UNIVERSITY OF BIRMINGHAM | COLLEGE OF ENGINEERING AND PHYSICAL SCIENCES

Summer 2022 & changing UK climate

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Trees and Design Action Group (TDAG)

TDAG is a **network** and **charity** that brings together individuals, professionals, academics and organisations from public and private sectors to improve knowledge and good practice to support the role of urban trees through better collaboration in the planning, design, construction, management and maintenance of our urban places.

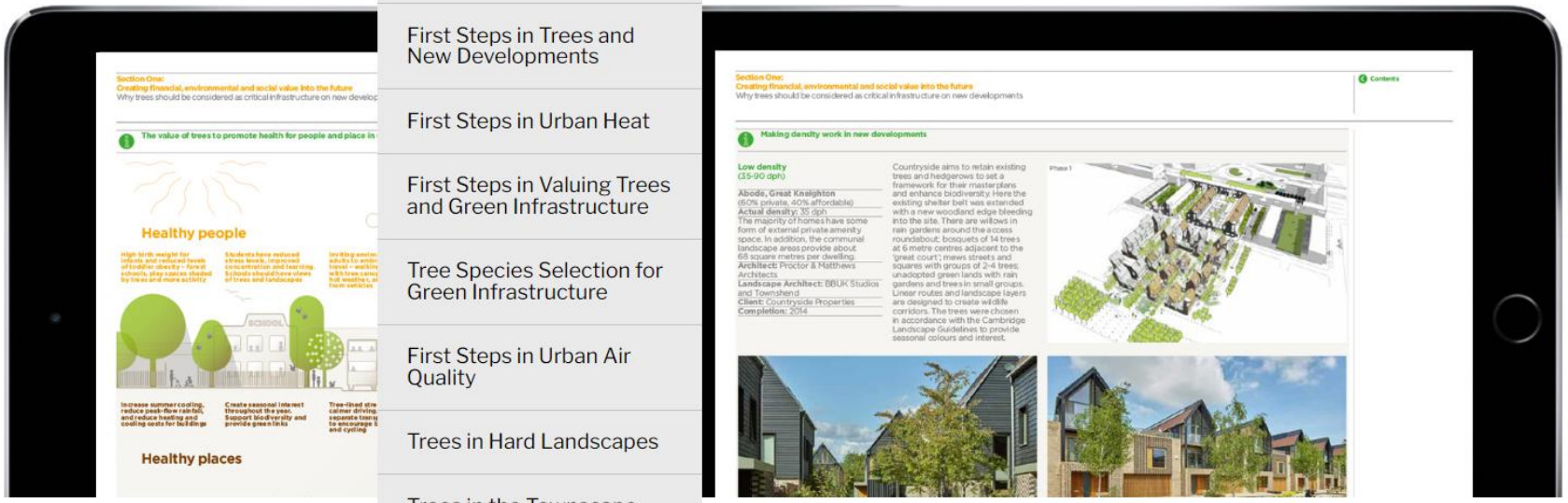
What we do

- Workshops & webinars
- Facilitate knowledge exchange & research dissemination
- Respond to consultations
- Produce best-practice guides
- Forum for cross-sector working

Trees and Design Action Group (TDAG)

HOME ABOUT US OUR GUIDES CASE STUDIES RESOURCES RESEARCH EVENTS PAST EVENTS NEWS ARCHIVE

- Trees, Planning and Development
- First Steps in Trees and New Developments
- First Steps in Urban Heat
- First Steps in Valuing Trees and Green Infrastructure
- Tree Species Selection for Green Infrastructure
- First Steps in Urban Air Quality
- Trees in Hard Landscapes
- Trees in the Townscape
- The Canopy
- No Trees, No Future
- Endorse Trees in the Townscape



TDAG uses its broad knowledge th evidence-based information, practical advice and case studies to inform decision-mak ompile accessible information and advice about the use of economic valuation approacl astructure, which tool or method to choose and how to get started.

www.tdag.org.uk

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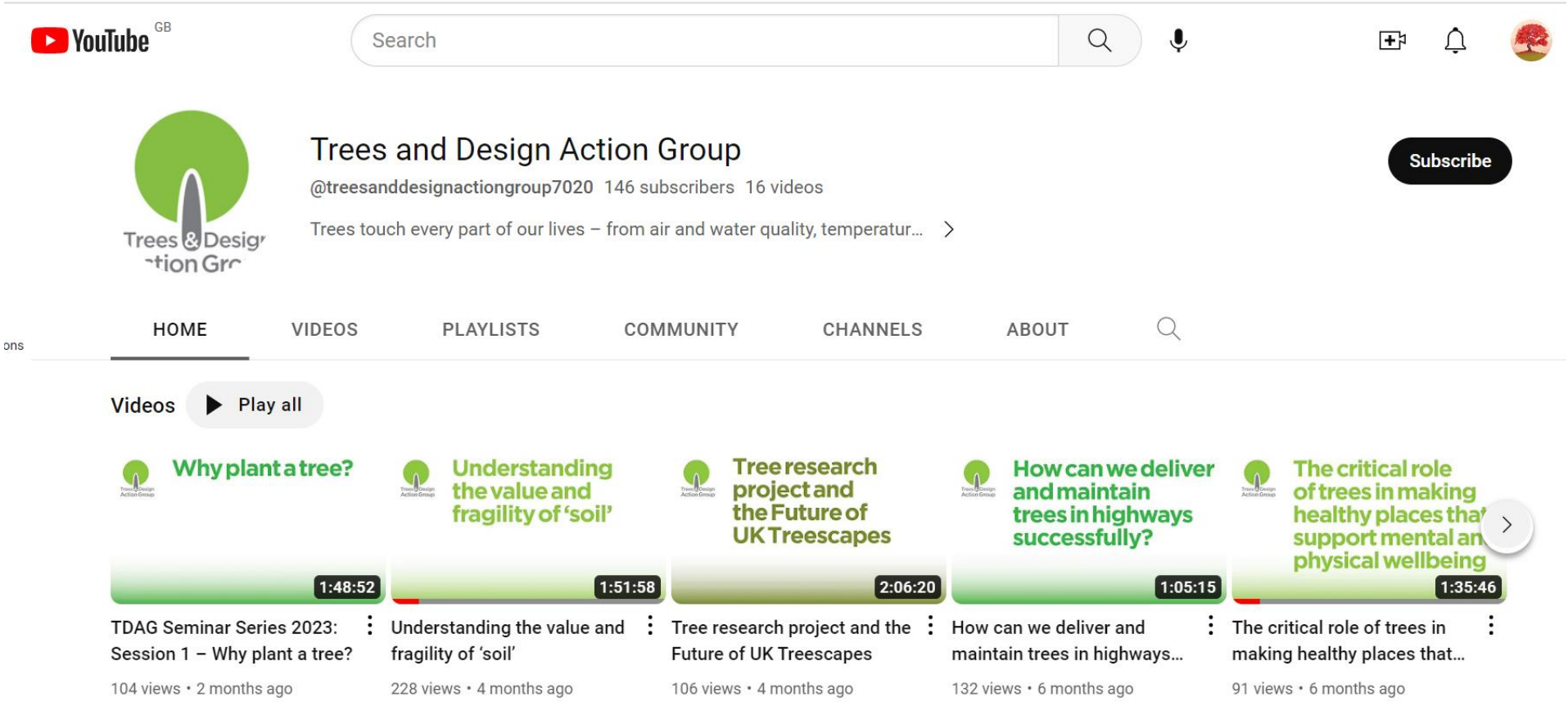

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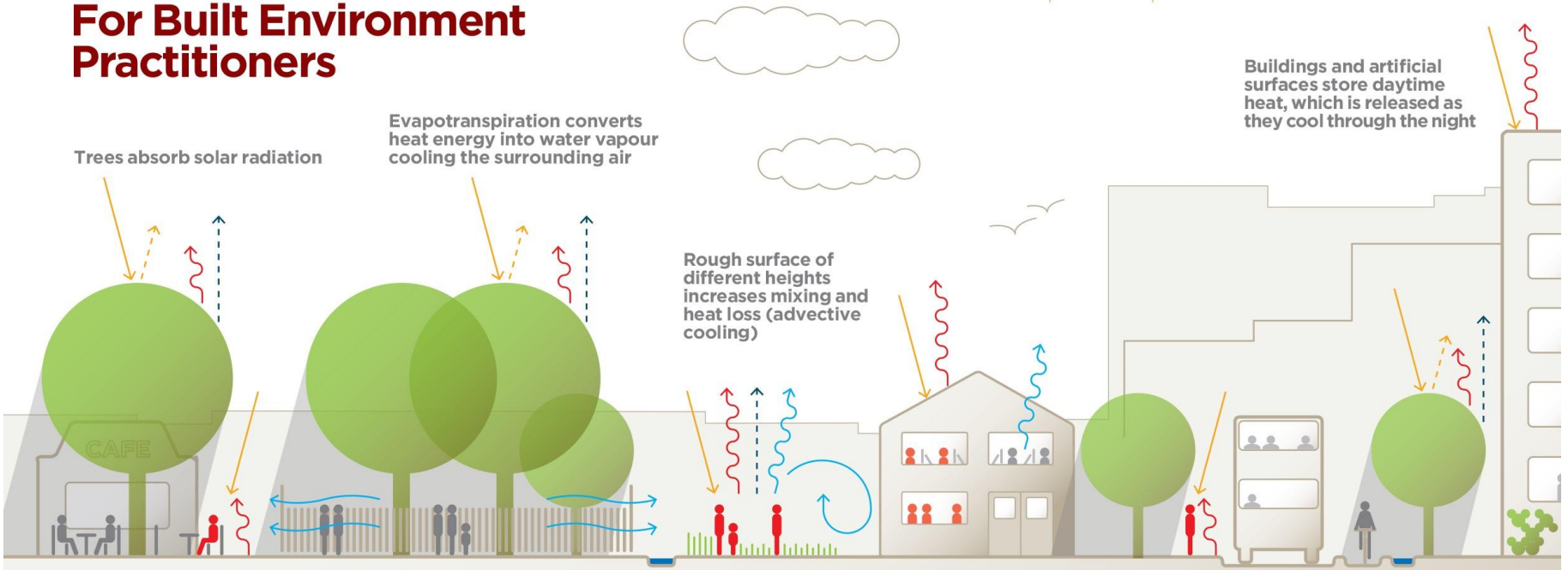
First Steps in Urban Heat

For Built Environment Practitioners



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First Steps in Trees and New Developments

For All Working in the Built Environment

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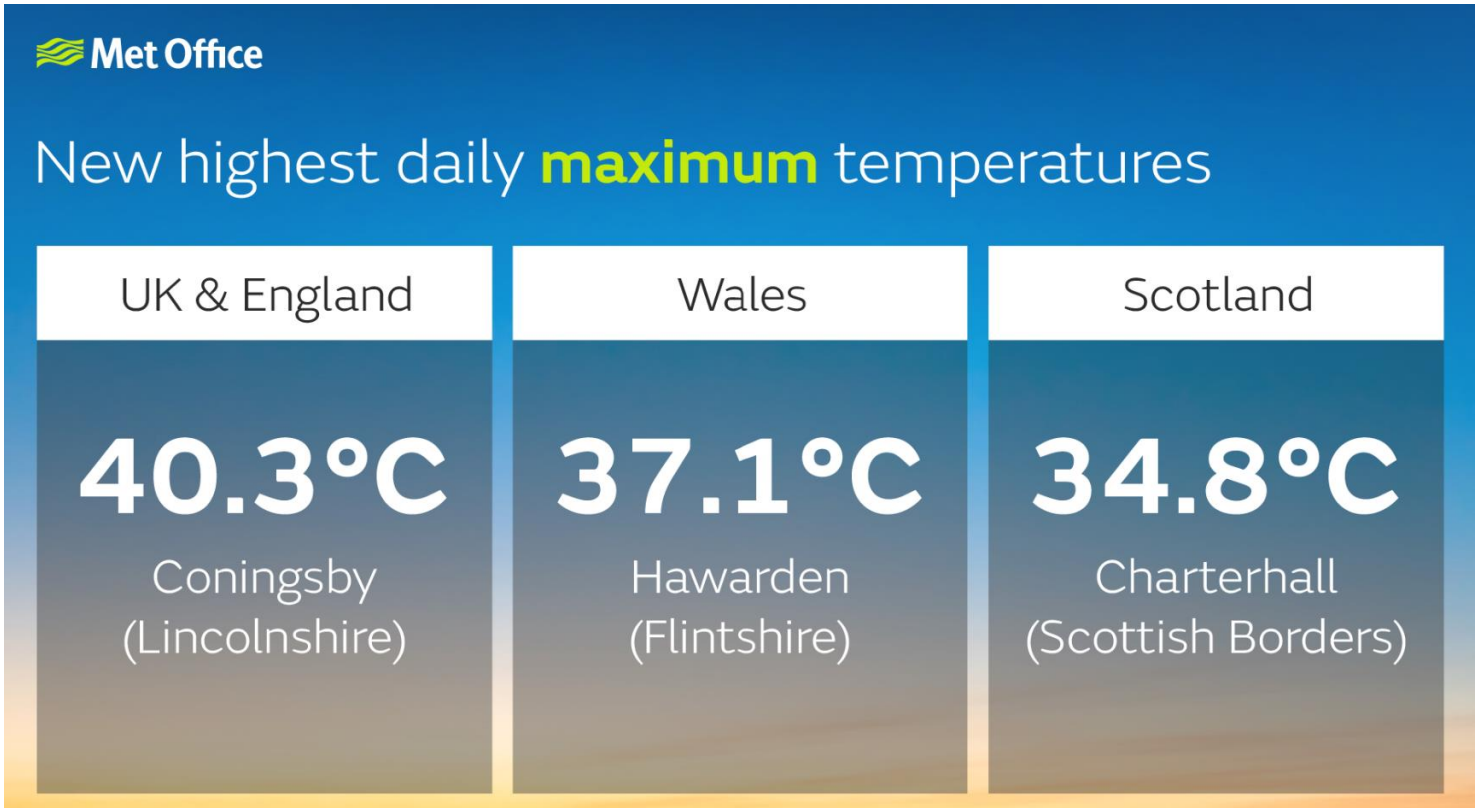
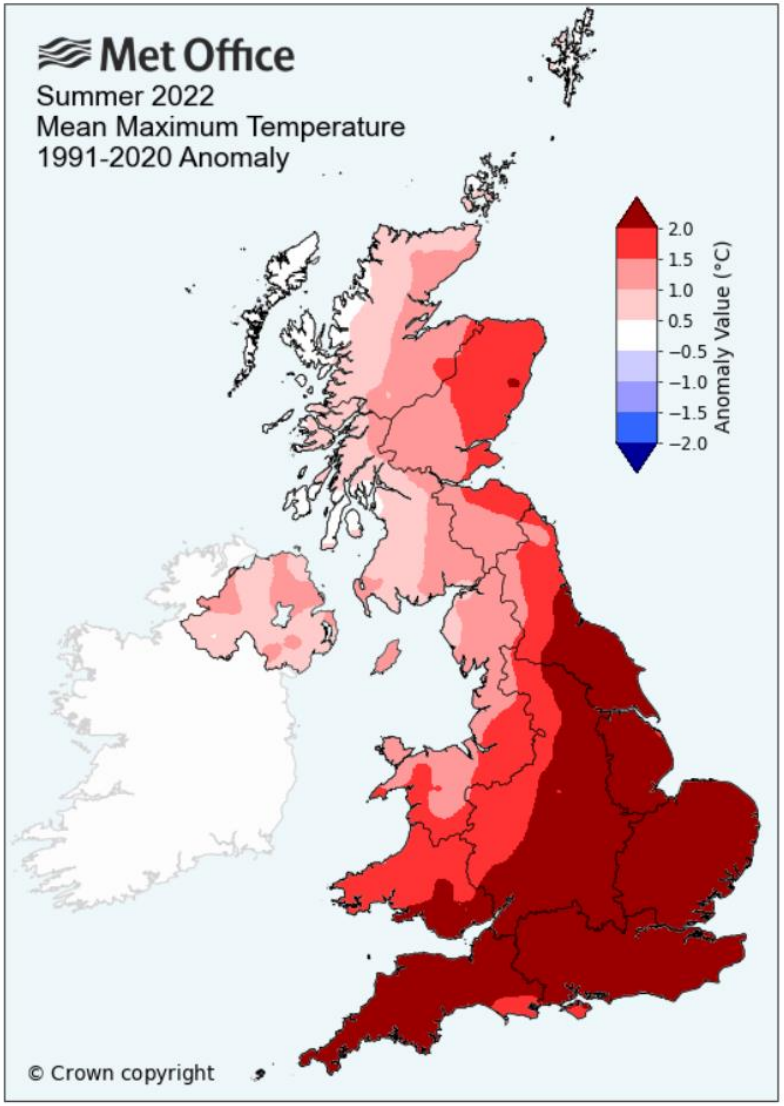
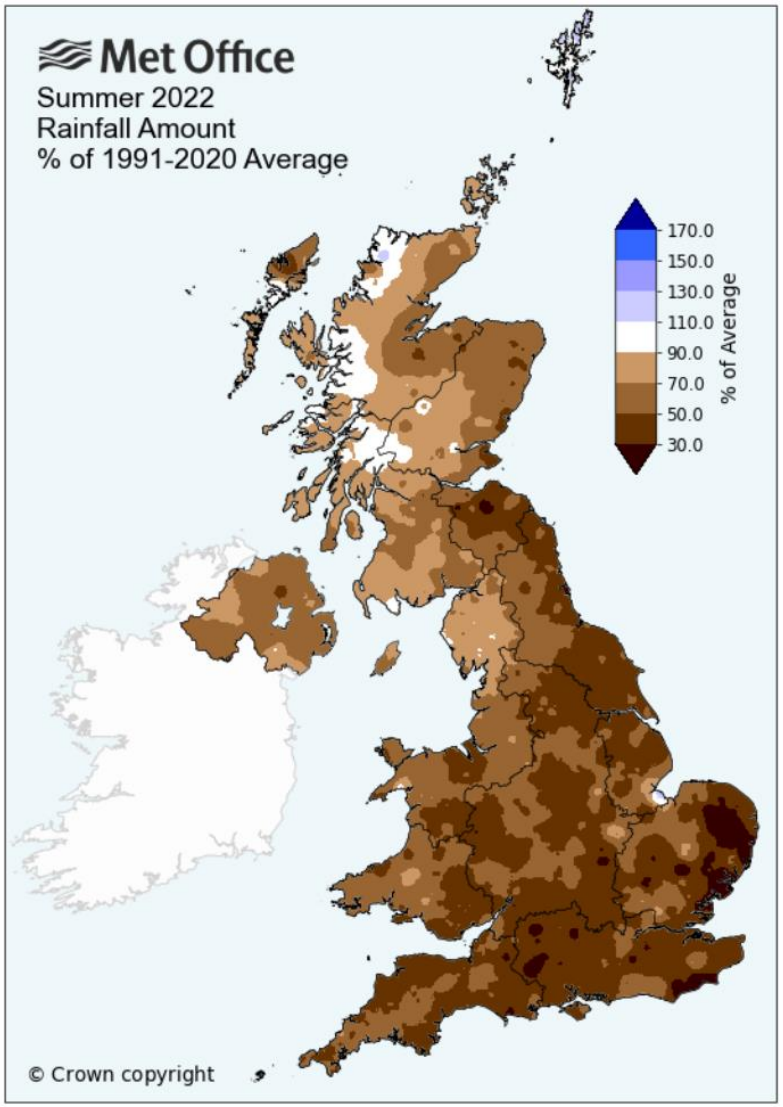
Summer 2022 - UK



Source Met Office

Summer 2022 - UK





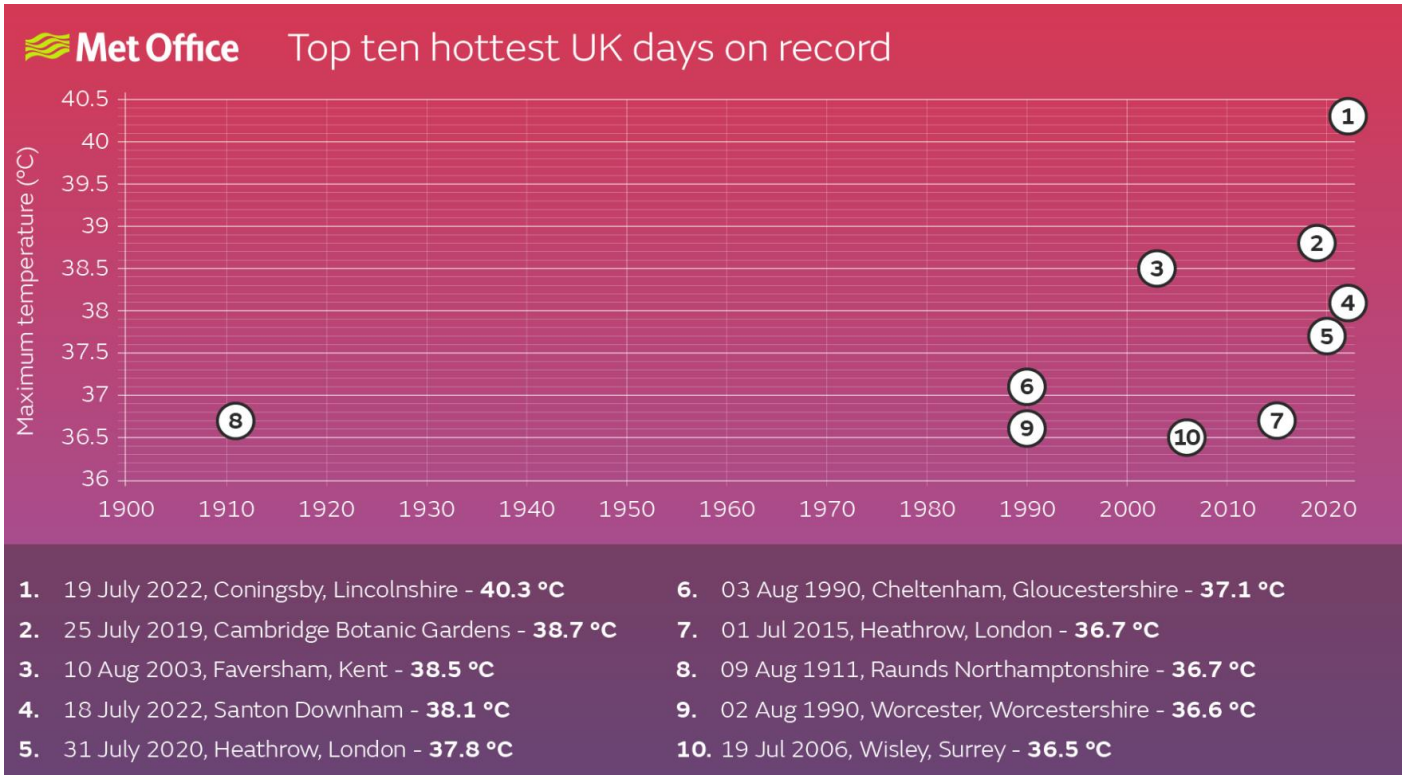
Source [Met Office]

Future Climate

Source Met Office

Met Office (UKCP 2018) "*a greater chance of warmer, wetter winters and hotter, drier summers*"

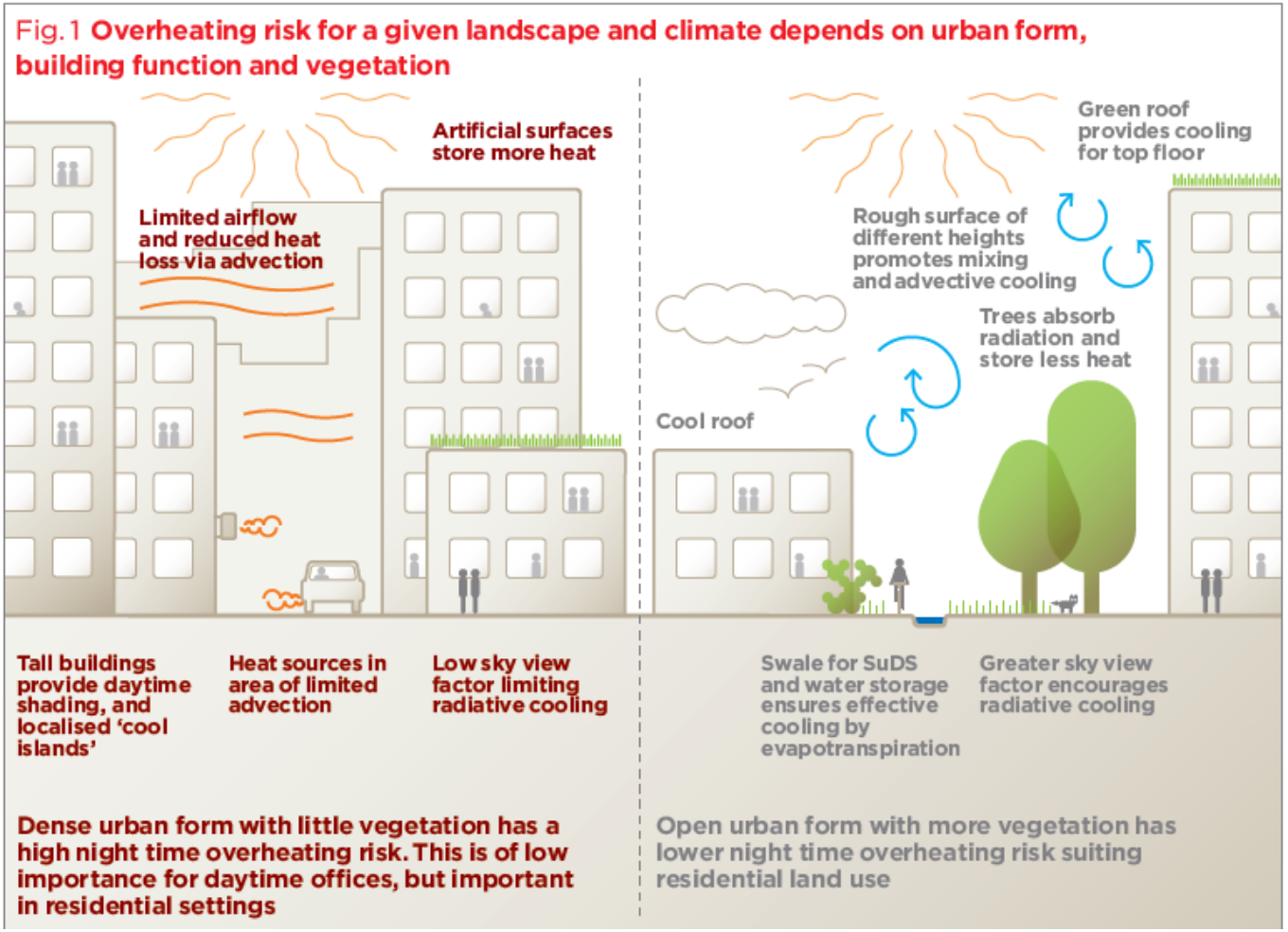
- More frequent heavy rainfall events, more rain in shorter period
- Summers like 2018 happening every other year by 2050



First Steps in Urban Heat
http://epapers.bham.ac.uk/3452/

Urban heat

Urban areas are warmer than surrounding rural areas



What can built environment practitioners do?

1. Understand urban heat – where is hottest?
2. Heat sensitive strategic planning – locate homes away from hottest areas
3. Consider site design and materials - sky view factor, green infrastructure, cooling materials
4. Assess building overheating risk
5. It is never too late to mitigate.

First Steps in Urban Heat
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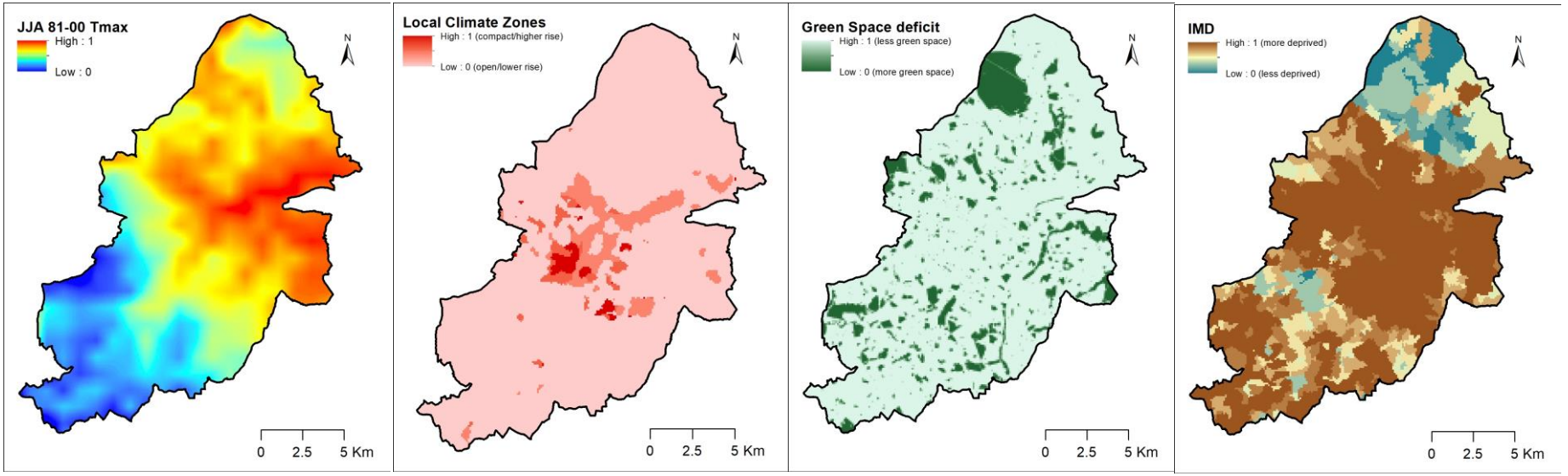
Mapping Heat Vulnerability in Birmingham



- Overheating risk can be estimated by combining 4 open access datasets (Ferranti et al. <under review>)
- Temperature, Local Climate Zones (urban form), green space, and Indices of Multiple Deprivation (IMD)

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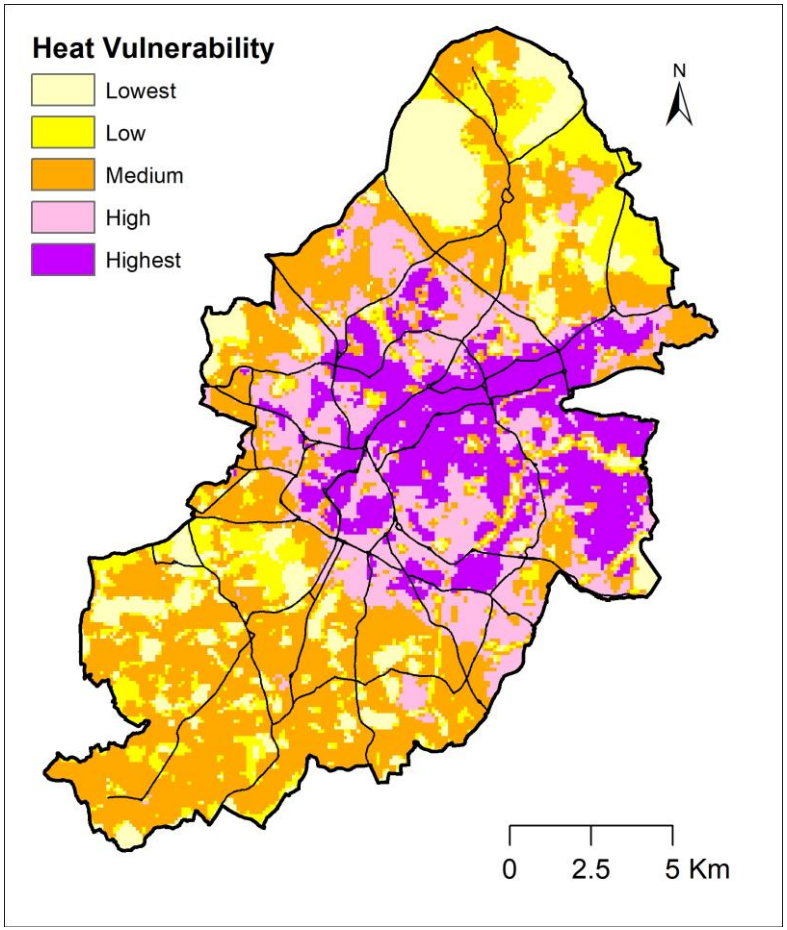
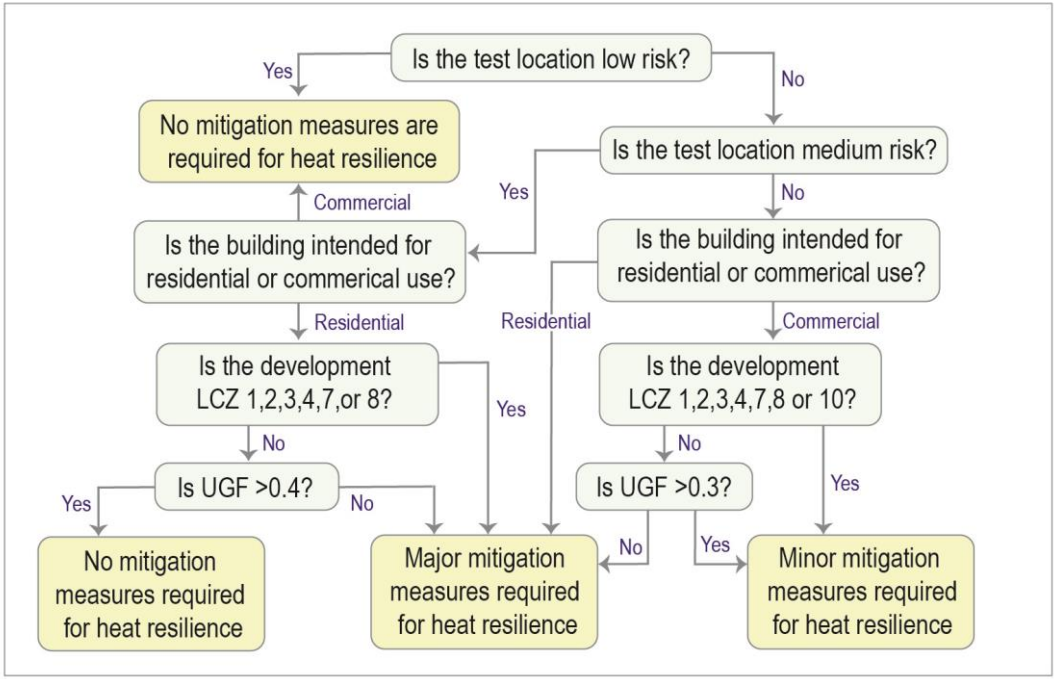
UKRI Engineering and Physical Sciences Research Council

Mapping Heat Vulnerability in Birmingham





2. Combine with flow chart to specify heat mitigation measures (e.g. GI/building materials)

1. Map heat vulnerability
(temperature, LCZ, green space, IMD)

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Final Thoughts

1. Urban trees feel the extremes of heat and drought

2. Water is important: extreme rainfall, drought, trees need water to survive /evapotranspiration

3. Overheating risk is part of broader Climate Risk and Vulnerability Assessment (CVRA) mapping work

4. Contact me if of interest

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