

TOWARDS AN END OF THE OFFICE?

The workspace, its evolution and its form impacted by economic fluctuations and societal crises, from the industrial revolution to the digital age.

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Theoretical Statement of Master in Architecture

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The workspace, its evolution and its form impacted by economic fluctuations and societal crises, from the industrial revolution to the digital age.

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INTRODUCTION

While the occupation of office buildings fluctuates according to the economic and now health crises affecting our cities, the question of the future of office buildings and the spaces they offer is more than relevant. The various office crises reflect the instability of a market based on speculation that is struggling to meet the increasingly varied and non-traditional demand from new businesses.

The solution of telework as a substitute for office work is mixed. Indeed, there are advantages and disadvantages, whether we work in the office or at home. But the rapid and abrupt separation from usual work caused by confinement has allowed an opening on the question of the workspace as we have known it until now.

Whether it is the office building inherited from the 1960s or the guest bedroom converted into an office and Zoom meeting room, the question of workspace arises. Some offices continue to empty while new ones are built. Telecommuting in the train, bedroom, cafe or coworking space changes habits while other habits persist. This is not only an architectural issue, but it is also of an economic, technological and social nature.

Above all, it is important to know how we came to work in office buildings. What characterizes an office building? What is the history of office work? The spaces proposed over time, the reason behind the changes and different layouts, are they still relevant today? And according to what criteria? What would be the viable alternatives today?

First, it will be a historical analysis from the industrial revolution to the present day to understand the economic and societal events that led to the appearance, development and then the crisis of office buildings. From there, an analysis of old and current projects will make it possible to better understand the evolution of typology models and their constituent elements. Finally, we will look at new working models that have arisen recently and that challenge the workspace as we know it today.

INTRODUCTION

THE GENESIS AND RISE OF OFFICE WORK

*“Between 1860 and 1920, business became big business, and the number and kinds of positions in the office ballooned. The change in the work environment reflected a change in work itself. Administration and bureaucracy had taken over the world of business.”*¹

Nikil Saval, *Cubed* (2015)

The origins of office work as we know it today go back to ancient civilizations. Whether in Egypt or Mesopotamia, the invention of writing in the 4th century BC will allow the calculation and archiving of food and goods reserves. This is how administrative work is born, which in turn generates the construction of places that are used for the accounting and administration of institutions in power, banks, and businesses.²

It is necessary to wait for the period of the Middle Ages to see the appearance of a room dedicated to office work: the scriptorium. In this room, the monks spend their days transcribing the texts of the Bible on parchments made of animal skins. It is from them that the word office comes to us. They protect their documents with bure, a thick woolen fabric they use to make their clothes. The word office first designates the table covered by the homespun and over time it ends up designating the entire room.³

¹ Nikil Saval, *Cubed: A Secret History of the Workplace* (New York: Anchor Books, 2015), 17.

² Saval, 12.

³ Élisabeth Pélegrin-Genel, *25 espaces de bureaux*, Collection 25 réalisations (Paris: « AMC »-le Moniteur, 2006), 10.

Once adopted, this workspace is replicated not only in the religious sphere but also in any institution that resorts to administrative work. It was during the Italian Renaissance that the first building designed to house offices was built. Increasingly wealthy banks require considerable accounting and administrative work. The Medici family in power in Florence had a palace of offices (offices) built: "Palazzo degli Uffizi". This palace houses the offices of thirteen important magistracies established to manage the financial operations as well as the administration of the Medici State.

In the United States in the mid-19th century, the typical office was the counting house related to a business or trade. The employees are clerks, scholars, who are mainly responsible for copying documents. Some of them have knowledge of mathematics and take care of the accounts. As has been the case since the Renaissance, this administrative space is essential to the smooth running of the institution in charge. Count houses in the United States are mostly modest and their spaces tight. The offices are organized in a precarious way across the country and function somehow with the means at hand.

La grande transformation du bureau trouve son origine dans l'industrialisation de l'Angleterre (fin XVIII^e s.) et du reste de l'Europe (début XIX^e s.) suivie des États-Unis (fin XIX^e s.). Grâce aux innovations, la production en masse et le développement des transports, les échanges nationaux et internationaux sont plus fréquents, plus sûrs et plus rapides. Cette nouvelle masse de données va réformer le travail de bureau tel qu'il était connu jusqu'alors.

"[...] Internationalization, the first wave of globalization of the European economy, made enormous progress and became institutionalized. [...] Free trade is accompanied by the construction of a network of international communication, especially in terms of transoceanic trade and communication and the European railway system. [Each

*country is connected to the others. The time and cost of transportation are greatly reduced."*⁴

The development of transport and communication systems will massively boost the economy and push companies to expand rapidly and at the same time see their administrative work increase in a colossal way. This work, mainly intellectual, requires a skilled workforce. This is how very quickly the small house or counting room is transformed into a vast workspace with a very large number of specialized clerks. What was once isolated and unrewarding work became an essential part of late 19th century capitalist and industrial society.

Cities began to hire clerks very early, in New York for example, in 1855, they were already the third largest labor group after servants and workers.⁵ Economic interest sees itself migrating from agriculture, the primary source of income, to factory and office work.⁶ The population is pouring into the cities in search of better pay, and the number of clerics is increasing exponentially to the point that it exceeds the demand. In 1870, clerics in the United States numbered 91,000, fifty years later, in 1920, they numbered 3,311,000.⁷ Little by little, the specialization and subdivision of work encouraged by the increase in demand will end up creating intellectual work completely detached, both physically and socially, from the factory and manual labor.

⁴ Tibor Iván Berend et Emmanuel Debruyne, *Histoire économique de l'Europe du XXe siècle: du laisser-faire à la globalisation*, 2e éd, Ouvertures économiques (Louvain-la-Neuve: De Boeck supérieur, 2018), 23.

⁵ Saval, *Cubed*, 13.

⁶ Donald Albrecht, Chrysanthé Broikos, et National Building Museum (U.S.), *On the Job: Design and the American Office* (Princeton Architectural Press, 2000), 17.

⁷ Evelyn Nakano Glenn et Roslyn L. Feldberg, « Degraded and Deskilled: The Proletarianization of Clerical Work », *Social Problems* 25, n° 1 (1977): 54, <https://doi.org/10.2307/800467>.

"The separation of tasks, and the making of things from their selling, crystallized in the development of offices with clerks, sometimes completely separated from the dirty, noisy, and smelly world of "real work." " ⁸

The offices are first placed in annex buildings then completely separated and often relocated to another sector of the city. This is when the name "bureau", or "office" in English, will be assigned to them. At that time, the offices were still vast and high rooms where dozens of clerks worked, each in his place, the bosses worked in separate rooms.⁹ This separation of offices from factories, but also of employees from their bosses, is possible thanks to the invention and commercialization of telecommunications. The typewriter (Remington) arrived in offices in 1874. Two years later in 1876 the telephone (A. Graham Bell) was patented. Prior to this, it was only possible to communicate via Morse code messages sent by telegraph.¹⁰ Managers can now communicate their orders to clerks via Dictaphone and employees can send objects to each other on several floors via pneumatic tubes. Paradoxically, these technological advances that should save employees time by improving communication end up simply increasing the pace and the amount of work. In addition to this, clerics see their tasks subdivided and differentiated into a multitude of sub-categories. This specialization illustrates the dismantling of clerical knowledge: the traditional clerk is now dispossessed and replaced by hundreds of white-collar workers without holistic knowledge of the work but rather of a single and unique task.¹¹

⁸ Saval, *Cubed*, 20.

⁹ Saval, 33.

¹⁰ Eric D. Sundstrom et Mary Graehl Sundstrom, *Work places: the psychology of the physical environment in offices and factories*, Environment and behavior series (Cambridge [Cambridgeshire] ; New York: Cambridge University Press, 1986), 33.

¹¹ Saval, *Cubed*, 39-40.

Another consequence of the rapid growth of offices is the lack of thought given to their form and workspaces. From the outside, the buildings are being built higher and higher but without concern for unity. They are built by stacking the floors, without global thinking but just out of the need to increase their capacities.

Built in St. Louis in 1890-91, the Wainwright Building by Louis Sullivan (1856-1924) would transform the architecture of tall buildings and pave the way to what skyscrapers are today. Consisting of ten floors, it offers the tall buildings of the time a unity and harmony that they did not have. In doing so, he will also assume and glorify their height by giving them a style of their own.¹² The plan does not change from the classic idea of office and administrative space. If the U-shape allows lighting and ventilation of each room, the latter remain very classic.

The purpose of stacking the desks was to save space, but the ever-increasing number of clerks and the lack of organization make office work chaotic.¹³ Traditional administrative workspaces were not designed for such a large amount of work and employees. Not only the spaces but also the organization within the company, whether in the factory or in the office, are out of control. The classic hierarchical organization no longer works on such a large scale. The clerks are crowded massively, the work is chaotic, and this is felt throughout the country both at the level of public and private administrations. Orders and receipts are lost, bank accounts are often corrupted or even rigged, which ends up digging a gaping hole in the pockets of companies.¹⁴

Built between 1904-1906, the Larkin Building by Frank Lloyd Wright (1867-1959) offers a solution for the administrative workspace of the

¹² Frank Lloyd Wright, *Frank Lloyd Wright: An Autobiography*, 3rd printing edition (Duell, Sloan & Pearce, 1943), 241.

¹³ Sundstrom et Sundstrom, *Work places*, 31-32.

¹⁴ Saval, *Cubed*, 43-45.

Larkin Soap Company in New York. Wright considers for these three important points of office work which are: cleanliness, light and the rational use of space. The Larkin building is designed to accommodate 1,800 employees. The plan is designed for this purpose: all the service spaces are placed at the ends of the building to free up the central space. This creates a large open space with a central courtyard and galleries all around on several floors. It is in these spaces that managers and clerks work. They are meticulously placed in rows in a system inherited from factory assembly line work.¹⁵ Industrial work is at this moment the best example of rational work, so it is quite conceivable to apply its system even in offices.

As for the furniture, it is also designed by Wright with the aim of facilitating the work of the clerks. Embedded in the masonry, it is thought of as an efficient, state-of-the-artwork machine that allows clerics to work as productively as possible.¹⁶ Indeed, they have to ship an average of nearly 5,000 orders per day. Wright's building is designed as an airtight block that helps keep interior spaces clean, dust-free, and cool. Outside air is drawn in through the hollow walls of the stairways located at the ends of the building.¹⁷ Once in the basement, the air polluted by smoke from trains and surrounding factories is filtered and then heated or cooled to the desired temperature. This "conditioned" air is then redistributed on all floors. It is one of the first buildings with an air conditioning system in the country. Natural light was one of the greatest features of this building. Wright knows how crucial it is for administrative work. So much so that the key element of the project is the lit central courtyard which allows staff both in this courtyard and on the outskirts to benefit from an abundant supply of natural light. This

¹⁵ Javier Mozas, Caruso St John Architects, et Caruso St John Architects, *The Office on the Grass: The Evolution of the Workplace*, éd. par Aurora Fernández Per (Vitoria-Gasteiz: A+T, 2017), 12.

¹⁶ Albrecht, Broikos, et Museum (U.S.), *On the Job*, 50.

¹⁷ Wright, *Frank Lloyd Wright*, 136.

is not the case with existing offices or those built at that time in New York.

This office building is designed by Wright as a protest what is done without thinking on both sides of the United States.¹⁸ While office buildings follow one another without their own identity and in disorder, Wright proposes a new architecture for the office building whose form follows function and where the architect thinks of the spaces as well as the furniture in such a way as to improve working conditions and thereby increasing the company's productivity. The various elements such as cleanliness, light and the rational use of space are important comfort factors that will be taken up later and throughout the history of offices.

At the beginning of the 20th century, the prices of products rose while services remained poor, and it was then that the efficiency of the systems put in place in the production plants was called into question. In 1910, Frederick Taylor (1856-1914) proposed a more profitable system that reduced costs and thus lowered prices. His idea was born from the observation of industrial work and the time lost due to unnecessary handling and travel. According to him, the workers in the factories are willfully inefficient and the employers do not know enough about the handling of the machines to be able to supervise their employees properly.

F. Taylor will individualize the work of the workers, reduce their reflections, their gestures, and their movements to a strict minimum. Their time is limited, counted, and compared with that of other workers. But for this, it is first necessary to analyze each movement, each gesture, divide the work into sequences of movement and establish a system that will make the work more profitable and efficient. This meticulous analysis must be carried out by employees

¹⁸ Wright, 136.

different from the factory workers and it is the clerks who will be in charge of this task. Using cameras, sketchbooks, and stopwatches, they seek to make the work of factory workers as efficient and profitable as possible. What used to be just a job to help with business management, administration, now becomes the brain that makes the capitalist machine work and the key to its success. The work of the worker in the factory has become a simple series of movements, with as little intellectual activity as possible. Office workers have become the brains, the thinkers, the scientists, the specialists, those who make the bridge between the employer and the workers.

It did not take long after the effervescence of the design offices for the obsession with profitability to end up reaching the clerks themselves. Logically, if factory work can be made profitable by observing, analyzing the work, and eliminating unnecessary gestures, office work can be just as profitable. The seconds lost in every pen movement, head movement, time to go to the bathroom, to fold documents, to open a letter, etc. Little by little the spaces are arranged in turn, as before in the factories, according to the tasks, the different lighting needs and so as to avoid possible distractions and noise. The furniture is also created gradually for more ergonomics and more profitability.

"[...] the movement of division of labor, of expropriation of the professional knowledge of the worker, is the motor of the development of the offices of work preparation and product study. This movement, carried to its final consequences, applies to its own agents the division and mechanization of labor that they had previously been responsible for imposing on other segments of the enterprise. Then, and only then, is

the division and mechanization of mental labor established."

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From then on, the number of offices exploded and American companies, which had now developed solutions to organizational and manufacturing problems, began to seek ever more efficient work environments and imposing, prestigious buildings created in their image.²⁰ The Johnson Administration Building designed by Frank Lloyd Wright, between 1936-39, precisely offers this new workspace. The idea is to create an imposing and stimulating place, a sort of modern cathedral of work. A place representing and exalting the spirit of business and administrative work.²¹ As with the Larkin building, employees are isolated from the outside world. F. L. Wright creates a sort of social entity. The clerks are gathered in a vast room of almost 70 m2 supported by slender columns in the shape of water lilies. This large space is richly furnished, artificially lit, air-conditioned and underfloor heated. This comfort offered to clerks makes it possible, among other things, to compensate for the lack of contact with the outside world. Taylorism is present in every detail of the building. The 250 clerks who occupy the large work room are organized and positioned in a rational and efficient manner. The furniture, designed by F. L. Wright is designed to be as efficient as possible. The principle of clear and rigid hierarchy results in a division of space with the managers upstairs supervising from the mezzanine the clerks who work on the ground floor. Executives have their own offices on the upper floors. The building is a success when it opens, and it shows in the overtime employees who choose to stay of their own free will.

¹⁹ Jean-Pierre Poitou, *Le cerveau de l'usine: histoire des bureaux d'études Renault de l'origine à 1980: recherche sur les conditions de l'innovation technique* (Aix-en-Provence: Université de Provence, 1988), 17.

²⁰ Mozas, Caruso St John Architects, et Caruso St John Architects, *The Office on the Grass*, 16.

²¹ Wright, *Frank Lloyd Wright*, 409.

However, Taylorism and its labor studies offices do not have the same impact or at least they are not assimilated in the same way in Europe as in the United States. Indeed, the scale of the territory and the workforce available are not comparable. The United States has a lot of manpower thanks to the large influx of immigrants from Europe. Its vast territory allows the construction of large-scale factories as well as more and more and higher offices. On the contrary, in Europe the situation is not conducive to such development: cities are made up of centuries-old buildings, the continent is divided into several countries with different visions and interests. The workforce is limited and qualified. It is not appropriate to “disqualify” it, especially since it is very attached to its know-how and its heritage. These elements among others did not allow the development of pure and hard Taylorism of the design offices with “white collar” employees who would invade the cities and who would hold all the know-how.

The French example of automobile factories, however, shows the partial adoption of American techniques such as Fordism and Taylorism. Most European companies only apply the elements that suit them and leave out what requires too much investment. They end up imposing on their workers the pressure of timing and make sure to specialize and disqualify them little by little. However, the creation of offices intended to study and organize work seems too expensive for companies which do not feel the need for it and do not see the benefit in the short term.

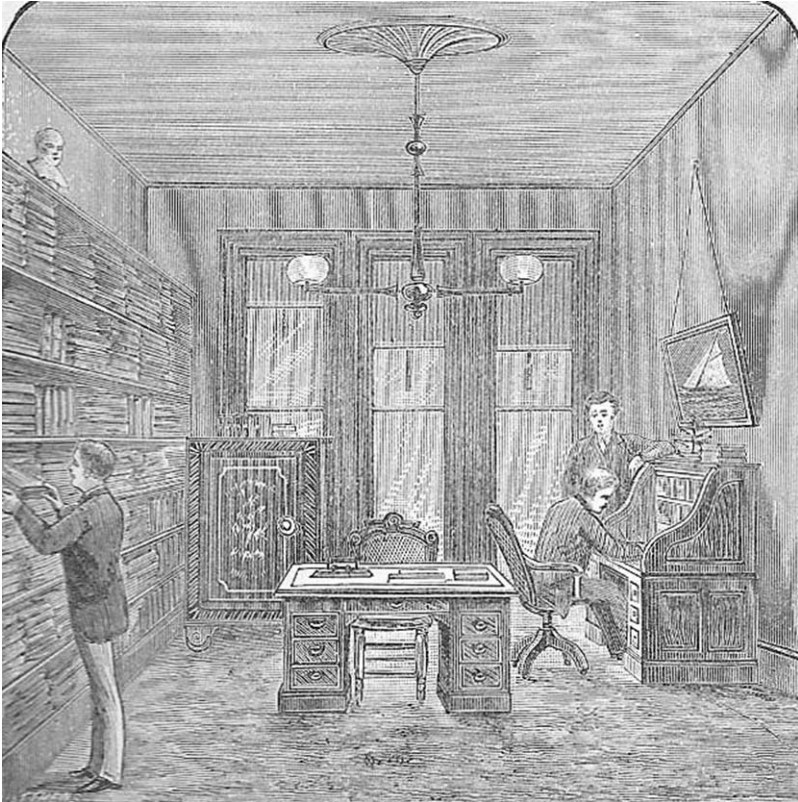
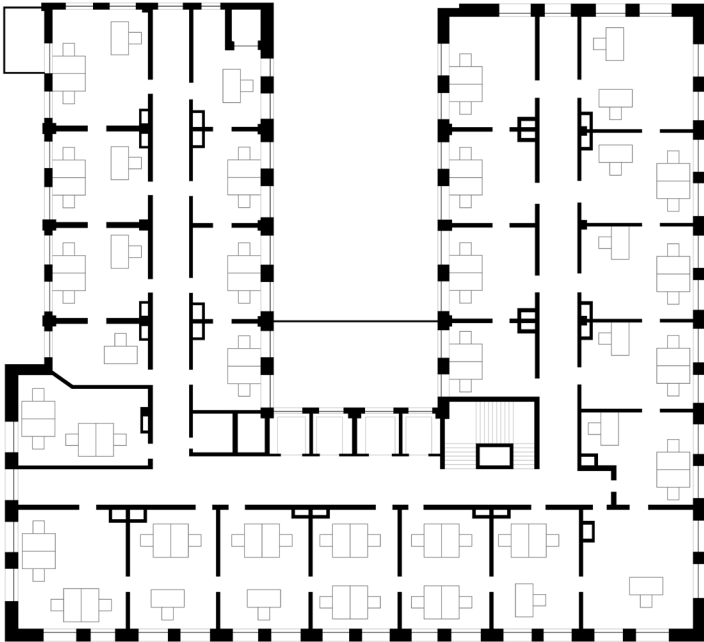


Fig 1. Bryant & Stratton Commercial School, General Business Office, Boston, MA, 1884. Early Office Museum



*Fig 2. Dankmar Adler and Louis Sullivan, Wainwright Building,
St. Louis, Missouri (USA), 1890–92*



*Fig 3. Dankmar Adler and Louis Sullivan, Wainwright Building,
St. Louis, Missouri (USA), 1890–91*



Fig 4. Frank Lloyd Wright, Larkin Building, Buffalo, New York (USA), 1904-06

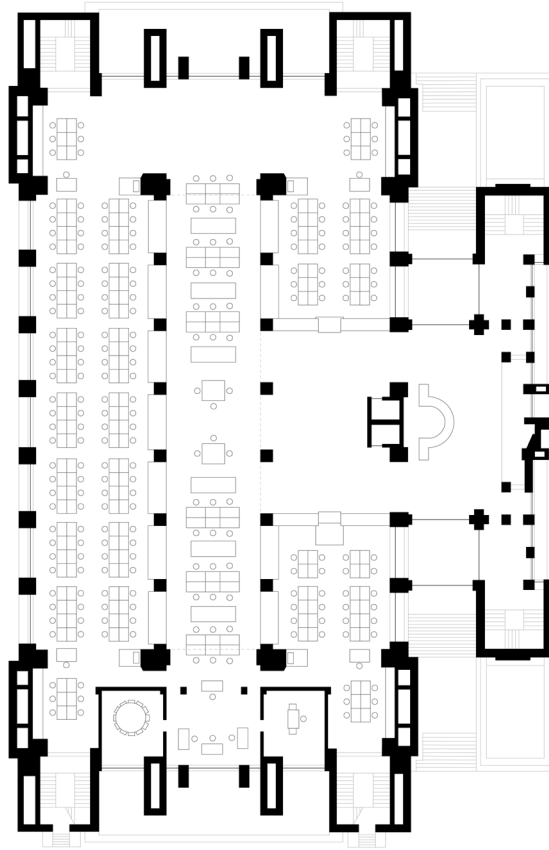


Fig 5. Frank Lloyd Wright, Larkin Building, Buffalo, New York (USA), 1904-06



Fig 6. Frank Lloyd Wright, Larkin Building, Buffalo, New York (USA), 1904-06



Fig 7. Frank Lloyd Wright, Larkin Building, Buffalo, New York (USA), 1904-06



Fig 8. Frank Lloyd Wright, Johnson Wax Administration Building, Racine, Wisconsin (USA), 1936-39

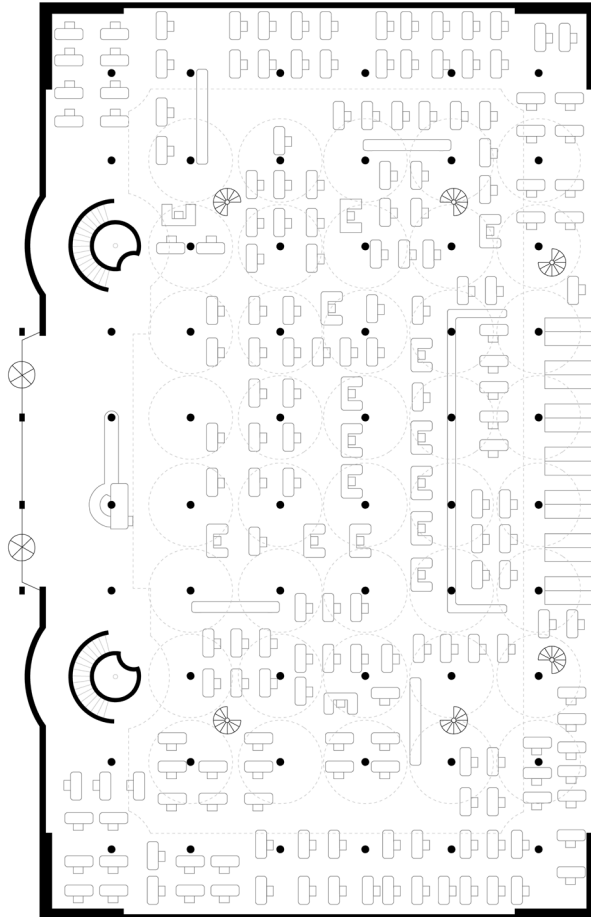


Fig 9. Frank Lloyd Wright, Johnson Wax Administration Building, Racine, Wisconsin (USA), 1936-39



Fig 10. Frank Lloyd Wright, Johnson Wax Administration Building, Racine, Wisconsin (USA), 1936-39



Fig 11. Frank Lloyd Wright, Johnson Wax Administration Building, Racine, Wisconsin (USA), 1936-39

THE OFFICE BUILDING AND ITS EVOLUTION

"If your eyes could penetrate the opaque masses of the facades, they would see an incredible spectacle: three hundred thousand five hundred thousand men and women - perhaps more - at work in a cluster of spaces at the same time. A humanity that has broken its millennial destiny of being attached to the earth, that is suspended between the sky and the earth, rising and falling at high speed in groups of twenty and in pulleys of two hundred. Is this a new scene in purgatory?"

Le Corbusier, *Quand les cathédrales étaient blanches* (1937)

From the middle of the 20th century, a few relatively tall office buildings emerged in the main European cities. At that time, in the United States, constructions became towers of several hundred meters that continued to proliferate. A subject of study for many architects around the world, the skyscraper raises questions and sparks innovative ideas, both in terms of design and technique. In Europe, the modern movement lacks the resources and opportunities to apply them.²² It is in this that we cannot take an interest in the case of European administrative spaces without first considering the American building whose international export will only occur later.

The American skyscraper is symbolic in many ways. An emblematic figure of the tertiary sector, it bears witness to great economic power and tremendous technological prowess, both through its spectacular implementation and its dizzying height. In addition, it contributes to the identity image of the city that hosts it and serves as a business card for the company responsible for its erection. By way of affirmation, a

²² Mozas, Caruso St John Architects, et Caruso St John Architects, *The Office on the Grass*, 14.

tower often bears the name of its owner or the company it hosts. It inspires solidity, reliability, and confidence in customers. A desire for representation and demarcation gives rise to designs that are more impressive than each other. These buildings of monumental dimensions are comparable to real cathedrals of the 20th century. They are the materialization, the demonstration and the magnificence of American capitalism pushed to its climax. The skyscraper embodies the birth and growth of the office made visible.²³

From the end of the 19th century, a frantic race for heights was launched between Chicago and New York. Important financial districts are rapidly developing in these competing cities once known for their high industrial activity. Heavy urban transformations are needed to accommodate new construction, some low-density residential areas are demolished and relocated to free up space in city centers. In 1871, the devastation caused by the Great Chicago Fire lasting three days provided great opportunities for redevelopment. Between 1871 and 1923, New York built 6.9 million m² of office space. Between the 1920s and the beginning of the 1930s, 3.5 million were added, including 1.2 million between 1930 and 1933, the first years of the Great Depression. Nothing seems to be able to stop the fascinating and frightening overgrowth of office space, not even a major collapse in the global economy. The astonishing diversity apparent in the irregular silhouette of a city in no way reflects the interiors tirelessly filled with the same spaces and the same employees.²⁴

“By the middle of the [XX^e] century, it had become a source of worry to many that the jagged skyline might only be a mirage of variety; that any beautiful skyscraper was actually filled story after story with identical-looking white-collar workers; that the city

²³ Saval, *Cubed*, 96-97.

²⁴ Saval, 97-98.

glinting over the river at night consisted of little more than millions of square feet of office space.”²⁵

Administrative work is constantly increasing. Always more white-collar workers are required to fill the positions created. The share of active labor in factories and farms is declining in favor of that of employees engaged in offices. A major economic transition is underway. This tertiarization is the consequence of a change in habits among consumers whose demand for services is increased. In 1960, office workers made up one-third of the United States workforce.²⁶

In 1956, the Bureau of Labor Statistics recorded a landmark event. The class of office workers takes the ascendancy over the working class with 27 million and 20 million representatives, respectively. This is an unprecedented reversal for an industrial power such as the United States.²⁷

During the 1960s, Peter Drucker (1909-2005), an Austrian management theorist, asserted that office workers were gradually becoming the heart of the economy. These individuals, members of the middle class, hardly identify with the proletariat. They are technical and professional workers capable of controlling the most precious of resources, knowledge. Called "knowledge workers", they constitute a new social class. A major change is taking place in the world of work: the growing need to apply knowledge to the most diverse tasks.²⁸

Amplified in the 1960s, the frenzy of administrative spaces is unstoppable and uncontrollable. Two oil shocks, stagflation - low economic growth coupled with high inflation and high unemployment

²⁵ Saval, 98.

²⁶ Saval, 156.

²⁷ Saval, 192.

²⁸ Saval, 196.

- and an increase in the real interest rate do not disturb its course. In the 1970s, 5 million m² of office space were built in New York. The following decade, this figure was increased by 4.3 million. In 1973, the twin towers of the World Trade Center designed by the American architect Minoru Yamasaki (1912-1986) were inaugurated and contributed an additional 930,000 m². They proudly rise more than 400 meters into the sky and fervently represent the banking and financial sectors of the New York economy. Across the country, business districts are gradually filling up with towers.²⁹

Faced with the emergence of ever more numerous and ever more imposing buildings, the most traditional and conservative residents are worried.³⁰ In urban areas, complaints about the height of skyscrapers are becoming commonplace and lively discussions. The high density of constructions and their occupants as well as the congested streets of the city centers create an oppressive climate which inevitably begins to cause anxiety among city dwellers.³¹ On the Pacific coast, the inhabitants of San Francisco observe with helplessness the denaturation of their daily landscape by the progressive appearance of towers linked to the development of the IT sector and denounce a catastrophic "Manhattanization".³²

It is essential to take into consideration the implication of technological advances in the development of the office building and the conquest of the skies.

Until the 1870s, technical knowledge hardly allowed the construction of a building whose height exceeded six floors. On the other hand, it

²⁹ Saval, 227-28.

³⁰ Saval, 101.

³¹ Saval, 109.

³² Saval, 229.

should be noted that human beings are relatively reluctant to climb more than five consecutive flights of stairs on foot. The first elevating devices for people were powered by steam and developed in the 1850s. However, they did not come into use in an office building until 1871. The hydraulic elevator was patented in 1872. It is notably employed in the New York Tribune Building (1875), an administrative building with ten levels.³³

Steel is the second key ingredient of this revolution. A skeleton made of this material serves as the structure of the building. In 1879 the concept of the curtain wall was introduced by William Le Baron Jenney (1832-1907), a renowned American architect and engineer. It is a light facade, continuous and independent of the floors. Like a skin, it covers the cast iron support. The envelope does not contribute to the stability of the construction. Therefore, the drilling of large openings is possible. Therefore, it is possible to benefit from a better supply of natural light in interior spaces. The occasional supports allow at the same time a release of the plane. The partitioning formerly induced by linear carriers is no longer a constraint in spatial planning. In 1884-85, the process is applied in the Home Insurance Building in Chicago, often cited as the first skyscraper.³⁴

If the design of the facade remains imbued with a classic ornamental value and respects a precious architectural heritage, the use of the metal frame as a structural principle denotes a real break with the past. Within the same building there is an obvious form of dialectic between tradition and modernism. Designed by L. Sullivan, the Wainwright Building (1890-91) is part of this new generation of constructions.³⁵

³³ Saval, 100.

³⁴ Pélegrin-Genel, *25 espaces de bureaux*, 2006, 8.

³⁵ Pélegrin-Genel, 8.

L. Sullivan was an influential American architect of the Chicago School. He is considered the father of skyscrapers and modernism. It defines the cell, i.e. the office, as an elementary and constitutive unit of the building. In the poetic imagination of L. Sullivan, the building and the cell are transposed respectively to the hive and the cell. The tower results from the stacking of an indefinite number of levels of cells where each floor and each office are identical. As in a construction game, the dimensions of the brick regulate the whole, i.e. the interior partition, the structural layout, the facade frame, etc.³⁶

“The practical horizontal and vertical division or office unit is naturally based on a room of comfortable surface and height, and the size of this standard office room naturally predetermines the standard structural unit, and, approximately, the size of the window openings. “³⁷

In sum, the design of the skyscraper is based on the office unit, its standardization and its repetition. The precept dictated by L. Sullivan is clear: “Form follows function”. The exterior reflects the interior. The envelope reveals the program of the building as if by transparency. This should have a beneficial effect on the workspace. Alas, this is not the case. At the start of the 20th century, L. Sullivan's artistic vision was tainted by a trend towards dramatic standardization dictated by economics. The concept is so powerful that it is almost universally adopted for the private offices of American skyscrapers. Making a workspace functional has less to do with accommodating the needs of a particular business and more to do with accommodating the needs of any business. An office building is often designed without its own specificities with the idea of being suitable for as many people as possible, but also and mainly for the sake of profitability. This is to ensure that a company can set up and go without encountering difficulties. A compatible model allows anticipation of tenant changes

³⁶ Saval, *Cubed*, 109-10.

³⁷ Saval, 110.

and better surface liquidity. The winners are not the architects, the executives or the employees, but the speculators: "Form follows finance".³⁸

In 1922, the Chicago Tribune held an international architectural competition to design its new office building. Quickly, hundreds of entries poured in, including some from Europe. The proposals are all more outlandish than each other. The winners, Raymond Hood (1881-1934) and John Mead Howells (1868-1959), opted for a neo-Gothic style, a relatively secure ornamental choice for the time. The second place is attributed to Eliel Saarinen (1873-1950). The project is surprisingly devoid of frills and seems to herald the modern movement prematurely. The competition signals a peak of worldwide fascination for the skyscraper which is experiencing a turning point in its history. It marks the point of decline of the first phase.³⁹

During the 1920s, a new architectural movement emerged, the modern movement. Consolidated in the 1930s, it lasted until the 1970s. Promoted by the American architect Philip Johnson (1906-2005) and the American architectural historian Henry-Russell Hitchcock (1903-1987) during an exhibition given to the Museum of Modern Art (MoMA) in New York in 1932, it is associated with some famous European actors such as Walter Gropius (1883-1969), Ludwig Mies van der Rohe (1886-1969) and Le Corbusier (1887-1965). Called International Style, it emphasizes a release from the forms and constraints of the past, a resolution of urban issues through the use of contemporary materials (steel, concrete, glass) and an application of industrial processes to the construction sector. (standardization, rationalization). It is characterized by a strict rejection of ornamentation and an obsessive search for purity. Gradually, the style is associated with the expression

³⁸ Saval, 110-11.

³⁹ Saval, 111-12.

of the power of American corporations. Consequently, he is quickly identified with the United States and the architecture of globalization.⁴⁰

The facade as a film of glass is a constant attribute of the International Style. It envelops the skyscraper in a smooth and continuous surface. A light and transparent veil uniformly covers the building, offering a refined volume with a monolithic appearance. Glass is an ideal candidate as it perfectly exemplifies the austerity and simplicity of the modern movement. Replacing stone, it promotes optimal light penetration. However, despite this powerful advantage, an unsuspected counterpart comes to light. Such glazed surfaces inevitably generate a greenhouse effect phenomenon leading to unbearable overheating of the premises..⁴¹

Fortunately, an innovative spirit is remedying this problem. At the turn of the century, Willis Carrier (1876-1950), an American engineer, embarked on a series of experiments and imagined a device capable of regulating the indoor climate. Through trial and error, the process is gradually improved. In the process, some patents are filed. From then on, the automatic air filtering and thermal control is accessible. Air conditioning was born. It took several decades for the system to spread. Originally adopted in auditoriums and amphitheatres, it was subsequently deployed in administrative spaces. The first American International Style office building, the Philadelphia Savings Fund Society Building (1933), was also the second skyscraper completely equipped with an air conditioning system..⁴²

Two additional inventions accompany the take-off of air conditioning. The fluorescent tube replaces the incandescent bulb. With its lower

⁴⁰ Saval, 131.

⁴¹ Saval, 131.

⁴² Saval, 132.

electricity consumption, it profitably replaces its predecessor by reducing the company's usual loads. Similar to the curtain wall, the suspended ceiling is attached to the carrier system. The technical space created is used for the discreet passage of cables and sheaths. The ceiling height is consequently reduced and seems overwhelming. Artificial lighting and ventilation bring light and air into the heart of the building. These arrangements allow a considerable increase in the depth of the plates. Between 1952 and 1962, office space expanded exponentially and accommodated twice as many employees.⁴³

In 1952, the completion of the UN Secretariat Building in New York, partially designed by Le Corbusier, sent a strong signal. Soon, countless glass boxes are springing up from the ground across the country. Lewis Mumford (1895-1990), American historian, depicts a repetitive and depressing catalog of office buildings. He is genuinely concerned about the trend towards homogenization that is looming. According to him, modern architecture fails in the task of serving the human being.⁴⁴

“At no point in the evolution of the skyscraper was the efficient dispatch of business under conditions that maintained health and working capacity the controlling element in the design.”⁴⁵

The UN Secretariat Building is not spared criticism. L. Mumford deplores the severe lack of consideration suffered by users. If certain aspects of design are touted by designers, they lead to unfortunate repercussions for employees. The north-south orientation assumes east and west exposure of the glazed envelope. The rising or setting sun causes excessive light penetration. Glare and overheating are inevitable. Without adequate sun protection, the light is blinding and the heat is unbearable. Conversely, some of the occupants do not

⁴³ Saval, 132-33.

⁴⁴ Saval, 133.

⁴⁵ Saval, 134.

benefit from this abundant natural lighting because the interior partitioning hinders its diffusion. In addition, L. Mumford denounces the absence of spaces for socializing. He is among the first writers to demonstrate the importance of random interactions and collaboration in a workplace.⁴⁶

In 1950-52, one of the most famous office buildings sprang up in New York, the Lever House. A realization signed Skidmore, Owings and Merrill (SOM), collective of American architects. The design of the interior spaces is the work of Raymond Loewy (1893-1986), a Franco-American industrial designer. The project materializes in the form of an emerald-colored glass tower. The vertical body rests on a flat base and occupies only 46% of the buildable area. Immediately recognizable by its exterior appearance, the building is mainly famous for the quality of its internal design. Employee comfort is carefully considered. The executive suite model characterized by a series of closed rooms is rejected. The space is open and revolves around the desk as a piece of furniture. The supplies are sophisticated and provided with height-adjustable trays. The skyscraper is 18.3 meters wide. This relatively narrow dimension allows precious natural light to be provided at each workstation. Some equipment provides a pleasant working environment: living room, kitchen, cafeteria and garden. However, the Lever House contains a weakness according to L. Mumford. The separation of employees and executives goes against the recent practice of making the space democratic.⁴⁷

The Lever House contrasts sharply with the built environment of Park Avenue. By its uncompromising rationality, it stands out from the old masonry constructions adorned with decorations. Victim of its success, it becomes in spite of itself an infinitely reproducible model. Quickly, half a dozen depersonalized imitations followed. It follows a tragic architectural impoverishment caused by a tendency to standardization

⁴⁶ Saval, 134-35.

⁴⁷ Saval, 135-38.

devoid of reflection. Only a neighbor of the Lever House is legitimately able to compete: the Seagram Building (1954-58) by L. Mies van der Rohe.⁴⁸

The framework is intimately linked to the architecture of the tertiary sector. Its development and rapid expansion date back to the era of the Trente Glorieuses (1945-1975). It is profusely used for housing as well as for offices. Inscribed in a historical context marked by heavy reconstructions, it facilitates and accelerates the implementation of buildings. However, its compulsive use causes a fundamentally comparable expression in plan, facade and volume.⁴⁹

The grid gives rise to the standardization and use of prefabricated elements: partitions, false ceilings, lighting ... Its success is explained by the granting of a vast internal flexibility. It is possible to configure and reconfigure the space in a few hours. Moving from closed to open plan offices is easy.⁵⁰

The glass envelope is seen as synonymous with technological advancement and progress. However, the interior spaces have not experienced a true revolution and have remained essentially the same for several generations.⁵¹

Until the 1970s, the International Style was inflexible in its representation, but complacent in its use. It prevails without real review. The office building as a glass box is little contested.⁵²

⁴⁸ Saval, 138.

⁴⁹ Pélegrin-Genel, *25 espaces de bureaux*, 2006, 16.

⁵⁰ Pélegrin-Genel, 16.

⁵¹ Saval, *Cubed*, 208.

⁵² Saval, 227.

It should be noted that the construction criteria essentially follow the desires and whims of the client, but above all the economy. If the well-being of the white-collar workers is considered, it is generally for purely selfish reasons. Indeed, the comfort of the staff is only taken into account to the extent that the productivity and profitability of the company are potentially affected. Acts of kindness are not disconnected from a desire to appease employees and attract new ones.

In search of entertainment, Chicago office workers rarely have to leave their buildings. Everything needed to live and to please is within easy reach: rooftop gardens, theatrical productions, concerts, barbershops, newsstands, banking services, dry cleaners, tailors, doctors, dentists, libraries, restaurants, recreational spaces, and so on. The buildings take on the role of miniature cities and make city life almost a mockery. The aim is to keep employees in their place of work and to make them want to come to work. It's a form of control. In Chicago, the Pullman Building (1883-84) embodies this ideal. George Pullman (1831-1897), an American inventor and industrialist, hoped that a large building would be "a producer of harmony and good feeling, while at the same time making [the employees] more interested in the work for which they are employed".⁵³

In the early 1960s, sociology and behavioral sciences were developing rapidly. The influence of the work environment on the subconscious and the well-being of the human being was of immense interest. We are able to shape the world around us, but we know little about ourselves. A certain inattention is paid to the most common spaces. The workplace is no exception and is particularly concerned. A new way

⁵³ Saval, 106-7.

of working is required. The basic needs of individuals have been neglected for too long.⁵⁴

“The growing popularity of behavioral sciences—sociology, anthropology, psychology—led managers to try to discover how workers actually behaved rather than how they should behave. In turn, better workplaces more suited to workers’ actual needs would—the theory went—obviate any grievance that might snowball into a full-blown strike. The new, kinder, gentler American workplace took shape under the auspices of what came to be called the “human relations” movement.”⁵⁵

The post-war period saw a move to suburban areas. Hills, lakes, pastures and green nature are coveted. Cities have become hectic, noisy, dense, oppressive and dirty. The urban centers as well as the buildings are congested. Between 1942 and 1952, the size of the corporate workforce doubled, but office space did not keep pace. The result was undersized and inefficient office space, poor working conditions, and people being crowded together.⁵⁶

There are a few more reasons why companies are moving out of urban centers. Racism is undeniably marked. Some companies are reluctant to hire people of foreign origin and prefer to avoid confrontation. There is increasing pressure from these populations, which are particularly present in the city, and texts aimed at equal treatment are being studied. In addition, the proximity of urban industry and its unified contingents of workers frightens the executives who wish to reduce friction with their still divided employees. Finally,

⁵⁴ Saval, 187-89.

⁵⁵ Saval, 126.

⁵⁶ Saval, 144.

the post-war climate raised fears of nuclear attack. Business districts are considered strategic targets and are therefore unsafe.⁵⁷

Les zones suburbaines sont perçues comme un havre de paix, un lieu privilégié bénéfique à la santé favorisant le calme, la contemplation et le repos. De nouvelles législations permettent la délocalisation de certaines activités comprenant les laboratoires dévoués à la recherche, à l'expérimentation et au design.⁵⁸

The suburban office park is directly inspired by the American campus. The complex is isolated in a landscaped setting, the perimeter is defined by hedges and secured by gates, the volumes are low and boxy, the employees face no outside distractions... Unlike the university model, the various buildings are interconnected by long corridors. It is sometimes necessary to take a path through various departments to get somewhere. This system is at the origin of the serendipity encounters advocated by L. Mumford. It creates unexpected collisions between employees from different areas and generates random discussions. A generous place is given to spaces for socialization, but also to places of contemplation. The relationship to nature is rigorously considered.⁵⁹

Built in 1954-57, the SOM-designed Connecticut General Insurance Company headquarters features probably the most elaborate interior planning since F. L. Wright's Larkin Building. The project is located in the countryside outside of Hartford, Connecticut. The central body is a three-level box surrounded by a wide moat. Inside, the plan is left completely free. An ingenious modular system governs the entire complex. Partition elements, ceiling tiles and furniture pieces are produced to the scale of the module and proportioned to ensure

⁵⁷ Saval, 145.

⁵⁸ Saval, 145.

⁵⁹ Saval, 146.

perfect alignment with the grid. Partitions and furnishings are removable to allow for unlimited reconfiguration of the space. If the container is rigid, the content is flexible. Virtually nothing is permanent.⁶⁰

Florence Knoll (1917-2019), an American architect and designer, was responsible for the design of interior spaces. An innovator at heart, she pushed architectural thinking, previously limited to the simple definition of volumes, to new horizons. She conscientiously and rigorously plans an internal layout based on the specific requirements of each client. Planning and furnishings are thought of as integral parts of the architecture and the office building is considered a functional organism in its own right. Until now, supplies were frequently ordered from a catalog. No special attention was paid to atmosphere and comfort. Knoll came up with an innovative and powerful idea: superior design should be manufactured via industrial processes to be made accessible to the general public. From then on, unique pieces were mass-produced. F. Knoll's main concern is to shape a more humane work environment.⁶¹

The campus is made attractive by an array of amenities. Restaurants, shops, services, recreation and sports facilities are available to staff. The complex includes, but is not limited to, a cafeteria, bar, grocery store, florist, dry cleaner, shoemaker, library, language classes, singing lessons, game room, solarium, meditation room, auditorium, swimming pools, bowling alleys, tennis courts and softball fields. The goal is to entice people to move from the city to the country by providing the necessities of life and more. The company provides bus transportation to ensure that its employees can get around..⁶²

⁶⁰ Saval, 147-48.

⁶¹ Saval, 148-49.

⁶² Saval, 149.

Connecticut General is a self-proclaimed employee-friendly company. It seeks to make its spaces as democratic as possible. As such, while there is a hierarchical distinction made visible by the simultaneous presence of private offices and open floor plans, there are no extravagant, prestigious wings dedicated to executives. The architects would prefer two separate buildings for programmatic reasons. Indeed, employees and executives do not require the same furniture and spatial configurations. Flexibility is required for the former, rigidity prevails for the latter. However, the organizational committee is leaning towards an egalitarian space and wishes to maintain a certain proximity between the members of its teams in a purely pragmatic perspective. The combined efforts of SOM and F. Knoll provide an intelligent design that ensures a well-oiled document flow. The entire project functions with the fluidity of an assembly line. The harmony and efficiency of the whole takes precedence over subordination.⁶³

The aforementioned serendipitous effect is a crucial component of the project. Random encounters are becoming an integral part of the employees' professional life and part of the job. In a vertical building, informal exchanges take place mainly in the elevators and are often of short duration. Relatively few spontaneous discussions and sharing of personal experiences take place on the company premises. Here, there is a desire to create a space for communication in which the differences between the various social and hierarchical statuses are erased. A friendly, natural and participative environment is the key to a pleasant, productive and healthy work environment.⁶⁴

Since the invention of the glass envelope, Europe has provided little inspiration for workspace design ideas in America. The reverse is also

⁶³ Saval, 150-51.

⁶⁴ Saval, 151.

true; the American plan characterized by huge floor plans is relatively unimplemented in Western Europe, where corridors and enclosed offices are the norm. However, the post-war period marked a great revival for Germany, the most ravaged of all nations. Expatriates returned from America with a wealth of business ideas, ranging from scientific management to human relations.⁶⁵

In 1958, the brothers Wolfgang and Eberhard Schnelle founded Quickborner, a German consulting firm specializing in interior design. For a long time, architects had put aside the strict rigidity inherited from F. Taylor and rarely questioned it. It is now a question of going beyond convention and thinking of the office space as an organic whole, including the notion of workflow and taking into account the complex interconnections of the employee network. A new working model is needed, a model on a human scale where the needs of each employee are analyzed and considered, the *Bürolandschaft* or, literally translated, the "landscape office".⁶⁶

Seemingly chaotic and random, the open plan is in fact carefully organized into clusters of activity. The location of each depends on its area of expertise and its useful and necessary interactions with its neighbors. Sinuous imaginary paths wind between the islands, sketching vague delimitations.⁶⁷

The *Bürolandschaft* abolishes the distinctive signs of hierarchy. No privileges are granted to the executives. The former compartmentalization is abandoned in favor of an open plan. Executives no longer have separate private offices and are housed in

⁶⁵ Saval, 200-201.

⁶⁶ Saval, 201.

⁶⁷ Saval, 202.

the same way as employees. It is a democratic and egalitarian concept where social barriers are dissolved.⁶⁸

The idea sounds crazy, but it is promising. It's a question of reversing a rational model that has been firmly established and anchored in people's minds for several decades to offer more freedom and flexibility. The phenomenon of the open-plan office is of interest and is gradually spreading in Europe, then across the Atlantic.⁶⁹

With a fluid form, the porous pattern is based on studies of information flow. The interiors are rich in areas of pause. The patterns are unpredictable, unlike the strictly row-organized American plan. This is not a generic model, but a malleable approach that bends to the client's desires. However, some similarities can be observed from one design to another. Plants and acoustic screens are used as separations between the multiple poles.⁷⁰

The system proposed by the Schnelle brothers intelligently integrates mobile design elements. This conscious consideration allows for a high degree of flexibility in the layout of the spaces, which can be rearranged at will. The plan includes an evolutionary dimension through its ability to adapt to the changing needs of the company. Its flexibility of use makes it long-lasting. Moreover, it readily adapts to the most varied and complex geometries. The supplies and transformations being relatively inexpensive, precious financial gains are generated.⁷¹

Despite certain provisions, a recurring problem in the history of office spaces persists. If no preventive measures are sufficiently studied beforehand, the ambient noise level can be a real plague for the

⁶⁸ Saval, 202.

⁶⁹ Saval, 202.

⁷⁰ Saval, 204.

⁷¹ Saval, 205.

comfort of the employees. This is a crucial and well-known value that has unfortunately been lost in the quest for the free plan. This is the sad counterpart of an open space based on communication.⁷²

Robert Propst (1921-2000), an American inventor, noticed that human beings are globally incapable of managing the world they have built. He constantly observed and analyzed his environment, then listed in a notebook the defects leading to a cruel lack of efficiency. To overcome these imperfections, he looks for solutions through design. R. Propst is particularly interested in the work space, whose intelligent organization reflects a major concern. Passionate about sociology and behavioral sciences, he devoured numerous magazines devoted to these themes in search of understanding. In the early 1960s, new perspectives on the relationship between human beings and their environment were emerging. R. Propst consciously integrated these parameters into his own work.⁷³

In 1964, Herman Miller, an American company specialized in furniture manufacturing, unveiled the results of R. Propst's work: the Action Office. Composed of a set of supplies including desks, storage and display surfaces, this new ergonomic workspace is based on the notion of movement. The employee is rarely static. Every task requires movement. The dynamism of the body echoes the lively and creative brain activity attributed to the knowledge worker. The device is porous and conducive to chance encounters. A few idiosyncratic touches testify to the attention paid to the influence of the environment on the human being. The objects are beautiful, modern and colorful. They subtly combine design, aesthetics and progressive ideas. Despite the praise, the system, made expensive by the choice of materials used, struggles to convince and sell itself. Although it is perfectly designed to

⁷² Saval, 205.

⁷³ Saval, 185-87.

fit into the Bürolandschaft, its vaguely defined appearance is often criticized. The mentality is not yet ready for such an investment. Nobody sincerely believes in it. In the face of an unwavering search for speed and simplicity, the Action Office is considered too complex. R. Propst stood his ground, did not accede to the request and reinforced his opinion. Individuals call for more freedom in the organization of their workspace. Design must be indulgent. To anticipate change, adaptability, flexibility, mobility and modularity are required..⁷⁴

R. Propst resumed his experiments and made a series of modifications to his device. In 1968, the Action Office II was presented to the public. Unlike its predecessor, its space is contained by an assembly of light and articulated partitions. The materials used are economical and make the purchase affordable. Deliberately depersonalized to leave room for individualization, the second model proposed by R. Propst takes the appearance of a fully equipped workstation. The office becomes a place dedicated to thought. Mechanical and repetitive tasks decline in favor of intellectual work. The grey matter is more solicited. The spirit of initiative is in full effervescence. R. Propst is a visionary. His approach remains relevant today. He underlines the danger of a sedentary lifestyle on physical and mental health..⁷⁵

The Action Office II does not have the desired effect. The panels are so high that they partition the space. The goal was to free up the employees, but they find themselves trapped. The Bürolandschaft is cluttered with partitions. The innovations backfired on their designer. They have caused what they were trying to combat. Autonomous work units do not interest companies that prioritize efficiency and profitability. Created to embody flexibility, the Action Office II bends to the demands of the market without resistance. Gradually, it becomes rigid, then irrevocably transformed into a box. R. Propst's design did not

⁷⁴ Saval, 206-10.

⁷⁵ Saval, 211-12.

find a home in Europe, but it was undeniably popular in the United States, where a myriad of variations gave rise to a new kind of workspace: the cubicle.⁷⁶

Architects, planners and designers seek an absolute truth. They tend to impose their vision as the only way of thinking. In their minds, the layout of their own offices should define the way everyone else works. Designers claim that their subjective methods are objective empirical results. User input is not sought. Furthermore, executives have the final say on every decision and are often a drag on employee comfort. Economic reasons are regularly put forward to oppose the improvement of working conditions.⁷⁷

Office spaces are going in the wrong direction. In the 1960s and 70s, European employees began to form councils and demand an end to the supposedly progressive ideas of designers. They were fed up and wanted to decide for themselves. In Europe, countries successively passed laws so that employees were represented in the supervisory committees of companies. The working conditions are denounced⁷⁸ :

“Unpleasant temperature fluctuations, drafts, low humidity, unacceptable noise levels, poor daylighting, lack of visual contact with the outdoors, and lack of natural ventilation.”⁷⁹

In addition, fierce hatred is shown against the Bürolandschaft. The open plan is seen as an attack on the strong cultural trend towards

⁷⁶ Saval, 217-20.

⁷⁷ Saval, 209.

⁷⁸ Saval, 218-19.

⁷⁹ Juriaan van Meel, *The European Office: Office Design and National Context* (010 Publishers, 2000), 37.

privacy and closed offices. This results in a massive rejection of the American plan and the cubicle which are struggling to convince.⁸⁰

⁸⁰ Saval, *Cubed*, 219.



Fig 12. United Nations Headquarters Board of Design directed by Wallace Harrison (Le Corbusier, Oscar Niemeyer...), UN Secretariat Building, New York (USA), 1948-52.

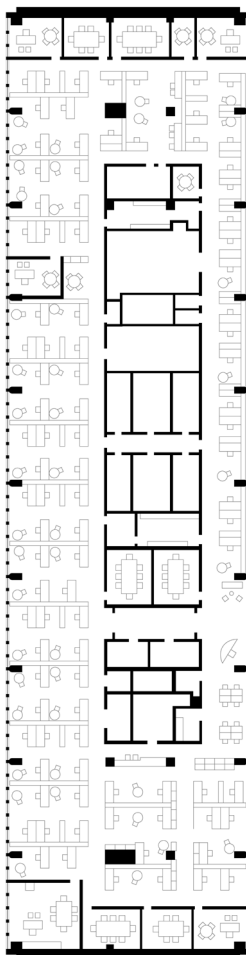


Fig 13. United Nations Headquarters Board of Design directed by Wallace Harrison (Le Corbusier, Oscar Niemeyer...), UN Secretariat Building, New York (USA), 1948-52.



Fig 14. United Nations Headquarters Board of Design directed by Wallace Harrison (Le Corbusier, Oscar Niemeyer...), UN Secretariat Building, New York (USA), 1948-52.



Fig 15. United Nations Headquarters Board of Design directed by Wallace Harrison (Le Corbusier, Oscar Niemeyer...), UN Secretariat Building, New York (USA), 1948-52.



Fig 16. Skidmore, Owings and Merrill (SOM), Lever house, New York (USA), 1950-52

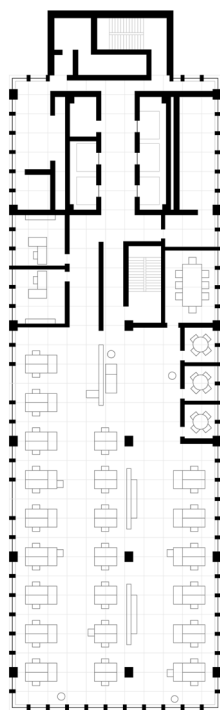


Fig 17. Skidmore, Owings and Merrill (SOM), Lever house, New York (USA), 1950-52



Fig 18. Skidmore, Owings and Merrill (SOM), Lever house, New York (USA), 1950-52



Fig 19. Skidmore, Owings and Merrill (SOM), Lever house, New York (USA), 1950-52



Fig 20. Skidmore, Owings and Merrill (SOM), Connecticut General Life Insurance Company, Bloomfield, Connecticut (USA), 1954-57

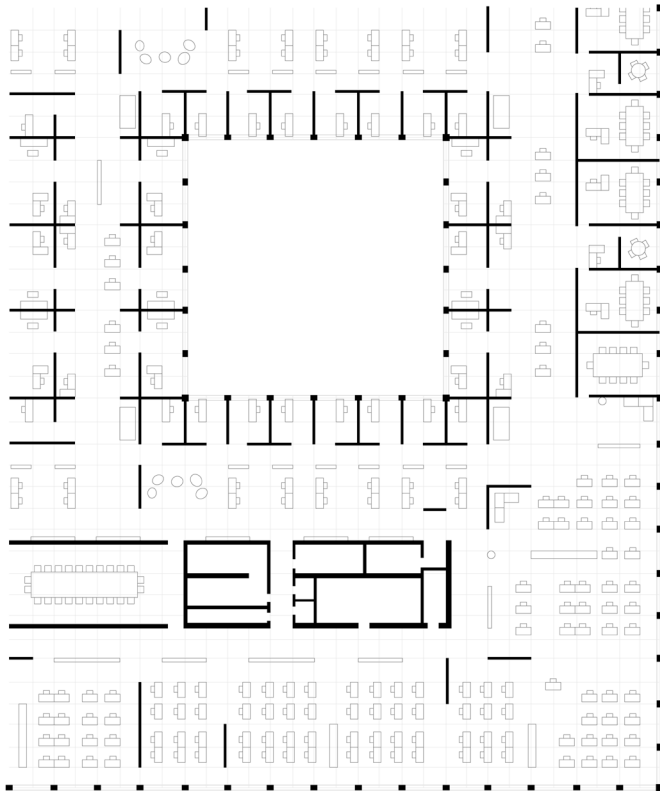


Fig 21. Skidmore, Owings and Merrill (SOM), Connecticut General Life Insurance Company, Bloomfield, Connecticut (USA), 1954-57

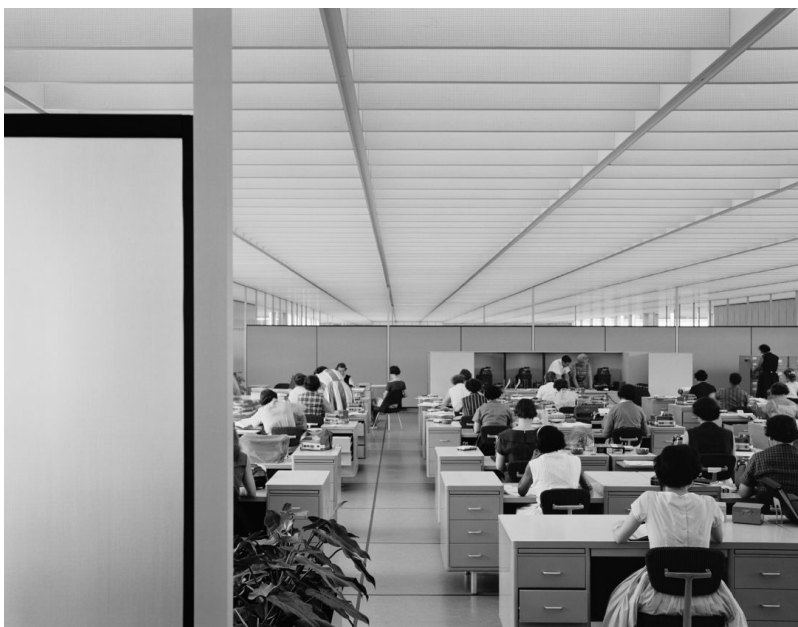


Fig 22. Skidmore, Owings and Merrill (SOM), Connecticut General Life Insurance Company, Bloomfield, Connecticut (USA), 1954-57

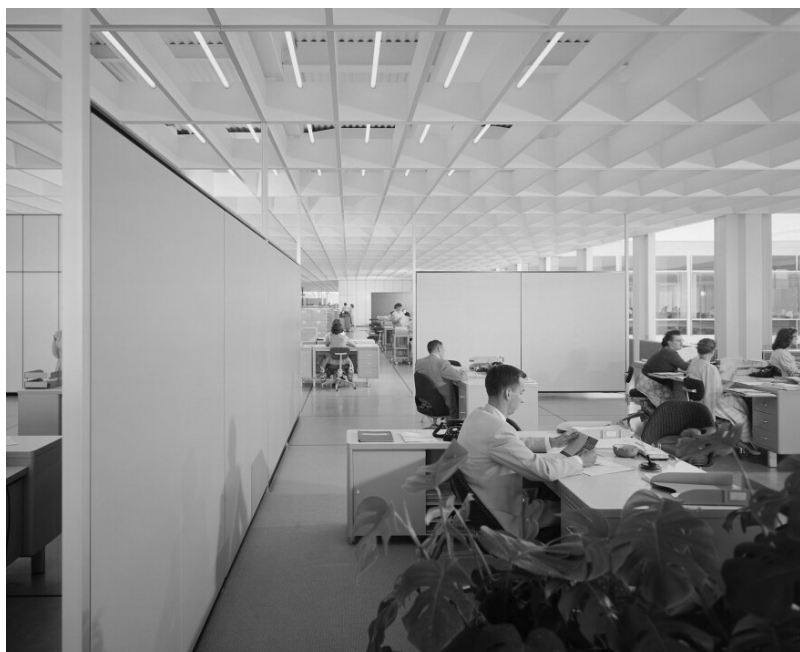


Fig 23. Skidmore, Owings and Merrill (SOM), Connecticut General Life Insurance Company, Bloomfield, Connecticut (USA), 1954-57



Fig 24. Walter Henn, Osram Office, Munich (DE), 1963-65

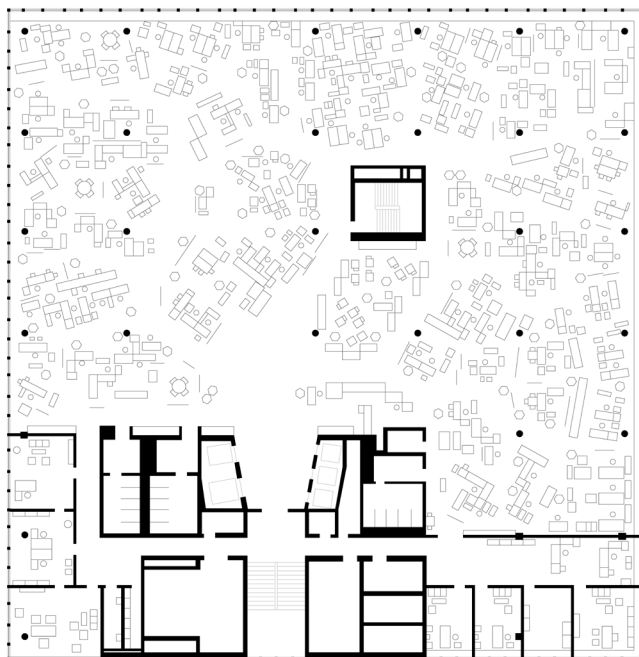


Fig 25. Walter Henn, Osram Office, Munich (DE), 1963-65



Fig 26. Walter Henn, Osram Office, Munich (DE), 1963-65



Fig 27. Walter Henn, Osram Office, Munich (DE), 1963-65

OFFICES IN THE DIGITAL AGE

*"[...] some saw technology as still offering a way of moving office work out of the office, into a broader sphere of public life; others saw that the office needed to be made vastly more humane and responsive to its increasingly apathetic denizens. These two paths were united by a single goal: the desire to make work enjoyable, to return it to an innocence that generations of workplace mistakes had rendered corrupt."*⁸¹

Nikil Saval, *Cubed* (2015)

Communication is the key to change. It enters a new era with the invention of the Internet and the World Wide Web. It is first the Internet that floods the market in the 1970s. The Internet is a system of connected computer networks first set up during the Second World War. It was successively completed for research purposes, then the first European network was created in 1975. Two years earlier, in 1973, the first microprocessor-based personal computer was invented in France.⁸²

The evolution of telecommunications has given rise to the idea of a revolution in the workplace. American experts predict the end of paper and the end of the office as it exists in the near future. The NSF (National Science Foundation) is encouraging a group of its workers to try doing all their work online. Exclude all use of paper except what is necessary to communicate with people outside their group. Engineers at IBM

⁸¹ Saval, 283.

⁸² Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 205.

(International Business Machines) are testing the "non-territorial office" at this same time, with no walls and no workstations. The space is freely arranged and employees work on shared tables and benches. During the same period, the American researcher Jack Nilles began to imagine a way to avoid the home-office commute. Indeed, these trips are long and polluting. They encourage unnecessary urban sprawl and are, above all, inefficient. He sets up a telecommuting system which unfortunately does not work because the managers cannot supervise their employees as they are used to do.⁸³ Meanwhile, the personal computer continued to spread and reached record levels of computers per capita in 1980 in Britain⁸⁴ followed a few years later by the United States with the arrival of Apple (1976) and IBM (1981) computers. It was during this period that Silicon Valley became the source of utopian prognostications about the workspace. Its software and hardware innovations, which were supposed to make work less laborious and more streamlined, enabled the revolution of the workspace. This led to a change in the way the company operated, redefined work methods and flattened hierarchies. The facilities are of better quality and the economic prospects are very promising.

In the 1980s, the typical office model in Silicon Valley was the cubicle. Like the Bürolandschaft before it, the cubicle system is a symbol of equality and a deliberate affront to the traditional hierarchical office arrangements still in use in the rest of the business world. In hierarchical offices, employees are separated from managers. They work in open spaces, while executives are given closed offices and even executive suites on the highest floors of the office. In the egalitarian offices of Silicon Valley, employees and managers are all placed in cubicles and on the same level. While the cubicles are uninspiring, the amenities offered are much better than elsewhere. Silicon Valley companies have sports facilities and recreation centers; suits and ties are not enforced; work hours are flexible; shift rotations and work teams

⁸³ Saval, *Cubed*, 259.

⁸⁴ Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 205.

are autonomous; and weekend picnics/barbecues are held for social cohesion.⁸⁵ It's the fun, laid-back student lifestyle applied to business. This office model eventually became the emblem of Silicon Valley.

In 1986, the advertising firm Chiat Day hired architect Frank Gehry to design its office in Venice, California. Working with pop artist Claes Oldenburg, Gehry produced one of Southern California's most iconic buildings. The image of the office is summed up by its three signature constructions in its main façade: a boat, a tree and a pair of out-of-scale binoculars to mark the entrance.⁸⁶ The idea is to create a building that reflects its spaces. Casual and fun spaces to encourage ownership of the office and to accommodate long hours of irregular work.⁸⁷ The layout is unusual, with pizza kiosks for informal meetings, trash can lids that cast light from the ceiling and all around owner Jay Chiat's contemporary art collection. Everything is done to attract young employees and create an inspiring workspace. Opened in 1991, it is known in New York as the "Oz of offices" transforming Frank Gehry's career. This office became one of the most famous of its time.⁸⁸ These changes in the Silicon Valley offices make them community-building and team-building friendly. Paradoxically, any team member is given the opportunity to leave to start a new competing team elsewhere. Silicon Valley workspaces are designed as the ideal spaces for intellectual capitalism. It is said that Silicon Valley is, at the time, the best example in the world of the merit and talent-based system. Its offices are taken as examples by the rest of the country and, later, the world.⁸⁹

⁸⁵ Saval, *Cubed*, 262.

⁸⁶ Mozas, Caruso St John Architects, et Caruso St John Architects, *The Office on the Grass*, 156.

⁸⁷ Mozas, Caruso St John Architects, et Caruso St John Architects, 30.

⁸⁸ Saval, *Cubed*, 274.

⁸⁹ Saval, 260.

It was in this attitude of freedom and rebellion that Silicon Valley was born a few years earlier. In 1967, eight young engineers left Shockley Semiconductor Labs to start their own company: Fairchild Semiconductor Corporation, the first company to manufacture chips exclusively from silicon. In 1968, two of those eight, Robert Noyce and Gordon Moore, resigned to found Intel Corporation. The rest of the Valley's iconic companies have similar stories: Dave Packard and William Hewlett worked out of their garages; Steve Jobs and Steve Wozniak left Atari and Hewlett-Packard, respectively, in 1976 when they introduced the Apple I: one of the first personal computers. This culture of rebelliousness and informality, combined with working around the clock, has a huge influence on the work environment in the "Valley".⁹⁰ "Valley" companies believe that the traditional hierarchical structure of older U.S.-based companies hinders the smooth and rapid operation of the industry in an era of such rapid technological change that the loss of a few weeks can mean the difference between failure and success. Mais pour les employés, ces entreprises ont petit à petit cessé de représenter le bureau idéal, capitaliste et égalitaire du futur, et sont devenues autant problématiques que les anciennes entreprises. Un employé d'une entreprise typique de la Silicon Valley s'exprimait en ces termes :

"[...] Since it is said that change begins at home, I looked around the office. It consisted of a series of cubicles with tall dividers; in order to speak to anybody, I had to stand up and peer over the partition. Each cubicle was unbelievably cramped; there were no windows; the ceilings were claustrophobically low; and fans spread the stale air around equitably and democratically."⁹¹

In the early 1990s, the design of large Silicon Valley companies was becoming less and less inspiring; it did not seem to correspond to the

⁹⁰ Saval, 261.

⁹¹ Saval, 263.

new idyllic workplace that was perpetually promised. Something more informal, but above all more human, was needed.

In 1993, the World Wide Web (WWW) was created. It was invented by Tim Berners-Lee, in Geneva, within the European Council for Nuclear Research (CERN). If the Internet is a system of connected networks, the Web offers the easiest way to access these networks and the information they contain. It now allows for simplified, fluid and increasingly fast navigation on the Internet. CERN is making the Web directly accessible to the public. In just a few months, traffic on the Web increased tenfold. A year later, in 1994, commercial operations began and CommerceNet, the forerunner of Amazon.com, made its debut. At that time, the Web has already reached a rate of 400'000 bytes/second, the equivalent of a novel per second.⁹²

In 1996 economic growth rates increased unexpectedly and investors were delighted. The latter massively speculate on emerging high-tech industries (such as companies in Silicon Valley), which gives rise to the "Internet bubble" (in English "dot-com bubble").⁹³ In 1999, at the height of the dot.com bubble, \$20 million a day was being paid to businesses in and around San Francisco. Money was flowing into Silicon Valley with such intensity that companies began to spend lavishly and that was when the construction of next-generation spaces, the "dot-com" offices, began.

At the start of the wave, working in a "dot-com" office was a mixture of relaxed atmosphere and frenetic pace. Offices in this "new economy" have picnic tables scattered around randomly, stacks of paper and crisscrossing wires everywhere. In the midst of this mess, people work, squatting, in pajamas, in front of their screens. In appearance these offices look more chaotic and less manageable than the old offices. But

⁹² Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 205-6.

⁹³ Berend et Debruyne, 252.

everything is going much too fast for anyone to take the time to design spaces in a meticulous way as the great architects of the time did. It's not that programmers don't care about design, but the speed of the market means that if they want to build themselves an office, they need to be able to expand or adapt it as quickly and economically as possible. It is therefore necessary to provide an office that can accommodate fifteen people one week and sixty the next. This is what they are starting to ask architects and designers: They need an office concept that can be changed at any time; a "flexible" design.

Although the design of office spaces is important, the idea is rather to let the need itself create the design. Form follows function. Unfortunately, this is not something architects and designers of the time were necessarily accustomed to or prepared to do. It was at this point that a certain schism was created between internet companies and designer architects. For dot-commers, architects and designers seem to remain stuck on their architectural and artistic concepts and put a brake on the personal and collective expression of users. Silicon Valley entrepreneurs cannot tolerate someone's outside vision limiting their projects in the slightest way, much less harming the productivity of their businesses.⁹⁴

Finally, some architects and designers play the game. These internet companies manage to transform their workplaces into palaces of informality and entertainment and manage to attract knowledge workers whose moment of glory has finally come. The designers at Swerze create for the company Evolve a layout from scratch: colorful enamel-coated workstations with boomerang-shaped desks, all in eight weeks. They make conference tables that adapt to the needs; other tables that can "anchor" to desks when a worker needs a spontaneous one-on-one. For the company Blue Hypermedia, Specht Harpman Architects imagines offices, separators, storage units and lighting that can be arranged in common spaces or separated at will in

⁹⁴ Saval, *Cubed*, 269.

private spaces. All this must coexist in an open space, the view free of partitions. At a time when the cubicle has become a subject of contempt, the open plan is the symbol of the coming revolution.⁹⁵

In these new offices, the emphasis is on pleasure and thus eliminates the old distinction between work and leisure. However, the offices of this “new economy” are the most intense workplaces in the United States. The Internet offers inexhaustible modes of distraction, work tends to stretch out for hours. Dot-commers alternate between work and leisure (most often video games) for about sixteen hours, much of it spent sitting in front of their computer. It is precisely for this posture that Herman Miller produced the Aeron chair in 1994, the symbol of the dot-com. But his success is a reflection of the carefree yet deeply intense pace of his ventures, which keeps people essentially confined to one place for hours on end. Designers and architects themselves will have to increase their pace of work to meet the needs and better match the permanent schedules of dot-commers.⁹⁶

That being said, workers are highly motivated to work for these companies. Of course, money is the main motivation because the chances of getting rich are high. But it is also the famous culture that reigns in the company that attracts. Dot-com workers are treated as artists, autonomous and free. When they create something new and do a new kind of work, they are doing it for themselves and not for someone else, so they are more likely to work long hours. In the 1980's ; Peters and Waterman advocate worker autonomy by asserting that if people think they have any personal control over their destiny they are more likely to persist in their tasks, they do better and they are more committed to them.⁹⁷

⁹⁵ Saval, 269.

⁹⁶ Saval, 270-71.

⁹⁷ Saval, 272.

The dot-com paradise and its colossal spending does not last long. The "Internet bubble" characterized by the vertiginous rise of 400% in stock prices at the end of the 1990s finally collapsed between 1999 and 2001. The fall began in September 1998 when the Nasdaq stock market index crashed. In 2002, it ends up dropping 78% from 1998. Dot-com companies are going bankrupt and disappearing one after another. As an example, among the largest of them at this time, CISCO saw its shares drop 86% as Amazon's shares fell from 107 to 7. Several other dot-com companies much richer and more prevalent lose everything and cease to exist. Online retail companies like Pets.com, Webvan, and Boo.com, and communications companies like Worldcom, NorthPoint Communications, and Global Crossing no longer exist. Others, like Yahoo, are struggling to survive.⁹⁸

After the stock market crash, a new white-collar crisis ensues. The office is no longer a dream place, but a nightmare. There is no more money to be spent on luxury offices and futuristic workspace experiments come to an abrupt end. When we thought we were seeing the end of the cubicles, when the financial bubble burst, the dot-commers must return to the cubicles or be unemployed. Indeed, the offices of large companies have copied the first work system of Silicon Valley that are the cubicles and the latter became the way par excellence, to arrange an office in the most profitable and productive way possible. Many ex-dot-commers end up without work and do temporary jobs here and there in these big companies. This is where the office nightmare begins: the pointless temporary work, the feeling of imprisonment, the office worker blues. Before, white collar workers worked for their dream, now they work for their companies and see no future. Their work is repetitive, worthless and poorly paid.⁹⁹

This distaste for office work in the years following the stock market crash resulted in office workers desperately looking for a way to

⁹⁸ Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 252.

⁹⁹ Saval, *Cubed*, 278-79.

improve their work environment. So the dream of a better office continued, but taking into account the precarious situation of millions of office workers. Some see technology as a way out of the office to work in a less oppressive private or public environment; others seek to make the office more human and adapted to the comfort and needs of employees. These two options share the same desire to make work more enjoyable.¹⁰⁰

It is for this last option that the Google company will opt. Founded in 1998, shortly before the financial bubble burst, it is one of the rare Internet companies to have survived the technological crash of 2001. The company was able not only to maintain itself but also to take advantage of the decline of its competitors to rise to the top of the market. Since then, Google has continued to grow and innovate. In just 10 years, the company has grown from a little-known group of Stanford students to a global company with more than 20,000 employees and recognized today as one of the best places to work.¹⁰¹

Google's headquarters (nicknamed the Googleplex) is based in Mountain View, California. The main campus comprises four buildings, with about ten other spaces scattered around a tree-lined business park. Google chose to create an environment that would strengthen its corporate culture, facilitate creative endeavors and empower its employees. Google's idea for their Googleplex is to make the normally heartbreaking transition from college to corporate life as natural as possible. So it's a real campus atmosphere that was created and now it's applied in all their offices around the world, regardless of the physical orientation or design of the building.¹⁰²

¹⁰⁰ Saval, 283.

¹⁰¹ Kursty Groves, Edward Denison, et Will Knight, *I Wish I Worked There! A Look inside the Creative Spaces of the World's Most Famous Brands* (Chichester, West Sussex: Wiley, 2010), 72.

¹⁰² Groves, Denison, et Knight, 75.

Google's workspaces are not luxurious in appearance, but the means deployed for the well-being of their employees are important. To achieve this level of comfort, the company must first meet basic human needs, ensuring that technology fully supports employees, and then adding a personal touch. Google thus offers its employees a level of comfort, physical and psychological, which allows them to be ready and able to work at their best.

“[...] In one of the buildings, [...] the company was trying out “ten different lighting systems, four different mechanical systems, and five different furniture manufacturers,” all to see which worked best for the Googlers.”¹⁰³

The Googleplex is not located near the city center, yet it was necessary to provide food on site to the employees. Rather than hiring outside caterers or providing food dispensers, they were one of the first major companies to provide free food served by chefs. For this purpose, micro kitchens have been designed, where employees serve themselves with a wide variety of snacks. Dispensers with salty and sweet products are also available but these are taxed. Employees therefore have to pay to consume food that is considered unhealthy.¹⁰⁴

Google doesn't view its dining facilities as mere refueling spaces, but rather as social spaces for discussion, sharing, and developing ideas. Ideas are not confined to specific times or places. At Google, a good idea is expected to grow over a cup of coffee, over lunch, or on beanbags on the lawn. Nothing reflects this philosophy better than the many whiteboards scattered throughout Google Spaces, from team spaces to coffee lounges, or next to pool tables. These tables are,

¹⁰³ Saval, *Cubed*, 288.

¹⁰⁴ Groves, Denison, et Knight, *I Wish I Worked There! A Look inside the Creative Spaces of the World's Most Famous Brands*, 78.

according to Google, ubiquitous reminders that ideas can arise anywhere.¹⁰⁵

The company values the spontaneous development of ideas and offers a multitude of opportunities to meet away from traditional workspaces. Nikil Saval, author of the book *Cubed*, visited the Googleplex Campus and observed in speaking with managers, but especially with employees, that often the meeting places or passages that the company designs do not work. necessarily for the reasons that entrepreneurs imagine. According to an employee interviewed by Nikil, one of Googlers' favorite places in the Googleplex is a small juice bar. While we might think that it is the juices that attract employees, according to this employee it is the view of the park next to the bar, the proximity to nature that makes it their favorite place.¹⁰⁶ Crossroads and corridors have been set up and designed to encourage random encounters and the exchange of ideas between employees. But when Nikil asks employees about the influence of these places to create the desired effect, the response is mixed. What seems to create the exchanges between employees is the element that seems the least relevant and possibly not considered by employers: the company's permissive dog policy. Encounters with people and their dogs seem to prompt the most human interaction and sharing.¹⁰⁷

At Google, the culture of free, easy, and fast information sharing has fostered a very open and dynamic environment. Posters are displayed in common places displaying web links to forums where Googlers are encouraged to combine their brains on unresolved issues. This saves time by providing company-wide troubleshooting. Saving time is essential. Everything is done at Google to reduce travel time. From scooters in Manhattan to zip lines in California and fire poles in Zurich.

¹⁰⁵ Groves, Denison, et Knight, 79.

¹⁰⁶ Saval, *Cubed*, 289.

¹⁰⁷ Saval, 290.

Everything is done to reduce the time needed to get from one end of the complex to the other by a few seconds. Indeed, you have to be reactive and respond as quickly as possible to customer requests and mobility is one of them.¹⁰⁸

Yet when it comes to home-work mobility. Telecommuting could be considered. But Google does not allow its employees to telecommute and advises against it. They want their employees to be productive on campus. Indeed, coordinating with workers who are not in the office is not easy. However, in practice employees are quite free to manage their work as they wish and teleworking is still practiced within the company, trust and autonomy are essential elements of working at Google. Maintaining a sense of identity is equally important to maintaining Google culture. There is a balance to be maintained between a strong corporate identity and the encouragement of personal and local expressions. The same fundamentals are shared in all Google offices around the world: individual space ratio per team, common spaces and number of meeting rooms, as well as some basic elements such as micro-kitchens, technical stops and the lava lamps in the lobby, plus a different footprint for each office.¹⁰⁹

Google brought the dream office trend to Europe in 2007 with its Zurich office. With over 500 people, the Zurich office has the largest population of Google engineers outside of the United States, and has benefited from experiences and learnings from other offices. Located in a former brewery, a complete makeover has created the best of Google's working environments.¹¹⁰ These spaces would have been unthinkable in an office 20 years ago: a rest area with aquariums, a library with fake books, a vinyl floor with a printed sand pattern, old wooden cable car cabins with checkered curtains and artificial snow on the ground, stuffed crocodiles. These are amusement park settings

¹⁰⁸ Groves, Denison, et Knight, *I Wish I Worked There! A Look inside the Creative Spaces of the World's Most Famous Brands*, 80.

¹⁰⁹ Groves, Denison, et Knight, 80.

¹¹⁰ Groves, Denison, et Knight, 80.

that feature exciting fictional worlds. The objective is of course to create a synergy between the collaborators and to inspire the employees in order to boost the creativity of the company.¹¹¹

To furnish the 100 meeting spaces planned for the office. The in-house team abandoned standard glass meeting rooms creating instead "gathering spaces" out of salvaged cable car cabins, refurbished Antarctic expedition igloos and egg-shaped dens, each decorated with different themes that correspond to different work floors. People can use these spaces freely for private conversations or to settle in and take a nap.

Yet while Google has earned a reputation for goofy offices, what's behind these facilities is an understanding of how the environment plays a part in making work stimulating. By developing and maintaining a relaxed, playful and fun atmosphere, deeper human bonds are created between people, reducing the fear factor and ensuring good work.

"The concept of hyperreality, formulated in the 1980s, has been used to inform phenomena like Disneyland or Las Vegas and is now helping us understand certain workplaces. Companies eager to innovate, eager to retain talent, are coming up with visual impact solutions, replacing office cubicles with simulated worlds, rather than bonuses. The new generation, which has welcomed the virtual setting of the entertainment industry into their lives, prefers a pleasant suggestive environment, away from the harsh reality to higher compensation."¹¹²

¹¹¹ Mozas, Caruso St John Architects, et Caruso St John Architects, *The Office on the Grass*, 54.

¹¹² Mozas, Caruso St John Architects, et Caruso St John Architects, 54.

Swimming pools, gymnasiums, game rooms, subsidized massage and hairdressing, volleyball courts, wifi-connected shuttles, 20% time to work on projects of personal interest; they are all solutions to everyday problems that people face when trying to look their best. These benefits are not considered as such by Google but rather as part of running a successful business. In the search for environmental control to promote the well-being of employees and thereby also the quality of work; Google seems to be taking inspiration from older types of campuses and family work environments like the Connecticut General, or even the Larkin Building. Google workplace templates are very popular today. Google receives approximately seventy-five thousand job applications per week, largely for the quality of its work environment. It is also a very exclusive environment, which makes it possible to select and filter employees. This is also what allows workspaces to be so friendly and informal. The employees all have more or less the same profile, a high level of intelligence and the same culture inherited from university student life.



Fig 28. Frank Gehry, Chiat/Day Offices, Los Angeles, California (USA), 1985-91.

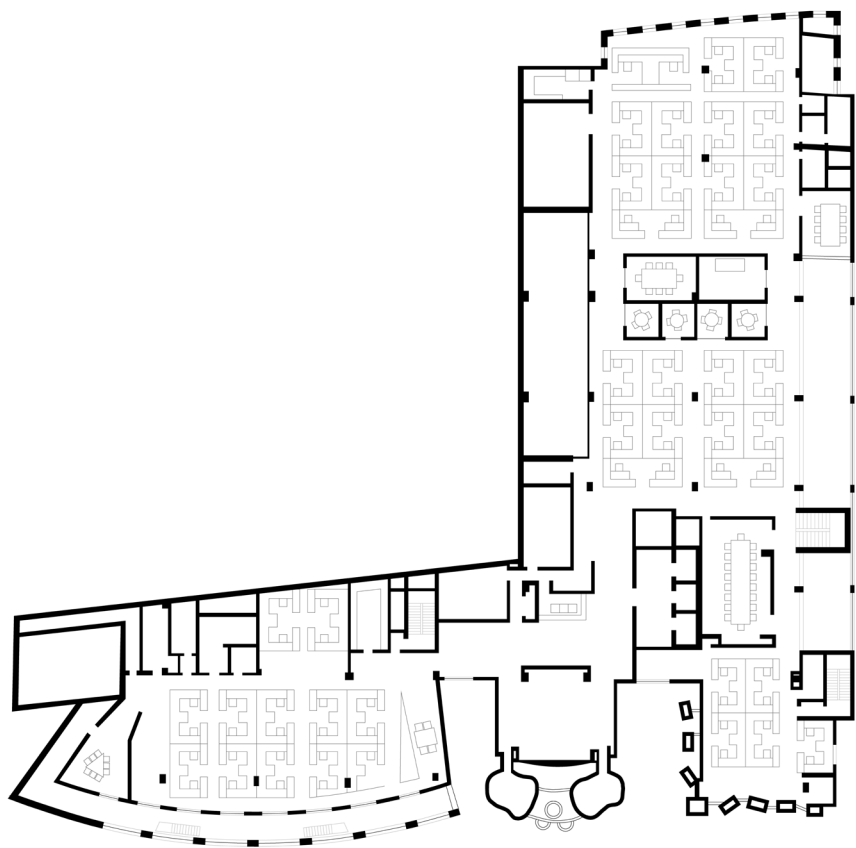


Fig 29. Frank Gehry, Chiat/Day Offices, Los Angeles, California (USA), 1985-91.



Fig 30. Frank Gehry, Chiat/Day Offices, Los Angeles, California (USA), 1985-91.



Fig 31. Frank Gehry, Chiat/Day Offices, Los Angeles, California (USA), 1985-91.



Fig 32. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007

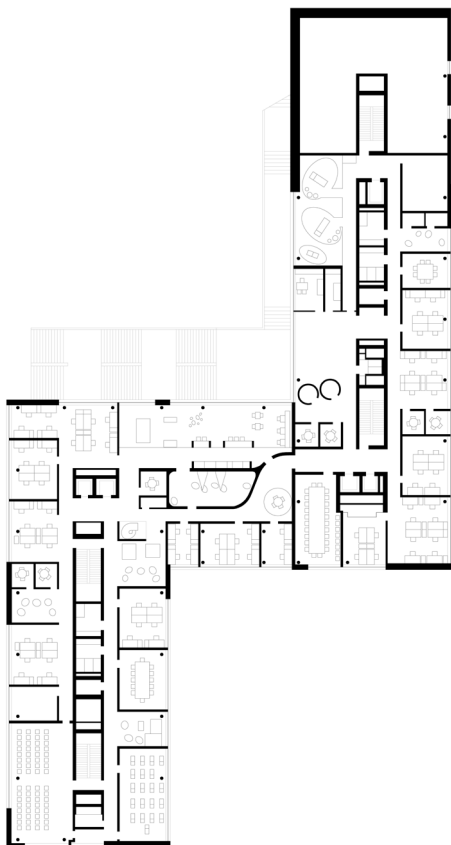


Fig 33. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007



Fig 34. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007



Fig 35. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007



Fig 36. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007

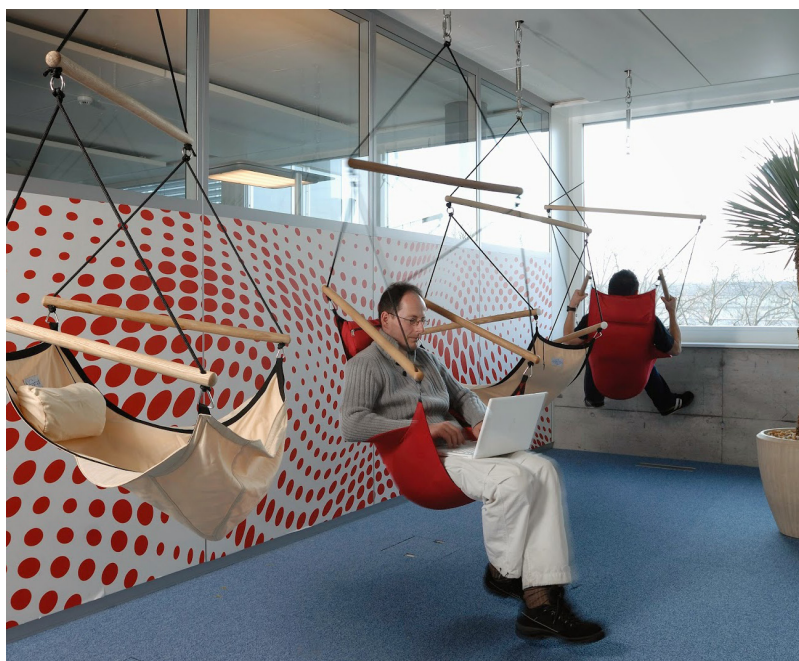


Fig 37. Evolution Design, Google EMEA Engineering Hub, Zurich (CH), 2007

DESERTIFICATION OF OFFICES IN EUROPE

*"The office crisis was already underway before the pandemic: suburban office parks in Europe have been in crisis for nearly two decades. The proliferation of office space was linked to the rise of the hegemonic service economy in major cities and their hinterlands. However, the service economy - the core of what we can call "post-Fordism" - may no longer be the hegemonic form of production in the future, making offices inadequate or irrelevant due to the increase in flexibility and precariousness of work, the most widespread result of which is self-employment."*¹¹³

Pier Vittorio Aureli, El Croquis (2021)

The design of modern tertiary spaces in Europe has been influenced by American architecture. The United States was the first to start the race for height for its office buildings. In 1875, Richard M. Hunt built the Tribune Building in New York with 79 meters in height and for comparison a Parisian building of the time did not exceed 30 meters in height.¹¹⁴ European cities are older and denser. They are constrained by centuries of architectural tradition and by the thickness of their urban fabric. Even before the appearance of skyscrapers in the United States, European cities had already imposed height restrictions on their territory. The London Act of 1894 limits the height to 30 meters. In Berlin the limit was set at 22 meters for many years, but the devastation of war freed up spaces to build higher. Yet, even if the restrictions are dropped,

¹¹³ Pier Vittorio Aureli et Martino Tattara, *Dogma, 2002 2021: familiar / extrano: familiar / unfamiliar*, éd. par Fernando Márquez Cecilia, El Croquis, 208 = 2021, 1 (Madrid: El Croquis Editorial, 2021), 27.

¹¹⁴ Pélegrin-Genel, *25 espaces de bureaux*, 2006, 11.

some resistance remains. In 1950 the tallest building in the United States culminates at 373.5 meters (Empire State Building), 15 years later the tallest buildings in London culminate at 107 and 100 meters (Shell Center and Portland House), the next 3 tallest do not pass the 70 meter mark.¹¹⁵

Take the case of office buildings in Paris and more particularly those of La Défense, the business city of Paris. At the end of the 19th century, most office spaces were indistinguishable from dwellings, except for the absence of kitchens and bathrooms. Workspaces are still mixed with homes and functions are intertwined. Within the same Haussmannian building, for example, the ground floor and the mezzanine receive shops and offices, the upper floors are reserved for housing or offices. As in the rest of Europe, the Parisian offices ended up gradually detaching themselves from domestic influence over the years. Private mansions and old apartment buildings are still safe bets, but business districts are beginning to be built on the outskirts of cities.

In 1950 the project for the creation of a "business city" in the district of La Défense was proposed. The idea is to decongest the center of Paris and facilitate traffic. But from an economic point of view, it is above all a question of favoring the tertiary sector which is booming by creating new office space to put on the market.¹¹⁶ In 1964, a development project was approved for the construction of 800,000 m² of offices, including a 250m high tower intended to house 150,000m² of offices. However, despite its enthusiasm and optimism, the business city is struggling to find buyers. The project for the 250m tower is abandoned and 25 years later only 8 of the 21 towers have been built. Clients ready to invest demand real skyscrapers and more generous office space. Finally, in

¹¹⁵ Saval, *Cubed*, 97.

¹¹⁶ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, éd., *Paris-La Défense, métropole européenne des affaires*, 2e éd. mise à jour et augm (Paris: Éd. du Moniteur, 1989), 40.

1970, the ground plan was modified to increase office capacity from 800,000 m² to 1,550,000 m². Measures are also taken to increase the height of skyscrapers. The UAP Tower thus goes from 144m to 190m, that of GAN rises to 214m and the future Fiat Tower reaches 235m.¹¹⁷ Office buildings are built directly by the end user. They are made to measure according to the specific needs of the company.

At the end of the 1960s, British investors who were interested in the prospects for rental returns in Paris were the first to build “white” buildings there between 1963 and 1964.¹¹⁸ In this specific office case, the user is not known, nor are his specific needs. This is a rental offer. The result is therefore a standardized, flexible space, with minimal interior fittings and modular partitions. The office is then no longer considered as a building only but as a real estate “product”. Consequently, these spaces are closely linked to economic fluctuations.

The 1960s in Paris were characterized by the proliferation of offices resulting from real estate operations and no longer from an architectural or urban planning concern. These offices are often considered to have no originality or quality, built en masse for purely economic reasons, to the detriment of human beings and the environment.¹¹⁹ This is when the “1972 Towers Quarrel” appeared. The Parisian population strongly criticizes this craze for office buildings which destroy the landscape and the La Défense project will be targeted and criticized. Parisians wonder about the purpose of the towers, the construction site seems endless and the monotonous and impersonal mineral aspect omnipresent in public spaces is displeasing. In the towers, the new environment is just as disturbing. Artificial light, air conditioning and the inability to open windows make office users

¹¹⁷ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, 67.

¹¹⁸ Pélegrin-Genel, *25 espaces de bureaux*, 2006, 14.

¹¹⁹ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, *Paris-La Défense, métropole européenne des affaires*, 67.

feel locked in. An industrial and cold character that Parisians, accustomed to Haussmann buildings, do not want to adopt: 52% of employees in these offices say they are little or not at all satisfied.¹²⁰

La Défense embodies an image of progress that has entered into crisis at the time of ecology and the oil crisis. While she was the promise of the future, she becomes the example of everything to be avoided. From the 1970s, the situation vis-à-vis environmental issues changed dramatically. This questioning follows several environmental disasters that followed one another in the second half of the 20th century and will hit the industrial sector and to a certain extent the tertiary sector hard.

One of the first environmental disasters was London's "smog" in 1952: a thick mixture of black smoke and fog that caused the death of 12,000 citizens. The cleanliness of the air is then taken into consideration by the government which decides to curb the emissions of sulfur dioxide. The same goes for water pollution and mass radiation accidents from nuclear power plants in the United States and the Soviet Union, including the fatal explosion at the Chernobyl nuclear station in 1986.¹²¹

At the beginning of the 1970s, almost the entire European continent was industrialized and the environmental danger was perceptible in the pollution of water, air and the destruction of natural spaces. It is becoming clear that Europe can no longer pursue unlimited economic growth at the expense of its natural environment. In 1972, The Club of Rome (a think tank bringing together scientists, economists, civil servants and industrialists from ten countries) was the first to attack

¹²⁰ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, 75.

¹²¹ Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 246.

the "unlimited growth" advocated during this period of the thirty glorious years and qualified it as political suicidal.

Their concept entirely rejects the old growth idol. They estimate that at this rate, the limits of growth on this planet will be reached during the next hundred years. They propose to limit growth and immediately begin a controlled and orderly transition from growth to global balance.¹²² An environmental revolution then developed during the 1970s and 1980s in Europe. In 1985, the Council of Europe agreed on the fact that environmental policy should be at the heart of the activity of the European community.

“Between 1983 and 1986, nearly 100 new regulations and directives were put in place. These included air quality standards, as well as limits on emissions from large industrial firms, transportation of toxic waste and lead content in gasoline. A range of regulations targeted water pollution, introducing sewage collection standards, quality objectives for inland freshwater and drinking water, and pollution reduction guidelines, especially against nitrates and non-organic fertilizers and chemical fertilizers. All in all, by the end of the century, nearly 850 environmental laws had been enacted.”¹²³

The direct consequence of these standards is the closure of the most polluting industries and the increase in the cost of production of other industries. Pollution control in the energy sector, steel, petroleum, paper, copper and chemical industries, reaches 5 to 20% of the cost of production and even a higher percentage of the investment costs. The phosphate fertilizer industries in Western Europe, for their part, had to cease their activity. The other consequence of these restrictions is the

¹²² Berend et Debruyne, 247.

¹²³ Berend et Debruyne, 248.

relocation of industries to developing countries. The developed countries of Europe are thus able to find an escape from strict environmental regulations. They reduce production in the most polluting sectors and establish subsidiaries in the least developed countries. They closed and then relocated the sectors in charge of the most polluting stages of the production process, while they keep the final treatment with high added value at home.

"During the last third of the twentieth century, the economic structure of the developed Western world changed radically. Rapid deindustrialization [...] led to a decline in the share of industrial employment from 48% to 20% in Britain and from 45% to 18% in Sweden. In 2004, industry's contribution to GDP fell to 27% in the eurozone. These structural changes have benefited the service sector [the tertiary sector]. Between 1970 and the 2000s, the contribution of the service sector to national income (calculated as value added) in the European Union rose from 50 to more than 70%. Within the service sector itself, the financial sector grew the most and eventually became the leading sector in the developed economies."¹²⁴

Before that, in 1973, the economic crisis induced by the first oil shock will leave the Paris region saturated with new and empty offices. It is a classic crisis of overproduction caused by the excessive profitability of this sector. The number of administrative areas placed on the market increased tenfold between 1967 and 1972, whereas the real market does not exceed 300,000 to 400,000 m² of new offices per year on average. Yet in 1970-1971 the stock available for sale or rental is greater than 1,000,000 m².¹²⁵ La Défense does not find a buyer in the midst of office space that has become overabundant in the Paris region. The Générale and Neptune towers (respectively 63,000m² and 55,000m² of offices)

¹²⁴ Berend et Debruyne, 252.

¹²⁵ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, *Paris-La Défense, métropole européenne des affaires*, 75.

are largely under-occupied. The Manhattan Tower in 1974 is completely empty.¹²⁶ The lack of relevant supply causes a drop in rents, thus discouraging the profitability of future investments.

Finally, in 1985, the situation is reversed, the tertiary sector comes back in force and the offices are again sold en masse. The shortage of square meters available on the market is causing a spectacular increase, the price of administrative space is increasing, and the office building market is gaining momentum. La Défense then became a prestigious business center and hosted the largest French and multinational companies. Each with a skyscraper in its name. Names that illustrate the economic weight that has built up on the banks of the Seine in the new business capital of La Défense. The city planned to increase its capacity to 3,500,000 m² of offices for 1990. The site then appeared as the leading business center in Europe with 6,000 companies, 110,000 jobs and a turnover of CHF 138 billion, or 90% of the national budget. Defense companies come from all sectors of activity: oil, chemical, engineering companies, IT service companies and insurance companies. Others are French representations or subsidiaries of European or global industry and service giants. Paris-La Défense, by its prestige and its position in Ile-de-France and in Europe, has become the ideal place for such establishments.

Again, this period of euphoria ended in a real estate crisis in 1991. The years that followed were difficult. The recession lasted several years and left one million square meters vacant in 1993 in the Paris region. As usual, the economy rebounded a few years later and La Défense got a new lease of life with the start of construction on Cœur-Défense (two twin towers and three buildings). The real estate market is rebounding and experiencing very significant investments. In 1999, demand was such that in the 2000s, there were less than 3% vacant offices in Île-de-France. The response was not long in coming and in 2001, there was a

¹²⁶ Comité français pour l'expansion et le rayonnement international de Paris-La-Défense, 75.

real explosion in areas under construction (more than 4 million square meters) and authorized areas (5.4 million square meters). The construction of new offices then decreases regularly by 3 to 5% per year. Rents are falling, or more precisely stop rising.¹²⁷ Market fluctuations and economic crises are an inherent part of the capitalist market system. Crises are the consequence of overly optimistic speculative decisions on the part of entrepreneurs, which sometimes create imbalances between production and consumption.

"Without checking their actions against the rest of the market, these entrepreneurs were expanding their businesses and hiring more workers. The result of the cumulative actions of these entrepreneurs is massive overproduction, falling prices, a sudden curtailment of production, and increased unemployment of the workforce. The final stage of the cycle is the swing from prosperity to recession. Although cyclical development has accompanied the history of the modern market economy throughout the 19th and 20th centuries, the pulses at the turn of the 21st century have been quite erratic and violent, resulting from over-financialization and market deregulation."¹²⁸

This speculative approach and the consequent construction of office towers is the one that resulted in cityscapes filled with skyscrapers that people can admire not only in La Défense but all over the world today. These are unfortunately built and maintained at a terrible human and environmental cost. These office projects, ambitious or not, rarely survive financial crashes. As seen above, form follows finance, offices are standardized and rented by the square meter which makes them vulnerable to economic crises. The oil crisis of 1973, the real estate crisis of 1991, the dot-com bubble of 1999 and then the crisis of 2007-2008, to name but a few, left behind many empty offices in cities around the

¹²⁷ Pélegrin-Genel, *25 espaces de bureaux*, 14.

¹²⁸ Berend et Debruyne, *Histoire économique de l'Europe du XXe siècle*, 252.

world. who posted for months and years "For Rent". Sometimes it's not just offices but entire cities that remain uninhabited, like some cities in Spain or China. Often, even offices that are used are underutilized. Most of the time they are empty, although the lights are often still on and even on working days some estimates suggest that people are only at their desks about a third of the time.¹²⁹ It is obvious today that office buildings are not adapted to the unstable economy of the tertiary sector which is constantly changing.¹³⁰ In times of crisis, these are abandoned and find it difficult to buy in times of economic growth because they no longer meet the new criteria of companies that are emerging.

In 2022, the overall vacancy rate in Europe is 7.2%.¹³¹ Here is the vacation rate in some of the biggest business cities: Brussels 13,5%,¹³² London 8,1%,¹³³ Madrid, 12%, Barcelona 7%, Munich 4,9%,¹³⁴ Paris 7,4%, Berlin 2,9%,¹³⁵ Most markets are experiencing a two-speed dynamic, with on the one hand low availability in central areas and in new buildings, and on the other hand much higher vacancy rates in outlying office districts.¹³⁶

¹²⁹ Saval, *Cubed*, 303-4.

¹³⁰ Aureli et Tattara, *Dogma*, 2002 2021, 27.

¹³¹ Clotilde Lechevalier, « LE MARCHÉ EUROPEEN DES BUREAUX AFFICHE DES SIGNES RASSURANTS AU T1 2022 », *BNP Paribas Real Estate Pressroom* (blog), 22 mai 2022, <https://presse.realestate.bnpparibas.fr/le-marche-europeen-des-bureaux-affiche-des-signes-rassurants-au-t1-2022/>.

¹³² « 2022, année de transition pour le marché du bureau bruxellois », *L'Echo*, 7 décembre 2022, <https://www.lecho.be/entreprises/immobilier/2022-annee-de-transition-pour-le-marche-du-bureau-bruxellois/10432681.html>.

¹³³ « Q3 2022 Central London Office Market Report », 28 octobre 2022, <https://www.jll.co.uk/en/trends-and-insights/research/q3-2022-central-london-office-market-report>.

¹³⁴ « European Office Occupier Market 2022 », consulté le 15 janvier 2023, <https://www.knightfrank.com/research/article/2022-05-11-european-office-occupier-market-2022->.

¹³⁵ « CP-Activite-Q3-2022.pdf », 2-3, consulté le 16 janvier 2023, <https://www.covivio.eu/fr/wp-content/uploads/sites/2/2022/10/CP-Activite-Q3-2022.pdf>.

¹³⁶ Lechevalier, « LE MARCHÉ EUROPEEN DES BUREAUX AFFICHE DES SIGNES RASSURANTS AU T1 2022 ».

CASE STUDY IN GENEVA

*"The volume of empty office and commercial space in Geneva has reached a record proportion. On June 1 [2019], 337,818 m2 of business space, available for rent or sale, were vacant in the canton [...] A figure that is up by 8.7% compared to the same month last year [2018]. This is even the highest value since 1985, when the first results were available, according to OCSTAT."*¹³⁷

In Switzerland, the five largest office real estate markets are Zurich, Geneva, Bern, Basel and Lausanne.¹³⁸ In recent years, the city of Calvin has been considered the "enfant terrible" of Switzerland.¹³⁹ The phenomenon of vacant administrative space is particularly marked in this city and is repeatedly in the headlines. We chose to learn more and study the case of this city because it is a current, local and French-speaking example. Moreover, the resources are readily available.

Let's start by briefly describing the economic profile of the city of Geneva. It is essentially oriented towards service activities: finance, trading, insurance, computer technology, international organizations, etc..¹⁴⁰ The tertiary sector is highly developed, accounting for 93.1% of

¹³⁷ Étienne Richard, « Nombre record de bureaux vides à Genève », *Tribune de Genève*, 20 août 2019, <https://www.tdg.ch/nombre-record-de-bureaux-vides-a-geneve-733160974959>.

¹³⁸ Véronique Stein, « Un marché à deux vitesses », *Le Journal de l'Immobilier* (blog), 24 août 2022, <https://jim.media/articles-jim/articles-de-une/un-marche-a-deux-vitesses/>.

¹³⁹ Fredy Hasenmaile et Kerstin Hansen, « Premiers effets de la pandémie : Marché de l'immobilier de bureau suisse 2022 - Décembre 2021 », 3 décembre 2021, <https://www.credit-suisse.com/ch/fr/clients-privés/hypothèque/schweizer-immobilienmarkt-aktuelle-fakten.html>.

¹⁴⁰ Stein, « Un marché à deux vitesses ».

establishments and 95% of gross domestic product (GDP).¹⁴¹ The secondary and primary sectors make up 6.8 and 0.1% of companies respectively.¹⁴²

"Why Geneva is crumbling under empty offices" was the headline in the *Tribune de Genève* of November 15, 2019.¹⁴³ This is neither the first nor the last time that Genevans are confronted with these words printed on newspaper boxes. This news is not surprising. It has become a part of everyday life. Some precursory signs announced the color. Indeed, the signs "for sale" or "for rent" have recently multiplied on the facades of administrative buildings and on the windows of small businesses.

In 2017, a publication by SPG Intercity Geneva, commercial real estate advisors, demonstrates a growing uncertainty related to the evolution of the office space market. In 2010-11, the vacancy rate was below 1% (2010: 0.95%, 2011: 0.59%).¹⁴⁴ In comparison, the average rate for large European cities was between 4 and 8%.¹⁴⁵ Since 2012, the Geneva office market has been continuously deteriorating. In 2017, the index shows 3.41%.¹⁴⁶ According to the experts at SPG Intercity Geneva, the Geneva market "[...] has gone from a "super cycle" to a situation that can

¹⁴¹ Ville de Genève, « Secteurs économiques en ville de Genève », consulté le 17 janvier 2023, <https://www.geneve.ch/fr/public/entreprises/portrait-economique-ville-geneve/secteurs-economiques>.

¹⁴² Ville de Genève.

¹⁴³ Roland Rossier, « Pourquoi Genève croule sous les bureaux vides | Tribune de Genève », *Tribune de Genève*, 15 novembre 2019, <https://www.tdg.ch/pourquoi-geneve-croule-sous-les-bureaux-vides-867871063098>.

¹⁴⁴ OCSTAT, « Statistiques cantonales - République et canton de Genève », consulté le 17 janvier 2023, <https://statistique.ge.ch/>.

¹⁴⁵ SPG Intercity Geneva, « Taux de vacance des bureaux à Genève : état des lieux », 2017, <https://geneva.spgi.ch/fr/newsroom/voir/article/taux-vacance-bureaux-geneve-etat-des-lieux>.

¹⁴⁶ OCSTAT, « Statistiques cantonales - République et canton de Genève ».

objectively be described as normal [...]".¹⁴⁷ In sum, the case of Geneva is not really alarming.

Moreover, this publication reveals a hidden economic interest. A vast catalog of office space is available on the market. Consequently, the offer is generously diversified. Potential future tenants are spoilt for choice. However, competition is fierce among real estate owners who have difficulty selling their properties. As a result, it is necessary to offer more attractive, more advantageous and more competitive conditions. This situation benefits buyers. Rental prices are re-evaluated downwards and the premises gain in excellence. On the other hand, it happens that the moving expenses are advanced or that some fittings are provided free of charge.¹⁴⁸ According to SPG Intercity Geneva agents, "[...] the greater liquidity of the market is contributing to a revival in demand. Indeed, the increased supply of quality space at reasonable rents [...] is prompting many companies and organizations [...] to restart the process of looking for space, which was interrupted at a time when the market was totally "dry".¹⁴⁹

On June 1, 2019, the OCSTAT's (Cantonal Statistics Office) annual survey of vacant non-residential premises is published. It reveals that the canton of Geneva accumulates 234,478 m² of vacant offices (for sale or rent). This is the highest value recorded since 1985, the date of the first available OCSTAT report.¹⁵⁰

In 2019, the office space vacancy rate continues to rise, reaching 5%. While the phenomenon is the talk of the town, economists are keeping calm. According to them, there is nothing to worry about. It is true that the city of Geneva is experiencing a delicate situation, but this value

¹⁴⁷ SPG Intercity Geneva, « Taux de vacance des bureaux à Genève ».

¹⁴⁸ Chantal De Senger, « Bureaux vides: le projet qui divise », *Bilan*, 9 octobre 2014, https://www.bilan.ch/economie/bureaux_vides_le_projet_qui_divise.

¹⁴⁹ SPG Intercity Geneva, « Taux de vacance des bureaux à Genève ».

¹⁵⁰ OCSTAT, « Statistiques cantonales - République et canton de Genève ».

should be put into perspective. At the end of the last century, the vacancy rate was around 7%. There are disparities across the Geneva territory. While the hypercenter has a rate of 3%, the municipality of Meyrin, which includes the airport sector, has a rate of 10%.¹⁵¹

The peak seems to be reached in 2019. In 2022, the results published by OCSTAT show a decrease in the number of vacant offices compared to 2021 (-16%). As of June 1, 2022, 160,119 m² of vacant office space, corresponding to 365 premises, were recorded. It should be noted that 99.3% of this space is offered for rent and not for sale. There is a glaring gap between the center and the periphery. The majority of vacant office and commercial space is concentrated in the city of Geneva (42%). The neighbouring municipalities of Meyrin (17%) and Vernier (12%) complete the podium. On a canton-wide basis, the average annual rent per square meter for an office space is \$400. This sum differs considerably from one municipality to another. It climbs to 448 in the city of Geneva, but does not exceed 368 in Meyrin.¹⁵²

We can wonder about the reasons for this phenomenon. Why are vacant spaces multiplying? The downtown office stock is aging, the premises are often dilapidated and no longer meet the standards sought by companies. It is estimated that 90% of the vacant premises in the city center require major renovation work in order to meet these criteria. It is difficult to find the rare pearl in the Geneva hypercenter. Consequently, there is an exodus to the periphery where buildings are generally new, better equipped and less expensive.¹⁵³

In the Geneva suburbs, the airport area has an exceptionally high vacancy rate. A serious lack of vision occurred when the administrative

¹⁵¹ Richard, « Nombre record de bureaux vides à Genève ».

¹⁵² OCSTAT, « Statistiques cantonales - République et canton de Genève ».

¹⁵³ De Senger, « Bureaux vides ».

park in this area was designed. Between 2008 and 2014, this area developed strongly to meet the increased demand. At that time, the hypercenter of Geneva was facing a terrible shortage of office space.¹⁵⁴ In 2019, peripheral space no longer checks the boxes of the standards companies seek and struggles to sell. The lack of flexibility in space is sorely lacking. Faced with unsold space, owners are forced to adjust prices. The reality is that unrenovated or poorly located buildings have difficulty finding buyers, even at low cost.¹⁵⁵ Conversely, central locations with good public transport links are in great demand.¹⁵⁶

In terms of sustainability, the demands are growing. Indeed, companies are put under pressure by a series of legal obligations. In addition, economic and identity aspects come into play. Compliance with ESG (environmental, social and governance) criteria is an almost indispensable prerequisite. However, there are few compatible buildings in the city center. Many older buildings require upgrading to meet the standards.¹⁵⁷

In 2022, the average duration of vacancy of administrative spaces corresponds to 21.4 months.¹⁵⁸ You have to go back to the crisis of the 1990s to encounter such delays. More than half of the empty space has been available for more than two years. These are mostly obsolete buildings built in the 1980s and 1990s.¹⁵⁹

In the city center, the supply is mainly concentrated on the left bank of the Rhône. The train station area also has a high density of vacant

¹⁵⁴ Stein, « Un marché à deux vitesses ».

¹⁵⁵ Rossier, « Pourquoi Genève croule sous les bureaux vides | Tribune de Genève ».

¹⁵⁶ Stein, « Un marché à deux vitesses ».

¹⁵⁷ Stein.

¹⁵⁸ OCSTAT, « Statistiques cantonales - République et canton de Genève ».

¹⁵⁹ Hasenmaile et Hansen, « Premiers effets de la pandémie : Marché de l'immobilier de bureau suisse 2022 - Décembre 2021 ».

space. On the outskirts, the new business district of Lancy-Pont-Rouge, consisting of six buildings, has 95,000 m² of office space and is causing the vacancy rate in the region to soar. This is the first major construction phase of the huge Praille-Acacias-Vernets (PAV) development zone in Geneva.¹⁶⁰

Curiously, and even paradoxically, the city of Geneva is constantly adding administrative space to its real estate stock. Despite low demand and an overabundance of office space, almost all new development projects include additional office space. One example is the Quartier de l'Étang in Vernier. It includes 140,000 m² of activities. Why invest in this market ? Investors believe that stone remains a safe investment, even at a low rate of return. Moreover, the demand for new premises does exist, provided that certain criteria are met.¹⁶¹

The figures for vacant office space should be treated with caution. The high level of construction activity in Geneva is partly responsible for the high supply. Every year, a few large-scale projects emerge and considerably inflate the statistics. Tens of thousands of square meters suddenly appear on the market. It is normal to observe a consequent increase in the volumes available.¹⁶² Conversely, some properties undergo extensive renovations to meet the new requirements and are temporarily removed from the offering. These properties are virtually absent, but they are not permanently deleted.¹⁶³

A drastic change is taking place in the selection criteria for companies. In 2014, Patrick Peyrot, head of real estate investments at Régie Naef, said: "For three years now, the number of new companies

¹⁶⁰ Hasenmaile et Hansen.

¹⁶¹ Rossier, « Pourquoi Genève croule sous les bureaux vides | Tribune de Genève ».

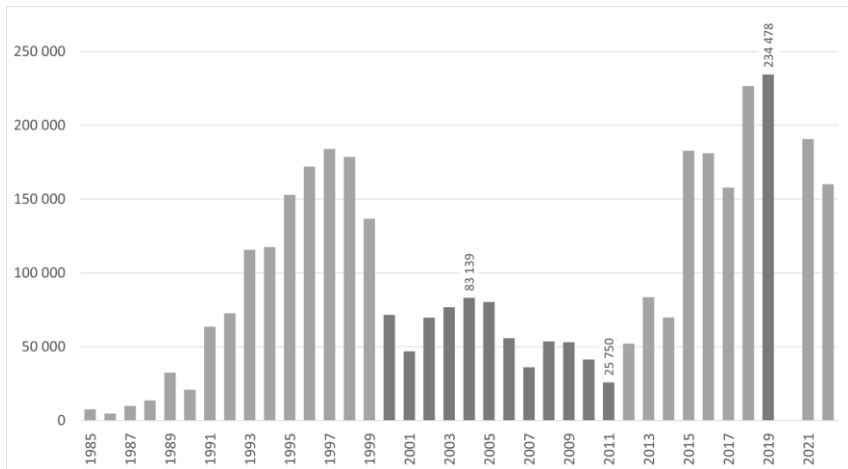
¹⁶² Richard, « Nombre record de bureaux vides à Genève ».

¹⁶³ Hasenmaile et Hansen, « Premiers effets de la pandémie : Marché de l'immobilier de bureau suisse 2022 - Décembre 2021 ».

requiring space larger than 1,000 m² has been decreasing. In the first half of 2014, spaces of less than 500 m² located in the hypercenter were very successful and were re-leased in less than six months. It would seem that companies are becoming less greedy for square meters. On the one hand, there is a trend towards downsizing. On the other hand, hybrid models, desk sharing or telecommuting, are becoming more common. Companies are re-evaluating their needs to optimize their expenses. The result is a search for smaller premises.¹⁶⁴

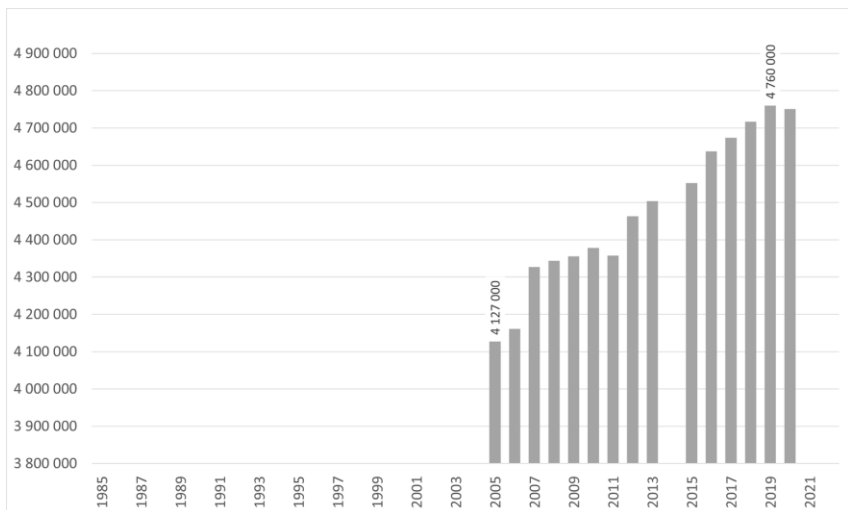
Geneva companies are constantly seeking to reduce their costs. They are looking for more competitive rental conditions. The advantageous rents of the periphery are attractive and inevitably contribute to the desertification of the city center. The selection criteria for companies are changing. The prestige attributed to the city center is no longer able to compete with the need to enjoy the latest office standards.

¹⁶⁴ De Senger, « Bureaux vides ».



Source: OCSTAT - Surface area of vacant office space in the canton of Geneva [m²] - 1985-2022.

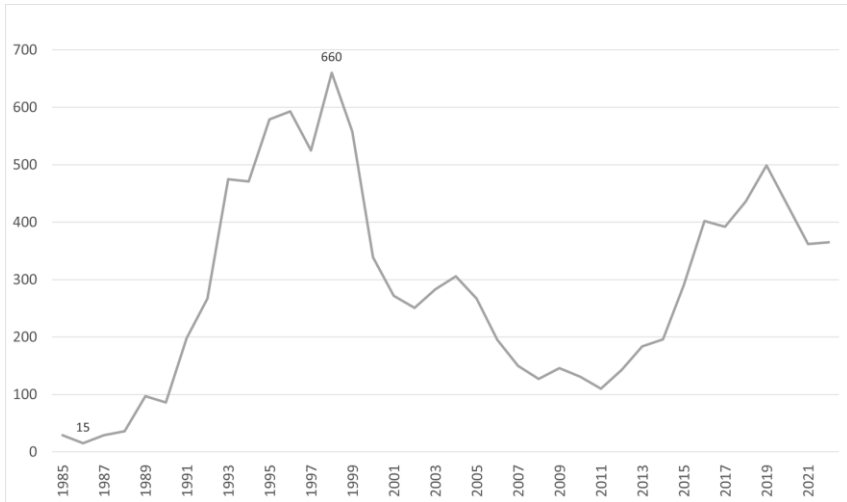
(I) Due to poor data quality, the results for 2020 could not be released.



Source: OCSTAT - Office space in the canton of Geneva [m²] - 2005-2020.

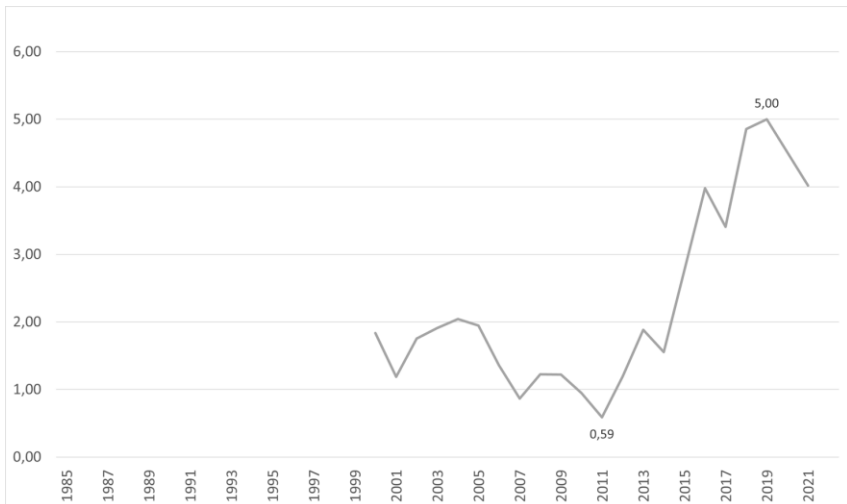
(I) Figures for 2014 are under revision.

CASE STUDY IN GENEVA



Source: OCSTAT - Number of vacant office spaces in the canton of Geneva - 1985-2022.

(I) Due to poor data quality, the results for 2020 could not be released.



Source: OCSTAT - Office space vacancy rate in the canton of Geneva [%] - 2000-2021.

(I) Figures for the non-residential space stock as of 31.12.2014 are not available.

(2) Due to poor data quality, results for 2020 could not be released.

Contrary to expectations, the health crisis and the rise of teleworking have had little impact on the Geneva real estate market. Very little space has been vacated or reduced due to the pandemic. The dynamism of the economic recovery is creating a favorable climate in which the supply of office space is stimulated. Demand is more resilient than expected, but it is hesitant and slow moving. As a result, new construction projects are being held back. If the canton of Geneva maintains a high level of planning activity, the surplus of office space will probably take longer to be absorbed.¹⁶⁵

Compared to the situation abroad, Switzerland is not to be pitied. However, investors prefer to be cautious. There is great uncertainty about the actual future needs of tenants.¹⁶⁶ Real estate developers are specifically interested in the flexibility and modularity of the premises to satisfy a wider demand. These qualities are increasingly valued by companies.¹⁶⁷

The pandemic has led to significant changes in work habits. With the development of hybrid models, a possible reduction in office space is to be expected. Forecasts predict a reduction of 15%.¹⁶⁸ Companies are completely rethinking the layout and organization of their premises. The workspace is changing and becoming a privileged place of exchange, creativity and well-being.¹⁶⁹

¹⁶⁵ Hasenmaile et Hansen, « Premiers effets de la pandémie : Marché de l'immobilier de bureau suisse 2022 - Décembre 2021 ».

¹⁶⁶ Hasenmaile et Hansen.

¹⁶⁷ Stein, « Un marché à deux vitesses ».

¹⁶⁸ Hasenmaile et Hansen, « Premiers effets de la pandémie : Marché de l'immobilier de bureau suisse 2022 - Décembre 2021 ».

¹⁶⁹ Stein, « Un marché à deux vitesses ».

For several years, the canton of Geneva has been facing a significant housing shortage. In 2021, the vacancy rate will reach a painful ceiling of 0.51%, which is the lowest value recorded in Switzerland after Zug.¹⁷⁰ However, the planning of residences is in full effervescence and reaches figures rarely equaled. In 2021, more than 3'000 residences will be built.¹⁷¹ However, a huge imbalance between activities and housing has developed over time. Geneva is a city that builds more administrative or commercial space than residential space. The gap is such that one third of jobs are held by people from outside the canton. By 2030, 65,000 jobs are expected for only 39,000 housing units.¹⁷²

Such a crisis raises questions. The potential for converting vacant office space is assessed. If giving a second life to these spaces seems attractive, few owners are inclined to change the use of their properties. The list of obstacles is long.

It is important to know that more than 100 standards and laws govern real estate. A multitude of texts and plans define what is allowed or not. These valuable documents serve as the legal basis. The construction zones are scrupulously established. It is forbidden to build housing in an area that is not intended for this purpose, with some exceptions. In the administrative or commercial sector, a maximum of one company apartment, with a surface area not exceeding 100 m², is tolerated per building.¹⁷³

¹⁷⁰ Théo Allegrezza, « Ville de Genève: A la Corratierie, les bureaux de Lombard Odier redeviendront des logements | Tribune de Genève », *Tribune de Genève*, 13 juillet 2022, <https://www.tdg.ch/a-la-corraterie-les-bureaux-de-lombard-odier-redeviendront-des-logements-607907222465>.

¹⁷¹ Allegrezza.

¹⁷² Rossier, « Pourquoi Genève croule sous les bureaux vides | Tribune de Genève ».

¹⁷³ Fabrice Strobino, « Des bureaux vides en logements? », *Bilan*, 14 mars 2021, <https://www.bilan.ch/opinions/fabrice-strobino/des-bureaux-vides-en-logements>.

In 2014, a bill aimed at making the LDTR (law on demolitions, transformations and renovations of dwellings) more flexible was drafted to facilitate the conversion of premises used for administrative, craft, commercial or industrial purposes into housing. It should be noted that a change of use is subject to the submission of a building permit application and generates long and costly administrative procedures. The idea is to soften the constraints in force and to accelerate the procedures to fight against the crisis by encouraging owners to convert their real estate.¹⁷⁴ It should be noted that, given the current housing shortage, the reverse path, i.e. the conversion of housing into offices, is prohibited by law.¹⁷⁵

In June 2015, the reform was accepted by 58% of voters.¹⁷⁶ Seven years later, the results have fallen far short of expectations. In the meantime, only 108 files have been authorized by the State.¹⁷⁷ The conversion of offices into apartments remains a rare phenomenon. If the procedures are facilitated and the reversibility of the operations is possible, the practice remains financially unattractive. We will come back to this point. Some factors independent of the economic aspect are to be considered.

Noise is identified as a factor responsible for health problems. However, certain regions of the canton of Geneva are strongly impacted by a noise level exceeding the recommended exposure thresholds. The proximity of the airport, highways or railroads is truly harmful to the well-being of the inhabitants. Surveys are carried out and maps are drawn up. On this basis, safety perimeters are defined

¹⁷⁴ De Senger, « Bureaux vides ».

¹⁷⁵ Allegrezza, « Ville de Genève: A la Corraterie, les bureaux de Lombard Odier redeviendront des logements | Tribune de Genève ».

¹⁷⁶ Christian Bernet, « Convertir des bureaux vides? Ça ne marche pas », *Tribune de Genève*, 8 juillet 2019, <https://www.tdg.ch/convertir-des-bureaux-vides-ca-ne-marche-pas-846398287766>.

¹⁷⁷ Allegrezza, « Ville de Genève: A la Corraterie, les bureaux de Lombard Odier redeviendront des logements | Tribune de Genève ».

around the hot spots. It is strictly forbidden to plan residences in an area where the limit values are violated. However, the presence of office buildings is accepted. The built volumes act in a beneficial way by preventing the propagation of sound.¹⁷⁸

On the other hand, administrative or commercial surfaces are not subject to the same regulations as residential surfaces. The LFAIE (Federal law on the acquisition of real estate by persons abroad), more commonly known as Lex Koller, is a real brake on the conversion of offices into housing. Indeed, the access to real estate ownership is restricted for non-Swiss nationals. It is impossible for them to own housing, unless it is social. Therefore, a change of use makes the property unsaleable to a foreigner. The size of the market is considerably reduced.¹⁷⁹

While the figures for non-residential vacancies are impressive and promise immense potential, the reality is distressingly disappointing. Not all properties are candidates for conversion. For example, a commercial arcade located on a busy street is unsuitable.¹⁸⁰ Once the various selection filters have been overcome, only a handful of candidates remain.

There are also many technical constraints. They hinder the smooth running of operations. In addition, the question of location is not insignificant. The vacancy rate is particularly high in the Geneva suburbs. Empty non-residential premises are omnipresent. However, buildings in outlying areas are often designed exclusively for office space.¹⁸¹ Therefore, it is really complex and expensive to transform them into housing. To go from large open spaces to functional

¹⁷⁸ Strobino, « Des bureaux vides en logements ? »

¹⁷⁹ De Senger, « Bureaux vides ».

¹⁸⁰ De Senger.

¹⁸¹ Bernet, « Convertir des bureaux vides? »

apartment typologies is not obvious. It is necessary to partition the space (partitions and walls), to plan bathrooms and kitchens, to create ducts, to provide outdoor spaces (balconies and loggias)¹⁸², provide distribution areas (corridors, passageways and stairwells)¹⁸³, adapting heating and ventilation systems, etc.¹⁸⁴ In addition, the interior fittings specific to office spaces, such as false floors and suspended ceilings, make the surfaces unsuitable for habitation.¹⁸⁵ In addition, the glazed and unenclosed facades do not lend themselves to residential use. Finally, suburban areas are relatively undeveloped and unattractive for housing because they lack shops and services.¹⁸⁶

Downtown, the potential is greater. Buildings were originally designed for housing. However, their original function was diverted over time. Lawyers and doctors set up their offices and practices there. The internal partitions often remain unchanged. As a result, the cost of conversion is relatively low, but the vacancy rate is objectively low in this popular area. The demand for these spaces remains high due to their central location and prestige.¹⁸⁷

A certain proportion of the buildings in the hypercentre have a programmatic mix, a specificity appreciated by property owners.¹⁸⁸ However, some of the remodeling work is more challenging. Drilling new standpipes can be problematic as they may pass through a conference room.¹⁸⁹

¹⁸² Allegrezza, « Ville de Genève: A la Corraterie, les bureaux de Lombard Odier redeviendront des logements | Tribune de Genève ».

¹⁸³ Allegrezza.

¹⁸⁴ Strobino, « Des bureaux vides en logements ? »

¹⁸⁵ Strobino.

¹⁸⁶ Bernet, « Convertir des bureaux vides? »

¹⁸⁷ Bernet.

¹⁸⁸ De Senger, « Bureaux vides ».

¹⁸⁹ Strobino, « Des bureaux vides en logements ? »

Let's address the financial issue. Beyond the procedural and inherent costs of the transformation work, not to mention the possible losses due to a loss of earnings, the transition from open space to apartment inevitably leads to a reduction in the surface area to be rented (balconies, loggias, corridors and stairwells) and, consequently, a reduction in profits. The deficit is estimated at 15%.¹⁹⁰ This difference should be reflected in the rent, but does not benefit tenants and market competition. With respect to rent, the average annual rent per square meter is higher for office space than for residential space.¹⁹¹ As a result, property owners logically prefer to wait for their properties to recover, even if it means temporarily renting them at a lower price.¹⁹²

Ultimately, it is impossible to make generalizations and treat every vacant space in a similar manner. It is essential to consider the specific context of each premises and to proceed on a case-by-case basis. The conversion of office space into living space is rare and represents a micro-market.

¹⁹⁰ Allegrezza, « Ville de Genève: A la Corratierie, les bureaux de Lombard Odier redeviendront des logements | Tribune de Genève ».

¹⁹¹ De Senger, « Bureaux vides ».

¹⁹² De Senger.

A NEW RELATIONSHIP TO WORK

“Collaboration over competition

Participation over observation

Doing over saying

Friendship over formality

Boldness over assurance

Learning over expertise

People over personalities

Flexibility over rigid structure“¹⁹³

The Coworking Switzerland Manifesto (2022)

The fragility of the real estate market, which is becoming more and more a matter of financiers, combined with the incessant and unavoidable movements of the economic sector, has concrete repercussions on the work space. Uncertainty about the future is leading to a search for rationalization of space and, in particular, to a resurgence of the open-plan office or Bürolandschaft, which theoretically requires less square footage. At the same time, new office arrangements (unallocated workstations, shared workstations, etc.) are being introduced. More and more companies are renting out their square meters. Little by little, no one is the "owner" of his or her workspace, literally or figuratively. The main consequence of these economic uncertainties is the rise of self-employment.¹⁹⁴

¹⁹³ Kevin Rodriguez, trad., « Home Coworking Switzerland », coworking.ch, consulté le 16 janvier 2023, <https://ch/?lang=fr>.

¹⁹⁴ Aureli et Tattara, *Dogma*, 2002 2021, 27.

Self-employment is a consequence but also a strong reaction to the hierarchy of work in companies. Indeed, at the heart of the company's thinking about workspace design is often the issue of control. Still present in most office spaces, it implies that they should not be too far from management so that they can be closely watched and ensure that they are working. For some, people work better together in an office. For others, employees need autonomy and are trained enough to work without being supervised or monitored.¹⁹⁵

It's clear that today more than ever, technology is giving office workers the ability to work outside the confines of their workplace. Yet most companies that produce so-called "mobile" technologies, such as Google, do not encourage this type of work within their own offices.

“ The small irony of these new ways of working is that the people who produce the tools that allow us to work in the cloud, to work anywhere we want to—this software is being produced by people sitting in offices [...] people in cubicles, people working in groups. It's not being done on an iPad from a café ... roaming and working wherever you want to.”¹⁹⁶

Indeed, the office's hold on its employees began to dissipate long before the arrival of the cloud. The rise of temporary, freelance and contract work in particular coincides with the gradual breakup of lifetime employment policies in service companies at the end of the 20th century. Economic crises forced companies to take drastic measures and adapt to the frivolity of the market. As the cycle of company mergers and layoffs became more intense and routine, a greater proportion of workers were hired on a contract basis rather than as permanent employees. Gradually, temping, ad hoc work, is becoming a fundamental part of the global economy. Today's nomadic

¹⁹⁵ Saval, *Cubed*, 292.

¹⁹⁶ Saval, 292.

and non-territorial offices, with official policies of flexibility, are as much the result of the precariousness of the labor market as the technological advances that make them possible.

In the 1990s, as before, many suggest that telecommunications will soon put an end to the office as we know it. While managers find the idea of giving workers autonomy frightening, research by a Dutch workplace research institute (Centre for Buildings and Places), seems to prove that with flexible working (abolition of fixed offices and the possibility of working remotely) workers seem to seek each other out more and that internal communication is increased. Studies done by the Interpolis insurance company in the Netherlands suggest that satisfaction with space and work has increased since the move to flexible working. However, other studies in the Netherlands paint a more mixed picture, with huge declines in worker satisfaction. They complain about the lack of space for concentration and privacy, constant noise and interruptions, and the time wasted in planning work.¹⁹⁷

Often employers rely on a utopian concept, rather than on the actual experience of workers. Unfortunately, these plans fail not because of a lack of ideas or originality, but perhaps because of a lack of listening. Designers sometimes tend to crowd people together to reduce costs and emphasize common space, but the practical result is noise and distraction. What studies done in shared spaces show is that there is little or no buzz of ideas as collaboration ideologues always hope. There is often too much traffic in general, and the presence of the agency manager in the same space makes workers more fearful and less free to speak and exchange ideas spontaneously.

The autonomy of workers to decide on their environment is now a key element in the evolution of the workspace. Google has understood this

¹⁹⁷ Saval, 295.

by asking its employees for their opinion and by making sure that they are comfortable and equipped according to their needs but also that they are independent in their time and work management. On the other hand, the company does not favor telecommuting because it does not, in its opinion, promote the exchange of ideas. But despite this, information technology is making work more independent of time and place. People can gradually organize their work as they wish, where they wish. Even if most companies do not yet allow it, this flexibility remains a possibility, whether it is offered or not. This freedom in work management can have a lot of influence on the way life is organized as well as on the life-work balance.

Since the 1970s and the advent of telecommunications, telecommuting has been seen as the way to abolish traditional office space. However, even today, it is still struggling to gain a foothold. With a few exceptions, its progress is slow and inconclusive. For many companies it remains problematic and not beneficial. However, a dramatic event will allow an unprecedented development of this mode of work. In 2020, the containment measures introduced by various countries in the context of the Covid-19 crisis will force a large part of the population to stay at home. In some countries, these travel restrictions are combined with the recommendation or even the obligation to telework.

Professor and sociologist Vincent Kaufmann emphasizes that although the experience of confinement was particularly painful in terms of mental health, it was also appreciated in certain aspects. The calming of life rhythms, the rediscovery of proximity and teleworking were for many a positive experience.¹⁹⁸

A study in *Frontiers in Psychology* examined the activities, housing conditions, and other factors affecting psychological strain

¹⁹⁸ « Forum Vies Mobiles | Préparer la transition mobilité », consulté le 15 janvier 2023, <https://forumviesmobiles.org/dictionnaire/13661/confinement>.

experienced during the first COVID-19 confinement in Switzerland. The introduction of telecommuting and increased time spent at home may be more tolerable if the setting is pleasant. Of those surveyed, those who teleworked full-time at home did report the smallest increase in psychological strain. But while this result seems to confirm the benefits of telecommuting, it must be qualified. It may also reflect the difficult working conditions of those who must continue to work face-to-face while subjecting themselves to the rules of distancing and the risk of infection. The negative impact of the particularly difficult conditions of face-to-face work can therefore minimize the negative aspects of telework.¹⁹⁹

Concerns about the health of occupants when activities normally located outside the home are moved in are not new. However, the COVID-19 confinement has exacerbated this concern. Indeed, when all the inhabitants of the same dwelling are confined, the lack of space is obvious. Whether it is a lack of space for work, telecommuting, study, exercise, or personal privacy, this lack is growing and can negatively impact the mental health of residents. The response from practitioners and academics has been to propose a rethinking of housing features such as room layout or indoor air quality. This is to address the shortcomings revealed during COVID-19. However, this linear top-down approach neglects the complexity of the housing system and its dynamics, as it does not take into account potential changes in resident preferences during containment.²⁰⁰ A study published in *Cities and Health*, reveals that the predominant feelings during confinement were "I miss my loved ones" (54% of respondents), "I lack interaction (virtual, face-to-face, etc.) and physical contact" (38%). Boredom,

¹⁹⁹ Ralph Hansmann et al., « Activities, Housing Situation and Other Factors Influencing Psychological Strain Experienced During the First COVID-19 Lockdown in Switzerland », *Frontiers in Psychology* 12 (2021), <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.735293>.

²⁰⁰ Anna Pagani et al., « How the first wave of COVID-19 in Switzerland affected residential preferences », *Cities & Health* 0, n° 0 (4 octobre 2021): 1-13, <https://doi.org/10.1080/23748834.2021.1982231>.

overwork and fear for one's health (20%).²⁰¹ We see that the different factors responsible for the negative feelings are not all work-related, but neither are they detached from it with people complaining about work overload and lack of physical interaction.

Telecommuting therefore implies a healthy and suitable environment. Housing should therefore be able to provide "adaptive and comfort resources to occupants to address residential stresses arising from lack of space to sleep, eat and work."²⁰² In other words, as was the case during confinement, telecommuting needs a healthy home that is "compatible with and facilitates access to a wide variety of experiences, resources, contacts and interactions."²⁰³

"[...] it is the responsibility of architects, housing providers and policy makers to ensure that dwellings' design promotes and preserves the autonomy of households and individuals, i.e. their freedom to use residential space independently and to adjust it to mitigate change (Turner 1976, Blunt and Dowling 2006, Lawrence 2012). In practice, this task could be translated into the provision of shared but personal spaces in residential buildings, [...] Promoting the adaptability of spaces to different spatio-temporal needs at the building scale would also be beneficial for the mitigation of conflicts that arise between the functions each household member desires for their dwelling (be they basic, e.g. adults' work, children's schooling, or self-expressive, e.g. leisure). In addition, designing private but visually interconnected external spaces such as balconies could address the need for safe interactions with the surrounding community [...] ensuring access to this kind of supportive environment would be of paramount

²⁰¹ Pagani et al.

²⁰² Pagani et al.

²⁰³ Pagani et al.

importance for the health and well-being of elderly people who live alone and are at risk of spatial and social isolation (Lawrence 2021b). Such propositions are in line with scenarios for the future of housing [...]”²⁰⁴

Projects combining housing and work have emerged in recent years such as Dogma's "One-Room House," a house for living and working (2017) or, from the same architects, "Everyday is like Sunday" (2015), a study for the transformation of a disused office park. In both of these projects the desire is to requestion space and allow for a hybridization between workspace and housing that becomes necessary with the possibilities offered by telecommuting.

“The transformation of these failed office parks is an opportunity not only to improve the supply of affordable housing, but also to rethink the relationship between home and workspace in a more nuanced way, away from the modern idea of their complete separation. This doesn't mean that we will be condemned to always live and work in the same space, but that more proximity and flexibility between them is possible. But before we can address the new possibilities of combining "residence and work," we need a thorough analysis of existing forms of work and the kind of spatial needs that these forms demand. We also need to understand work in a more subtle way, not just as what we do in exchange for wages, but also as domestic and emotional work, the kind of work that is largely ignored and unpaid.”²⁰⁵

As observed by the professor and sociologist Christian Licoppe, telework is more than an alternative to face-to-face work, it is a resource that allows one to manage one's working time, either face-to-

²⁰⁴ Pagani et al.

²⁰⁵ Aureli et Tattara, *Dogma*, 2002 2021, 27.

face or remotely, according to the needs of the activities performed. It is an opportunity to open a discussion and question the modalities of "classic" work.²⁰⁶ It is important to be aware that the increase in teleworking is directly related to containment and that it is not a choice but an obligation that has led to its widespread use. In this sense, it is only a model adopted by companies on a temporary basis. However, it remains relevant in the change of mentality it brings about, the awareness of the importance of the work environment and the possibility of autonomy it offers.

"The international survey by Mobil'Homme of 14,886 people in Switzerland, France, Belgium, Germany, Austria, Luxembourg and Spain showed that telework was most common in the service sector, especially among managers. The same study also shows that the intensity of telework use varies according to the stringency of travel restrictions and their control in the different countries studied. [Telework is therefore a response to the injunction to maintain continuity of work activities. This injunction is taken for granted, suggesting that telework is part of a society governed by control and surveillance]." ²⁰⁷

In Europe, during the spring 2020 lockdown, the rate of telecommuting tripled. Vincent Kaufmann expresses it as "the substitution of travel by telecommunication". The experience of the lockdown, he says, opens the way to a possible transformation of future lifestyles.²⁰⁸

Although technologies have allowed the advent of nomadic work. The precariousness of work has encouraged the development of

²⁰⁶ « Forum Vies Mobiles | Préparer la transition mobiliataire ».

²⁰⁷ « Forum Vies Mobiles | Préparer la transition mobiliataire ».

²⁰⁸ « Forum Vies Mobiles | Préparer la transition mobiliataire ».

independent and temporary work. Richard Greenwald, Professor of Labor History and Sociology, has studied this phenomenon and observed the decline and precarious state of service work. Indeed, it is now very different from the corporate world of high benefits and high wages that characterized corporate life for generations. Knowledge workers in the digital age seem to move from job to job, in an increasingly irregular and precarious fashion, and in almost permanent underemployment. Some of these precarious workers make the choice to leave the permanent labor market; most of the others are laid off. Yet it seems that temporary and independent work develops a sense of pride and identity with their work. Indeed, those who succeed have some control over their hours and the work they produce. Of course they are dependent on the market for the prices they set, but the best ones can set the conditions of what they offer. On the other hand, satisfaction is accompanied by "a lot of worry" as is the case for all self-employed people, white collar or not, who are likely to fail and bear the consequences alone.²⁰⁹

The growth of self-employment and nomadic work, however, provides an opportunity to explore a world of work detached from hierarchy and management control, and offers a glimpse of the potential for greater control by workers themselves over the work process. A management of time and space, by the workers and for the workers. The problem is that this is rarely expressed in concrete workplaces.

Today, the monopoly of workspaces considered the most employee-friendly are those of large companies, both new and old, such as LEGO, Airbnb, Microsoft, Google, Dyson, DreamWorks, Hasbro, Nike, Philips, Sony and Walt Disney. These companies seek to create the best possible environment, each with their own work philosophies and vision for the company. While places like these may represent a "post-bureaucratic" workplace, they are not the majority and are by far not

²⁰⁹ Saval, *Cubed*, 298-300.

the models considered when designing office spaces by architects or designers. Yet, this non-hierarchical approach is only a reflection of a broader sense of unease with the management control systems that have developed over a century in office environments. While still very much in evidence, organizations that insist on hierarchy are becoming harder to defend. Employees are looking for autonomy and flexibility that they are less shy about asking of their companies.

Office design is now developed, however, it is the supply of office space that is regressive. The dominant model of office development in emerging economies remains speculative. Offices are not built to meet a specific direct need but rather to satisfy a hypothetical future demand.

“What’s more, the design inside is hardly progressive. Infosys’s buildings were packed tightly with cubicles; and another campus I visited, General Electric’s research facility out in Whitefield, was the same. When I asked a representative of GE why they had chosen to use cubicles, he replied, “How else do you design offices?”²¹⁰

Niki Saval, interview avec K. Santhosh, India, 2012

The problem is that in developing countries, but not only, the basic design is that of the American skyscraper, and interior design with cubicles remains cost-effective and efficient. Use should become the main criterion for creating office space, not speculation.²¹¹

Coworking offers an alternative to the speculative market and is transforming the workspace and to some extent the real estate market.

²¹⁰ Saval, 305.

²¹¹ Saval, 305.

This phenomenon has exploded in the last 20 years and is a sign of a new attitude towards the use of buildings. Coworking is basically the provision (for a fee) of shared office space (offices, conference rooms, cafe) for freelancers who want to get out of their apartments and work in a more sociable environment while remaining in the office environment. These office environments are almost "loose" in style with open space, vintage furniture, bike racks, whiteboards, etc.

A coworking space in Geneva, close to the train station, uses a small space previously used for commercial purposes. The space had been empty for a number of years, after which it was refurbished to accommodate a coworking space. The space is set up as a bar/café with second-hand tables made of wood, metal and plastic. The same goes for the chairs, sofas and other equipment in the room. This informal character gives the space a casual atmosphere with some neon lights hanging on the wall. There is also a community bar/kitchen near the entrance where occupants can prepare or heat up food. There is another room where whiteboards have been placed to create a meeting/conference space. In addition to the whiteboards and the privacy of the room, the design tries to keep a casual style. The coworking space is occupied randomly by monthly or annual subscribers. The room is rarely full, so coworkers don't feel crowded. However, interdisciplinary exchanges seem to be emphasized because of the direct relationship between the kitchen, the work tables and the entrance.

Companies like Google and Facebook encourage exchanges between employees. Coworking spaces, on the other hand, are conducive to interdisciplinary exchange. This is a strong argument for coworking spaces. Indeed, it seems more likely to meet someone useful outside of one's field of work. Indeed, the different fields of work often complement each other and are useful to each other.

Despite the idea of having to pay to go to an office, when nomadic and independent work was supposed to abolish it, coworking has proven to be extremely popular. Today it is no longer just small offices made by freelancers but coworking companies that manage the creation of these shared workplaces. The number of large-scale coworking companies is growing rapidly, allowing other large companies to take advantage of higher productivity rates, reduce real estate costs and test new markets. These other companies are not only interested in the opportunities offered by external coworking spaces, but are also beginning to experiment with coworking internally as a way to address changing generational work styles. Companies today understand that they must seek to attract and retain young talent. Coworking spaces bring to the forefront attributes that are increasingly in demand in workspaces: flexibility, interactivity and mobility.²¹²

Today, coworking is influencing the very design of corporate offices. In fact, to encourage idea sharing and innovation, various companies are setting up coworking spaces for employees to use. As coworking gains popularity, it is not only impacting the design of corporate offices, but also real estate in major cities as is the case in Geneva with Spaces, the coworking company that offers 24 meeting rooms and 51 workstations in addition to common coworking spaces, catering and relaxation areas. All this is spread over 3 buildings in Geneva, one of which is located at the corner of the Place de la Gare in the emblematic Credit Suisse building and another building on the Quai de l'Île, in the middle of the Rhone and opposite Bel-Air. Spaces is proud of the prestigious buildings it occupies, the strategic position of its coworking spaces, the proximity to public transportation and the low energy consumption of its buildings.²¹³ In a way, environmental investments are now seen as investments in competitiveness. New green

²¹² Kursty Groves et Oliver Marlow, *Spaces for Innovation: The Design and Science of Inspiring Environments* (Amsterdam: Frame Publishers, 2016), 208.

²¹³ « Spaces | Espace de travail, adhésions sur mesure & salles de réunion », Spaces, consulté le 15 janvier 2023, <https://www.spacesworks.com/fr/>.

technology and environmental control services have become attractive.

With the rise of coworking and the advent of telecommuting, large companies are realizing that the traditional models of long-term leases and fixed office space are less and less necessary. In addition, these alternatives reflect and promote a new attitude toward work and a new generation's expectations for the workplace. Coworking and telecommuting are quickly becoming a symbol of the shift from fixed, linear work based on power and control, to creative collaboration based on community and autonomy.

CONCLUSION

The office has evolved greatly in its form and function after the industrial revolution. It went from being a simple space to help the administration to being the flagship element of the capitalist society of the 20th century. The rapid economic growth and the lack of organization in companies forced them to transform themselves radically. This led to the advent of Taylorism, the rationalization of work and the intensification of employee control in the office.

Architects quickly tried to create original office spaces to accommodate the large number of knowledge workers flocking to cities. At first, they considered function, efficiency and employee comfort, but in the end, the economic argument prevailed. This is how office towers were born, with standardized, economical, modular and identical spaces on each floor, apart from the furniture. The phenomenon of office towers also ended up being standardized and massively reproduced with office towers invading first the United States and later Europe.

The lack of comfort in the office, the stressful environment and the oppressive hierarchy pushes workers to look for alternatives to traditional office work. The arrival of the Web allows them to achieve this goal. This fast navigation system will generate huge gains for IT companies and will give birth to the new generation of offices with a fun and relaxed layout, flexible and autonomous work.

However, the very strong link between offices and the economy means that offices in recent decades have followed the waves of growth and decline inherent in the global economy. The numerous and strong economic crises of the 20th century have emptied offices often after a period of massive construction. These offices are abandoned and lose their attractiveness, when the economy picks up these offices are

no longer rented because they are no longer relevant and this leaves many empty offices. Cities then build new offices, following speculative trends, in order to respond to the desire for image and modernity sought by clients.

The workspace is also evolving and moving back and forth between the cubicles and the landscaped office. Experiences of autonomy, flexibility and fun are relegated to a few companies, often those of new rich companies that want to attract employees. The questioning and revolutionary ideas concerning the office have been gently democratized and new forms of work are beginning to take off, such as coworking and telecommuting. Their main strength is to question the work of the "classic" office and thus open the door to dialogues on the form and functioning of face-to-face work.

In the end, the offices as they are experienced around the world today in business centers are predominantly those resulting from the economic growth of the late 20th century. Their form and construction follows a speculative, non-functional and non-adaptive model. Their evolution is for the most part a direct consequence of the economy, which makes them vulnerable to crises.

Their evolution was also possible thanks to technological advances throughout the 19th and 20th centuries. However, today the majority of offices are not adapted to the new ways of working allowed by new technologies. Companies are still interested in the image to attract employees to their offices and the most used model is still the international style for the towers and the landscape office, sometimes even the cubicles, for the interior design. Even today, the preferred way to design an office space is an open space with arbitrarily distributed desks. While housing is rigorously studied and tested, offices are too often left without a defined identity and without proposals for adaptation.

CONCLUSION

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Illustrations

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Fig. 4. Frank Lloyd Wright, Larkin Building, Buffalo, New York (US), 1904-06

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Fig. 10. Frank Lloyd Wright, Johnson Wax Administration Building, Racine, Wisconsin (US), 1936-39

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Fig. 12. Board of designers (feat. Le Corbusier) mediated by Harrison & Abramovitz, UN Secretariat Building, New York (US), 1948-52

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Source : Gordon Bunshaft and SOM at Nueva York, Lever House | The Strength of Architecture | From 1998

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