



SUSTAINABLE URBAN DESIGN IN WORLD HERITAGE SITES



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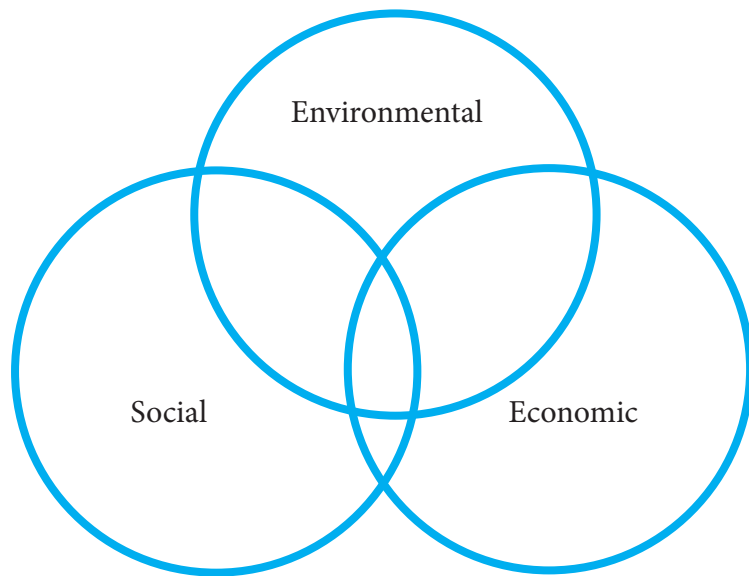
W4

Sustainable Urban Design Concepts

SUSTAINABLE URBAN DESIGN IN WORLD HERITAGE SITES

W4.1

Introduction to sustainability



Cities must become greener for the sake of the diversity of many species who inhabit them.
It is needed to identify the major issues in making cities environmentally sustainable as an integrated approach is needed.

Understanding of the:

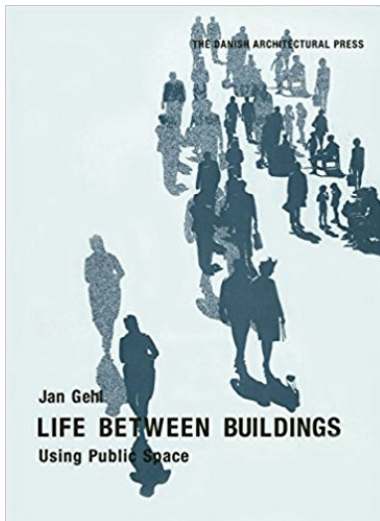
1. context (environmental, historical, social etc...)
2. scale for the appropriate solution (block, building, neighbourhood ...)

Sustainability pillars:

1. social
2. economical
3. environmental

the Environmental factor is the easiest to assess as it is based on quantifiable data and parameters.

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015



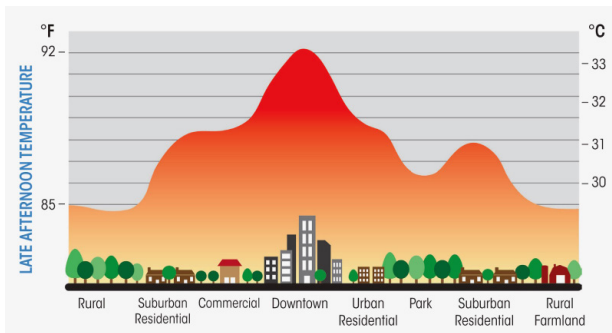
One of the prevailing solutions is to design cities to return pedestrians and cyclists scale. Designers should think cities with a slower rhythm made of a rhythm that includes “accidents” to enjoy the slower dimension.

The space in between buildings and the landscape promotes biodiversity and empowers the public space.

The key factors are interconnected and can be identified with the

1. form and density of the city
2. the movement and transportation

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

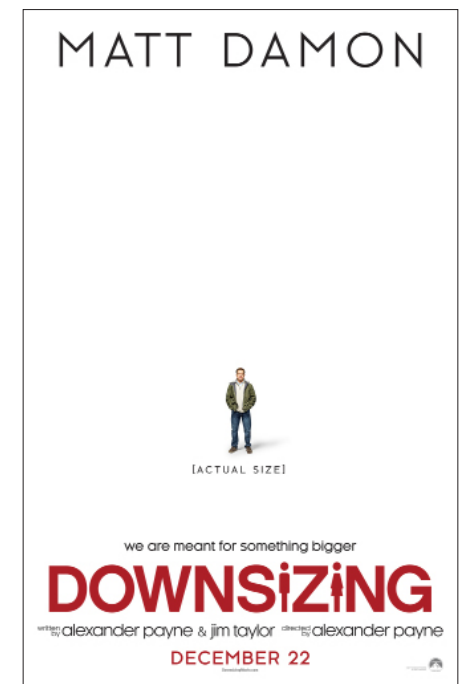


Cities tend to accumulate heat with the so-called "heat-island phenomenon". Cities can be several degrees warmer than their surroundings. And with the temperature rises the phenomenon is getting more marked.

source: cliffmass.blogspot.com

London Urban Heat Island (UHI) was recorded by UCL during the LUCID project from the 26th of May to the 19th of July 2006. This shows the difference of heat from the outskirts and rural areas of the city to the central parts.

Global warming risks to lead to social political and economical disruption.



A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

The city is a complex system as it is made of systems. To work on sustainability we need to look at each flow and understand

Where does it come from? How does it get there? Who looks after it?
What does it do? Where does it go?

This to develop a long term strategy to reduce the environmental footprint of each city. It is both an individual and a political challenge.

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015



1.2 View down a narrow street in central London.

1.3 Figure ground plan showing Malmö's Western Harbour street pattern.



Site analysis

It is important to analyse at least two factors that could make the urban microclimate better and lower the need of air conditioning and heat:

- solar patterns
- wind crossing the site

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

Urban planning and design

Walkable structure

Polycentric urban structure in which a town or a city comprises a network of distinct but overlapping communities.

In this case facilities need to be within 800m distance (10 minutes walk).

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

Urban planning and design

The **attributes** of the walkable community are:

- shops and services along the main street
- community facilities that stand around the neighbourhood (such as schools, health centres etc..)
- range of housing opportunities (tenure, sizes etc)
- higher densities of houses on the edges
- people move to the center
- mixed used development

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

Planning design opportunities encompasses a variety of possibilities, however the main rule to follow is to **contextualize**.

Being aware of the cultural and physical context of the neighbourhood, also through a cultural mapping of the local tangible and intangible features is crucial for the success of the project.

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

Main guidelines:

1. corners have to be designed to be safe and with active frontage

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2. orientation need to be thought to increase the solar potential
3. internal layout needs to reflect the solar orientation
4. the threshold between street and dwelling has to be designed for services
5. streets should be a place where a variety of activities takes place

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015

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- social mixity
- services/facilities that meet a range of needs
 - engagement of the local community
 - quality of public transport services
- long term management and maintenance

A. Ritchie, R. Thomas, *Sustainable Urban Design, an environmental approach*, Routledge, London, 2015



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