

Climate resilience in buildings

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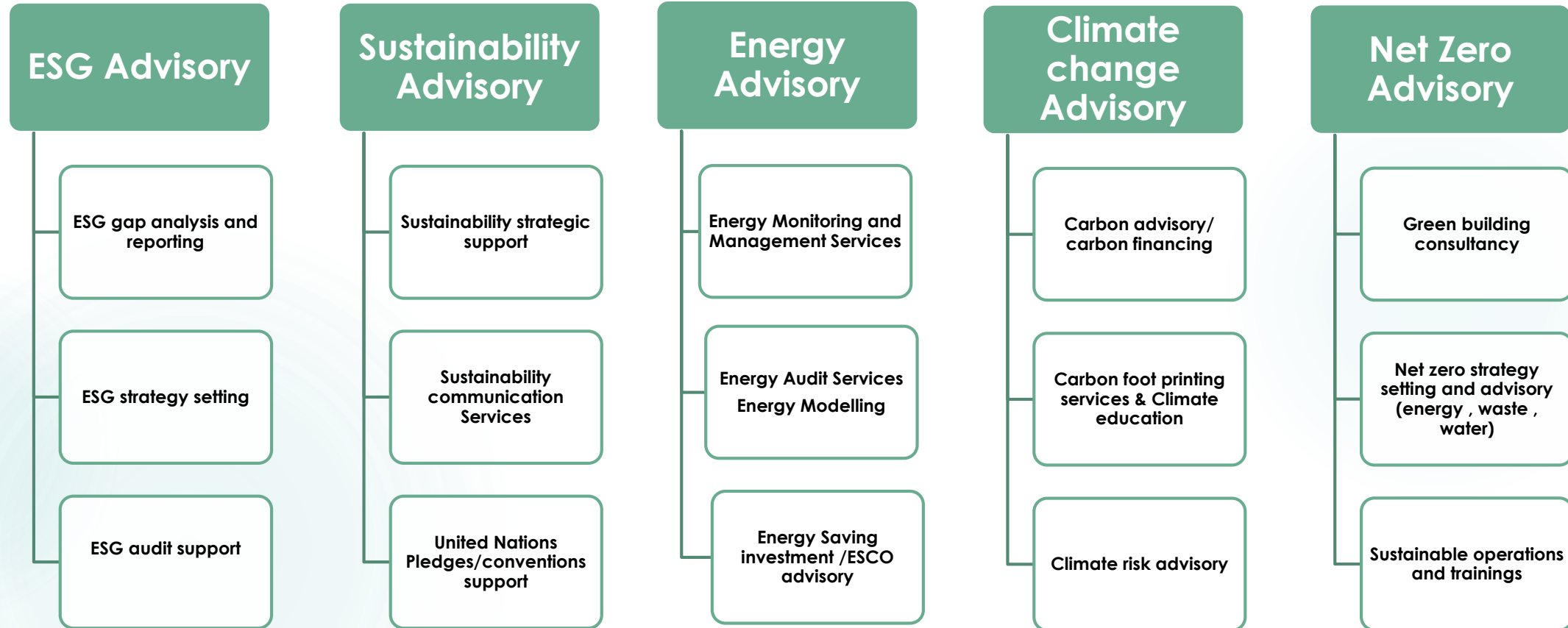
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Who we are

- ▶ The young Qatari company providing comprehensive and unique climate services under one umbrella
- ▶ Cross cutting services inline with the current and future market needs
- ▶ Engineering , Technical and Sustainability consultancy
- ▶ Through our experts, we provide a comprehensive range of support - from strategy setting to development, implementation, and maintenance.
- ▶ As an advisory company, our business model is to provide expert and innovative solutions to clients using our expert team.
- ▶ Wherever you are on your climate journey, we are here to help you from understanding the need till the implementation.



What we do



Our services are spread across **5** verticals



Why climate resilience

- ▶ The buildings and construction sector is responsible for **38%** of global energy-related CO2 emissions.
- ▶ The sector's 2021 operational energy-related CO2 emissions is up **5%** from 2020.
- ▶ In 2021, operational energy demand for heating, cooling, lighting and equipment in buildings increased by **4%** from 2020.

The buildings and construction sector is not on track to achieve de carbonization by 2050 (UNEP 2022)



Investments in building energy efficiency have gone up by 16 per cent in 2021 over 2020 levels .

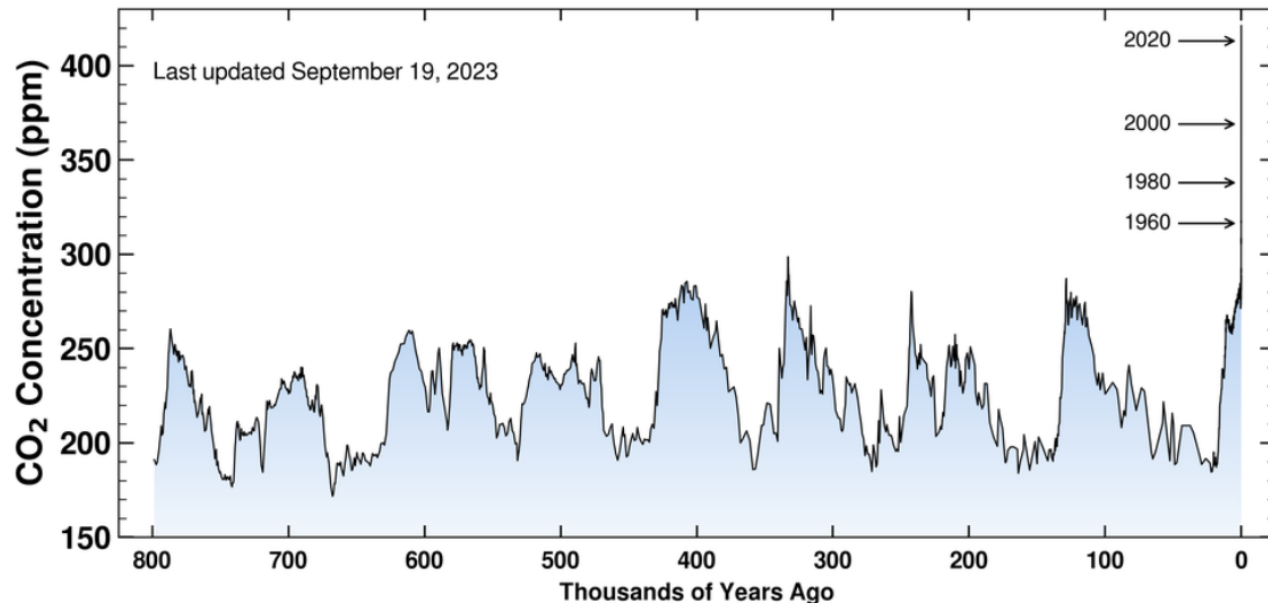


Why climate resilience

*Latest CO₂ reading: **418.54 ppm**



ONE WEEK ONE MONTH SIX MONTHS ONE YEAR TWO YEARS FULL RECORD 1700-PRESENT 2K YEARS 10K YEARS **800K YEARS**

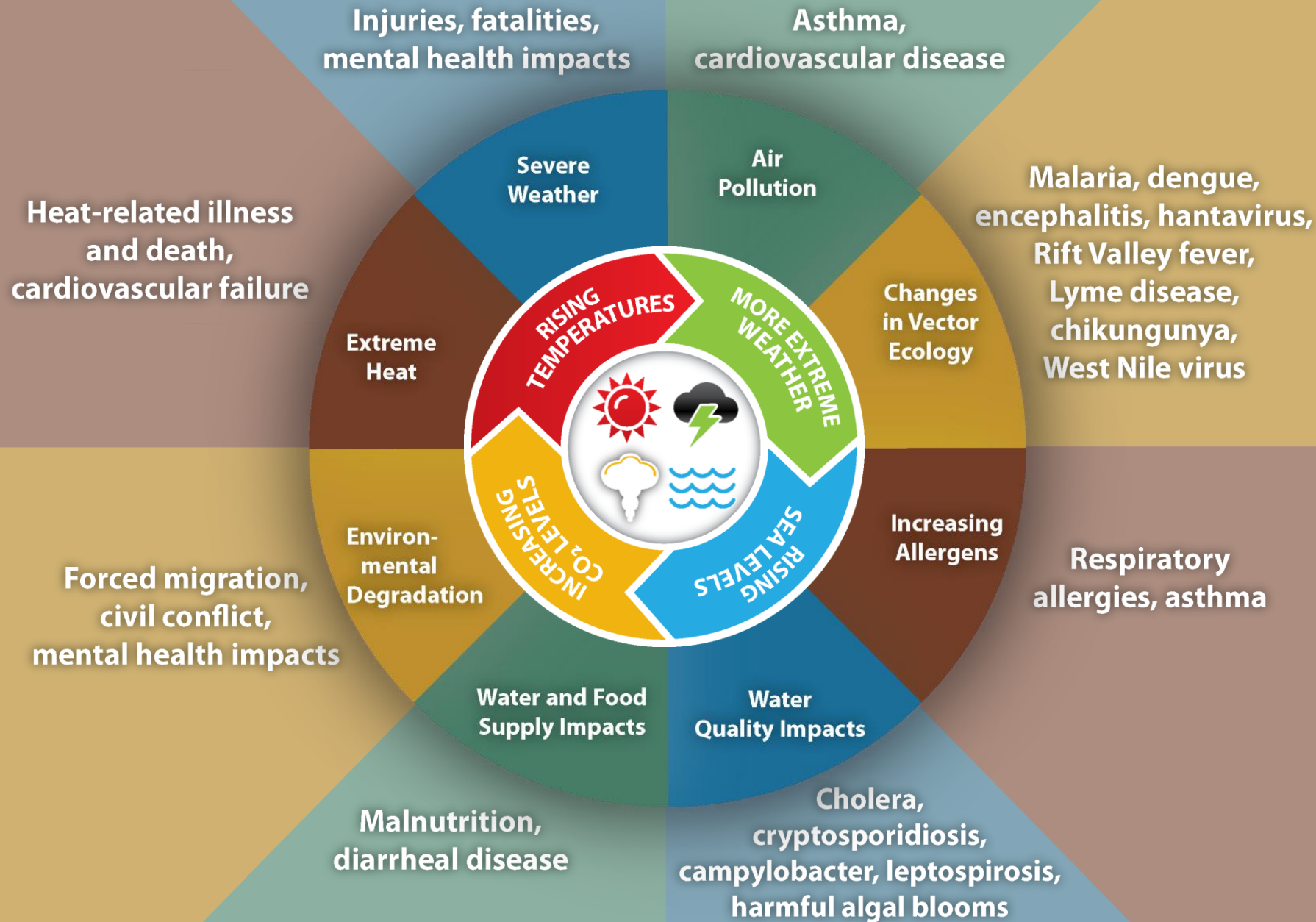


- ▶ Carbon remains in the atmosphere for decades , even after curbing the emissions — climate impacts are here to stay

- ▶ By 2050, **1.6 billion** urban dwellers will be regularly exposed to extreme high temperatures
- ▶ Over **800 million people** living in more than **570 cities** will be vulnerable to sea level rise and coastal flooding.



Impact of Climate Change on Human Health



Source : CDC's climate and health program



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Climate resilience

- ▶ Climate resilience is about successfully coping with and managing the impacts of climate change while preventing those impacts from growing worse.
- ▶ 3 A's – Adapt , Anticipate and Absorb
- ▶ Future-proofing the buildings sector must be a center piece of building resilience and GHG emissions mitigation

Sea Level Rise

With a global temperature rise of 2°C by 2050, at least

800 million
people will be exposed to rising seas and storm surges.



Water Scarcity

Today,

255 million

people in cities face extremely high water stress.

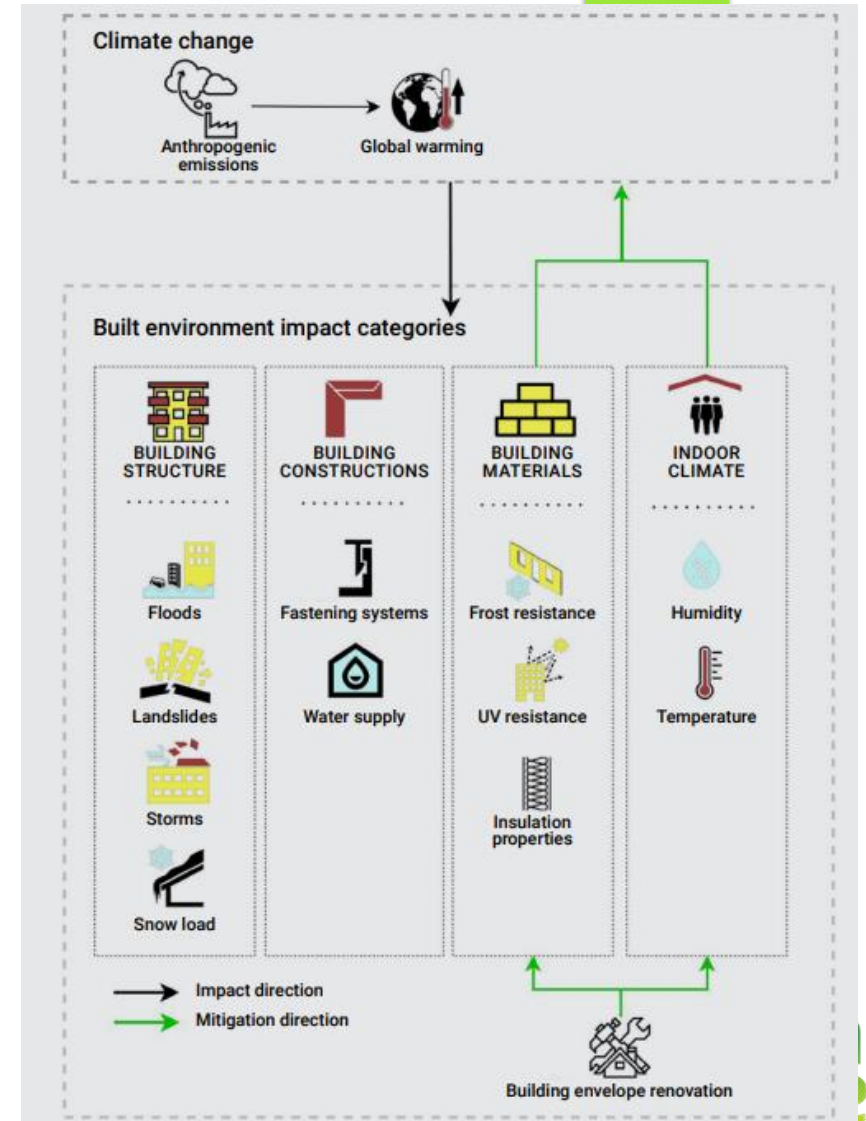
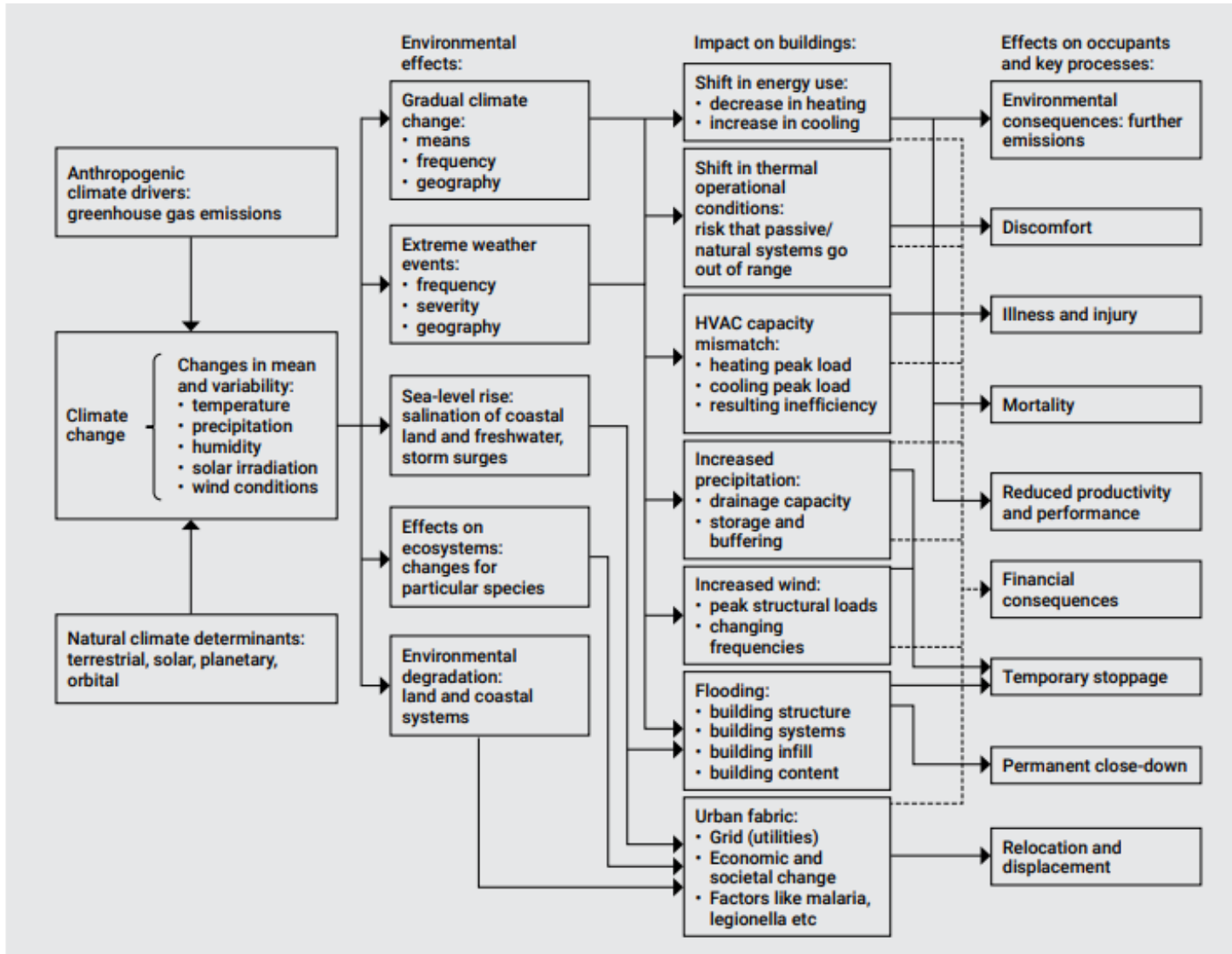


By 2030,

470 million

people are expected to live in cities with extremely high water stress.

Climate change impacts on building sector



Climate resilience in buildings

- ▶ Adaptation to climate change and planning for future climate projections should be considered in housing projects/at construction stage.
- ▶ Adhere to passive design and reduce exposed surface to heat
- ▶ Reduce urban heat island effect (UHI) by using colors with high reflectivity and emissivity on roofs , walls , pavements.
- ▶ Improve nature based solution (NBS) / green infrastructure as part of passive cooling , flood protection by water retention etc.
- ▶ NBS act as buffer and protect from desertification and sand storms.
- ▶ Protect natural eco systems like mangroves. and reinforce the coastal development to protect against sea level rise and winds.



Drought



Flooding



Sea-level Rise



Heatwaves
and Warming



Cyclones and
Strong Winds



Hot and
Arid Climate



Hot and
Humid
Climate



Temperate
Climate



Cold
Climate

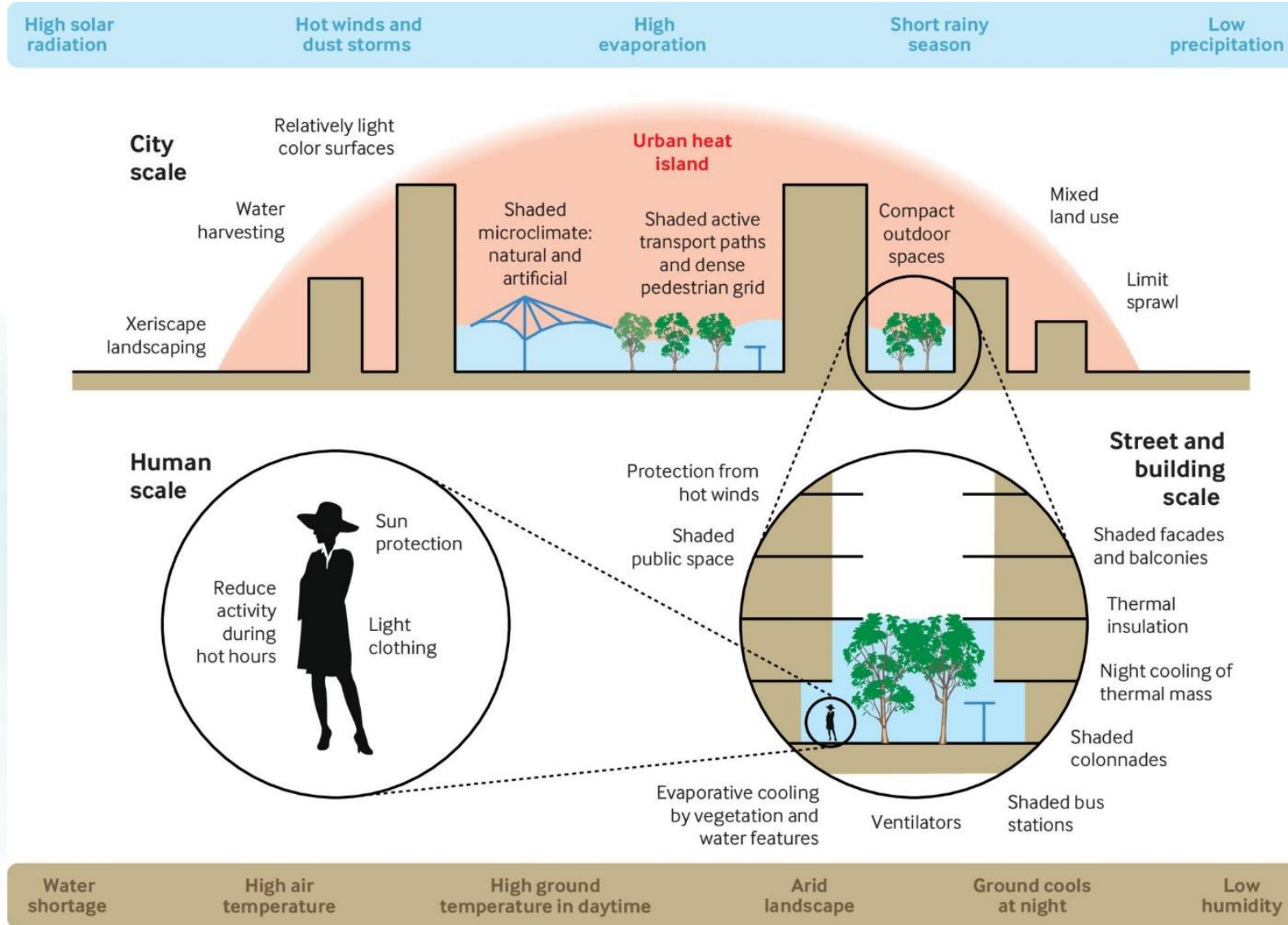


Nature-based
Solutions



Materials

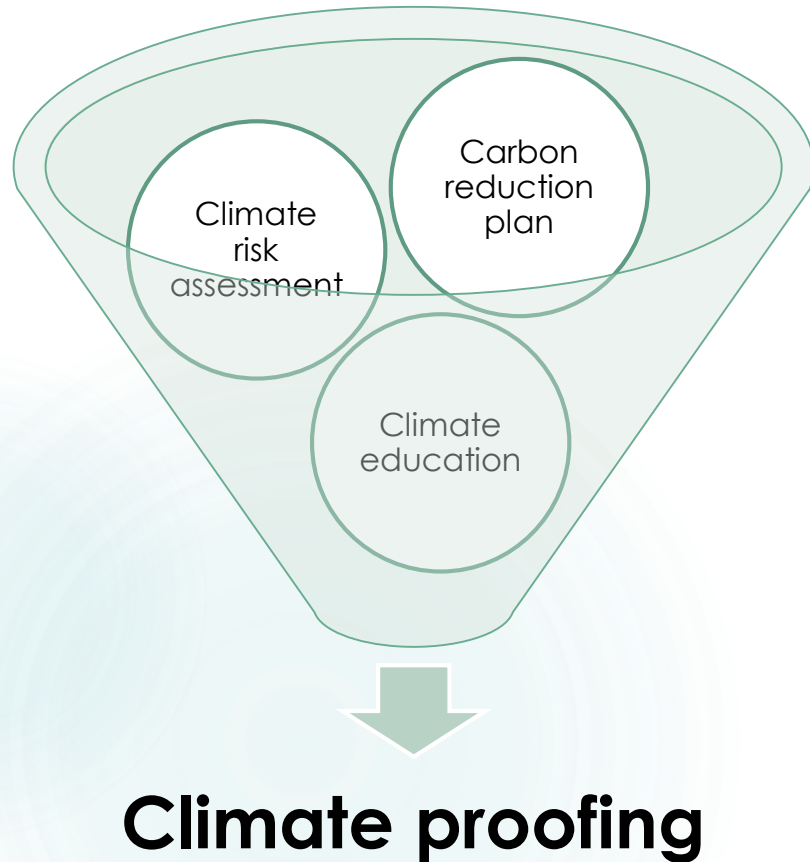
Climate resilience in buildings



Risk reduction through

- ▶ Locational approaches
- ▶ Structural approaches
- ▶ Operational approaches

Three pronged approach – Silver bullet ?



- ▶ Undertake **Climatic risk assessment (CRA)**. First step for building climatic resilience is to understand and estimate the climatic risk , exposure and vulnerability .
- ▶ Prepare a **carbon reduction plan** after identification of carbon hotspots is a must . The plan has to be monitored and evaluated on a yearly basis.
- ▶ Become **climate literate**. Amplify the capacity building efforts at Ensure the employees and senior management is aware of the risks and impacts of climate change . Provide training on both mitigation and adaptation.

Thank you



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