

THE GREEN VILLAGE

Smart buildings: Co-Creation Centre

Joep van der Weijden

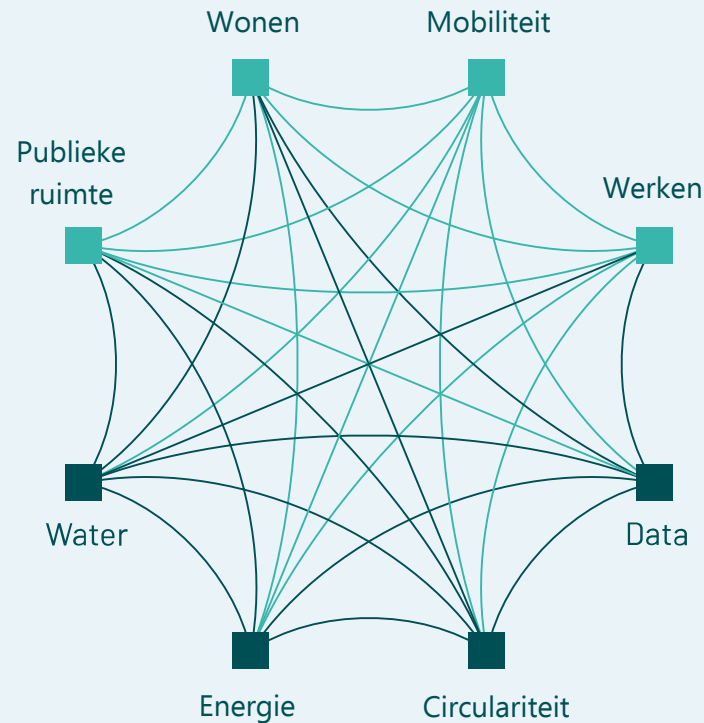
Stellingen

- Hoe meer sensoren, hoe duurzamer je gebouw
- Een glazen kas is niet geschikt voor energie neutraliteit in de gebouwde omgeving

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The Green Village is een field lab voor duurzame innovatie



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The Green Village 2020-2025

Drie thema's



1
Duurzaam
bouwen en
renoveren

2
Toekomstig
Energiesysteem

3
Klimaatadaptieve
stad

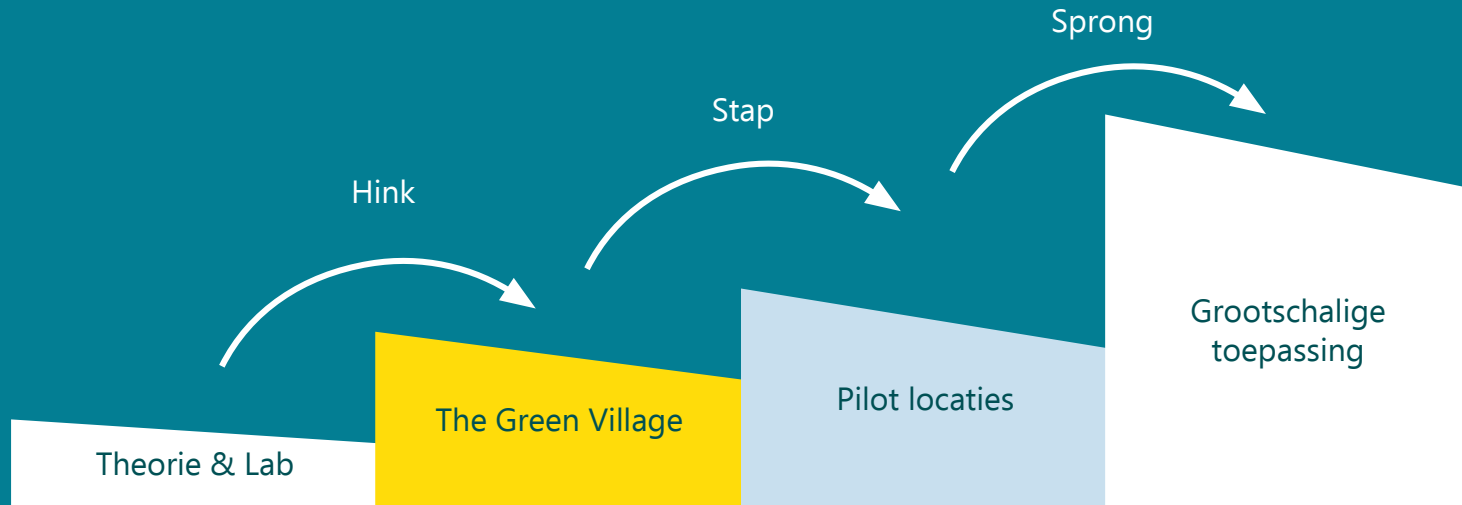
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Stao

The Green Village (TRL3-7)

De eerste 'hink' naar grootschalige toepassing

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CASUS: CO-CREATION CENTRE



Energie consumptie in gebouwen

Energie consumptie van
Nederlandse gebouwen:

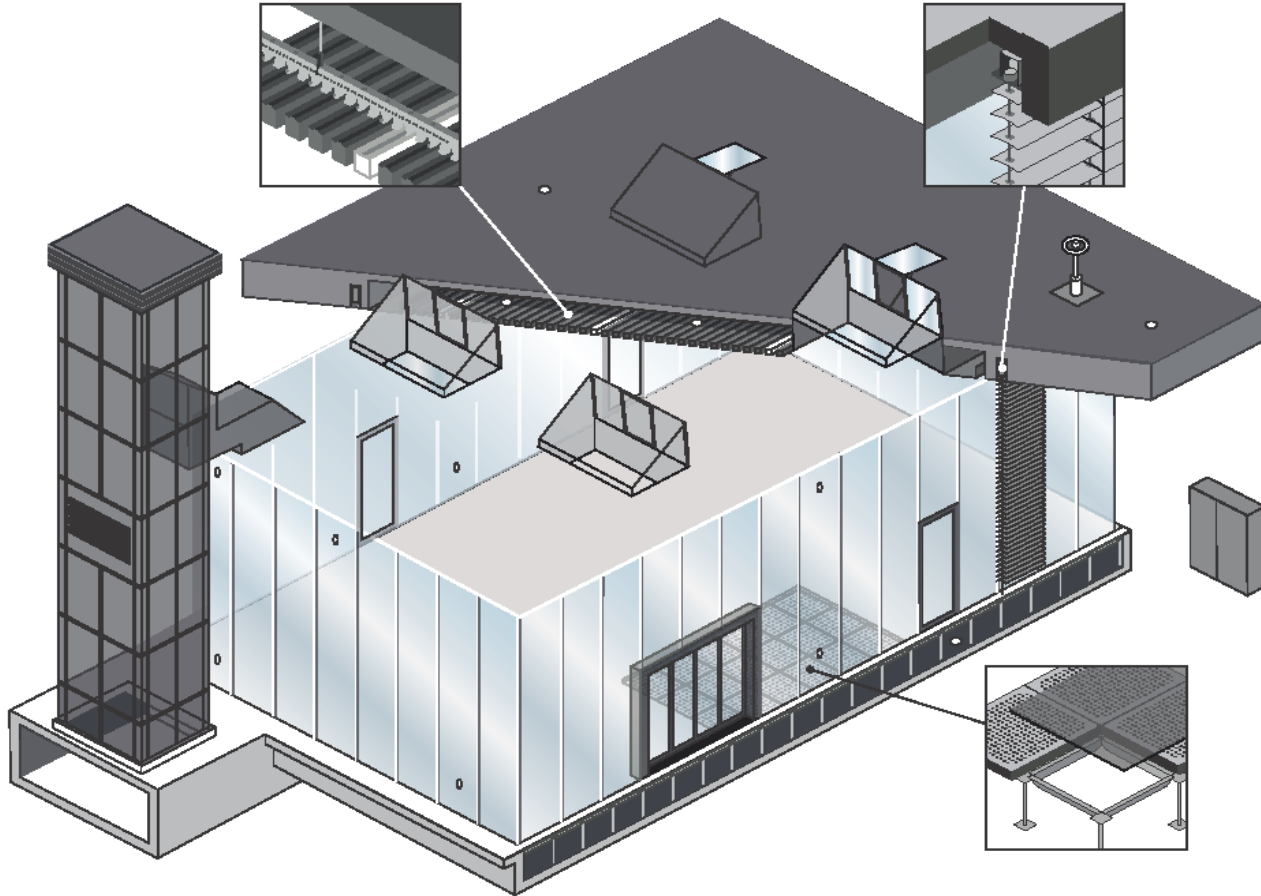
150 – 200
 $\text{kWh}_{\text{eq}}/\text{m}^2 \cdot \text{y}$

Betere gebouwen:

50
 $\text{kWh}_{\text{eq}}/\text{m}^2 \cdot \text{y}$

Door: Betere isolatie en glas, PCM, warmte terugwinning, LED, vraag gestuurde ventilatie, ...

Passieve verwarming en koeling



Door beter gebouw en
techniek gaat de
capaciteitsvraag naar 30%

Resterende
energiebehoefte duurzaam
opgewekt



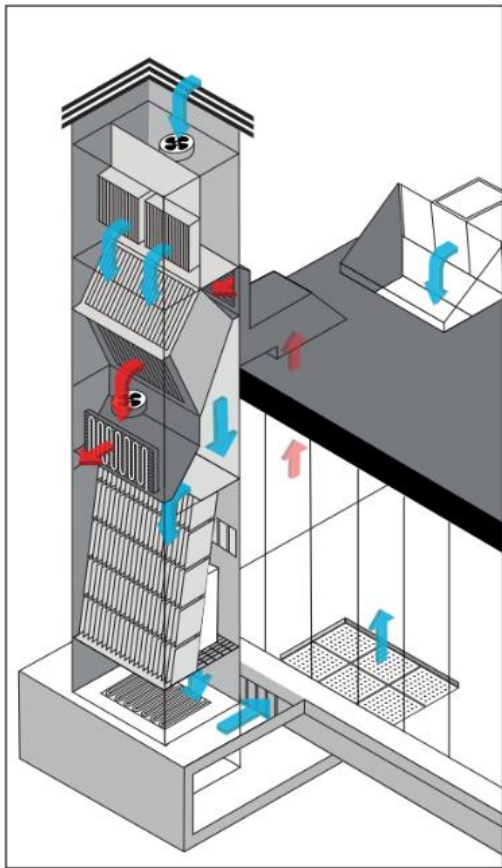
Lamellen aan de buitenkant voor passieve koeling





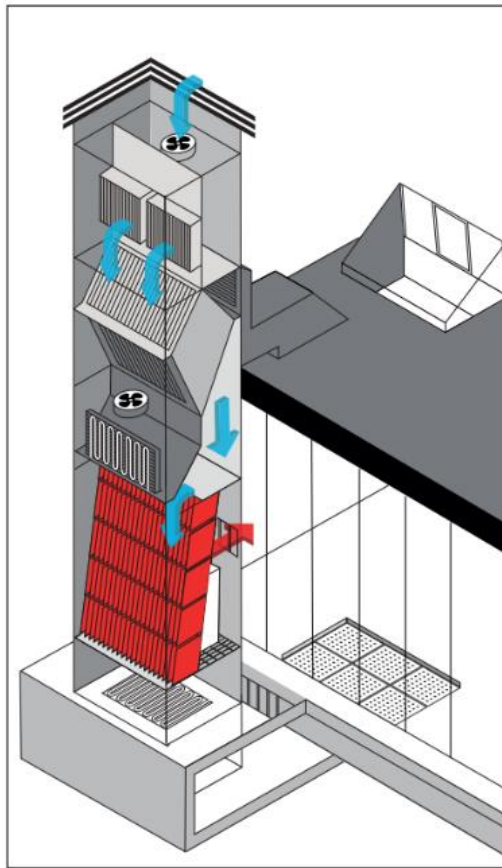
Summer, spring, fall
10 - 20 °C

Sunshades open
window open
WP off
PCM off
HRU off



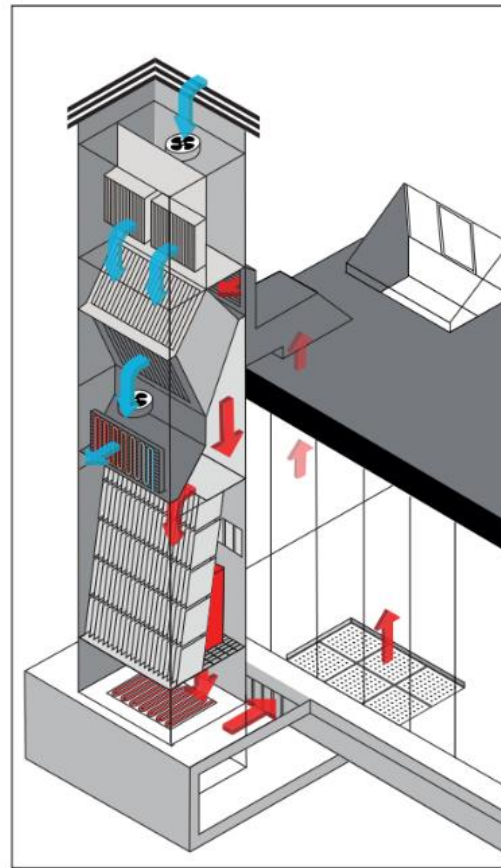
Summer, night
15 °C

Fan for cooling PCM



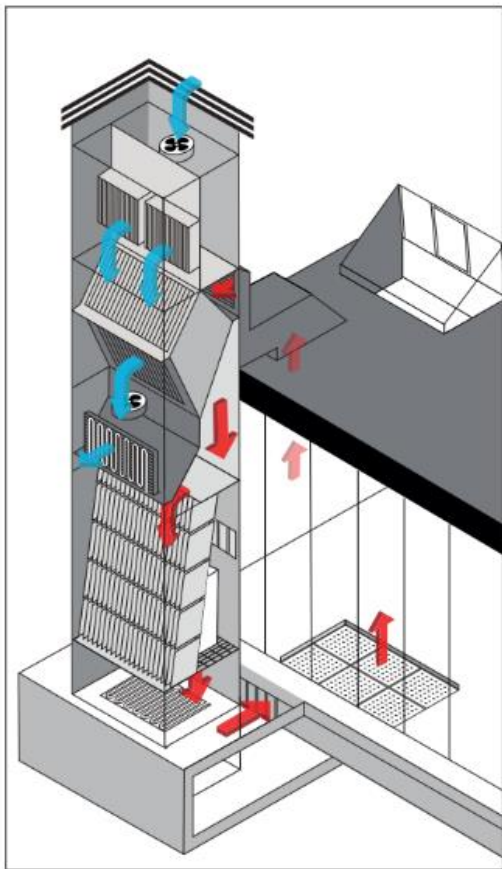
Winter clouded 0 °C

Sunshades open
window closed
WP on heating
PCM on
HRU on



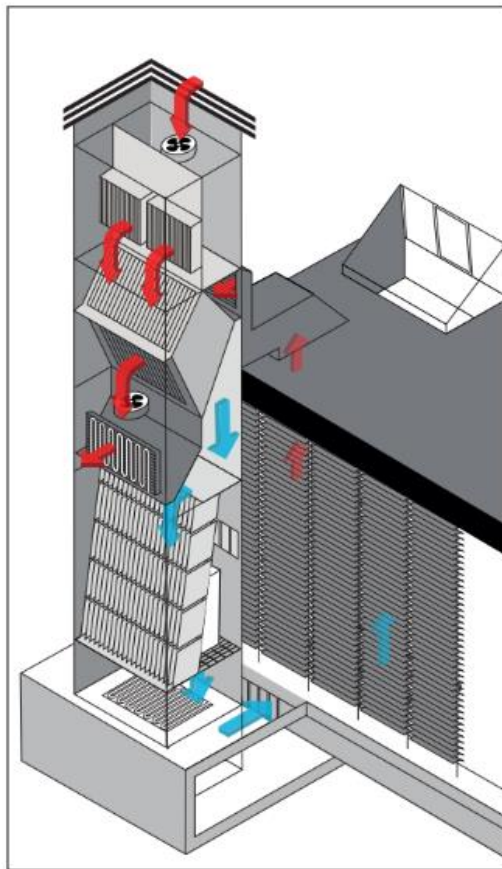
Winter sun 0 °C

Sunshades	open
window	closed
WP	off
PCM	off
HRU	off



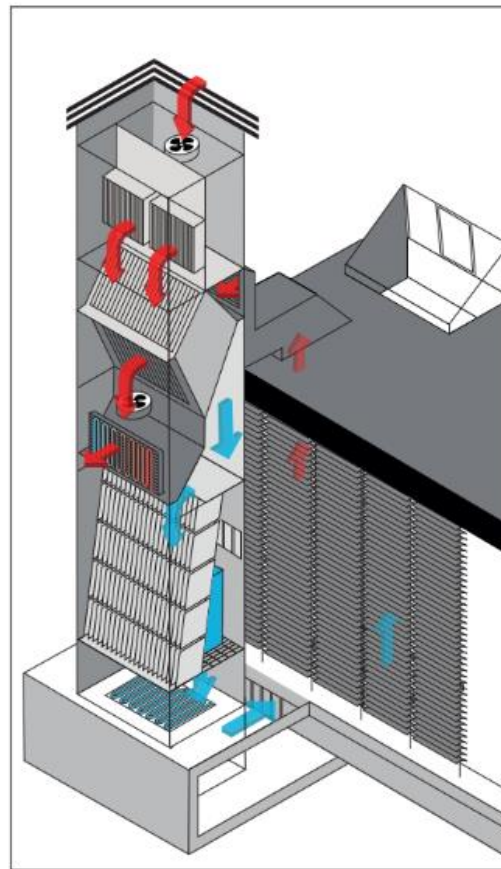
Summer moderate warm 25 °C

Sunshades	closed
window	closed
WP	off
PCM	off
HRU	off



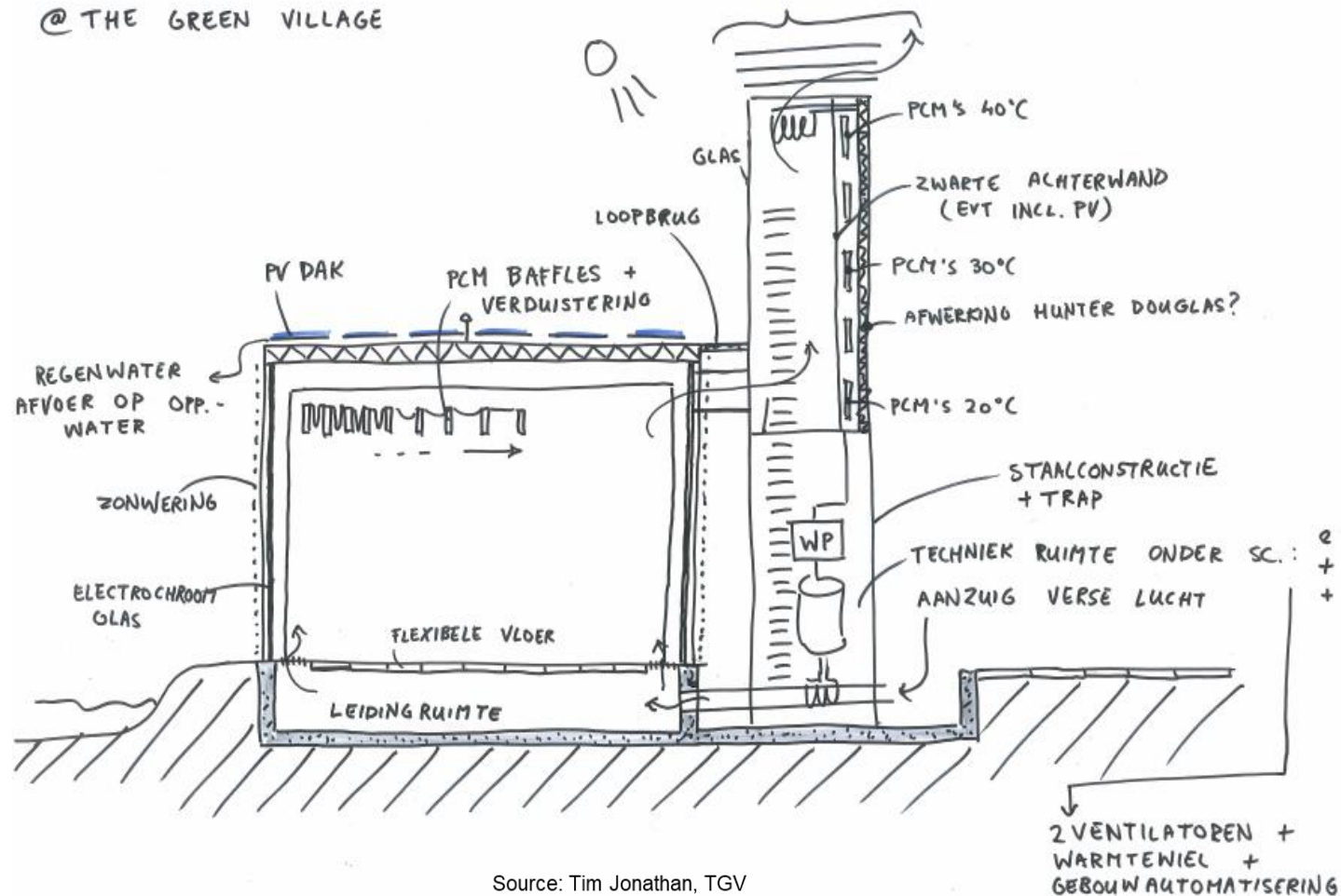
Summer heat 30 °C

Sunshades	closed
window	closed
WP	on cooling
PCM	on
HRU	on



CO-CREATION CENTRE
@ THE GREEN VILLAGE

SOLAR CHIMNEY



Source: Tim Jonathan, TGV

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