



## SUSTAINABLE URBAN DESIGN IN WORLD HERITAGE SITES



# Erasmus+

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## W4.2

Elements of sustainable urban design

# Travel

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

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Mobility, in our industrialized society, is driven by the exploitation and consumption of fossil fuels. The resulting emissions are significantly impacting climate change and global warming.

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## Cars effects

the use of cars is affecting a lot the urban life.

It impacts the global warming but also peoples' health.

With the use of cars in their everyday lives, inhabitants reduced dramatically their physical exercise if compared to the pietonal or cycling system, increasing the possibilities of illnesses.

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public transportation

bicycles

walking

low emissions vehicles



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### Primary distribution

Main road - routes providing connections across the city

### District distribution

Avenue or boulevard - formal, generous landscaping

### Local distribution

High street - mixed uses, active frontage

### Access road

Street or Square - mainly residential, building lines calming traffic

### Cul de sac

Mews/Courtyard - shared space for parking and other uses

# TRANSPORTATION

reduce the **dominance of cars** in the urban centres

reduce **traffic speed** and give **priority** to pedestrians and cyclists

improve the **image of public transport** both in the design and in the service

**mixed use** new developments projects

## LANDSCAPE AND NATURE

they **affect the microclimate**. They bind airborne particles, absorb noise, raise humidity, reduce temperature fluctuation and lower wind speed.

make the urban environment **calmer** and more **comfortable**.

**wildlife corridors** crossing the urban fabric can improve the biodiversity of the city.

**free drainage** should be reserved to the 5% of a site.

**green and brown roofs** should be considered as additional landscape elements.

## BUILDING DESIGN

free of charge choices need to be done (orientation, mass, form etc.)

building highly insulated in order to reduce the demand of energy.

low-energy ventilation systems

buildings components should be conceived to be re-shaped for the improvement of technological innovations in time.

## ENERGY AND INFORMATION

energetic demand and supply should be analysed simultaneously.

all the possible renewable energy resources should be used simultaneously.

reuse waste as source of energy.

IT should touch all the aspects of the sustainable city.

# MATERIALS

explore reclaimed materials.

design taking into consideration the deconstruction.

# WATER

reduce the demand

ensure the quality of water is as high as required for the use and not higher.

rainwater collection and proper organization of the site for this purpose.

landscape choices that do not need irrigation in summer.



# WASTE

minimise waste

use waste as an energy/material resource.

minimize water use for the waste disposal.



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