

The architectural influence of Óscar Niemeyer

La influencia arquitectónica de Óscar Niemeyer

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Óscar Ribeiro de Almeida Niemeyer was a great Brazilian architect with a peculiar style in his works. For him, architecture had to become a great work of art capable of touching people on an emotional level. Oscar Niemeyer is recognized for breaking the schemes that were held in architecture. Each of his works is governed by his feelings and way of understanding the world. His work places him as one of the best architects both professionally and personally. He left a legacy in the utilization of light and the use of external and internal spaces, as well as in the construction of flexible and usable materials. Niemeyer caused a global transformation that is not limited to the architectural sector, but also the political and social.

Keywords: Architecture, construction, design, modernism, Niemeyer

Óscar Ribeiro de Almeida Niemeyer fue un gran arquitecto brasileño con un estilo peculiar en sus obras. Para él la arquitectura debía convertirse en una gran obra de arte capaz de tocar a las personas a nivel emocional. Óscar Niemeyer es reconocido por romper los esquemas que se tenían en la arquitectura. Cada una de sus obras se rigen por sus sentimientos y forma de entender el mundo. Su trabajo lo ubica como uno de los mejores arquitectos tanto a nivel profesional como personal. Dejó un legado en el uso de la luz y aprovechamientos de espacios externos e internos, así como en construcción de materiales flexibles y aprovechables. Niemeyer causó una transformación global que no se limita al sector arquitectónico, sino también al político y social.

Palabras clave: Arquitectura, construcción, diseño, modernismo, Niemeyer

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Introduction

The following text will cover a topic that for many people in their thinking may be useless, but for anyone who can see the construction beyond a simple set of walls or a union of materials to create a structure can be a very substantial and necessary text. What leads us to discuss the following topic is the need to show the world the vision of a man who dedicated his entire life to architecture, and that today is a symbol and synonym of the same that taught the world the exquisite art that has every building built with the fundamental bases of aesthetics. This to exalt Oscar Niemeyer as a unique reference in the history of architecture that laid the foundations for all architects of modern times (Philippou, 2013).

Throughout different texts and interviews, Niemeyer talked about his life, and how he went through the process to become the icon of architecture that he is today. He also details his most difficult moments when he was relegated from his nation because he was believed to be an unprepared architect, or when he had to flee because the monarchy took over Brazil, and he being a communist had no place in his city. Different media and more have shown the different stages of Niemeyer's life because he became an icon with his architecture (Read, 2005).

At the age of 20, Niemeyer joined the Socorro Velmelho, which defined itself as a group of the Brazilian communist party (Barros, Costa, & Navarro, 2012; Stierli, 2013). In 1929 he decided to enroll in the national school of fine arts located in the city of Rio de Janeiro, where through the years he learned to finally start his working life in 1932 and culminating in 1934 with graduation and subsequent departure as a professional. Over the years, more specifically 1967, Oscar went into exile in France due to the multiple military dictatorships that occurred at that time. Even so, in France, he did a certain amount of work that led him to earn a special French license that allowed him to create works in the country. He then dedicated himself to the creation of a special work that was directed to the people of the French communist party. After returning to his native country, around 1980, he created multiple works, winning the Pritzker Architecture Prize in 1988. Later, in 1991, he created the Museum of Contemporary Art located in the city of Rio de Janeiro, as well as the Latin American Parliament, and in 2002 he created his museum named Oscar Niemeyer Museum (MON) (Godoi et al., 2013).

Already leaving a little of his life and general works, aesthetics touch here a point of great importance to understand why the works of Niemeyer played a different role in the architectural vision, starting with the definition of aesthetics (Lahoud, 2013). The beautiful or what is perceived as beautiful is an artistic concept connected to everything we think and feel, something that should not be altered by moral reasons or knowledge that society has created in

each inhabitant. Beauty is a fundamental characteristic with meaning in each person since it is special meaningfulness in the sight of each person, something incapable of being appreciated if its function or purpose is sought. The simple fact of creating uncertainty makes them monumental and unique, taking this into account the aesthetics were important for Niemeyer since he was in charge of capturing these characteristics in his works, adding all those things that for him meant the pure beauty that he transmitted in his curved strokes. With this term, he thought of giving an idea that would create multiple points of view, both objective and subjective, that could change depending on the context that the aesthetics had created in those who saw it, whether it was one that focused on the beauty of the world that changes with it or one where advertising and all aspects of sales and trends had delivered.

How this article is developed is by thoroughly investigating different texts that talk about Niemeyer's definition of aesthetics. In this way, we intend to reach a hypothesis of the main question of our research: What was aesthetics for Niemeyer's point of view? Different interviews and phrases will lead us to the conclusion of what was his definition of aesthetics. These texts will be studied to know which ones are the most suitable to answer our question since many texts talk about Oscar Niemeyer, but telling about his works and his personal life, which is not the fundamental of our search. It can even be said that there are few texts in which Niemeyer expresses or tells what is his definition and importance of aesthetics in construction. All this will also be complemented with data from his personal life, such as the influence he received from Le Corbusier, or the support of his friend Lucio Costa, because for many Niemeyer's talents for buildings was something that simply emerged from his studies, but few know him behind all this, and even less about the people who were behind the birth of a genius (Bullaro, 2014; Segawa, 1997).

Modernist ideas of a great thinker

Oscar Ribeiro de Almeida Niemeyer Soares Filho is also known as Oscar Niemeyer, was born on December 15, 1907, in Rio de Janeiro; he was a great Brazilian architect. He said that architecture should become a work of art that creates emotions, he did not like straight lines, he was attracted to curves he said "*it is not the oblique angle that attracts me, nor the straight line, hard, inflexible, created by man. What attracts me is the free and sensual curve, the curve that I find in the mountains of my country, in the winding course of its rivers, in the waves of the sea, in the body of my favorite woman. The whole universe is made of curves, the curved universe of Einstein*"; having as inspiration women and nature, provoking emotions in the people who see it; using geometry (he uses mainly curved lines) to give it a more aesthetic form, and to make possible the construction of such

projects, facilitating and making possible the calculations (Fig. 1).



Figure 1. Oscar Niemeyer (Levit, 2019).

At the age of 20, he joined the Socorro Vermelho (a support organization for the persecuted and political prisoners, linked to the Brazilian communist party), later in 1928 he married Annita Baldo (descendant of Italian immigrants).

In 1929 he enrolled in the National School of Fine Arts in Rio de Janeiro; in 1930 he had his daughter Anna Maria Niemeyer; then he began his professional life in the office of Lúcio Costa in 1932, then in 1934 he graduated as an engineer-architect, later in 1936 he worked with Le Corbusier and Capanema, as a trainee and worked together with Le Corbusier to design the new building for the Ministry of Education and Public Health in Rio de Janeiro, thus demonstrating his innovative thinking giving new ideas and being accepted with success.

Later in 1937, he had his first project built in Rio de Janeiro, the project *Obra de Berço*, then he built the project *Casa de Oswald de Andrade* in São Paulo and a hotel in Ouro Preto-MG, then in 1940, he worked on the project *Conjunto de Pampulha, Belo Horizonte* at the invitation of Juscelino Kubitschek, where the project includes a casino, a club, a ballroom, an Englishwoman and a hotel. For the execution of this project, he worked with the structural engineer and poet Joaquim Cardoso and the landscape designer Burle Marx.

In 1942 he worked at the Rodrigo de Freitas Lake House, then in 1945 he traveled to New York to work on the design of the United Nations building and joined the Communist Party of Brazil.

Between 1951 and 1955 he worked on the Ibirapuera Park, São Paulo Surge to commemorate the 400th anniversary of the city of São Paulo, a symbol of Brazilian modernity, which was Niemeyer's second-largest project, where he used curves to accentuate the *lightness* of the buildings, In 1953 he worked on the *Canoas House* where he lived with his family for a long time, in 1954 he participated in the design of a group of buildings for the Hansa neighborhood as part

of the Berlin reconstruction program, and he designed the Caracas Museum in Venezuela. Later in 1955, he founded the magazine *Módulo* in Rio de Janeiro.

Later in 1956, he was invited by JK (Juscelino Kubitschek de Oliveira) to create *the most beautiful capital in the world* where Niemeyer was able to carry out his projects together with Lucio Costa, making Brasília a work of modern art. After that in 1963 he received the Lenin Peace Prize.

Later in 1964 due to the overthrow of the president of Brazil and the new dictatorship in Brazil, his projects were rejected and his office was raided due to persecution because of his political ideas, which stopped his career, forcing him to go into exile in Paris.

He then left the University of Brasília in 1965 due to the military coup to highlight the difficulty of living and working in Brazil, then traveled to Paris to visit the exhibition *Oscar Niemeyer, l'architecte de Brasília*, at the Museum of Decorative Arts of the Louvre Palace, where he received the Joliot-Curie Medal and the International Grand Prize for Art and Architecture from the magazine *L'Architecture d'Aujourd'hui*.

In 1967 he went into exile in France due to the military dictatorship and during his exile, he worked on different projects for different countries and obtained a special license to work in the country with all the rights of a French professional. Later in 1971, he built the headquarters of the French Communist Party, silencing critics of his style of construction.

Then in 1972, he opened an office on the Champs Elysées in Paris, where he planned the Bobigny Labor Exchange and the Le Havre Cultural Center in France. After some time, in 1980 he returns to Brazil to create the JK Memorial in 1980 and the Indian Museum in 1982, together in Brasília, later in Rio, he builds in 1983 the Manchete Television Network, the same year in which he plans with Darcy Ribeiro, the public school system called CIEPs (Integrated Center of Public Education) and then in 1984 builds the Sambadrome, later travels to São Paulo and in 1985 builds the project *Pantheon of the Homeland* in the Three Powers Square in Brasília and in 1987 the *Memorial of Latin America* and the headquarters of *L'Humanité Newspaper* in Paris. In 1988 he received the Pritzker Architecture Prize.

Later in 1991 he executed the project for the MAC Contemporary Art Museum in Rio de Janeiro and the Latin American Parliament, and then in 1996 he built the Eldorado Memoria Monument, donated to the Landless Rural Workers Movement, and the Niteroiy Contemporary Art Museum, and in 1999 he designed the new Ibirapuera Park and the Cultural Sector of Brasília.

In 2000 he publishes his memoirs in London and creates the Ravello Auditorium, the following year he executes the project of the Brazilian Cinema Museum in Rio de Janeiro, the Oscar Niemeyer Museum in Curitiba, and the Acqua

City Palace in Moscow, then in 2002 he inaugurates the Oscar Niemeyer Museum (MON), and the Museum of Eyes, in Curitiba and projects the Ibirapuera Auditorium, then in 2003 begins the construction of the National Library and the National Museum in Brasilia, and projects the Serpentine Gallery Pavilion in Hyde Park, London.

Then in 2004 he separates from Annita Baldo and builds the Peace Monument in the city of Paris, then in 2005 he designs the Potsdam Water Park in Germany and the Hydroelectric Administrative Complex in Itapúa, later in 2006 he builds the Principality of Asturias Cultural Center in Spain and the León Brizola Memorial in Rio de Janeiro; he remarries now with Vera Lucia Cabreira. In 2007 he commits to design the headquarters of the Public Archive of the Federal District, the Museum of Image and Sound in Brasilia, and builds the University of Science and Informatics in Cuba and the Cultural Center of Valparaiso in Chile.

In 2008 he launched the third edition of his architecture magazine *Nuestro Camino* and built the Teatro Puerto de la Música de Rosario in Argentina, then in 2010, he executed the project considered the most daring of Oscar Niemeyer, the Administrative City of Minas Gerais, which was inaugurated on March 4, 2010. On December 5, 2012, he passed away at the age of 104.

Aesthetics

As previously mentioned, the aesthetics in the works is a very important aspect in the elaboration of constructions, even for a great architect such as Oscar Niemeyer is one of the most important aspects when designing his futuristic works of art, which are based on women, flowers, mountains or rather in nature, adapting their designs to the environment making something extravagant for today's architecture, but that looks good in the environment in which it is although it is more difficult to build and plan due to the calculations for the structures for its various curved shapes.

Therefore, it is important to answer the questions: What is aesthetics and how did it originate? And why are aesthetics important in the planning and construction of buildings?

The term aesthetics has different meanings. In colloquial language it refers to that which is beautiful, or rather, that which is perceived as beautiful, although in philosophy it is understood as the branch that studies the study of the essence and perception of beauty. The word derives from the Greek words *aisthētikē* (perception), *aisthēsis* (sensibility), and *ica* (relative to).

Aesthetics is an artistic concept, leads to a direct connection with what we think and feel, giving it directly an abstract idea, but symmetrical can be subjective by managing objective standards.

The autonomy of the aesthetic is akin to our experience. It is not only that we can hardly equate, without roughly blurring the differences, what happens when we know a

fact of the world, qualify our actions ethically or morally, or appreciate the aesthetic features of certain objects. The central point is, rather, that we do not support the relevance of aesthetic manifestations on moral or knowledge grounds: we do not say that an object is aesthetically significant because it makes us know aspects of reality or because it conforms to our ethical evaluations. Under these strict restrictive criteria we would have to take as serious deviations almost all art from Impressionism onwards and, if we look at things carefully, not a little art of the past.

Statics refers to all kinds of beauty where the person who observes it has different points of view, but there are always points in common between subjective and objective opinion, where no matter how far apart are the opinions of each person, they tend to give similar objectives.

One of them is the objective symmetry where everything you can see of an object or that you can differentiate from an object aesthetically speaking will have aesthetics as long as it is as symmetrical as possible, human beings are aesthetically attracted to objects that keep as much symmetry as possible.

If we continue talking the next point refers to aesthetics from a social point of view, aesthetics changes according to the social world where you live, and it is shown that in the eighteenth century the concept of beauty and aesthetics was completely different seeing how the social environment changes in a certain way the point of view of aesthetics.

The third point to deal with is the aesthetics through advertising, where it is one of the most important in this century, as it is determined by everything that industry wants to sell and makes it an aesthetic trend using the concept of common paranoia where a group of people influence others to follow this new concept and so on until it is quickly recognized, the problem is that as it arrives quickly changes again, but we always have an objective opinion against the concept of aesthetics because it is the one that sells us the industry.

The fourth point to discuss is aesthetics with differentiated concepts, where the concepts of aesthetics tend to be the same due to ignorance and lack of concepts, in human behavior we see how human beings in their social environment do anything to fit into a social group changing their own opinion and generating a new concept of aesthetics showing how the influence of a social group changes their whole concept of aesthetics without having their own opinion just because of their ignorance and lack of concepts.

If I speak at this point with my personal experience I would call aesthetics a concept that your family gives you, where the people you live with give you a basis of their perception of aesthetics and are the first direct influence on the way we think or feel and that makes our concept is a reflection of the first thing we see socially.

We have already seen how aesthetics in its subjective thinking has basic points that make it a general objective

concept, where our social circles, interpersonal relationships, what they want to sell us, and the same history makes our concept similar, then we can ask ourselves if aesthetics is an own concept or is always inherited by what surrounds us? I do not know to what extent we are influenced by external values, but I can affirm that aesthetics is and will remain an objective concept with personal changes that lead to the subjective.

Why is aesthetics important in the planning and construction of buildings?

The aesthetics that Oscar Niemeyer managed to express through his long work experience in the design and creation of architectural works are of great interest, as it is one of the few visions that managed to break the predetermined schemes that were followed so far, putting firm foot managed to express what he felt comfortable light and space on more than one occasion without fear that an idea would create multiple negative impressions of that which for him was not only a structure but a unique and own art based on curved and alive strokes that gave the feeling of giving a breath to the architecture, more than that of giving a new idea that would change the way things were seen in the future, since this peculiar vision was ahead of its time by the simple fact of giving naturalness to the works added to complex futurism that endowed each structure with beauty and its character.

Just by the above mentioned it is obvious to deduce that this great designer set a benchmark for more than one, not limited only to the permission to create unique structures, but to allow new and current generations to add something more to their work, thus demonstrating that the buildings are not large piles of heavy materials, but rather a large-scale aesthetic art, which like a painting or sculpture is able to draw attention to receive time, analysis and complex opinions that demonstrate everything that was behind its creation, this vision and radical form of design already has its great impact as well as its merits and recognition by those belonging to this wide world taking steps forward on the future of it as another form of study that will be taken into account for young and new pretenders who will take advantage of this as one of the multiple paths to follow when it comes to training having a responsibility as a reference point from the moment of its arrival and possibly without a close withdrawal, Niemeyer's vision promises to be one of those that will be marked in history regardless of what happens in the following years, since things like this are rarely repeated and provoke so much from its root, that is why as for architecture, art, education and most importantly people this type of aesthetic framework has marked and will mark its own space in all media allowing it to endure and prevail as one that stood out from the rest by breaking the rigidity and creative norms and be the expressive and aesthetic artistic curve of architecture.

Interstices, construction and space utilization

Oscar Niemeyer has a very peculiar way for the planning of structures, in which he takes advantage of the interstices (small space between two bodies or two parts of the same body) to the maximum to leave more space, mainly on the main floor, to store other objects that will later be stored as equipment or large objects, besides that the structures built with interstices are built with a height of approximately 6 to 8 floors to have easy access to repairs and not have to completely close the building for repairs.

We can observe that Oscar Niemeyer in his projects uses modernist architecture combining it with interstices to demonstrate how by making good use of a space a work of art can be generated, as in the cathedral of Brasilia (Fig. 2).



Figure 2. Cathedral of Brasilia (Mangini, 2019).

In which, to take advantage of the space and interstices, and not to *damage* or modify the structure, he designs a subway entrance; With a height of 40 meters, with a large space between the center and its structure, and with independent structures, it allows the entrance of various large objects, to arrange the space as desired, and to change the objects without any problem, besides that, it gives a great futuristic style very interesting and attractive, and most importantly, it allows that if a repair is needed in any of the pillars, it is not necessary to close the entire enclosure, but it can continue to be used while it is being repaired.

Basis in Niemeyer's aesthetics

Start of his vision

How was the concept of aesthetics born for Oscar Niemeyer? We see this reflected through the different texts cited for this article, different types of informative texts were used in addition to interviews with Niemeyer. This text may sound unremarkable to some readers because of the question asked and because not everyone knows the person to whom this text refers, His vision begins from the point of work which began as that of any person of our days and of the past times. He started as just another architect of Brazil who was one of the creators of the Brasilia project which at first did not go as expected and he was criticized by many of his colleagues and superiors because of this he had to seek new opportunities in Europe more specifically in France where he polished all his knowledge and acquired new techniques developed in the old continent, He returned to his native country to implement everything he learned to be recognized today for his many works not only in Brazil but in more than 20 countries and four continents this gives us to see how Niemeyer took his architecture around the world.

This gives us to understand that for Niemeyer architecture is to create, it is not simply designed if not give way to something new something never seen before something out of the ordinary construction. With this in mind gives us to understand the importance of the question posed in this text, as it is to know the point of view of someone so important and influential in the architecture of all time that not only should be his point of view but to be so important his work should be a concept that takes into account any architect of the modern era. But we can always open a door to debate and ask ourselves if Niemeyer's definition of aesthetics is the correct one.

We find another very interesting phrase of Niemeyer that shows us how imagination influences architecture and aesthetics and how this is reflected in every project that an architect carries out. And this leads us to underline what is the contribution of this text to the readers is that they know more deeply what architecture means, which is not only a combination of engineering and the erection of walls but can be defined as an artistic expression on a large scale.

Niemeyer was a complete revolutionary as far as architecture is concerned since all his works were completely different from what had been seen until that time. Why? Niemeyer visualized a different aesthetic for the constructions since at that time everything was generally straight-line constructions.

He innovated by including curves in concrete structures since for many this was impossible and far-fetched due to the hardness of concrete and the fear that by not being straight the structure might not have the same resistance capacity offered by a straight structure.

Among his most outstanding works, which include curves, we can appreciate the Oscar Niemeyer Museum, the Museum of Contemporary Art, and the Cathedral of Brasilia. But we must keep in mind that Niemeyer did not reach the summit by himself, since after his exile in France he returned being still questioned for his type of architecture, here we go back to 1932 when he joined Lucio Costa who was an architect who like Niemeyer was in the pilot plan of Brasilia, these two had a partnership that lasted for years forming several projects among which stands out the Gustavo Pacanema building.

Lucio Costa lived until 1998, but even so, Niemeyer continued with his life as an architect working in his field despite his advanced age and continued with his life as an architect until his death at the age of 104.

The architectural revolution resulting from its aesthetics

Taking into account that the texts that can be found today on Oscar Niemeyer are several and you can also appreciate his projects that mentioned above were a complete revolution for the time. His works have been the inspiration for many architects of the modern era who have his projects and his life in general as a reference to follow. This revolution has much to do with the question posed, as it shows the importance that aesthetics had in each of Niemeyer's works.

Niemeyer's influence on architecture is such that even a culture such as the Japanese has been inspired by this master. I want to highlight a little in this area that I find very interesting because the Japanese culture has always been considered a highly advanced culture compared to the rest of the world. This is because their strict discipline makes them the best professionals in many fields of work.

And see how Niemeyer influences the architectural field of this culture makes us see how the aesthetics in the architecture of Niemeyer did not remain as something for the simple view and appreciation of all those who saw his works, but what he sought was to convey a revolutionary idea that would lead more architects to be launched by innovation and not stay in the field of the straight line that was the regime that had the architecture before his time.

One of his greatest influences was Le Corbusier, since Niemeyer's ingenuity was not a flash that came out of nowhere, Le Corbusier was a complete theorist who knew how to transmit his buildings to other professionals and this gave rise to Niemeyer's ideas of not just building without including art or even building without taking into account some of the philosophy of this area of work.

This makes it more than clear what Niemeyer wants to convey, he makes his works so that others notice that they are unique, his architecture has always been marked by the use of curves that he, being a passionate man and lover of women, implies that he is inspired by it to make his works.

Another reference to the fact that Niemeyer looked at the world with different eyes than other people, since he

could see the beauty of his surroundings from the simplest of things, and when he saw the beauty of the universe, he captured its beauty in his revolutionary works of art.

Let's look at another of his many important works and where his vision of aesthetics can be seen reflected in the city of Brasilia, which became the new capital of Brazil in 1960. This city was one of Niemeyer's favorite canvases, it was enough to see that together with Lucio Costa they were practically the creators of this city that were innovative and would bring a lot of progress to the nation.

Let's say that this was the first time that Niemeyer decided to carry out structures with curves and that I thought to show the signs of a career that would be full of success and that would define a new concept for the architecture of all history. He took into account that this had to be a location that would be even for the president's compound. Despite the short time he had for its construction, he realized that he had created a new architecture that took to another level what was known until now about construction. He broke the mold of flat construction and gave way to a new type of structures that were based on aesthetics and curves which could transmit to everyone who saw it that innovative thought of staying in what has been working for years that we can do more to take not only the architecture but every aspect of our lives to another level to something that revolutionizes society as we know it now.

We can see that what we have talked about not only serves as a topic for enterprising architects but for anyone who has a different way of thinking that breaks the mold. This also helps us to see the beauty of the world and not only have aesthetics as something visual but as something that goes beyond the simple human vision that through it we can express ourselves and bring a message to other people who may be looking for a meaning to the present and life.

Niemeyer an exemplary visionary?

First, given the contexts seen during this chapter, it can be defined that aesthetics for Niemeyer is the most fundamental part of a structure since it can transmit thoughts to anyone who truly admires it with more than just sight. Now let's go to one of the faces of Niemeyer less known by many people.

Let's talk about Niemeyer's ideological thinking and how with his works he talked about communism. Someone who had a thought inspired by Marx and Lenin, but who treats it more as a moral value than as a way of doing politics this does not make us see the other as a friend walk side by side with our companions and not see them as rivals and try to make them fall on the way.

Niemeyer was also part of the communist party of his country until it fell in the coup d'état in 1964 where Niemeyer was exiled again due to his ideology, despite this it is seen that he was a friend of the Cuban communist Fidel Castro and we could say that he shared some ideas (Fig. 3).



Figure 3. Dead Fidel Castro, when Niemeyer remembered their meeting and the anti-Castro lawyer (Terruzzi, 2019).

Here he shows us that Niemeyer was not only a revolutionary in terms of architecture but also participated in trying to revolutionize a bourgeois thought that began in the city of Brasilia which he decided to leave because the powerful and wealthy people began to come to the city to settle there. After his exile, he left for France where he was from 1964 to 1985 where he designed some of his works such as the headquarters of the Communist Party in Paris and the House of Culture in Le Havre. He also did some works in Algeria where he also managed to become an architectural reference in this culture. After he died in 2012 the world mourned the loss of a great exponent of the architecture of the last centuries.

Niemeyer died in a hospital in Rio where he was hospitalized due to health problems due to his advanced age, specifically dehydration. Several countries and organizations spoke about Niemeyer in tribute to his passing. Among them Unesco and the UN, which referred to him as a *major figure*, *universal artist* and *great humanist*. This makes it clearer that even for world-class organizations Niemeyer was an exceptional artist and architect of the kind that will rarely be seen again in history. For Unesco, his greatest work (Brasilia) has been a world heritage site since 1987.

A country that admires Niemeyer as much as Cuba also teaches us that his communist thinking was also an example of how the reality in which we live should be. Niemeyer died as probably the greatest architect who ever lived. And he died leaving clear what he wanted to show with his architecture, with his aesthetics. We conclude by saying that for Niemeyer the essence of a structure was in its aesthetics that could transmit ideas and emotions to anyone who saw it, which is beyond a simple set of walls.

Oscar Niemeyer, architectural visualization

Architectural concepts

What is the relationship between construction and aesthetics according to Oscar Niemeyer? Oscar Niemeyer leaves a legacy to those studied that is based on the concepts that he put forward throughout his career as an artist and as an

architect. His architectural conceptual principles are based mainly on the use of light in external or internal spaces and geometry in plans and constructions.

According to the preceding, it can be said that the relationship between construction and aesthetics for Oscar Niemeyer is the background of the constructions, how they can express feelings, and the interpretation that each person can give to them. He was an exemplary architect, influenced by Le Corbusier, Lúcio Costa, and Carlos Leão, thus participating in the mega-project of Brasília. Here he learned about the artistic and technical articulations that converge to the breadth of pragmatic compositions in all their splendor. He also innovated in production and construction methods such as concrete, which facilitated the use of curves in the constructions, being a highly flexible and resistant materia

A further important factor of Niemeyer's modernist methods was the use of space and the preservation of the natural aspects or in simple words the surrounding landscape, mainly in the use of flora and water resources (this without affecting in any way what was already planted). This could be developed by the multifocal methodological system; which made easier the relationship between modern language and the global conceptualization of the new methods or forms of architecture.

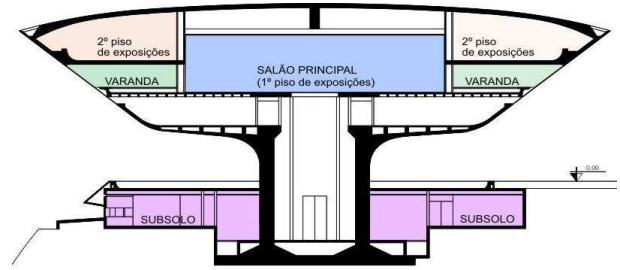
He always stood out from the rest, since he always imposed his stamp on any work he did, thus highlighting the culture of his country, his masters, and above all his spectacular magic when imagining basic works in meticulous works full of details and altruism. In this way, Oscar Niemeyer managed to innovate in a field that already had its bases and well-established arguments, demonstrating not only methods but also concepts that something as great as constructions can only need a different perspective and ingenuity.

Niemeyer's construction methods

Architecture is an invention. Based on this premise is that projects can be made, always in search of beauty, expressive solutions, different, capable of surprising. The architect is a citizen like any other, always open to attend all kinds of programs that are presented to him, he must remain attentive to the need to change society, to carry out a more just and supportive world. With drawings and stories of the architect himself, it faithfully reflects the delicacy with which he worked. Niemeyer is always based on the observation of nature and the curves in his constructions (Fig. 4).

To contemplate all this at the time of the creation of a work, he had to take into account different aspects such as:

- Resistance.
- Durability.
- Support.
- Space management.
- Adaptation to the structure.



Schematic cut

Scale 1/250

Figure 4. The Niterói Contemporary Art Museum (Wikiarquitectura, 2019).

- Costs and budgets.
- Etc.

Since he was a qualified engineer-architect he could participate in both areas (construction and creation), with those concepts established and from his knowledge, he began to visualize construction methods and forms differently, since he started to develop his architectural constructive concepts.

He proposed a uniform division of weights in columns that did not affect the internal space, in which the loads did not alter any form of the structure. From the concrete, it was easier for him to build works with different patterns in their bases and even with a variety of foundations with greater complexity that lead to parameters so that their forms were from the narrowest base to its much larger and more uniform structure.

Oscar revolutionized civil constructions in every conceivable and unimaginable way, transforming the ways and methods in which they were produced or built, exploring more and more what was unthinkable at the time, challenging the established construction norms, and showing that despite the complexity of construction, it can be done with enough knowledge and courage.

He never flinched from any construction and devised other ways to make it happen, using the plans he represented an abstract idea, it was very unusual to observe in his drawings any construction with patterns or rectangular shapes.

Utilizing the longitudinal cuts he reflected how the spaces and rooms would be organized, by the transversal cuts he denoted the way to access the different rooms and the area they had. Without forgetting the perspectives of his buildings, depending on the angle at which his constructions were observed, one could see a different figure in his work and thus astonish the *spectator* even more.

He believed that everything important was born in sensibility. One expresses oneself within a limited field, by the terrain, by the form, by the efficiency of construction. One also leaves one's personal history in the work, as André

Malraux said, *what one has seen and loved in life*, and architecture is like that. Each work, even if unintentionally, contains the memory of older architecture, of previous forms, of people, the memory of a beautiful woman, of a history.

For him the inspiration of women was very important, he defined them as perfect works that the more curves they had the better, he thought that they were highly complete works of art, that their mere presence was admirable and that based on the curves of women his planning of the works was going to move towards a better future.

So Niemeyer did innovate in the way of building and planning every aspect of a work, changing how a building was observed, transforming everything established in terms of art, and demonstrating that architecture is not based on the elaboration of mundane works.

Aesthetics for Niemeyer

Aesthetics is the study of art, its qualities giving an origin to the feeling and the creations that it reflects, creating certain judgments and general experiences making reflect on the value contained in art and everyday life. Plato said that aesthetics is something beautiful in itself and something good in itself, Kant referred to aesthetics as a philosophical branch that analyzed the manifestation of the expressive and beautiful visually, and finally for Buenaventura de Fianza aesthetics for him in the name of God was everything to be considered with proportionality in its concept of form, it is called beauty, beauty and delight do not exist without certain proportion, and this primarily consists of the number.

For Niemeyer aesthetics was the faithful representation of his ideas, that is to say, that the aesthetic is subjective, but there are points in common of what can surprise a person, for Niemeyer mainly as mentioned is the conservation of nature and the curve of the figures.

Niemeyer's way of innovating was based on architectural concepts and diverse construction methods that he influenced, created, and introduced from other cultures. He caused such a global transformation both politically and socially that modern buildings began to develop a certain type of aesthetic. His influence today is extraordinary, he is one of the greatest architects in history, and is a source of pride for Latin America and the world.

Niemeyer's modernism is characterized by his famous cult of the curve, but also, the curator points out, by his eagerness to integrate his buildings with their surroundings. The vegetation is always integrated and is an accomplice of the buildings and their intended use.

With a deep understanding of solidarity, the architect, defender of freedom and human rights, created flexible, curvilinear modernism, of forms inspired by the biological with a rhythm and a composition free to the fanciful imagination. A modernist who went beyond the rules.

He was a great exponent of all those innovative artists, a revolutionary in the matter and with a born ingenuity he demonstrated that the power of the limits to the imagination is put by the one who imagines, he never limited himself nor limited any of his companions, he was Christopher Columbus of the constructions, discovering new ways to build in different lands.

In summary, Niemeyer managed to relate aesthetics and constructions from the methods he proposed and found in common the way to surprise people, not contemplating the building as simple pieces of construction but as works of art that could be detailed in its maximum expression.

Conclusions

Niemeyer was characterized by the use of curves, the entrance of light, and also the appropriation of nature. He was an innovator in architecture and constructions since he revolutionized this by giving a different perspective to the way they were planned or built, changing even the methods, but especially the norms. Through his arduous experience, collaboration, or apprenticeship with various architects, and external influences the learned and influenced that the aesthetics of a building is reflected in its architect, in the ingenuity he possesses and demonstrates the way he can see the world.

For Niemeyer geometry was highly important since it was based on the figure of the woman, he described it as perfect and started from it in terms of planning his works; making it much more detailed and varying the symmetry, demonstrating the importance of the external point of view to observe the beauty of the form and the contemplation of the work in its splendor.

Space and the interaction between people were important to Niemeyer, he was interested in the way people moved around, so in the internal structure, he sought to ensure that the structure did not affect the internal emptiness of a floor.

For Niemeyer, aesthetics and constructions are mainly related, and from the background of the constructions, how they can express feelings and interpretation are based more on the subjectivity of each person and the taste they can demonstrate. Niemeyer, despite all the difficulties he experienced, learned that he who gives up halfway will see others fulfill the dream he set out to achieve, but will never achieve it, so he did not give up and worked until his death. He lived and fulfilled his dream, never regretted anything, and believed that the decisions he made could not be regretted.

Niemeyer's surprise factor in his works was what most fascinated the students since up to the last deadline for the presentation of the plan, he delivered the plate with models different from the expected one.

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