

The Mural

The mural titled "Legacy of the Engineer Alejo Peralta" has a 2 x 6.40 m² format, made with an Isoplastic technique of my authorship. The theme is based on the life and career of the engineer Alejo Peralta y Diaz Ceballos, to do this I had to carry out an investigation based on the documentation that the Alejo Peralta Foundation provided me.

In the initial part of the upper left side, some blackwood tree trunks appear. This tree was exploited by the ancestors of Alejo Peralta, because from it they could obtain a substance called Hematoxilin (from the Greek "Bloodwood"). The tree is called *Haematoxylum Campechianum*, which through various chemical processes we can obtain different color dyes. The exploitation of blackwood in the XIX Century was in great demand, as well was indigo from Guatemala or from Brazil to dye cotton and silk fabrics. The blackwood tree possesses white flowers that produce honey and are used for decoration.

On the right hand side of the cut tree trunks, we can find the map of Tabasco and underneath the seal of Campeche, between these two we see the figures of the grandparents Anacarsis Peralta León and Trinidad Requena Abreu, whose ancestors, as landowners worked between Campeche and Tabasco. Towards the top we see a type of freshwater shrimp, we must remember that in the colloquial language of Tabasco this crustaceous is called "La Pigua" and that is exactly what they called the son procreated by the Peralta Leon's because of the reddish tone of his skin. One of his offspring, Anacarsis Peralta Requena, was riding and came along a snake that was sewed together and had gold coins inside, this is the reason why under the shrimp the reptile with the coins appears.

Toward the bottom of the seal of Campeche we see the image of a drilling well since Anacarsis, Alejo's father, carried out this activity. This allows us to think that they are a family that had an engineering background, of creating mechanisms, machinery, instruments and this is demonstrated through a series of patents, the inventiveness they had to build machines gave place to the development of an extensive and varied industry. At the bottom part of the well there is a diagram of one of the inventions of Anacarsis Peralta Requena and in the middle of his figure and that of Maria Josefa Diaz Ceballos, we come across the image of a sewing machine because he used to sell these machines and this is how he met who would later be his wife.

At the bottom, there is a family photograph and next to it, as if it were part of the furniture of the machine, we can see a detailed vignette I transformed and that represents the culture of effort of this family. Besides Maria Diaz Ceballos I placed a label of the mineral waters of Tehuacan because they were owners of the natural spring.

Subsequently, in Puebla they had saunas, reason wh over the tag of Tehuacan we find a machine they invented to save energy and water when they produced the vapor of the baths. The Revolution affected them and they went to live to Mexico City. In the upper area we see a family image (ca. 1916), a mature Anacarsis Peralta Requena and Doña Maria Josefa Diaz Ceballos Mont with their children. I am referring to Leopoldo on the left side, next to him the young Alejo and his sister Aurora, behind Anacarsis Peralta appear his other two sons, Anacarsis Hector and Hector Anacarsis, towards the right of both, we see the figure of Natalia and finally a

little separated, Octavio. This photograph is very important because not only Alejo Peralta dedicated his ingenuity to develop companies but also his brothers.

Underneath of the invention of that machine, which saves vapor and energy, we see as if it were a photograph of an ID the engineer Peralta at age 14. I picked this picture because it was when he began his life as an entrepreneur, beginning when the family was a manufacturer of candles, Luz Perpetua, and it is the reason why they are part of this mural underneath of Alejo's photograph, in roman numerals his date of birth, May 5th 1916. On the upperpart we find a lantern which separates the family photograph of what was the EIME, the old Superior Level School of Mechanical and Electrical Engineering, where he studied.

It should be noted that the mural has several perspectives because I taught different subjects like mathematics, algebra, integral calculus, geometry, etc. This is when I discovered Apollonius conics of the third century before our time. Apollonius was the author of the conic sections that consist of cuts that are done to a cone that give place to ellipse circles, a variety of curves, hyperbolas and parabolas. And based on that, this composition is based. Reason why we can appreciate 12 points.

The scene of the mechanical engineering school is situated above a motorcycle that Alejo Peralta bought from one of the important collaborators of his father and this appears over a radio, and next to the radio we can distinguish a Bakelite molecule, material he used to manufacture the frame of the radios. Immediately we can see a group of students of the Politecnico that are taking an experimental class, a practical class, and under that, a crystal radio, because the engineer Peralta and his brother had a workshop that would repair these devices. In a downward direction we can see a Bakelite chassis. The spoon that appears on top to the left is to signal that he was a pioneer in Mexico by recycling waste of the steel sheets his father used in the factory. He would die-stamp spoons for ice cream, one of his first businesses.

Next to de school of engineers we see a machine that helped him make the spoons. Underneath that machine we find a scene of soldiers of the Second World War, since this conflict favored the industrial development of Mexico. The tank is firing a rivet because Peralta manufactured rivets and buttons for cowboy pants, and underneath that cascade of rivets we find a lathe that alludes to everything he learned from the mechanical engineering workshops.

To the right we find a series of cables representing high voltage cables, or of alternating or three-phase current, a pipe and a support where the lightbulbs were screwed in because he began to manufacture a whole series of articles for the electrical industry. That is why contacts and switches that he manufactured appear within this mural. Upward we find a copper coil, because it depicts the production range of a series of different caliber pipes for various industrial activities.

In 1939 he incorporated IUSA (Industrias Unidas Sociedad Anonima), which means United Industries Public Limited Company, anticipating from its name what would be a group of companies that within time would be around 200.

On top of the copper coil we observe two fundamental pieces for electrical substations and to the right a sample of copper in its natural form and underneath this, four crosses that represent

copper valency, next to this there is a tire with a pivot, because part of his enterprises also cover the automotive sector.

Underneath the pivot we see the engineer Alejo Peralta playing racquetball and also him with a tiger. We must remember that he did not only like baseball but also promoted this sport as he was the owner of the team called Tigers (Tigres) named before as Aztecs (Aztecas); he filled various chapters of the Mexican baseball history with repercussions in the American Baseball League.

Over the engineer Peralta with the tiger, we can distinguish a book which cover is the very well-known façade of the National Polytechnic Institute (Instituto Politecnico Nacional) since he was its Dean. There exists various anecdotes, as he reformed this institute when it entered a bureaucratic, political and magisterial crisis, he elevated the importance an institute of that nature should have. He was named Dean of that institute by the President of Mexico, Adolfo Ruiz Cortines.

In a downward direction we can distinguish a tractor, because the engineer imported a batch of tractors necessary for the construction of the industrial unit Pastejé, we immediately contemplate another image of the engineer, since the purpose of the mural is to show him in various moments of the different stages of his life. This is why he appears with a pipe in his hand and behind him those profiles he used to build the Argon Unit, one of his first factory complexes. Later, we see a baseball player with his Tiger's uniform batting an old logo of Petroleos Mexicanos since he supplied considerable material used for the production and transportation of goods of this State company; and beneath we may observe two large pipes, one for gases and the other for liquids because he also provided these for that same purpose. On the side there is a switch which colors harmonize with the tones previously used.

The mural has a linear composition also inspired by Apollonius conics that combined with the chromatic establishes a balance, harmony and a movement that generates a dynamism not only in the figures, but in the colors; and in that sense the mural begins, as I have explained, in the blackwood tree, which different colors are extracted with chemical reactions: violet , intense red, purple, blue, yellow; This is the reason why the selected color palette gives this mural shades linked to the reaction of extraction of the hematoxylin of blackwood.

Above the engineer with the tiger and the IPN book cover, there appears two zippers because Alejo also covered the zipper industry, he did not only use copper to manufacture a diversity of products, but he also used alloys that are used to manufacture heaters. We see a book close by because at the time the engineer was the Dean of the National Institute he was able to obtain significant discounts with the editorials on behalf of the students.

The fuses presented at the bottom of the book illustrate the different sizes for various voltages as an additional sample of the production of IUSA. To the right, a television of that time and the letteres X IPN TV which symbolize the creation of Channel Eleven, because thanks to his vision and executive abilities he was a pioneer in education through television, even enduring the cost from his own pocket in the beginning and in the maintenance of this educational and cultural

model, importing equipment from the United States to establish the entire television circuit and paid the employees for two years until finally the government assumed the costs.

Above the letters XIPNTV of channel 11, we can spot a panoramic view of the bullring El Toreo since he ventured into breeding fighting bulls within his professional career. Simply put, the engineer would employ all tools necessary to cleanup and correct companies and businesses, so when there were certain conflicts within them, as there were in El Toreo, he organized and restarted the love for the bullfighting fiesta in Mexico.

Underneath the television appears a mock-up of the Zacatecas Unit, he thought that as there was a University City, the National Polytechnic Institute, there should be a comparable area, so he ordered his assistants to look for a huge area of more than 40 hectares where he built these educational facilities.

At the foot of the mock-up, we can see a helicopter that alludes to the use of this machine as frequent transportation of the Peralta family traveling from the Pastejé Hacienda to their corporate office in Mexico City. Under the helicopter we can distinguish a view of the Delta Baseball Park that became a symbol of this national sport. Above the mock-up we see a textile filament thread spool he also manufactured, and its molecular structure, that of Polypropylene

Alejo Peralta conceived a system called SOS for people linked to the entrepreneurial world, thanks to which, from anywhere, you could communicate through a commutating system. Under that SOS switchboard system there is a set of spare parts for pens because they were part of the IUSA group of companies; Below this series of different spare parts, a safety belt is shown, but in full equipment since he also manufactured safety belts for different means of transportation. Next to this is a transmission tower because many of the cables, insulators and tensioners have been manufactured by IUSA for the national electrification system. Next to the tower we find a series of nibs of different colors designed according to chromatic eurythmy.

Towards the top there is a detail of one of his industrial plants and a map of the Mexican Republic where we can find the current locations of IUSA factories. We also see the famous Yankee junior airplane that he used, and as well we can find the license plate, and underneath, as if it were a photograph on a night stand, we find the Peralta couple, and next to that photograph, a panoramic view of the façade of the Pastejé Hacienda that Alejo bought from Carlos Arruza and where he would build one of the first industrial parks outside the city. He was convinced that the industry should be outside the urban center and that rural people had to be professionalized to positively affect the economy of the rural environment; This is the reason why a group of Mazahuas people appear. When he bought that place he had a lot of challenges, he even looked for a way so that people from nearby towns, ages between 16 to 18, (many of them did not speak Spanish), could go to a school that he set up so that they could receive education and were trained to develop productive abilities.

Next to the plane, a series of conduits appear that end in the Gulf of Mexico, converted into a light meter, another important IUSA product, before, the meters were imported from Japan, and to its side we observe a panoramic view of the entire Pastejé complex in the State of Mexico and beneath that, a bicycle wheel is illustrated because the engineer Alejo Peralta

thought that business development should metaphorically be like the wheel of a bicycle, since it could lack a spoke if a company failed, but with the rest it, it could continue advancing; to the right of the wheel there is a shield of the school that carries his name, and that educates and technologically trains children and young people, this school cost a lot of work, and finally was recognized by the Department of Public Education.

In a lower scene we observe a group of students sitting in front of a series of monitors, because since the beginning he thought to use the latest technology in production at different stages in the industry. By the way, a majority percentage in his factories is made up of young women, since he thought that women were very responsible and very thorough in certain activities, such as welding. At the end we contemplate the face of a Mazahua woman and the finishing touch of the mural is the image of Alejo Peralta with a cigar in his mouth who observes everything he could have imagined and which became a reality.

The mural is iconographic, there may be geometric murals but in order to express the legacy of Don Alejo Peralta y Díaz Ceballos, a figurative graphic language has been required to allude to his most important stages in life. Others might be missing, but the substantial ones that were carried out by the engineer are included in this mural.

Made in the year of 2024

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