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LECTURES

May 08th and May 15th 2023, online

The multiple aspects of urban regeneration in the time of climate change

Title : CLIMATE ADAPTATION THROUGH PUBLIC SPACE DESIGN

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URBAN OPEN SPACES

are places where nature, city, and its inhabitants come together.

- They are both **reflection** of environmental problems and part of their **solution**, and as such have great ecological importance.

PUBLIC SPACES

are social spaces that are open and accessible to PEOPLE.

- They are simultaneously part of **urban open space** system and part of **public sphere**.
- Besides their aesthetic and functional importance, public spaces are constituents of urban identity and serve as the arenas for social interaction and cultural exchange. **+ Climate adaptation function**

Photo: Aleksandar Kujučev, PaPs archive

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PUBLIC SPACE DESIGN refers to design actions that contribute to creation of places that are functional, sociable, accessible, comfortable and have a good image (PPS). It is multiscalar concept that refers to both **public space system and its elements** .

DESIGN of public realm considers (CABE, 2003):

a) The relationship of the building to the street :
- The rhythm, pattern and harmony of building openings
- Boundary treatment and frontage condition at street level
- The architectural expression of entrances, corners, roofscape

b) Streetscape and landscape
- Paving, planting and street furniture
- The integration of public art, lighting, signing and way-markers
- The treatment of parks, play and recreation areas, natural features

c) Details and materials
- The texture, colour, pattern, durability and treatment of materials
- The art, building techniques and detail of building components
- Materials sourced from local and/or sustainable sources
- The treatment of shop fronts, entrances and building security

Photo: Aleksandar Kujučev, PaPs archive

Photo: J.Živković

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CLIMATE CHANGE in 21st century

- **Is one of the most challenging and complex problems** facing humanity, that is at the same time global and local, environmental and development problem
- **Creates a new lens** for examining and evaluating urban development, planning and design
- **Introduces new constraints:** demand for minimizing carbon emissions and for adapting to climate change
- **Opens new opportunities for the cities**: to improve different environmental features and become better place to live and invest

- **CLIMATE CHANGE MITIGATION** refers to actions on reducing greenhouse gas emissions in order to limit future climate change,
- **ADAPTATION TO CLIMATE CHANGE** refers to changing the way our environments and societies are shaped and managed in response to the impacts of climate change on buildings, infrastructure, ecosystems , human comfort and health.

Valjevo, Serbia. Source: 614825_poplava-2014-centar-valjeva. https://www.blic.rs/vesti/srbija/valjevo-godinu-posle-poplave-bez-kuca-jos-22-porodice/fmez80x

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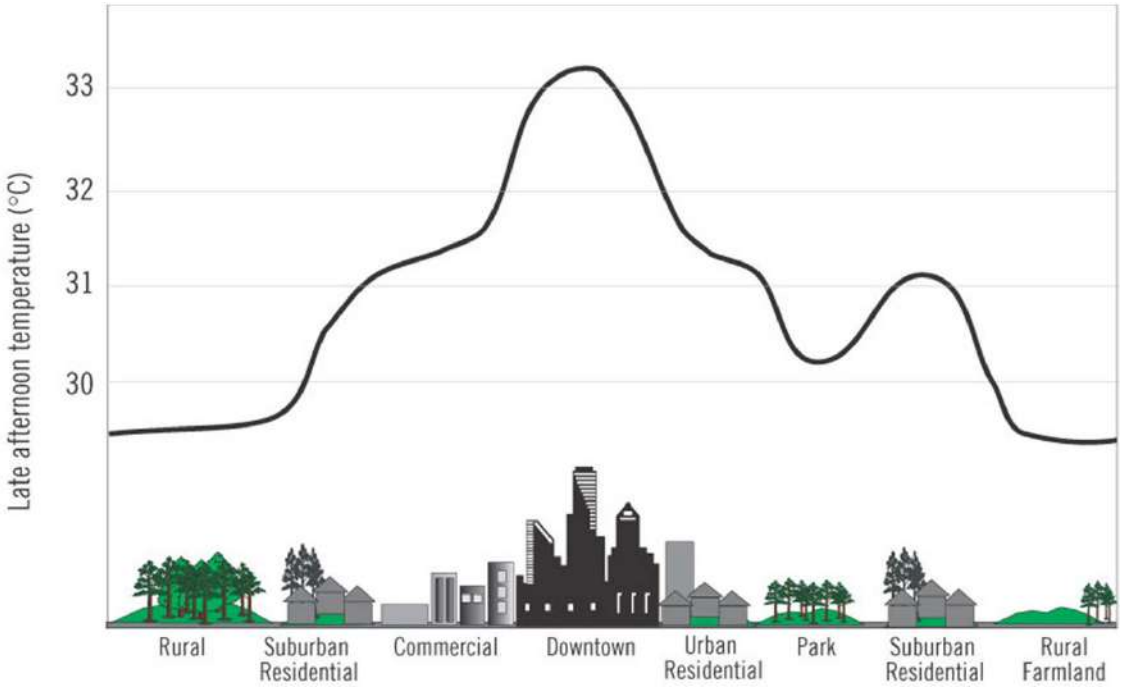
- **URBAN AREAS are especially vulnerable** to the impacts of climate change due to their high population density and physical structure
- **URBAN BUILT ENVIRONMENT** is not only exposed to climate change risks, but also has an impact on it.
  - 'Urban heat islands' (UHI)
  - Costal, fluvial and pluvial flood risks
- **CLIMATE CHANGE ADAPTATION is complex problem** linked to other domains of human life and actions.
  - It is environmental problem but it is also about **capacity of individuals and communities to respond to risks and threats**.
  - It is about **HOW** we both **create and respond to change** and how we sustain development in balance with nature
- **CLIMATE ADAPTATION POLICIES and measures recognize public and open spaces as an important action area**, due both to their vulnerability and their potential to respond to various climate-related issues
  - Adapting to climate change through public space design requires a **shift in mindset** - from fragmentary and problem-solving way of thinking, **towards an integral , systemic and proactive** one



Urban heat Island. ESA https://www.esa.int/ESA_Multimedia/Images/2008/07/Profile_of_Urban_Heat_Island#.ZEkAMlqdOfY.link

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CLIMATE CHANGE IMPACT on cities can be analysed in relation to main **EXPOSURE UNITS** (Handley & Carter 2006):

- **BUILDING INTEGRITY** means that both buildings and infrastructure are at risk to increased coastal, fluvial and pluvial flood risks and shrinking and swelling of the ground erosion.
- **URBAN GREEN SPACES** are important for improving the climate conditions and combating the threats induced by climate change, but they can also be affected by climate change. It is expected that climate change will lead to more droughts in summers, and this will mean a greater need for urban green spaces to be watered.
- **HUMAN COMFORT AND HEALTH** in urban areas are threatened by climate change due to rising temperatures and more intense rainfall events with associated flooding. With the prospect of climate change, people will need to be aided in their efforts to adapt to the different expected new climatic conditions within urban areas.

EXPOSURE UNITS

- **Building integrity**
- **Urban green space**
- **Human comfort and health**

ADAPTATION POLICIES & MEASURES

- **Flood**
- **Overheating**
- **Droughts/ Water Management**

CLIMATE SENSITIVE PUBLIC SPACE DESIGN

- **Green and blue infrastructure**
- **Built structures**

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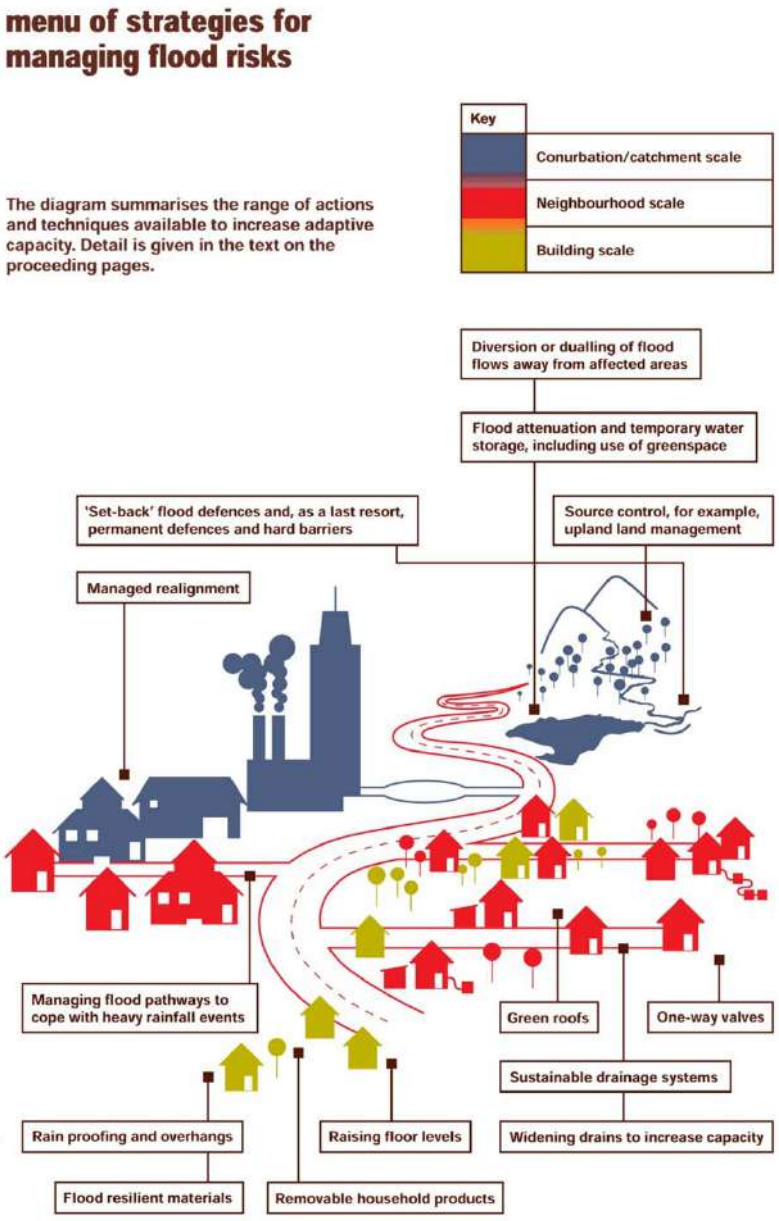
1. ADAPTATION TO FLOODING

1. **Safeguard LAND–HOLISTIC APPROACH**
2. **Creation of hard, permanent FLOOD DEFENSE**
3. **Reduce flood RISKS**
4. **Use SUSTAINABLE DRAINAGE systems (SUDS)**
5. **Good quality GREEN INFRASTRUCTURE**
6. **Provision of TEMPORARY WATER STORAGE capacity**
7. **Upland and lowland STORAGE AND PLANNING to reduce runoff**
8. **Diversion of FLOOD FLOWS AWAY from vulnerable areas**

Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for sustainable communities*. TCPA, London



Source: Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for sustainable communities*. TCPA, London

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1. ADAPTATION TO FLOODING

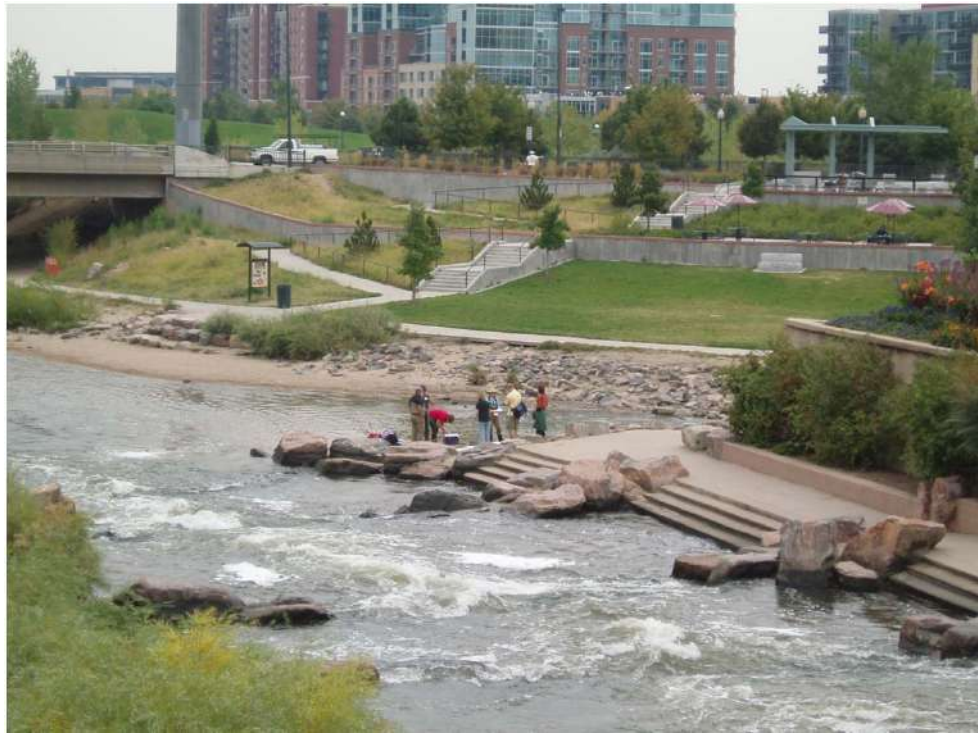
CONVENTIONAL flood control design

- focus narrowly on the efficient conveyance of water, with little regard for environmental resource planning and natural geomorphic processes. Consequently, flood control projects are often environmentally disastrous, and expensive to maintain.

INTEGRAL approaches to flooding in open space design

- utilizes an integrated planning process that requires that all the significant hydrologic, geomorphic, ecologic, social and economic factors have to be considered.

Mouth Klov Stream in Kyiv, Ukraine.
Source:https://en.wikipedia.org/wiki/Klov#/media/File:Mouth_of_Klov.jpg



Confluence Park project. World Water Monitoring Day .USEPA Environmental-Protection-Agency

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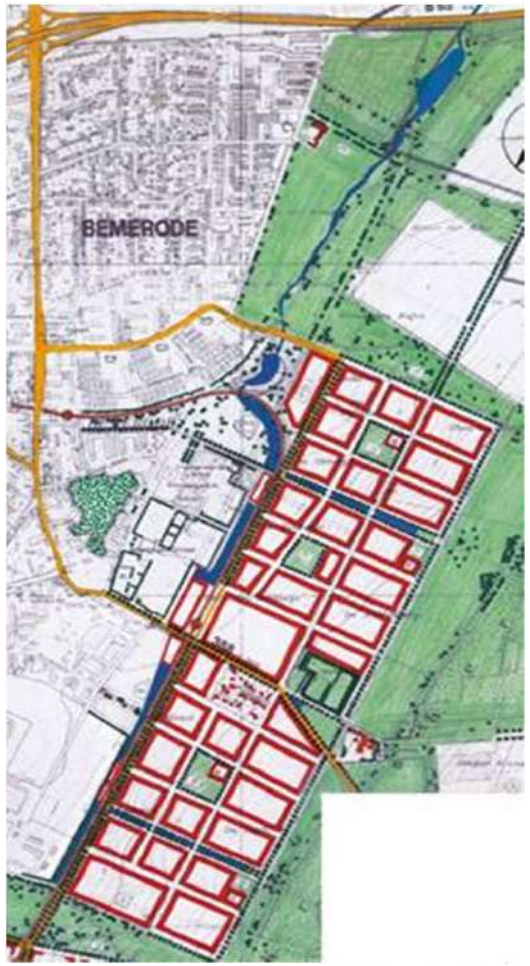
1. ADAPTATION TO FLOODING



Providing space for water - KRONSBERG, Germany

Source: Stadtwässerung Hannover. (2002). Water Concept Kronsberg, Part of the EXPO project: Ecological Optimisation Kronsberg. Hannover

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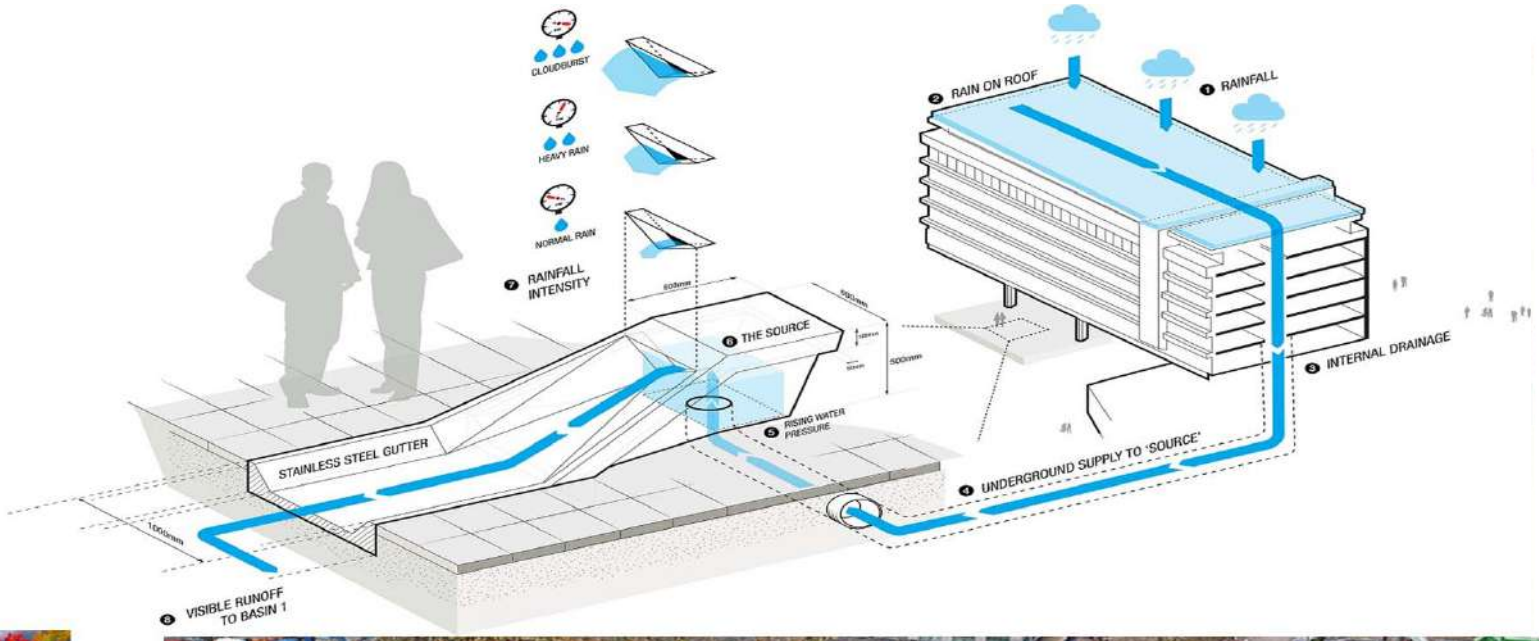
1. ADAPTATION TO FLOODING

Providing space for water
WATERSQUARE Benthemplein, Rotterdam



Source: https://inhabitat.com/waterpleinen-rain-reserviors-a-dynamic-public-spaces/

Source: http://www.urbanisten.nl/wp/?portfolio=waterplein-benthemplein

Source: https://www.dutchwatersector.com/news/new-innovative-water-square-combines-leisure-and-storm-water-storage-in-rotterdam-the

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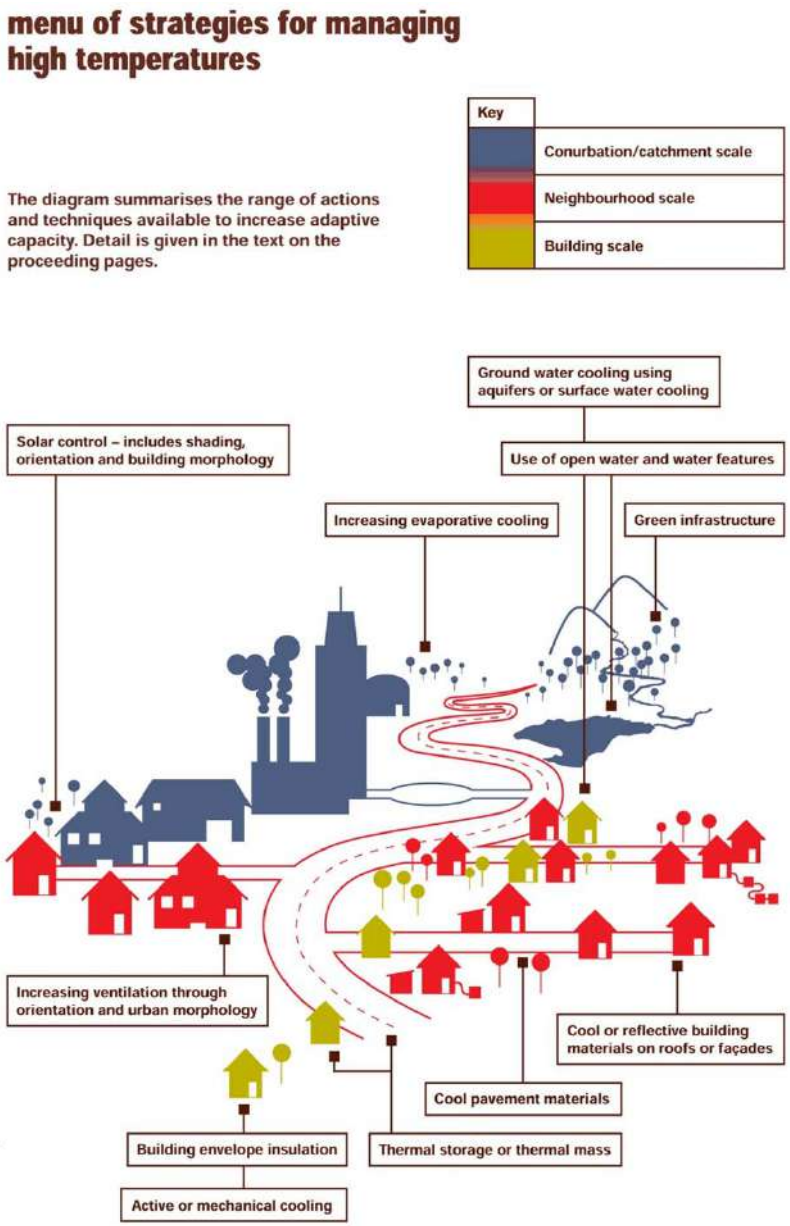
2. ADAPTATION TO OVERHEATING

1. **Good quality GREEN INFRASTRUCTURE**
2. **Making BLUE SPACE ACCESSIBLE**
3. **SHADING AND ORIENTATION**
4. **Passive VENTILATION**
5. **COOL MATERIALS**

Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for sustainable communities*. TCPA, London



Source: Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for sustainable communities*. TCPA, London

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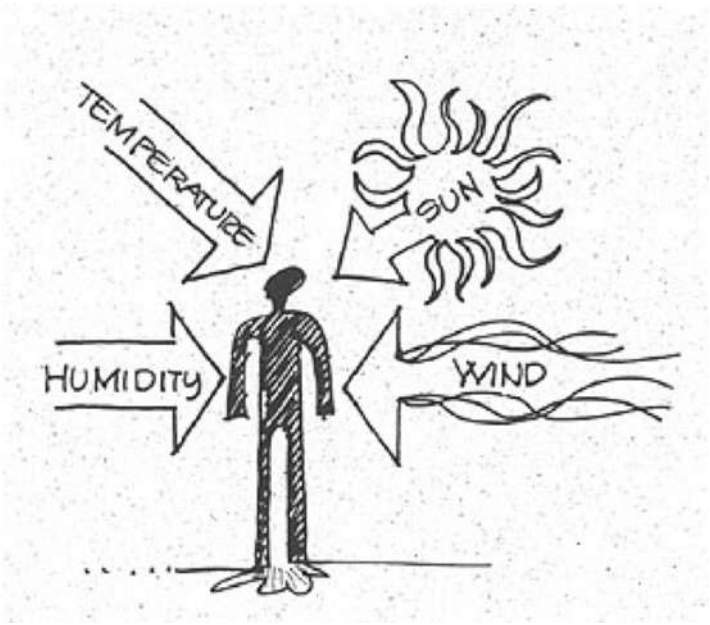
2. ADAPTATION TO OVERHEATING

Conventional approaches to overheating

- include choice of technical solutions (shades, greenery, bodies of water) focused primarily on an overheating problem as it affects human beings.

Integral approach to overheating

- recognize overheating as a part of actions for enhancing living conditions in the city.
- Combating overheating should be approached simultaneously with improving water and air quality in the cities.
- Formation of connected, functionally attractive and accessible green and blue system is essential.



Source: Shiller, M. (2004). Mechanical and Electrical Systems. Chicago: Dearborn Financial Publishing

Source:Ching F.D.K. (2015) Architecture: Form, Space, and Order, Wiley

Source: Goossens J., Guinee A., Oosterhoff(ed.) (1995) Public Space - Design, Layout and Management of Public Open space in Rotterdam, 010 Publishers, Rotterdam,

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2. ADAPTATION TO OVERHEATING

SHADING AND ORIENTATION

Photo: J.Živković

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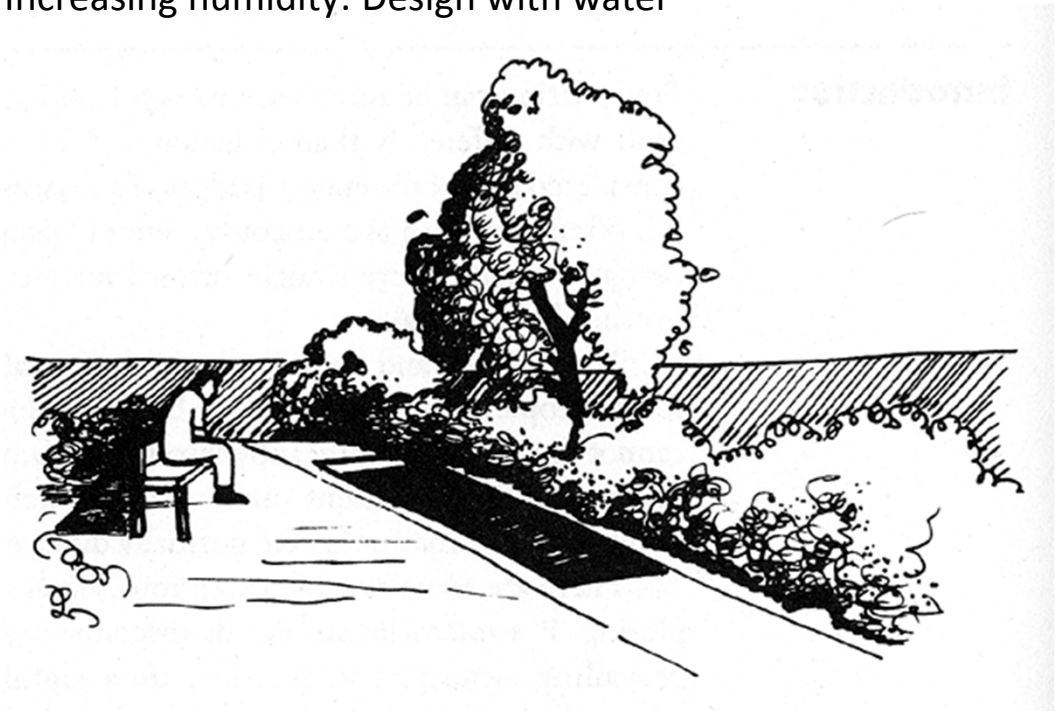
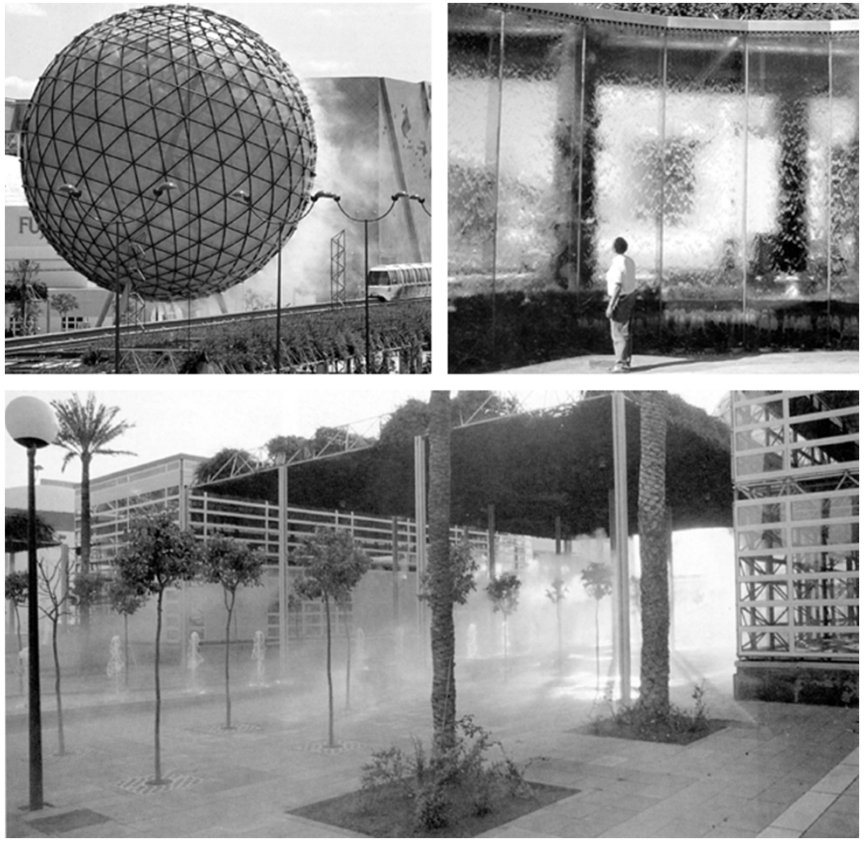
2. ADAPTATION TO OVERHEATING

Making BLUE SPACE ACCESSIBLE

Increasing humidity: Design with water



Source: Brown, R., Gillespie, T. (1996) Microclimatic Landscape Design, Wiley & Sons



Source: Architectural Record 8/1992

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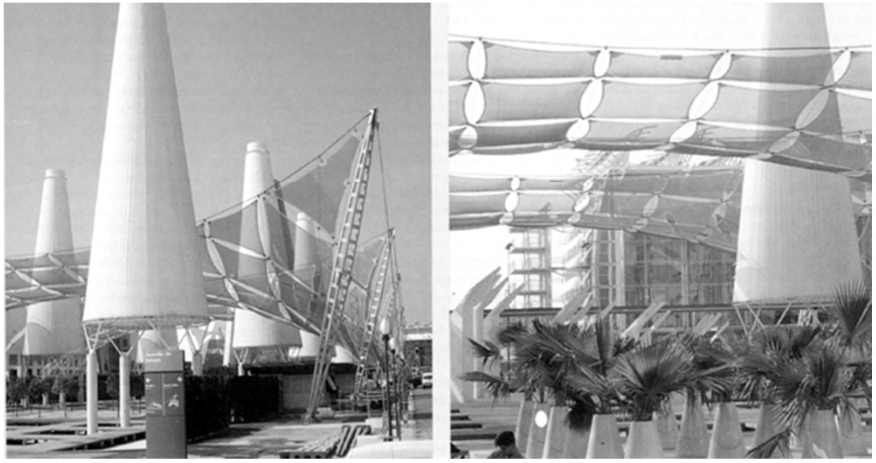
2. ADAPTATION TO OVERHEATING

Passive VENTILATION
at local level

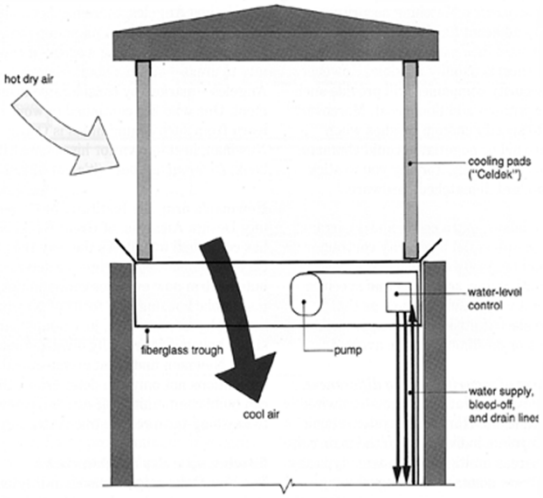
Wind tower /windcatcher
Is traditional architectural element used to create cross ventilation and passive cooling in building.

Contemporary use:
- Lisbon EXPO 1992
- Phoenix (Arizona) bus stop

Source: https://en.wikipedia.org/wiki/Windcatcher



Source: Architectural Record 8/1992



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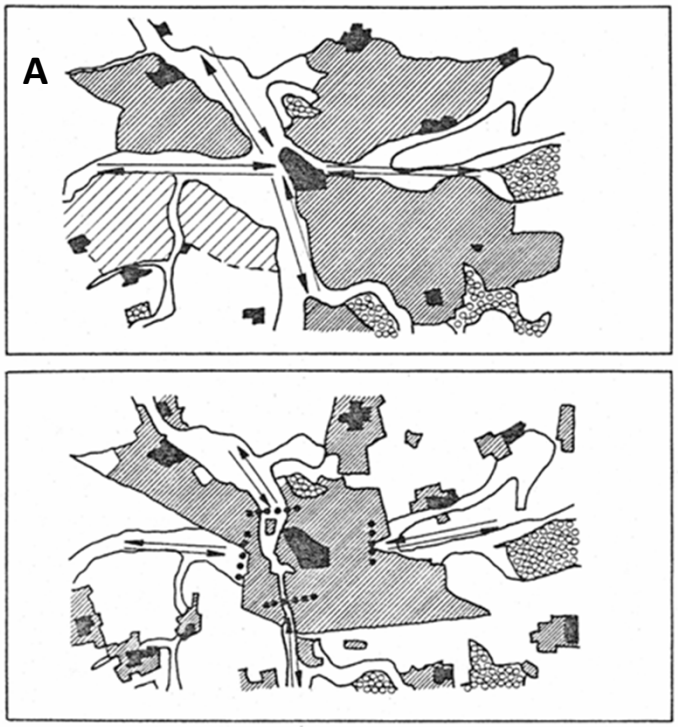
2. ADAPTATION TO OVERHEATING

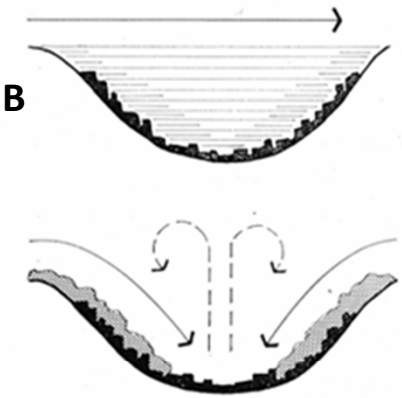
Passive VENTILATION – city/neighbourhood level

A

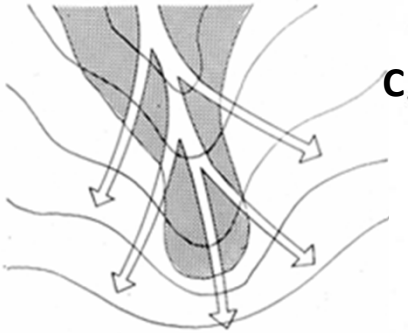


Source: Albertshauser, E.M. (1985) Neue Grunflachen Fur Die Stadt, Callwey, Munchen

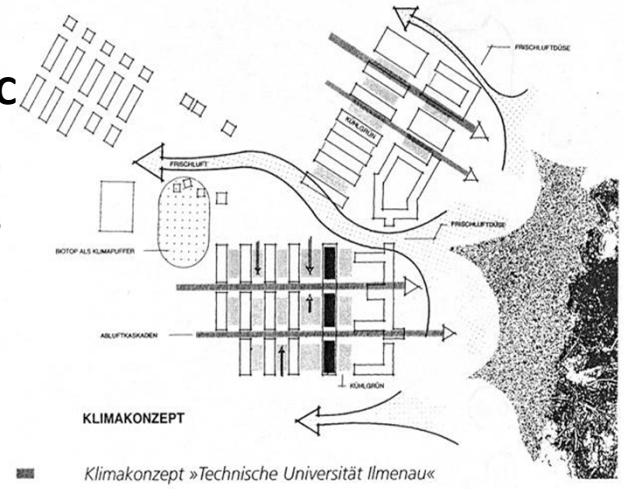
B



Source: Cliff, T. (1975) *Handbook Of Urban Landscape*, The Architectural Press, London



C



Source: DBZ 5/97, 1997

A. **Protection of natural corridors**
B. **Strategic location of green spaces**
C. **Bioclimatic urban design**

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2. ADAPTATION TO OVERHEATING

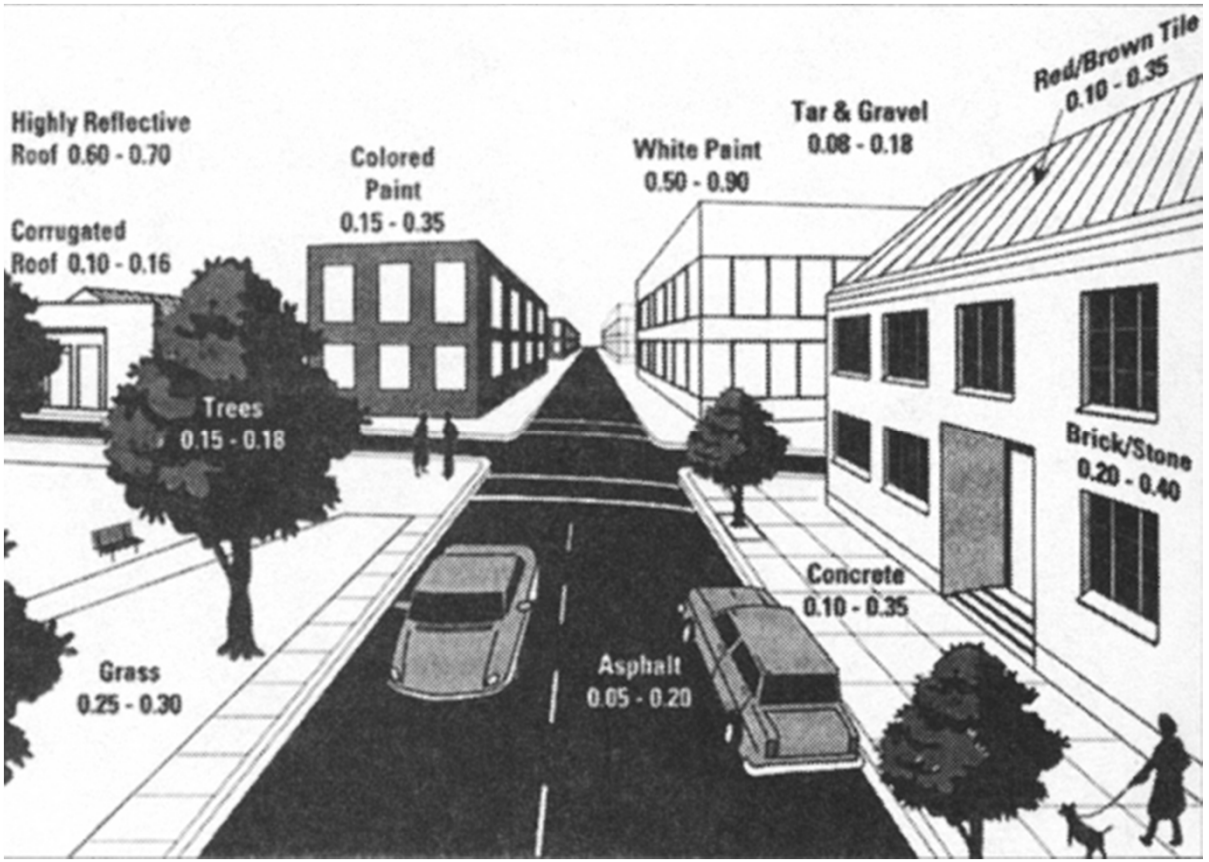
COOL MATERIALS

Design with albedo in mind

Albedo is the fraction of light that a surface reflects.

„**Urban albedo -** *the capacity of urban surfaces to reflect solar radiation- is one of the most important contributors to changes in outdoor temperature, intensifying the urban heat island phenomenon, where temperatures in urban centres are higher than the surrounding rural environs*."

(Urban Albedo- The capacity of urban surfaces to reflect solar radiation.)



SourceUrban Ecologist, no.1, 1997

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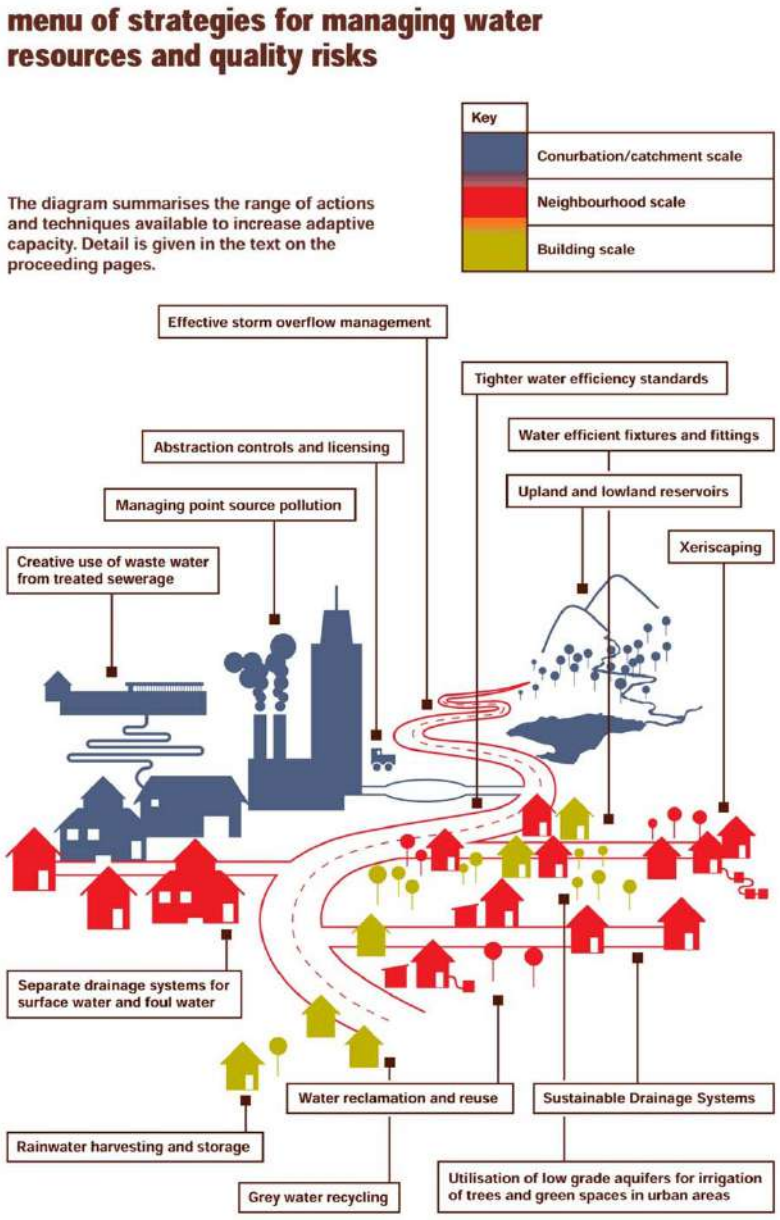
3. ADAPTATION TO DROUGHTS/WATER MANAGEMENT

1. **Creation of upland and lowland RESERVOIRS**
2. **Providing SPACE FOR TREATMENT of storm water and waste water**
3. **Use of sustainable drainage systems SUDS**
4. **Greater use of separate drainage systems**
5. **Use of LOW WATER USE PLANTING and underground storage**

Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for sustainable communities*. TCPA, London



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3. ADAPTATION TO DROUGHTS/WATER MANAGEMENT

Conventional approaches to droughts/water management

- Creation of reservoirs
- Polluted waters are conventionally treated by re-piping to a remote wastewater treatment facility. It is expensive, requires additional space and high maintenance costs

Source: John Todd, Urban Municipal Canal Restorer, Fuzhou, China (http://toddecological.com/PDFs/100623.casestudy.baima.pdf)

Integral approaches to droughts/water management

- Rainwater can be collected and re-used in droughts period
- Affordable treatment of polluted waters through nature based solutions
- Water treatment can be integrated into urban environment and allow for multiple benefits.

Photo: Aleksandar Kujučev

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3. ADAPTATION TO DROUGHTS/WATER MANAGEMENT

Facing increasing demands on existing water supplies, cities should encourage **conservation of water** through an extensive programming of creative landscaping.

SUDS/WSUDS, are **drainage systems** that are considered to be environmentally beneficial, causing minimal or no long-term detrimental damage. They manage surface water while taking account of water quantity (flooding), water quality (pollution) biodiversity (wildlife and plants) and amenity .

Xeriscaping in Albuquerque, New Mexico
Source: Sites Southwest

Hammarby Sjostat, Stockholm
Source: Hammarby Sjöstad – a unique environmental project in Stockholm (2007) Available: https://apo.org.au/sites/default/files/resource-files/2007-06/apo-nid196771.pdf

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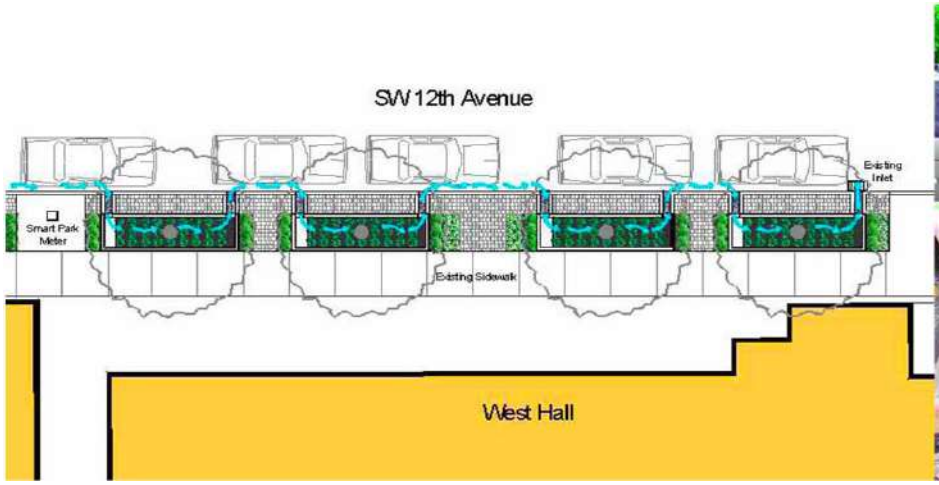
MULTIFUNCTIONAL PUBLIC SPACES

- Although conventional approaches can solve singular problems, **MULTIFUNCTIONAL AND INTEGRAL PROJECTS** can achieve multiple goals and contribute to different fields of climate action.
- Climate adaptation through public space design can have a high level of **AUTHENTICITY** if it is based on recognition that both past, present and future of place is important.
- Authenticity of projects contributes to their sustainability through their better acceptance among local citizens and higher attraction to visitors.
- **PUBLIC ART** is important for acheiving this goal



Green streets of Portland, Oregon.

Source: https://www.portland.gov/bes/stormwater/about-green-streets

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PUBLIC ART AND PUBLIC SPACE DESIGN

Although, it might seem, at the first sight, that two large and important social and spatial practices: **art and production of space**, are naturally cooperating, that is not the case. There are many aggravating circumstances that lead to difficulties in cooperation between these two practices, which results that they are mostly realized completely independently and separately, as it actually is, deep in their own nature.

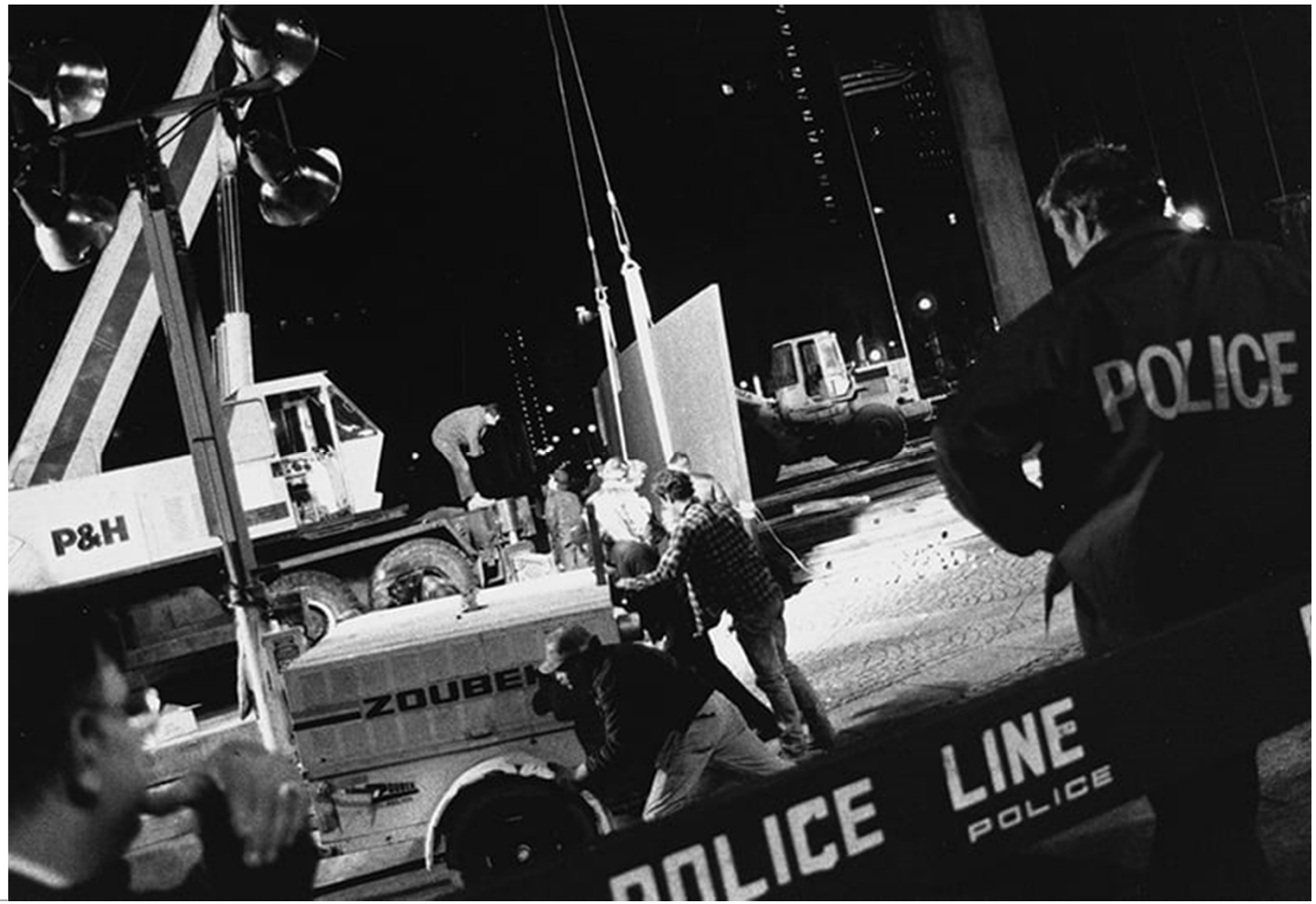

Photo Jennifer Kotter (March 15, 1989) *Dismantling of Tilted Arc*, Federal Plaza, New York (https://metropolismag.com/viewpoints/conversations-about-sculpture-excerpt-foster-serra/)

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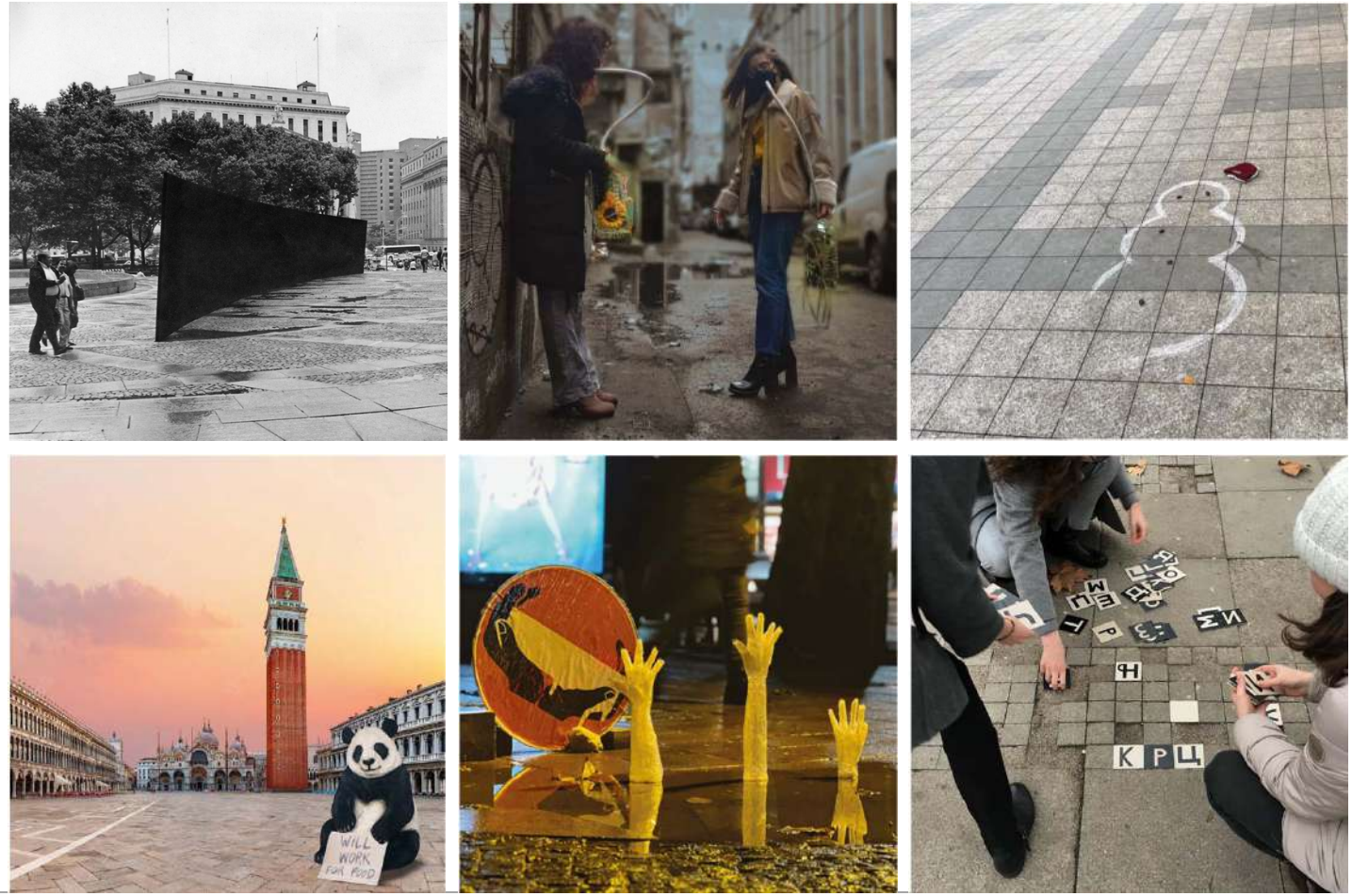
PUBLIC ART AND PUBLIC SPACE DESIGN

Public art refers to works of art in any medium that are planned and executed with the specific intention of being located or performed in the public spaces and freely accessible to all.



Up left: Richard Serra (1981) *Tilted Arc*, Federal Plaza, New York, USA / all others: Public Art & Public Space program for CliCCHE (2023): sculpture, performance, graffiti, digital collage, installation, urban play

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PUBLIC ART AND PUBLIC SPACE DESIGN

Public art is closely related to the context in which it is created and can be spatially, socially or thematically specific.

It can be placed in a closed or open public space, small or large, and can be an artistic intervention of a permanent or temporary character.

Nélé Azevedo (2009): *Melting Nen / Army of Melting Men*,Berlin, Germany

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PUBLIC ART AND PUBLIC SPACE DESIGN

The term public art refers to various artistic interventions in public space - from monumental sculptures commissioned by the public administration, to anonymous graffiti in subways.

Up: Banksy piece near the Oval bridge in Camden, north London, credits: https://www.banksy.co.uk/out.html /
Down: Gordana Trajković (2022) *Migration*, Public Art & Public Space for CliCCHE

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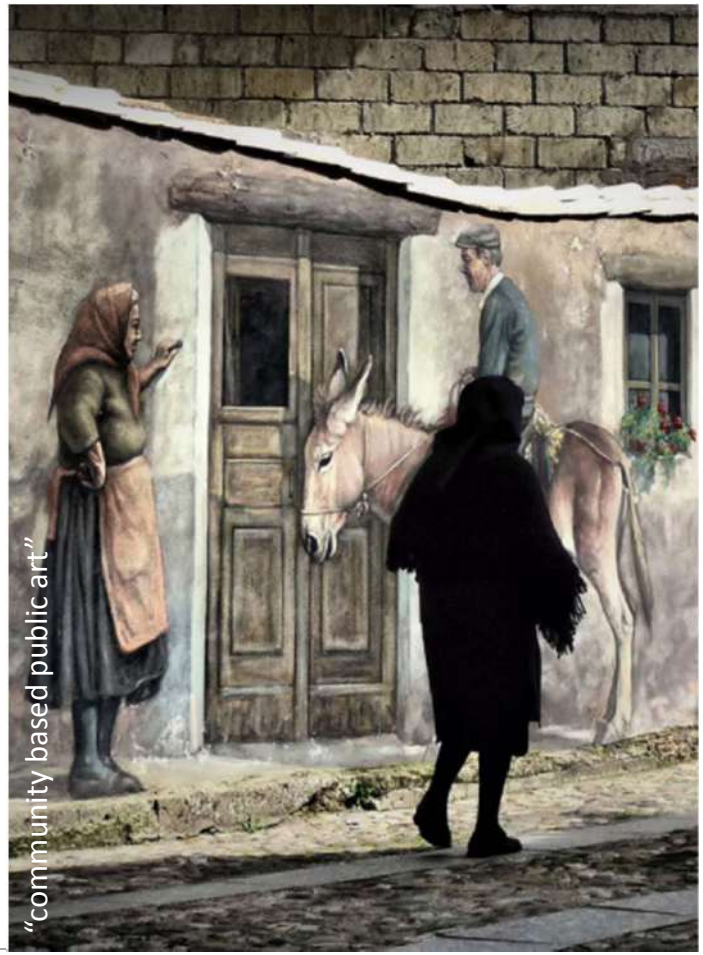
PUBLIC ART AND PUBLIC SPACE DESIGN

During the last century, **public art has been diversified in a wide range of "*arts*".** But it was also transformed from the "*art exposed outdoor – in public space*", over the "*site specific public art*", to the "*community based public art*" and "*place-making*" practice.


"art exposed outdoor – in public space"


"site specific public art


"community based public art"

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PUBLIC ART AND PUBLIC SPACE DESIGN

Public art is an important activity in place-making practice and give many benefits for urban quality in general.

Giuseppe Zocchi (first half of 18th century) *Piazza della Signoria in Florence*

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PUBLIC ART AND PUBLIC SPACE DESIGN

Public art works are a way of celebrating hopes, beliefs, values and memories in the way to marking a place of communal importance. It helps to create a sense of identity, uniqueness, and civic pride in the city.

Up: Danko Mitov (architect), Ivan Vasilyev (architect), Lyuben Neykov (architect), Boris Kapitanov (architect), Ivan Funev (artist), Lyubomir Dalchev (artist), Mara Georgieva (artist), Vaska Emanuilova (artist), Vasil Zidarov (artist), Petar Doychinov (artist) (1954) *Monument to the Soviet Army (Bulgarian: Паметник на Съветската армия, Pametnik na Savetskata armia) - detail*, Sofia, Bulgaria (Photography: Folkestone Jack) / Down: Unknown Artist (2011) *guerilla street art - graffiti over a part of the Monument to the Soviet Army,* Sofia (Bulgaria) (Photography: RUETERS)

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PUBLIC ART AND PUBLIC SPACE DESIGN

Public art boosts social capital and improves local economies.

Public art has been seen to promote urban regeneration. It offers a combination of aesthetic values and social identity to activate public spaces. Cities that demonstrate an active and dynamic culture are more attractive to individuals and businesses. Arts and culture also play a key role in developing tourism opportunities while enhancing the city's public image. These factors create jobs from new business ventures, bringing revenue into the local economy.

Public art is capable of enhancing the perceived value of a neighborhood, offering better facilities and quality of life. Communities that see an influx of art witness simultaneous rise in real estate prices. Developers may sponsor local artists to create artwork that drives housing prices upwards.

Aldo Sergiacomi (1983) *Monumento alle Merlettaie (The Monument of Lacemakers)*, Offida (Italy)
(Photograph: Unknown)

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PUBLIC ART AND PUBLIC SPACE DESIGN

Public art does not solve problems. For example, **public art cannot alleviate the problems that climate change creates, but it makes the problems more visible.** It educates, sensitizes and warns the public about the problem and thus motivates the public to take action.

Blu (2009) *for BELEF project Super wall*

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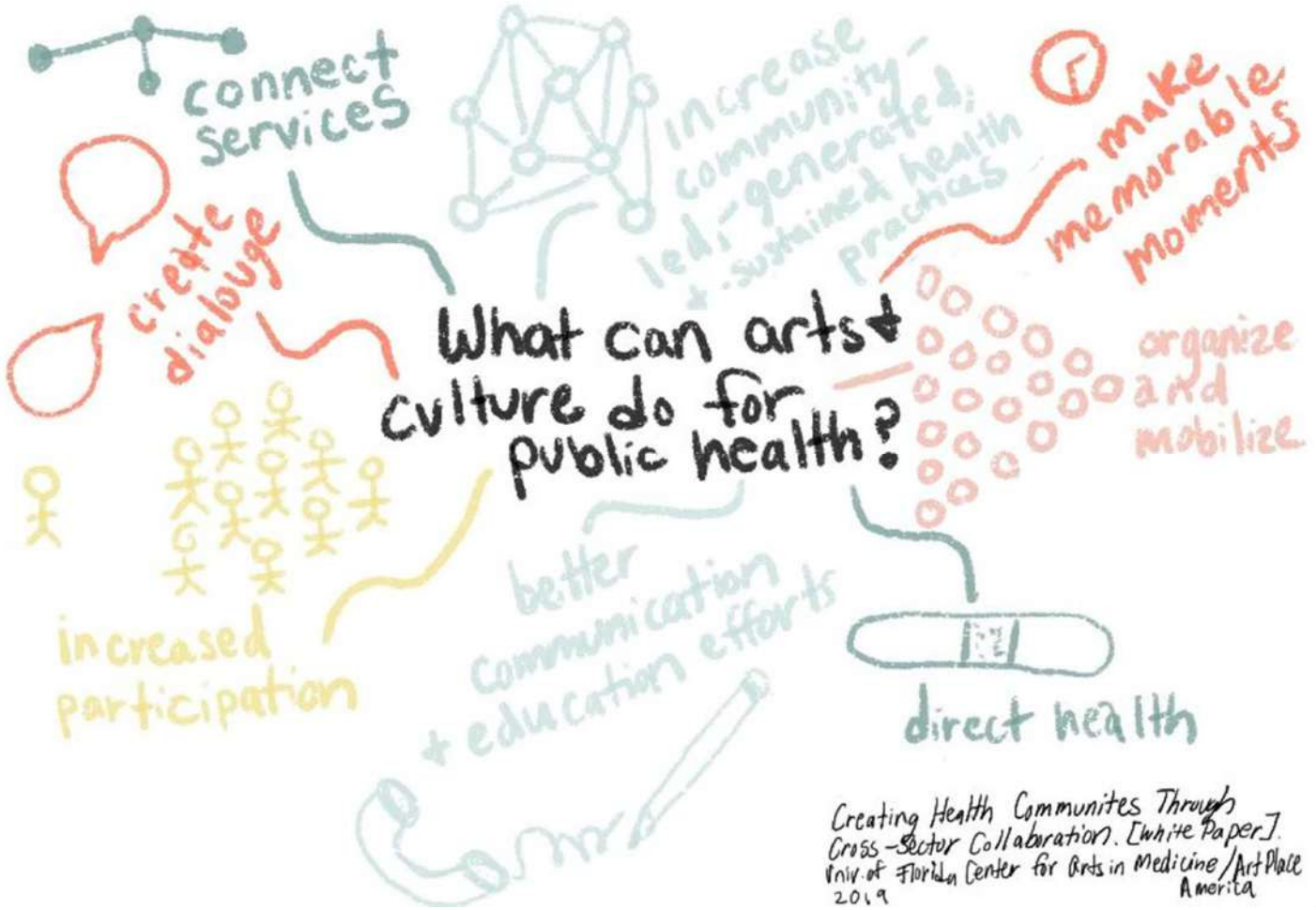
PUBLIC ART AND PUBLIC SPACE DESIGN

On the other hand, there are a variety of ways that **art and culture can create positive health impacts**.

There is evidence that engagement with artistic activities*, either as an observer of the creative efforts of others or as an initiator of one's own creative efforts,* ***can enhance one's moods, emotions, and other psychological states as well as have a salient impact on important physiological parameters.*** (Staricoff R, Loppert S. 2003)

Engagement with creative activities has the potential to contribute toward reducing stress and depression and can serve as a vehicle for alleviating the burden of chronic disease. (Stuckey HL, Nobel J. 2010)



Drawing by Stephanie Echeveste / https://distillcreative.com/blog/2020/2/7/what-can-arts-and-culture-do-for-public-health

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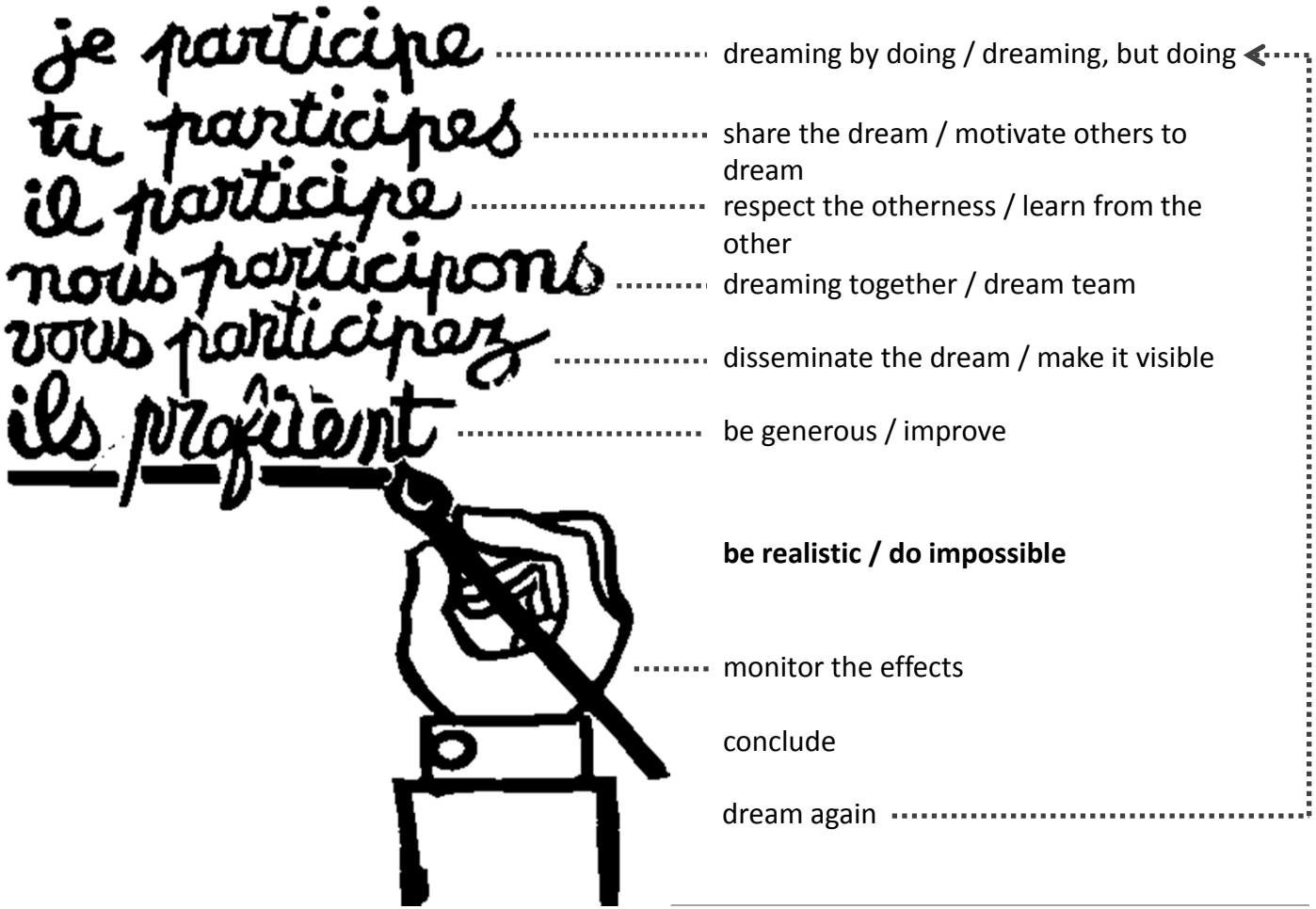
PUBLIC ART AND PUBLIC SPACE DESIGN



Public participation at different levels of public art creation process – becomes a vital for sustainability of urban place-making. For art to truly be public, it must be embraced and accepted by the public and recognized as shared cultural experience.

Public Art & Public Space program: Participatory methodology in participatory public art / https://www.publicart-publicspace.org/

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PUBLIC ART AND PUBLIC SPACE DESIGN

Experiences show that **without official recognition, institutional support and wider citizens' acceptance of public art, it can only have a temporary character and limited effect on the sustainability of the created places.** However, in the cases where this cooperation happens, often there are significant improvements within the city image as well as in the public social sphere.

Sanja Đurić, Katarina Radičević, and Staša Petrović (2015) *Public art & Public space: "Revival of Monuments" intervention at the monument to Nikola Tesla* (sculptor Frano Kršinić 1963.), Belgrade (Serbia) (Photography: Mitar Mitrović)

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Literature

- Albertshauser, E.M. (1985) *Neue Grunflachen Fur Die Stadt*, Callwey, Munchen
- Brown, R., Gillespie, T. (1996) *Microclimatic Landscape Design*, Wiley & Sons.
- CABE (2003). *The Councillor's guide to urban design*. [Online]. Available: https://www.designcouncil.org.uk/fileadmin/uploads/dc/Documents/councillors-guide-to-urban-design.pdf
- CABE (2008) *Adapting Public Space To Climate Change* (2008). Available: www.designcouncil.org.uk/.../Publications/CABE/ adapting-public-space-to-climate-change.pdf (preuzeto 21/03/2011)
- Cliff, T. (1975) *Handbook Of Urban Landscape*, The Architectural Press, London
- Đukanović, Z. & Cecchini, A. B. (eds) (2019). *Wine cellars of Negotin – Participatory Urban Design*; Istituto Italiano di Cultura di Belgrado, Beograd, ISBN 978-86-901492-0-9
- Đukanović, Z. & Živković, J. (2008). *Public Art and Place Making – case study Belgrade, Municipality Stari Grad*, Faculty of Architecture of the University of Belgrade; Belgrade; ISBN 978-86-7924-012-5
- Gill, S., Handley, J., Ennos R & Pauleit S., (2007) Adapting Cities For Climate Change: The Role of the Green Infrastructure, *Built Environment*, Vol 3, No 1, 2007, pp. 115–133.
- Hammarby Sjöstad – a unique environmental project in Stockholm (2007) Available: https://apo.org.au/sites/default/files/resource-files/2007-06/apo-nid196771.pdf
- Handley J., Carter J.(2006) *Adaptation Strategies For Climate Change In The Urban Environment*, ASCCUE Report Draft, Final Report To The National Steering Group; Centre For Urban And Regional Ecology, Manchester.
- Holden, R. (1996) *International Landscape Design*, Laurence King Publishing
- Project for Public Spaces (PPS).*What Makes a Successful Place*? [Online]. Available: https://www.pps.org/article/grplacefeat
- Shaw, R., Colley, M., and Connell, R. (2007) *Climate change adaptation by design: a guide for* sustainable communities. TCPA, London
- Stadtwässerung Hannover. (2002). Water Concept Kronsberg, Part of the EXPO project: Ecological Optimisation Kronsberg. Hannover: Stadtwässerung Hannover.
- Staricoff R, Loppert S. (2003) Integrating the arts into health care: Can we affect clinical outcomes?: Kirklin D, Richardson R. *The Healing Environment Without and Within* London, England: Royal College of Physicians; 63–80
- Stuckey HL, Nobel J. (2010) The connection between art, healing, and public health: a review of current literature. Am J Public Health. 2010 Feb;100(2):254-63. doi: 10.2105/AJPH.2008.156497. Epub 2009 Dec 17. PMID: 20019311; PMCID: PMC2804629.
- Urban Albedo- The capacity of urban surfaces to reflect solar radiation.University of Kent [Online]. Available: https://research.kent.ac.uk/urbanalbedo/
- Živković, J. & Djordjević A. (2016). Otvoreni urbani prostori u prilagođavanju gradov a klimatskim promenama: preporuke za gradove Srbije (Role of Open Spaces in Adapting Cities to Climate Change: Recommendations for Serbian Cities). In: M. Pucar & M. Nenkovic-Riznic, (Eds.), *Prostorni, ekološki, energetski i društveni aspekti razvoja naselja i klimatske promene (Spatial, Environmental, Energy and Social Aspects of Developing Settlements and Climate Change)* (pp.65-92). Beograd: IAUS
- Živković, J., Lalović K.,& Milovanović-Rodić D. (2012). Open Space Design as a Tool for Adapting Cities to Climate Change: Possibilities For Integral Approach, *II International Conference„Ecology of urban areas*" 2012, Ecka:TU-NS pp 375 -385
- Živković, J., Lalović, K., & Milovanović-Rodić, D.(2012). Multifunkcionalnost otvorenih prostora u kontekstu prilagođavanja gradova klimatskim promenama (Multifunctionality of Open Spaces in Adapting Cities to Climate Change), In: M. Bajić-Brković (Ed.), *Klimatske promene, nacionalne politike i lokalni razvoj (Climate changes, national policies and local development)* Belgrade: Faculty of Architecture University of Belgrade
- Zivkovic, J.,& Milovanovic-Rodic, D. (2011) Klimatski senzitivan dizajn javnih prostora kao faktor kvaliteta turističke destinacije (Climate-sensitive Public Space Design as a Quality Factor of Tourist Destination). In K. Lalović, U.Radosavljević (Eds.), *Savremeni pristupi urbanom dizajnu za održivi turizam Srbije (Contemporary approach to urban design for sustainable tourism of Serbia*) (pp.135-159). Belgrade: Faculty of Architecture of the University of Belgrade
- https://artistsandclimatechange.com/tag/public-art/
- https://www.publicart-publicspace.org/

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