to 38.3 years in the US and 40.5 years in the UK.

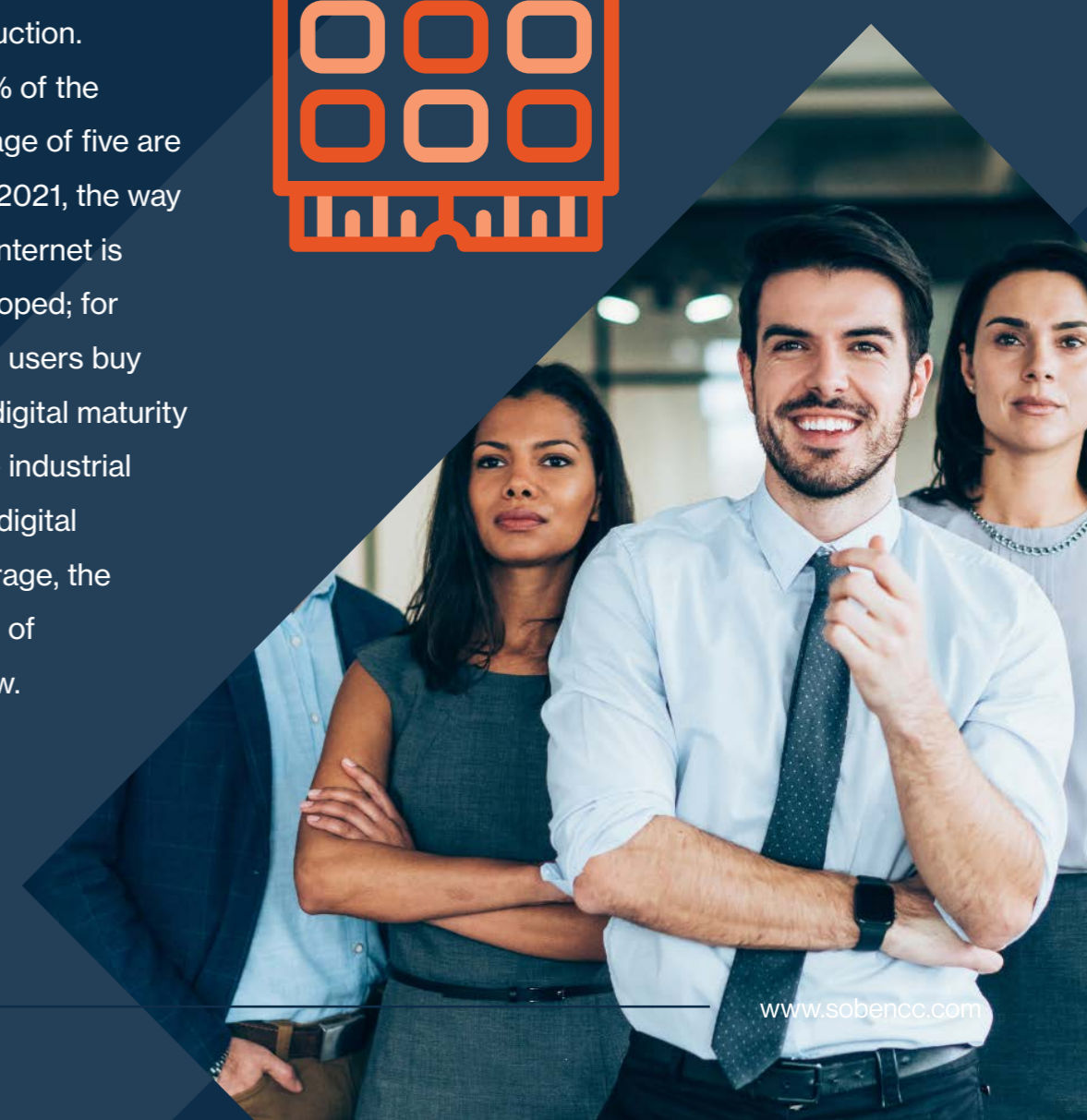
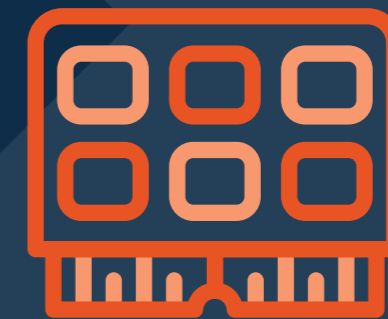
MX	29.2	Years
US	38.3	Years
UK	40.5	Years

The cost of labour is a driving factor for relocation to Mexico. Marco cites the example of one computer component manufacturer who, after relocating to Mexico, could recoup the cost of building its facility in just one year by saving in wages. There are huge logistics gains too: containers could take up to two months to travel from Asia to the US, compared to three days when traveling from Mexico.



Other existing companies are investing here too. Automotive manufacturers, for instance, are transforming their production lines to meet the growing demand for electric vehicles, a trend that the Mexican government is keen to nurture. BMW is investing \$866 million in San Luis Potosi in central Mexico on a facility to produce high-voltage batteries and fully electric cars, and in March 2023 Tesla announced it would build a new gigafactory in Monterrey.

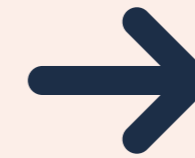
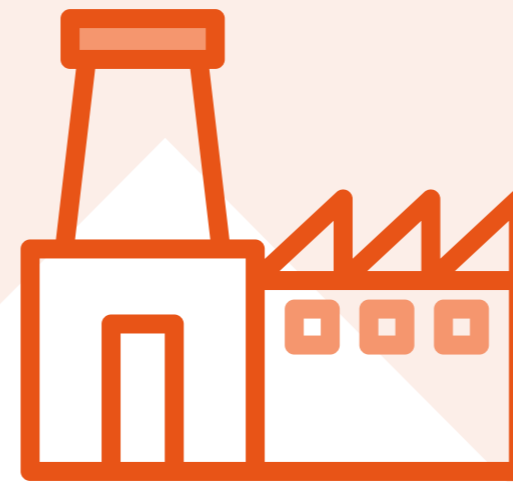
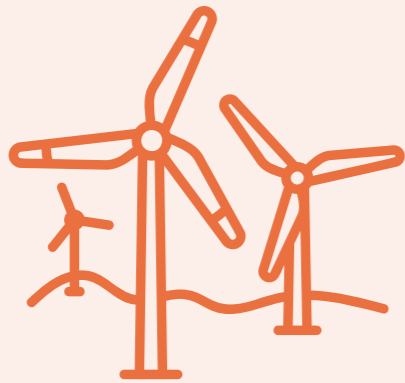
The data centre market is another busy area for construction. Although around 76% of the population over the age of five are internet users, as of 2021, the way that people use the internet is relatively underdeveloped; for example, just 22% of users buy goods online⁴. With digital maturity advancing, and more industrial processes requiring digital connectivity and storage, the demand for this type of construction will grow.



Energy Transition

Mexico's transition to green power will be an important consideration for many overseas investors who have carbon cutting as a priority on their agendas. In 2021, just under 30% of the country's power was generated by clean energy sources such as wind and solar photovoltaic energy (PV)⁵. In November 2022, the Mexican Government said in a statement that it intended to double its renewable energy capacity by 2030, investing \$48bn to achieve this goal⁶.

30%
Generated by
clean energy



With so much investment planned and more underway, his country is an exciting place to be, says Mora: *"We have been enjoying industrial investment from all over the world for many years, but now we are poised to move up a gear, thanks to the agreement with the United States and Canada."*



Design and project management skills and practices have improved significantly since the start of Mexico's industrial transformation, says Mora: *"Over the past 25 years, the industry has evolved significantly in respect to building codes, design engineering skills and project management."* However, there are still some potential pitfalls, particularly around site selection, building permitting and procurement strategies.





Data Centres

Internet use in Mexico is burgeoning – for both households and industry - and so is the data centre market. Researchers are predicting a compound annual growth rate (CAGR) for the data centre market of 9.37% between 2022 and 2027⁷.



The COVID-19 pandemic drove a surge in internet use for consumers, with e-commerce rising by 27% in 2021 compared to the previous year. However, the Mexican Internet Association reckons that less than a quarter of users buy online – so there is still a lot of growth to come.

2021

76%

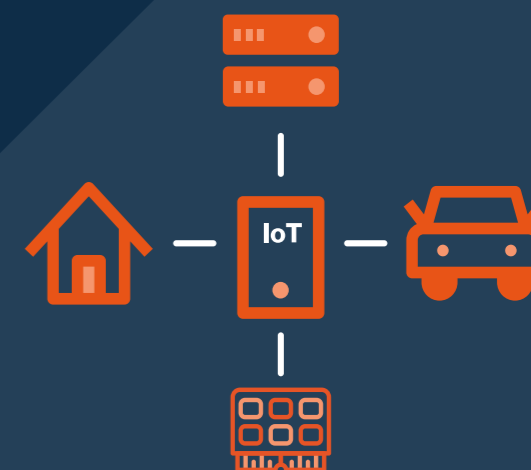
Population with internet access

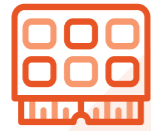
48%

Rural communities

Yet not all of Mexico's 127-million strong population is online either. Although by the end of 2021, 76% of the population had internet access, that percentage drops to 48% for rural communities⁸. In 2022, the Mexican government promised to invest \$1bn to connect those neglected rural areas⁹.

At the same time, the demand for data storage from Mexico's established manufacturing and industrial businesses is growing with the rise of the Internet of Things (IoT) and artificial intelligence (AI). The influx of new manufacturing facilities thanks to nearshoring will only fuel this demand further.





Querétaro: the heart of the market

The undisputed heart of Mexico's data centre market is the state of Querétaro, whose capital city, Santiago de Querétaro –or Querétaro City– lies around 200 km to the north of Mexico City. The state has around 10 data centres already up and running, with another 10 in the pipeline¹⁰.

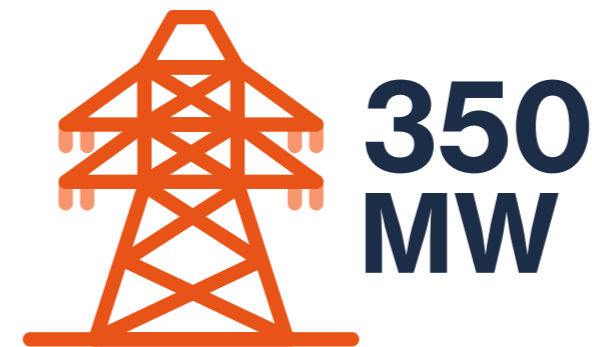
Among the main data centre operators in Querétaro are Equinix, Kio Networks and Banamex (Banco Nacional de México). Microsoft, AWS and Oracle are all reported to be looking to develop facilities here as well.

Recent developments include Brazilian data centre firm Odata, which opened its first facility in El Marqués, Querétaro, in May 2022.

Its QR01 provides 8.4MW with a second 30MW data centre planned and a total site build-out of 32MW¹¹. In July 2022, Ascenty launched two facilities, Mexico 1 and Mexico 2, in Querétaro City with a combined capacity of 52MW¹².

However, one of the challenges Querétaro is facing is the power demand of its data centre cluster. The state already has the highest demand for electricity in the country, with another 350MW of demand to come from planned projects. According to El Economista, the state faces an energy deficit with local and federal authorities looking for solutions through the creation of the State Energy Agency, which will look into these and other power-related issues¹³.

Perhaps for this reason, data centre developers are beginning to look over to other states. In October 2022, the construction of Layer 9 Mexico began in the neighbouring state of Guanajuato, which developers say will be the largest data centre in Latin America with an investment of \$800 million distributed in two phases¹⁴.



There is also activity in Mexico's second largest data centre hub, Mexico City. In November 2022, it was reported that KIO Networks had purchased a 20MW capacity data centre campus in the Mexico City area, known as KIO MEX6¹⁵.

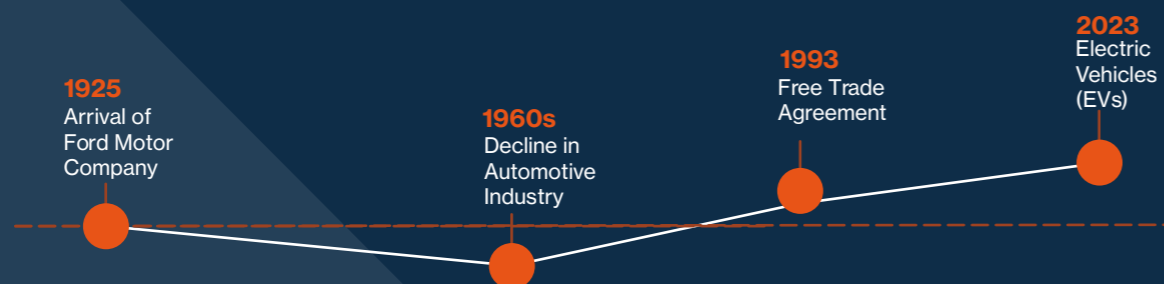
The importance of Mexico's data centre sector was underlined on March 22nd 2023, when the Mexican Data Centre Association (MEXDC) was officially launched in Mexico City. Among the objectives of the founding members Ascenty, DCD, Equinix, Layer9 Data Centres, Odata, Scala Data Centres and KIO are the promotion of sustainability initiatives, launching education programmes for the general public and train people for the demands of the sector.





Automotive

Although it has had some ups and downs, the automotive sector has a long history in Mexico, beginning in 1925 with the arrival of the Ford Motor Company which is still there today. Although there was something of a decline in the sector in the 1960s, the automotive industry began to grow again following the signing of the North American Free Trade Agreement between Mexico, the US and Canada in 1993. Today, the rise of electric vehicles (EVs) promises another influx of investment.



Today, Tier 1 manufacturers include General Motors, Chrysler, Volkswagen, Nissan, Mercedes Benz, BMW, Toyota, KIA, Honda, Mazda and of course, Ford, and feeding these manufacturers represents a long supply chain of lower-tier companies.



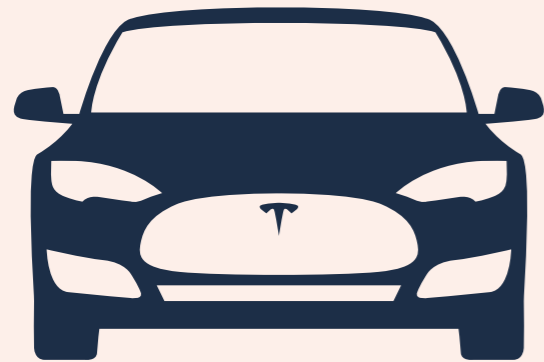
Traditional hotspots for the automotive industry include areas close to the US border in the states of Baja California, Sonora, Chihuahua, Coahuila and Nuevo León, as well as the industrial corridor El Bajío, which runs up north from Querétaro through Guanajuato, parts of Jalisco, Aguascalientes and Zacatecas.





Electric transformation

Mexico's ambitions to create another era of growth in its automotive sector by transforming to electric vehicle (EV) production received a huge boost in March 2023 when Tesla confirmed that it would build a gigafactory in Monterrey in Northern Mexico.



This followed on from a string of announcements from existing automotive firms who have transformation plans for Mexico to meet the growing demand for EVs. In 2021, GM announced it would invest \$1 billion in its Ramos Arizpe plant in Coahuila, first introducing the manufacture of battery packs and electric motors as well as gas engines with the intention to transition to only EV production¹⁶. BMW's \$866 m investment in its manufacturing facility in the state of San Luis Potosi will be a battery assembly centre and extend its assembly line to install the battery packs¹⁷.

The Mexican Government wants to create a lithium battery cluster. In March 2023 it spoke of plans for the cluster to be built at the centre of the country to feed automotive plants in Puebla, Queretaro, Mexico City and Guanajuato¹⁸.





Sector Focus

Aerospace

Mexico's aerospace sector is growing fast. According to the Mexican Aerospace Industry Federation (FEMIA), there were 100 companies in 2004 and 368 by mid-2022, three-quarters of which are manufacturers¹⁹.



There are five main hubs for the Mexico's aerospace companies: Baja California, Chihuahua, Nuevo Leon, Sonora, and Queretaro, with Baja California having some of the larger established companies including Rockwell Collins, Eaton Aerospace, Honeywell Aerospace, GKN Aerospace, Parker Industrial, Goodrich Aerospace and Safran Aerospace²⁰.

The drive for nearshoring is expected to create more growth in this sector, and perhaps Mexico will move up from its current position as the sixth largest aerospace supplier for the US. It appears that federal and state government encouragement for further investment in the sector is having an effect, with several recent news of expansions being made to existing manufacturing plants.



● Expansion plans

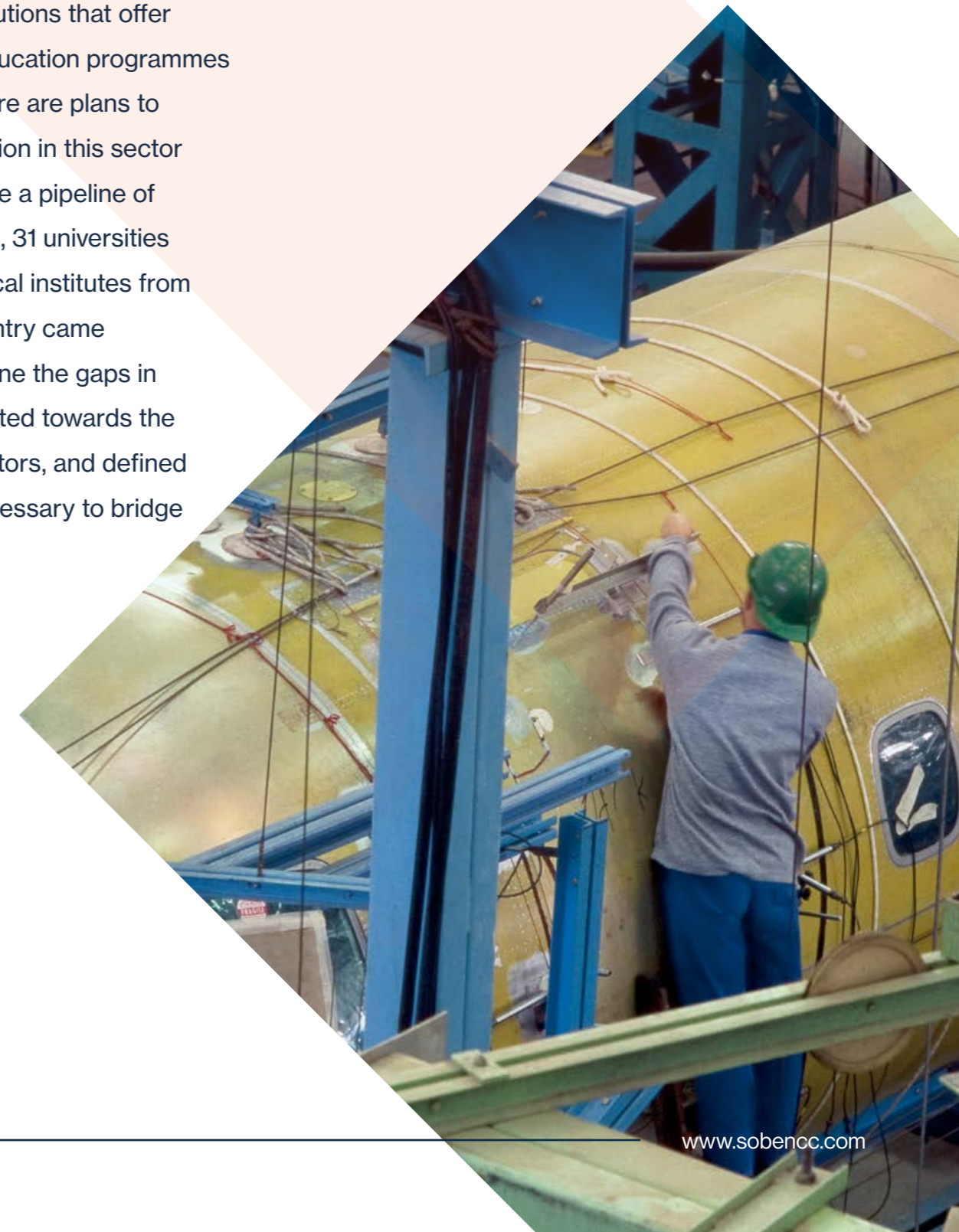
In February 2023, GKN Aerospace, which is a supplier for companies including Airbus, Gulfstream and Honda Jet, announced an 80,000 sq. ft expansion of its manufacturing facility in Chihuahua to meet new demands for its composite manufacturing and assembly²¹. So far, GKN has three facilities in Mexico.



In September 2022, the Canadian manufacturer Bombardier, which builds aeronautical components and systems at its plant in Queretaro, announced that it would increase production from there²², and in July 2022, Airbus Helicopter signed an agreement with the State of Queretaro stating that it would increase the capacity of its manufacturing plant in exchange for financial incentives²³.



Although there are already 21 academic institutions that offer aeronautical education programmes in Mexico²⁴, there are plans to improve education in this sector in a bid to create a pipeline of talent. On 2022, 31 universities and technological institutes from across the country came together to define the gaps in education oriented towards the aerospace sectors, and defined the agenda necessary to bridge that gap²⁵.





Infrastructure

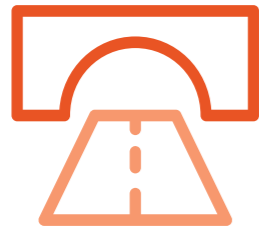
As the reality of nearshoring starts to take hold, so does Mexico's plans to increase investment in infrastructure, with both public and private financing. Ports, railroads and highways will be built and upgraded to aid in the flow of goods and materials in and out of the country.

In addition, the Mexican government plans to upgrade six ports including Puerto Chiapas, located in the southern state of Chiapas and which will span 300 km between the states of Veracruz and Oaxaca, as part of the Interoceanic Corridor. This project is comprised of 300 km of railway and improvements to rail links in several states²⁶.

The Interoceanic Corridor aims to improve connectivity between the Salina Cruz Port in Oaxaca and the Coatzacoalcos Port in Veracruz, in order to provide an alternative to the Panama Canal as a connection between the Atlantic and Pacific Oceans²⁷. New container terminals at these two ports are part of that vision.

Also, in the offing is the modernisation of the Guayamas Port in the state of Sonora, along with a 100 km highway between northern Chihuahua state and the western coast. Investments in Progreso Port in Yucatan state and Veracruz port are also under consideration.



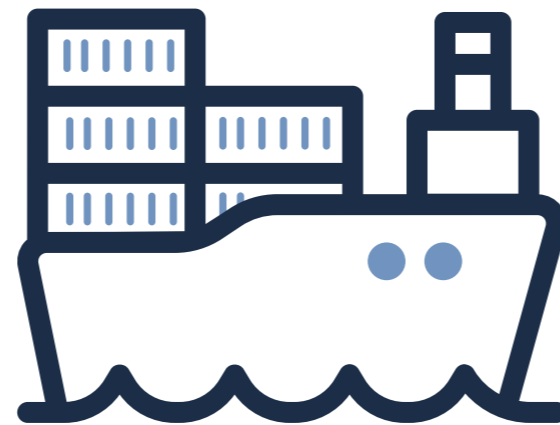


Private Investment

There is private sector investment in the pipeline too. In December 2022, Caxxor Group signed an agreement to develop the T-MEC corridor, a \$3.3 bn plan to link Sinaloa state in Mexico with Winnipeg in Canada via the US. This would involve the construction of a floating port in Mazatlan, Sinaloa, a 180 km rail line between Durango and Mazatlan, and four industrial parks in the states of Coahuila and Durango²⁸.



The Government also has ambitious plans for its highways, valued at \$1.8 bn²⁹. The goal is to upgrade its 15 main transport routes, nine of which run longitudinally and six which traverse the country. Among them are other projects connected with the Interoceanic Corridor and Highway 200 which runs along the Pacific coast from Tepic to Oaxaca.





Sustainability

Although green building practices in Mexico are at a relatively early stage, there are firm foundations in place that will help the country's construction industry respond to new demands for sustainable construction. Would-be investors, private companies looking to relocate, and the North American governments have strong arguments in favour of more energy efficient and sustainable building practices and a bet for renewable energy.

According to the International Finance Corporation (IFC), which is part of the World Bank, only around 5% of buildings were certified as green in 2020³⁰. There are three international green building systems which are generally deployed in Mexico: LEED, EDGE and BOMA Building Environmental Standards.



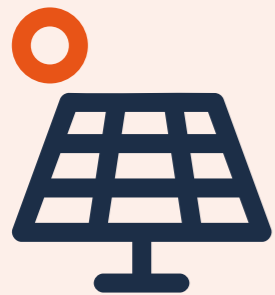
EDGE (Excellence in Design for Greater Efficiencies) is perhaps the fastest-growing. It was created in 2012 by the IFC to provide an accessible and affordable green building certification scheme. To achieve EDGE certification, buildings must use 20% less water, utilities and construction materials compared to a baseline for the city where they are being developed.

Materials suppliers are already aware of the opportunities of sustainable building in Mexico. For example, concrete suppliers Holcim and Cemex have both recently launched some of the first brands of low-carbon concrete in the country.



Renewable energy

In 2021, Mexico generated just under 27% of its energy from clean sources such as the sun and wind³¹. According to the US Department of Energy, the country could increase that proportion relatively easily to 35% by 2024, with plentiful resources of wind, solar, geothermal and hydroelectric power.



The Mexican Government's objectives to double its renewable energy capacity by 2030 are supported by initiatives such as the Sonora Plan, which was announced at the COP27 Climate Summit in Egypt. The Plan includes investments in solar parks in Sonora and wind farms in Oaxaca, examines how lithium reserves in Sonora might be exploited and outlines the expansion plans for Guaymas, the state's principal port.



At a more local level, some states are taking a lead on energy transition and decarbonisation. For instance in 2018, Queretaro joined the Climate Pathway Project which has set a trajectory to reduce its carbon emissions³². Among the state's plans are implementing solar energy for public services, producing renewable energy and heating at industrial sites and increasing the use of electric vehicles. The \$1.6 bn Puerto Peñasco solar plant, headlined in the plan, is already under construction and will be the largest such plan in Latin America once fully built out³³.





Project management in Mexico:

Lesson Learned

Like every country, Mexico has a raft of regulations and permitting processes which developers must adhere to if they are to deliver a project successfully. Over the past decade, Marco Mora has seen many projects run into difficulties due to a lack of awareness around local procedures and capabilities. Many of those mistakes are still happening up to this day, with the following being the most common:



Lesson 1:

Apply more due diligence to site selection

Without appropriate levels of due diligence around site selection, mistakes made at this stage can be very expensive. There can often be a lack of information related to electrical infrastructure, geological and environmental assessments, topography and hydrological studies, to name a few.

"I see companies coming from outside the region who don't have a clue," says Mora. "They make decisions to purchase a piece of land based on incomplete information, which can cost them dearly later on."

Companies should do their due diligence on the local advisers they choose to work with too, advises Mora. There are almost 30 tasks and actions associated with the site selection process, he explains, from negotiating Government incentives to interactions with the Environmental Protection Agency to analysis labour and professional resources.

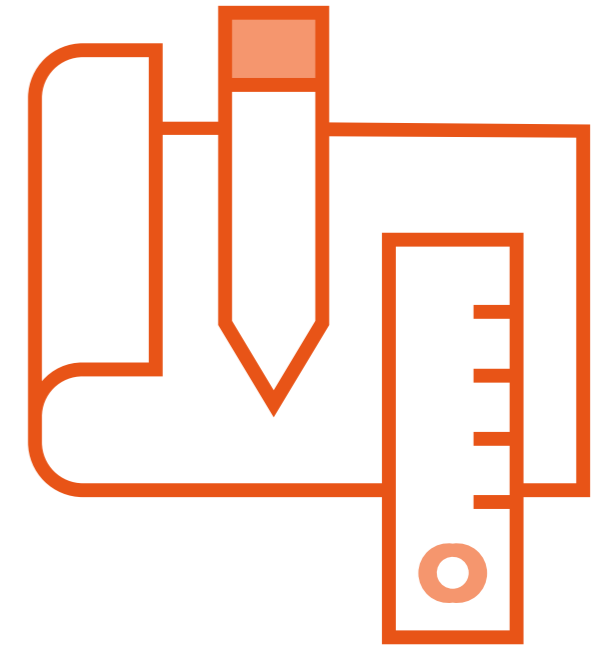


Lesson 2:

Insist on high safety standards

Over the past two decades, on-site practices regarding accident prevention and safety have improved hugely thanks to regulations based on those of the Occupational Safety and Health Administration (OSHA) in the US. However, some overseas contractors do not realise the standards of safety required, warns Mora.

Contractors who don't pay attention to safety standards may well submit lower bids than their competitors, says Mora. *"Think very carefully if you are considering awarding a contractor based on price alone,"* warns Mora. *"It's not just that safety standards will be low. There will be other risks that have not been budgeted – and it is the client who ends up paying."*



Lesson 3:

Engineering design – you get what you pay for

“In the early days, many companies did not realise the importance of having good engineering design,” says Mora. Rather than paying for a qualified and reputable company, clients would be tempted to go for a general contractor who offered general engineering services as part of their package.

“Many contractors, in order to access the market, provide engineering design but at a very poor level. This creates problems throughout the process,” says Mora, who has often been called in to sort out such problems. Fortunately, today, engineering design firms with the right level of competency do exist; again, good due diligence practices should be part of the selection and appointment process.



Lesson 4:

Understand process for permits – and apply early

Gaining the right building permits at the right time is, by nature, a bureaucratic process – and one that varies from state to state. There is a long list of permits in multiple categories covering the construction process, which impacts highways, the environment, water, power, labour, fire and construction termination.

“It is very painful if you don’t get it right, and regulations are increasing all the time,” says Mora. *“I find that people underestimate how difficult it can be to get environmental or electrical permits or the certificate of occupancy.”* He cites one project which sat empty for eight months because the application for the certificate of occupancy had not been processed at the right time.



Conclusion

Mexico rising

At a time when the world is shifting in so many ways - global flow of goods, digitalisation, decarbonisation, and energy transition – Mexico is uniquely placed to be benefited. As the many nearshoring-driven relocations are showing, the country has a lot to offer to companies who can exploit its growing expertise and existing supply chains in multiple sectors.

From a rich source of human capital to its growing renewable energy sector and its position as Latin America's second largest data centre hub, Mexico is beginning to fulfil its huge potential. With a 200-year track record of industrial development, there is a healthy and professional construction sector to draw on.

Like its immediate North American neighbour, Mexico is a country with many states. Each of them has different benefits, limitations, incentives – and regulations. Failure to take note of these details when setting up construction projects will have negative repercussions down the line. For any organisation that is new to the country, due diligence and robust project management at every phase are vital.

With the right advice and experience, Mexico is a country with many opportunities. Those companies who, like Soben, choose to invest and grow here, will be investing in the start of an amazing new era.

About Soben

Soben offers something different - a combination of the best consultancy practices, with real-life hands-on commercial experience in delivering major construction projects. Our founder Scott Smyth started his career in private practice before moving to work for contractors as a commercial manager. Scott found that he struggled to identify organisations to support him that understood the commercial reality of being a major contractor working on high-risk projects with low-profit margins.

As a result, Scott founded Soben. Since 2011, we've been supporting some of the world's leading organisations, increasing certainty for their construction investments through cost, project, programme, and risk management consultancy and proudly shaping the future with integrity.

Find out more at www.sobenc.com

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