

MOBILITY AND COLLATERAL EFFECTS ON CITY HERITAGE IN AGUASCALIENTES, MEXICO

ALEJANDRO ACOSTA COLLAZO

Habitat Design Department, Autonomous University of Aguascalientes, Mexico

ABSTRACT

Beginning in the third millennium, Mexican cities increased in urban mobility, but it wasn't until the decade following 2010 that the city of Aguascalientes began rapid growth mobility, dramatically changing its historic centre. Changes in this cultural site have taken place not only in the buildings, but also in daily lifestyles. There is a lack of reliable mobility choices now, yet Aguascalientes is a city far away from designing and building a subway. There is still the chance to promote sustainable urban growth by encouraging the use of less polluting mobility systems, like electric cars and bicycles. Also, Aguascalientes has a lack of parks and bikeways. Moreover, city planning has overlooked having proper zoning in the historic centre; as a result, there are factories, commercial places and museums all mixed up together in the historic quarters. It's convenient to set a suitable relationship between cultural heritage and increasing mobility. The idea behind studying mobility is to find out how people go to a certain place and to discover new ways to make the process more efficient. Mobility is somehow changing the historic centre. There is a strong link between mobility and the loss of heritage buildings. There's also a mobility conflict between cultural and commercial activities in the historic centre. The fact is that we are losing cultural advantages by allowing a lot of commercial business to get established in the historic centre. The main consequences of this situation are the building of parking lots and the decay of the population. It is through the identification of parking areas, documentation of flow frequency, the use of historic drawings and historical population data that the loss of this type of architecture could be determined.

Keywords: Aguascalientes, city planning, historic centre, mobility, preservation, transportation, urban growth.

1 INTRODUCTION

Nowadays in Mexico, a city planning problem is that vehicles are considered more important than pedestrians. Analysing the new suburbs, the more comfortable it is to transit inside them in vehicles, the better it is (although some of them now include bikeways). Following the idea about car mobility: they enter the historic centre and easily find a way to park, because private interests provide parking lots, no matter if they had to tear down some historic buildings. So, the problem of having too many private cars parking in the historic centre is basically due to land area. On the other hand, public transport stops and leaves at certain points in the city, so people can get on or off, but in general, public transport only passes through the historic centre. Parking lot size is a variable also evaluated in this paper.

The Nissan company arrived in Aguascalientes and built a factory in 1985. Mobility in Aguascalientes increased and the new industrial parks became a concern for city administrators, but it wasn't until the 2010 decade that the factory supported the use of electric cabs. After a few years, some of this type of car are being removed from the traffic network. Electric taxis were an example to some other cities in Mexico, because there was a health concern about air pollution in Aguascalientes, and also there were public solutions and discoveries in the search for having a sustainable city. What's the best form of transportation in this city? Electric cabs would be the quick answer, but they are still very expensive. Electric cars cause little noise, no pollution, and are a good solution for the discomfort of actual mobility problems in the suburbs and in heritage areas of the city.



2 MOBILITY IN “A LIMITED PART OF THE CITY”

For this research, it was better to study certain phenomena in the city by establishing a specific urban area. Aldo Rossi once recommended studying a city in “limited parts”: This criterion used in the writing of this paper. Basically, use of a historic drawing of Aguascalientes as a base determined the existing buildings at a moment in time (Fig. 1).

As the drawing made in 1885 by the geographer Isidoro Epstein was the most accurate historic plan of the city (also the oldest one), it was used to determine “a limited part of the City” of Aguascalientes now (Fig. 1). As a result, the “limited area” includes the most

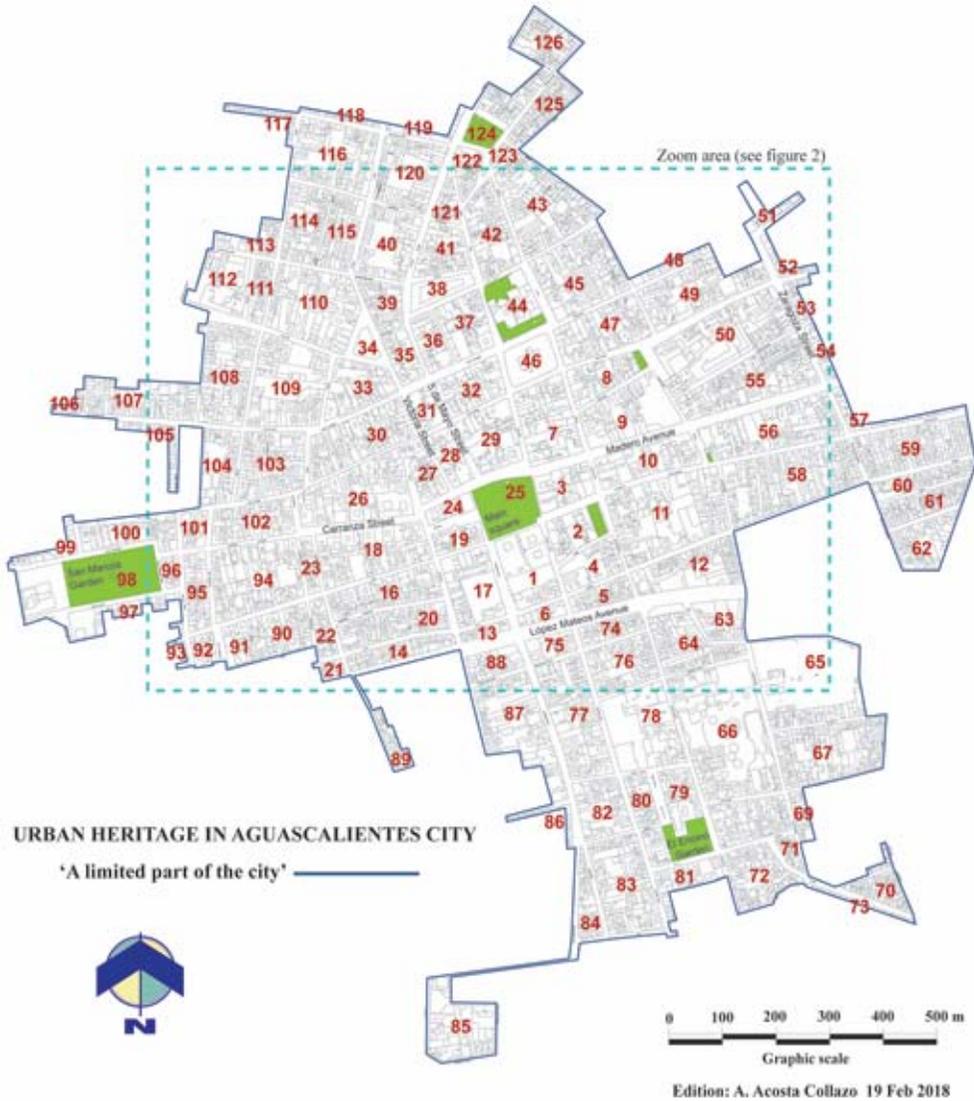


Figure 1: The “limited part” of Aguascalientes City (based on 1885 Isidoro Epstein drawing of limits). (Source: Alejandro Acosta and Jéssica Rodríguez, February 2018.)

important buildings in the city, considered as heritage architecture. The identification of traffic flow also became an important factor in locating the parking lots inside the “limited area” defined in this paper. The lack of traffic regulations in the city allows almost all types of vehicles entering the selected urban heritage area. The main reason for this activity is that the “limited area” is located in the oldest urban centre in town. It includes some government and office buildings, primary schools, factories, houses and commercial shops.

The city was designed for slow mobility, five centuries ago. The old horse-drawn carriages used to ride people into the old village, and even among villages in Mexico, so wide streets weren't necessary for this type of transportation. Nowadays, there's a mobility concept where it tends to save time to arrive from certain places in the city to others.

The faster people get to a place the better it is: it doesn't matter if the historic centre is passed through. In this sense, the original design of the historic development has changed in meaning, and the narrow streets don't fit correctly with a contemporary city. This situation brings urban trouble when people drive fast cars through the “limited area” analysed in this

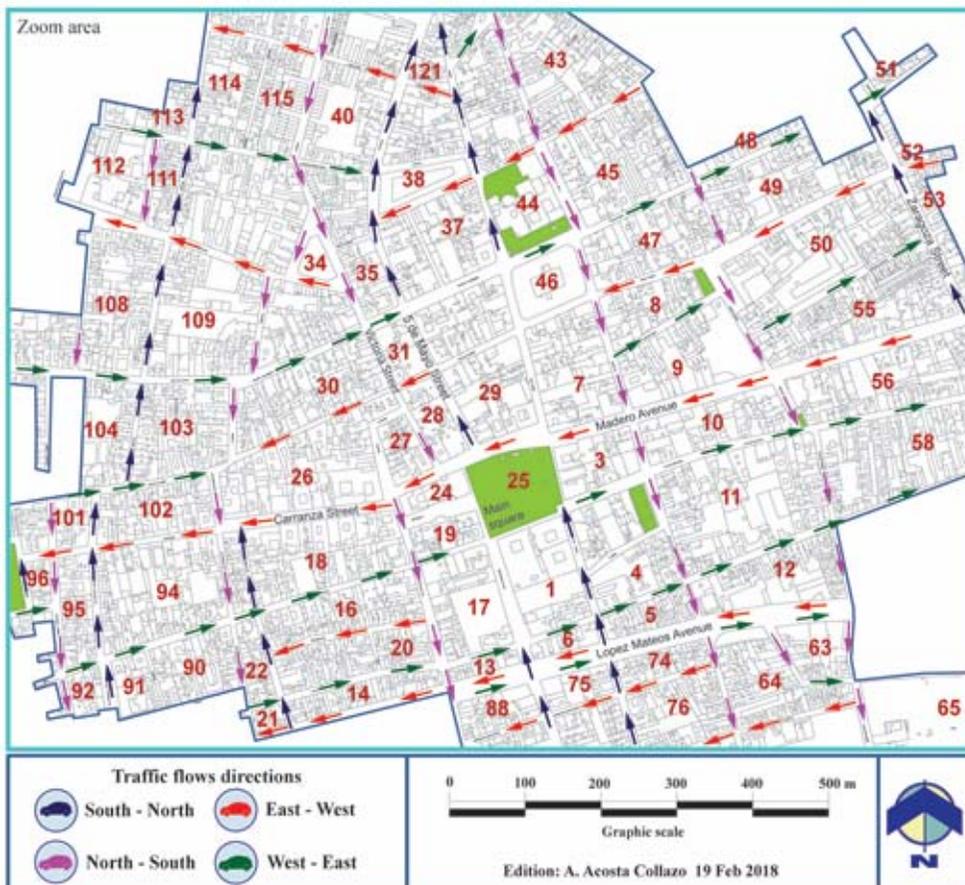


Figure 2: Most traffic flow within the “limited part” of Aguascalientes City is in one direction, but López Mateos Avenue is a 2-way street. (Source: Alejandro Acosta and Jéssica Rodríguez, 2018.)

paper. In fact, if we zoom inside this city area, we observe there is only one 2-way street: López Mateos Avenue (Fig. 2). On this avenue, a driver can go 50 mph, which is high, and there's no problem with speed regulations. Yet this isn't an average speed for going through a historic site, in Mexico.

López Mateos Avenue was built during the 1950s decade, upon an old river. Those years were prosperous for Mexico and its main cities renewed communication paths according to the mobility process brought from the use of self-propelled wheeled vehicles. Therefore, López Mateos Avenue separated the urban heritage area of the city into two sides. On the northern side, there are now: the main square (including a chessboard design in the main blocks around it) and the most important historic buildings in town. And on the southern side, there is the old neighbourhood named *El Encino*, which includes two factories and housing areas. This avenue became the easiest way to cross the historic centre by car. The problem now is the speed of traffic flow limits social interaction. Also, changes in the streetscape give preference to cars over pedestrians.

The entrance of vehicles to different parts of the historic centre come from all directions. From east to west, there are 16 streets; from west to east, there are 20 streets; from north to south, there are 17 streets; and from south to north there are 13 streets (Fig. 2). The most efficient street for vehicles is López Mateos Avenue. The most frequent way to enter the historic centre is from west to east. In the opposite direction (east to west) the communication problem is the railroad crossing the city in a north-south direction.

In recent years, Aguascalientes administrators have paid special attention to remodelling public spaces: streets, parks, squares and historic buildings façades. But with respect to preserving heritage buildings, government budgets represent a limitation, because they usually assign funds for remodelling public spaces, but this doesn't often occur for remodelling the inside of these private historic buildings. And it so happens that in several countries, most of the historic buildings are private. So, even if society is interested in the preservation of this type of architecture, government budgets are usually destined for remodelling public spaces (in some cases, this means only the façades of buildings).

City planning has failed somehow in Aguascalientes in the last three decades, because it hasn't linked correctly to reality and the purpose of planning. A possible solution is the inclusion of management as part of city planning. Urban planning and management could improve the development of society, too. The opposite pole to the historic centre is contemporary urban sprawl in the city. But still, vehicles try to cross the historic centre in order to get to the other side of the city. So crossing the city has become a common situation in people's minds, instead of driving the existing ring roads. Several ideas have emerged to solve this situation lately. Some say bridges or tunnels are the right answers. But new bridges don't fit well with the original design of historic city blocks, neither do tunnel systems with historic buildings. Although it's been proved that vehicle vibrations produce structural damage to historic buildings, some city administrators in Mexico still promote the use of them (For example, the tunnel network under Guanajuato City, or the subway system under the historic centre of Mexico City).

Traffic in the historic centre is usually heavy. There's been a singular interest in building parking lots—and tearing down some buildings (including historic buildings) for the last few years. As part of the methodology used in the writing of this paper, I decided to record the surface areas of all the parking lots inside the “limited part” of the city (Fig. 1) in 2018. This area includes 126 street blocks. The accounting also includes fragments of street blocks within the spatial boundary limits. The total surface of parking lots in 2018: 139,441.90 m². In the year 2000, during another research experience, I had counted 97,243.37 m² [3]. This means parking lots have expanded 43.39% in 18 years. The perception of this growth is not

Table 1: Total square meters of parking lots in the “limited part” of the city. (Source: Author data, 2018.)

City block	Parking lot 1 (m ²)	Parking lot 2 (m ²)	Parking lot 3 (m ²)	Parking lot 4 (m ²)	Parking lots 5-9 (m ²)	Total (m ²)	City block	Parking lot 1 (m ²)	Parking lot 2 (m ²)	Parking lot 3 (m ²)	Parking lot 4 (m ²)	Parking lots 5-9 (m ²)	Total (m ²)
1	3,034.63	6,942.92				9,977.55	65	1,608.63					1,608.63
2	646.36	192.14	722.85	162.35		1,723.70	66	3,649.83	493.87				4,143.70
3	145.38	333.91	219.82			699.11	67	728.46					728.46
4	430.78	479.77	449.38			1,359.93	68	492.92					492.92
5-7						0.00	69-73						0.00
8	276.71	263.26				539.97	74	213.71					213.71
9	374.02	851.71	556.52	517.53	4,564.45	6,864.23	75	778.56					778.56
10	437.98	1,271.71				1,709.69	76	1,464.56					1,464.56
11	1,897.33	2,198.45	637.12	5,312.41	2,096.13	12,141.44	77	561.12	656.42				1,217.54
12	262.15	2,425.34				2,687.49	78-79						0.00
13-14						0.00	80	610.58					610.58
15	519.79					519.79	81						0.00
16	402.93					402.93	82	1,521.46					1,521.46
17	1,569.34	231.77	843.93			2,645.04	83-85						0.00
18	548.93					548.93	86	289.84	86.41				376.25
19-25						0.00	87	3,051.53	504.98	416.88	1,202.14	4,434.63	9,610.16
26	132.26	538.69				670.95	88-89						0.00
27						0.00	90	102.84					102.84
28	252.75					252.75	91	187.89					187.89
29						0.00	92-93						0.00
30	828.31	630.74				1,459.05	94	1,615.38	435.08	1,508.08	499.00	274.58	4,332.12
31	1,240.77					1,240.77	95	209.00					209.00
32	505.38	988.53				1,493.91	96						0.00
33	732.02	954.66				1,686.68	97	210.00					210.00
34-35						0.00	98						0.00
36	765.79	275.82				1,041.61	99	74.64					74.64
37	1,317.81					1,317.81	100						0.00
38						0.00	101	423.27	345.30				768.57
39	477.85					477.85	102						0.00
40	169.10	205.41	383.79			758.30	103	231.32					231.32
41	1,367.55					1,367.55	104	435.85					435.85
42	238.99	656.72	634.92			1,530.63	105-106						0.00
43	488.60	969.43	723.61	951.59	1,123.68	4,256.91	107	524.38					524.38
44						0.00	108	123.93	250.87				374.80
45	1,885.51	485.56				2,371.07	109	2,031.80	2,236.69	3,718.84	403.52	472.15	8,863.00
46	6,637.89					6,637.89	110	790.00	223.42	937.80	1,044.33	959.32	3,954.87
47	433.36					433.36	111	426.56					426.56
48	444.28	768.35				1,212.63	112	1,304.56	383.94				1,688.50
49	236.04					236.04	113						0.00
50	771.56					771.56	114	1,199.77	562.05				1,761.82
51						0.00	115						0.00
52	315.11	186.96				502.07	116	345.35					345.35
53	580.14					580.14	117-118						0.00
54						0.00	119	91.76	495.22	429.24	50.26	75.84	1,142.32
55	228.31	801.89				1,030.20	120	1,414.07	822.89	566.11	1,210.71		4,013.78
56	602.40	359.42	102.56	1,008.53		2,072.91	121-122						0.00
57	575.47	307.53				883.00	123	263.35					263.35
58	1,145.71	577.61	798.58	605.60	1,077.20	4,204.70	124						0.00
59-61						0.00	125	222.07					222.07
62	768.78	266.20				1,034.98	126	1,101.29	259.11				1,360.40
63	147.44	290.15	737.51			1,175.10	TOTAL =						139,441.90
64	1,053.09					1,053.09							
65	1,608.63					1,608.63							

very visible, but the perception changes if the loss of architecture is compared in serial values, through time. If we think about data sequences taken in 1885, 2000 and 2018, we can observe a dynamic urban change in that “limited part” of the city analysed in this paper.

The old city block boundaries and streets weren’t originally designed for the use of automotive vehicles in Aguascalientes; now such designs became obsolete. This obsolescence idea changes the sense of urban heritage, as somehow people forget things age.

This means renovation isn't the most important thing, when speaking about significant architecture. Furthermore, one problem we face is the type of subjects we teach in architecture school, because we try to teach design skills for how to renovate architecture, without observing that we have to preserve important places and buildings in town, first. In Mexico, the culture of obsolescence has affected historic buildings since the beginning of the 20th century.

Newer parking lots are being built in the "limited part" of the city and some of them still involve the tearing down of heritage architecture (and also contemporary architecture). Besides, the new open space areas relocate inhabitants of the historic centre, so population density is reduced. As a result, in many cases only the façades of the historic buildings are left standing, to keep a historic streetscape. These cases remind one of Hollywood's Western movies (from the early 20th century to the 1960s).

In Table 1 we can observe the parking lots (areas in square metres) inside the "limited part of the city". Most of the 126 city blocks have parking lots. But the blocks 5–7, 13–14, 19–25, 27, 29, 34–35, 38, 44, 51, 54, 59–61, 69–73, 78–79, 81, 83–85, 88–89, 92–93, 96, 98, 100, 102, 105–106, 113, 115, 117–118, 121–122 and 124 don't include parking lots. The reason might be the block size or the concentration of historic properties.

The city blocks that contain from five to nine parking lots are: 9, 11, 43, 58, 87, 94, 109, 110 and 119. These cases mean there could be a problem in terms of heritage loss. Parking lots within blocks 109, 110, 43 are near to commercial stores in Victoria Street. This street contains many stores and nowadays it is hard to find historic buildings left standing. The former residents were forced out by profitable conditions in the area during the last three decades. Also, city planning should include more commercial centralities, but outside the historic centre. New centralities were built in the city in the second half of the 20th century, but the oldest centrality is still the historic centre; nevertheless, people use it as a commercial core. Also, commercial stores choose this place to achieve the greatest utility.

Some primary schools prefer to locate in the historic centre, too. Zaragoza Street, Madero Avenue, Carranza Street, 5 de Mayo Street and certainly López Mateos Avenue (Fig. 2) carry intense traffic, especially during rush hours (at 8–9 a.m., and 14–15 and 18–19 hrs p.m.), because of schools and commercial places. So the historic centre has lost its original sense of being a residential area, especially during the second half of the 20th century. Housing no longer predominates and the question is: What will happen with the city's urban heritage in the near future?

The city blocks that have more land area taken by parking lots are: 1, 9, 11, 87 and 109. Most of them are near López Mateos Avenue and Madero Avenue. Also, the city blocks without parking lots are basically away from the principal historic buildings in the city centre. The iconic places in the city of Aguascalientes, like San Marcos Garden (Park), el Encino Garden (Park) and the Main Square still don't have parking lots. It's important to mention that city blocks: 1, 38 and 46 have parking spaces under their main buildings, particularly city blocks 38 and 46, with two and three-story car park buildings, respectively.

Every once in a while, city administrators close Carranza Street and allow only pedestrians to move across – which is good, but then traffic congestion increases. A good practice in historic preservation sites is giving room to pedestrians, which makes the street safer. Also, it increases tourism in the historic centre. Carranza Street has a high concentration of historic buildings in town, but as population density has changed during the second half of the 20th century, a lot of the buildings are now used for restaurants, coffee shops, hotels, exhibit galleries or museums: very few properties are still used for residential buildings. Since most of the buildings in Carranza Street are protected by national historic designation, their structures cannot be modified.

3 TOWARDS A SUSTAINABLE CITY

Transportation in the city is basically linked to the oil economy. But we did have a funding case in the city a few years ago, by the Nissan company and the government. They decided to support taxicabs in Aguascalientes, with 50 brand new electric cars in 2012, as part of a green transportation plan. Also, in Mexico City on February 15th 2018, the city government decided to promote the use of 101 hybrid taxis, promising they would support the exchange of 40 (or 50) gasoline taxis to hybrid ones every month, from now on. This is part of the idea in having a circular economic process. This means the cars produce part of their energy when they function, generating lower climate change emissions. About a circular economy, Zhijun [1] says: “infrastructure development is indispensable”. This includes the building of water-recycling systems, clean energy systems, and clean mass transit systems. This last purpose is the most difficult to achieve in Aguascalientes, because it requires a larger government budget. The car building companies, which are interested in improving the local transit system, are in the city but limited to a few of them, like Nissan. Recently the Toyota Motor Company released new hybrid cars to be sold in Mexico, too.

A sustainable future for the human race will demand system-based thinking that involves, in equal measure, society, environment and economics [2]. So, the use of hybrid vehicles is a good idea to preserve the historic centre, following a circular economic model. Also, if it is possible to reduce the mobility of cars in the “limited part” of the city, the pedestrians will have cleaner historic spaces to enjoy.

The reduction of traffic congestion in Aguascalientes might also increase liveability. It means we should give more room to pedestrians in the city. The trip times of cars and urban transport can be analysed in the “limited part” of the city mentioned in this paper, in order to support city planning. Air pollution has become a never-ending problem in some Mexican cities. For example, in Mexico City, private vehicles aren’t allowed to circulate in the city once a week, and if air pollution is high, then the programme control changes to twice a week. This situation depends on harmful air pollutants levels (basically ozone) at ground levels.

Another variable measured in this research was the traffic flow. This helped us to determine critical situations in the “limited part” of the city, by the use of statistical methods. This also helped us find out about cultural contexts and to determine the reasons visitors were at certain points of the urban heritage places. There must be strong links between places and the way to get to those places. This situation can become a problem in city planning, if historic preservation is not cared about.

City planning should include topics of zoning to improve the functions of the city and its morphology. Thus, decisions should be taken about moving out primary schools from the “limited part” of the city or letting them stay there. The fact is that the number of cars going to schools, and then returning, is too high for the historic site. Also, it’s convenient to solve a housing problem, because nowadays some families don’t want to live in the historic centre, as a result of its mobility problems. The original city of Aguascalientes was founded and designed in the 16th century to shelter people (never thinking about the establishment of commercial stores as we have now); several historic houses are now being converted into non-residential buildings like restaurants, museums, commercial stores, etc.

4 CONCLUSIONS

In this research, we obtained the best results by establishing “a limited part of the city” to study urban mobility phenomena. The context of space unified special characteristics of buildings with time. Such a context was easier to explain with a historic drawing, historic data, and the urban reality nowadays, supported by mobility aspects. There is still a lot to discuss on what a historic centre is; also, how it should be related and integrated into the city.



In this paper, I used a drawing made by Isidoro Epstein in 1855 to set “a limited part of the city”. The main idea was to select a place with common characteristics to be evaluated, as recently it is facing problems with mobility.

Also, after reviewing topics about urban growth and smart cities, and trying to relate the concept to specific urban cases, I realized urban growth basically leans now, in Mexico, on economics. Nevertheless, it’s convenient to decrease the interaction between the mobility of cars and commercial shops in the historic centre of Aguascalientes, to achieve a circular economy model in the near future. There is still more to do in terms of mobility technology. This means new urban centralization should emerge away from the historic centre, in the search for new relationships with city structures, in order to stop the loss of heritage architecture. Innovating solutions to use the current resources in a smarter way. A difficult goal to achieve will be to learn how to motivate the present generation of young people to use the historic places in town. Schools don’t promote much the benefits of learning substantial facts concerning the preservation of urban heritage.

It’s convenient to encourage the people who visit the historic centre to use public transportation more often. In city planning, an accurate traffic flow study is necessary to record the interactions between the visitors of the historic centre and iconic places. Also, installing smart traffic lights could reduce traffic jams. As a result, city planners need to apply higher standards in the design of clean transportation in Aguascalientes and its historic centre. This would improve citizens’ quality of life and public health (a condition of the circular economy practice). One solution is improving soft mobility (bicycles) in the designs remodelling some historic parks, for example: El Encino. A good solution would be to include a bikeway in the urban design (Fig. 3), with smart bike racks. Furthermore, a video system network would improve civic protection in the park, for example. In this park, there’s enough open space to include a bikeway long enough for people who want to exercise and enjoy the green areas, as there’s a lack of green areas in the “limited part of the city”. But if city planning designers start including bikeways in the main parks, like nodes, a network could be generated to promote the use of bicycles, reducing the use of cars in the “limited part of the city”. In El Encino Park, there is enough space to include a 2-way cycle track (Fig. 3). Cities like London are including bicycles as a transport solution. These types of projects are now being developed in important cities around the world such as Vienna and Mexico City, in order to reduce pollution and to activate historic places.

An important characteristic of the circular economy is social development. Commercial shops, restaurants and offices that have settled in the “limited part of the city” constantly offer jobs to people. Also, in recent years, tourism is producing significant income for City Hall and for businesses installed in the historic site. In the El Encino neighbourhood, there’s a big factory that benefits its workers, basically, as most of them live close to the factory.

Social progress is part of the economic growth in a circular economy model. It’s recommended to also include strategic planning. The use of strategic planning might be a good solution to solve the mobility problem in the “limited part of the city”. Rahman says it is not only necessary that planning should respect the prevailing social, environmental, economical and political situation, but the same conditions must need to be congenial and compatible enough to nurture and promote planning as a discipline aimed at lasting social welfare [4]. In this sense, sustainability becomes reasonable and inclusive. In Aguascalientes, city planning can include interviews with inhabitants and users of the El Encino neighbourhood, to improve urban renovation plans’ design; this can also help improve social welfare.



Figure 3: Design including a bikeway in El Encino Park. El Encino is a *sui generis* Park in Aguascalientes City and public interest in it is based on cultural aspects of the city and of Mexico. (Source: Alejandro Acosta and Jéssica Rodríguez, February 2018.)

Avoiding streets façadism must be in the agenda of city planning programmes for the historic centre of Aguascalientes, because parking lots are increasing their land area inside these city blocks.

If we allow demolition of historic buildings, only the façades will be shown to historic centre visitors. George Kubler once mentioned the importance of the shape of time, and it's still a thinking process that city planning can include in its urban renovation programmes. What's the reason to keep a historic streetscape, if inside the city blocks there's no more historic architecture? Hani Hamzah says the concept of time is an important and vital issue in architecture and urban planning. Time means simply the perception of change in one place [5]. And usually, we care much more for what we build in the present than what was built in the past, it's because few buildings are considered important (culturally speaking) for society.

In fact, in the recent architecture educational programmes in Mexico, there's a tendency to reduce teaching the history of architecture. But we must not erase the past in the shaping of cultures. Also, history is the basis of theories about learning from others, to improve professions like architecture and urbanism. We must learn from the past, otherwise we are condemned to repeat the same mistakes. Societies' legacies should be based on people too, not only on buildings and urbanism. Currently, there's a lack of integration of societies with their historic centres, and also there's a lot of research still to do.

The review of sociological theories might also be helpful in urban planning. Moreover, the application of qualitative methods in practicing urban research could improve and create a better relationship and understanding between urbanism and the users of the city, including the contemporary mobility situation. We believe abandoned properties (by homeowners) in the "limited part of the city" must be related to the new, recently-built infrastructure, especially parking lots. Some old citizens still live in the "limited part of the city" but in most cases, their children got married and moved away from their parents. A lot of houses in the "limited part of the city" are big, but with few people living in them now. This is also a historic preservation problem. Moreover, the elderly homeowners' resources are too limited to maintain their houses, with so many rooms. Old people only occupy the first floor of some multi-story houses. Stairs become a problem, as people get older.

The old city quarter named El Encino (Fig. 3) is an attractive place (culturally speaking) in Aguascalientes, because it's basically picturesque. El Encino looks old-fashioned and keeps a special interest for city administrators and people in general. Some might say its main attraction is the Posada Museum, but the fact is that there's a historical background in the place that is considered very relevant to the city. There's a big difference between the El Encino neighbourhood and the buildings surrounding the Main Square and San Marcos Garden: There are a few aims of land speculation, as well. So the image of El Encino is *sui generis* in Aguascalientes. The place keeps a historical aspect due to the vicereignty in the New Spain period. The baroque church and the neoclassical houses show interesting aspects of the city. Also, there's a special interest by certain restaurants to get installed in the area. The façades facing the park are well structured, with a proper historical urban image. So the urban growth in the city of Aguascalientes hasn't transformed the place too much and the problem of parking lots isn't as usual in El Encino, as it is in the Main Square, for example.

The organization of urban land houses is somehow coherent in the El Encino neighbourhood (Fig. 3). The main problem at the site was the installation of a factory in the northern side of El Encino, which dramatically changed the architecture since 1957 (see discussion in Acosta Collazo [6]); but surprisingly, the factory didn't promote changes in El Encino Park. Few aspects of daily life have changed, since then. For example, during lunch time, some factory workers go to the garden to eat and try to relax in the shadow of trees, but these situations don't alter the park at all, and the El Encino image is still powerful (culturally speaking). Even though living conditions are desperate for the next-door neighbours of the factory because of noise pollution, the case for houses surrounding El Encino Park is somehow noiseless, especially on the western side.

The El Encino neighbourhood grew upon an original foundation of the city (named Triana), and certainly the neighbourhood and the city have grown continuously somehow, since then. In the year 1791, Felix Calleja counted the people living in the small village of Aguascalientes and found there were almost 10,000 inhabitants. In the year of 1837, the Governor of Aguascalientes ordered a census of Aguascalientes and detected 19,600 inhabitants, but in the year 2001 I counted (in the "limited part of the city") 5,553 inhabitants. It's convenient to say the land area in the "limited part of the city" (Fig. 1) contains the old small village of Aguascalientes, so it's correct to say that there's a decay in the population of

72%. No wonder we find a lot of abandoned houses in such a land area. But the most important fact for this paper isn't only to analyse the quantity of abandoned buildings, but the amount of parking lots built in the last decades, so now in conclusion I can say that urban mobility is related to the loss of historic heritage within the selected land area used for the writing of this paper. It's an everyday situation to observe car drivers trying to find spots to park on the streets, but also the city regulations more often limit parking on the streets. The intention of the business shops is to promote the use of parking lots. Instead, we can observe the way they solve this situation in important historic cities in Europe, for example. They promote new driving habits and increase pedestrian spaces in historic sites, and also promote the use of bikeways.

The way we move now through historic sites in Mexico usually changes the streets. Also, urban mobility sometimes changes buildings and their façades. The advantage of El Encino Park is its location at the core of the neighbourhood: the processes of transformation are inside the buildings and in the surrounding perimeter, but not in the park. The purpose of the proposed bikeway in the park design in Fig. 3 is to improve the quality of life of visitors and inhabitants, also to improve spatial dynamism in the El Encino neighbourhood, without transforming historic buildings and the streets. It also intends improvement of ethical urban growth, following sustainability principles: social, economic and the environment.

Even though the phenomenon of mobility in urban heritage sites is fragmented and has multi-causal problems, I can assure you that the parking lots named in this paper are severely altering the rest of the historic buildings inside the "limited part of the city" area, becoming collateral effects, in terms of urban sciences. We can learn from the past by using historic drawings, for example the drawing made in 1855 by Isidoro Epstein, to understand urban problems these days. Also a good conclusion is that improvement can be achieved in city planning by studying historic topics related to mobility conflicts. As a researcher, I don't want Aguascalientes to have a bad reputation for its historic preservation of older properties. The loss of historic architecture in the City of Aguascalientes is huge, compared to some other cities in Mexico, like Guanajuato, Zacatecas, and San Miguel de Allende. Such cities are on the list of the United Nations Educational, Scientific and Cultural Organization (UNESCO) 'World Cultural Sites.' I don't know precisely the reason Aguascalientes has lost more heritage buildings than some other Mexican cities, lately. The decay of population by 72% during 164 years in the "limited part of the city" is clear. Yet the parking lots have expanded 43.39% in 18 years, according to the results of this research. These situations make me think it relates to the way we are trying to set preservation heritage rules for the city.

ACKNOWLEDGEMENTS

I thank my research assistant Jéssica Alejandra Rodríguez Torres. I also thank the students: Saananda Luzayn Delgado Rodríguez, Karla Yarithza Maldonado Macías, Ana Cristina Bernal de la Paz and Wendy Abril Lemus Briano. Appreciation is extended to my friend and researcher, Marco Alejandro Sifuentes Solís.

REFERENCES

- [1] Zhijun, F. & Nailing, Y., Putting a circular economy into practice in China. *Sustainability Science*, **2**, pp. 95–101, 2007.
- [2] Murray, A., Skene, K. & Haynes, K., The circular economy: An interdisciplinary exploration of the concept and application in a global context. *Journal of Business Ethics*, **140**(3), p. 377, 2017.
- [3] Acosta Collazo, A., *The Historic Centre of Aguascalientes*, UAA: Aguascalientes, p. 294, 2007.



- [4] Rahman, A.U., Urban sustainability through strategic planning: A case of metropolitan planning in Khulna City, Bangladesh. *Journal of Urban Management*, **5**, p. 22, 2016.
- [5] Hani Hamzah, H., Syed Zubir, S.S., Yahya, Z. & Kholid, F., Space simulacrum: A paradox of conceptual novelty. *WIT Transactions on Ecology and the Environment*, vol. 226, WIT Press: Southampton and Boston, p. 161, 2017.
- [6] Acosta Collazo, A., Progress, mobility and urban regeneration in a traditional neighbourhood: El Encino, Mexico. *WIT Transactions on Ecology and the Environment*, vol. 223, WIT Press: Southampton and Boston, pp. 345–355, 2017.

