Walkable Cities

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Contents

- What Makes a City Walkable
- Why is Walkability Important
- The Theory of Walkability
- Restrict and Restrain the Car
- Manage Parking Effectively
- Look After the Pedestrian
- Plant Trees
Walkable Cities

- Florence
- Amsterdam
- Dubrovnik
- San Francisco
- Edinburgh

Not so Walkable Cities

- Houston
- Varna
- Cape Town
- Phoenix
- Toronto
Most Walkable Cities

1. Florence
2. Paris
3. New York
4. Amsterdam
5. Dubrovnik
6. Venice
7. Munich
8. Vancouver
9. Buenos Aires
10. Boston
11. Edinburgh
12. San Francisco
Florence
Florence
Dubrovnik
Dubrovnik
Edinburgh
Edinburgh
Houston
Houston
## What Are the Traits of a Walkable City

- **Residential Density**
- **Commercial Density**
- **Land Use Mix**
- **Connectivity**
- **Presence of Trees and Vegetation**
- **Frequency and Variety of Buildings**
- **Plenty of places to go to near the majority of homes**
- **Street designs that work for people, not just cars**
- **Access to mass transportation**
Problem: Cities develop and grow, based on plans and designs of experts, solely on their professional expertise.

Questions to be asked:
- What kind of city will thrive economically?
- What kind of city will keep its citizens safe and healthy?
- What kind of city will be sustainable for future generations?

Answer: Cities need to be planned by multi-disciplinary teams.
Why is Walkability Important?

“The metropolitan area that does not offer walkable urbanism is destined to lose economic development opportunities, the creative class will gravitate to those areas that offer multiple choices in living arrangements”

• Christian Leinberger, ex real estate advisory firm owner.
Do People Want to Walk?

**Share of vehicle kilometres driven by young Americans aged 20-29**

- 1990: 20.8%
- 2010: 13.7%

**Share of 19 year old Americans opting not to take a driving test**

- 1990: 8%
- 2010: 23%
The Theory of Walkability

In order for someone to walk, the walk must be:

**Useful**

**Safe**

**Comfortable**

**Interesting**
Factors Affecting Walkability

The Useful Walk
• Restrict and restrain the car
• Create mixed use neighbourhoods
• Manage parking effectively
• Support public transport

The Safe Walk
• Look after the pedestrian
• Encourage cycling

The Comfortable Walk
• Provide a sense of enclosure
• Plant trees

The Interesting Walk
• Make the facades interesting
• Choose your projects wisely
Restrict and Restrain the Car

- Car
- Shared Use
- Public Transport
- Bicycle

Pedestrians
Bicycles
Public Transport
Shared Use
Car

×

√
you are here

cap-and-share?
debate-and-divide?
predict-and-provide
Build it and They will Come, Remove it and They will Go

predict   provide

political vision
environmental capacity

managing demand
The Case of the Embarcadero Freeway in San Francisco
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The Case of Cheonggyecheon Expressway in Seoul
The Case of Cheonggyencheon Highway in Seoul
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“In every case, attempts to relieve traffic pressure by building more roads and parking garages have generated more traffic and more congestion. The volume of car traffic almost everywhere is more or less arbitrary, depending on the available transportation infrastructure”

• Jan Gehl, Danish city planner
Manage Parking Effectively
The Vicious Cycle of Parking Inefficiency

- Growth in car ownership
- Unregulated on-street parking
- Minimum parking requirements
- Bad interpretation of minimum parking requirements
- Sprawling development
- Inadequate public transport
- Increased reliance on the car
The Cost of a Parking Space

Simple 2,6x5,5m on-street place
• €5,000-8,000

Standard parking structure
• €20,000-30,000

Multi-storey parking
• €40,000-50,000

Underground parking
• €60,000+
The Subsidy of Parking

Average daily cost of a parking space €4-5
Any space, that generates less than this, is subsidised
But who pays the subsidy?

- Private Investments
  - The developer
  - The tenants
  - The customers
- Public Investments
  - Municipal or state authorities
  - Tax payers

Subsidy is paid by everybody (car drivers, pedestrians, cyclists, public transport users, old people, handicapped, etc)
Problem 1: Minimum Parking Requirements

USA
• Minimum parking supply for peak demand for free parking
• Maximum development density to limit vehicle trips

Europe
• Maximum parking spaces to avoid congestion
• Minimum development density to encourage walking, cycling and PT

Which works better?
Which model does Cyprus follow?
Problem 2: Cheap/Free On-Street Parking

Studies indicate that up to 1/3 of congestion is caused by drivers looking for parking.

Congestion, pollution, wasted time, slow emergency response.

Free/cheap parking is bad for business:
- Paid parking increases turnover.

What’s the right price for parking?
The Case of San Francisco: Dynamic Parking Charging
How to Use Parking Revenue

Make revenues work locally
- Fix pavements
- Plant trees
- Improve lighting
- Upgrade street furniture
- Hire employees

Have a parking plan
- Manage comprehensively
- Target community success, not revenues

Retail areas
- Non-residents pay on-street
- Money spent to the benefit of residents

Residential Areas
- Residential parking permits
- Charge at nominal rates
Looking After the Pedestrian

You can’t fix a pedestrian at a body shop.

Slow down and watch for pedestrians.
The Importance of Low Speeds

HARD AND FAST FACTS

Pedestrians hit by a car...
- at 30 km/h – 1 in 10 will die
- at 50 km/h – 5 in 10 will die
- at 60 km/h – 9 in 10 will die

Travelling speed and pedestrian survival

Hit at 40km per hour 25% of pedestrians will die

Hit at 50km per hour 55% of pedestrians will die

Hit at 60km per hour 85% of pedestrians will die
The Importance of Low Speeds

48 km/h
Threat: Big Blocks

- Big blocks
- Wider multiple lanes
- Easier for cars to speed
- Very difficult for pedestrians to cross
Threat: Extra Right Turn Lanes

- Right turn lane too long
- A lane too wide for pedestrians to cross
- Traffic speeds higher
- Pedestrian more easily distracted
Threat: Wide Lanes

Study by National Association of City Transportation Officials (NACTO)

“When lanes are built too wide, pedestrians are forced to walk further across streets on which cars are moving too fast and bikes don't fit”

- Jeff Speck, American Urban Planner
Threat: Large Turning Radii

“Corner radii directly impact vehicle turning speeds and pedestrian crossing distances. Minimizing the size of a corner radius is critical to creating compact intersections with safe turning speeds. While standard curb radii are 10–15 feet, many cities use corner radii as small as 2 feet. In urban settings, smaller corner radii are preferred and actual corner radii exceeding 15 feet should be the exception”.

• Urban Street Design Guide, NACTO
Plant Trees

- Biomass: potential energy source
- Reduction in storm water runoff and flooding
- Visual screening for large expanses of pavement and utilities
- Biomass, habitat, and nutrients for birds and other wildlife
- Decreased energy demands for adjacent buildings
- Increased property values
- Absorption of harmful pollutants (natural filters)
- Noise absorption/buffering
- Extended pavement life from shading
- Reduced urban heat island effect
- Reduced UV exposure for pedestrians
- Rehabilitation and stress relieving attributes
- Define street edge and protect pedestrians
- Root structure and soils provide additional storm water management and subsurface habitat and nutrients for important bacteria and organisms
- Reduces solar glare for drivers
- Provides context and aids drivers in better assessing their speed (traffic calming)
Why Are Street Trees Essential for Pedestrians

- Offer shade
- Reduce the ambient temperature
- Absorb tailpipe emissions
- Absorb rainwater
- Provide UV protection
- Limit the effects of wind
- Slow cars by “necking down” the street space with their canopies
Trees and Pedestrian Safety

Designers, considering the risks to drivers only, neglect to use trees in their design, assuming soft pedestrians to be much less of a threat to moving vehicles than hard trees.

In fact, street trees are safer for both drivers and pedestrians, because drivers respond to the absence of trees by speeding (principle of Homeostasis).

A Toronto study has indicated that the presence of trees and other objects along road edges correlates with a 5-20% reduction in mid-block accidents.
Safety from Heat Waves

In 2010 in Moscow 700 died every day during a heatwave.

Ambient temperature differential of 3-9°C between shaded and unshaded streets.

A healthy tree is equivalent to 10 room-size air-conditioner working 24 hours.
The Economics of Trees

University of Pennsylvania study: Trees within 15m of houses increase property value by 9%

Estimated increase in property tax in Portland, $15.3m/yr against $1.28m/yr cost of planting

Shops in tree lined trees have 12% higher income

In Melbourne 70,000 street trees provide $14m in value

New York set a goal to plant 1m trees in 10 years

In London, trees remove 2.241 tonnes of carbon from the air each year. They also hold 3m m3 of water, saving £1.5m in stormwater management
Thank you very much for your attention.