WRINKL SOMMI.

Urban Design in the Context of Population Growth and Global Warming

### World population

2050: 10 E09

Net growth: 2.4 cap s<sup>-1</sup>





Built environment (weight, approx.)
2023: 1,000 Gt

Increase popul. 670 Gt

Catch up GS 1,700 Gt

2050: 3,300 Gt

Target level is 335 t cap  $^{-1}$  1 Gt = E09 t = 1,000 Mt

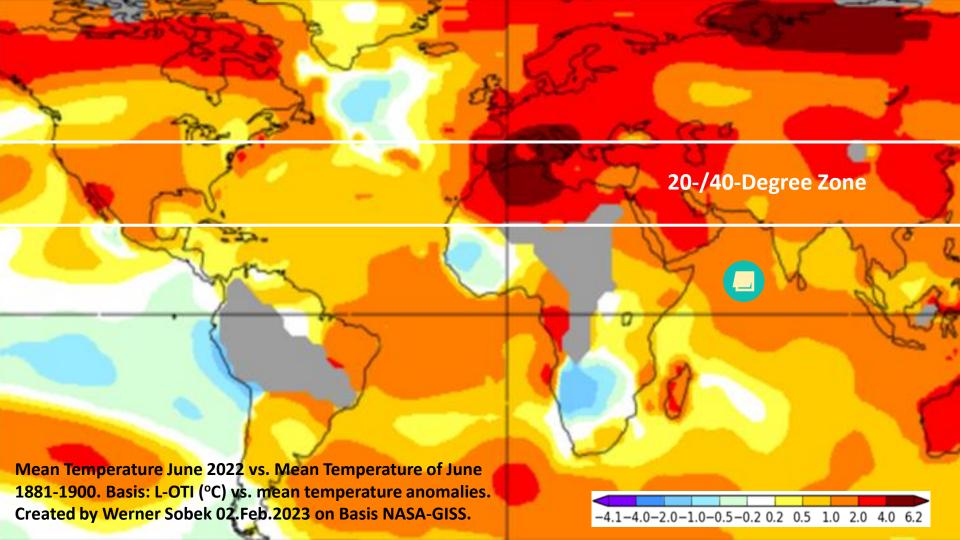
GS = Global South



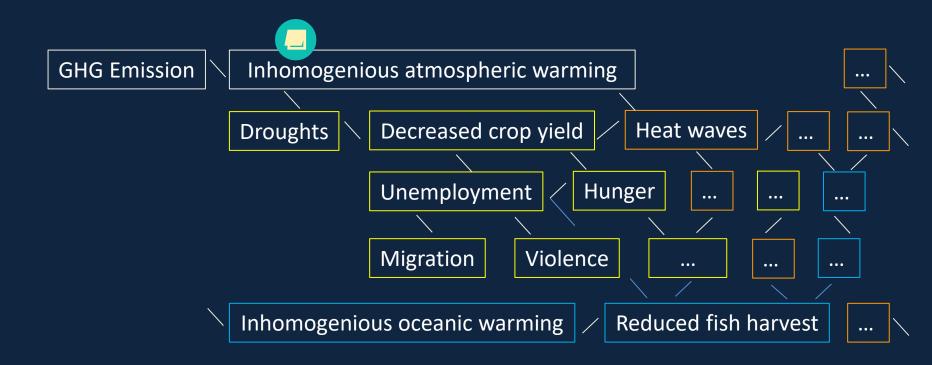
Material consumption
Waste production
Emissions
Energy

The built environment stands for approx. 50 % of annual world greenhouse gas emissions

Heat/cool: 25-28% Grey em. bldgs: 12-14% Grey em. infrastr. 12-16%



# GHG cause-and-effect-relationship



#### GHG Emmissions in 2023

.6
9
7
1

In t cap<sup>-1</sup>, approx. values

#### Minimize

Material consumption
Waste production
Emissions
Save energy if needed





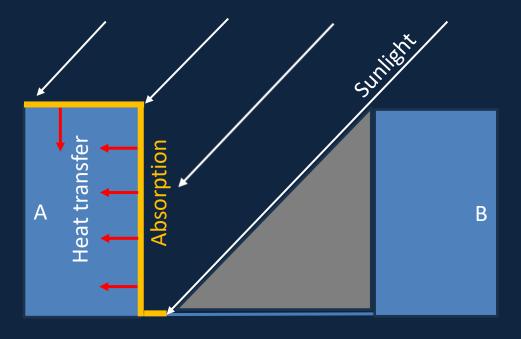






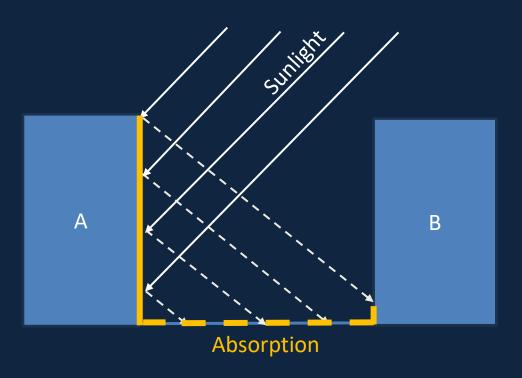


# Warming up the urban area: Absorption



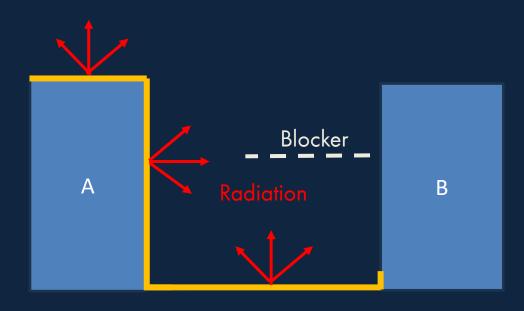
## Warming up the urban area: Reflection





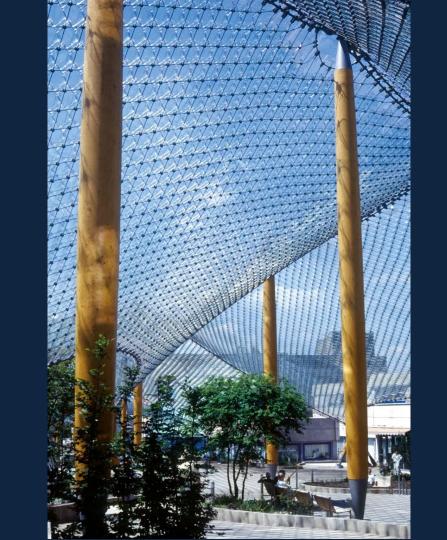


## Warming up the urban area: Radiation

















#### These 17

#### Natura mensura est





The alignment of how we build to future demands is not an architectural or an engineering problem.

It is a soziological problem.

#### These 18

### Dein Tun berührt mein Sein



Votre faire touche mon être Il tuo fare tocca il mio essere Your doing touches my beeing Tu obra toca mi ser Твоё дело касается моего существа W. Sobek, non nobis – über das Bauen in der Zukunft

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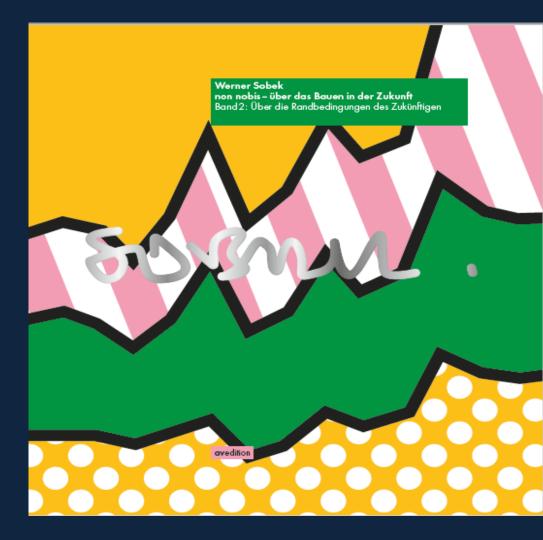
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### 40+20 Min