

WAVES OF ENERGY

Klimaatneutraal ontwerp voor Oostenburg, Amsterdam

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In samenwerking met Eefje, Kathrin, Stefan, Marieke en Kristyna*



ONTWERP UITDAGING



Klimaat gebruiken als uitgangspunt voor ontwerp

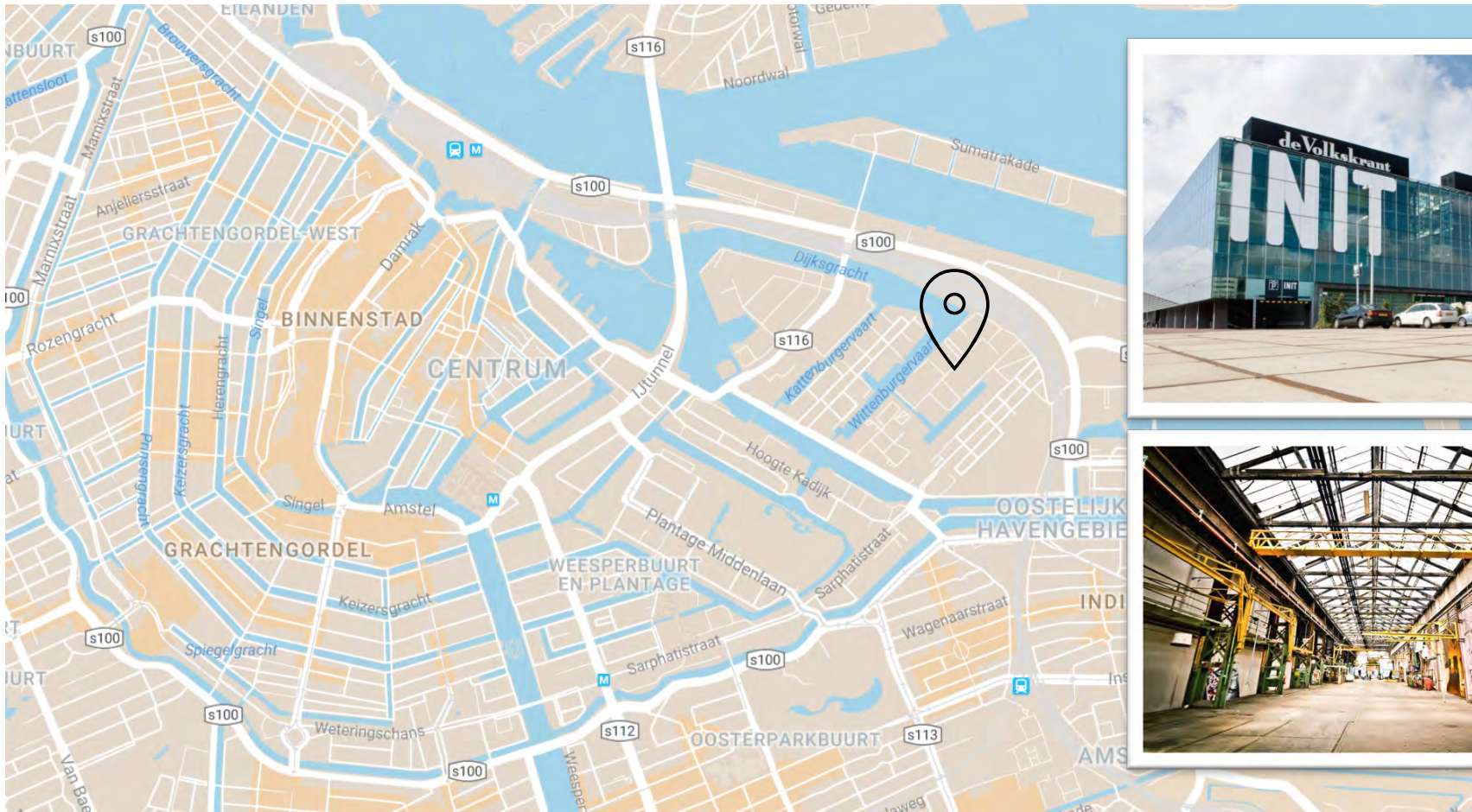


Adapteren op microklimaat



Energie bewust plannen en ontwerpen

LOCATIE



Amsterdam

Ambitie:
minder CO2 uitstoot
& meer duurzame energie

Oostenburg

Oostelijk havengebied
Creatief & industrieel karakter
Ruimte voor nieuw woon-werkgebied



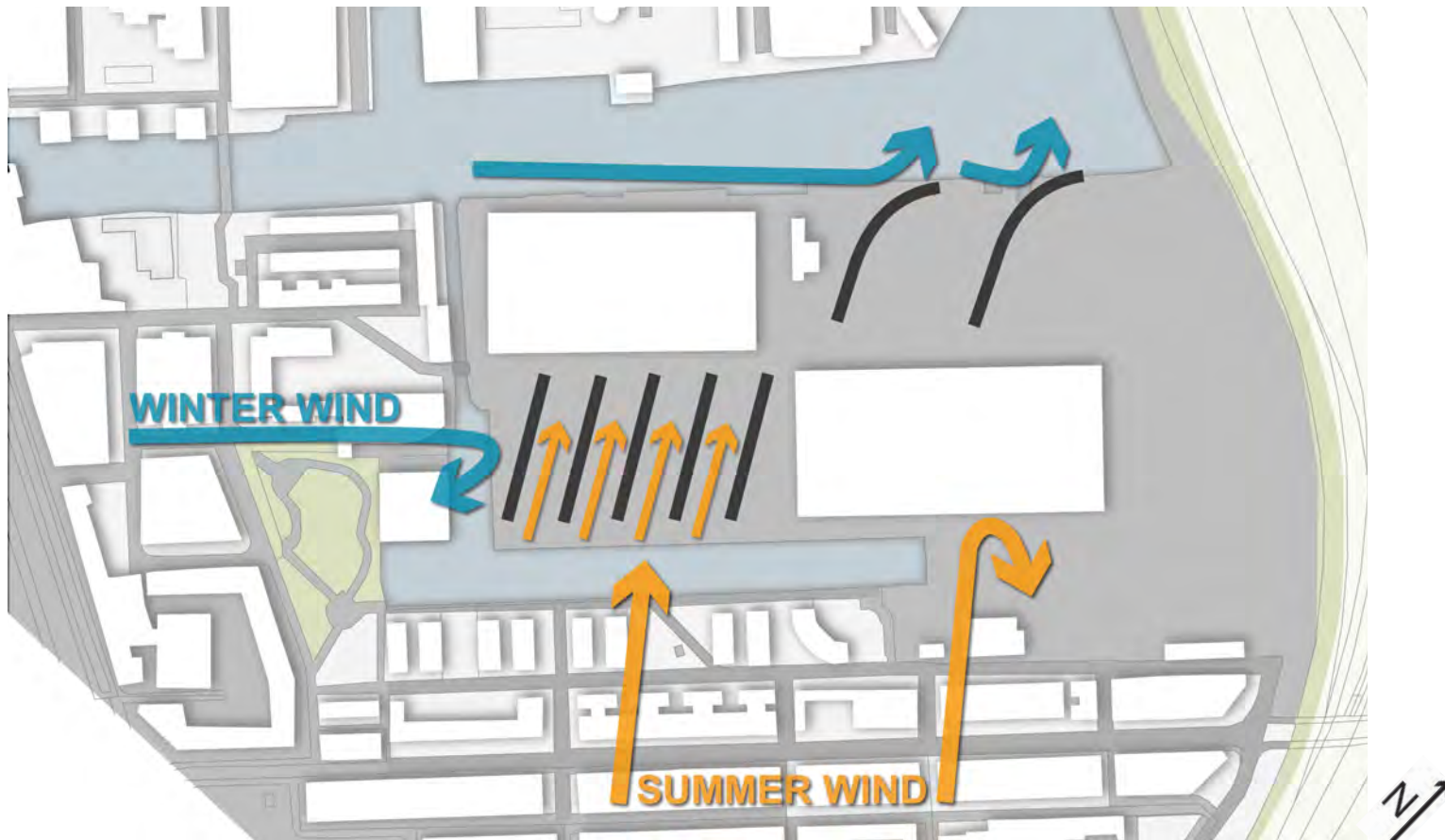
AANGENAAM THERMISCH COMFORT

&



ENERGIE NEUTRALE WIJK

THERMISCH COMFORT



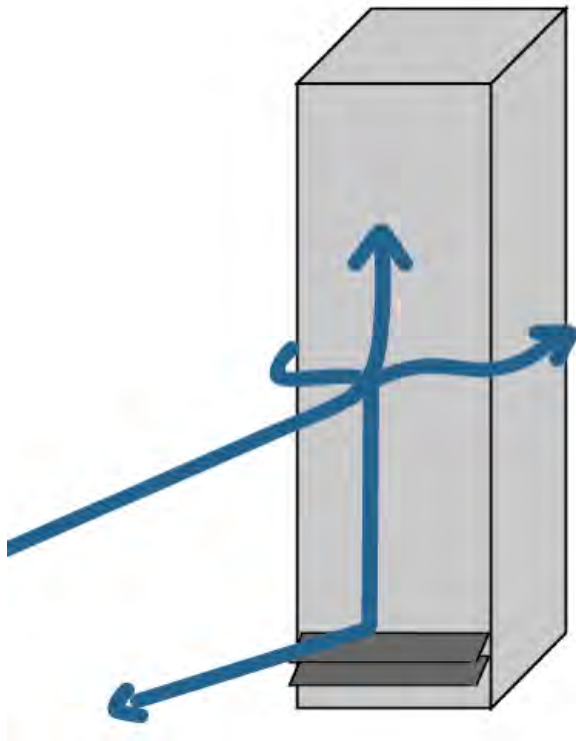
Wind

Winter wind blokken
Zomer wind gebruiken voor
ventilatie

Warmte

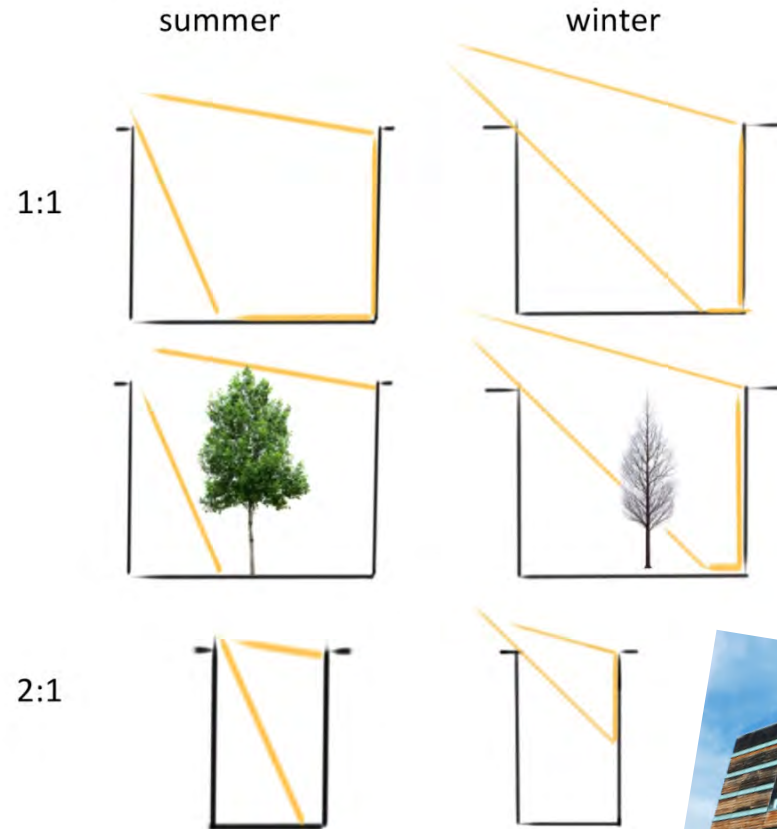
Optimale oriëntatie van straten:
Lang zonlicht in ieder huis
en elke straat

THERMISCH COMFORT



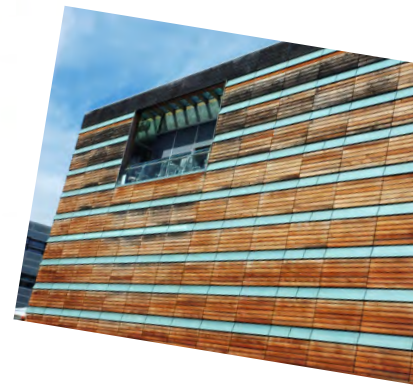
Wind

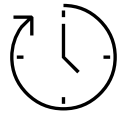
Harde wind blokken
door middel van aangepaste
architectuur



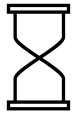
Warmte

Optimale straat verhouding
Zonlicht blokken in de zomer
Zonlicht doorlaten in de winter
Slim gebruik van materialen

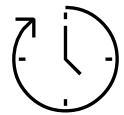




Wat is de toekomstige vraag aan energie?

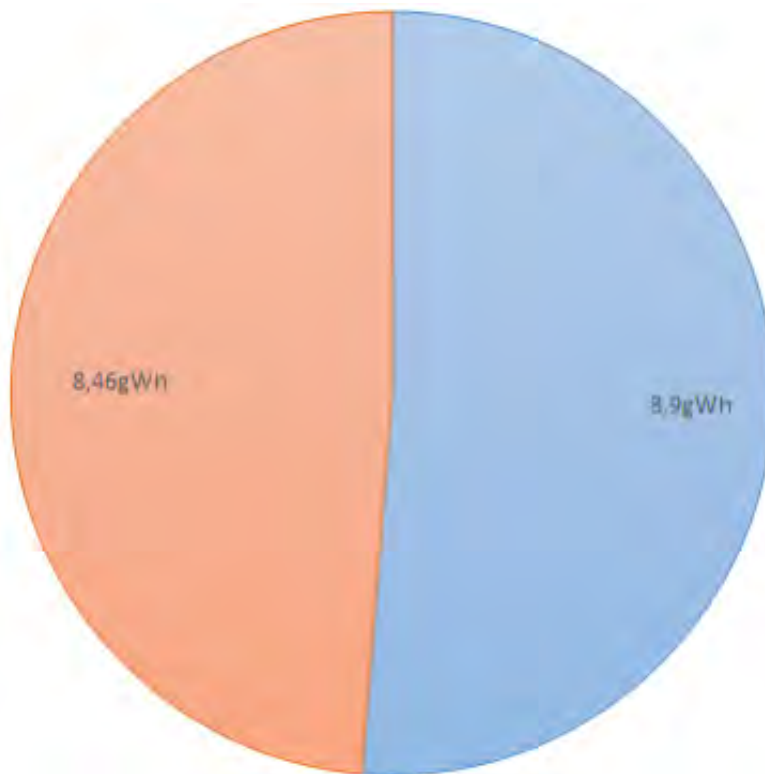


Duurzame energiebronnen (wind- & zonne-energie)



Wat is de toekomstige vraag aan energie?

Energy demand per season



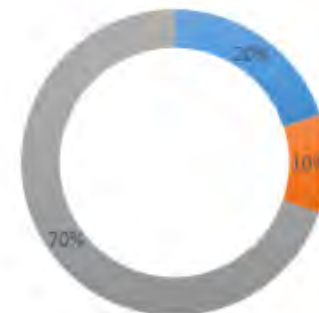
■ Energy demand winter
■ Energy demand summer

Total energy distribution summer



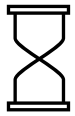
■ Households ■ Household companies ■ Companies

Total energy distribution winter

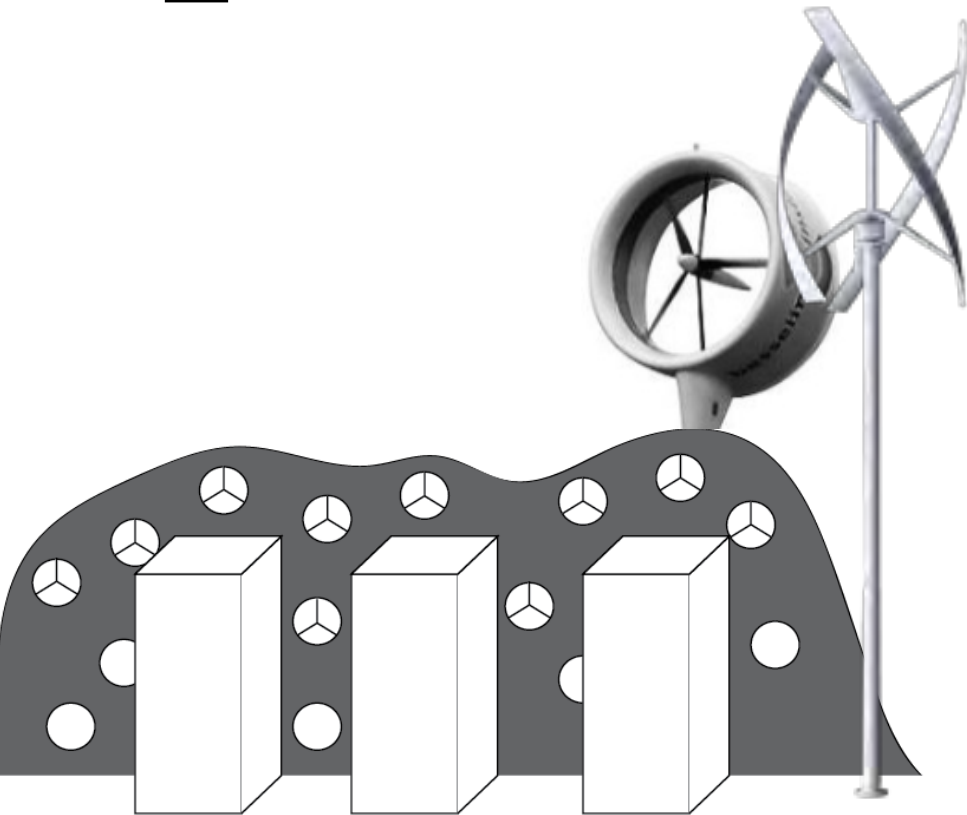


■ Households ■ House-companies ■ Companies

ENERGIE NEUTRAAL



Duurzame energiebronnen



Windenergie

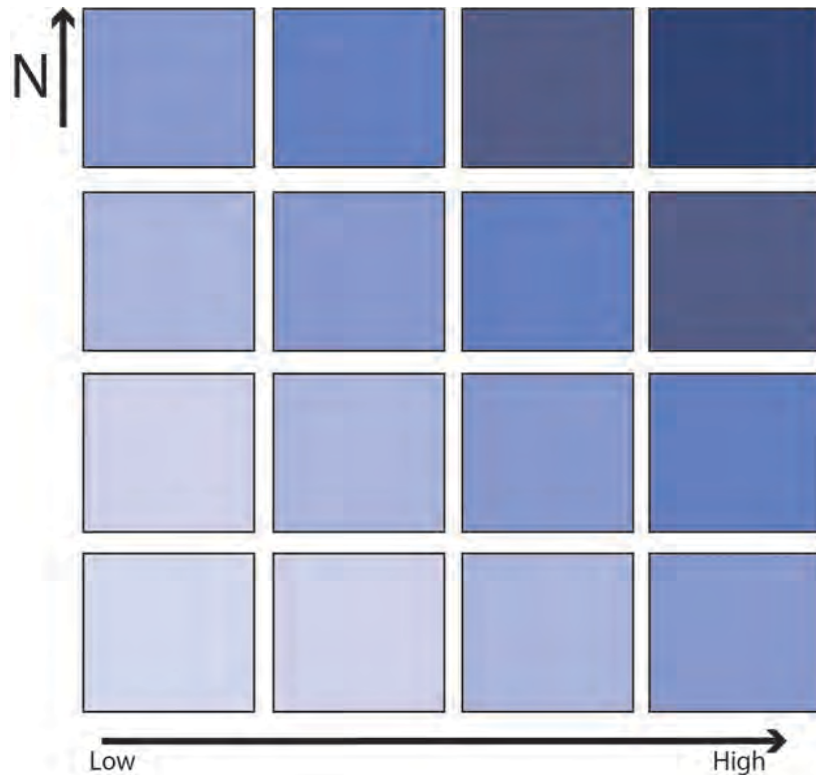
Verticale & horizontale turbines
Geïntegreerd in architectuur



Zonne-energie

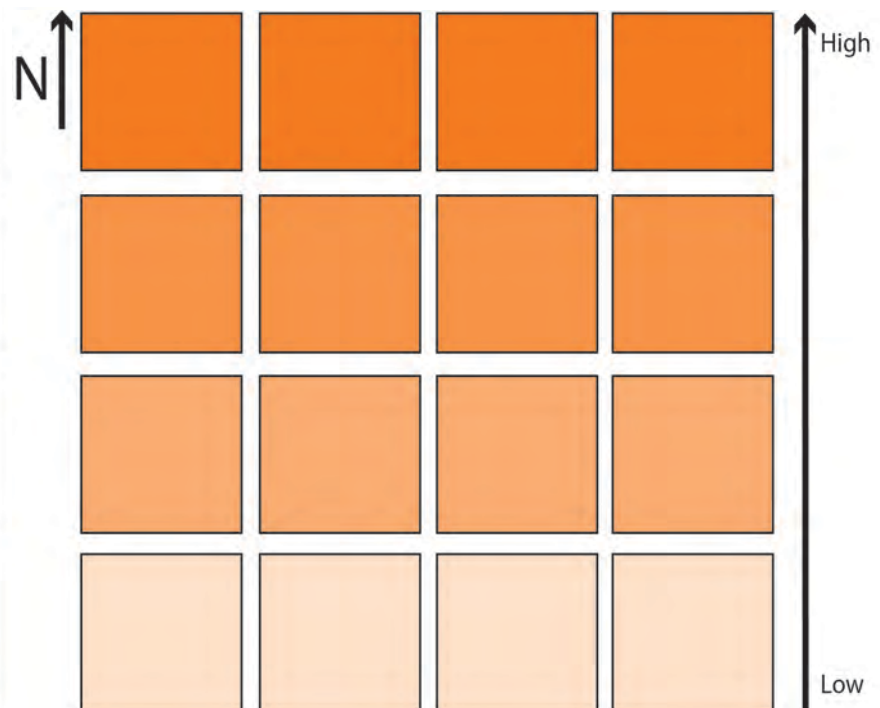
Panelen op daken en gevels

ENERGIE NEUTRAAL



Windenergie

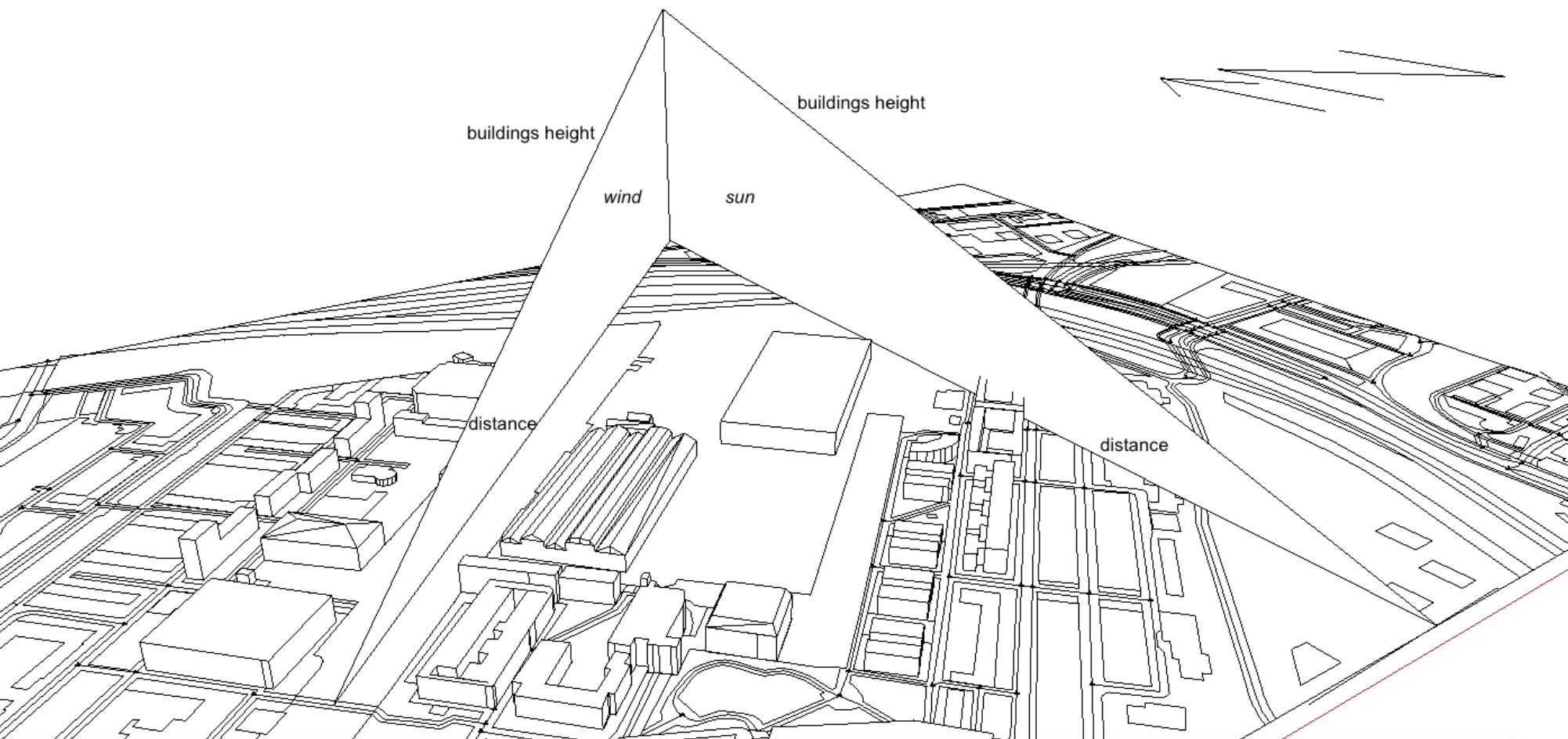
Optimale oriëntatie:
Oplopend van
Zuidwest naar Noordoost



Zonne-energie

Optimale oriëntatie:
In een hoek van 36° op Zuid

ENERGIE NEUTRAAL



Windenergie

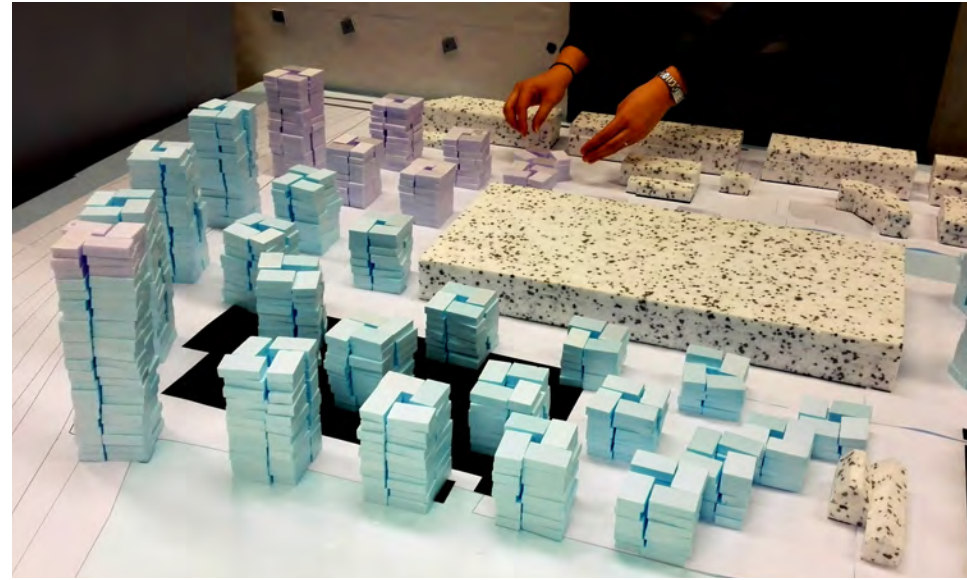
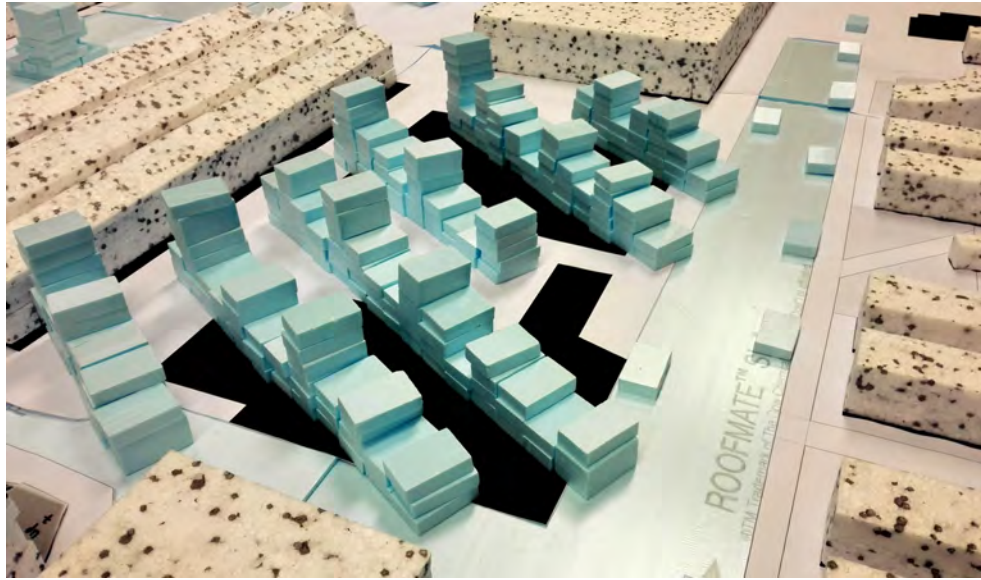
+

Zonne-energie

Optimale oriëntatie:
Oplopend van
Zuidwest naar Noordoost

Optimale oriëntatie:
In een hoek van 36° op Zuid

ONTWERP



ONTWERP



ONTWERP



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Vegetatie

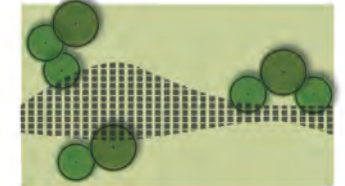
LOWER WIND BLOCKING GRASSES

Miscanthus grass



GROUPS OF TREES

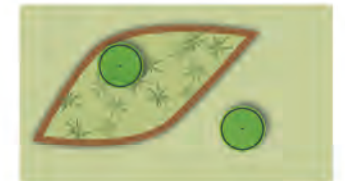
Acer Campestre, Betula pendula, Ulmus x hollandicus



COMMUNITY GARDEN

FRUIT TREES

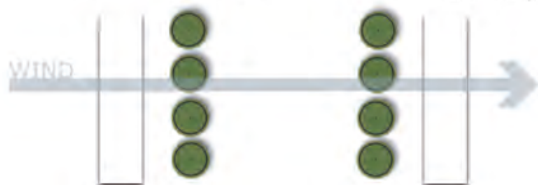
SIT ELEMENTS WITH PLANTS



SQUARE

WIND INTERCEPTION BY TREES

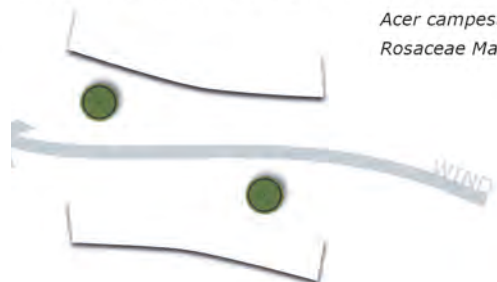
Acer campestre



SOLITARY TREES IN WIND CHANNELING STREETS

Acer campestre

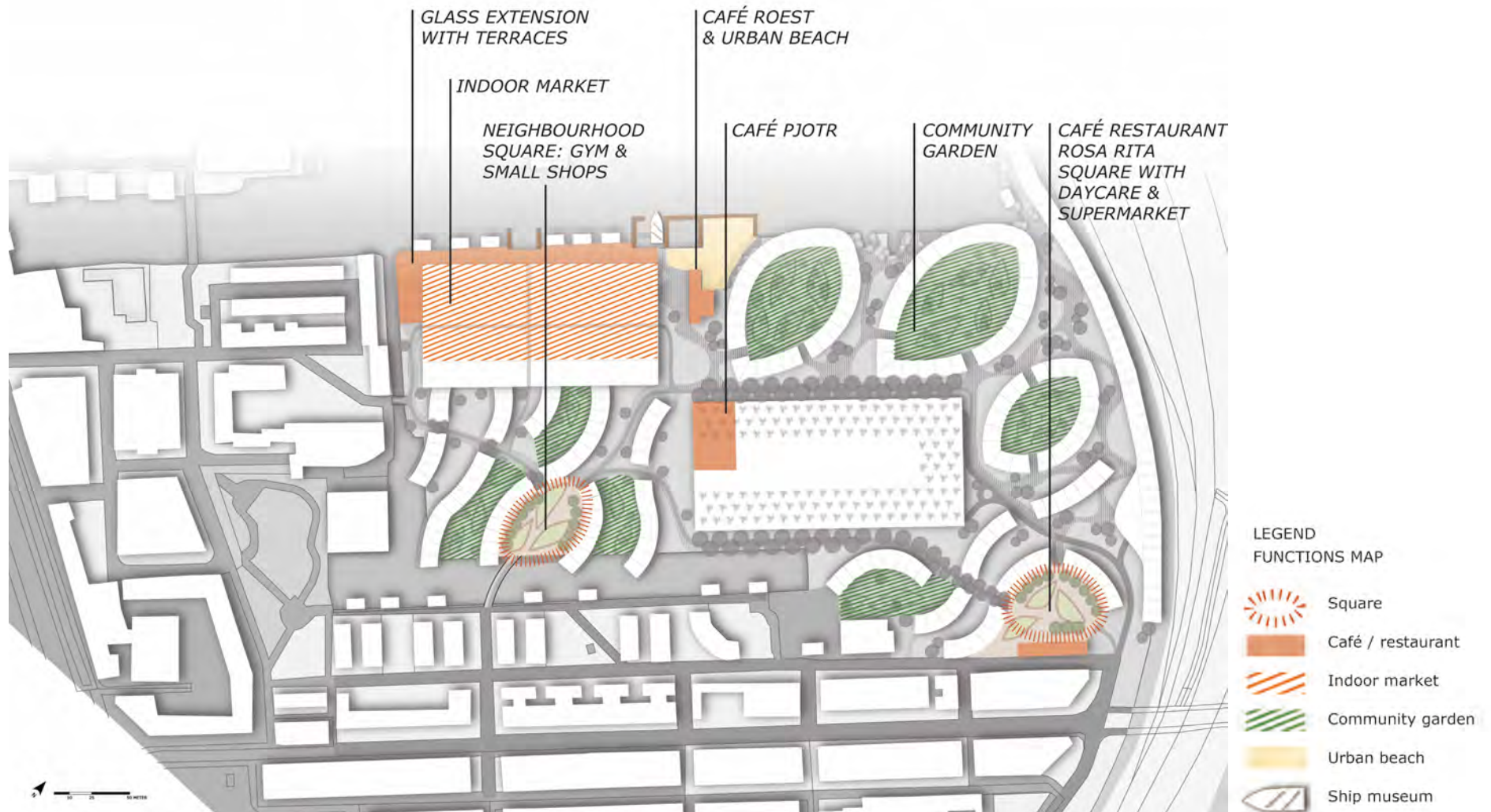
Rosaceae Malus 'Almey'



WIND BLOCKING LANE

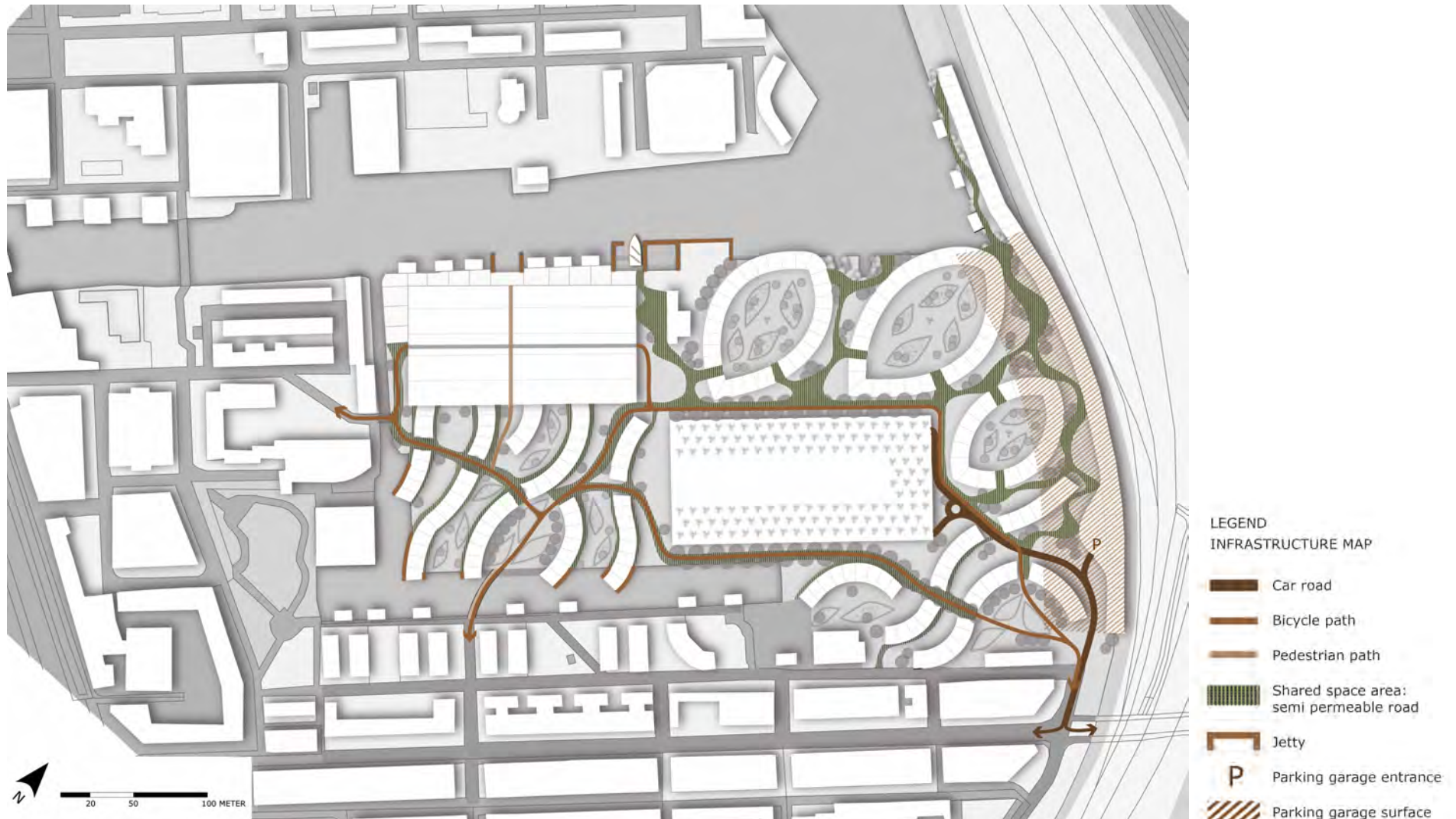


Funcities



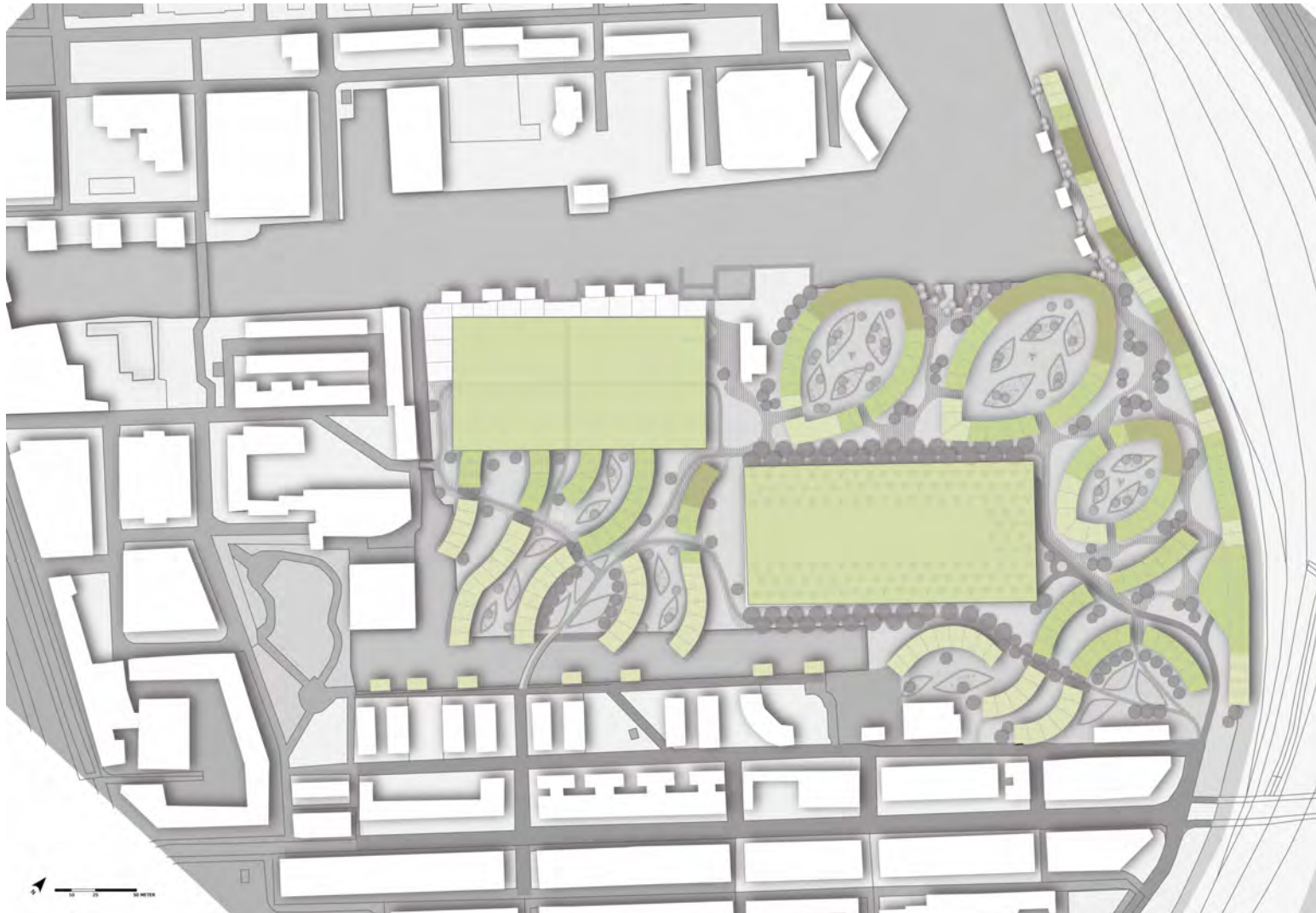
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Infrastructuur

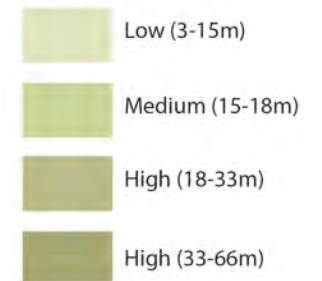


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Hoogte

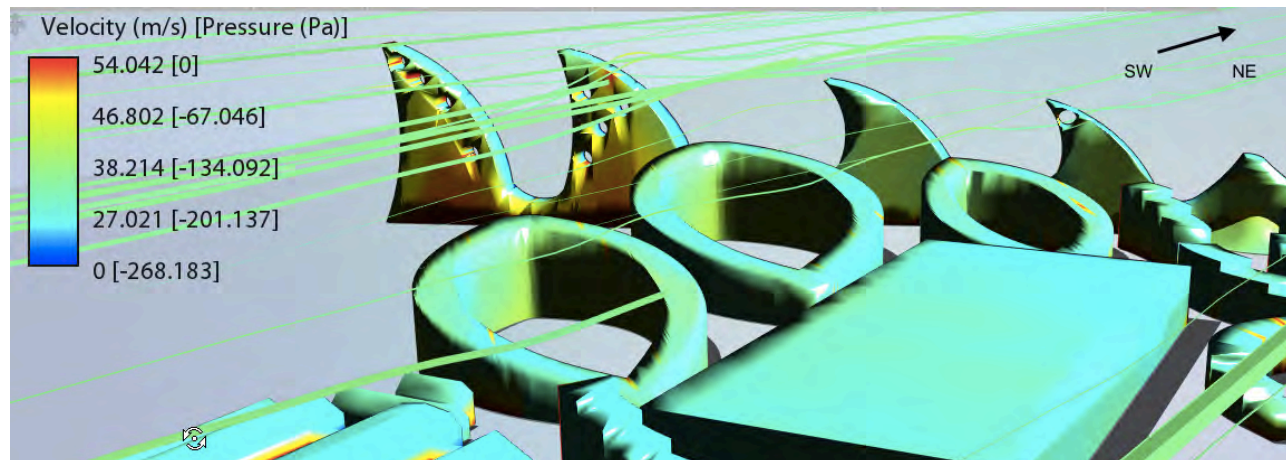
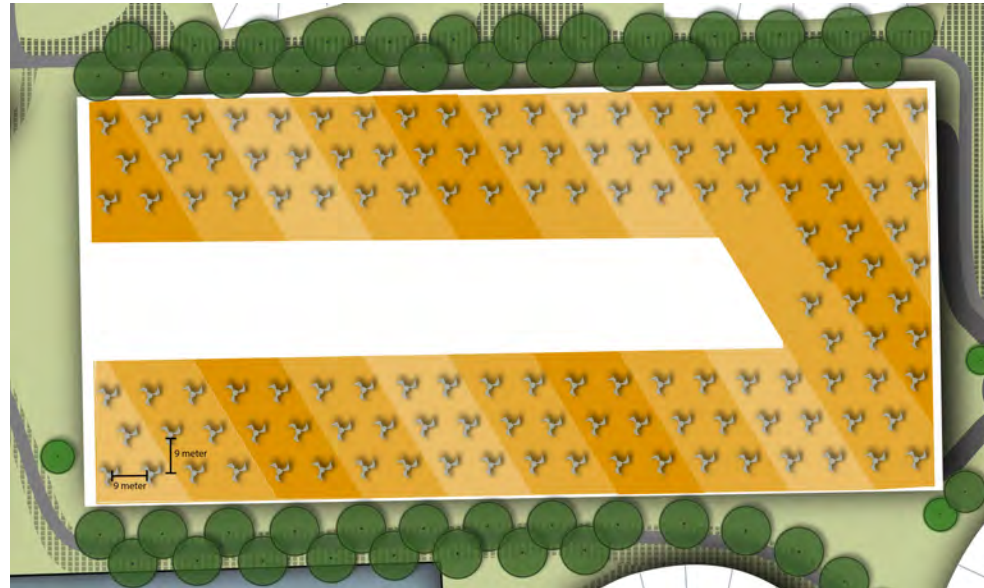


Building Height



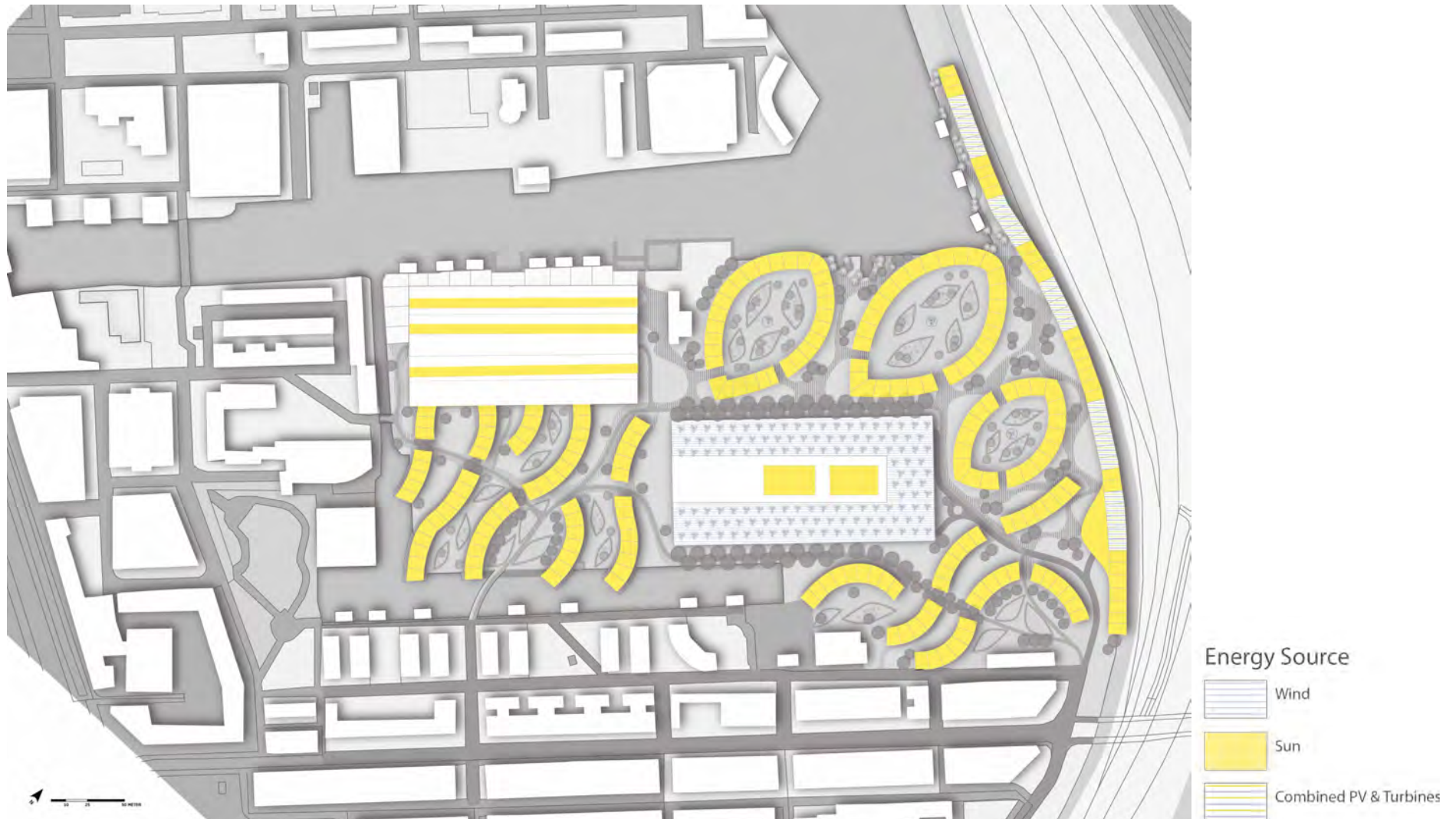
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Windenergie



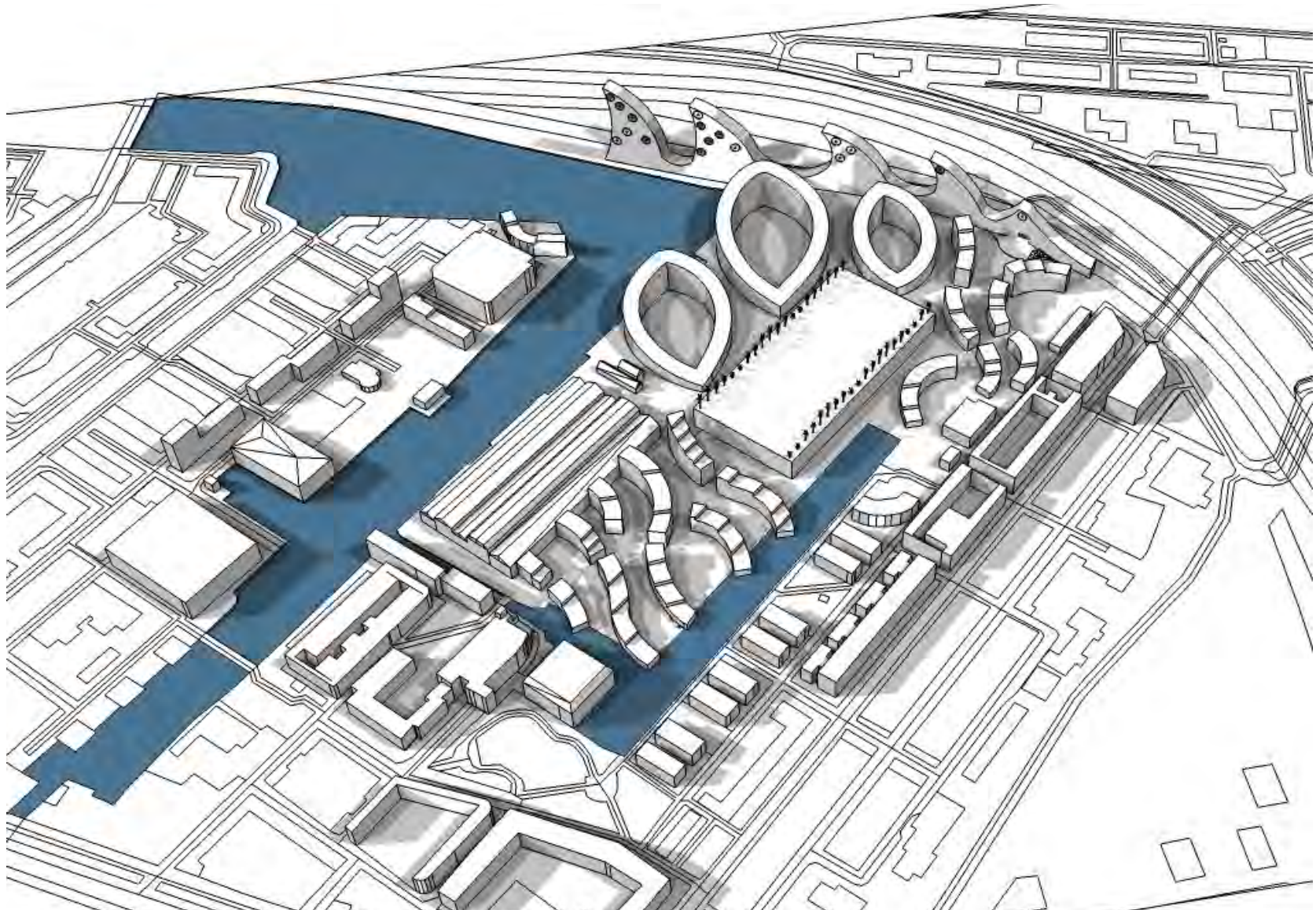
ONTWERP

Energiebronnen



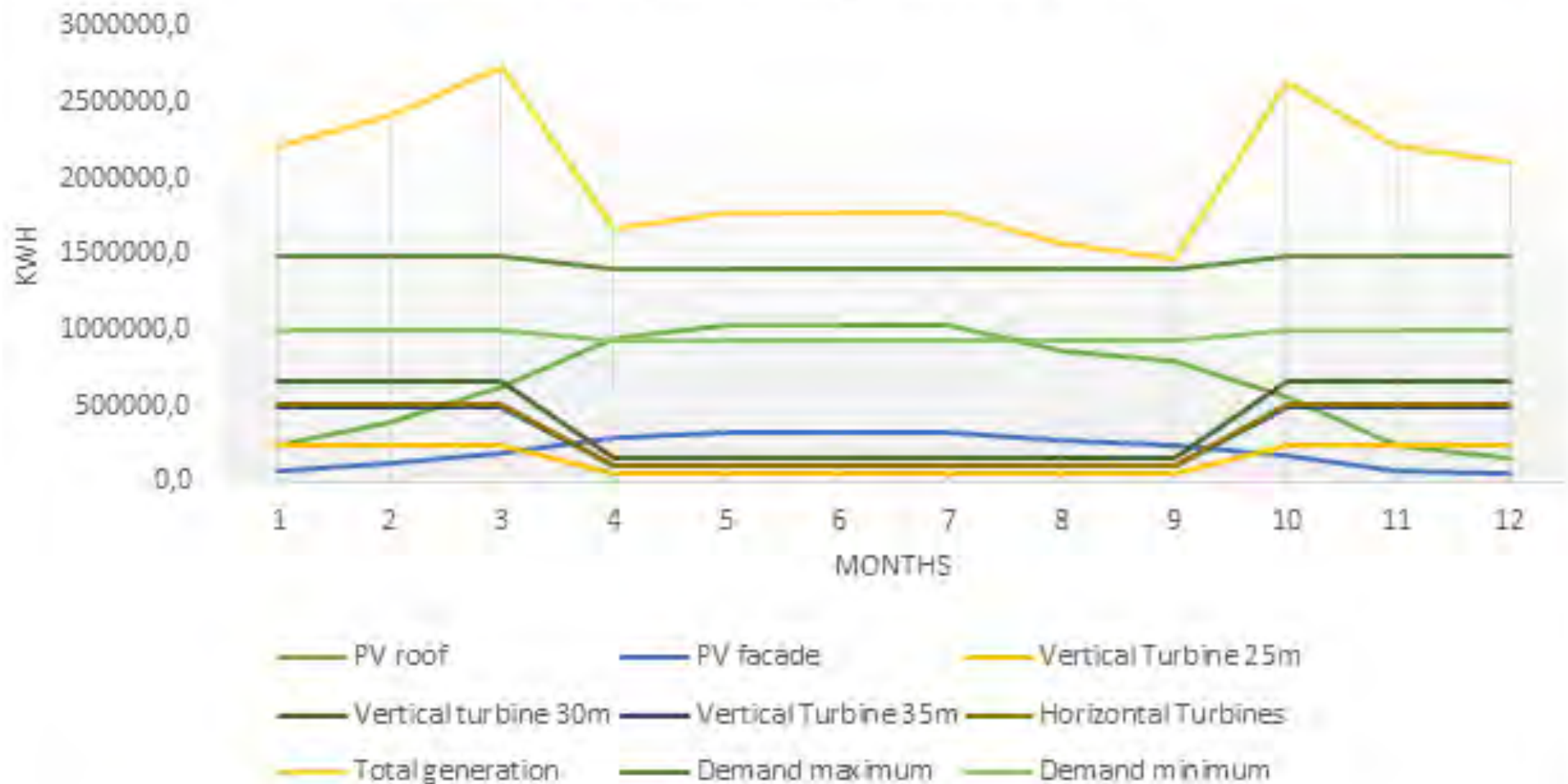
ONTWERP

Zoninval



Energie productie

Demand and harvesting electricity kWh



CONCLUSIE



DE TOEKOMST?

