

Interaktivna delavnica 3

Interactive workshop 3

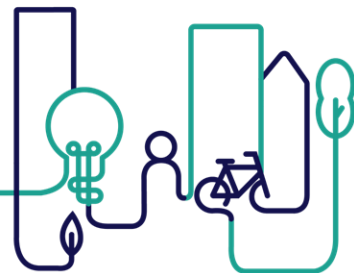
Prilagajanje podnebnim spremembam v urbanih območjih z režimi varstva kulturne dediščine

Adaptation to climate change in urban areas with cultural heritage protection regimes

Klemen Strmšnik, EUI strokovnjak / *EUI IA & Transfer Expert*

Arianna Guerrini, Mesto Bologna / *City of Bologna*

Celje, 19. 11. 2025



Raziščimo primere slovenskih mest bolj podrobno

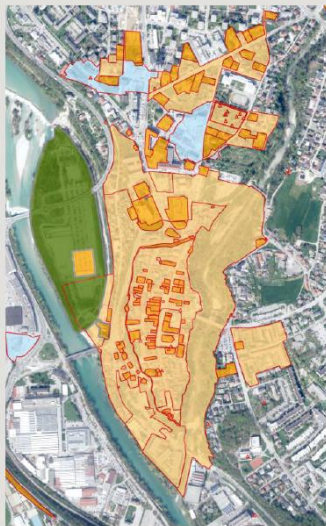
Exploring examples from Slovenian Cities a bit deeper



2025
URBANA
KONFERENCA

Projekt Be Ready

EID 1-00274 Kranj – mestno jedro, Zakon o varstvu kulturne dediščine (ZVKD-1)



Ukrep je **DOPUSTEN**, ko:

1. **ne spreminja** bistvenih značilnosti objekta,
2. je **reverzibilen**,
3. je **usklajen z konservatorskimi smernicami**,
4. je **funkcionalno nujen in strokovno utemeljen**,
5. je **vizualno nevpadljiv**;

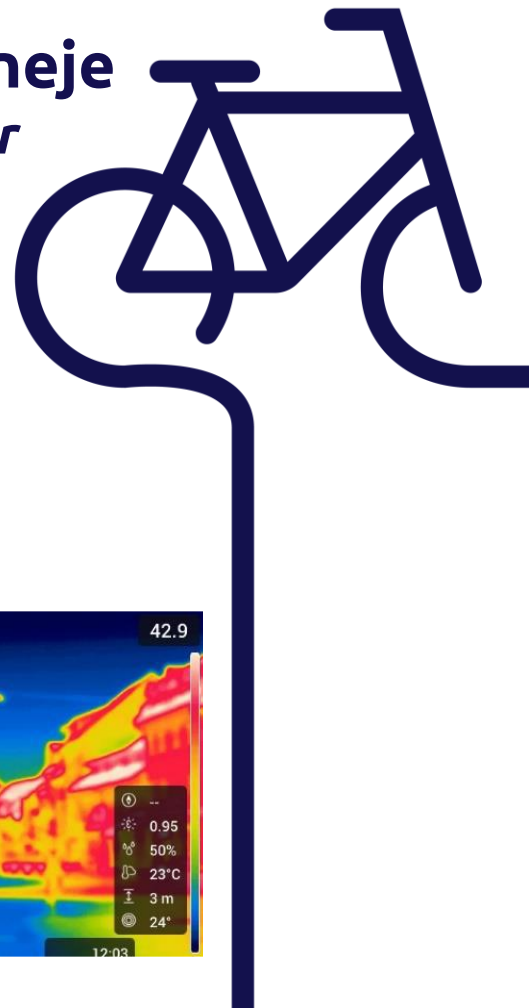
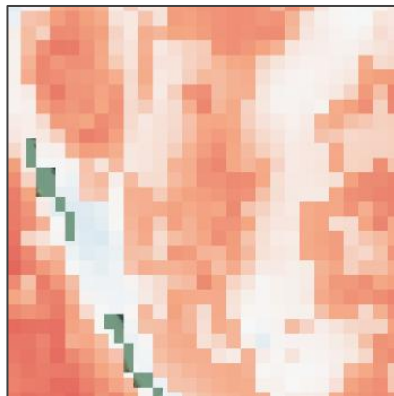
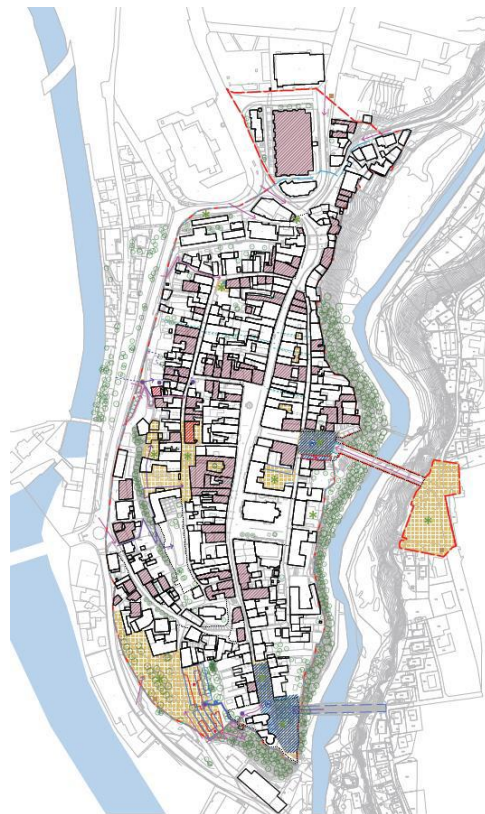
Ukrep je **NEDOPUSTEN**, ko:

1. **nepopravljivo spremeni videz** ali značaj objekta,
2. gradivo ali izvedba **ni skladna s tradicionalnimi materiali**,
3. ukrep **ni strokovno utemeljen**,
4. **prepovedane** so nepremišljene rešitve;

Ukrepi za zmanjševanje pregrevanja zaščitene območij
KD so dopustni, kadar so vizualno, materialno in
tehnično skladni z dediščino, jih spremlja strokovna
utemeljitev, so reverzibilni in prilagojeni posameznemu
objektu.

Raziščimo primere slovenskih mest podrobneje

Exploring examples from Slovenian Cities a bit deeper



Raziščimo primere slovenskih mest podrobneje

Exploring examples from Slovenian Cities a bit deeper



Raziščimo primere slovenskih mest podrobneje

Exploring examples from Slovenian Cities a bit deeper



Interreg Co-funded by the European Union

Alpine Space

ADAPTNOW

PRAKTIČNE IZKUŠNJE Z VARSTVOM DEDIŠČINE IN POPLAVNO ZAŠČITO

dr. Vlasta KRMELJ,
direktorica
Energetsko podnebne agencije za Podravje
županja Občine Selnica ob Dravi



Po poplavih v Železnikih septembra 2007.



24/10/2025

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Raziščimo primere slovenskih mest podrobneje

Exploring examples from Slovenian Cities a bit deeper

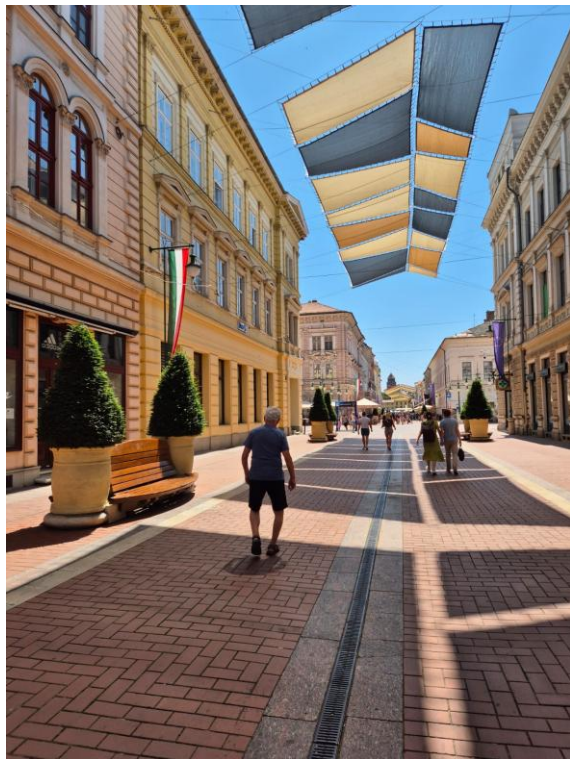


Raziščimo primere slovenskih mest podrobneje

Exploring examples from Slovenian Cities a bit deeper



... in kakšnega drugega
... *and a few others*



Szeged's Choice:
Mobilising Citizens to
Experiment with
Climate Resilient
(Re)Greening Through
a Collective City-Wide
Mindset Shift



Lokalni kontekst Mesta Bologna

Local Context of the City of Bologna



TALEA – primer Mesta Bologna

TALEA – Bologna's Case Study

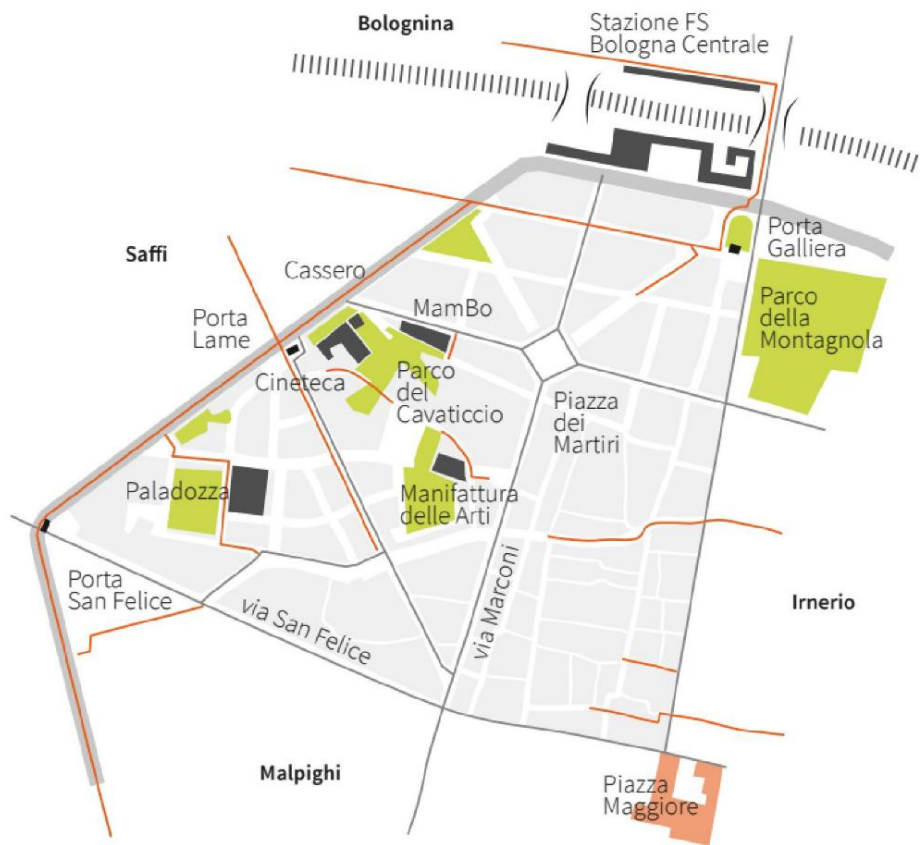
The European project "**TALEA - Green cells leading the Green transition**" was created with the aim of responding to the challenges and critical issues generated by the phenomenon of heat islands in the cities.

The approach combines technology, nature and citizen participation, we intend to experiment actions to make public spaces **climate refuges inclusive and accessible**.



Območje obravnave: Staro mestno jedro

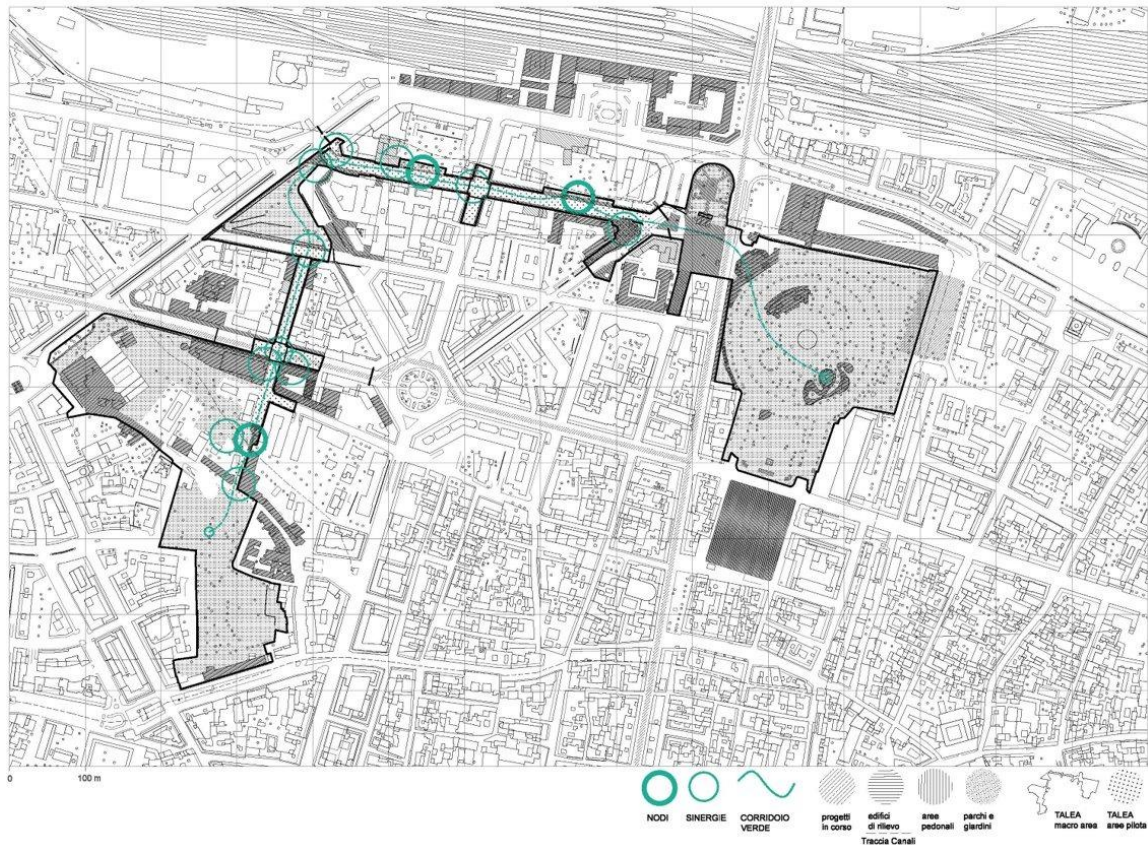
Intervention area: Historical centre of Bologna



Območje obravnave: Staro mestno jedro

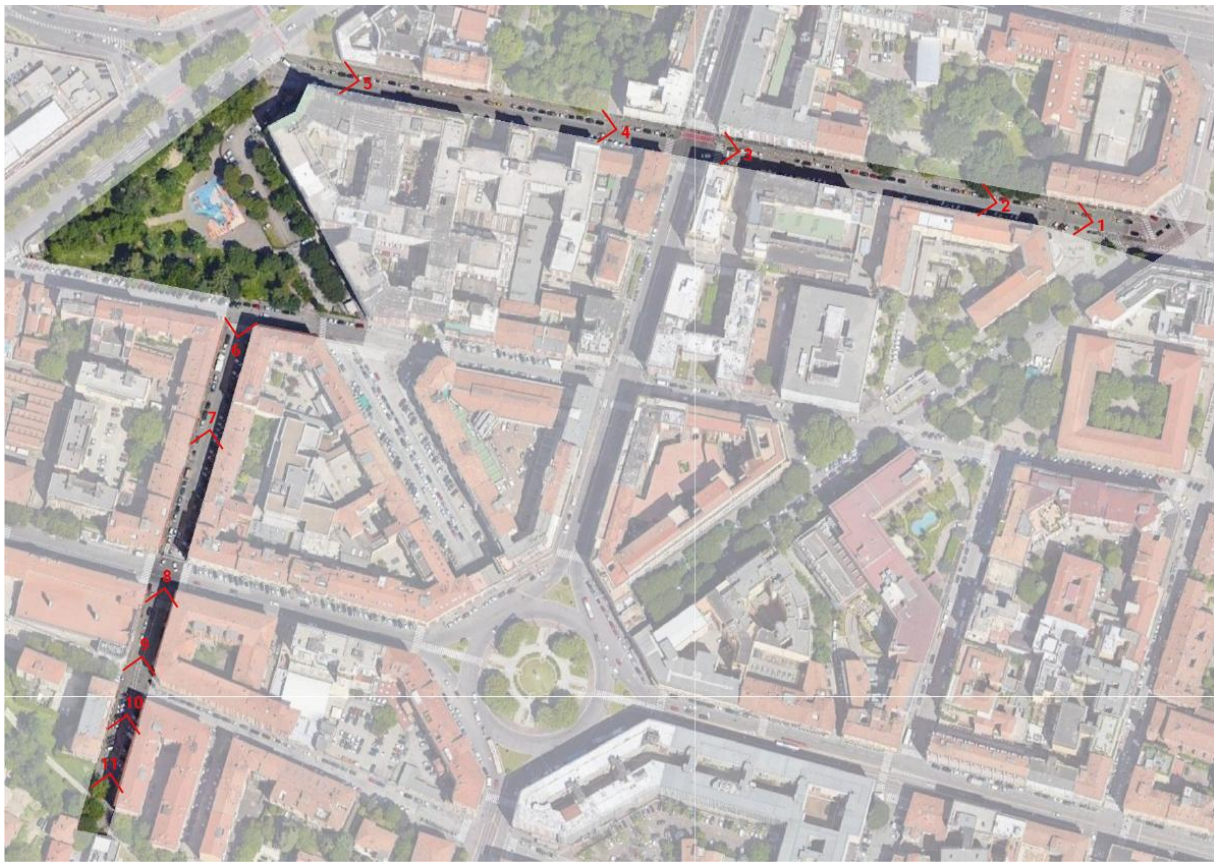
Intervention area: Historical centre of Bologna

STRATEGIE IN SUPPORTO DELLA LOCALIZZAZIONE DELLE TALEA GREEN CELLS



Območje obravnave: Staro mestno jedro

Intervention area: Historical centre of Bologna





Via Boldrini - intersection with Piazza XX Settembre



Via Boldrini – Amendola Garden



Via Boldrini – intersection with via Amendola



Via Boldrini and small public garden



Via Boldrini – intersection with the avenue and Giardino Fava



Via Fratelli Rosselli – intersection with Giardino Fava



Via Fratelli Rosselli



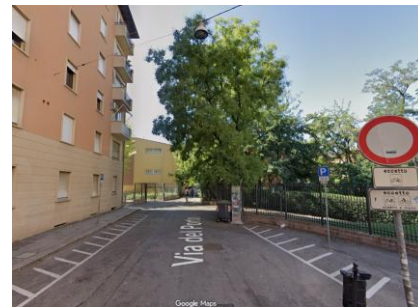
Via Fratelli Rosselli and MamBo Museum



Via Fratelli Rosselli – intersection with Via del Porto



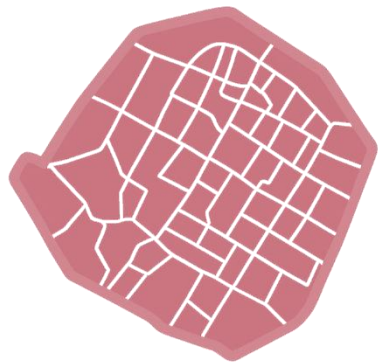
Via del Porto



Via del Porto and Cavaticcio Garden

Območje obravnave: Staro mestno jedro

Intervention area: Historical centre of Bologna



 **50.000**
residents

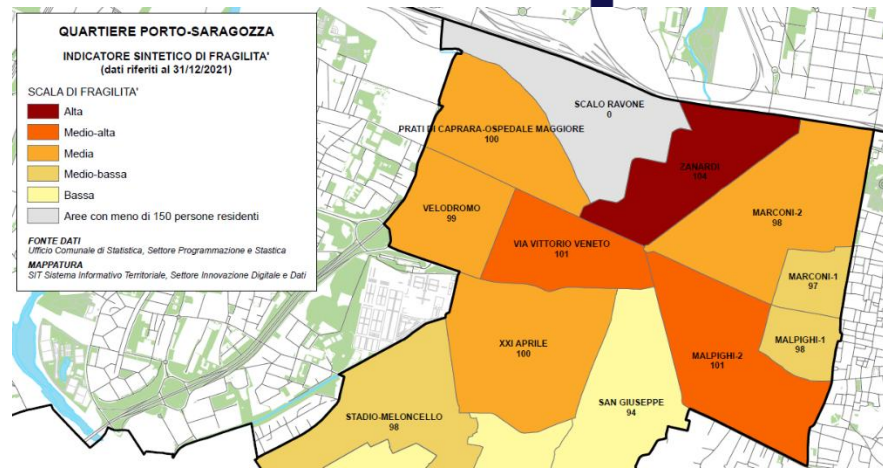
 **65.000**
city users daily



Območje obravnave: Staro mestno jedro

Intervention area: Historical centre of Bologna

- **12.390 inhabitants**, with a slight predominance of the female gender;
- **population density** per km² is more than five times the city population density: 14.054 against 2.773;
- 7.581 households, well over half **single-person households**;
- The average age is about a year lower than the citywide average age: **45,98 years**.
- **Italian nationality** clearly prevails, with **88%** of the total;
- **Romania, China and Bangladesh** the most numerous foreign nationalities.
- The **income disparity** between the two population groups, of Italian and foreign nationality, is more than double;
- The **employment rate** is 76% for men, 70% for women, who have a university degree in the percentage of 47% against 44% for men.
- The long-standing problem of **drug dealing** and related **micro-criminality** creates a serious security crisis, aggravated by incidents of stabbing.



Območje obravnave: Staro mestno jedro

Intervention area: Historical centre of Bologna

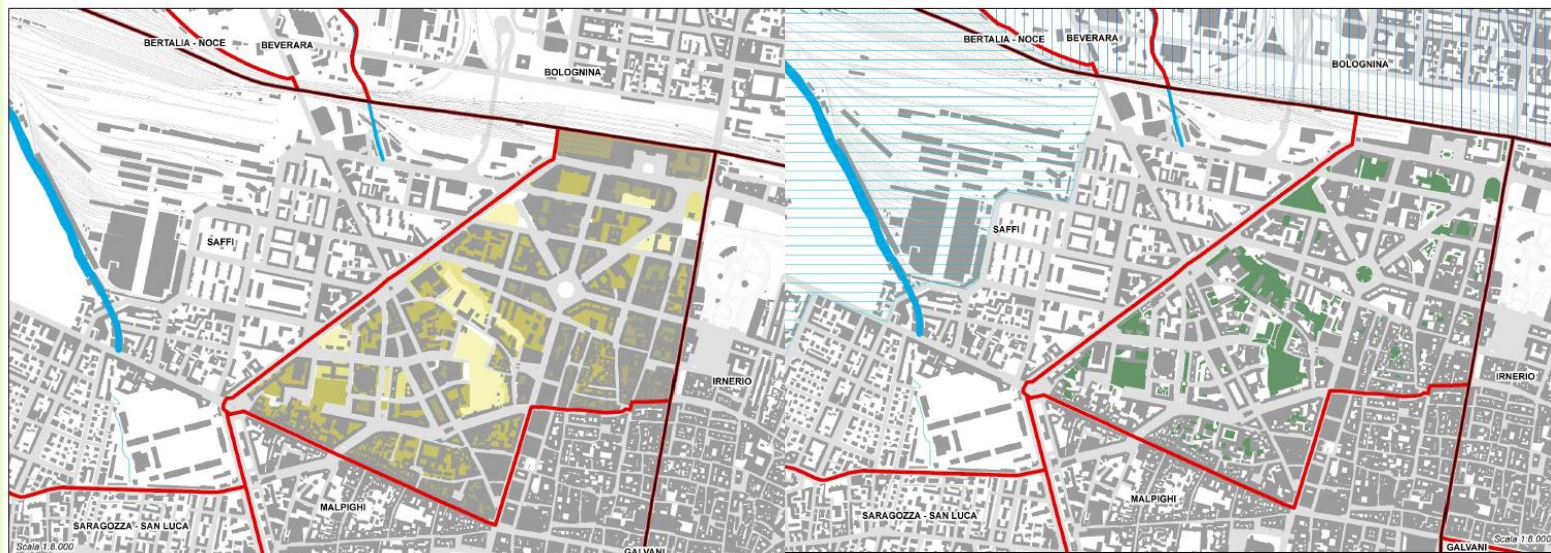
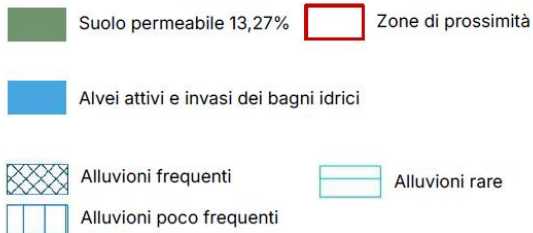
Fragilità microclimatica (PUG)



Indicatori

Dalla Carta
del rischio idraulico
del PUG

Aree potenzialmente
interessate da alluvioni
del reticolo principale



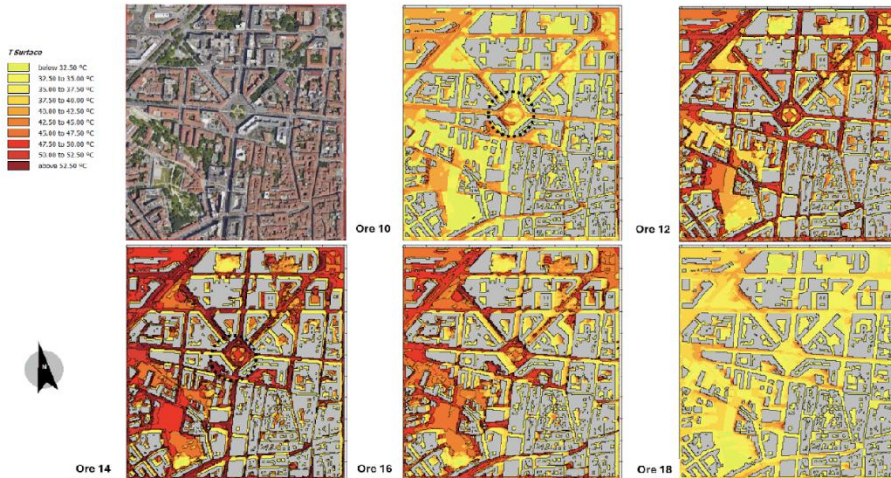
Območje obravnave: Staro mestno jedro

Intervention area: Historical centre of Bologna

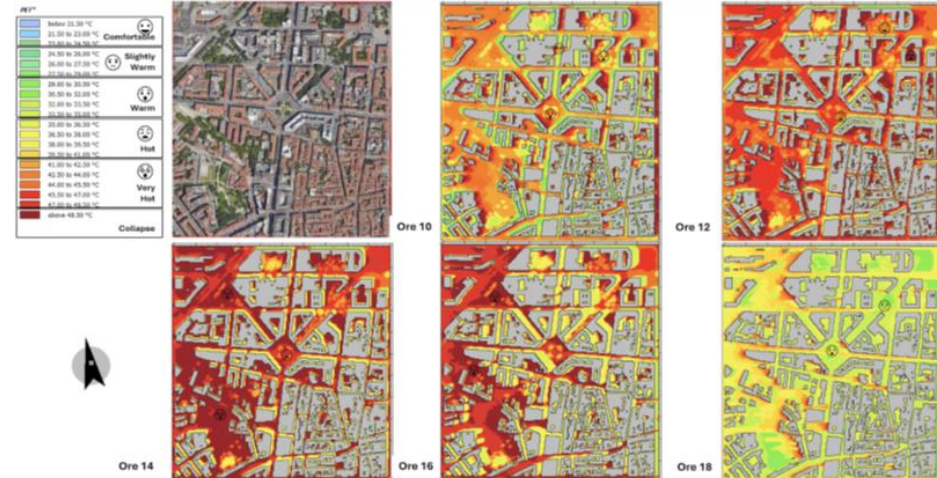


- Microclimate maps of the study area
- Virtual modeling of the area using Envimet software
- Initial results of microclimate simulations

Results SURFACE Temperature (°C)



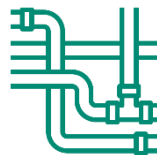
Results PET (°C) Physiological Equivalent Temperature



Ključni izzivi, ki jih moramo nasloviti

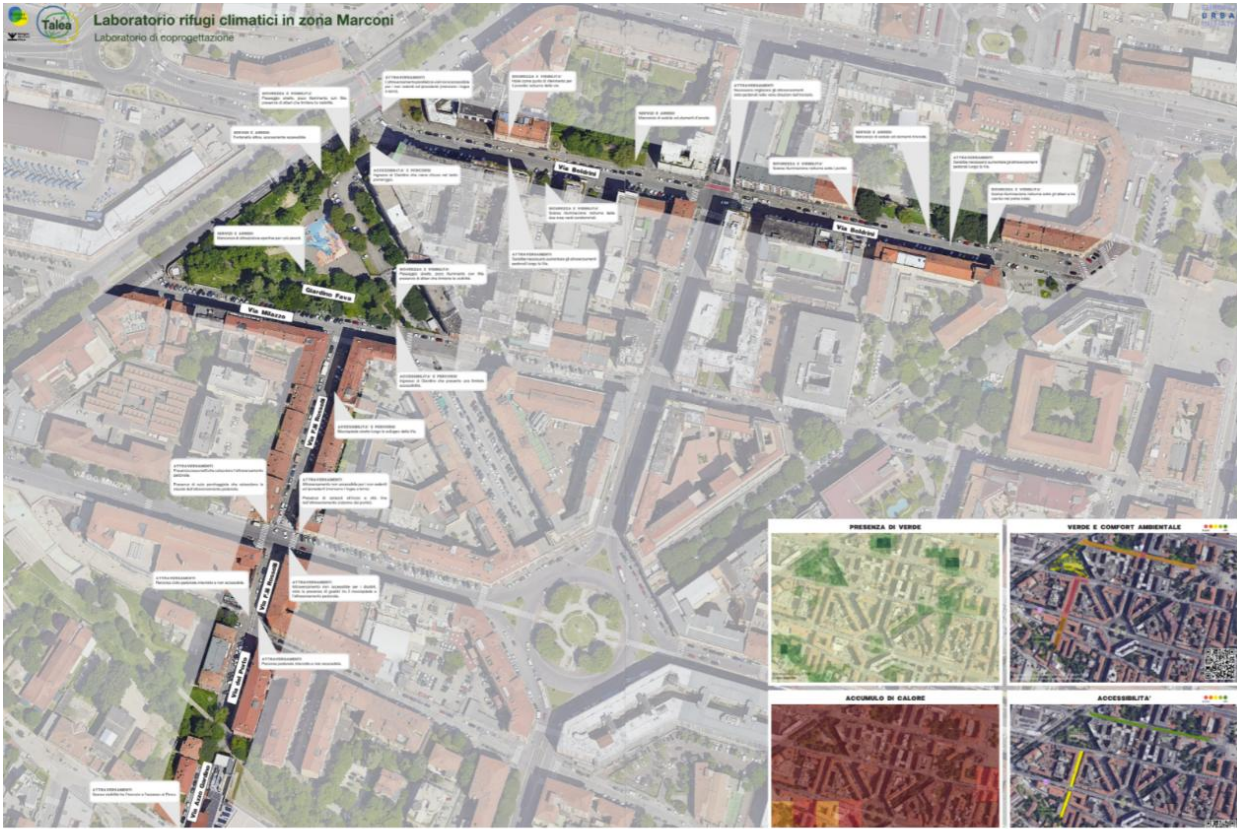
Key challenges we need to address

- **Historical and Archeological Constraints**
- **Architectural and material limitations**
- **Dense network of utilities**
- **Complex authorization process**



Vaja za delo v skupinah

Groupwork Exercise



Izzivi, ki jih bomo danes naslovili

Challenges we will address today

... in vprašanja, ki se iz pristopa porajajo?
... and questions arising from this approach?

Bo takšen pristop res zagotovil ustrezno
prilagoditev mest na podnebne spremembe?

Obstajajo drugačne, bolj učinkovite rešitve, ki
jih še nismo prepoznali in preizkusili?



Izzivi, ki jih bomo danes naslovili

Challenges we will address today

Izzivi, ki jih bomo poizkusili razrešiti v „World cafe“ vaji:

1. Predlogi rešitev povezanih s strateškim načrtovanjem in usmerjanjem prilagajanja na podnebne spremembe
2. Predlogi konkretnih tehničnih rešitev, ki bi jih bilo smiselno izvesti v danem primeru
3. Predlogi rešitev povezanih z načinom vodenja načrtovalskih/projektnih procesov in sodelovanja ključnih akterjev

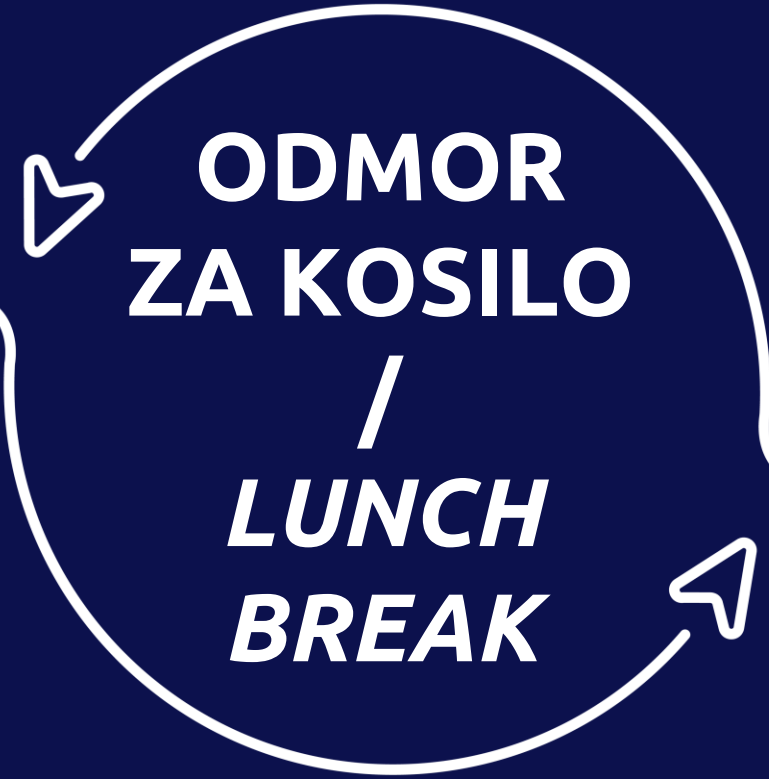


Navodila za delo v skupinah

Groupwork Instructions

- Prosim, da se razdelite v 3 približno enake skupine
(še posebej tisti, ki prihajate iz istih mest/institucij)
- Vsaka skupina naj prosim določi 1 poročevalca
- Za iskanje rešitev na prvi izziv imate 20 minut časa
- Ob zvončku se vsi (razen poročevalca) premaknete na naslednje omizje – poročevalce ostane pri mizi in povzame opravljeno delo udeležencem naslednje skupine
- Za iskanje rešitev na drugi in tretji izziv imate 10 minut časa
- Poročevalci po koncu vaje v 5 minutah povzamejo dinamiko in ključne predlagane rešitve
- Nato sledi razprava





**ODMOR
ZA KOSILO
/
*LUNCH
BREAK***

Navodila za delo v skupinah

Groupwork Instructions

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- Nato sledi razprava



Razprava, zaključki in priprava na poročanje

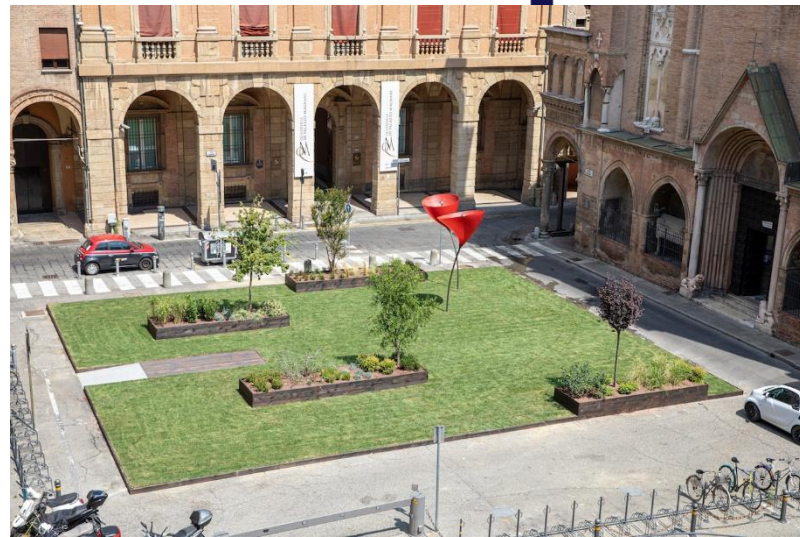
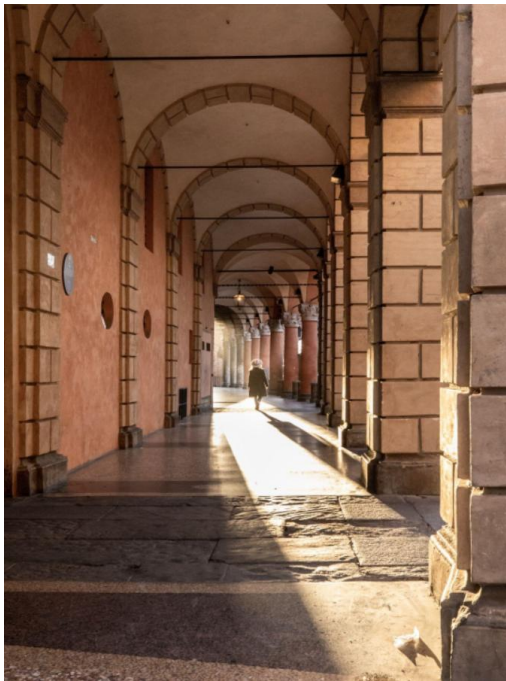
Discussion, conclusions and preparation for reporting



Nekatere obstoječe rešitve Mesta Bologna

Some existing solutions of the City of Bologna

Typological interventions present in the historic center



Nekateri na NTR rešitve projekta TALEA

Some NBS we plan to test in TALEA



Machine Translated by Google



Depaving

Permeable materials, vegetal and mineral



It removes asphalt and concrete to make room for natural soil: this allows water to filter better and promotes greater biodiversity. Ideal for non-driveable areas of squares and streets.

Asphalt breaker: removes impermeable surfaces such as concrete or asphalt.

Sponge found: the water starts to infiltrate naturally again.

Green Shield: promotes nature, freshness and biodiversity in the city.



Machine Translated by Google



Light flooring

Permeable materials, vegetal and mineral



They reflect more light and absorb less heat than dark ones.

Smart light: They increase evening visibility and reflect more light, slightly reducing the surface temperature.

Thermo-shield: they reduce surface temperatures and the heat island effect.



Machine Translated by Google



Climbing green

Trees and green infrastructure



Climbing plants bring nature where there is a lack of space, they cool and shade squares, streets and seats.

Vertical Oasis: They add nature and shade where there is no space on the ground.

Friendly shadow: they cool and shade public spaces.

Clean air: they absorb pollutants and improve air quality.



Nekateri na NTR rešitve projekta TALEA

Some NBS we plan to test in TALEA



Machine Translated by Google



Gardens and squares of the rain

Water and blue infrastructure



 Deep flowerbeds that intercept and retain rainwater, ideal for increasing urban resilience in the event of heavy rainfall, reducing rapid runoff.

 **Natural filter:** Through various drainage layers, it slows down the flow of rainwater, reducing the risk of flooding and lightening the load on sewers.

 **Micro habitats:** improves the quality of public space and provides habitats for insects, plants and small animals.

Green
Bologna

Machine Translated by Google



Ecological corridors

Trees and green infrastructure



 Green belts that connect natural or semi-natural areas, helping animals and plants to move around and maintaining vibrant urban ecosystems.

 **Green Passage:** create safe streets for animals and plants, uniting habitats currently separated by roads or buildings.

 **Biodiversity on the go:** They allow species to meet, exchange resources and better cope with environmental changes.

Green
Bologna

Machine Translated by Google



Pergolas and coverings

Attractiveness of public spaces



 Structures that provide shade and protection from the sun, improving thermal comfort in public spaces.

 **Shadow:** It protects from the sun and lowers the temperature, creating cooler areas.

 **Green fog:** The climbing greenery releases humidity into the air, improving the microclimate.

 **Extra move:** combination with rainwater collection and management systems.

Green
Bologna

Hvala
Thank you!

Z razpravo nadaljujemo jutri...
Let's continue discussing tomorrow ...

