

The Need for Developing our Urban Streets

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ABSTRACT

Streets have many functions. They are social spaces, parking spaces, service routes and traffic routes. They form the largest part of the public land. Streets must be designed as places first, even when they are also paths for people and goods to get from A to B. Not only do streets connect us to the places we want to go, they are the places where everyday life unfolds. Streets are more than just sidewalks and facades—they are what enables cities to become more human and the entirety of public life to take place. They allow us to connect with the identity of a city and with each other. In especially dense urban areas, streets provide essential space for living - effectively functioning as backyards and garages. In Libya, we need to update street design standards to be consistent with citywide goals for safety, economic growth, development, and urban design. These standards should attempt to capture the unique local relationship between the built land and the surrounding streetscape, encapsulating the varying scales at which motorists, bicyclists, and pedestrians interact with individual corridors as well as the overall street network. Around the world, many cities have developed street classification systems specific to their local needs. These classification systems generally combine 2–3 variables that guide decision-making: Street type and usage _ Urban design context and built environment_ Overlays, including modal priorities, special uses, and historic designations. This study looks at the possibility of improving our streets to meet the everyday living requirements, by comparing what we have with what many surrounding countries have as well as looking at the principles of urban street design.

Key words: Urban design – living street – social spaces – improve existing streets

1. Introduction

The urban design of the road is defined as the process of finding the geometric dimensions of each road and arranging the visual elements of the road such as the path, distances of vision, displays, slopes, etc. To begin with, roads should be classified as major, sub-local or local roads so that the design speed and slope can be determined after balancing such factors as the importance of the road and estimating the size and characteristics of traffic, terrain and available funds. Design speed and slope are the basis for setting the standard minimums for both vertical and horizontal planning of the road and then the designer can try and error to fly these limits or higher to the terrain to reach a horizontal hometown and a longitudinal section of the road. Then comes the stage of detailing the geometrical dimensions of one-level, multi-level, service and other features. [1]. As well as our streets and spaces need to design for young and old, including those with mobility issues. Streets also need to be suitable for vehicles, but this should not be at the expense of pedestrians and cyclists. The careful design of highways, and parking and servicing arrangements, can make spaces comfortable for all users, whether on foot or in a car.

The streets are the main component and the vital artery of any city in the world, and an important organization, and a compass of population and physical movement therein, and undoubtedly the planning of the streets are the most important things that should be the attention of developers of urban plans. It is enough to say that one of the most important causes of traffic accidents due to poor Planning roads and streets (narrow streets, many intersections, sudden changes in direction, bad vision, irregular turns, etc.). However, the streets are not only for the movement but also for supporting the land uses along its length, including the seating areas of cafés, social networking places, children's playgrounds and public places. It also contributes to the economic success of the institutions and companies located on them. In Libya today we live in large areas, width and length filled with large streets and major non-main branches of other streets in each side are all dedicated to cars and nothing but cars. In most cities in Libya, we see vast areas where cars are moving, and we hardly see a pedestrian area or a bicycle route that is as important as the others are.

Streets often make up more than 80% of public open space [1] in us cities; this is more space than all parks combined. Quality streets have elements of protection, comfort, and enjoyment. These three themes can be thought of as a hierarchy of needs in a space. Without basic protection from cars, noise, rain, and wind, people will avoid spending time in a space. Protection from these things is mandatory for a place to be used. Second, without elements that make walking, standing, sitting, seeing, and conversing comfortable, a place will not invite people to spend time there. Finally, a great place distinguishes itself from a good place by including elements that invite people to be active and make use of the positive aspects of microclimate and human scale. Many researches and practices around the worlds have shown that aesthetic qualities of an outside space are only one of the important things that influence whether or not a public space is appreciated or used, see figure 1.

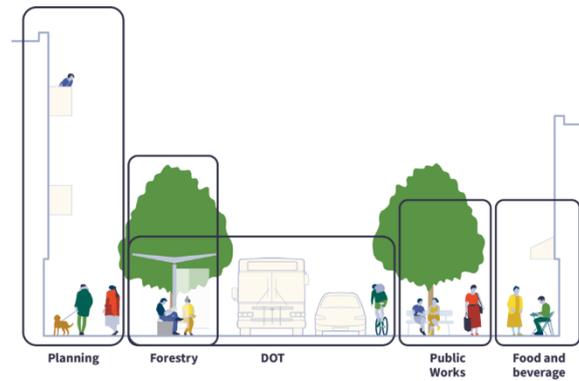


Figure 1. Street space should be equitably distributed for people _ www.nacto.org

2. The need to improve street designing system

An important question must be asked in order to understand the way urban streets should be designed:
Are we design the streets for cars or for people?

One of the most common causes of death for many people is traffic accidents. Is it normal happening on the road? According to the World Health Organization report, Libya ranked first in the world in the number of road traffic fatalities, with 3606 people killed just in 2013. Experts attributed the cause of the increase in the number of road traffic fatalities to several factors, the most important of which is the continuous increase in the number of cars, the insane speed of driving, as well as the lack of public transport and the erosion of roads. Is this rate high due to speed only? What about street planning, city design in general, whether the city's design is centered around cars or around people.

The largest cities in the world are designed to be friendly walking as well as enjoyable and safe for pedestrians, reducing driving rates and improving public health. It is the most popular option for anyone to move from one place to another. It does not require paying money to travel or wait in the midst of crowds for hours on a busy road. The importance of walking is reflected in the fact that it is a clean and easy process on the infrastructure and healthy for the individual and an integral part of the community's living [2].

People who walk on their feet know their neighbours and their lives. Cities with infrastructure and design that is prepared for walking and easy movement have a positive impact on the health of the population, also, green areas and flowers and trees have a positive impact on the psychological as it acts as a shock to employees and employees to reduce the sense of tension and anxiety. Walking can create a significant impact on income among the community, as many people who drive their cars every day spend about a third of their monthly income on the move. The importance of providing a safe environment for pedestrians using the integrated planning and design principles of the movement network (motorized - pedestrian) has had a significant impact on improving the quality of life and sustainability of the urban areas [2].



Figure 2. Design for the human scale with varied housing typologies and mixed-use buildings that activate streets and bring amenities to neighborhoods. Source: www.nacto.org

The motorized movement has played an important role in the disintegration and sustainability of the urban fabric within cities. Clean, safe, accommodation and entertainment in any urban space. There are many international and regional experiences, such as the city of Vienna, Istanbul, Singapore, Dubai, Abu Dhabi and many other European cities where they have taken care of pedestrians, which has helped to increase their economic, environmental and social development. Jeff Speck state in his book (walkable city) a theory which states that the desire of people to choose to walk comparing with who choose the use cars is require several steps at the same time called by the Jeff the structure of pedestrian areas [3], some of these steps are summarized below;

- **Put cars in their place:** the key is not eliminating cars from the pedestrian environment but managing them so that they do not push the pedestrians out, so the area may shrink or may disappear permanently because of the increase in the number of tracks in the street for the benefit of cars. More clearly, to travel around any city, you need a transportation to use, whether to shop or to meet your business needs or even to go on a holiday, and because cars are the first and basic means to travel in the cities of Libya, you need to use the car like other people. The city begins to re-shape itself around the needs of the people living in it. The streets begin to widen by putting more paths than ever before to ease congestion and fill the needs of the people, and then new streets are synonymous with previous streets in another attempt to solve the problem of overcrowding and increasing cars. But the truth is that these solutions are useless because they are like soothing pills that relieve pain rather than remove it. The fact that the number of cars in the city and congestion is not a justification for the development of new routes in the street one and the reason is simply that the number of cars will increase automatically after each new path is placed, and then the problem does not end but worsen more.

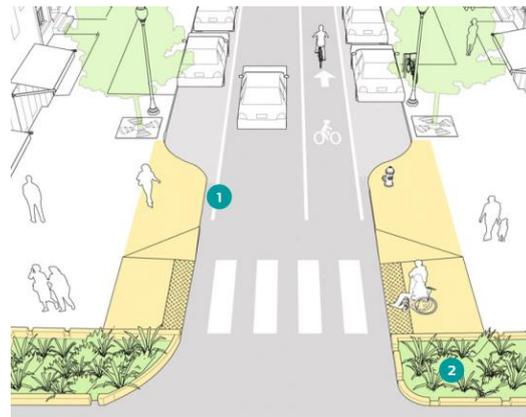


Figure 3. an example on given priority to people over cars on streets by using the slow speed gateway

- **Mix the uses:** mixed use development encourages walking by placing homes, workplaces, and businesses within walking distance of each other and making it easier for them to walk, so that users of pedestrian areas and streets can do their work and their living needs with ease and ease.
- **Get the parking right:** in many countries of the world, you have to pay at least \$ 3 per hour at peak times to use car parks within the city to reduce people's use of cars and urge them to use public transport such as trains, buses and pedestrian streets. In Libya, it is quite the opposite. The overall situation of roads, transportation and street planning is like encouraging people to drive cars in all aspects of their lives within the city. Many people will stop thinking about using the car when they know that they can not stop it anywhere on the street, and a large percentage of them will have to walk when parking is not free at peak times. This will relieve traffic congestion and encourage people to use pedestrian streets. Changing parking regulations could have a large impact on when and where people walk, as well as on traffic congestion.
- **Protect the pedestrian:** cars primarily control the protection of the pedestrian areas and the people who walk through them. Drivers are forced to ease speed and drive more slowly by imposing strict laws that help to raise safety rates for both drivers and pedestrians. In addition, the wide streets make drivers drive quickly, so reducing footpaths helps reduce speed. Safe sidewalks are not necessarily large sidewalks, but enclosing the streets with dense trees, in turn protect pedestrians from cars and help drivers to ease speed as the tree-lined streets of each side positively affect the lives of drivers unlike other streets, Pedestrians and streets as well.



Figure 4. Pedestrian overpass help to protect the pedestrians and staggered crossing with an island in the middle are two separate crossing

- **Encouraging use of Bikes:** promoting urban cycling is a cost-effective way to increase the safety of cyclists and pedestrians as well. The use of bicycles reduces traffic congestion in cities and reduces the proportion of spending per capita on the means of mobility in the city, and helps to increase the rates of public health in the community.

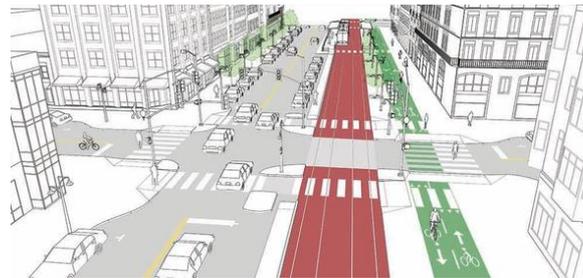


Figure 5. Example on a transit street design aims to create more bike-friendly transit

Source: thewashcycle.com, NACTO

- **Shape the Spaces:** the closure of places crowded with markets, restaurants, coffee shops and cafes and preventing the entry of cars in them. Doing that by reshaping the pavement and make it a pedestrian area will make people feel comfortable and safe. The architecture of the area and the spread of trees in those places plays an important role in creating a wonderful and lively atmosphere.



Figure 6. street furniture help to improve urban streets

- **Make Friendly and unique spaces:** the architecture of the area must interact with the street and the place to create a different, varied and interesting face. Setting up pedestrian areas is important but attracting people to these places is another challenge. You can bring life back to many places in the cities to attract people by taking care of the architecture and surrounding the place with trees, seating chairs, children's yards, meeting people and making them a lively, safe and enjoyable area.



Figure 7. Reshaping parking spaces into places for people to relax and socialize with friends and strangers. Designed by Ogrydziak Prillinger Architects in San Francisco, USA

3. Variables facing decision makers

There is a pressing need in Libyan cities for better coordination to achieve the quality of environment appropriate to the cities status. This will requires a significant improvement in the integration of local authority services and greater co-operation between public and private sectors.

To implement all the above steps listed in section 2 of this paper, on all the streets in the cities it will be difficult for many cities to bear this financially, so the selectivity in the choice of streets is an important way to connect all of this together. The beginning is to apply these steps to major urban roads in the city and then use the secondary urban streets to connect those streets together with local streets later on.

The economic and real estate development level variable includes gross domestic product, commercial activity, business and real estate investment, housing price and rent level and differences in the average level of urban real estate market indices. This variable was fully recognised by most researchers who have performed similar studies. Regional economic development levels are not only the embodiment of current economic situations, but also reflect the development potential following renewal, and are the main consideration factor that the real estate developers take into consideration for investment decision-making and the judgment basis that the government balances the regional development on

4. Need to develop and update the structure of the schematic device.

As well as the development of urban planning, strategies, public policies, programs, projects and legislations governing urbanization, implementation of plans, monitoring of implementation, control and control, within a comprehensive framework of integrated coordination with other government systems, with related functions and competencies Directly in the planning process, in accordance with what is being done at the level of the developed countries.

This dimension is governed by the organization's organizational structure, its main tasks and responsibilities, by the force of the law, on the one hand, and the status of this body within the system of ministries and government agencies, on the other hand, in order to achieve the goals and objectives in the field of planning and development,

Development, transformation and change in the future, in a sophisticated and modern way. The nature of this organizational structure relates to everything that is practical and practical to the implementation of this content and the vision achieved by the planning system as a whole. Within the framework of the functions and responsibilities of the planning body.

It is necessary to point out that the development of the organizational structure is not an end in itself, but rather a means to achieve the expected objectives of this planning body. It is therefore a serious mistake to start restructuring the planning apparatus by simply placing a proposed number of organizational structures, departments, divisions, degrees and functions. Without paying careful attention and with a great deal of responsibility, to the importance of examining the nature of the new and required tasks and responsibilities that correspond to the nature of the situation at the various economic, social and political levels. As well as within the contemporary framework of the concept of comprehensive planning system.

Transportation engineers can work flexibly within the building envelope of a street. This includes moving curbs, changing alignments, daylighting corners, and redirecting traffic where necessary. Many city streets were built or altered in a different era and need to be reconfigured to meet new needs, such as parklets, bike share, and traffic calming.

5. Examples of good street redeveloping

A complete street provides safe, comfortable, attractive and convenient access and travel for pedestrians, bicyclists, motorists and transit users of all ages, abilities and preferences. The design of a complete street considers both the public right-of-way and the land uses and design of adjoining properties, including appropriate building heights and the planning of adjoining land uses that actively engage the public street realm.

Road diets (figure 8) can improve traffic flow and reduce conflicts with turning vehicles, while increasing a road's efficiency by channeling turning vehicles out of the through lanes. Streets designed with either 2 lanes or a 2-way left-turn lane can cut crash risk by nearly half [4].



Figure 8. Existing conditions demonstrate how traditional design elements, such as wide travel lanes and undifferentiated street space, have an impact on how people experience the streetscape.

For city streets to meet the needs and demands of everyone using them, intersections, both large and small need to function as safely and efficiently as possible. Good intersection design, however, goes beyond making streets safer. Well-designed intersections use street space to bring people together and invigorate a city, while making traffic more intuitive, seamless, and predictable for those passing through.

For example, at intersections, raised crossings and curb extensions should be used to limit turning speeds from the major to the minor street. Raised crossings increase visibility and the potential for a vehicle to yield to a crossing pedestrian. When crossing a minor street, a raised cycle track can be carried through an intersection and be combined with a raised crosswalk to clarify and accentuate priority [6].



Figure 9. a typical intersection of a minor street with a major through street or collector, and reconstruction with many solutions and improving

Crossing roads is important in all urban streets. In the case of figure (10) install, a midblock crosswalk should be where there is a significant pedestrian desire line. Frequent applications include midblock bus stops, parks, plazas, building entrances, and midblock passageways. Stop lines at midblock crossings should be set back 20–50 feet. This ensures that a person crossing the street is visible to the second driver when the first driver is stopped at the stop line [5].

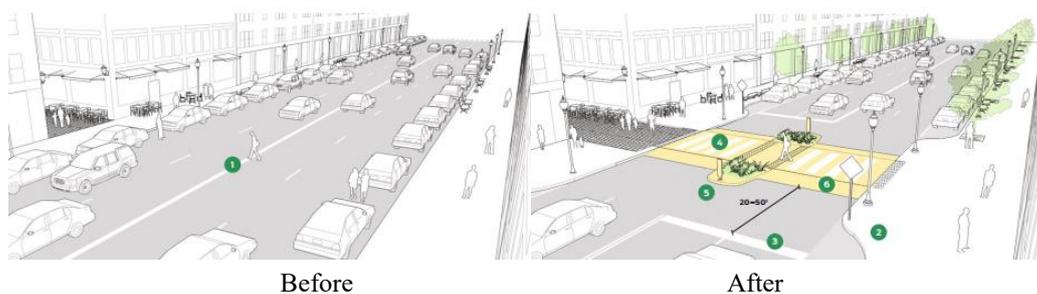


Figure 10. Existing and reconstruction road using midblock crosswalk for safety cross.

Other thing is the speed cushions are either speed humps or speed tables that include wheel cut-outs to allow large vehicles to pass unaffected, while reducing passenger car speeds. Speed cushions elements should be designed to the following criteria;

- Slopes should not exceed 1:10 or be less steep than 1:25.
- Side slopes on tapers should be no greater than 1:6.

- The vertical lip should be no more than a quarter-inch high [5].



Figure 11. Speed cautions should be located where there is sufficient visibility and available lighting

6. Conclusions

It is important to note that urban situations are complex, the treatments and developing the roads must be tailored to individual situations and contexts. Good engineering judgment is encouraged in all cases. Decisions should be thoroughly documented. To assist with this, references to case study cites must be considered. Here are some points that must be included in redeveloping any urban street;

- ✓ Road design standards should be suitable for traffic size, vehicle types, weights and trends.
- ✓ Safety standards for all road users should be observed in order to reduce traffic accidents.
- ✓ Meet pedestrians' requirements by providing a pedestrian walkway and side tracks open to them. Provide roads with lighting system, traffic control system through the availability of traffic lights, floor signs, as well as various service boxes.
- ✓ Take into account road distances, especially at intersections.
- ✓ The speed of design is the highest speed a vehicle can safely drive on a given road when conditions are ideal: moderate weather, congestion, and depend on many things: traffic size, structure, topography and terrain.
- ✓ Variety of transportation and traffic options for both public transport, private cars, bicycles and motor vehicles.
- ✓ The design of the roads in a way connected with the buildings and houses, in a way that reduces pressure and traffic jams.
- ✓ Reduce slopes and curves in roads, by good paving, in order to increase speed in traffic.

Take into account the principles of road sustainability. Provide umbrellas in the public transportation waiting areas, and planting trees on the sides of roads, to give them a better aesthetic view.

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