

Título do capítulo	CHAPTER 6 MODERN BRAZILIAN ARCHITECTURE AND THE AUTOMOBILE:THE MARRIAGE OF THE CENTURY
Autores (as)	Fernando Luiz Lara
DOI	-
Título do livro	CITY AND MOVEMENT: MOBILITIES AND INTERACTIONS IN URBAN DEVELOPMENT
Organizadores (as)	Renato Balbim Cleandro Krause Clarisse Cunha Linke
Volume	-
Série	-
Cidade	Brasília
Editora	Instituto de Pesquisa Econômica Aplicada (Ipea) Instituto de Políticas de Transporte & Desenvolvimento (ITDP Brasil)
Ano	2016
Edição	-
ISBN	: 978-85-7811-282-0
DOI	-

© Instituto de Pesquisa Econômica Aplicada – ipea 2016

As publicações do Ipea estão disponíveis para *download* gratuito nos formatos PDF (todas) e EPUB (livros e periódicos). Acesse: <http://www.ipea.gov.br/portal/publicacoes>

As opiniões emitidas nesta publicação são de exclusiva e inteira responsabilidade dos autores, não exprimindo, necessariamente, o ponto de vista do Instituto de Pesquisa Econômica Aplicada ou do Ministério da Economia.

É permitida a reprodução deste texto e dos dados nele contidos, desde que citada a fonte. Reproduções para fins comerciais são proibidas.

MODERN BRAZILIAN ARCHITECTURE AND THE AUTOMOBILE: THE MARRIAGE OF THE CENTURY

Fernando Luiz Lara¹

The protests throughout Brazil in June 2013 made it very clear to us all that the current urban development model is no longer sustainable, in three of its key dimensions: economic, social and environmental (Lara, 2013; Holston 2013). From the economic standpoint, automobile production incentives are very close to the inflection point, if they have not already slipped past it unnoticed. This is because – despite being an important industrial and commercial sector – automobiles impose significant impacts on other sectors of society, and especially on healthcare through Brazil's Unified National Health System (SUS) and the National Social Security Institute (INSS), as well as on productivity, through time wasted in traffic jams. These impacts should prompt us to consider investing heavily in a more advanced public transportation system. From the environmental standpoint, there is no need to waste words to describe the effects on our planet caused by emissions resulting from the combustion of fossil fuels (Vanderbilt 2008; Maas 2009). And from a social standpoint, if we were to look ahead to a fair, productive and healthy society as our main development goal, automobiles would certainly have little to contribute to this project of the future.

So why are we so bound to these machines? How was the hegemony of the automobile built during the 20th Century, and what can we do to dismantle this process in the 21st Century?

To answer these questions, it is necessary to understand the place the automobile holds in contemporary imagination. It seems as though Jaime Lerner was quite right when he said that we are faced by a challenge that is very similar to the battle against smoking: both are habits deeply ingrained in the social awareness of the entire planet that must be discouraged due to the harm they cause to society. Shattering the glamorous link between drivers and their cars seems to be the challenge of our generation, just as the previous generation shattered the glamorous link between smokers and their cigarettes.

However, in order to do so, we must understand how this relationship of identification has grown up between human beings and their favorite means of transportation, powered by combustion engines.

1. University of Texas at Austin.

What is the relationship between the hegemony of modern architecture and the hegemony of the automobile in Brazil?

We are already well aware that Brazilian architecture is utterly modern, with all its contradictions (Cavalcanti and Correa do Lago, 2005; Lara, 2002). But, just in case, we can use a brief numerical sophism to explain the modernity of the built environment in Brazil. Offering a brief quantitative overview: Brazil had only two million urban homes in 1940, compared to 35 million today. That same year, Oscar Niemeyer designed the Grande Hotel de Ouro Preto and settled the argument that had been underway between proponents of the Academicist and Modernist schools of thought since the late 1920s – obviously in favor of the latter – which will be discussed in greater detail below.

Going back to the numbers, if we assume that everything built in Brazil after the 1940s was strongly influenced by the modernist movement, then 95% of our built space is modern. To a greater or lesser extent, for better or worse in terms of quality, it is still nevertheless eminently modern. It therefore becomes crucial to discover: exactly which modern spatial values are still impregnated in our constructed surroundings, and what are the problems that still persist? What distortions have occurred during the past fifty years? Furthermore, the qualitative impacts of this dissemination are far broader, which is where this rubber and metal machine, commonly known as the automobile, comes in the play,

When we look at the history of modern architecture, we realize that the roots nourishing the predominance of circulation over all other urban functions stretch back to the 19th Century. The key concept underpinning the construction of the modern world has always been tightly linked to the development of mobility. During the late 19th Century – even before the automobile was invented – the issue of mobility was already starting to reshape cities, with Paris being the best example, under the administration of Eugene Haussmann between 1853 and 1870 (Kirkland, 2013). As though responding directly to the Communist uprising of 1948, Haussmann linked public sanitation tenets urged by the newly-hatched positivist school of philosophy to the issue of mobility, opening up dozens of kilometers of spacious boulevards cutting through the narrow medieval streets that still formed the heart of the city (Barer, 2000, Malet, 1973). This was the launch of a new urban planning model based on broad avenues whose routes demolished the cramped hovels that were home to the poorest sectors of the population, clearing land for property development ventures that were to transform entire districts of major metropolises throughout the following century. Although not yet invented when Haussmann changed the face of Paris, the automobile would soon be included as the preferred machine in this equation.

Still in the streets of Paris, Gustave Trouve was experimenting with a vehicle powered by electricity back in 1881. Sixteen years went by between the end of the

Hausmann Administration and the invention of what was to be acknowledged as the first automobile: the Benz, in 1886. Paris was so eager for this new machine that Carl Benz sold more of his *motorwagens* in France than in his native Germany. During the last decade of the 19th Century, Daimler started up operations, as well as Peugeot, Diesel and Studebaker. But another decade would go by until Oldsmobile in Michigan started to work with an assembly line in 1902 that slashed assembly costs and times, using a process that was later to be “borrowed” and improved by Henry Ford, from 1908 onwards. During the first decade of the new century, 10,000 automobiles were built, while during the next ten years (1911-1920) a further six million automotive vehicles took to the road, 80% of them in the United States. Growth expanded exponentially until the Wall Street Crash in 1929, when annual production topped five million units (Ingrassia, 2010).

It is certainly not surprising that this mobile machine invasion influenced all forward-looking urban development proposals at that time. In 1914, the Italian architect Antonio Sant’Elia published his *Manifesto of Futurist Architecture*, suggesting a city dominated by huge residential blocks divided by broad highways. Between 1920 and 1923, Swiss-born French architect Charles-Édouard Jeanneret-Gris (better known as Le Corbusier) published a set of manifestoes and designs for the city of the future, where automobiles played a leading role (Conrads, 1970). One of his most famous houses is called Maison Citrohen (1922), paying tribute to Citroen cars and celebrating precisely this idea of the home as a “living machine” that is just as efficient and elegant as an automobile.

Cars had become indissolubly entwined in the history of architecture, with the hegemony of these new machines rooted in the infant science of urban planning, and was firmly established in 1933 through the Athens Charter. Drawn up by Europe’s leading modern architects at the Congrès International d’Architecture Moderne (CIAM), the Athens Charter urged the separation of housing, work and recreation, all connected together (obviously) by automobiles (Mumford, 2000). The ideas shaping modernization and the future were seated firmly on a four-wheeled combustion engine.

In the 19th Century Brazil showed little interest in infrastructure projects. During the rule of Emperor Pedro II, (1840-1889), a large amount of government funding went to subsidizing private enterprise and handing out concessions for projects designed to streamline outflows of agricultural produce (railroads in São Paulo and ports in Porto Alegre, Santos, Recife, Fortaleza and São Luís), while also equipping the army to defend Brazil’s territorial integrity and repress domestic unrest. The fastest-growing city in Imperial Brazil, Rio de Janeiro absorbed a few projects focused on water supplies and upgrading its docks, as this was the largest port in Brazil. Mobility – particularly for workers – was not a priority, as slavery ensured a workforce that was always nearby, sleeping in basements or slave quarters of larger estates.

The absence of investments in mobility during the 19th Century is highlighted by the massive movement and logistics difficulties faced by the Brazilian Army during the Paraguayan War (1864-1870) and the Canudos uprisings (1896-1897) in Brazil's newly fledged Republic. Coinciding with the repression of the Canudos rebellion in the late 19th Century, the inauguration of Belo Horizonte (the new capital of the state of Minas Gerais) was intended to replace the old mining capital of Ouro Preto (founded two centuries earlier), after bitter political battles between Republicans determined to wrest control of the capital of Brazil's most populous State from the "Monarchists" in Ouro Preto. At the technical level, the selection of the site of this new city was steered by its location: a neutral place between the coffee-growing South and the cattle-ranching North. The report drawn up by sanitation engineer Aarão Reis mentioned a temperate climate and abundant water as advantages of this site at the foot of the Serra do Curral hills.

The ground plan for Belo Horizonte consisted of an orthogonal network of streets overlaid on a diagonal grid of avenues, closely attuned to the Positivistic urban planning tastes of the late 19th Century. Streets twenty meters wide and avenues thirty-five meters across were the state of the art for a city heading into the 20th Century, with easy circulation, good ventilation and adequate natural lighting. As work began in 1895, Aarão Reis suggested that the streams that were such an attractive feature of that site be left to follow their natural courses through city blocks (Barreto, 1996). But political leaders were not at all charmed by the idea of allowing untamed nature to run freely through the regular modern blocks of the city, particularly as this would cut back on the areas of the lots to be sold or donated by the state government. Since the 19th Century, a good river is a buried river in Belo Horizonte: a short-sighted approach that is still being deployed, even in the 21st Century. Although there were very few automobiles in Belo Horizonte during the 1900s, road surfacing and channeling nevertheless won the day.

Even before the proclamation of Brazil's First Republic (1889-1930), public health engineers were already engaged in discussions over urban intervention models. On the one hand, André Rebouças had drawn up a plan for urban expansion and upgrades that preserved wellsprings and water-courses, with housing making some concessions to nature (Trindade, 2011). On the other hand, Francisco Pereira Passos proposed broad avenues cutting through the cramped streets of the colonial capital, in order to improve in circulation (Benchimol, 1990; Chalhoub, 1996). André Rebouças left Brazil with the royal family in 1889, and Pereira Passos waited twenty years to become mayor and implement his plan between 1904 and 1906.

Looking at the generous boulevards laid by Pereira Passos, it is clear that these interventions – preceded by a removals and demolitions program that caused the well-documented Vaccine Revolt – was intended to streamline connections between the emerging South Zone of the city, and the downtown area where all its

businesses were still tightly clustered (Chalhoub, 1996). An interesting footnote here is that the urban renewal projects implemented by mayor Pereira Passos used asphalt surfacing for the first time in Brazil, apparently foreseeing the imminent arrival of thousands of automobiles.

The next few years saw the arrival of famous US car manufacturers in Brazil: Ford opened a dealership in São Paulo in 1919, followed by General Motors in 1925. In 1920, Brazil's future President Washington Luiz (1926-1930) was elected governor of São Paulo state with the slogan: to govern is to build roads. In 1930, the first major urban plan for the city of São Paulo laid out a complex web of radial and axial avenues cutting through the city. Still today known as the Avenues Plan, the ideas of Prestes Maia would spur the expansion of São Paulo at a dizzying rate (Toledo and Kuhl, 1996).

At that time, the link between road infrastructure and territorial expansion was already established in Rio de Janeiro (with the Agache Plan – 1929) and São Paulo (with the Prestes Maia Plan – 1930) in better areas designed for higher-income families, with automobiles being a fundamental part of this equation (Stuckenbruck, 1996; Villaça 1998). The urbanization of the Southwest vector of São Paulo and the Southern zone in Rio de Janeiro follow this concept to the tee, as clearly demonstrated by Flavio Villaça (1998). Until the 1930s, trams drove the expansion within a radius of three to five kilometers from downtown areas, followed by the automobile, which powered outward urbanization processes from that decade onwards. As using private automobiles for transportation became a priority and municipal budgets were earmarked for funding road infrastructure to an increasing extent, Brazil's elite left the core areas where they lived at the turn of the century and moved out to new subdivisions some ten kilometers away, in an urban flight process whose economic impacts have not yet been properly analyzed. The diametrically opposite vectors (Northeast in São Paulo and Northwest in Rio de Janeiro) became home to hordes of low-income workers through a real estate development process that turned country estates into mass housing sub-divisions that also involved massive amounts of money, although with less intensive investment in road infrastructure at the private and public levels. The sequence of urban protests prompted by fare increases between 1923 and 1947 clearly reveals the inequalities inherent to this process (Pamplona, 1991).

While Rio de Janeiro and São Paulo were heading up automobile-driven territorial expansion processes, it was in placid Belo Horizonte that the combustion engine on four wheels was to find its place of honor in the nation's imagination. In October of 1940, physician Juscelino Kubitschek was appointed the city's mayor by Minas Gerais state governor Benedito Valadares. This young mayor soon realized that public sanitation projects and building highways and streets would be great ways of boosting his popularity and bringing in funds for subsequent

campaigns. His predecessor, Otacílio Negrão de Lima, had built a dam in the northern vector of the city that formed an artificial lake at Pampulha, drying up the downstream marshes where the municipal airport of the same name would be built. When Juscelino Kubitschek took office as mayor, he encountered a problem at City Hall: Negrão de Lima and Benedito Valadares had invited real estate tycoons to invest in the development of the area around this lake, but three years after inauguration, the lots were not selling as well as expected. No matter how attractive its landscape, nobody wanted to move twelve kilometers out of town to Pampulha. However, the new mayor had no doubts and opened up a broad avenue lined with Imperial palm-trees between Pampulha and the northern boundary of the city at that time, seeking a modern architect to design some public buildings and facilities that would make Pampulha more attractive to the local upper class.

During his attempts to save Pampulha from this imminent real estate disaster, Kubitschek was chatting one day with his colleague, the mayor of Ouro Preto, who spoke very highly of a young architect from Rio de Janeiro who had designed a new hotel for this historic town. Knowing that this architect would be visiting Ouro Preto a few weeks later, mayor Kubitschek invited him to a meeting in Belo Horizonte. Just 33 years old, young Oscar Niemeyer was already the *enfant-terrible* of Modernist architects in what was then the capital of Brazil, having worked on the design of the Ministry of Education and Public Health (1936) and the Brazilian Pavilion at the World's Fair in New York (1939). His design for the Grande Hotel de Ouro Preto was the first project in which his ultra-modern lines were recalibrated in order to blend seamlessly with the 18th Century urban fabric of Ouro Preto. From his directorship at the National Artistic and Historical Heritage Institute (Iphan), Lúcio Costa asked his pupil Oscar Niemeyer to use ceramic tiles on the roof, replacing vertical sunshades with wooden latticework, and opting for square rather than rounded columns, following traditional colonial designs (Lara, 2002; Cavalcanti 1995). Although accepting the first two suggestions, Niemeyer used square columns only on the facade, retaining his original round designs for the interiors. The Grande Hotel de Ouro Preto was the missing piece needed by the Modernist architects of Rio de Janeiro to win the battle with the supporters of more classic aesthetics who urged an architectural style more closely attuned to Brazil's past. By introducing a modern building in the heart of a town that played a leading role in colonial Brazil, Niemeyer and Costa establish the legitimacy of re-reading the past as a frame for the project of the future that they had already mastered. With their authority over the past severed (the Iphan was set up in 1937 by the Modernists), there was little the Academicists could do, other than watch the vibrant explosion of modernity that was Brazil during the 1940s and 1950s, extending all the way to April of 1960 and the inauguration of its futuristic capital, Brasília.

But before moving on to Brasília, we must talk a little more about the Grande Hotel de Ouro Preto and our key topic: the automobile. More attentive readers will have already realized where I am heading. Built during the 18th Century, Ouro Preto was certainly never designed to handle automobiles. All its main buildings were constructed right on the street, with their doors opening directly onto its sidewalks. The Grande Hotel designed by Niemeyer in 1940 ushered in a new design. For most visitors viewing it from the square with the Casa dos Contos fountain, its most eye-catching feature is still the broad ramp curving up from the street, designed specifically for automobiles. Continuing its course, the main hotel building is split, so cars can drive off the ramp underneath it, protecting its guests from the rain. Only then does another ramp appear, narrower, inviting visitors to walk up to the reception lobby and other public areas of the hotel. Even back in 1940, one of the key buildings for understanding modern Brazilian architecture clearly displays a protagonism of the automobile that was completely inexistent until then. Designed during the 1930s, the Ministry of Education and Culture (MEC) was photographed exhaustively with the latest Ford, Buick and Chevrolet models of the day. The same occurred with the Santos Dumont airport. But none of them invited automobiles to drive right into the building, like the Grande Hotel de Ouro Preto.

Let us return to the momentous meeting between Kubitschek and Niemeyer. Legend has it that the mayor spent an entire afternoon walking around the dam with the architect, asking him to sketch out some designs and come back to Belo Horizonte. Well aware of the get-up-and-go spirit of the mayor, this young architect worked through the night, and by dawn the next day, he already had several drawings to present. The almost-as-young mayor (38 years old in 1940, Kubitschek was five years older) approved his ideas right there and then, with work beginning a few months later at Pampulha, where Niemeyer planned a hotel, a casino, a chapel, a social club and a small events venue. Although the hotel never got off the drawing-board, the other four buildings flowed smoothly into the history of world architecture, displayed at the Museum of Modern Art (MoMA) even before their completion in 1942 and featured in all modern architecture compendia since then.

There is no need to remind Brazilian readers of the ripple effects of this lakeside meeting on the history of Brazil from 1940 onwards (Carranza and Lara, 2015), particularly as we will soon be exploring Brasília: the futuristic city conceptualized by this pair of inspired dreamers. A good example is the Casino building (today the Pampulha Art Museum). Perched on a small peninsula and surrounded by water on three sides, the casino building is connected to the rest of the city by an automobile upramp on the right, balanced by a downramp on the left, and framed by gardens designed by Roberto Burle Marx. At the top of the ramp, a generous canopy protects visitors from the weather, welcoming them into the building. Similar to the Grande Hotel de Ouro Preto, there is no specific

pedestrian entrance or any separation between car lanes and walkways. The casino was designed for guests arriving on four wheels, with no other options.

At the Pampulha Chapel, automobiles were relegated to a lower level of importance: although cars can be driven right up to the door of the church, this is not the usual route. Nowadays, only brides are allowed to alight right in front of the chapel porch, and it seems unlikely that this was different in the past. It is hard to imagine lengthy processions of cars filled with the faithful on their way to Sunday mass. But even here, cars were not forgotten.

Among the many works of art commissioned to embellish the city's buildings and turn them into icons – which they really are – the most eye-catching is the tiled panel on the rear wall of the Pampulha Chapel, designed by Cândido Portinari. While the faithful pray facing a painted mural, thousands of passers-by driving along the banks of the lake can appreciate this Portinari tilework masterpiece. The work of a Communist architect (some would like to remind us...) the best part of this design has its back to the priest, facing out to the entire city. There is nowhere to pause and examine this interesting feature, as the nearby square is many meters higher and largely unrelated to the panel. Instead, there is a thoroughfare. Even the angle between the panel and the road was designed to maximize the view for people driving by at speed. Although Brazilian architecture and urban planning had long been enchanted by the combustion engine on four wheels, it was at Pampulha in 1941 – 1942 that Oscar Niemeyer endowed this relationship with the appropriate form and glamour.

Between 1942 and 1955, Juscelino Kubitschek and Oscar Niemeyer formed a partnership that was to change the face of the nation, and a significant component of this new image was the automobile as a symbol of modern Brazil.

It was not by chance that Kubitschek placed so much importance on the automobile industry. A industry with massive impacts along the entire production chain and closely associated with the concept of the modern world, it fitted his developmentalist and privatist vision of the future like a glove. Although today we have a very narrow, lackluster idea of the Kubitschek administrations, it must be recalled that he was presented as a democratic alternative to the labor movement headed by Vargas, João Goulart, and Brizola. In contrast, his center of gravity lay with capital, rather than the workers. If his administration is today seen as progressive and transformative, it is because this emphasis on the image of modernity was extremely efficient, rather than considering any ways of sharing our wealth or providing real benefits for the workers (Fonseca, 2009).

And none of Kubitscheck's accomplishments fit more seamlessly into this drive towards modernity than its meta-synthesis: the construction of Brasília. Designed as a development vector for Brazil while also drawing the attention of society, there was no way that Brasília could fail to be the automobile city *par excellence*.

Looking back to 1956, when Kubitscheck took office as Brazil's president, the political context in Rio de Janeiro was one of turmoil. He was elected with only 36% of the votes, while his Vice-President João Goulart represented other political forces that were far from aligned with Kubitscheck's Social Democratic Party of Minas Gerais state. The construction of Brasília was thought to provide a catalyst for political maneuverings that allowed the newly-elected President not only to complete his term of office, but to do so with high approval ratings.

The idea of building a new capital city in the heartland of Brazil had been under discussion since Brazil declared its independence from colonial rule in 1822. During the late 19th Century, the Cruls² Commission was sent to the high inland plains of the Planalto Central specifically to survey possible areas for a new federal capital. The area demarcated by Luis Cruls in 1892 was then shown on all official maps of central Brazil, until Kubitscheck returned to this matter during his 1955 campaign. Once in office, he acted rapidly and started up the construction of this new city, with the contest to select its urban plan launched on September 30, 1956. By coincidence, President Kubitscheck signed Decree 39,412 just three months earlier, setting up the Automobile Industry Executive Group (Geia). Although the roots of Brasília and Brazil's automobile industry stretch faintly back into the 19th Century, both were effectively solidified by visionary President Juscelino Kubitscheck in 1956.

Until 1951, automobiles were shipped into Brazil from abroad, either complete or as parts for local assembly, with extremely low local content levels, accounting for 15% of foreign expenditures by the Brazilian Treasury. In 1952, President Getúlio Vargas banned the importation of parts when similar items were manufactured locally, helping Brazil's nascent auto-parts industry find its feet. In 1953, he banned the entry of complete vehicles, and during the next two years, Mercedes-Benz and Volkswagen set up assembly plants to compete with Ford, GM and Studebaker, which were already established in Brazil. With a market expanding at more than 10% a year, there was no dilemma between imports (impacting the foreign trade balance) and boosting local content.

2. Headed by engineer Luis Cruls, this expedition set out in 1892 to document and locate a site for the construction of a new capital in the heartland of Brazil.

This was the economic context President Kubitscheck found when he took office on January 31, 1956. An automobile enthusiast since his days as the mayor of Belo Horizonte, he worked quickly to attract foreign investments in auto-assembly, while also striving to step up local content levels in this sector. That same year, he inaugurated the Mercedes-Benz truck assembly line on September 28, and he saw Romi-Isettas roll out of the plant in Santa Bárbara do Oeste with 70% local content. Two months later, a party at the Copacabana Palace Hotel launched the DKW light truck made by Vemag, with 60% of its weight consisting of locally-manufactured parts. During the next few years, automobile and truck production with local content levels of over 70% dominated the Brazilian market.

At this point, it seems that a word of criticism is needed for Brazilian architecture and urban history studies: all their authors have discussed Brasília as a city dominated by the automobile without linking up the dots between the construction of this new capital city and the industrial policy adopted with equal enthusiasm by the Kubitscheck administration. If he commissioned four outstanding buildings at Pampulha (largely to help property developers sell plots of land in what was then a remote suburb), might Brasília have been designed similarly to some extent, boosting demands for automobiles and thus pumping up the market for Brazil's expanding auto-industry sector? We can't say that Brasília was created in order to boost demands for automobiles – it is much more complex than that, but there is also no doubt that the symbolism of modernity for this new capital city fitted seamlessly into the president's plans to incentivize growth for this industrial sector.

Looking at other entries in the Brasília design contest, it is clear that most of the prize-winners leaned on the automobile as heavily as the selected design submitted by Lúcio Costa. An honorable exception is the project presented by brothers Marcelo and Maurício Roberto (ranked in fourth place), which treated cars as purely recreational vehicles, with all inter-city travel by monorail, escalators, people-movers or buses (Braga, 1999).

There is little point in wondering to what extent the Lúcio Costa plan revered the automobile, as only one of the seven prize-winning designs did not do so. What is important is to understand Brasília and all 20th Century urban planning in Brazil as a massive paean to the automobile as a hegemonic machine in the construction of mobility. Other urban solutions, if any, were rapidly swept away by the power of the links constructed between architecture, modernity and the four-wheeled combustion engine, commonly known as the automobile.

At a time when the depletion of this model is quite clear, the question arises: How should we design cities today so that, in fifty years' time, we will have more efficient and less aggressive mobility structures, enhancing relationships between human beings and their surroundings? How can we shatter the relationship of

glamour and identification that we have with the automobile, instead developing healthier and more sustainable values such as walking and cycling, sitting on a bench in a square simply interacting with other people: simple actions that I believe are fundamental to society that are ruined each day by the overwhelming presence of four-wheeled combustion engines.

REFERENCES

BARER, S. **The doctors of revolution**: 19th-century thinkers who changed the world. New York: Thames & Hudson, 2000.

BARRETO, A. **Belo Horizonte**: memória histórica e descritiva. 2. ed. Belo Horizonte: Sistema Estadual de Planejamento, Fundação João Pinheiro, Centro de Estudos Históricos e Culturais, Prefeitura de Belo Horizonte, Secretaria Municipal de Cultura. 1996.

BENCHIMOL, J. **Pereira Passos**: um Haussmann Tropical: a renovação urbana da cidade do Rio de Janeiro no início do século XX. Biblioteca Carioca, 11^o. v. Rio de Janeiro: Secretaria Municipal de Cultura, Turismo e Esporte, 1990.

CARRANZA, L.; FERNANDO, L. **Modern architecture in Latin America**: art, technology and utopia. Austin: University of Texas Press. 2015.

CAVALCANTI, L. **As preocupações do belo**. Rio de Janeiro: Taurus Editora, 1995.

CAVALCANTI, L.; CORREA DO LAGO, A. **Ainda moderno?** Arquitetura brasileira contemporânea. Rio de Janeiro: Nova Fronteira, 2005.

CHALHOUB, S. **Cidade febril**: cortiços e epidemias na corte imperial. São Paulo: Companhia das Letras, 1996.

COMAS, C. Stud banker bang bang!: casa y estudio. Barragán en Tacubaya, México, 1947. **Arquitextos**, São Paulo, v. 01, n. 006. 08, Vitruvius, nov. 2000 <<http://goo.gl/YFv8B0>>.

CONRADS, U. **Programmes and manifestoes on 20th-century architecture**. London: Lund Humphries, 1970.

DORAY, B. **From Taylorism to Fordism**: a rational madness. 1. ed. London: Free Association, 1988.

GOMEZ MERA, L. Macroeconomic Concerns and Intrastate Bargains: Explaining Illiberal Policies in Brazil's Automobile Sector. **Latin American Politics and Society**, v. 49, n. 1, p. 113, 2007.

INGRASSIA, P. **Crash course**: the American automobile industry's road from glory to disaster. 1. ed. New York: Random House, 2010.

KIRKLAND, S. **Paris reborn**: Napoléon III, Baron Haussmann, and the quest to build a modern city. 1st ed. New York: St. Martin's Press, 2013.

LARA, F. One step back, two steps forward: the maneuvering of Brazilian avant-garde. **Journal of Architectural Education**, v. 55, n. 4, May 2002, p. 211-219, 2002.

_____. O passe livre e outros pontos cegos da esquerda brasileira. **Op-Ed piece at Brasil 247**, newspaper, June, v. 21, 2013. Available at: <<http://goo.gl/9r7dzX>>.

MAASS, P. **Crude World**: the violent twilight of oil. 1. ed. New York: Alfred A. Knopf, 2009.

MALET, H. **Le baron Haussmann et La Rénovation de Paris**. Paris: Les Éditions municipales, 1973.

MILTON, B.; KON, N.; WISNIK, G. **O concurso de Brasília**: sete projetos para uma capital. São Paulo: Cosac Naify: Imprensa Oficial do Estado de São Paulo: Museu da Casa Brasileira, 2010.

FJP – FUNDAÇÃO JOÃO PINHEIRO. (Eds.). **Saneamento básico em Belo Horizonte**: trajetória em 100 anos: os serviços de água e esgoto. Coleção Centenário. Belo Horizonte: Sistema Estadual de Planejamento – Fundação João Pinheiro, Centro de Estudos Históricos e Culturais, 1997.

MUMFORD, E. **The CIAM discourse on urbanism, 1928-1960**. Cambridge, Mass: MIT Press, 2000.

STUCKENBRUCK, D. **O Rio de Janeiro em questão**: o plano agache e o ideário reformista dos anos 20. Rio de Janeiro: Observatório de Políticas Urbanas e Gestão Municipal, 1996.

TOLEDO, B.; KÜHL, B. **Prestes Maia e as origens do urbanismo moderno em São Paulo**. São Paulo: Empresa das Artes Projetos e Edições Artísticas, 1996.

TRINDADE, A. **André Rebouças**: um engenheiro do império. Pensamento político-social 4. São Paulo: Editora Hucitec: FAPESP, 2011.

VANDERBILT, T. **Traffic**: why we drive the way we do (and what it says about us). 1. ed. New York: Alfred A. Knopf, 2008.

VILLAÇA, F. **Espaço intra-urbano no Brasil**. São Paulo: Studio Nobel, 1998.