

LIVEABLE CITY = WALKABLE CITY

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Abstract. As the urban populations increase we have to think more deeply about how to make cities less stressful and more creative for people to live in. The development process of our cities, and the players within this process - central and local government, politicians and professionals, developers, financiers and builders – have become entangled in a system which produces developments, but not places.

For places to be well-used and well-loved, they must be safe, comfortable, varied and attractive. They also need to be distinctive, and offer variety of choices and fun. Vibrant places offer opportunities for meeting people, playing in the street and watching the world go by [1].

New development should enrich the qualities of existing urban places. This means encouraging a distinctive response that arises from and complements its setting. This applies at every scale - the region, the city, the town, the neighbourhood and the street.

Places need to be easy to get to and be integrated physically and visually with their surroundings. This requires attention to how to get around by foot, bicycle, public transport and the car - and in that order.

Watching how people move through an existing area reveals the numerous influences on movement at work. How people move, particularly on foot, is not just a matter of the simplest and most obvious route, but will be influenced by, for example: variety and interest; safety; light and shade; commercial activity; landscape; noise and pollution. [2]

Liveability and quality of life are key factors whilst designing and managing the development of our cities, not only in terms of energy, water, pollution and waste systems which are sustainable for the long term, but in a way that we can understand better how to use our cities [3].

Keywords: Liveability, sustainability, quality of life, people movement, walking, transportation, safety

1. WHY A LIVEABLE CITY SHOULD BE A WALKABLE CITY

A key asset of cities is the relative ease with which people can access a wide range of jobs, goods, services and opportunities for social interaction. People and businesses value city locations for the accessibility they provide. Places that are

walkable — that have a variety of services and destinations in close proximity to one another — are more convenient and livelier.

City structure is defined by the connections between the different elements within its urban activity [4], which can be competitive, complementary or auxiliary for the territory within the city. This structure has an order and in turn this order has a spatial character.

Now we are in a different phase, in which stands out two territorial characteristics: (1) extensive use of land within the city and (2) increased mobility of the population due to dispersion of activities within spatial structures.

Many aspects of urban design and new approaches to city form are based on the concept of liveability. These approaches recognise that design and structure can be very influential in the life of a town or city and indeed to the building of community in and of itself. They also create novel contexts for a community to develop in a more sustainable way [5].

Liveability is a human construct and it is not new. When we make judgements about places, e.g. "I couldn't live in this street", "I wouldn't mind living in this suburb" or "I wish there was a coffee shop close by", we are assessing and evaluating liveability, but we have just never called it that before. Liveability, sustainability, walkability, 'quality of life', 'human wellbeing' and many other concepts have become the new language of planning better places to live.

The most important factors that influence the decisions people make about where to live and their perceptions of the liveability of places are:

- Influence of environmental quality-resources, climate change;
- Influence of accessibility to services and facilities;
- Influence of social connectedness & cultural identity;
- Strategies used to enhance the liveability of places, especially for young people.

2. THE MOVEMENT FRAMEWORK

Getting the movement right affects uses and activities, density, security and the impact of the development on neighbouring places.

The general theory of walkability explains how, to be favoured, a walk has to satisfy four main conditions: it must be useful, safe, comfortable, and interesting. Each of these qualities is essential and none alone is sufficient. 'Useful' means that most aspects of daily life are located close at hand and organized in a way that walking serves them well. The re-integration of traffic and other activities is best done by creating a network of spaces rather than a hierarchy of roads. The arrangement of spaces will take full account of the movement framework for the area, including the analysis of vehicle movements. Inevitably there will be some main roads, either within the development or nearby. These are the main routes for vehicle movement, but should be designed:

- To minimise their negative effects on the area through which they pass;

- To allow their safe, pleasant and convenient use by pedestrians and cyclists.

'Safe' means that the street has been designed to give pedestrians a fighting chance against being hit by transport vehicles (motorized -bus, car, lorry, motorcycle, motor scooter, etc., or non-motorised – bicycle, tricycle); they must not only be safe but *feel* safe, which is even tougher to satisfy. The key considerations in providing safety movement are:

- People prefer to walk along streets where they can be seen by drivers, residents and other pedestrians;
- If segregated footpaths are provided, they need to be well-connected and overlooked by houses and other buildings;
- All measures that slow traffic help pedestrians feel safer. At junctions, the use of raised surfaces and tight radii make it easier for pedestrians to cross;
- Well-designed shared surfaces avoid conflicts of movement yet encourage other activities to take place. To achieve this, subtle variations of material or bold changes of detail are appropriate, depending upon the location;
- Footpaths should lead where people want to go, rather than follow a preconceived geometry;
- Footpaths in new developments should be positive, direct and barrier-free.

'Comfortable' means that buildings and landscape shape urban streets into 'outdoor living rooms', in contrast to wide-open spaces, which usually fail to attract pedestrians. During their everyday itineraries, people pick-up on elements of the urban fabric that convey information about the broader socio-economic forces at work in the city.

'Interesting' means that sidewalks are lined by unique buildings with friendly faces and that signs of urbanity abound. In any development, the design of streets should start by asking "what will happen on this street?". The street should be designed to suit the activities that we would like to see carried out on it. For example, if the street is lined with shops it should be designed to enable people to get to the shops, cross the road, have a chat and linger in front of shop windows, or have a beer in the sun.

The city is the tangible sum of the action that has created it; this is revealed to those how engage with it through the movement framework, using street and footpath networks. Sensory engagement with the city is a source of information obtained by: driving, cycling, using public transport, and especially by walking.

A successful movement framework:

- Provides the maximum choice for how people will make their journeys;
- Takes full account of the kinds of movement a development will generate;
- Makes clear connections to existing routes and facilities.

Because every site is different there can be no standard formula. What suits a large suburban site will be quite different from a site located in the inner city.

The movement framework should, wherever possible and practicable, make it as easy and attractive to walk, cycle or take the bus, as it is to travel by car. This means providing the right kinds of route to fit the journeys that people want to make. [6].

The reason why one route is better than another depends on tangible or intangible factors, like: quality of pavements, quality of roads, cycle facilities, segregated path, over bridges, underpasses, safety features or variety in visual amenity, convenience and speed of journey, pollution generated by road congestion. Predicting vehicle movements is only one part of the exercise: how people experience their journey, especially people on foot, is just as important [7].

The quality of different routes can be rated to help decide which should be developed or where improvements are needed. Redevelopment of an existing site may provide opportunities to re-establish old routes that have been destroyed or downgraded, and to improve movement through an area, not just to and from the new site.

Local facilities bring residents together, reinforce community and discourage car use. So, the first component of a movement framework should be the walking distances to facilities. The quality of the routes is important, especially where there are obstructions such as busy roads or railway lines.

To give walking priority means putting the everyday experience of the street first on the agenda. Direct, attractive connections between key facilities, avoiding dead ends, help to create more convenient and comfortable places. An assessment of how best the site can plug into the wider movement networks should aim to provide the maximum number of direct connections to main streets carrying through traffic.

The linear elements that define the boundaries of a place — the edges — may be used to define the limits of a development site or regeneration area.

3. MIX THE USES AND PROTECT THE PEDESTRIANS

3.1 Mix the Uses

For people to choose to walk, the walk must serve some purpose. In planning terms, that goal is achieved through mixed use or, more accurately, placing the proper balance of activities within walking distance of each other. While there are exceptions, most city centres (in Europe, or downtowns in America) have an imbalance of uses that can be overcome only by increasing the housing supply.

Cities, if they are to become whole again, must not only reform their planning codes, but must also earnestly labour to re-establish a proper balance of activities in their centres and not only there (downtowns or derelict areas need also a coordinated and focused interventions).

Uses are still being zoned and roads designed as strategic routes at the expense of the creation of more local relationships based on walking and cycling.

Communities require a full range of local services and facilities, including commercial, educational, health, spiritual and civic uses. They need to be conveniently sited and connected to residential areas by safe and comfortable routes. Traditionally, towns have developed around crossroads, centres of activity or stopping places, with the

incremental growth of housing, retail, community and employment uses around the original core.

Yet despite the virtues of mixed development (*cf.* Table 1), in modern development it often remains the exception, rather than the rule.

Benefits of Mixed Development	
1.	More convenient access to facilities
2.	Travel-to-work congestion is minimized
3.	Greater opportunities for social interaction
4.	Socially diverse communities
5.	Visual stimulation and delight of different buildings within close proximity
6.	A greater feeling of safety, with "eyes on streets" ¹
7.	Greater energy efficiency and more efficient use of space and buildings
8.	More consumer choice of lifestyle, location and building type
9.	Urban vitality and street life
10.	Increased viability of urban facilities and support for small business (such as corner shops)

Table 1: **The Benefits of Mixed Development**²

A successful and sustainable neighbourhood is a product of some favourable factors as: the distances people have to walk to access daily facilities, the presence of a sufficient range of such facilities to support their needs, and places and spaces where a variety of activities can take place.

These are exemplified by the traditional Victorian and Edwardian suburbs of many UK towns, which were built on the assumption that most movement would be pedestrian. Other travel needs were serviced by a suburban rail line — the station providing the focus of retail, commercial and civic activity.

Such spatial and use patterns are often difficult to replicate in modern development due to current transport planning regimes, the dispersal of movement patterns facilitated by the car and the trend towards overlarge retail, educational or healthcare buildings, in order to achieve efficiencies of scale.

Often the actual planning system does not help.

To illustrate, if we take any medium or small city, land uses may include housing, a primary school, shops, offices and some industry. Planning generally zones these uses and gives them relatively fixed boundaries before any serious design work is undertaken. On occasion, sites are carved into development parcels around a rudimentary road system without a clear urban design structure in place. At this stage, it is not unknown for densities to be decided upon, as well as other fixed requirements — open space provision, for example. This approach frequently involves routing the main road round the site rather than across it and locating the

¹ Urban Design Group (1998), „Involving Local Communities in Urban Design - Promoting Good Practice“, a special report provided in the Urban Design Quarterly, Issue 67, July.

² Urban Design Quarterly (1994), „Urban Design Briefing“, special Issue 51, July.

traffic generating uses such as retail and employment areas close to entrance junctions and along the main road.

According to Adam Baake, Lowell's assistant city manager for planning and development, "achieving this transformation is essentially a three-step process that could be described as politics, permitting and inclusionary zoning" [2].

Politics refers to changing attitudes (and people) on the city council and eventually, the city's new outlook will be motivated to sell its underutilized parcels for the express purpose of creating mixed-used functions.

Permitting refers to sidestepping the city's conventional zoning code. Instead, the third step, inclusionary zoning, requires a pre-set percentage of all new housing developments to meet affordability criteria.

As Adam Baake suggested, this strategy means building more market-rate housing while also "promoting those things that residents want and need: parks and playgrounds, supermarkets and farmer's markets, coffee shops and restaurants – and, eventually, good schools – all embraced in a good walkability framework" [2].

These interventions are great for walkability, as they increase neighbourhood density, putting more feet on the sidewalks and making transit service and local shopping more viable.

3.2 Protecting the Pedestrian

Will potential walkers feel protected against being run over by cars, enough so that they make the choice to walk?

The street is used as a boundary to segregate uses. Such attempts to create a sense of place around a focal point often fail because the very uses that generate activity are on the edge of the site or beyond, in a nearby business park or out-of-town centre, and tend to be internalized in 'big boxes'.

At over a quarter of the city's land area, streets are a critical part of its infrastructure. They provide the bulk of its public space and have wide-ranging impacts on both its environmental health and the quality of life of its neighbourhoods.

Generally speaking, cities with the smallest block are the ones best known for walkability, while those with the largest block are known as places without street life. The preindustrial neighbourhoods of downtown Boston and Lower Manhattan, like their European counterparts, have blocks that average less than two hundred feet long (approximately 60 meters). The most walkable grids, like Philadelphia's and San Francisco's have blocks that average less than four hundred feet in length (approximately 120 meters). And then there are the pedestrian-free zones, like Irvine, California, where many blocks are one thousand feet or longer (300 meters). [2].

There are, as always, exceptions. Much of Berlin has surprisingly large blocks. But its street maps are effectively a planning untruth, since so many Berlin blocks are abundant with interior passages and courtyards that creates a hidden network of pedestrian life. The blocks of Los Angeles aren't much bigger than Barcelona's, but the latter's streets aren't engineered for high speeds.

Big-blocks coupled with multi-lane systems results in streets that are both harder to cross and easier to speed on.

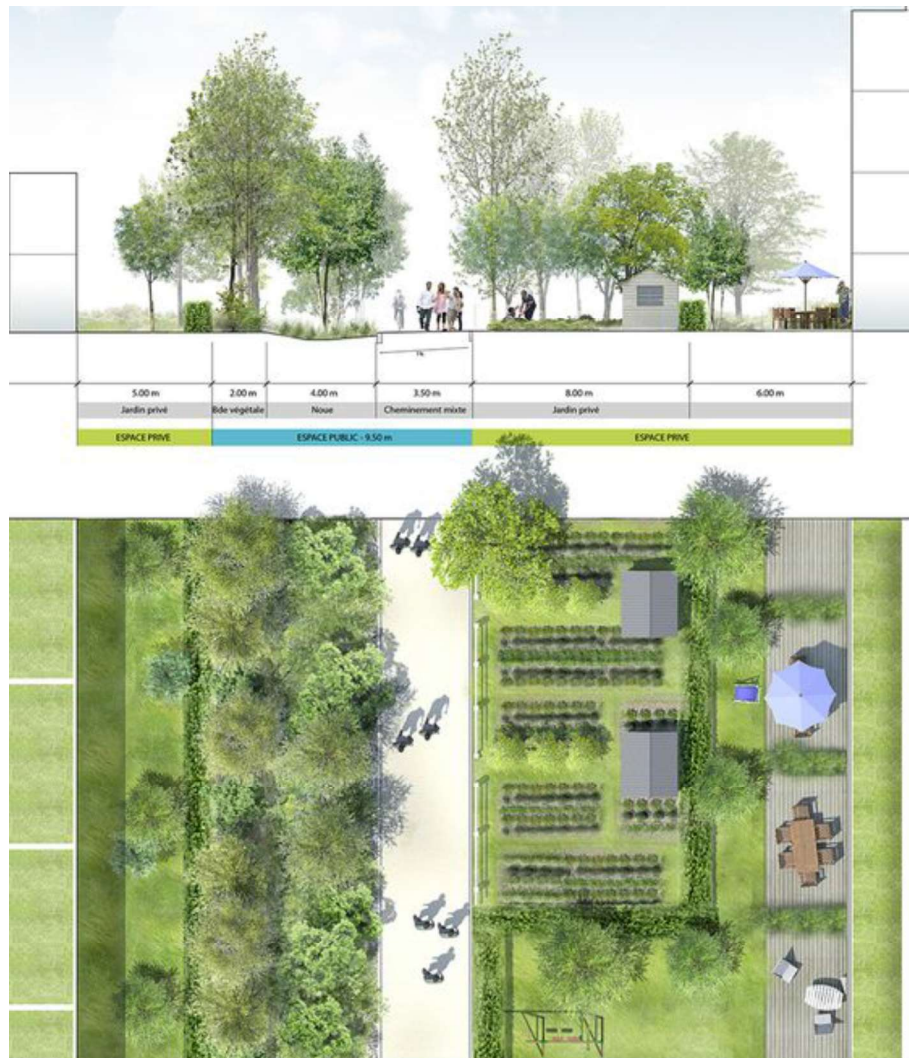


Figure 1: **Eco-quartier de la Marine — La Compagnie du Paysage**³

According to the situation presented above, it is the policy of any city that the following goals and principles be adhered to when designing city streets in order to achieve mixed-use neighbourhoods and to protect pedestrians also:

Principles for Street Design

1. **Design for Safety:** Move people and goods safely
2. **Design for Access and Mobility:** Accommodate all street users, giving priority to the most energy- and space-efficient modes
3. **Design for Context:** Respond to neighbourhood character

³ Etude urbaine opérationnelle pour l'aménagement de l'éco-quartier de la Marine (2009), Ville de Colombes, Codevam, La Compagnie du paysage, France

4. **Design for Liveability:** Create a vibrant public realm with high-quality public spaces
5. **Design for Sustainability:** Contribute to a healthier and more sustainable environment
6. **Design for Visual excellence:** Create coherent and harmonious streetscapes
7. **Design for Cost-effectiveness:** Provide the greatest possible value to the public

Table 1: **Principles for Street Design**⁴

Pedestrian oriented planning advocates for wide sidewalks. What makes a sidewalk safe is not its width, but whether it is protected by a line of parked cars that form a steel barrier between the pedestrians and the roadway, doubled by a green lane (tree planted or a raised earth mount with grass).

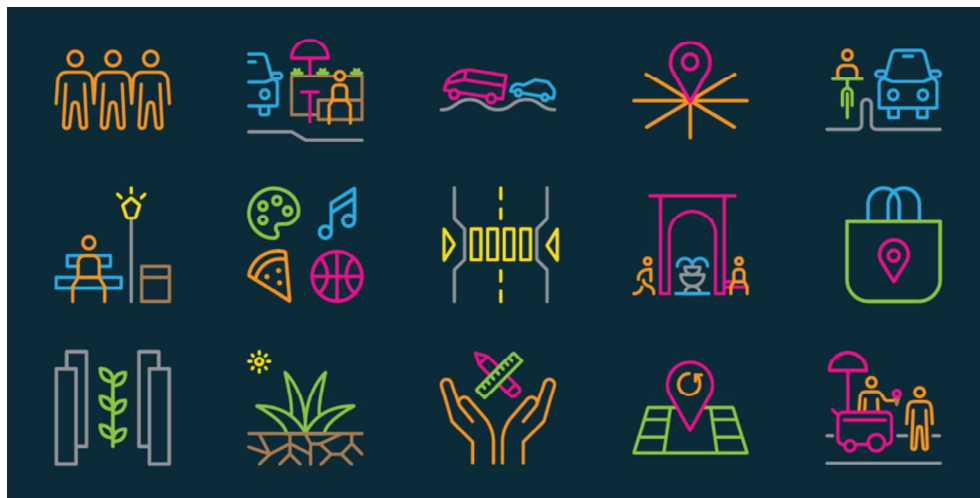


Figure 2: **Reimagining Great Streets in Los Angeles**⁵

4. CONCLUSIONS

Walking is a key element in planning city spatial development, if we take into consideration the fact that walking is the reciprocal constitution of people and places through interaction. Walking involves the relation between a person and its environment, a “spatial relationship” dependent on how conveniently a place is organized, involving ease of movement and “things [being] in the right place and not too far apart”, as Rybczynski mentioned in 1986 [9].

For a long time, walking has received little respect as a means of transportation or as an essential part of vibrant urban spaces. Now, city planners have a simple

⁴ Siksna, A (1997) “The Effects of Block Size and Form in North American and Australian City Centres”, in *Urban Morphology* (Journal of the International Seminar on Urban Form), 1, 19-33

⁵ Great Streets Iconathon in partnership with the Office of LA Mayor Eric Garcetti and Goldhirsh Foundation gather in the heart of Mar Vista to reimagine our LA neighbourhoods as vibrant, empowering, and safe spaces. Citizens, designers & subject matter experts alike brainstormed visual depictions of the following 24 referents with a focus on 6 main categories. One of the main categories is Access and Mobility that depicts walkability as “a measure of how welcoming an area is to people walking. Factors influencing walkability include the prevalence and quality of sidewalks, traffic and road conditions, land use patterns, and safety. Experiences of people in wheelchairs, pushing strollers and carts, and other travel modes allowed on sidewalks are also considered in measuring ‘walkability’”[8].

solution for cities with congested roads, overburdened metros, unhealthy populations and flagging town centres: get more people walking.

Walking has a host of health benefits. Among other things, it can halve your risk of heart disease, help prevent the onset of Type 2 diabetes and some cancers, and even slow cognitive decline in adults – especially those with existing conditions such as Alzheimer's.

These benefits add up. Recent research from RIBA found that UK taxpayers could save nearly £1bn a year in obesity-related healthcare costs if people could be persuaded to walk more each week.

And that's not all. Transport for London's Town Centre Study 2011 [10] found that people who walked to town centres across London spent more per week than those who came by bus, train, tube, bike or car. Given the benefits, it seems astounding that cities don't do more to encourage walking. There are more advantages, too. It's the lowest-carbon, least polluting form of transport. It's a great social leveller (there are no first-class carriages on the pavements). Another great thing about walking is that everybody everywhere can do it – unless they are in the small minority with a disability that prevents them.

So, walking is a mode of transport that works as well for developed cities as it does for developing cities. Walking is the ideal form of transport in cities like London where half of car journeys are less than 2km – just 25 minutes' walk.

In the U.S.A., Oklahoma's mayor declared in 2007 that "he wanted citizens to lose a million pounds in weight collectively". He wanted to help them lose weight, as he had, by walking more. Since then the city has built new sidewalks to connect schools with neighbourhoods and slowed traffic by turning one-way streets back into two-way routes.

As mentioned earlier, walking (and by effect, walkability), offers a lot of benefits to our health [11], the environment, our finances, and our communities as well:

- Health: The average resident of a walkable neighbourhood weighs 6-10 pounds less than someone who lives in a sprawling neighbourhood [12];
- Cities with good public transit and access to amenities promote happiness [13];
- Environment: 82% of CO₂ emissions are from burning fossil fuels. Your feet are zero-pollution transportation machines [14];
- Finances: Cars are the second largest household expense in the U.S.A. [15];
- Communities: Studies show that for every 10 minutes a person spends in a daily car commute, time spent in community activities falls by 10%. [16].

Cities that provide easy access to convenient public transportation and to cultural and leisure amenities promote happiness. Cities that are affordable and serve as good places to raise children also have happier residents. City planners suggest that such places foster the types of social connections that can improve happiness and ultimately enhance the attractiveness of living in the city.

“Walkability is a measure of how well a neighbourhood’s built form promotes walking”, explains Grasser in 2013 [17]. It includes components such as the proximity and diversity of destinations (shops, services, workplaces, and schools), an interconnected street layout, and the proximity of green spaces and other recreational areas.

But, what exactly makes a neighbourhood walkable?

- A centre: Walkable neighbourhoods have a centre, whether it's a main street or a public space;
- People: Enough people for businesses to flourish and for public transit to run frequently;
- Mixed income, mixed use: Affordable housing located near businesses. [18];
- Parks and public space: Plenty of public places to gather and play;
- Pedestrian design: Buildings are close to the street, while parking lots are relegated to the back;
- Schools and workplaces: Close enough that most residents can walk from their homes [19];
- Complete streets: Streets designed for bicyclists, pedestrians, and transit;
- Neighbourhood walkability is the product of both public and private decisions. The public sector dictates the land use framework, regulating the location and composition of commercial land uses and the types and density of housing units. The public sector is also responsible for streets and sidewalks and choosing the number, size and location of important destinations (i.e. schools and parks).

The apparent value that consumers attach to walkability likely stems from many sources. Consumers in more walkable neighbourhoods may save money and reduce air pollution on driving (and transit) by virtue of the closer proximity of many destinations. It seems likely that many consumers value the time savings associated with walkable neighbourhoods – even for trips taken by other modes. The variety of uses close by and the implied opportunities for unanticipated interaction may also make a neighbourhood more interesting [20].

And improved walkability may assist fiscally strapped local governments. Because most local governments depend heavily on property taxes to finance local services, improved walkability may mean higher property values and higher tax revenues than for less walkable development.

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