HEAT IN THE CITY

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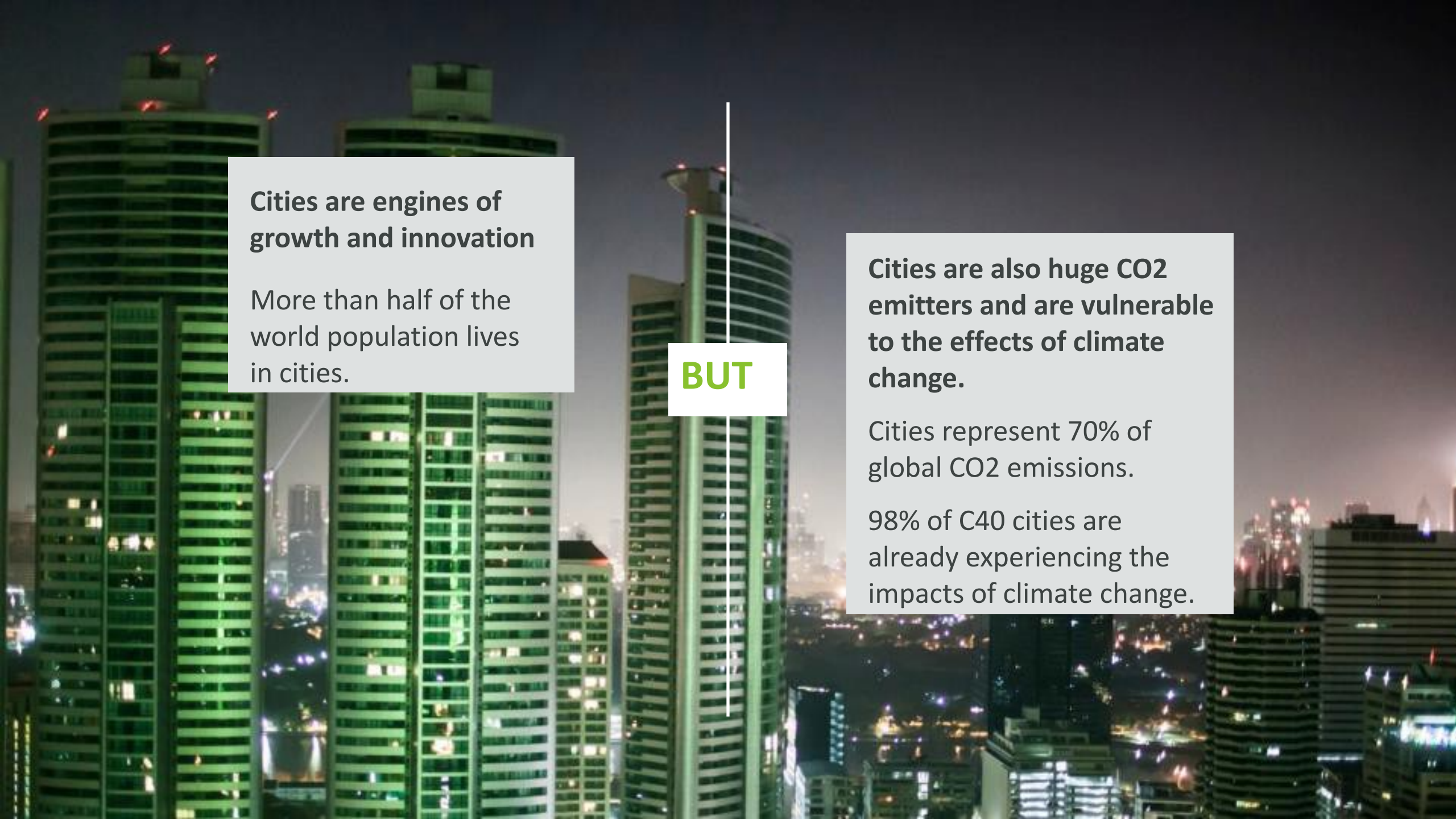
C40 CITIES

01.

C40 CONTEXT

C40 connects 96 cities worldwide to tackle the climate crisis together



Cities are engines of growth and innovation

More than half of the world population lives in cities.

BUT

Cities are also huge CO2 emitters and are vulnerable to the effects of climate change.

Cities represent 70% of global CO2 emissions.

98% of C40 cities are already experiencing the impacts of climate change.

C40 is a city-led organization

17 members of the Steering Committee, representing the 7 regions, make strategic decisions and meet 3 times a year.

16 C40 Networks: Driving policy change in high impact sectors

ENERGY & BUILDINGS	TRANSPORTATION & URBAN PLANNING	FOOD, WATER & WASTE
• Private Building Efficiency • Municipal Building Efficiency • New Building Efficiency • Clean Energy	• Mobility Management • Mass Transit • Walking & Cycling • Zero Emission Vehicles • Land Use Planning	• Sustainable Waste Systems • Waste to Resources • Food Systems

ADAPTATION IMPLEMENTATION	AIR QUALITY
• Connecting Delta Cities • Cool Cities • Urban Flooding	• Air Quality

How Networks work

C40 networks help replicate, improve and accelerate climate actions

Support group of 25-40 city experts, sharing information, experiences, challenges and advising each other through all stages of policy development process

SELECT ACTION

PLAN

APPROVE

IMPLEMENT

EVALUATE

70% of C40 cities have implemented new climate actions, better or faster as a result of their participation in C40 networks.

C40 Cool Cities Network



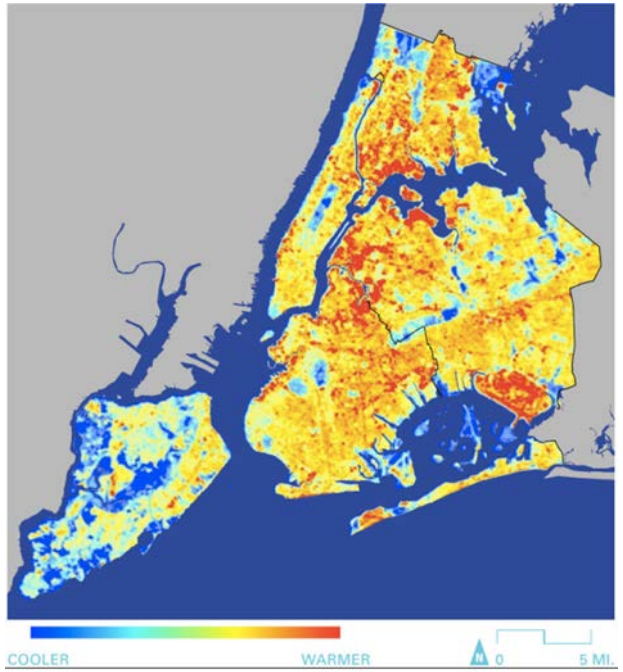

LONDON
TORONTO
BOSTON
ROTTERDAM
BERLIN
PARIS
ROME
NEW YORK CITY
TEL AVIV
MADRID
LOS ANGELES
PHILADELPHIA
MILAN
SEOUL
BARCELONA
PHOENIX
ATHENS
WASHINGTON DC
TOKYO
LISBON
MIAMI
DUBAI
MEXICO CITY
GUADALAJARA
ACCRA
DAR ES SALAAM
DURBAN
MEDELLIN
RIO DE JANEIRO
TSHWANE
SAO PAULO
SYDNEY
QUITO
CAPE TOWN
BUENOS AIRES
MELBOURNE

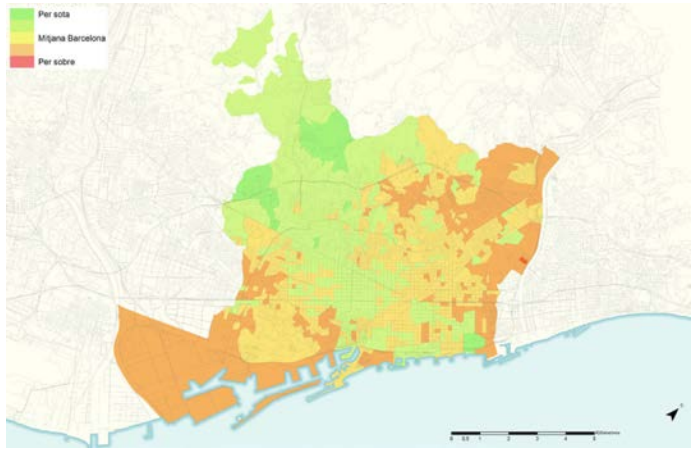
C40 CITIES

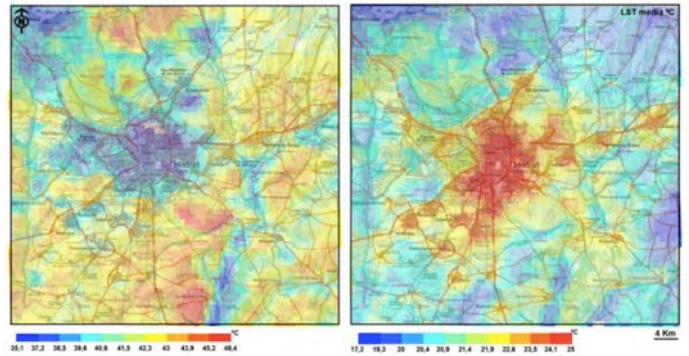
Global Cool Cities ALLIANCE

03.

HEAT RISK MAPPING

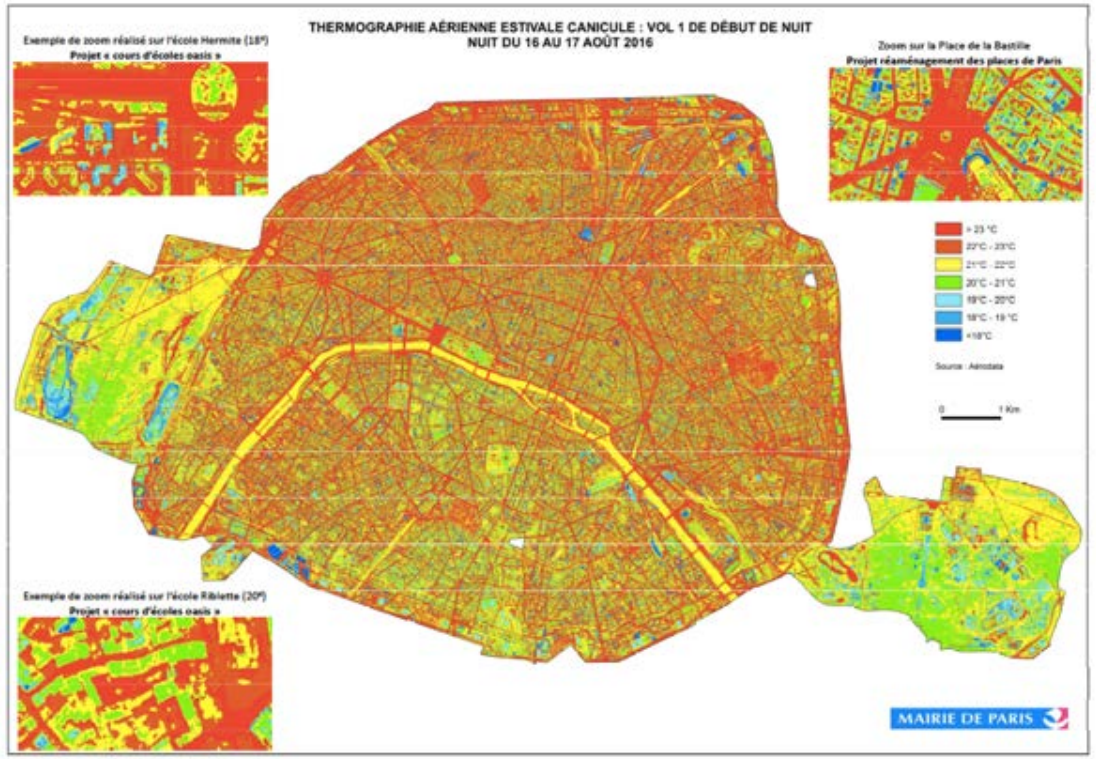






CITY CASE STUDY

Surface temperature maps

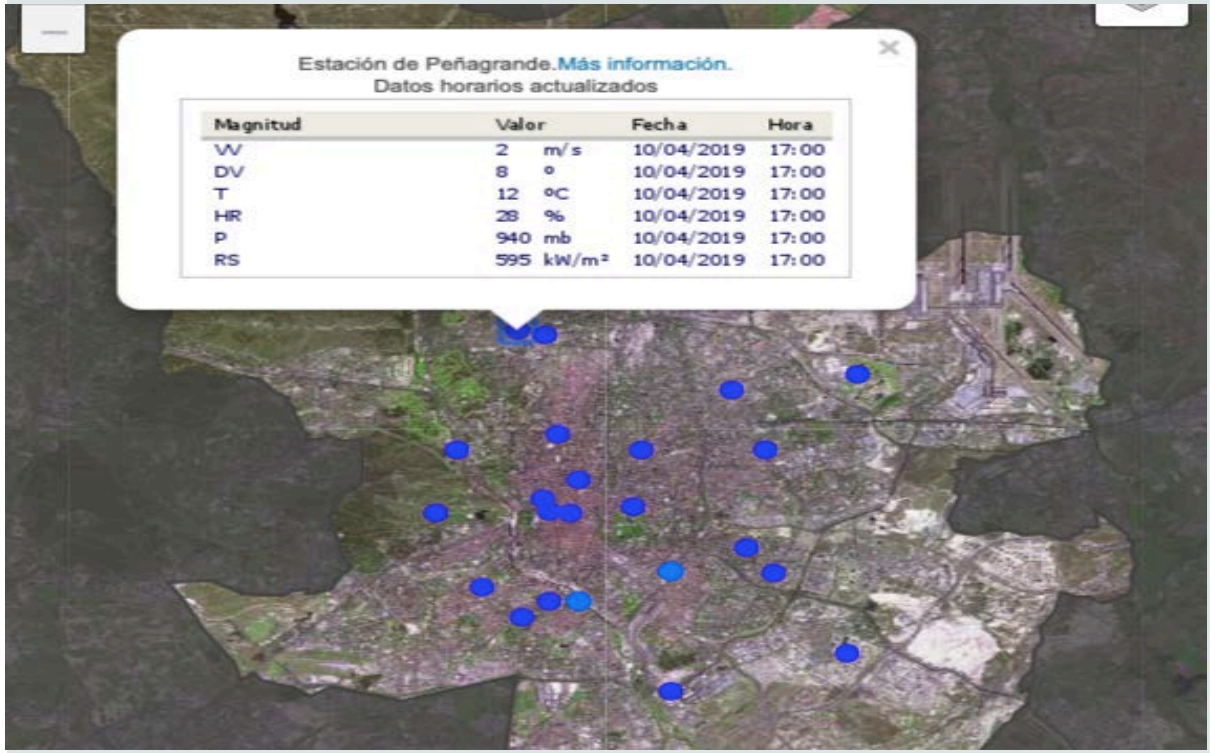


PARIS - HEAT MAP

CITY CASE STUDY

Air temperature sensors

MADRID

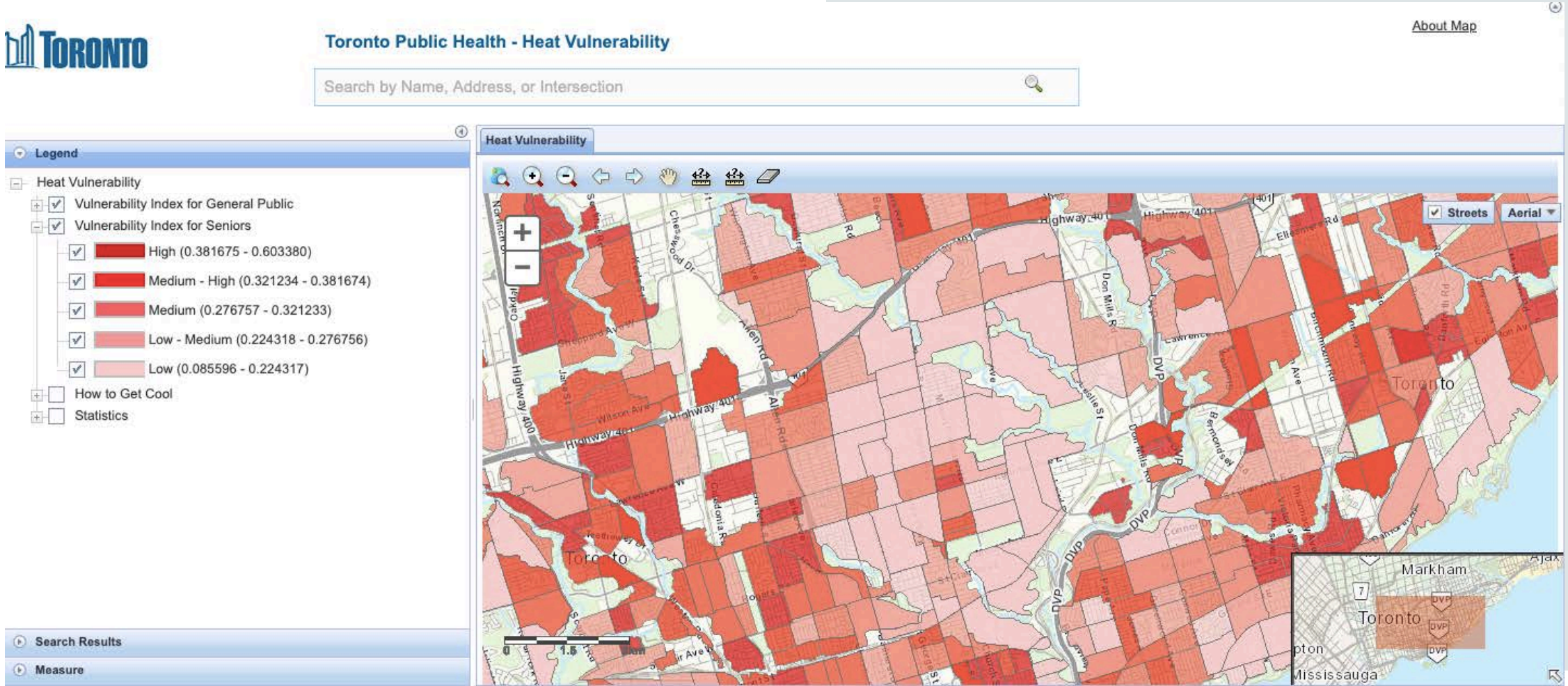


C40 CITIES

CITY CASE STUDY

Heat vulnerability Index - visualisation

TORONTO



03.

HEAT ADAPTATION ACTIONS

1. Heat emergency management

2. Long-term cooling actions

Heatwave emergency management

HEATWAVE PROTOCOL

Outlining the arrangements for the management of heatwaves across preparedness, response and recovery.

HIGH	
MEDIUM	
LOW	
VERY LOW	

COMMUNICATION CAMPAIGN

Strategies and for communication of heat risk to vulnerable populations

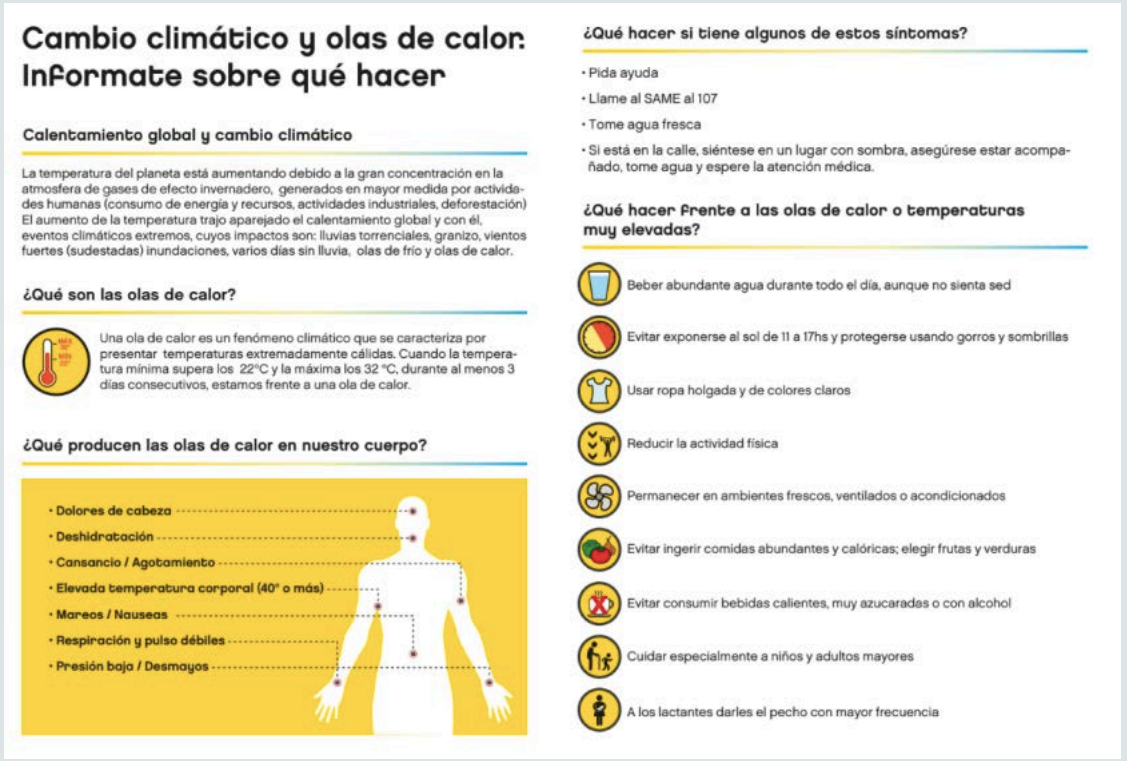
COOLING CENTRES

= public or private spaces within a city, which are set up by local authorities to temporarily protect citizens from the health effects of a heat wave.

Communications campaign

- Identification of vulnerable groups
- Targeted outreach campaigns, examples:
  - *Social media*
  - *Flyers in strategic locations (doctors, pharmacies,..)*
  - *Posters (buses, stations, schools, ..)*
  - *Neighbourhood check-ins for elderly (collaborating with community groups)*

BUENOS AIRES



Cambio climático y olas de calor: Informate sobre qué hacer

Calentamiento global y cambio climático

La temperatura del planeta está aumentando debido a la gran concentración en la atmosfera de gases de efecto invernadero, generados en mayor medida por actividades humanas (consumo de energía y recursos, actividades industriales, deforestación) El aumento de la temperatura trajo aparejado el calentamiento global y con él, eventos climáticos extremos, cuyos impactos son: lluvias torrenciales, granizo, vientos fuertes (sudestadas) inundaciones, varios días sin lluvia, olas de frío y olas de calor.

¿Qué son las olas de calor?

Una ola de calor es un fenómeno climático que se caracteriza por presentar temperaturas extremadamente cálidas. Cuando la temperatura mínima supera los 22°C y la máxima los 32 °C, durante al menos 3 días consecutivos, estamos frente a una ola de calor.

¿Qué producen las olas de calor en nuestro cuerpo?

- Dolores de cabeza
- Deshidratación
- Cansancio / Agotamiento
- Elevada temperatura corporal (40° o más)
- Mareos / Nauseas
- Respiración y pulso débiles
- Presión baja / Desmayos

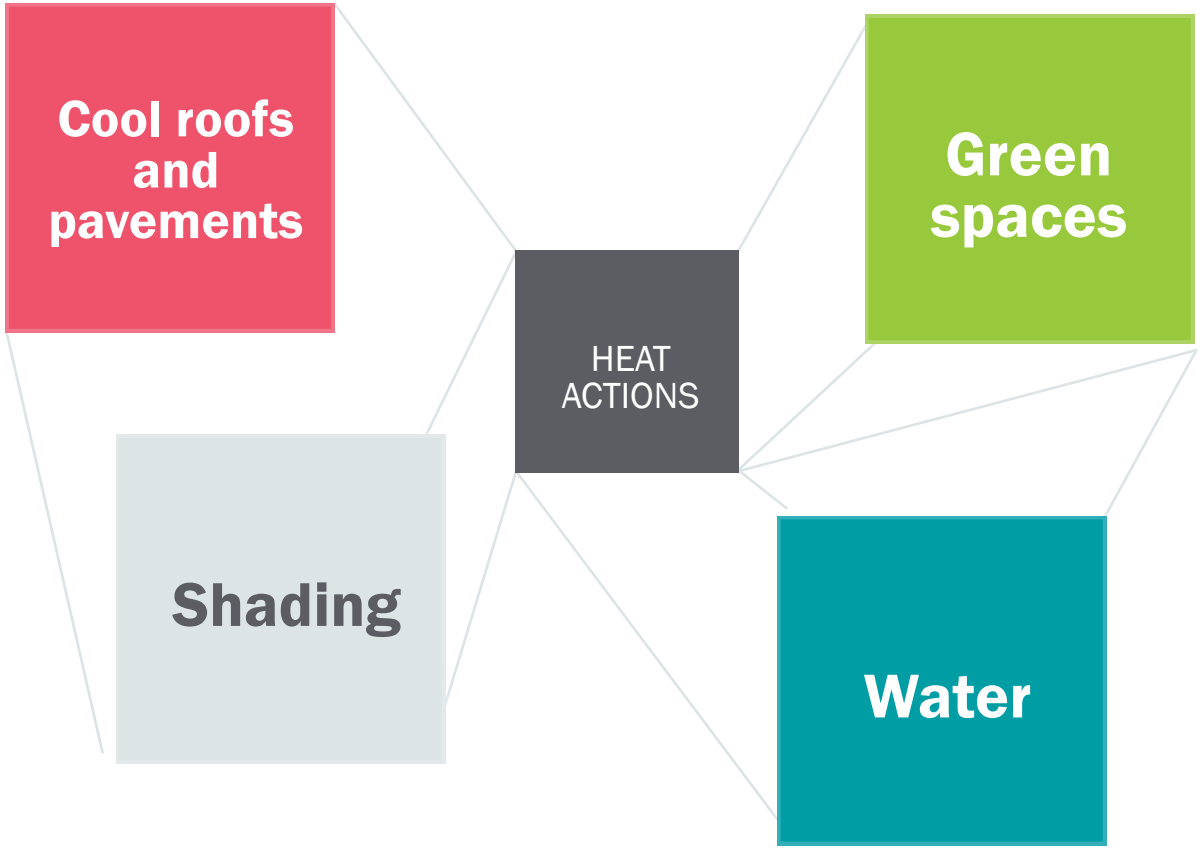
¿Qué hacer si tiene algunos de estos síntomas?

- Pida ayuda
- Llame al SAME al 107
- Tome agua fresca
- Si está en la calle, siéntese en un lugar con sombra, asegúrese estar acompañado, tome agua y espere la atención médica.

¿Qué hacer frente a las olas de calor o temperaturas muy elevadas?

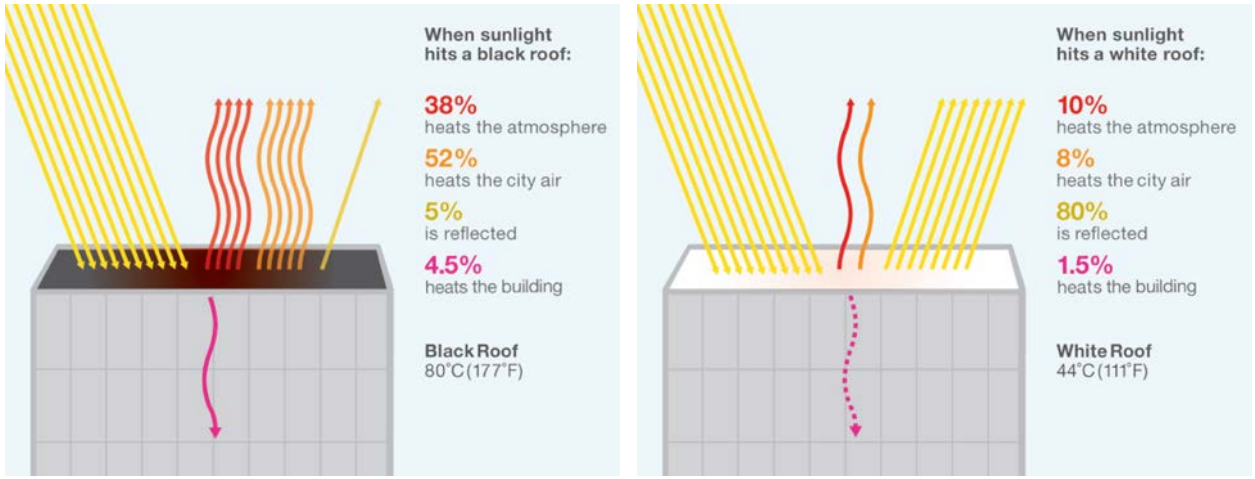
- Beber abundante agua durante todo el día, aunque no sienta sed
- Evitar exponerse al sol de 11 a 17hs y protegerse usando gorros y sombrillas
- Usar ropa holgada y de colores claros
- Reducir la actividad física
- Permanecer en ambientes frescos, ventilados o acondicionados
- Evitar ingerir comidas abundantes y calóricas; elegir frutas y verduras
- Evitar consumir bebidas calientes, muy azucaradas o con alcohol
- Cuidar especialmente a niños y adultos mayores
- A los lactantes darles el pecho con mayor frecuencia

Long-term cooling actions



Cool roofs & pavements

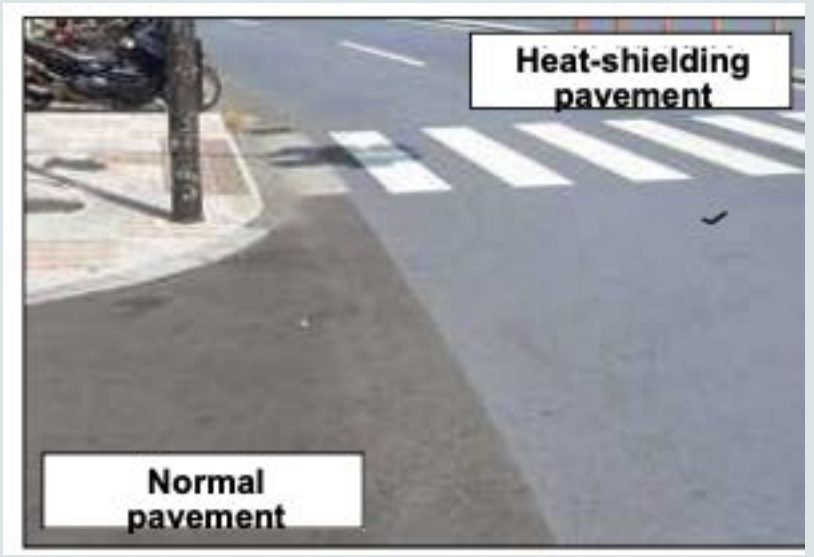
Reducing surface temperatures

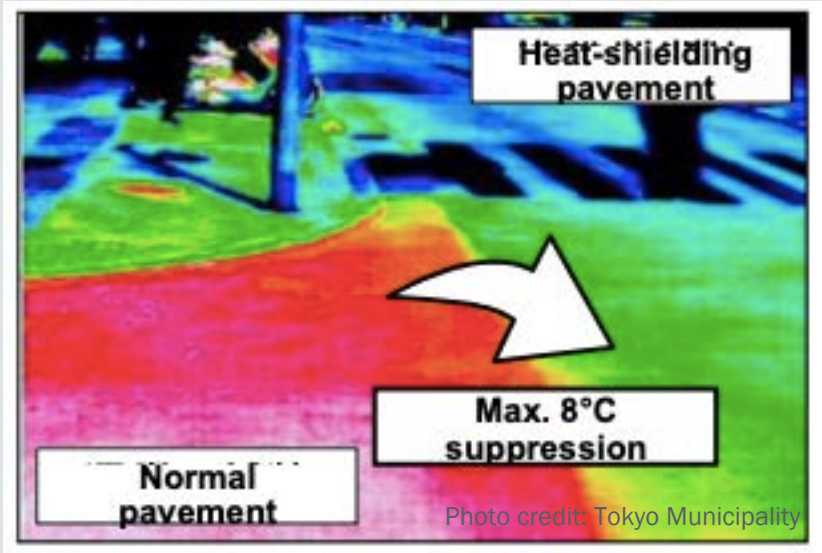


Comparison of a black and a white flat roof on a summer afternoon with an air temperature of 37 degrees Celsius.

Source: Adapted from data from LBNL Heat Island Group.

TOKYO heat-shielding pavement





Green spaces

THE VALUE OF NATURE IN URBAN LIFE

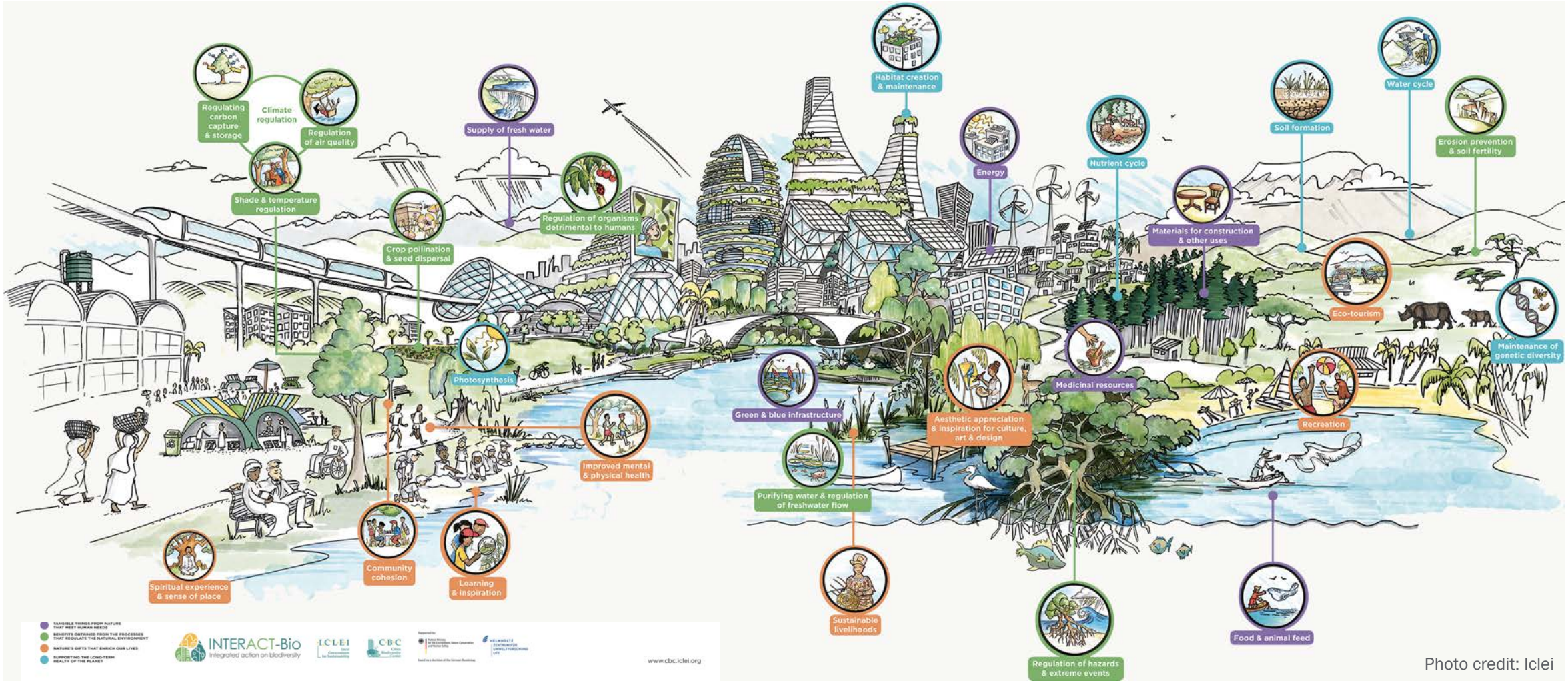
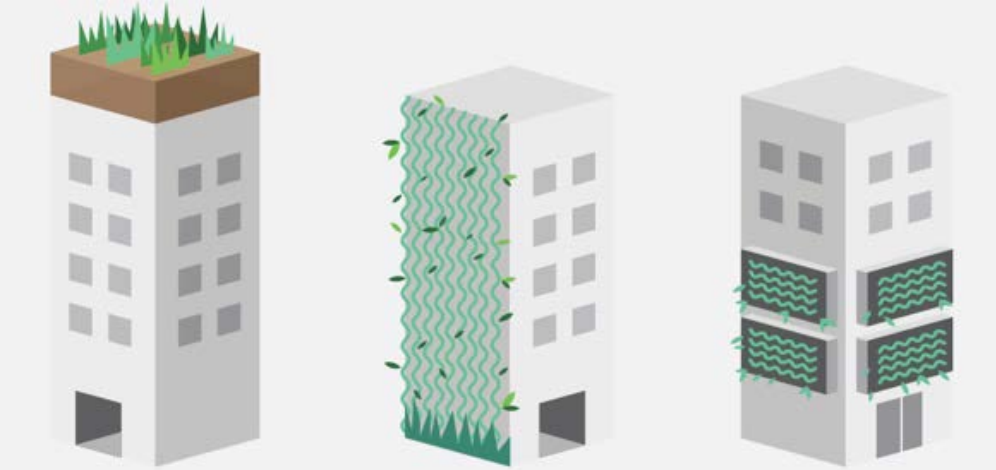


Photo credit: Iclei

Green spaces

Green roofs and walls



Source: City of Melbourne

EXTENSIVE green roofs

INTENSIVE green roofs

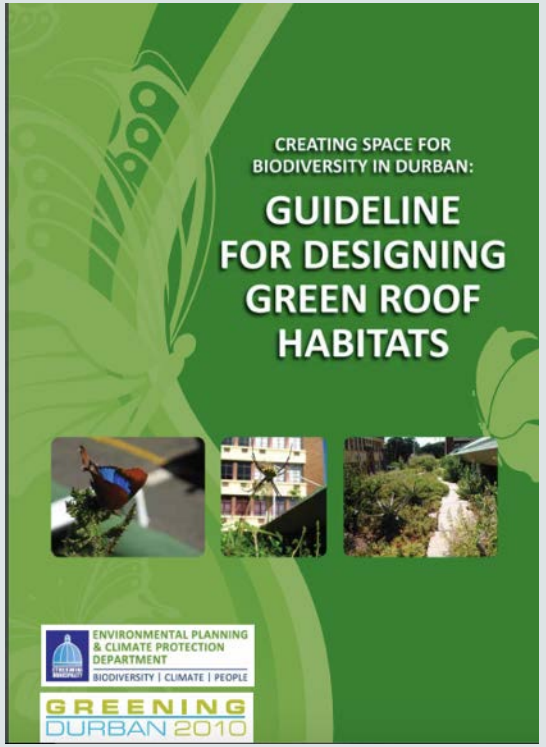
Photo credit: Ecobusiness

SINGAPORE

"LUSH policy" that regulates and incentivises private building greenery

DURBAN

"Green Roof Guidance" that provides support for green roofs on residential buildings



Green spaces

Urban forests - parks and tree canopy

SEOUL

The City of Seoul has the goal of creating 1000 forests and 1000 gardens. For example, the City turned a former overpass into a lush public park with over 24,000 plants.

Photo credit: City of Seoul

ATHENS

Athens has developed a web-based tree inventory, that helps to know the exact costs of maintenance and help to allocate resources appropriately.

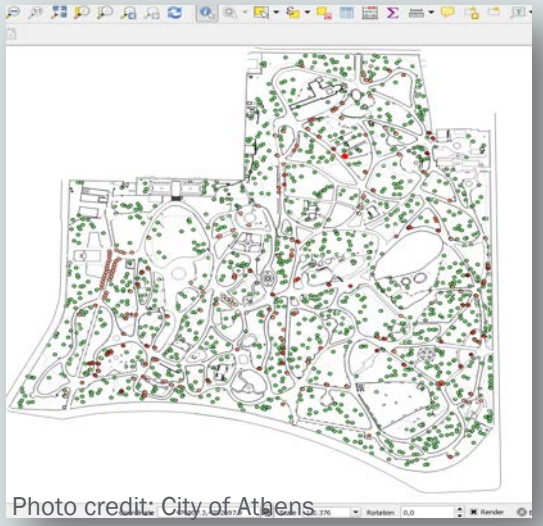


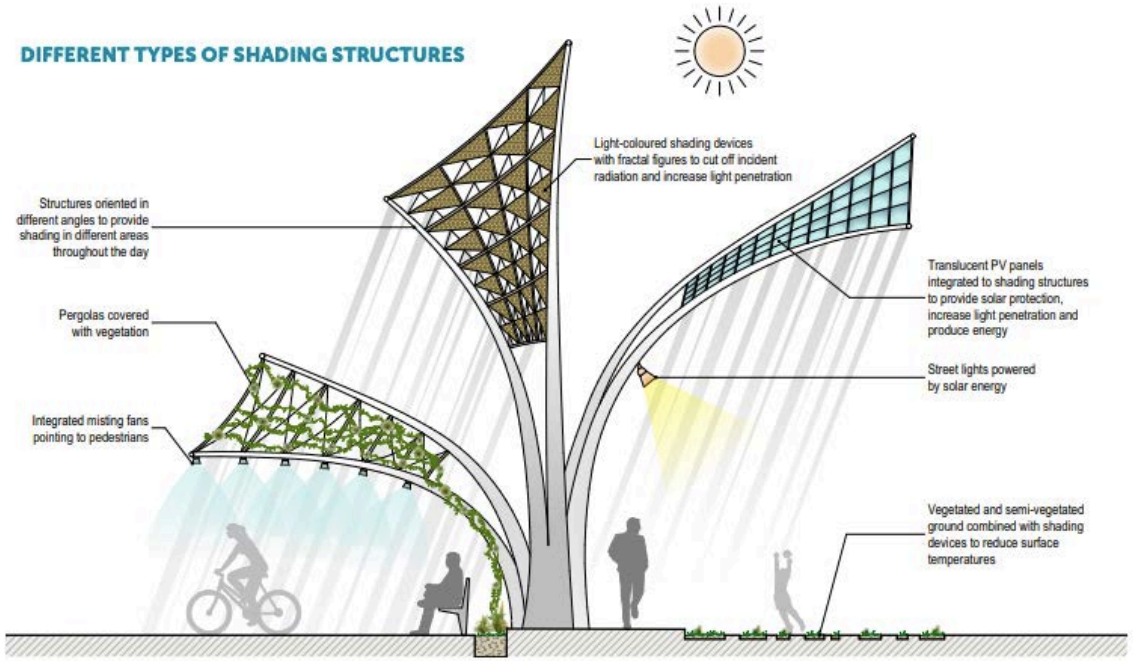
Photo credit: City of Athens

MEDELLIN

'Green Corridors' - a network of greenery across the city with the aim of reducing UHI effect, and also improving biodiversity and air quality. Trees, shrubs and ground cover have been planted along the main transport axes, riverside as well as marginalised neighbourhoods of Medellín.

Photo credit: City of Medellin

Shading



Source: Guide to Urban Cooling Strategies, CRC Low Carbon Living (2017)

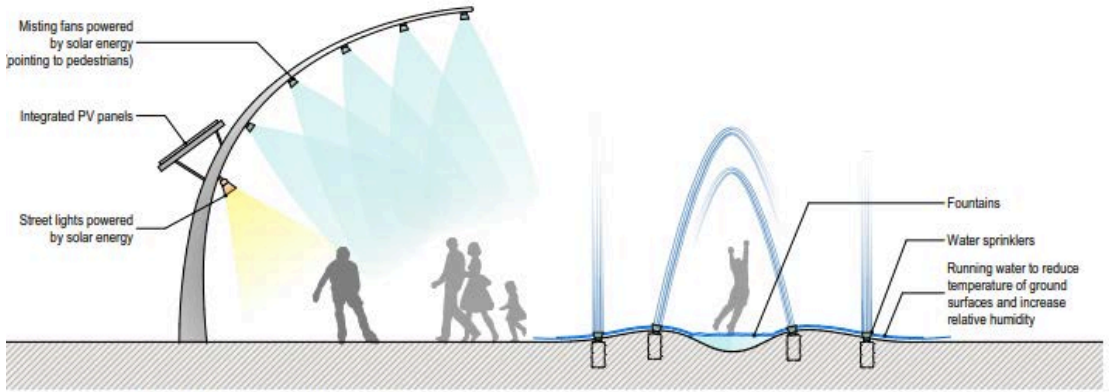
Photo credit: City of Tel Aviv

TEL AVIV

Shading Planning Guidelines & innovation competition

Photo credit: City of Tel Aviv

Water



Evaporative spray cooling systems

Source: Guide to Urban Cooling Strategies, CRC Low Carbon Living (2017)

CAPE TOWN

Water spray parks

Photo credit: City of Cape Town

Photo credit: City of Cape Town

04.

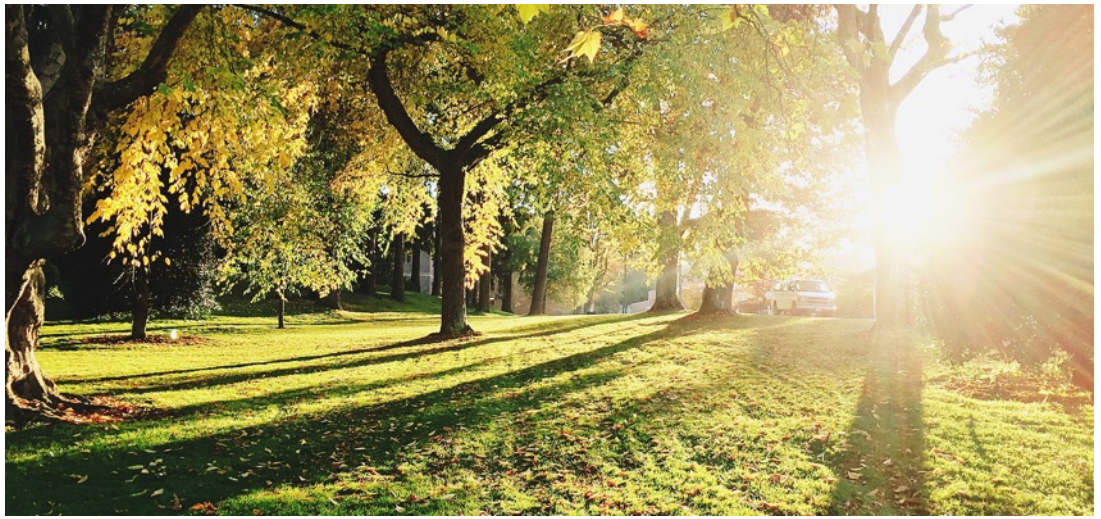
INTEGRATING HEAT IN OTHER SECTORS

Photo credit: SCPR

Mitigation & Adaptation

MITIGATION:

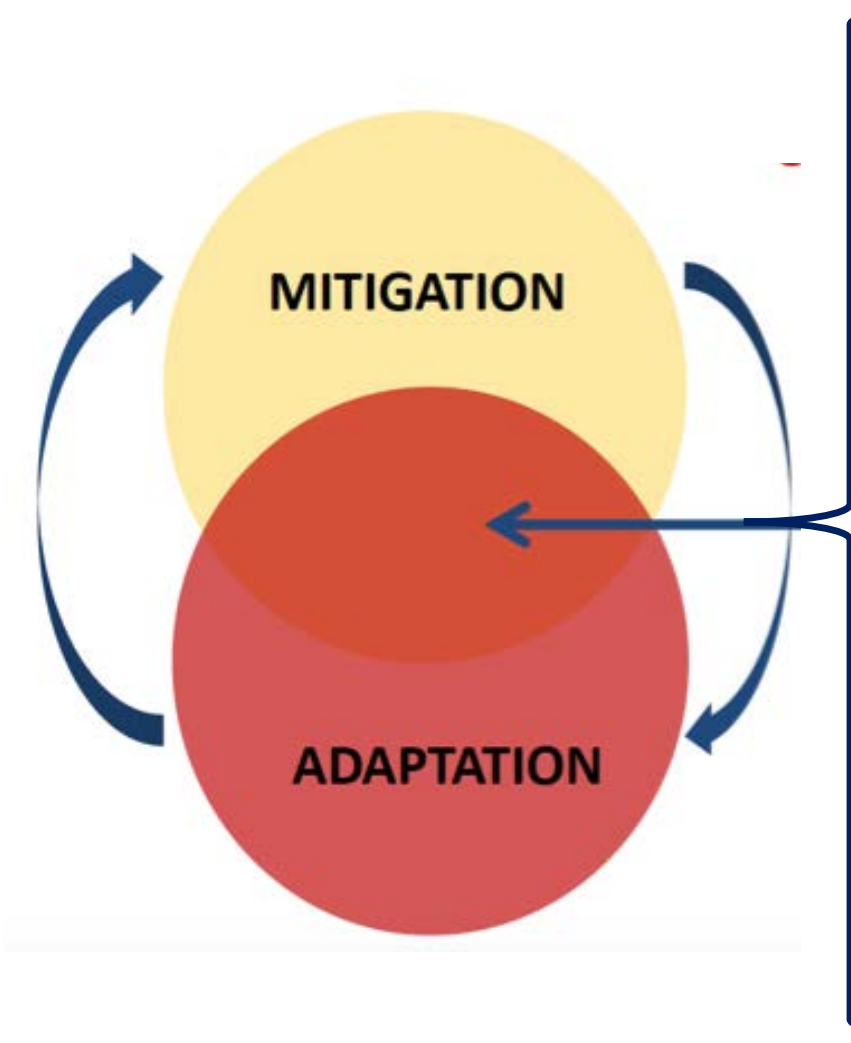
ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS (GHG)



ADAPTATION:

ACTIONS TO REDUCE THE IMPACTS OF EXTREME WEATHER EVENTS

Types of interactions



Piggybacking: *Actions that are complimentary when designed and/or implemented together.*

Synergies: *Actions that reduce both carbon emissions and climate risk*

Mal-investment: *Actions that can be undone or rendered less effective by the effects of climate change if they are not sufficiently resilient*

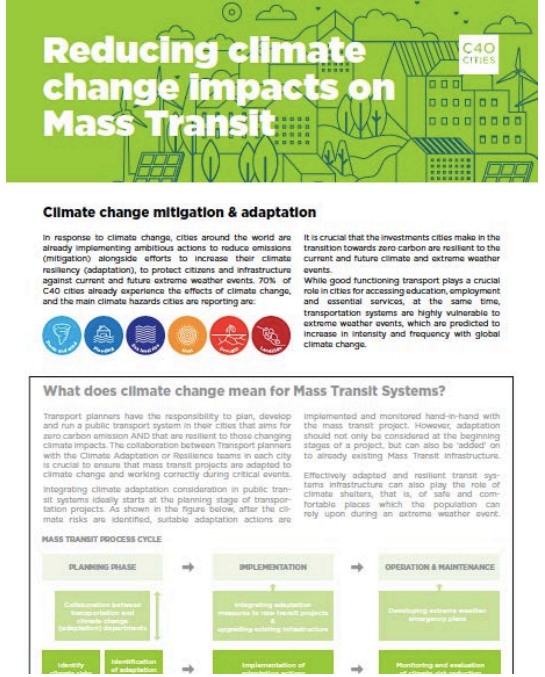
Trade-offs: *Actions with contrary effects on mitigation and adaptation*

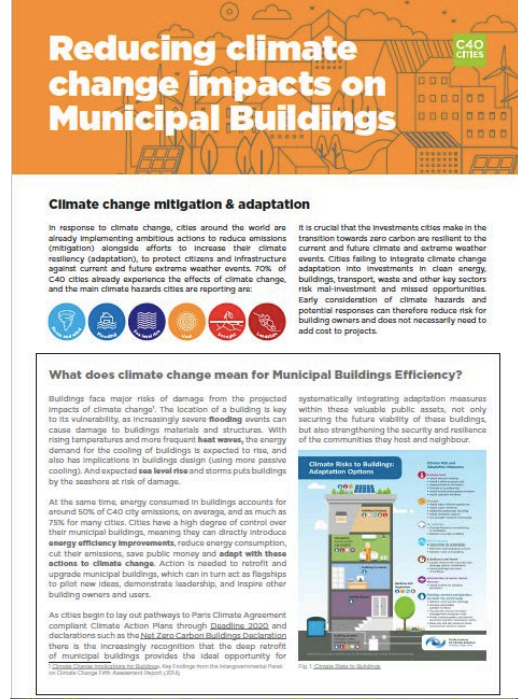
C40 Resources:

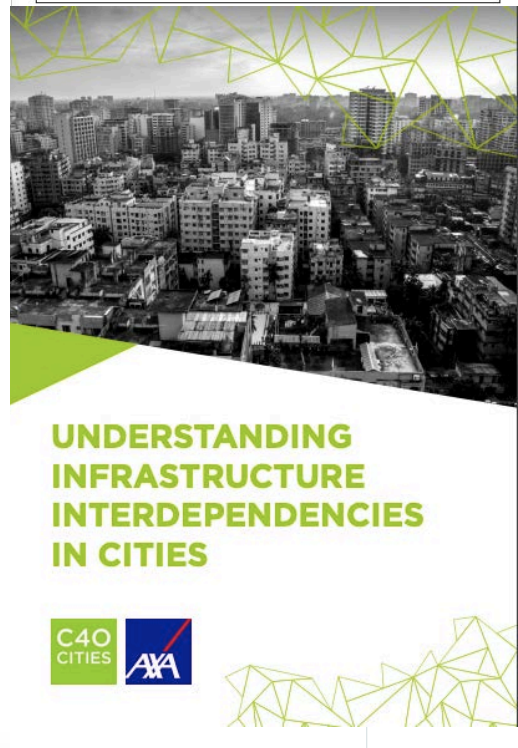
...available on C40 Knowledge Hub
www.c40knowledgehub.org

For example:

- “**Understanding Infrastructure Interdependencies in Cities**” (2019)
- “**The Future We Don’t Want**” Report (2018)
- **Adaptation Integration Guides** *(Clean Energy Systems, Municipal Buildings Efficiency, Private Buildings Efficiency, New Buildings, Mass Transit, Walking & Cycling, Food Systems, Waste Systems)*
- **Heat Communications Toolkit** (2020)







Thank you!

Contact

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