New Urbanism

[IMAGINE A CITY WHERE THE STREETS ARE DESIGNED FOR PEOPLE, NOT JUST CARS]

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Classe : 2cB

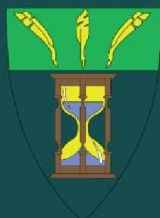### DIRECTEUR DE MÉMOIRE:

THEIN XAVIER

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INTRODUCTION

Trise to 68%. Almost 7 out of 10 people will live in cities and the reason for this is that cities offer   oday, 55% of the world's population lives in cities and urban areas. By 2050 this number should access to amenities, variety and opportunity. Therefore, it is increasingly important to design our cities and the places we live in to be sustainable and worth living in.

Cities are places of high density, and many have endured for centuries. Every city started out small, with few people and big dreams. Over time people took many small bets with many small outcomes, none of which could decide the outcome and future of the city. Houses were built, churches and public places created and eventually, roads were paved. City development was slow and adaptive. They were also designed according to the most frequent mode of transportation, our feet. Cities predate cars and to be functional, had to be designed in a walkable way. All major amenities had to be reachable within minutes by foot. Many cities and towns had large squares with markets and public places. Streets were built with hu- mans in mind and were narrow in scale.

All cities used to follow an established way of urban design which was created through thousands of years of trial and error, from the romans to the industrial age. This has drastically changed in the 20th century; cars became the primary mode of transportation and our cities had to adapt. Suddenly, methods of development that had persisted for centuries were scrapped in favour of accommodating personal vehicles. The issues caused by this are apparent. While cars offer much

in terms of flexibility and convenience, they are responsible for many things that make cities worse. Most of the already few public spaces in cities are taken up by cars, congestion and traffic jams are the norm, our cities lack vital public spaces and are hotspots with notoriously bad air quality. According to the European Environment Agency, out of 344 observed European cities, only 11 are below the maximum for safe air quality of 5 ug/m3.

THE ISSUE OF PARKING

Cities contain urban areas of high density and population; traditional cities are unable to accommodate the space needed for excessive car use and therefore needed to be redesigned. Today's cities are built for cars, not people. The way cities develop and expand has changed completely within a century.

Not only do cars need wide roads, but also giant highways to get into and out of the city and huge parking garages which take up the little remaining space. There is no country in which this is more apparent than in the United States.

These images show a satellite view of the cities of Philadelphia and Seattle, the areas marked in pink are parking lots. Car storage has become a large if not the primary land use in many cities. This shows that dense cities, containing tens or hundreds of thousands of people cannot accommodate a car centric mode of transportation. There is simply not enough space in a city for parking, especially as parking spaces are mostly needed in places with many amenities, such as city centres. These Areas are also some with the highest property values, meaning that any parking lot could instead be a continuous source of revenue by taxes for the city. Parking is an essential aspect of urban design, but it also poses several challenges that negatively impact cities. The growing number of vehicles on the road has led to an increasing demand for parking space in urban areas. However, the provision of parking space has several negative impacts, such as urban sprawl, heat islands, and decreased liveability in cities.

This is due to Parking minimums. Parking minimums refer to regulations that require a specific number of parking spaces to be built in new developments, based on a predetermined ratio of parking spaces to the size or type of development. They are used by local governments to ensure that there are enough parking spaces available to meet the demand from cars. The rationale behind parking minimums is to reduce traffic congestion and improve access to businesses and services. By requiring a minimum number of parking spaces, local governments hope to encourage car ownership and use, as well as provide a convenient and safe place for people to park their cars.

Parking minimums were commonly established during the rise of the automobile in the second half of the 20th century and at the height of auto-centric design. Today their negative impacts on the environment, social and economic growth are apparent.

One of the most significant problems with parking is that it contributes to urban sprawl. Cities that require a minimum number of parking spaces in new developments create an incentive for developers to build larger lots to accommodate parking. This results in the expansion of the city's boundaries, which leads to increased infrastructure costs, decreased open space, and more reliance on automobiles.

Arrowhead Stadium – Kansas City;

Another issue with parking is that it contributes to heat islands. In cities, the urban heat island effect occurs when urban areas experience higher temperatures than surrounding rural areas. The phenomenon occurs because cities have large areas of concrete and asphalt, which absorb heat and release it at night. Parking lots are one of the primary contributors to this problem, as they cover large areas of land and are made of materials that absorb heat. The resulting high temperatures make cities less liveable and exacerbate health issues, such as asthma and heart disease.

Parking also has a negative impact on the environment. Building and maintaining parking lots require significant resources, such as energy, water, and materials. Moreover, the use of personal vehicles leads to increased carbon emissions, which contribute to climate change. In many cities, transportation accounts for the largest share of greenhouse gas emissions. Reducing the number of parking spaces and promoting sustainable transportation options could significantly reduce carbon emissions and mitigate the impacts of climate change.

The provision of parking spaces also has social implications. Building parking lots takes away valuable land that could be used for other purposes, such as housing, parks, and community spaces. This creates an imbalance in urban design, where private automobiles are given priority over public space. Moreover, the requirement for minimum parking spaces in new developments often results in higher housing costs, making it challenging for low-income individuals to afford housing in urban areas.

There are also economic implications associated with parking. Building and maintaining parking lots are expensive, and the costs are often passed on to consumers. This can make the cost of living in urban areas unaffordable, particularly for low-income residents. Additionally, the focus on car-centric development can lead to decreased economic activity in urban areas, as people are less likely to walk and explore local businesses if they are reliant on cars.

Image source: Less Parking Lots, More People Space – Strong Towns

Therefore, it is necessary for a healthy city to attempt to reduce car dependency and parking lots along with it as much as possible. In Luxembourg city, many steps have been taken to reduce parking minimums. For instance, parking minimums have been eliminated within 300 meters of public transportation stops as a measure to reduce car-dependency and include other modes of transportation in urban design. In addition, previous mistakes in city planning have been admitted and new paradigms introduced.

Carparking Paradigms

Old paradigm	New paradigm
Parking problem means inadequate parking supply.	There can be many types of parking problems, including inadequate or excessive supply, too low or high prices, inadequate user information, and inefficient management.
Transportation means car driving.	Travelers may use various modes. Not everybody drives a car.
Abundant parking supply is always desirable.	Too much supply is as harmful as too little.
Parking demand should be satisfied on-site. Walking distances should be minimized.	Parking can often be provided off-site, allowing sharing of parking facilities among various destinations.
Parking should generally be provided free, funded indirectly, through rents and taxes.	As much as possible, users should pay directly for parking facilities.
Parking should be available on a first-come basis.	Parking should be regulated to favor higher priority uses and encourage efficiency.
Parking requirements should be applied rigidly, without exception or variation.	Parking requirements should reflect each particular situation, and should be applied flexibly.
Innovation faces a high burden of proof and should only be applied if proven and widely accepted.	Innovations should be encouraged, since even unsuccessful experiments can provide useful information.
Parking management is a last resort, to be applied only if increasing supply is infeasible.	Parking management programs should be widely applied to prevent parking problems.
Land use dispersion (sprawl) is acceptable or even desirable.	Dispersed, car-dependent development can be harmful.

This is an extract from the official Parking strategy of Fonds Kirchberg. It quickly becomes clear why Luxembourg has such a large parking & congestion issue if the old paradigm exclusively focused on car transportation as seen in the quote "Transportation means car driving".

This report also further puts into perspective the true cost of parking as this is often overlooked. In Kirchberg, parking can cost as much as **30.000 Euros per parking spot**, a cost which is passed on to the taxpayer. There are also currently about 28.000 parking spots in Kirchberg, this is still a significant improvement to how it once used to be.

Today's parking minimums dictate there to be at least one parking spot, every 300 square meters, 15 years ago there needed to be 6 lots. And this in a metropolitan area! There is still much to do as Luxembourg boasts low parking fines and a high amount of parking per person. To reduce car dependency is to reduce parking.

Parking fines

Source : https://fondskirchberg.public.lu/dam-assets/gehl/20190710-Kirchberg-Parking-Strategy-Final-For-Print-File.pdf

AUTOMOBILE DEPENDENCY

Car-dependency in urban design refers to a situation where cities and towns are designed primarily around the automobile, making it difficult or even impossible to navigate without a car. This has become a common phenomenon in many parts of the world and has had significant negative effects on urban environments. The origins of car-dependency in urban design can be traced back to the mid20th century, when the automobile industry was booming, and urban planners began to view cars as the solution to many of the challenges facing cities. Planners believed that cars would make it easier for people to access employment, services, and amenities, and that they would be more efficient than other modes of transportation. As a result, many cities and towns were designed with cars in mind, with wide streets, sprawling suburbs, and large parking lots.

However, over time, it became clear that car-dependency in urban design had several detrimental effects on cities and their residents. One of the main negative impacts is on the environment. Cars are a major source of air pollution and greenhouse gas emissions, which contribute to climate change and have negative health effects for residents.

In addition, car-dependency can lead to traffic congestion, which can have negative economic impacts by making it difficult for people to access employment and services. Congestion also contributes to longer commute times, which can lead to stress and decreased quality of life for residents.

Car dependency goes hand in hand with environmental degradation. Cars are a significant source of air pollution and greenhouse gas emissions, which contribute to climate change and can have negative health impacts for residents of urban areas. The construction and maintenance of highways and other car-oriented infrastructure can contribute to deforestation, soil erosion, and other forms of environmental degradation. The impact of air pollution and greenhouse gas emissions on the environment is enormous. Air pollution is a major source of health problems such as asthma, lung disease, and heart disease. Additionally, climate change can lead to more frequent natural disasters, such as floods, hurricanes, and heat waves. Such disasters can cause significant property damage, loss of life, and economic disruption.

It also prioritizes large chain stores and shopping centres, which can have detrimental effects on small businesses and local economies. When large chain stores dominate the market, small businesses are often unable to compete. As a result, small businesses may close, which increases unemployment, reduces tax revenues for the city, and leads to fewer opportunities for entrepreneurship. Furthermore, car-oriented development can create infrastructure costs that are borne by taxpayers, rather than by the businesses and individuals who benefit from them. For example, the cost of constructing and maintaining highways and other car-oriented infrastructure can be quite high, and these costs are often passed on to taxpayers in the form of higher taxes.

A car dependent design also causes large social impacts on residents of urban areas. By prioritizing cars over pedestrians and public transit, car-oriented development can create a sense of isolation and disconnection within communities. It can also contribute to sedentary lifestyles, which can lead to a range of health problems, including obesity, diabetes, and heart disease. Furthermore, car-dependent urban design often results in a lack of walkable and bikeable spaces, limiting the opportunities for social interaction and physical activity.
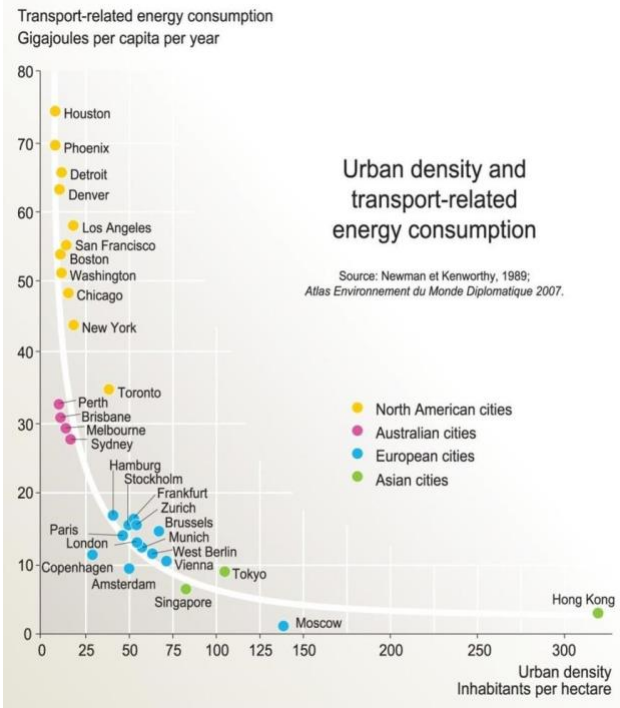
This reduction of opportunities of social interaction causes isolation. In communities which are cardependent, people spend more time driving alone in their cars instead of interacting with others. This increases the risk of feelings of loneliness, depression and anciety. This lack of social interaction and sense of community can have a significant impact on the mental health and wellbeing of individuals.
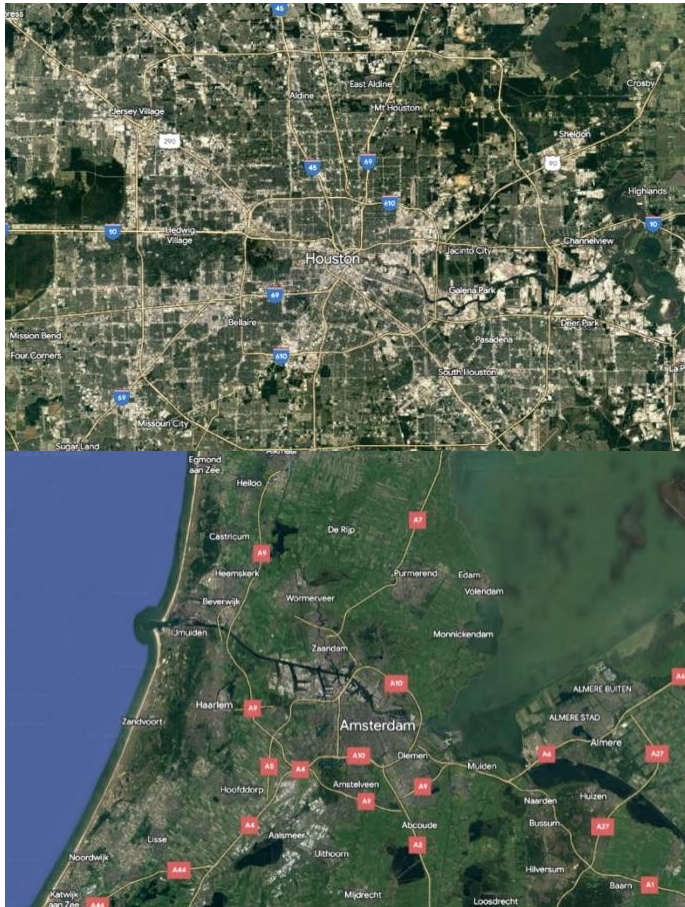
CASE STUDY, AMSTERDAM AND HOUSTON

Urban design is a thing most people never even think about or consider, it is usually only noticed when it's done badly. Therefore, it is important to compare 2 vastly different methods of city design to see the potential in improving our cities.

The two cities being compared are Houston and Amsterdam. Houston is the most populous city in Texas with almost 2.3 million residents. It serves as a classic example of American, car-centric design, while Amsterdam, the capital of the Netherlands is famous for its walkable and pedestrianfriendly urban planning.

The first clear difference between these two cities come in form of their energy consumption. Houston consumes on average more than 7 times more energy per capita that Amsterdam. This shows that the way we design our cities have a massive impact on our sustainability and emissions.

Transport-related energy consumption
Gigajoules per capita per year

Urban density and transport-related energy consumption

Source: Newman et Kenworthy, 1989;
Atlas Environnement du Monde Diplomatique 2007.

- North American cities
- Australian cities
- European cities
- Asian cities

Urban density
Inhabitants per hectare

The first and most apparent comparison between the two cities is their scale. While this is an unequal comparison (Houston has more than double the population of Amsterdam) one thing becomes clear. Both Images use the same scale. While Amsterdam has an area of 220 square kilometres, Houston extends over 1.720 Kilometres. This means one thing, that Amsterdam is significantly denser populated.

Another thing that can be seen right away on both pictures are the highway connections. In Amsterdam, the highways circle around the city yet never enter its centre. The Highway network in Houston is much denser, elaborate and lines from all directions meet at the centre of the city.

Both differences can be explained by the effects of urban sprawl.

*"**Urban sprawl**, also called **sprawl** or **suburban sprawl**, the rapid expansion of the geographic extent of cities and towns, often characterized by low-density residential housing, single-use zoning, and increased reliance on the private automobile for transportation."*

- *Definition by britannica*

In other words, urban sprawl means that cities become larger as space is often seen as an infinite resource and is therefore wasted. This dramatically increases the physical and environmental footprint of cities by destroying wildlife habitats and increasing the distance between departure and arrival of cities. The reason for this rapid expansion is quite simple: cheap land.

AMERICAN CAR CULTURE

Houston's car culture has deep roots in the city's history. Following World War II, Houston experienced a surge in population growth, driven in part by an influx of workers in the booming oil

industry. The city's leaders saw an opportunity to attract new residents and businesses by promoting suburban development, a method of development which defined the American dream.

The American Dream is a cultural ideal that is deeply rooted in American society. It is the idea that with hard work and determination, anyone can achieve success and prosperity. In the post-World War II era, this ideal was reflected in the promotion of suburban living to achieve the American Dream.

Figure 4: 1950s advertisement for suburban living. Photo credit: Wikipedia

Suburban living promised a safe and affordable lifestyle, driven by the economic boom after the second world war everyone should be able to buy his own home and garden. This lifestyle quickly became very attractive, especially to white middle-class Americans who wanted to live on the edge of town to avoid the crowded, polluted and often crime-filled cities of the time.

However, the promotion of suburban living was not without its negative effects. The development of suburban communities was often accompanied by discriminatory zoning practices and segregation, which made it difficult or impossible for non-white and low-income families to access the benefits of suburban living. As everyone had their own single-family home, suburban developments became very spread out, making car transportation the only feasible way to access these developments. Many minorities were unable to overcome the financial hurdles that came with car ownership and so stayed downtown, which grew increasingly poorer as rich white Americans accessed jobs in the city, but lived and paid taxes in the suburbs, which moved money out of the city.

Zoning laws were used to restrict the types of housing that could be built in certain areas, creating exclusive neighbourhoods that were often racially and socioeconomically homogenous.

A particularly wicked was the state-sponsored system of segregation in city planning. A policy known as "redlining" was introduced in which banks refused to lend money or insure mortgages to black neighbourhoods to minimise the risk of them escaping poverty and moving into the same neighbourhoods as their white counterparts. Instead, they were pushed into urban housing projects.

An urban housing project in Detroit, source:

NPR - A 'Forgotten History' Of How The U.S. Government Segregated America https://www.npr.org/2017/05/03/526655831/a-forgotten-history-of-how-the-u-s-government-segregated-america

The negative effects of zoning and segregation are still being felt in many American cities today, including Houston. Houston's suburban experiment has contributed to the city's segregation and income inequality, with low-income and minority communities often located far from job opportunities, public transportation, and other essential services.

Additionally, the development of car-dependent suburban communities has contributed to the decline of many urban neighbourhoods. As more people moved to the suburbs, businesses followed, leading to a decline in the quality of life in many urban areas, particularly for low-income and minority communities.

As a result, developers began building new neighbourhoods on the outskirts of the city, often featuring large, single-family homes on spacious lots. To accommodate this growth, city officials invested heavily in highway construction, which enabled suburban residents to commute to and from work in the city centre. This development pattern became known as "urban sprawl," characterized by low-density, cardependent neighbourhoods sprawling outward from the city centre.

Over the decades, Houston's suburban experiment continued, with developers building new subdivisions and shopping centres further and further from the city centre. By the 1980s, Houston had become one of the fastest-growing metropolitan areas in the United States, and the city's

infrastructure struggled to keep up with demand. Traffic congestion and air pollution became major problems, and Houston's reputation as a car-centric city was cemented.

Houston in the 1970s. The city was not bombed, its historic centre was demolished to make way for parking for people living in suburban developments.

In the 1950s and 1960s, Houston began to transform from a compact, walkable city centre to a sprawling metropolis. Developers built new neighbourhoods in the city's outskirts, luring residents with promises of more space, larger homes, and better schools. To accommodate this growth, city officialsbuilt highways and roads that linked these suburbs to the city centre, making car travel the easiest and most convenient mode of transportation.

Source: what is a suburb - Planetizen

The city's car-centric development has resulted in high levels of traffic congestion and air pollution. Houston is consistently ranked as one of the most traffic-congested cities in the United States. This congestion also contributes to air pollution, which poses a threat to the health of Houston residents.

The city's sprawling development has also led to social and economic segregation. The suburbs tend to be wealthier and more racially homogenous than the inner city, where many low-income and minority residents live. The lack of public transportation options in these areas further isolates these communities and makes it difficult for residents without cars to access jobs and services in other parts of the city.

One of the most notable examples of this development pattern is the Katy Freeway, which stretches westward from downtown Houston. Originally built in the 1960s as a four-lane highway, the Katy Freeway has undergone significant expansion over the years, eventually becoming a 26-lane behemoth.
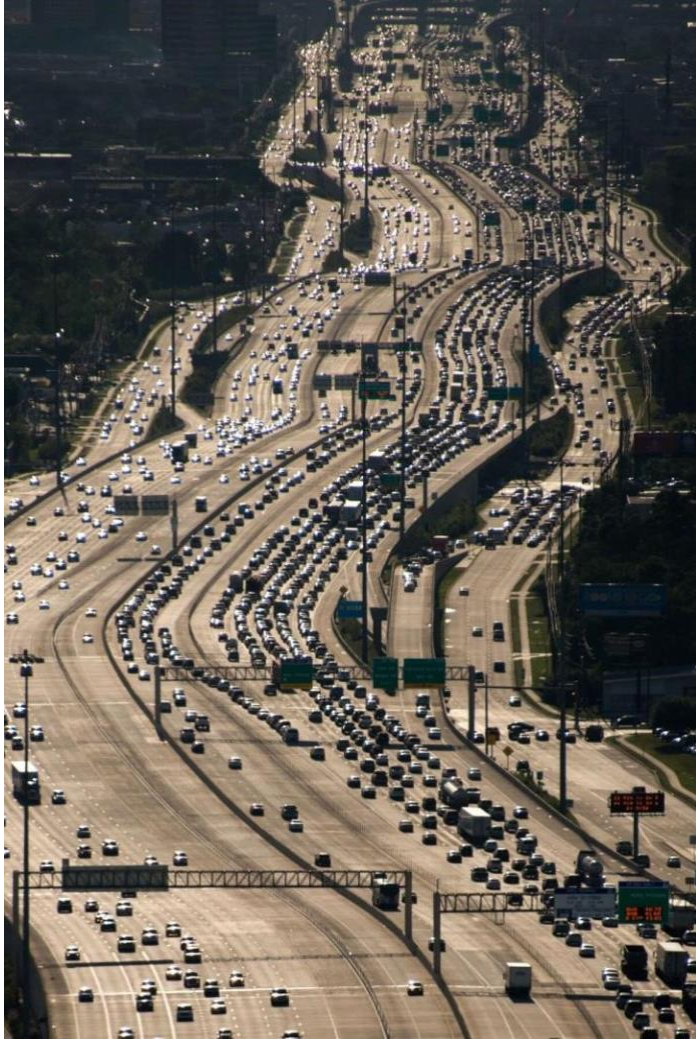
The freeway's expansion was intended to alleviate traffic congestion, but instead, it encouraged even more suburban development further from the city centre.The Katy Freeway's expansion is emblematic of Houston's car -dependent development, which has resulted in significant negative consequences for the city and its residents. Sprawling suburbs have led to longer commutes, increased air pollution, and reduced access to public transportation. In addition, the city's reliance on cars has contributed to a high rate of traffic fatalities and injur ies, with Houston consistently ranking among the most dangerous cities for pedestrians and cyclists.

The low-density development in the city's suburbs makes it difficult to provide efficient public transportation options, while the lack of a comprehensive urban planning framework makes it challenging to coordinate development and transportation infrastructure. Houston's experience with car dependency and suburban experimentation highlights the importance of a comprehensive approach to urban planning.
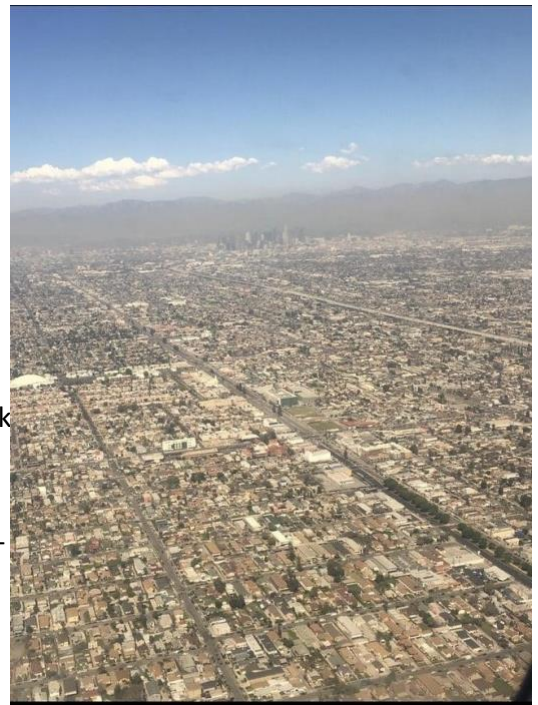
NEW URBANISM

New Urbanism is a movement in urban design which seeks to achieve the opposite effect of car-dependent urban practises and serves to promote walkable, diverse and dense neighbourhoods. By designing cities in such a way to reduce car use, walking and cycling is encouraged and public space is created.

Source: What is New Urbanism? - Congress for the new urbanism

(https://www.cnu.org/resources/what-new-urbanism)

This movement got started in the United States during the early 1980s, a time in which the automobile was strongly engrained in the culture of the US, with many innovations such as turbocharging and fuel injection. The 1980s are seen by many as the best decade of automotive history and a high point of automobile dependence which still shapes many cities across the world.

A traffic Jam in Trafalgar Square, London – late 1970s

(https://flashbak.com/photos-mid-seventies-london-david-rostance-394974/trafalgar-square-traffic-jam-april-1976-davidrostance/)

As American cities continued to expand in decentralized low-density Suburbs, American Planners came up with plans to model their cities closer to traditional European ones. In 1993 the CNU,

congress for new urbanism was formed, which seeks to promote new urbanism ideas and hold conferences throughout north America.

THE PRINCIPLES

On their website the CNU contains a charter which outlines the purpose and goals of the movement. In 27. Principles the development practise of a new urbanist city is explained. To better the understanding of new Urbanism, I will analyse and explain certain Principles.

"3. The metropolis has a necessary and fragile relationship to its agrarian hinterland and natural landscapes. The relationship is environmental, economic, and cultural. Farmland and nature are as important to the metropolis as the garden is to the house. "

Every city is dependent on the Land that surrounds them, often called hinterland. Cities need an evergrowing number of resources; we need food from surrounding farms and use wood from the forests around us. Fresh water is supplied through local rivers, lakes and fresh and clean air arrives from the nature around us. The relationship between the city and the hinterland is economic as well, as the hinterland provides valuable resources, and the city provides jobs for people in the hinterland. Furthermore, the culture of the city is also affected by the surrounding nature as people enjoy spending time in parks and cultural practises from rural communities that live in the Hinterland bleed into the city and create a diverse culture. Just like a house needs a garden to be complete, the city needs the hinterland and natural landscapes to be complete. The hinterland provides the city with the resources it needs to function, and the natural landscapes provide beauty and recreation.

For a new Urbanist city, it is essential to take care of its natural landscapes. Not only by reducing the consumption of resources, but by preserving its natural habitats and reducing its footprint and unnecessary waste of space. <u>A city must realise that space is not an infinite resource</u> and should strive to reduce horizontal expansion as much as possible to preserve its garden.

This further highlights the differences in design between Houston and Amsterdam as seen before.

"4. Development patterns should not blur or eradicate the edges of the metropolis. Infill development within existing urban areas conserves environmental resources, economic investment, and social fabric, while reclaiming marginal and abandoned areas. Metropolitan

regions should develop strategies to encourage such infill development over peripheral expansion.”

The edge of the metropolis refers to the line between a city and the countryside. A city should have clearly defined boundaries instead of endless suburban developments which extend for tens of kilometres. This can be achieved by infill development, the practise of building new houses within existing urban areas to reduce environmental resources. This provides the additional advantage of reclaiming abandoned or marginal developments, a parking lot can be repurposed into a park. This aids in revitalising areas which would otherwise be neglected in favour of new developments on the outskirts of the city. Cities should also strive to encourage infill development instead of horizontal expansion through incentives. It should be noted that these are the principles are not some new and experimental methods but instead adhere to the traditional method of development which has guided cities for centuries. These are proven methods which work.

“8. The physical organization of the region should be supported by a framework of transportation alternatives. Transit, pedestrian, and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.”

The physical organization of the region refers to the location of buildings streets and parks which should be linked together by a good system of transportation. Means of transportation should be encouraged that are healthy and sustainable to make the city a healthy place to live. There are almost no cities in which the air is clean. The primary measure of air pollution is the concentration PM2.5, which are small particles mainly released by automobiles. At the time of writing (April 2023), Luxembourg currently exceeds the WHO safe guidelines by a solid 330%. Twice as much as the city of Rotterdam. By building public transit and allowing people to walk and bike to their destination we can ensure that our cities will become sustainable and healthy places to live. It is also important to maximise accessibility to make sure that there are enough transit stops to make sure everyone can get to where they want without ever feeling the need to drive.

Source, air quality : https://www.iqair.com/de/

“12. Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.”

Cities should be designed in such a way, that allows independence for people who do not drive. This is especially important for the elderly as well as the young so they can seek an independent life. This is achieved by designing neighbourhoods in a pedestrian and bike friendly way. This entails that the space between amenities such as schools, stores and parks is reduced and that the streets

are designed to be safe to encourage walking. One way to do this is to reduce the speed, but the most effective way is to make sure the cities are planned in such a way that walking automatically becomes the most convenient option. This means creating interconnected street-networks that make walking from A to B the preferable option.

By encouraging pedestrian friendliness, we can reduce the number and length of automobile trips and save cost, reduce congestion and conserve energy.

"18. A range of parks, from tot-lots and village greens to ballfields and community gardens, should be distributed within neighbourhoods. Conservation areas and open lands should be used to define and connect different neighbourhoods and districts."

Open spaces such as parks play a vital role in creating vibrant and healthy cities. Modern Urban planning should strive to create recreational opportunities that are accessible for everyone. Parks should be abundant and meet the specific needs of a community, ranging from community gardens and walking trails to ballfields and playgrounds. Different neighbourhoods can also be defined by conservation areas which can serve as natural habitats for wildlife, protect water resources and improve health, both physical and mental. Distributing parks in urban areas and making sure that everyone lives in proximity of them serves to create communities which are more liveable, healthy and sustainable as well as providing spaces for people to socialize.

"19. A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use."

It is essential to consider how any public space will be used. Streets are public spaces, and most cities only have few open public spaces for people to come together. Therefore, it is important to use this resource in the most efficient way and allow as many people as possible to use the streets. In practise this means making them accessible and welcoming to everyone. So, streets should be of shared-use and as safe as possible, this means including bike lanes, considering the width of sidewalks, the placement of benches and the amount and types of trees along them. Streets are more than concrete highways for cars, they are public space and therefore a public good that needs to be accessible to everyone, regardless of their means of transportation.

Streets that are designed to be inviting create more vibrant and inclusive communities which help to break down barriers between people and that are truly open to everyone.

Image source : Design3 – Designing mixed-use communities with residential https://www.d3i-usa.com/mixed-use-communities-with-residential-the-how/

"27. Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society."

Historic buildings and sites provide a link to the past and tell the story of a community and its evolution. By preserving them we appreciate the cultural background of a city as well as promoting its renewal. By restoring old neighbourhoods, we can breathe new life into our cities and encourage an adaptive reuse of these buildings. This means that we conserve resources and create a much stronger sense of community. Therefore, old cultural centres of cities should be revived instead of building new developments on the edge of town.

THE 15-MINUTE CITY AND PARIS

While new urbanism as a term is still quite unknown, one term which aligns itself closely with the movement has very quickly gained a lot of popularity, even outside of urban planning circles. Many people can resonate with it and its name is short and explains what it is all about. The idea is simple, everyone who lives in a city should be able to reach any service, ranging from education, work and recreation within a 15-minute walk or bike ride. The idea of the 15-minute city is not new, and it has been around since the 1970s. However, it has gained more attention in recent years due to the growing concern over climate change, urban sprawl, and inequality in access to services and amenities. The concept was initially proposed by the Colombian urbanist Carlos Moreno, who believed that cities should be designed for people, not cars. He argued that urban planners should focus on creating neighbourhoods that are self-sufficient, compact, and well-connected.

This concept has also quickly risen in popularity and finds a strong support from most communities. Most of the British support making their community a 15-minute city. According to YouGov, the movement finds a majority support in all political groups.

Source, YouGov – 15 minute city https://yougov.co.uk/topics/society/articles-reports/2023/03/06/most-britons-would-their-area-become-15-minute-nei

One example and one of the largest projects of this kind was the transformation of Paris. The city is leading the way in the implementation of the 15-minute city which was put through in multiple stages. The first major step was achieved in 2017 when the Paris council realised that more than 50% of public space in Paris was taken up by private motorised vehicles, for instance by parking spots. In reaction, the council voted unanimously to adopt the Paris Pedestrian Strategy which served to give walking higher priority as a sustainable method of transportation.

The strategy itself can be defined in 5 distinct targets.

- Facilitate pedestrian continuity and shared streets between different modes of transportation
- Promote the diversity of street uses
- Raise the standards of comfort in public spaces.
- Rethink pedestrian orientation.
- Strengthen Paris' pedestrian culture.

The main measures of this plan were to increase the amount of bike lanes throughout the city as well as to ban cars from some streets and making them fully pedestrianised. In addition, speed limits were reduced to 30 kilometres per hour in certain areas.

The next large step came just one year later in 2018 when the major of Paris, Anne Hidalgo publicly announced her plan to make Paris a 15-minute city to create self-sufficient communities and to cut pollution and stress. This announcement also unveiled many drastic policies which served to transform the face of the city. A new massive tree-planting program was announced as well as more streets pedestrianised. A 350 million Euro plan which creates a bike lane in every street by 2024 was announced and 60.000 parking spaces were removed. More green spaces were created, and public transportation was improved. Instead of making these changes on a city-wide basis, the city was divided into 200 zones or neighbourhoods. This meant that each neighbourhood could assess its needs individually to make sure that the 15-minute city could be achieved everywhere.

Paris at that point was well on its way to becoming more sustainable and healthier, yet even more changes were made during the covid-19 pandemic. During the pandemic, the streets were suddenly found empty due to the lockdowns. The local council used this as an opportunity to create so called "coronapistes". The lack of traffic showed the true potential of all this public space and new temporary bike paths sprung up everywhere in the city. Consequently, bike ridership increased, and the project found a large amount of public support. Therefore, it should not be of surprise that many of these temporary ended up as permanent ones, 52 kilometres of new bike paths were introduced. This experiment also highlighted the importance of bike paths instead of lanes. Bike lanes are on the edges of streets and the only thing separating bikes from cars is a drawn line on the pavement, this is extremely dangerous, especially as cyclists can end up in blind spots and be hit by vehicles during intersections. Therefore, cyclists need to be separated from vehicles by walls or need to have their own separate paths. In addition, the city also introduced free bike rentals for healthcare workers and gave everyone a 500 Euro subsidy of buy electric bikes.

Source: Leparisien - Anne Hidalgo annonce la création de sept nouvelles coronapistes à Paris (3rd

October 2020)

Another major change was the "réinventer la Saine" project which aims to transform the area around the Saine into vibrant public and community spaces. Beforehand the riverbank of the Seine was an urban highway for cars travelling at high speeds. This highway was a major source of air pollution and contributed to thousands of deaths per year in the city. Today these Areas have transformed into parks, bike paths, gardens and cultural spaces. Furthermore, the city is expanding its tramway network and building almost 70 new metro stations. The 15-minute city design also aids in promoting local businesses, instead of driving to a large international supermarket, people buy stores along the street. The "made in Paris" initiative encourages citizens to buy local goods and many open-air markets have been opened, where residents can buy products directly from local producers. The city also celebrates car free days, on the first Sunday of every month, the entire Avenue des Champs-Elysées is given back to pedestrians, during this time people can be seen picnicking on the streets and children playing on the avenue.

One hand the 15-minute city provides many benefits to the people living within it.

Firstly, people will live healthier and will generally be happier due to the increase of social spaces. This will make people more considerate of each other and makes the city a better place to live.

Secondly, it will be beneficial to the climate as more green spaces will be created, less emissions released which improves air quality and less parking will be needed which results in less heat islands.

Additionally, many small and local businesses will profit from such changes. Instead to driving to large supermarkets which have enough space to offer everyone parking, a walkable city will encourage people to shop at their local stores across the street. This also reduces the amount of wasted food, as people tend to only buy what they need today instead of buying their groceries in bulk in large stores outside the city, which leads to buying more than one needs and inevitably ends in wasted products.

However, the transformation into a 15-minute city also comes at a cost.

Converting streets into pedestrian areas will come at the expense of people who must rely on cars to move around the city. Such as people with disabilities who are unable to walk or bike to their destinations.

Furthermore, essential good such as delivery services or emergency services must still be able to access every part of the city as fast as possible, this means by car. Therefore, a pedestrian area must never be completely cut off from the road network and exceptions will always have to be made, city planners must account for this.

Additionally, reducing cars by itself will only worsen the city's accessibility. There must be plenty of alternatives, including a good and elaborate public transportation system which people want to use. This means a high cost and a large need for construction to create the necessary infrastructure, a cost which will need to be burdened by the taxpayer.

Lastly, such a project requires a strong support from the community. Many people simply want to drive and see pedestrian and public infrastructure as more of a nuisance instead of a benefit. Education and awareness campaigns will need to be created to promote the benefits of active transportation and a health city.

Ultimately, a 15-minute city provides great benefits to the people living within it. But it is not a one fits all solution. Many factors will need to be included, such as people with disabilities and a large and expensive public infrastructure project will need to be launched beforehand. Such a large and complex project can only be created on a case-by-case basis which requires a lot of planning and funds. Urban planners should aim to strike a balance between the needs and preferences of different road users, while prioritizing safety, sustainability and accessibility for all. Finally, the 15-minute city will require a large amount of work and public support as well as many investments to be feasible and may not be possible everywhere. But when it is possible it becomes a shining example of the transformation of a city into a liveable, healthy and sustainable space.

Sources:

- World Resources Institute - Paris' Vision for a '15-Minute City' Sparks a Global Movement (25th January 2023)
- Paris Perfect - Paris Reconquers the Seine! (27th October 2017)
- Ville de Paris - Où en est-on de l'aménagement des nouvelles pistes cyclables ? (3rd April 2023) • Walk21 – The Paris Pedestrian Strategy (Case Study)

SPACE FOR PEOPLE, NOT CARS

An approach to reduce our fossil fuel driven design approach to cities is to strip cars of their unique priority in the street. Effectively this would mean designing a road as a shared space in which pedestrians, cyclists and cars commute alike. This serves to get rid of signs, eliminate clear borders between a space for cars and people and give people equal ownership of the precious space in cities.

While this approach may seem dangerous and unresponsible to many, many cities are introducing this system in several streets. The basic idea is that if car drivers are stripped of their priority and the street becomes more complex and confusing, drivers will have to slow down which would make streets less dangerous and make them more inviting. The main process of transforming a street into a shared space is to remove signs, traffic lights and any road markings.

The advantages of such a design come from the reduced speed of motor vehicles, drivers will have to pay more attention as the road hierarchy is simply less clear. This leads to a reduction in accidents and injuries.

Furthermore, a shared space encourages people to travel by foot or bike as shared spaces tend to be more inviting and safer for them. People will also be less likely to drive in these areas as it is usually slower than the alternatives, especially as shared spaces often impose a 20 km/h speed limit.

Additionally, shared spaces are simply better for the environment. Less car usage combined with slower speeds release less emissions and lead to a better air quality. An example for this is the new shared space in Bértrange which so far saves 100 tonnes of CO_2 annually.

But there are also negative impacts of such a development style.

The most obvious one being increased congestion. The reduced speed, combined with less markings on the road will inevitably lead to higher congestion. This leads to longer travel times and can stimulate nerves for the drivers which never good, especially if this street is shared with pedestrians.

Additionally, while shared spaces may in theory be safer, people often feel much less safe on these roads. Such designs are especially problematic for people with limited vison. As shared spaces rely on vision and interaction between the users, a blind person will find it difficult to cross the road if there is no clear indication to when it is safe to do so. This is also dangerous for children as they often won't be seen and often don't realise the danger posed by vehicles rushing past them.

A study by the university and college Union in London found that a shared street poses significant issues for people with disabilities and is a strong source of concern for parents who find it unsafe to let their children walk across such streets.

Pedestrian: 'I didn't feel safe for/with children - there were no clear boundaries for them. Road traffic was still moving at 20mph or more, I had to make sure we held their hands the whole time. Motor traffic often failed to give way at "Informal crossings", and lack of pedestrian priority crossings meant you had to basically, take your chances or wait a long time to cross the "road"

Blind pedestrian: 'I am blind. Not knowing the difference between the places where I'm safe and the bit where I can be killed is scary!'

Overall, I believe that shared spaces are not the simple solution some people make it out to be. They are a step in the direction of public spaces and pedestrian areas but fail to consider the issues they pose to many groups of society. I still believe that they should be implemented, but this should be done on a case-by-case basis and is best suited to residential streets as the only traffic usually comes from people living on that street. This means that traffic flow is very low, which can be seen by the fact that children already are playing on these streets. Making these exclusively residential streets into shared spaces would make these areas better to live as the low traffic streets are relatively empty most of the time, which results in wasted space. Shared spaces can also create a local sense of community within the neighbourhood and can make it safer and better for children.

What I am describing of course already exists, it is called an encounter space (Begegnungszone / zone de réncontre) in which pedestrians have priority. In theory all we need to do is to designate residential streets as such spaces whenever possible on roads with minimal car throughput.

Image source : https://twitter.com/programmeUVT/status/1002851881662574592/photo/1

Shared space study : https://www.ucu.org.uk/media/8143/Shared-space-how-safe-is-it/pdf/shared_space.pdf

PEDESTRIAN AREAS IN LUXEMBOURG

A as way to sum up all principal points of this mémoire, the coming chapter will analyse how to make Luxembourg city itself more sustainable and to reduce our dependence on motor-vehicles as well as how to establish pedestrianised Areas in the heart of the city. The previous chapters have analysed the issue of car-dependence, have introduced the new urbanist movement and explained the transformation of Paris. The following part will put the gained knowledge in practise and propose the pedestrianisation of a major artery in Luxembourg.

The first thing to consider is the location. This chapter does not act as a full guide on how to transform the entire city, but instead to propose a prototype, a first idea which needs to be able to be created as quick and simple as possible. Location plays a primary role in this, as there should already be infrastructure in place to make sure people can travel without cars.

One area of Luxembourg City that could benefit from pedestrianisation is the Avenue de la Liberté, a historic boulevard that runs from the Gare Centrale to the Place de Metz. By pedestrianizing this area, the city could create a more attractive and accessible public space, while also reducing car traffic and air pollution. The Avenue de la Liberté has a rich history, having been built in the late 19th and early 20th centuries as part of a major urban redevelopment project. The boulevard was designed to be a grand and imposing entrance to the city, lined with impressive buildings and wide sidewalks. However, over the years, the avenue has become increasingly congested with car traffic, making it difficult for pedestrians to move around and enjoy the space.

The Avenue de la Liberté is a major street in the city, connecting the central station to the Place de Metz. Before the construction of the tramway, it was a busy road with four lanes of traffic. However, in 2018, as part of the urban project to build the tramway, the road was reduced to only two lanes to accommodate the tramway tracks. This reduction in lanes has already helped to

reduce traffic congestion and create a more pedestrian-friendly environment in the area. Pedestrianizing the Avenue de la Liberté from the central station to the Place de Metz would be a logical next step in the transformation of the area. The tramway already provides excellent public transportation, making it easier for people to leave their cars at home. By pedestrianizing the street, it would create a more pleasant and safer environment for pedestrians, cyclists, and public transit users. It would also create opportunities for businesses to expand and attract more customers.

The Avenue de la Liberté pre- and post 2018. A Major project reduced the massive 4 lane Road to a much smaller 2 lane street to accommodate the Tram.

Source: Mudam Luxembourg - Avenue De La Liberté Luxembourg Ville https://zenoz.deminasi.com/

In addition to pedestrianizing the Avenue de la Liberté, there are many other historic places in Luxembourg City that could be transformed into a more pedestrian-friendly environment. For instance, the Place de Paris, the Place des Martyrs, and the Place de Metz are all significant public spaces that could be linked together to create one large public space.

The Place de Paris is a beautiful square located in the heart of the city, with several historic buildings surrounding it, such as the Luxembourg City Hall and the Church of Saint Michael. Currently, the square is dominated by a busy road that divides it into two separate areas, making it challenging to fully appreciate its historic beauty. By pedestrianizing the area and diverting traffic, the Place de Paris could become a more inviting and enjoyable destination for residents and tourists alike.

The Place des Martyrs is another significant public space in Luxembourg City. It is located near the Place de Paris and is home to the Monument of the Resistance and Deportation, which commemorates the victims of the Second World War.

The Place de Metz is a charming square surrounded by beautiful historic buildings and is a popular destination for tourists. Currently, the square is dominated by cars, making it difficult to enjoy fully.

Connecting these historic public spaces together would create one large public space, making it easier for people to explore the city's rich history and cultural offerings. By pedestrianizing the areas and diverting traffic, it would create a more inviting and enjoyable environment for residents and visitors. Additionally, cafes, restaurants, and other businesses could take advantage of the new pedestrianfriendly environment, creating a more vibrant and livelier atmosphere.
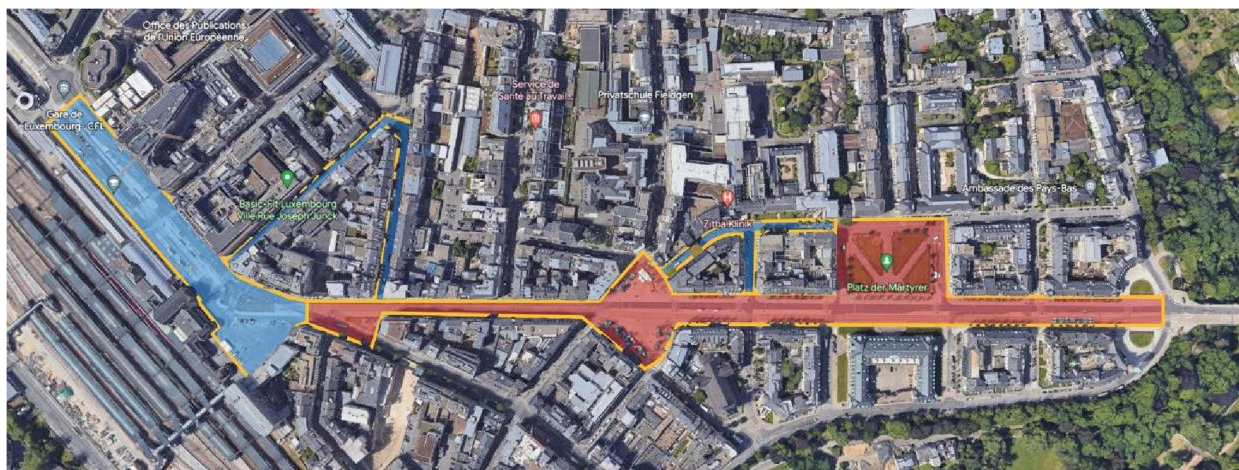
The historic importance as well as the past willingness of the government to remove motor-traffic in this area make it the perfect location for a full pedestrianisation. The Area marked in red would be a complete pedestrian Area while the adjacent spaces in blue would see a significant reduction in car usage which could be used for further pedestrian and public infrastructure. As is the case in all pedestrian projects, emergency vehicles and people with disabilities will always be able to access this Area by car. Furthermore, the entire Area also has no on-street parking, meaning that the people living there won't need to remove their cars and can leave them where they were beforehand.

The city has also chosen to expand the Place de Paris beforehand, showing its willingness to invest in the enlargement of historic and cultural places. Below is part of a presentation regarding the construction project which finished in 2021.

Source : PaperJam - La place de Paris plus grande et sans voitures (25th Feburary 2020) https://paperjam.lu/article/place-paris-plus-grande-et-san

This serves as a specific example of making the hearth of Luxembourg a healthier place, however it is more important to focus on many small steps which each make the city a tiny bit better. Such as improving public transportation, making sure that there are plenty of bus lanes and making biking more accessible everywhere by reducing speed limits and funding the expansion of new separate bike paths.

Overall, the success of a city should not be measured in single large projects but as collections of small efforts by everyone which, bit by bit improve the living conditions of everyone else. The design approaches mentioned in this text are far from perfect, therefore it is important to make gradual changes and learn as we go to benefit all.

CONCLUSION

New Urbanism is a movement which seeks to revert our oil and car centric vision of the 1970s which has often destroyed urban and cultural areas and propelled major cities into an age of air pollution, poverty and social isolation. While the situation is nowhere near as extreme as in the 1970s and 1980s (after all, acid rain and poisoned water supplied due to car fumes were frighteningly common in major western cities at that time), there is still much to be done to make cities more sustainable and healthier for everyone.

New urbanism, the 15-minute city and other projects are a continued source of debate and are not easy to implement and come with downsides of their own. However, it must be made clear that the current addiction to cars in cities and our dependence on them is not a solution in urban areas. It is important to promote change and a transition away from automobile dependence.

This does not just include cars that release emissions, as the urban sprawl, heat islands from parking, lack of social space and expensive and crumbling infrastructure come from a dependence of cars, transitioning to electric vehicles will not solve these issues and self-driving cars wont either. While they may be an improvement to 'regular' automobiles, we should still strive to create liveable places that don't need them at all and focus and walkability and public transportation which people want to use.

> the   urgent need for a new approach to urban planning in America. Marohn's work has been a drivnspired by the ground-breaking book Strong Towns by Charles L. Marohn Jr., this piece explores ing force behind the movement for liveable, sustainable cities, and his organization, the Strong

Towns Foundation, has been a vital resource for citizens seeking to create change in their communities.

In his book Strong Towns, Charles L. Marohn Jr. offers a compelling critique of the car-centric development that has dominated American cities for decades. Through case studies and personal anecdotes, Marohn makes a compelling case for a new approach to urban planning that prioritizes people over cars. Marohn's work has been an inspiration to many urbanists and advocates for sustainable communities. His organization, the Strong Towns Foundation, has played a crucial role in advancing this movement and empowering citizens to create change in their communities.

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Bibliography

Fonds Kirchberg, Car Parking Strategy on: www.fondskirchberg.lu

URL: https://fondskirchberg.public.lu/dam-assets/gehl/20190710-Kirchberg-Parking-Strategy-Final-For-Print-File.pdf (consulted the 28.01.2023)

Terry Gross, A 'forgotten history' Of how the US government segregated america on npr.org

URL : https://www.npr.org/2017/05/03/526655831/a-forgotten-history-of-how-the-u-s-governmentsegregated-america (consulted the 22.02.2023)

Congress for the new urbanism, what is New Urbanism?, on cnu.org

URL: https://www.cnu.org/resources/what-new-urbanism (consulted the 25.02.2023)

Fintan Smith, Most Britons would like their area to become a 15-minute neighbourhood, on yougov.co.uk

URL: https://yougov.co.uk/topics/society/articles-reports/2023/03/06/most-britons-would-theirarea-become-15-minute-nei   (consulted the 01.03.2023)

University and College Union, Shared Space: how safe is it?, on https://www.ucu.org.uk/

URL: https://www.ucu.org.uk/media/8143/Shared-space-how-safe-is-it/pdf/shared_space.pdf

(Consulted the 28.03.2023)

By Salome Gongadze and Anne Maassen, Paris' Vision for a '15-Minute City' Sparks a Global Movement, on https://www.wri.org/

URL: https://www.wri.org/insights/paris-15-minute-city.   (Consulted the 25.01.2023)

Ville de Paris - Où en est-on de l'aménagement des nouvelles pistes cyclables ?, on paris.fr

URL:https://www.paris.fr/pages/les-pistes-cyclables-provisoires-vont-devenir-perennes-18264#:~:text=Rue%20La%20Fayette%20Est%20%3A%20travaux,jusqu'au%20Bd%20Haussmann).

(consulted the 08.05.2023)

Books:

Charles L Marohn Jr, Strong Towns, A Bottom-Up Revolution to Rebuild American Prosperity, Place of publication: United States, publisher: Whiley, published the October 1, 2019