

## **Newsletter 2021**

**THE EVOLUTION OF OFFICES:  
ANALYZING THE PAST  
AND THE FUTURE**

  
**AUTONOMY**  
INVESTIMENTOS

The context of the pandemic in 2020 brought a series of challenges, but also showed the resilience of our portfolio. A portfolio that is already prepared for the transformation through the flexibility of

workspaces, the increased use of open and green areas, and known for its elevated standards of sustainability, from construction to project operation with a focus on people's experience and well-being.

This reflects in the positive results of Autonomy in 2020:

- We launched **Autonomy Edifícios Corporativos FII (Autonomy Corporate Buildings REIT)** (ticker: AIEC11), our first fund aimed at Brazilian investors and listed on the stock exchange (after an interruption due to the pandemic, the offering was finalized in September);
- We initiated the construction works of **LUNA**, which aims to be the first Net Zero building in Brazil, and one of the first in the world<sup>1</sup>;
- We finished the year as **the largest LEED Platinum assets owner in the country**, with 29% of issued certifications, the result of a commitment to sustainability since our foundation in 2007<sup>2</sup>;
- We leased **176 thousand sqm** of our logistics assets delivered at the end of 2019;
- We started **project Moises**, a bold global study of trends and innovations related to the real estate market, which seeks to point out trends and collaborate with discussions about the future.

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In addition, during the pandemic, we took the opportunity to revisit our historical data on corporate offices, aiming to understand how each building has behaved over the years in order to anticipate movements in the office market, especially in São Paulo and Rio de Janeiro, the two main corporate markets in Brazil. Some historical data stood out and we came to interesting conclusions, which will be approached and analyzed in this newsletter.

This letter is divided into five sections:

- 1.** Historical analysis: the advantage of new assets (p. 3)
- 2.** Competitive edge: the evolution of office standards over the decades. (p. 4, 5 e 6)
- 3.** ESG: the message is clear, but little understood by the industry. (p. 6 e 7)
- 4.** The real estate cycle: anticipating the cycle is essential. (p. 8 e 9)
- 5.** Conclusion: transforming investments into more valuable cities to live in. (p. 10)

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<sup>1</sup> 44,000 sqm located in the region of the Marginal highway in São Paulo, next to the metropolitan train network's Granja Julieta station, scheduled for delivery in 2023. The project includes everything we look for in a development.

<sup>2</sup> We are responsible for the first LEED Gold asset in Brazil and all assets developed by Autonomy have some kind of environmental certification.

The goal of the study was to understand the behavior of the corporate office market and how this asset class will be transformed in the future, by extrapolating already observable trends.

We analyzed each property, separated by their quality ratings, encompassing more than 1,000 buildings between São Paulo and Rio de Janeiro, with occupancy data starting in 2005, beginning with the existing initial stock and including all new launches since then. Unlike the main market analyses, we did not focus only on the vacancy and absorption data of each region in a generic way, but focused on how each asset performed individually, including the lease up pace and lease rates reached, starting on each construction delivery date, and analyzing the performance since.

The experience and dedication of the Autonomy team to real estate, added to the data described above, allows us to understand the evolution of offices over the last decades and draw a line of what to expect for the near future.

# 1. Historical analysis: the advantage of new assets

The numbers corroborate with the thesis already well known in the market as 'flight-to-quality', in which tenants leave old or lower quality buildings for better assets. In São Paulo, the AAA office market has never had negative net absorption, even in periods of recession. Since 2005, class A+ had an average net absorption of 178,000sqm / year while B and C assets had an average of only 2,000sqm, even though its stock is similar in size. If we consider only the past decade, Class A+ absorption averaged 200,00sqm/year since 2011, this positive absorption took place in a period in which Brazil was stagnant, the GDP growth was 2.70% in 10 years (an average of 0.27% per year), compared to the global growth in the same period of 30.5 %, or 11x higher (average of 2.70% per year). But what if we analyze from the perspective of new buildings delivered, year by year, comparatively to the performance of the existing stock?

New towers were already, on average, 74% occupied by the 5th quarter after the conclusion of their construction. If we exclude the constructions concluded in 2014 and 2015 (one of the record periods for new deliveries with 333,000 sqm, which coincided with the 2015-2016 crisis), 80% of A+ deliveries were at least 85% occupied. When it comes to the best buildings on the list, the average is much higher.

We have an example of this in Autonomy's portfolio: Rochaverá's<sup>3</sup> 53,000sqm Crystal Tower was already 100% leased upon delivery. More recently, Birmann 32, an A+ launched during the pandemic in 3Q20, already has an occupation rate above 55% at an average price well above its region's average<sup>4</sup>.

The performance of new assets shows that quality and innovation matter and that the main companies demand the most modern assets available, a trend observed at least in the last 15 years. As for the definitions of quality, in the next section we will discuss the evolution of high-end buildings and how tenants' demands have evolved over time.

<sup>3</sup> An AAA standard, located in the Chucuri Zaidan avenue region, it is considered one of the best corporate complexes in São Paulo.

<sup>4</sup> Lease above R\$ 200 / sqm, around 15% above the region's average.

## 2. Competitive edge: the evolution of office standards over the decades

New properties have historically performed better in terms of leasing and vacancy, but what are the main characteristics sought by tenants in higher-quality assets?

An A+ building has, in general, a higher ceiling, more than 1,000sqm per floor, a central air conditioning system and a central core, but it has not always been so, and it is not only these technical aspects that differentiate the buildings from each other.

The image below illustrates the evolution of offices in the last decades (using examples from each period), and how the tenants' demands have evolved. What is clear is that the evolution is constant, and in each new period, new demands are attended to serve the best tenants.

Something seemingly simple, like air conditioning, has undergone numerous updates. In the 90s, having a central air conditioning system was a differential; in the 2000s more efficient equipment was sought, seeking to reduce the operating cost; from 2010 onwards, the demand on this equipment was to bring maximum thermal comfort; as of 2020, the focus turned towards air quality. How often is the air in your building renewed? Do the filters meet the standards of international health agencies? Does it operate with negative pressure? These are some questions that tenants are starting to ask themselves. And not without reason: a 2000 Harvard study shows that employees in less ventilated buildings are 53% more likely to take sick leaves<sup>5</sup>.

The evolution of offices continues, and in conversations with tenants and observing the main projects being launched and leased around the world, we noticed innumerable innovations that very soon will become the basic demands in offices of the highest standard, perhaps starting a new class above A+.

The new generation of offices is focused on the experience and well-being of the user. After all, we spend a large part of our day in the workspaces. More and more, offices will be places where people want to be, and not just a place to work. A place where collaboration, creativity and the diffusion of culture are optimized. Microsoft's new office in Israel<sup>6</sup> is a great example, as well as Google's office initiatives<sup>7</sup>.

Interestingly, technology companies, which would intuitively be the most propitious to adopt the remote working model, were the ones that rented the most office space during the pandemic. Meanwhile, remote work is being mostly adopted by companies or departments with greater cost restriction and which until then occupied offices with lower lease rates, reinforcing the thesis that lower quality buildings will become increasingly obsolete, which reinforces the 'flight-to-quality' thesis.

5 <https://pubmed.ncbi.nlm.nih.gov/11089326/>

6 <https://news.microsoft.com/features/israel-campus/>

7 <https://www.nytimes.com/2021/04/30/technology/google-back-to-office-workers.html>

In order to address remote work policies, companies will take into account three main aspects: efficiency of employees and their capacity for innovation; occupancy costs; and employee retention and attraction. Each company will decide in its own way, but it does not seem likely to us that large companies will not have generous headquarters and spaces for their employees, following the example of technology companies.

Not to mention that the average density of offices, which had been decreasing over this decade and is starting to be reversed. The current average in Brazil of approximately 7sqm / person is now getting closer to 10sqm / person, an additional area requirement of 40% by position. The increased space aims at the health and well-being of office users, considering the introduction of greater spacing between desks, flexible work and meeting spaces, and the introduction of breakout areas.

Some additional examples of how well-being is sought are through greener areas, greater offer of services and technology and better air quality. The WELL certification seeks to encompass some of these aspects and characteristics. We are already implementing these concepts in our new project, called LUNA, which in addition to the focus on well-being, will have innovative concepts for flexible spaces, something increasingly demanded by tenants.

Another trend, perhaps as important as the previous ones, is the aspects of sustainability. We will dedicate the next section to this topic.

## Evolution of office building's highest standards

Timeline	1990 (A)	2000 (AA)	2010 (AAA)	2020 (New Standard)
				
	<b>BIRMANN 8</b>	<b>CENU</b>	<b>ROCHAVERÁ</b>	<b>LUNA</b>
<b>Space</b>	Floor > 1,000 sqm	Occupancy efficiency	Comfort of users	Flexibility and user experience
<b>Amenities</b>	Central A/C	Central A/C with peak-shaving (cost) High-performance elevators Comfortable and imponent lobby	Efficient central A/C (comfort) Automation (EI, access control) Comfortable and imponent lobby Energy solution (gas plant)	High performance A/C (internal air quality) Automation (user tracking, Apps) Integrated lobby Energy solution (renewable)
<b>Access</b>	Private parking spaces	Covered and shared parking spaces	Underground parking spaces, public transportation and via bikeways	Ride sharing, public transportation and via bikeways
<b>Sustainability</b>		Sustainability certifications (starting in 2006)	LEED Gold (energy and water)	LEED Platinum, Net Zero (energy, water, carbon and impact to surroundings)
<b>User experience</b>				WELL certification Flexible and open outdoor spaces Availability of commerce and services Placemaking calendar



### 3. ESG: the message is clear, but little understood by the industry

The commitment to sustainability is becoming absolute in all industries, and it will be no different for offices. The most diverse companies have already committed to zero carbon emissions by 2050 (the year that experts indicate as the deadline to reach zero emissions and avoid worse effects on the climate), with many already setting aggressive targets for 2030. The theme is not new. Google, for example, claims to be carbon neutral since 2007. We, at Autonomy, have been investing in the development of sustainable assets since 2007. More recently however, the environmental issues have certainly become ubiquitous.

That said, in 3, 5 or 10 years, which office will companies prefer to occupy, one with sustainable LEED Gold certification, LEED Platinum or NetZero? They may not even have a choice, given the commitments already established and the costs a carbon footprint will likely have in the future. Will sustainable assets be priced similarly to those without such status? With that in mind, we continue our tradition of investing in increasingly more sustainable projects and innovations.

And what about the social issue (the 'S' of ESG)? Buildings have countless impacts on their surroundings, some positive and others negative.

Increasingly, real estate developments must be inclusive to their surroundings and with the people who live there. A recent GRESB report brings an interesting concept of efficiency for buildings, in which it would be measured by the number of people and the amount of time they get to use the project - places that can be enjoyed by different people 24/7 would be the most efficient ones<sup>8</sup>.

Interestingly, the main office region in São Paulo, Faria Lima, was practically deserted during the pandemic, with offices closed. A lack of other types of services, green and public areas and other amenities make this region little explored outside of business hours. A revitalization of the private areas open to the public in some of the buildings can help to positively transform this region of the city, which will always be the financial heart of Brazil.

<sup>8</sup> <https://gresb.com/quantifying-sustainability-pere-sustainable-investing-report/>

Rochaverá, a precursor of public enjoyment spaces in São Paulo, offers the city 10 thousand sqm of open green areas (with species from the Atlantic rainforest), connected to the public transport network, and which will be activated in the coming years through activities for health and well-being, work spaces and outdoor events, in addition to gastronomy areas. Occasionally we see residents of the region walking their dogs in this garden. Who said that a corporate building cannot contribute to the improvement of the neighborhood where it is located?

We take this concept to another level at Moinho Fluminense, a project under development by Autonomy in Rio de Janeiro, comprising the retrofit of an industrial heritage from 1880, which will welcome not only the local community, but all locals and visitors, with work and experience spaces, becoming a new icon of the city.

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## 4. The real estate cycle: anticipating the cycle is essential

The entry point is essential in the formation of the return on real estate investments and high returns can be reached both during growth cycles as well as during reduced economic activity. The strategy to address each cycle, however, is enormously different.

The real estate market is cyclical, with relatively long cycles. At favorable times, we saw a growth of up to 145% in rental values between 1994 and 2000 and up to 79% between 2006 and 2011. It is not by chance that plans for the founding of Autonomy began in 2006, anticipating this second favorable moment, when many in the industry did not believe in the recovery of the market.

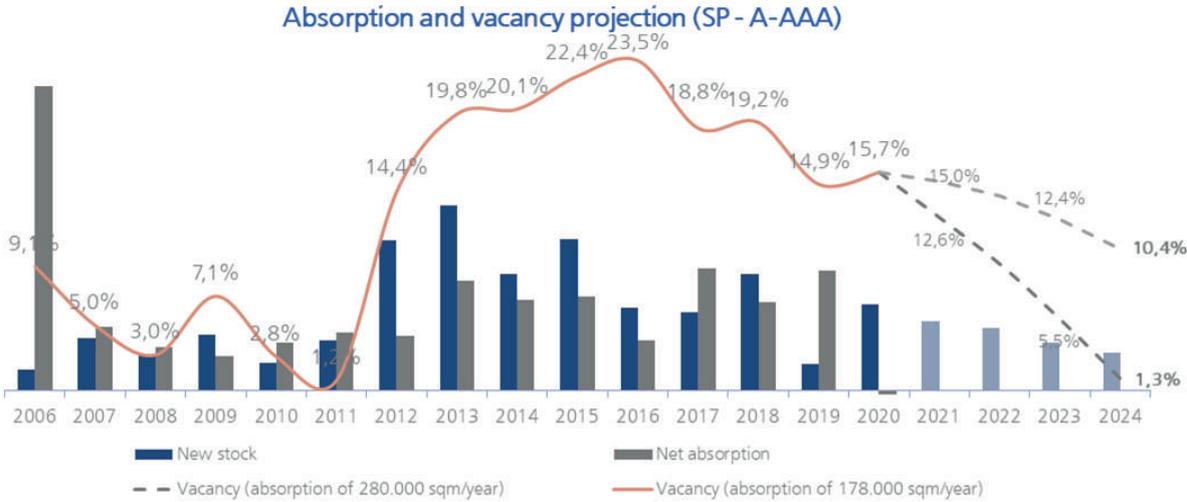
The investments made by Autonomy since then followed strict criteria of location, always looking for areas with the greatest potential for appreciation, given the urban and infrastructure movements, and for quality, that is, properties that would be a reference in their context. These characteristics, added to the favorable moment in the market,

resulted in first-quartile returns in the portfolio, with examples that surpassed the 30% IRR mark and with multiples that exceed 5.0x the invested capital.

And where do we currently stand in the cycle? The previous years have been challenging for the Brazilian economy, adding to it the pessimism resulted from the pandemic, has created an excessively negative perspective, in our opinion, to the offices asset class. A perspective as bad as the one we encountered during 2006 and 2007, when Autonomy was founded. We heard many times “you should forget making new investments for the next 7 or 8 years”.

We believe the economic recovery will come as soon as vaccination is consolidated and our lives come closer to what it was before. Also, the favorable moment to increase the exposure to the office market is reinforced by the lack of new stock, both in São Paulo and in Rio de Janeiro. In São Paulo, the projection of future deliveries in the coming years is 49% below the average of the last 10 years, also due to urban limitations and the city's master plan for new developments.

In scenarios with a minimal recovery of the economy, the vacancy of class A+ office buildings can reach single digits, reaching less than 2.0% in the most optimistic scenarios, a level observed in 2010/2011, when the stock of higher-standard spaces was a fraction of what it is today. With vacancy significantly below 10%, positive pressure on rentals in the medium term is expected, in line with that observed in previous cycles. We already saw signs of this recovery in 2019, before the interruption by the pandemic.



New offices take 2 to 5 years to be concluded, so the ability to anticipate the cycle and trends must always be on the radar of developers and investors, this is the differential of excellent managers.

## 5. Conclusion: transforming investments into more valuable cities to live in

Looking at the past, it is clear that companies' demands for increasingly better offices is a global and lasting trend. And looking to the future, we see important signs of what will be the main characteristics sought in corporate buildings, from health issues to the well-being of its users and even the absolute concern with sustainability.

This scenario, which has been created over the past few years and transformed by the pandemic, added to the prospect of the real estate cycle recovery, which had been declining until 2019, places us at a unique moment in the market. This moment motivates us to continue investing and creating value for cities and for our investors.

In yet another chapter of our history, we will continue to transform cities, making them more valuable to live and invest in.

# Autonomy Investimentos

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Autonomy Investimentos is a leading real estate investment firm based in Sao Paulo, Brazil. Founded in 2007, Autonomy is composed by a talented local team with over 200 years of combined experience in the acquisition, development and or retrofit, product design, engineering and construction, leasing, management and marketing of real estate properties intended for capital appreciation and long-term income.

Over time Autonomy has developed long standing relationships with global institutional investors (public and private pension funds, family offices, fund funds, wealth managers and high-income individuals) including a joint venture with the Canadian public pension fund Ontario Teachers / Cadillac Fairview in logistics since 2012.

With a focus on the domestic real estate market, Autonomy is a world-class manager of excellence recognized for investing third-party funds in the real estate private equity class, accumulating approximately USD 1.2 billion under management covering a portfolio of 22 commercial and logistical developments, plus 60 high quality tenants and 2.0 million square meters of developed or potential development leasable area<sup>9</sup>.

We transform investments into more valuable cities to live in.

## Autonomy Investimentos

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