

Abu Dhabi, Cool Corridor

**ENVI
_MET**







Abu Dhabi, Cool Corridor



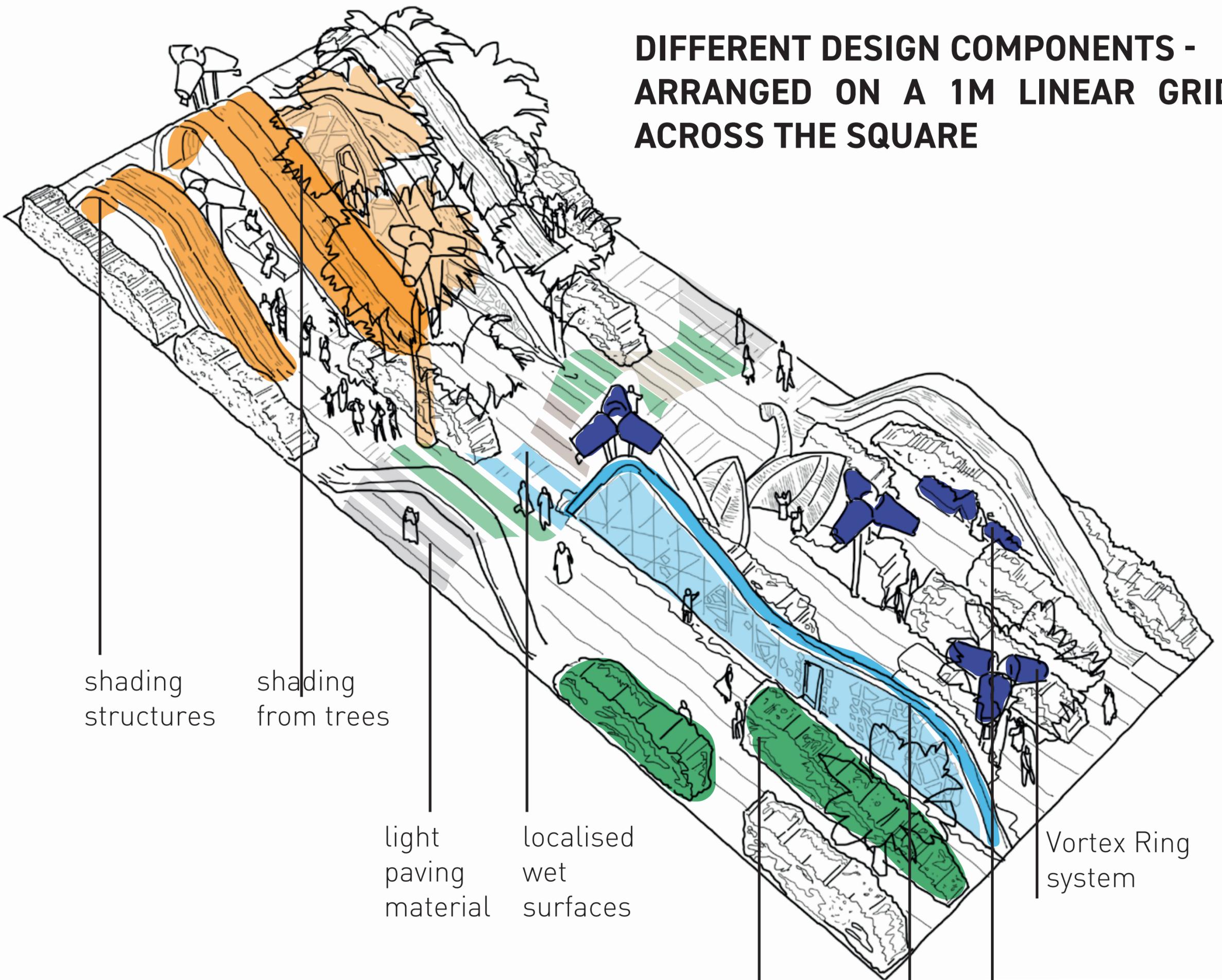
The Department of Municipalities and Transport (DMT) organised an open design competition for a typical open square in the city of Abu Dhabi.

The design challenge received 300 entries from 67 countries.

Abu Dhabi's Cool Corridor was an entry submitted by a multi-disciplinary team, led by studio 4215, which provided a solution for not just the square itself but also how such squares across the city need to be connected to each other to form a network of well-performing public spaces.

The proposed solution was modular and mainly identified the key components and their performance potential in the context and climate of Abu Dhabi.

DIFFERENT DESIGN COMPONENTS - ARRANGED ON A 1M LINEAR GRID ACROSS THE SQUARE



shading
structures

shading
from trees

light
paving
material

localised
wet
surfaces

hedges
and low
level
planting

mist and
water
features

Radiant
Benches

Vortex Ring
system

Abu Dhabi, Cool Corridor

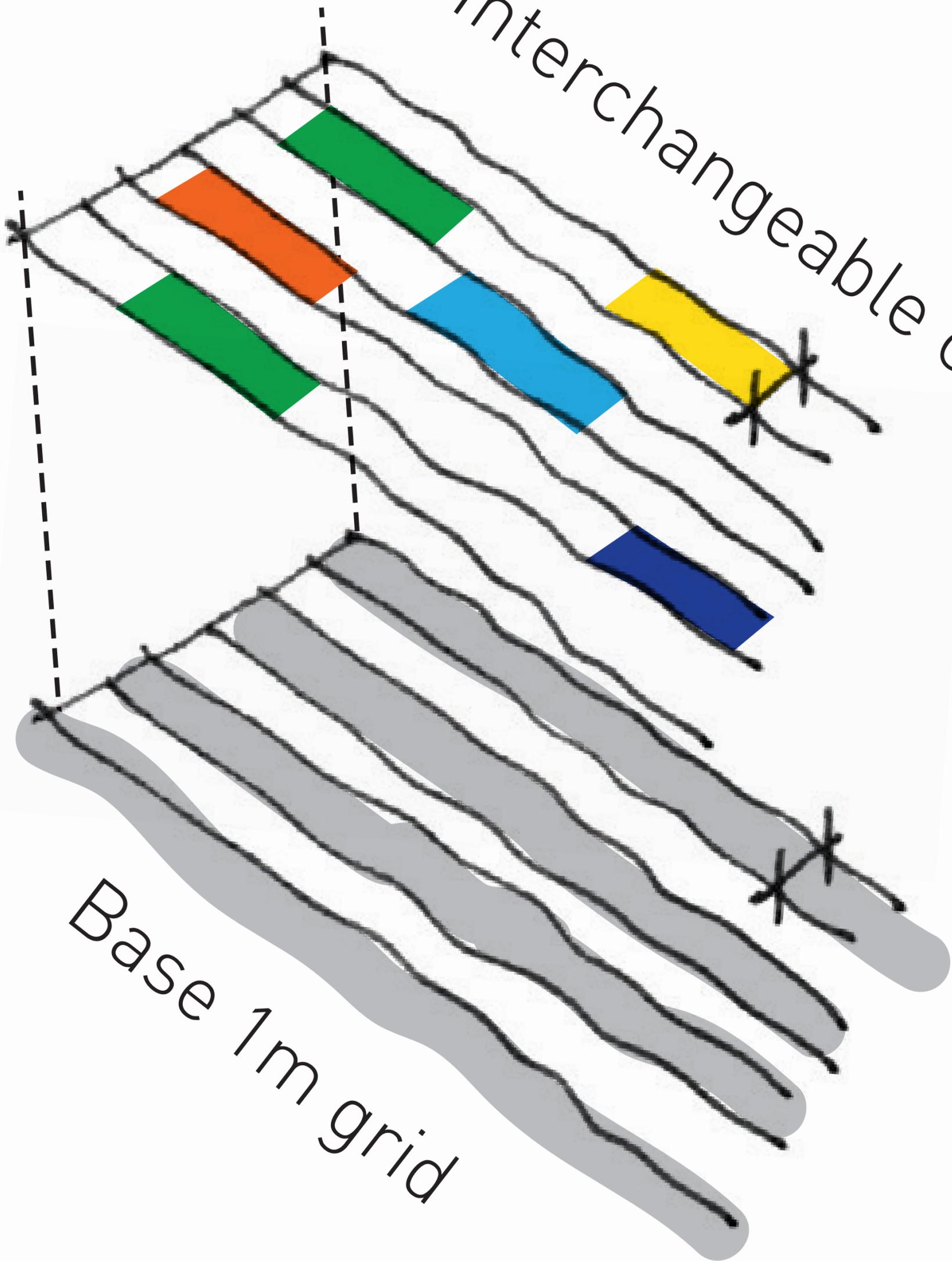


The design proposal represents a true collaborative effort between the thinking, the testing and the implementation teams. ENVI-met provided the perfect tool/platform for testing of ideas and more importantly, for comparison between options relating to materials and passive design measures.

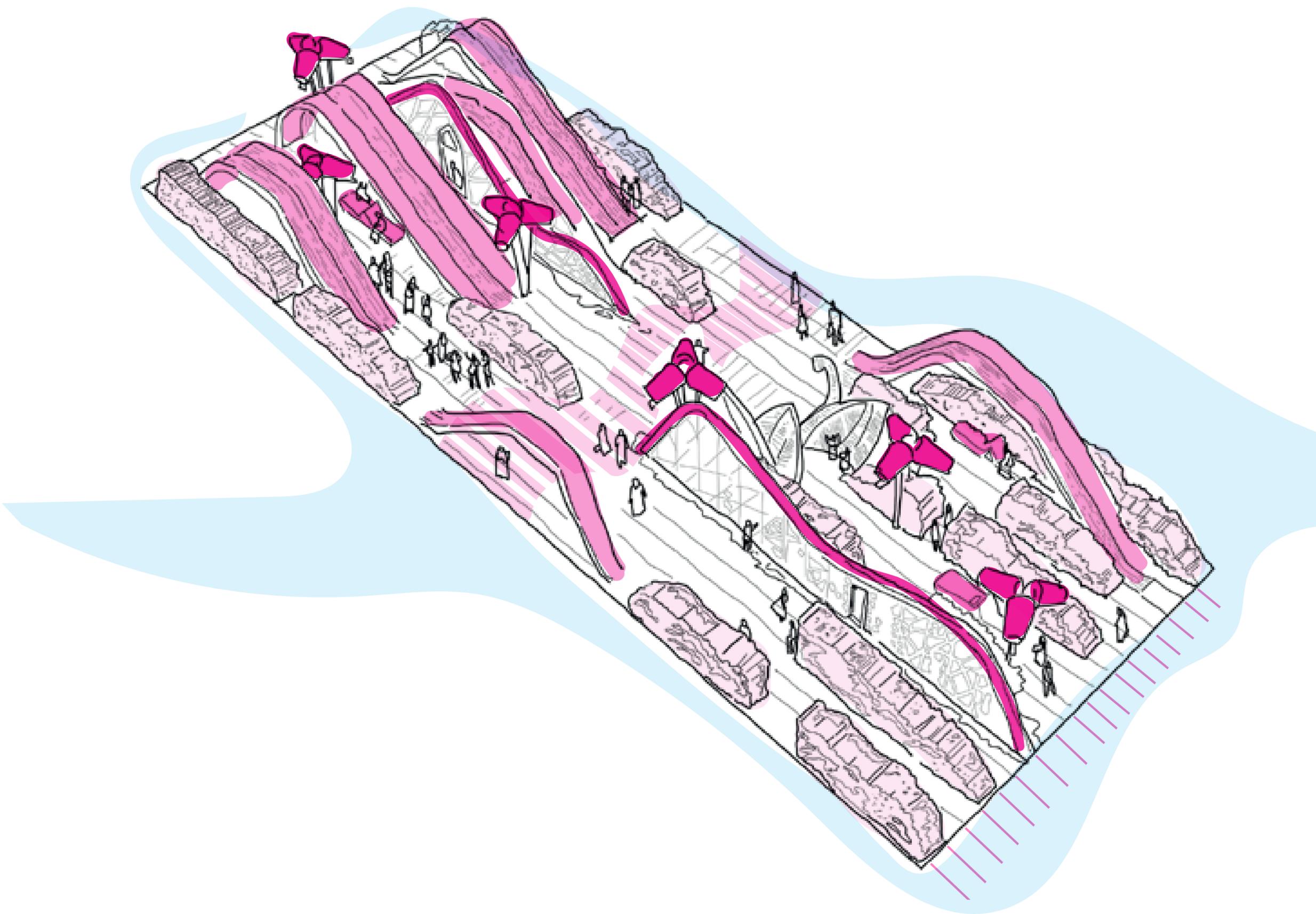
In Abu Dhabi's climatic conditions, untreated outdoor spaces could reach unfavourable/unusable conditions for walking/cycling for more than 7 months of the year.

Landscaping combined with passive and active measures can provide outdoor comfort and minimise the local heat stress. These strategies were tested and proven to be highly effective for Abu Dhabi. The modular nature of the proposal implies more such squares could be created and connected to form a network or a 'Cool Corridor' – allowing local residents to comfortably move across the city.

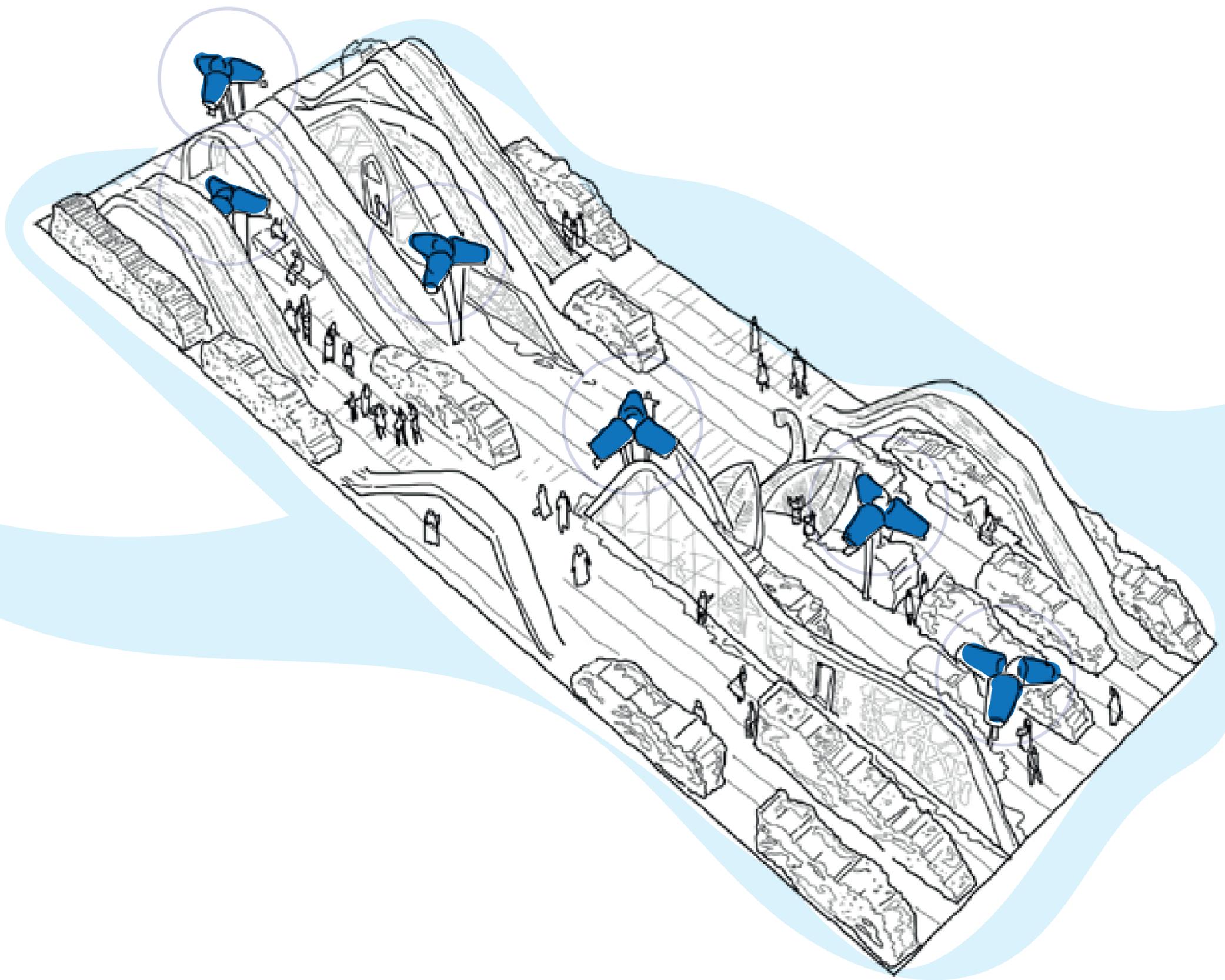
Interchangeable components



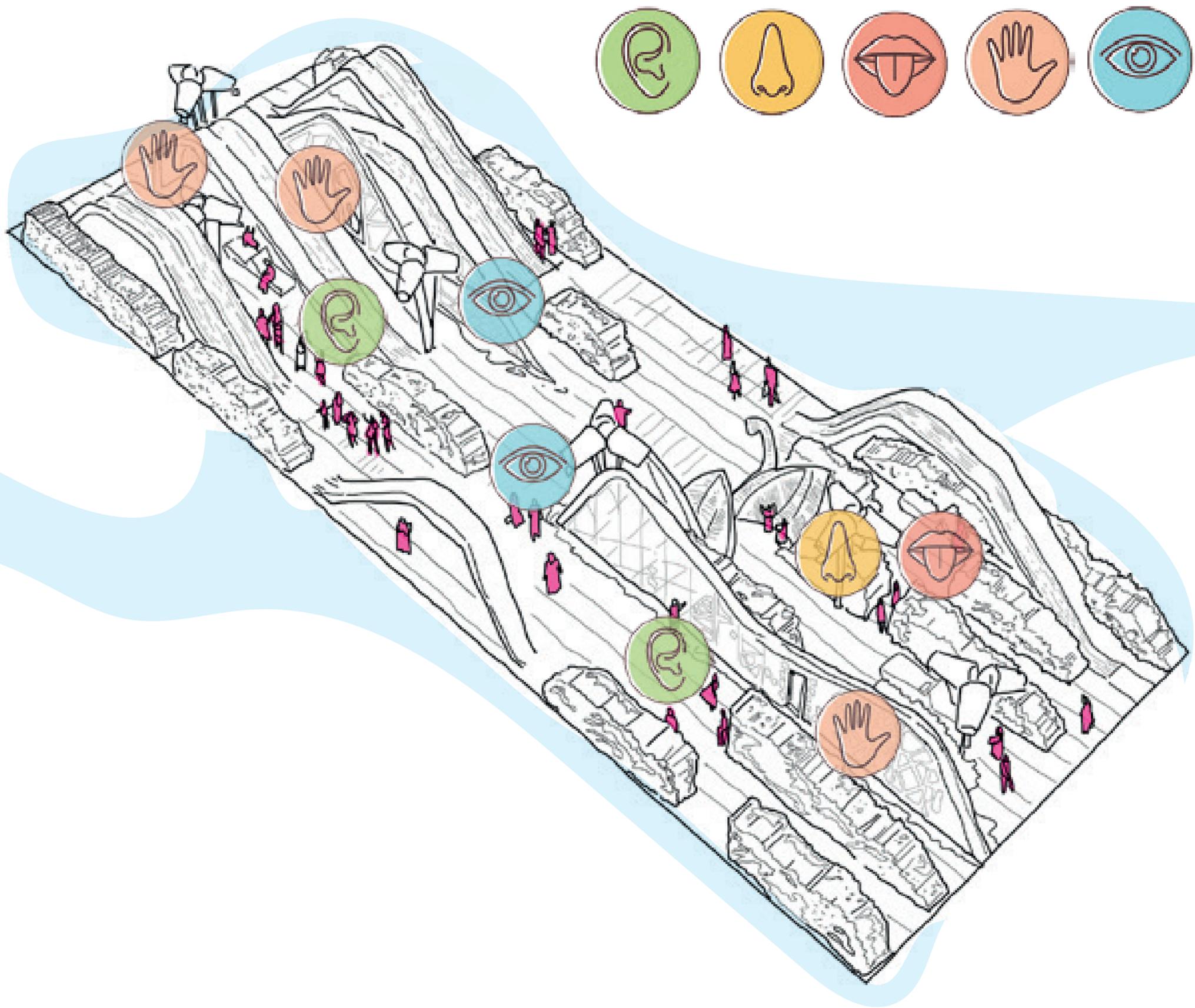
Base 1m grid



Modular components
applicable to any space



Innovative coolth
delivery system



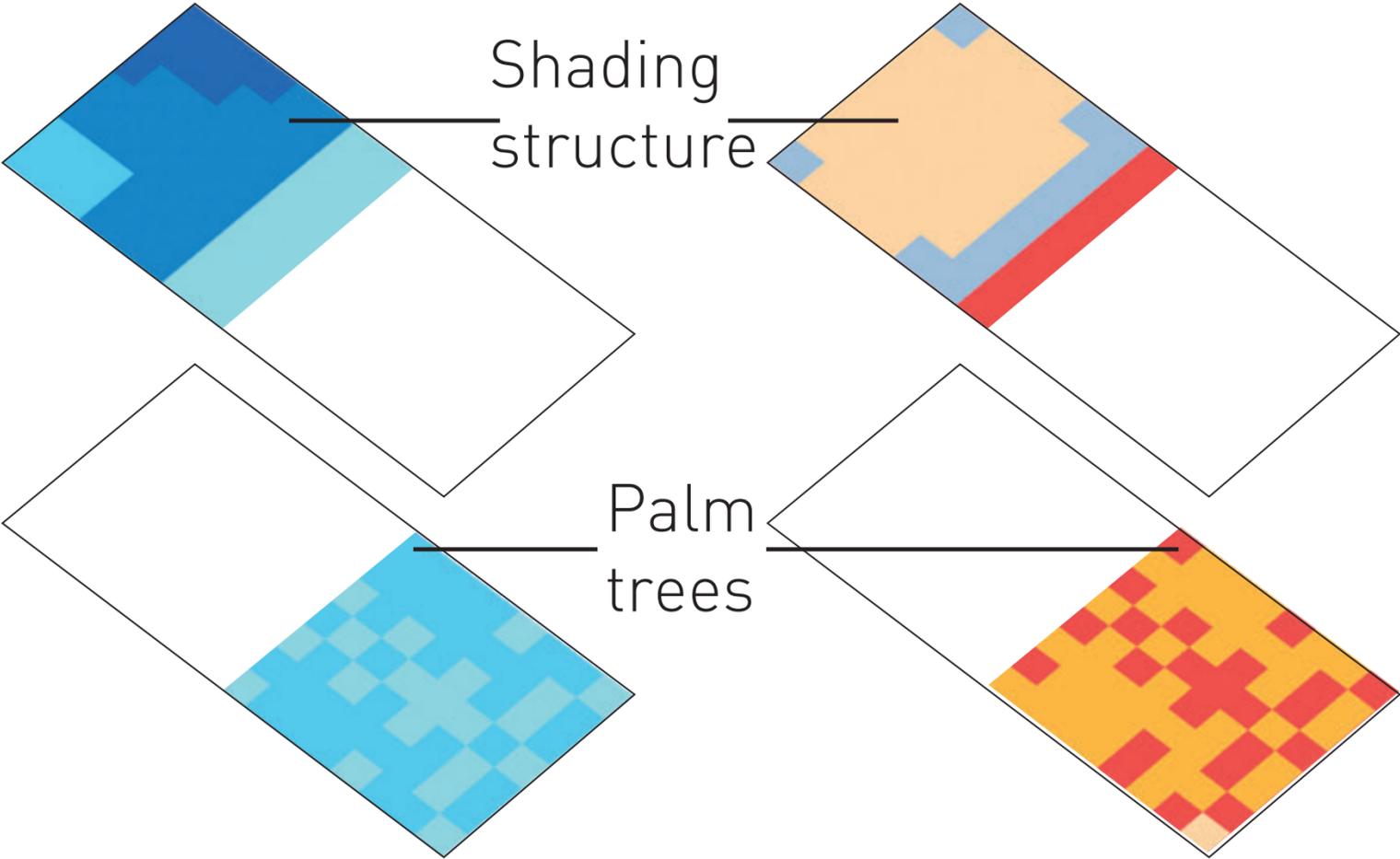
Designed for
the senses

Design and effectiveness of solar control

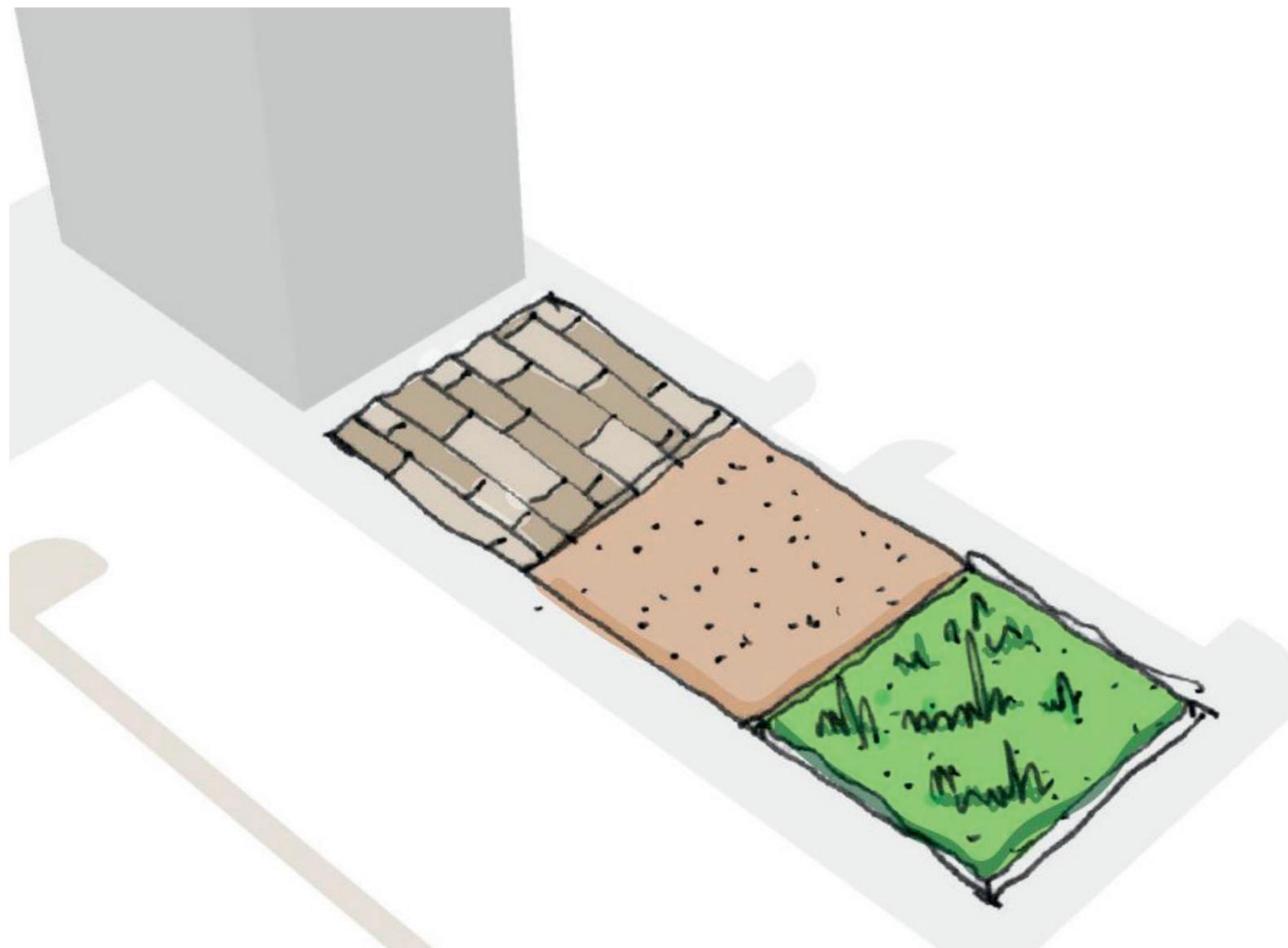


UTCI

MRT

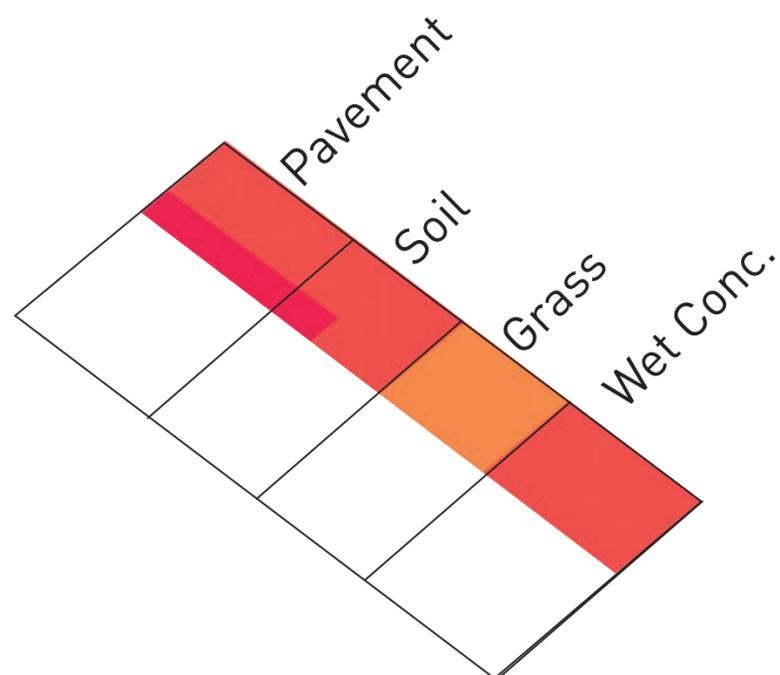
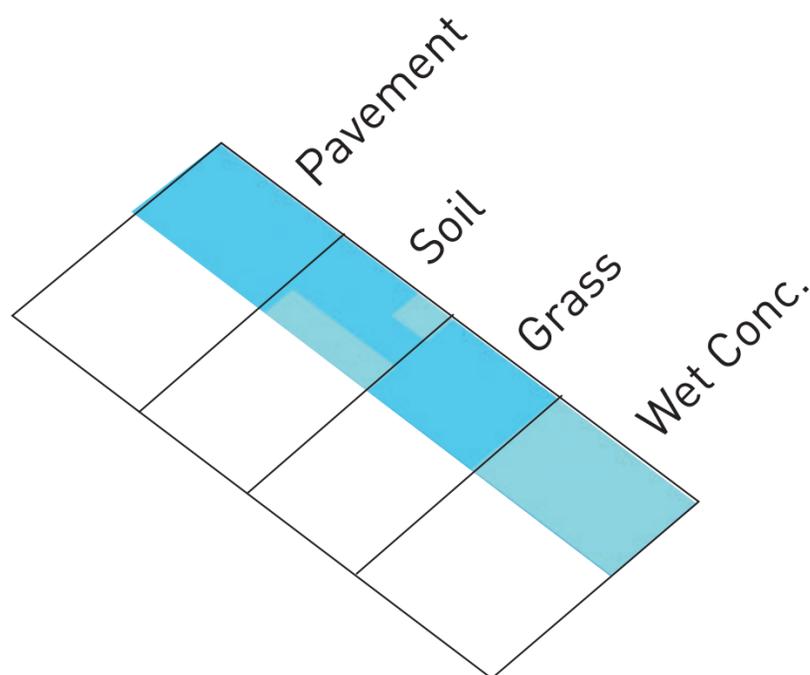


Material selection and performance for the square

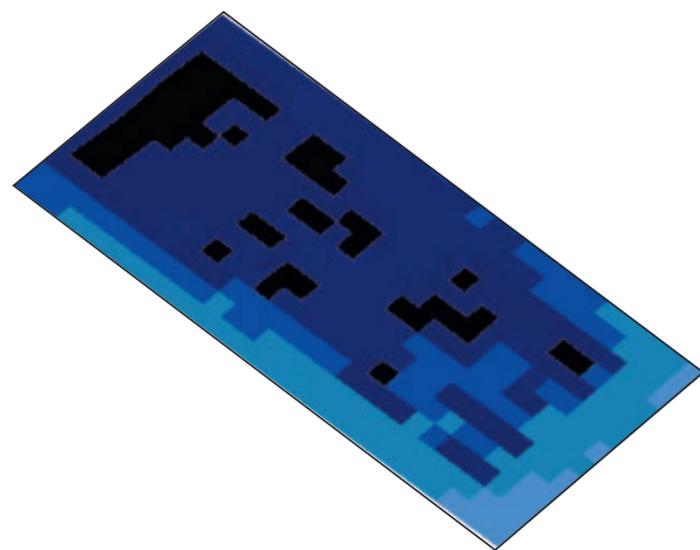
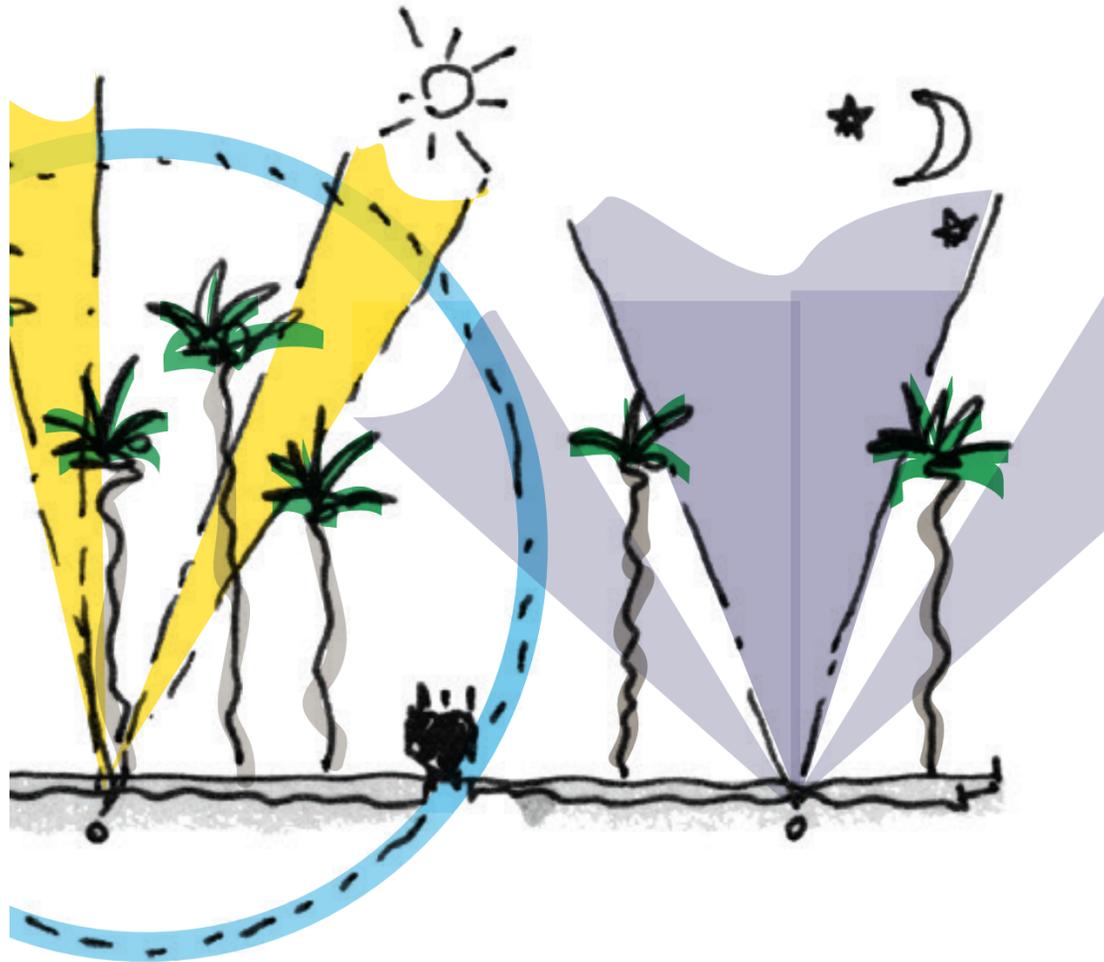


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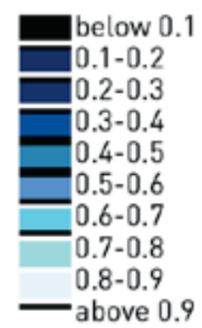
MRT

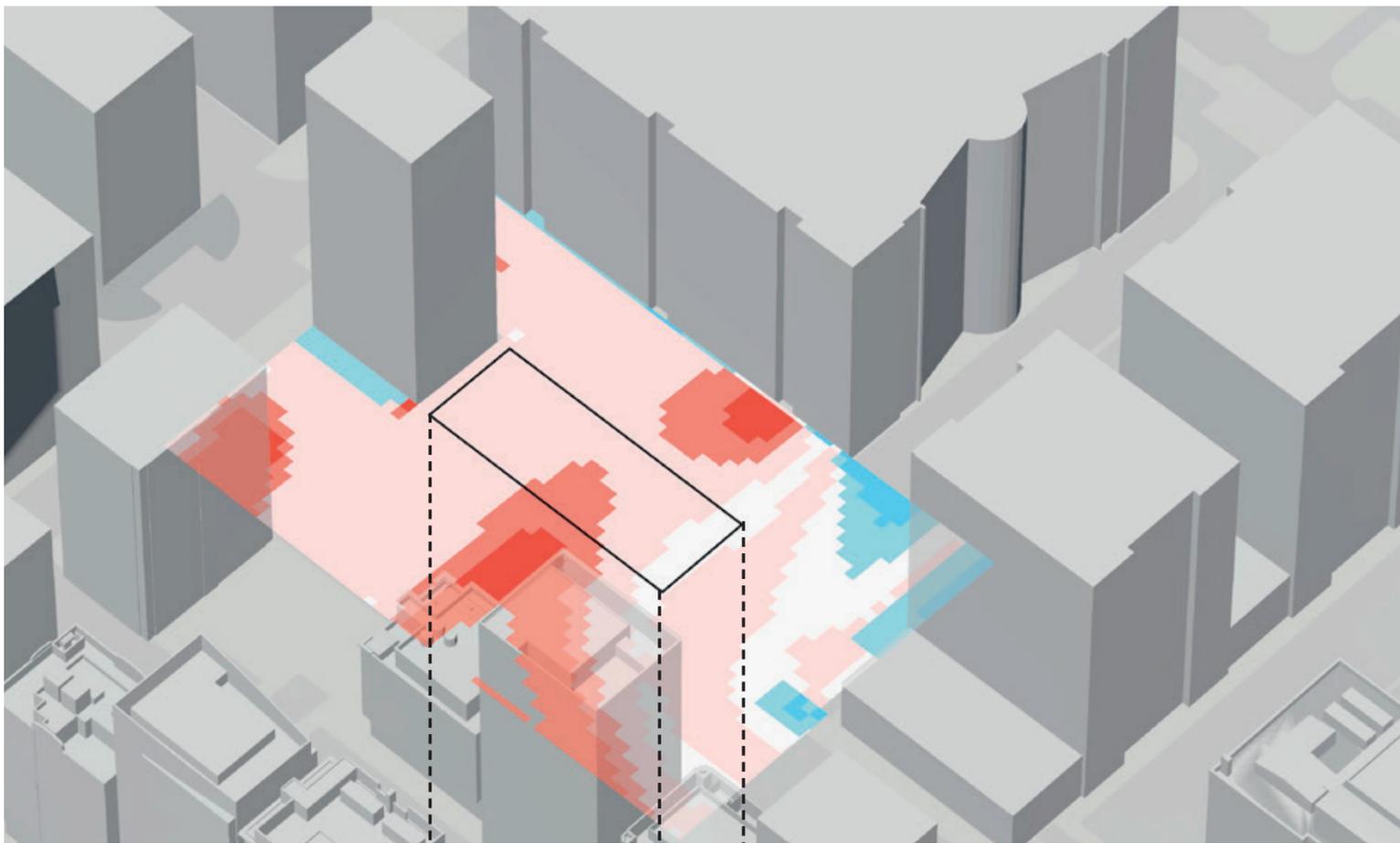


Sky view factor and impact on Day / Night performance



Sky View factor

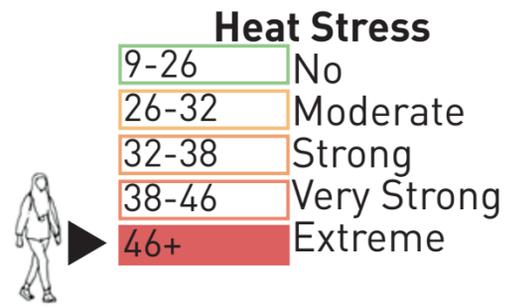
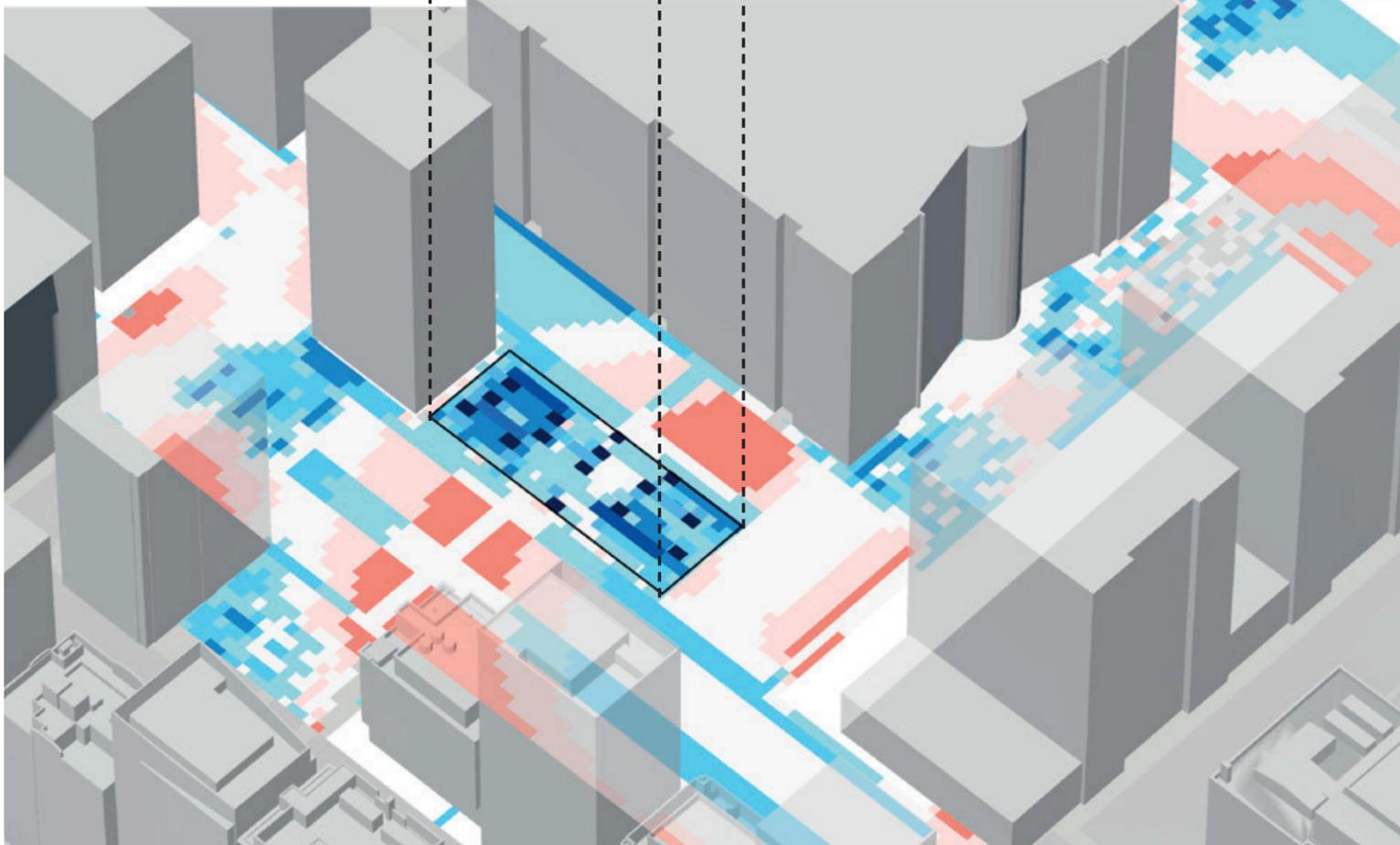




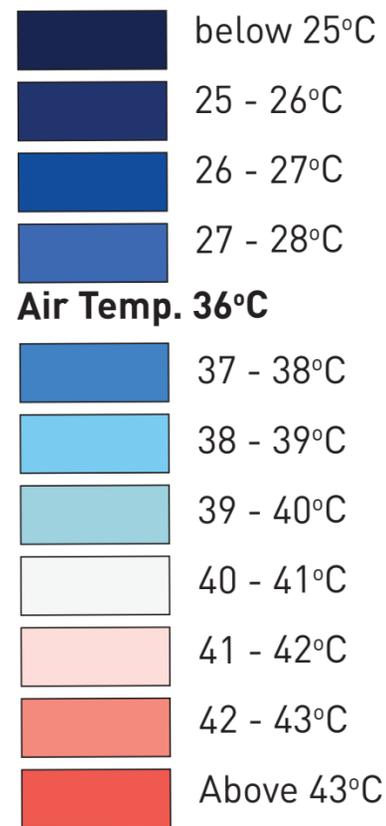
Before - Heat Island

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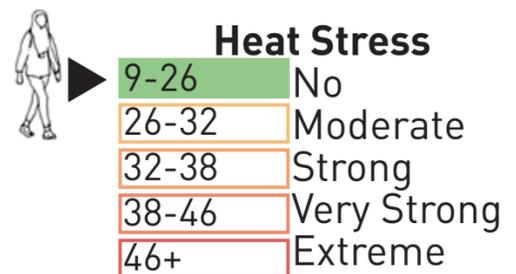
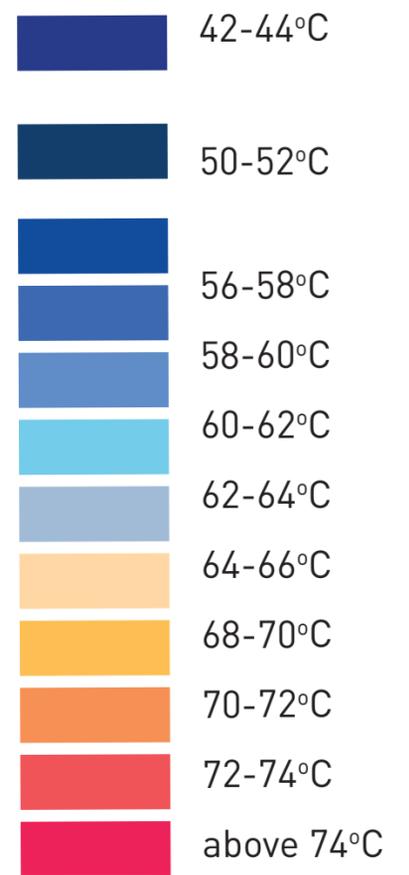
After - Oasis

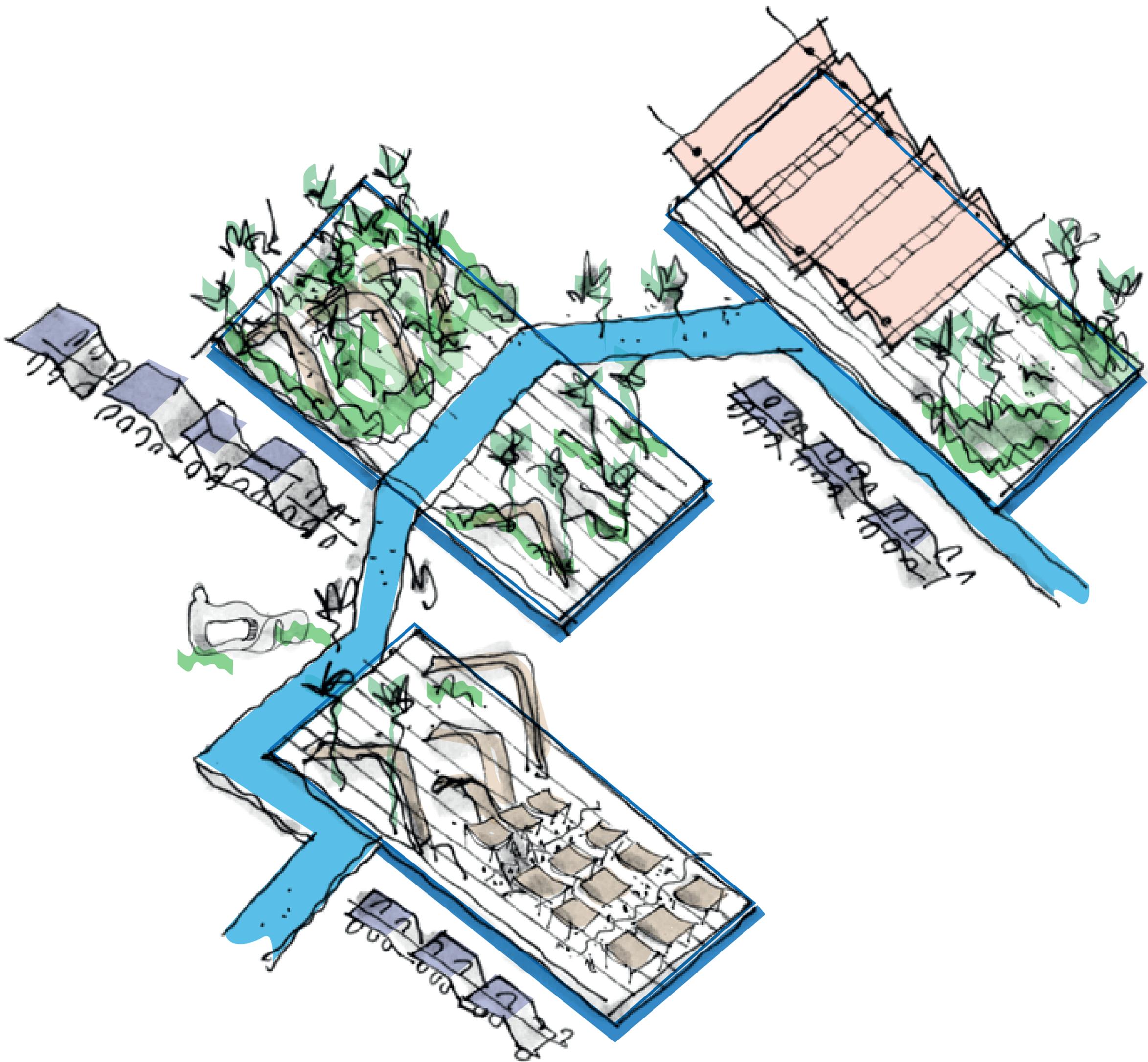


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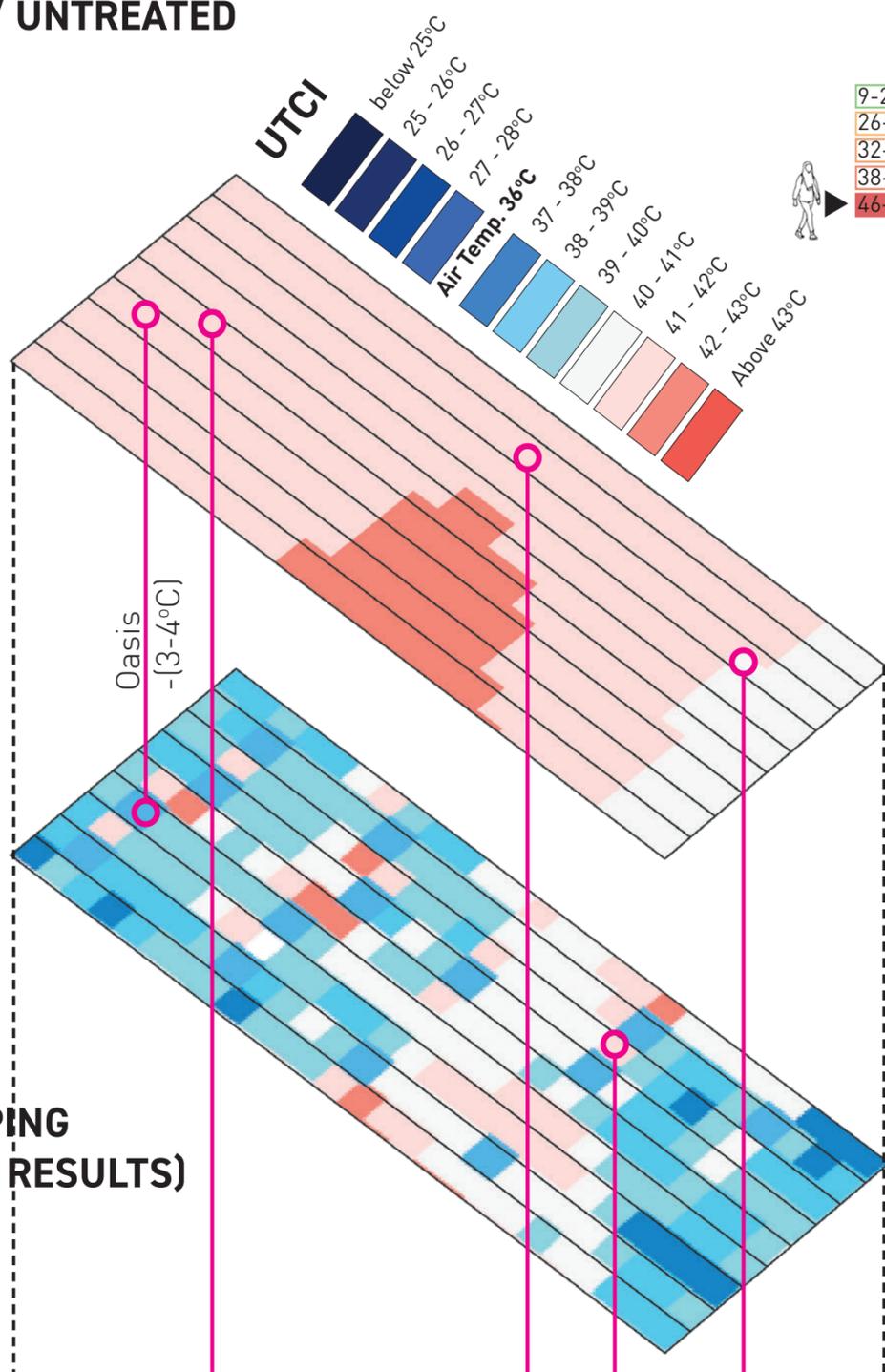
MRT



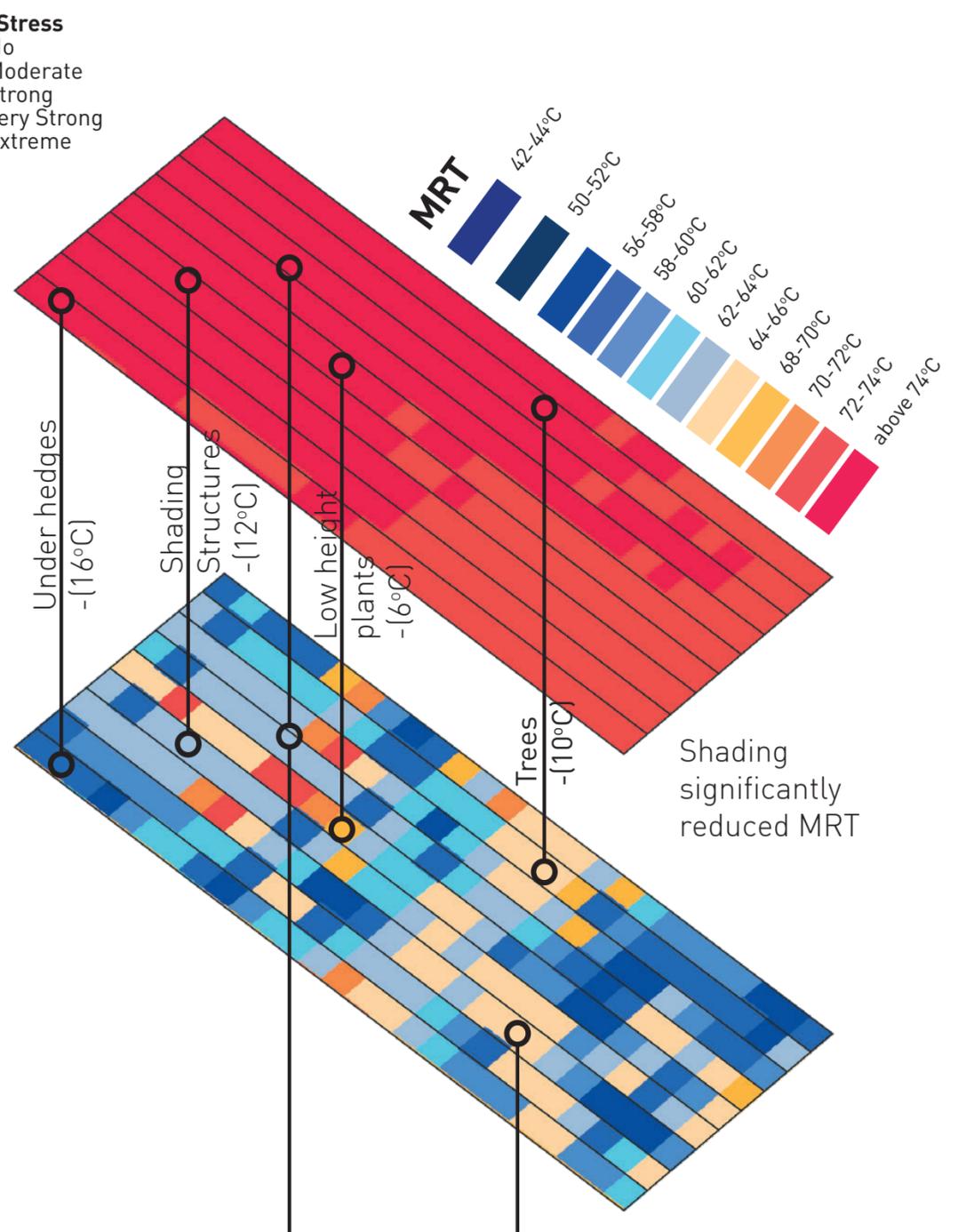


Testing of the final proposal with UTCI and MRT reductions from each of the strategies.

1 EXPOSED / UNTREATED SQUARE

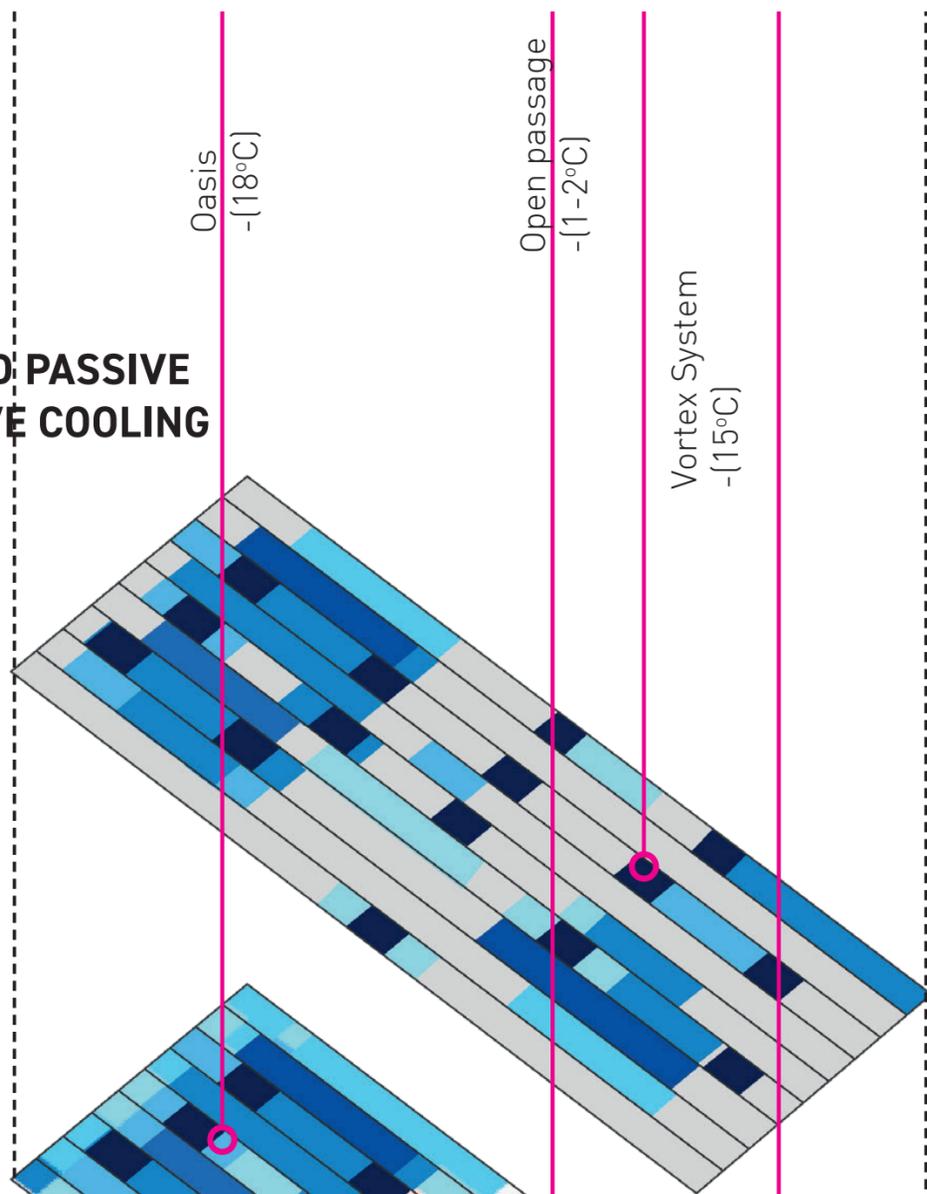


2 LANDSCAPING (ENVI-MET RESULTS)

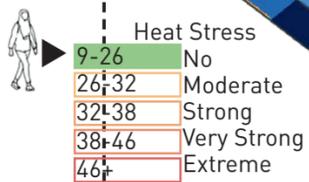
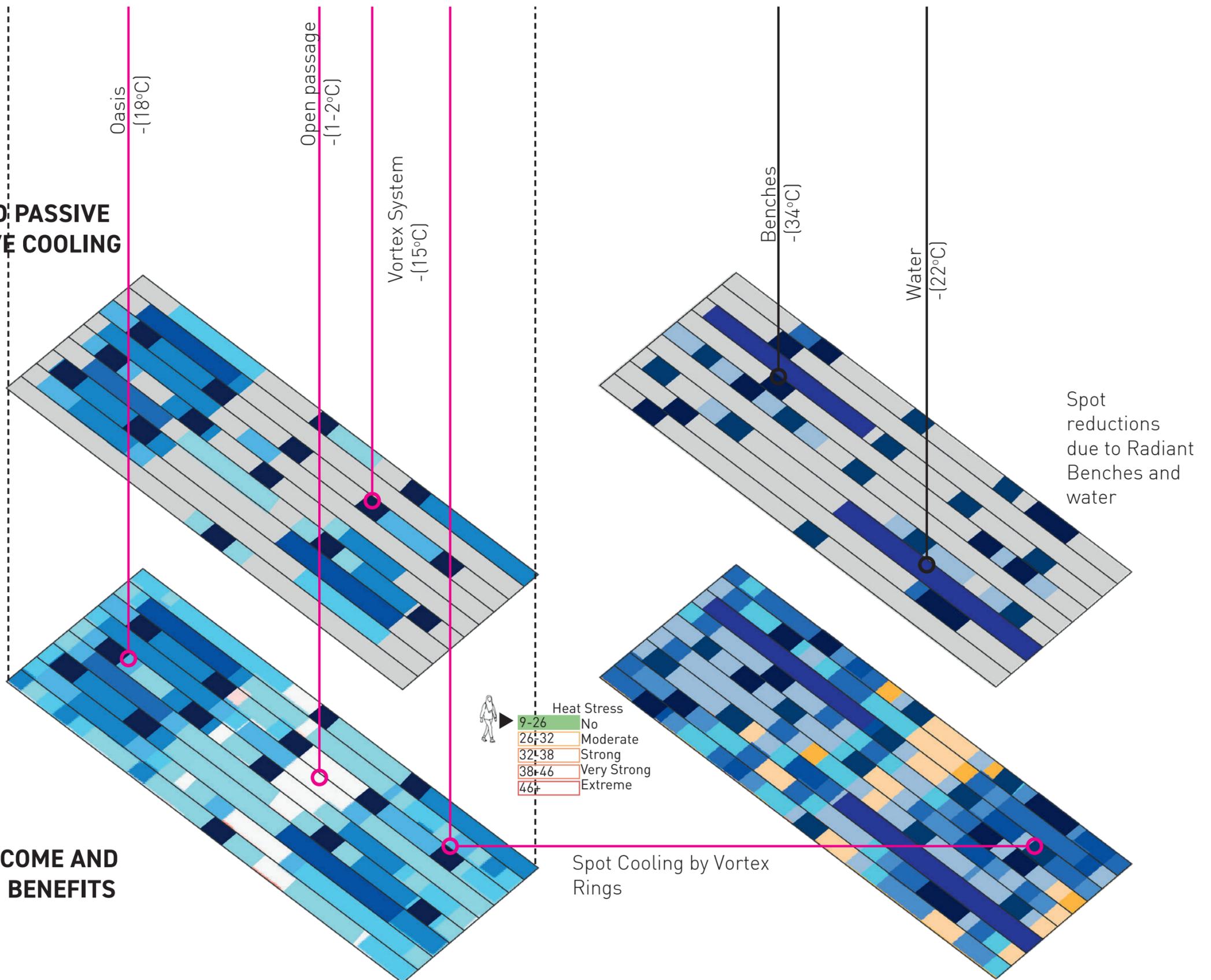


Testing of the final proposal with UTCI and MRT reductions from each of the strategies.

3 ESTIMATED PASSIVE AND ACTIVE COOLING BENEFITS



4 FINAL OUTCOME AND COMBINED BENEFITS



Abu Dhabi, Cool Corridor



FACTS

Design lead and environmental consultant

STUDIO 4215

INTEGRATION

MEP solutions

Software and modelling technical support

ENVI-MET

Renders and video

ARCH 4D

Help with illustrations

SOHAM DE

Creative writing

SONIA GUHA