URBANCLIMATE OS

From urban climate data to better decisions for public space

A product hypothesis for connecting urban climate analysis, spatial interventions and measurable real-world impact.



WHAT?

UrbanClimate.

Integrated advisory system for sustainable urban development.

A digital twin of urban heat for city councils: where public space overheats, why, and what each measure would change, before money is spent.

- Open city and climate data, connected in one model
- Street-level heat exposure, hour by hour
- Intervention scenarios with cost ranges
- Results a council can read and act on



VISION · DATA → MODEL → SCENARIOS → CITY DECISIONS

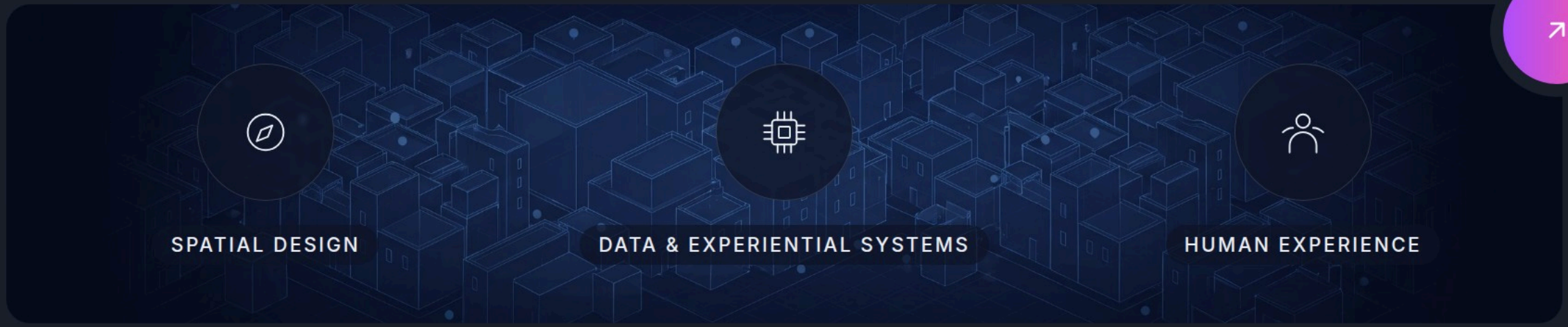
NAOS — *Integrated* Multimedia **STUDIO**

AN INTEGRATED MULTIMEDIA & SPATIAL EXPERIENCE STUDIO

We turn **complex technical systems, data and ideas** into experiences people can **understand, interact with and act on.**

Energy · Technology ·
Culture · Public Environments

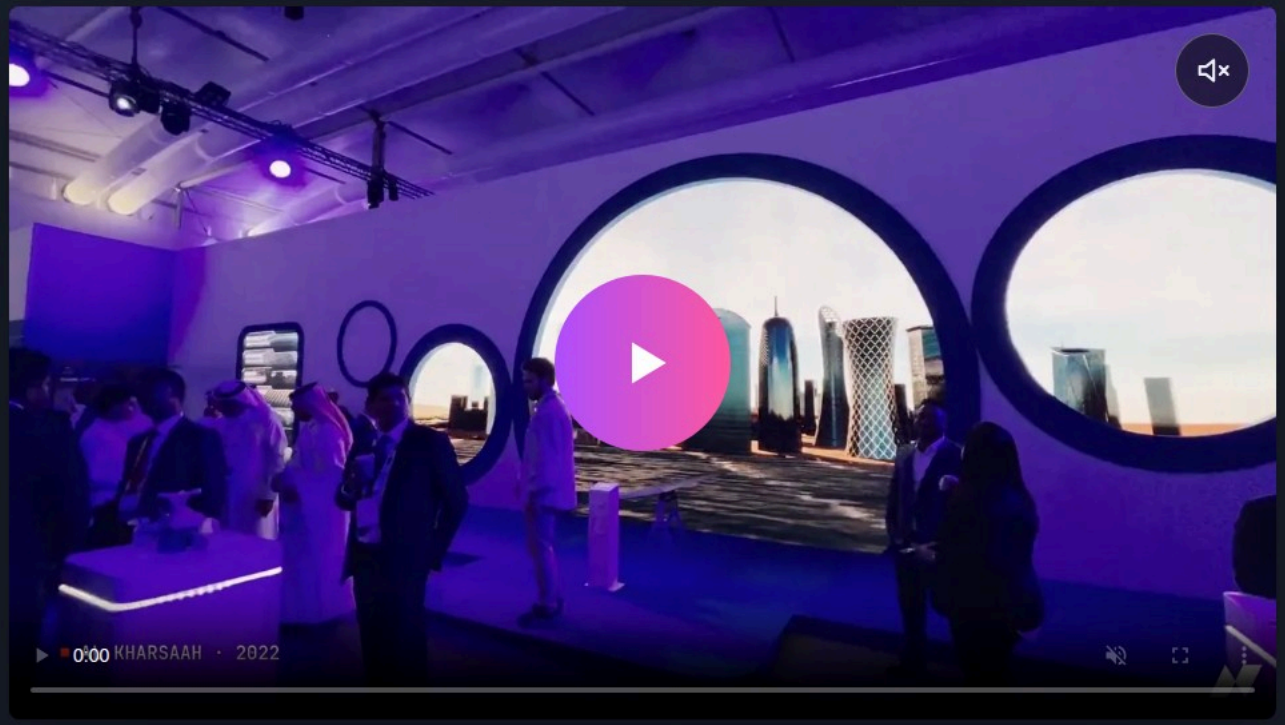
Data-Driven Design Studio



17 YEARS · 15 COUNTRIES · 300+ PROJECTS

From complex information to physical experience

DATA · STORYTELLING · INTERACTIVE SYSTEMS · PHYSICAL SPACE · IMPLEMENTATION

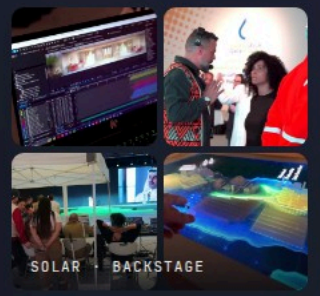


QATARENERGY · INSTALLATIONS & INFORMATION DESIGN · 2022–2025

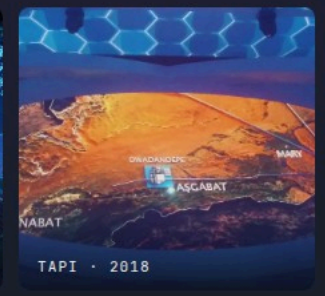


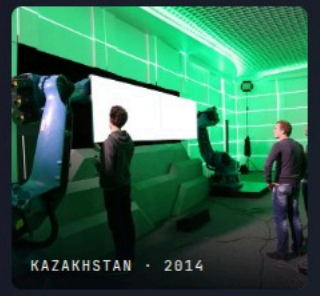


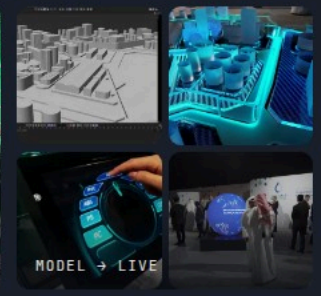














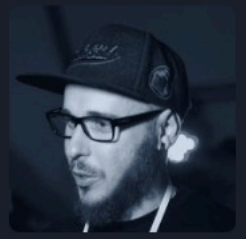






TEAM

01 Strategy, technology, product, partners.



CREATIVE & STRATEGY

Alex Butenko

Vision, strategy, urban research, partnerships.



STRATEGY & PARTNERS

Stefaniia Soloviova

Strategy, partner communication, production.



CTO

Alex Udalov

Platform, AI and data, IoT and sensors, architecture.



PRODUCT & UX

Alex Matiushchenko

Product, UX/UI, user research, roadmap.

WHAT WE ADD

NAOS Studio brings production and visual communication (17 years, 15 countries). We are looking for a scientific partner in urban climatology to validate models and co-sign proposals.

THE PROBLEM

02 Heat is now a municipal management problem.

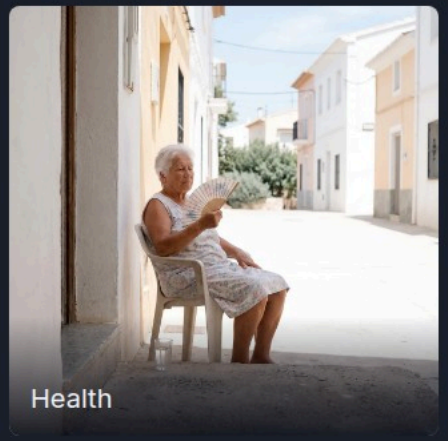
WHAT THE CITY SEES

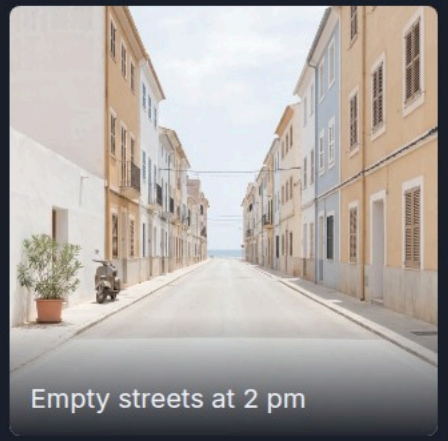
- More pressure on residents' health
- Higher energy use for cooling
- Less comfortable public space
- Impact on tourism and the local economy

WHAT IS MISSING

A reliable way to know which measure works before paying for it.

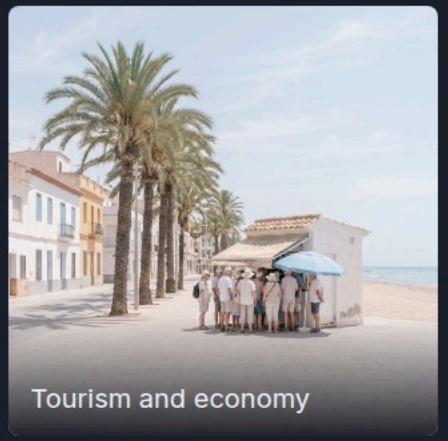
Where to intervene, what to do first, what effect it will have and what it will cost: today these are decided without a tool that calculates them street by street.


Health


Empty streets at 2 pm


Energy and air conditioning


Public space nobody uses


Tourism and economy

WHY CURRENT TOOLS FALL SHORT

03 Cities hold fragments of information, but no system for deciding.

	WEATHER STATIONS	CLIMATE MAPS	CONSULTANCY	URBANCLIMATE OS
Street level	✗	✗	✓	✓
What-if scenarios	✗	✗	✗	✓
Cost and effect per measure	✗	✗	✗	✓
Up-to-date data	✓	✗	✗	✓

UX

04 From urban data to urban action.

OBSERVE

Where is it hot?

Heat exposure street by street, from open city and climate data.



UNDERSTAND

Why there?

Sun, shade, surfaces, geometry and wind: the physical causes.



TEST

What if?

Simulate a measure before building it: ΔTmrt, ΔUTCI, cost.



INTERVENE

Act in one place

Build the chosen measure, permanent or as a temporary test.



MEASURE

Did it work?

Sensors compare before and after on the street.



LEARN

The model improves

Measured results calibrate the model for the next decision.

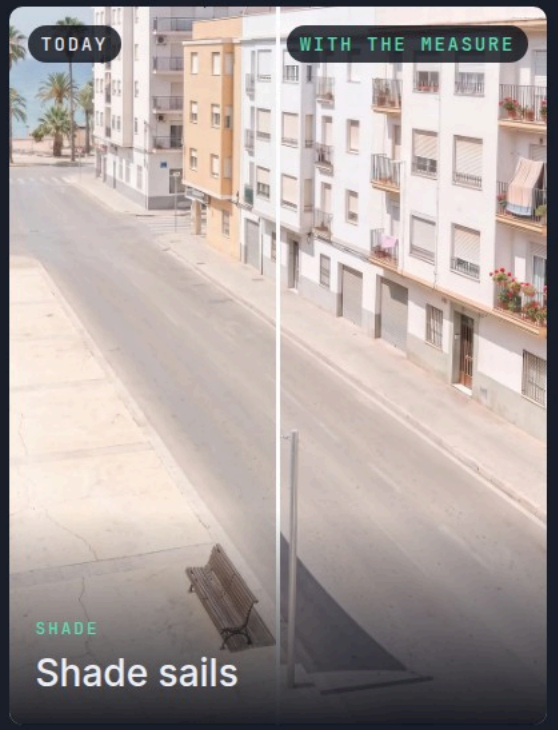


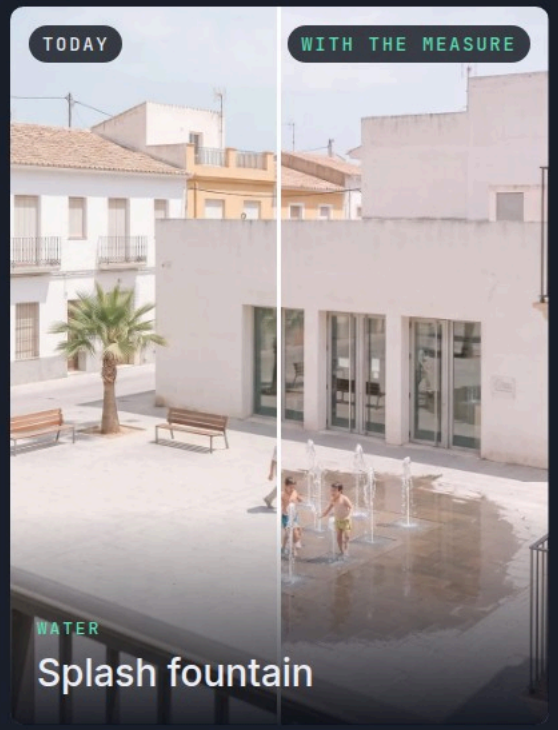
OBSERVE → UNDERSTAND → TEST → INTERVENE → MEASURE → LEARN

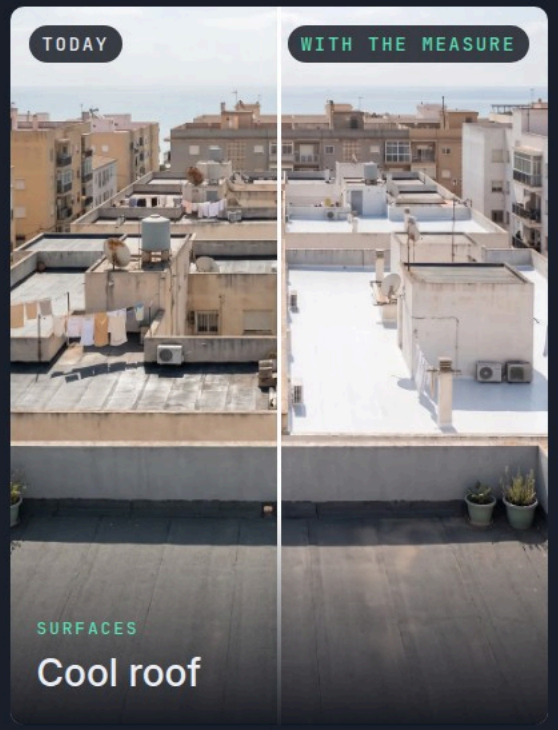
SOLUTIONS

22 measures, each before and after.





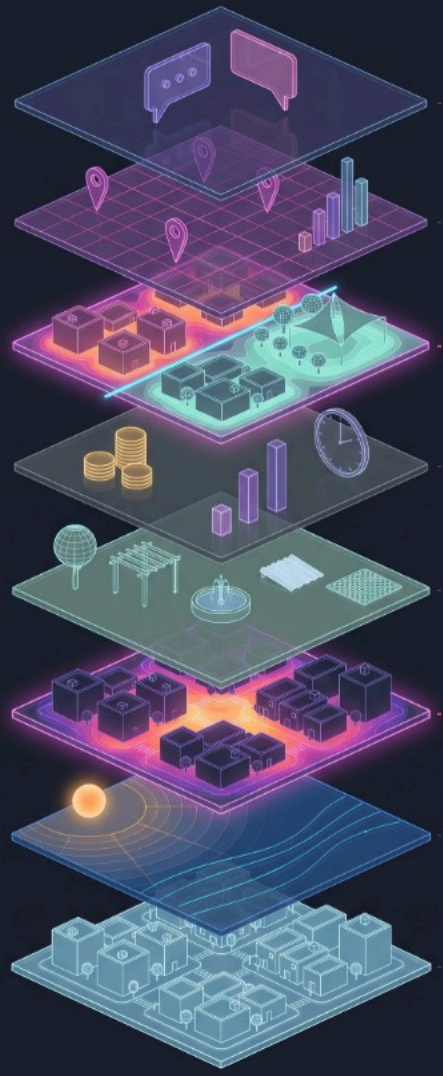




Concept images are generated. Today the model calculates 6 of the 22 measures, with literature coefficients, not yet field-calibrated; 7 are next, 9 reference only.

SYSTEM

05 UrbanClimate OS in layers.



AI — AI assistant (LLM) — TARGET CAPABILITY
Ask: «Where to spend €100k?» · «Why is this street hotter?» · «What do 30 trees change?»
Calls our computed tools and explains results; never invents temperatures

L5 — Planning & decision support — TARGET CAPABILITY
Compare · prioritise · combine · plan
Locations · measures · costs · timelines · budgets

OPERATIONAL 2 — Intervention simulation [modify city → recalculate → compare] — PROTOTYPE · VALIDATION REQUIRED
Change the environment → rerun the physics → compare
Before / after microclimate · ΔTmrt · ΔUTCI · surface temperature · alternatives

L4 — Resources & implementation — IN DEVELOPMENT
Cost · time · maintenance · resources · feasibility
Market benchmarks · supplier data · municipal constraints (to integrate)

L3 — Intervention knowledge — IN DEVELOPMENT
Trees · shade · cool surfaces · water · depaving
Literature · solution providers · applicability · effect ranges · constraints

OPERATIONAL 1 — Urban heat exposure [first own computed result] — COMPUTED · VALIDATION PENDING
Street-level microclimate: Tmrt · UTCI · surface temperature · by street · by hour
Now: heat exposure · shade · radiation · hotspot comparison

L2 — Climate & urban physics — COMPUTED
Sun & shade · radiation · sky view · thermal inertia · wind
Data: Open-Meteo · ERA5 · AEMET · climate scenarios

L1 — City & environment data — CONNECTED
Buildings · vegetation · streets · urban geometry · surfaces
Data: PNOA LiDAR · Cadastre · OpenStreetMap · satellite imagery

CONNECTED DATA → PHYSICS → HEAT EXPOSURE → INTERVENTIONS → SIMULATION → PLANNING

ROADMAP

06 Our development path.

TODAY

Working prototype

- Open city & climate data
- Physics-based heat model
- Street-level exposure
- Early intervention scenarios



PILOT

Prove it in one street

- Local scientific review
- Field sensors
- Baseline validation
- One real intervention
- Before / after measurement



PRODUCT

Decision-support system

- ML calibration on sensor data
- Validated intervention simulation
- Resource & cost integration
- Planning scenarios · decision support



SCALE

Platform

- ML surrogate trained on validated simulations + measurements
- AI assistant (LLM) on top of our tools
- Platform for worldwide integration



DATA → PHYSICS → SENSORS → ML → DIGITAL TWIN → LLM

WHY TOGETHER

07 Two strengths, one pilot.

Scientific and local partner

- Research
- Local data
- Sensors
- Validation
- Living Lab
- Municipal context

UNIVERSITIES · INSTITUTES · CITY COUNCILS

JOINT URBAN-HEAT PILOT

TORREVIEJA · ONE STREET · 2027

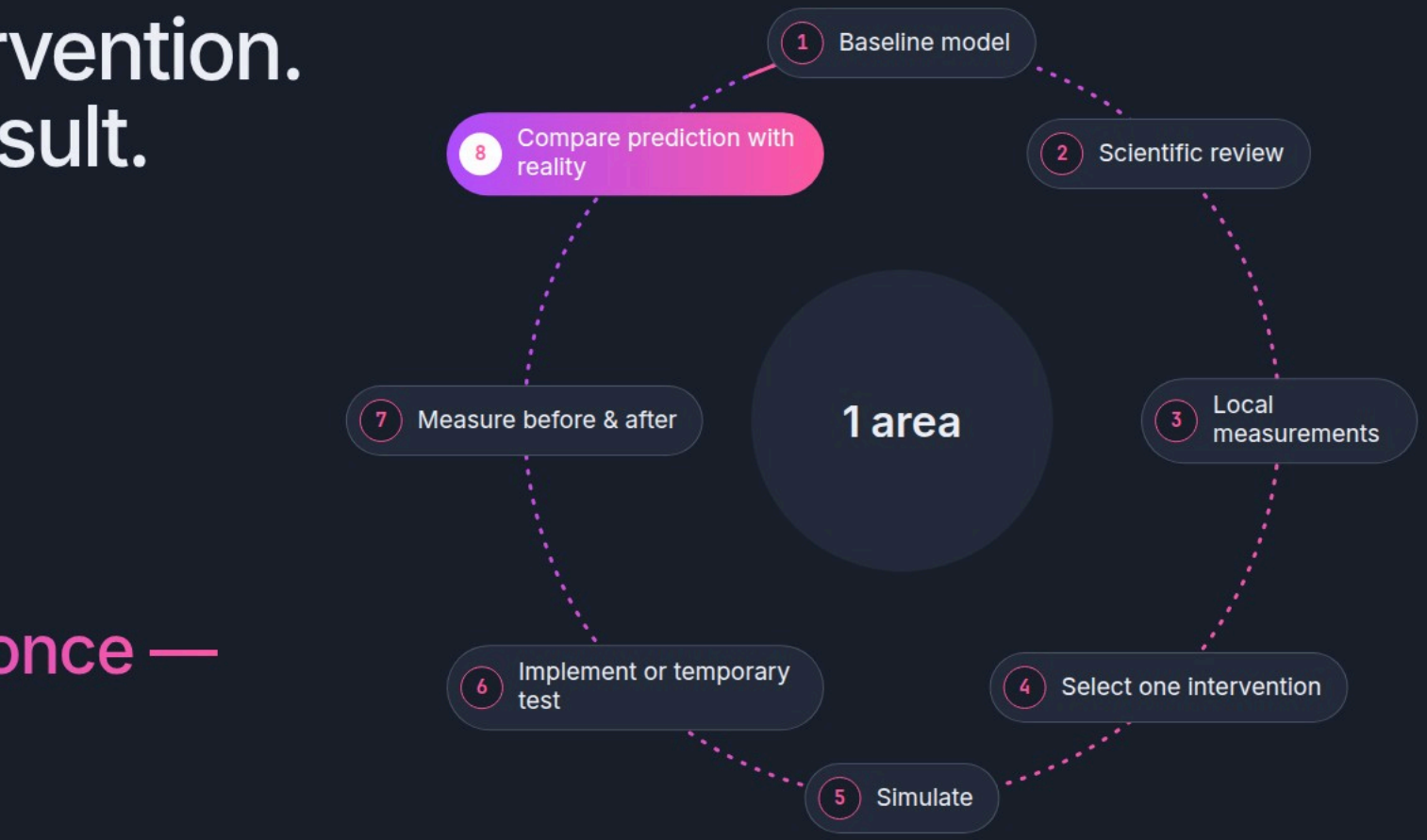
UrbanClimate / NAOS

- Spatial & experience design
- Product vision
- Data visualisation
- Intervention interface
- Commercial / supplier layer
- Product development & scaling

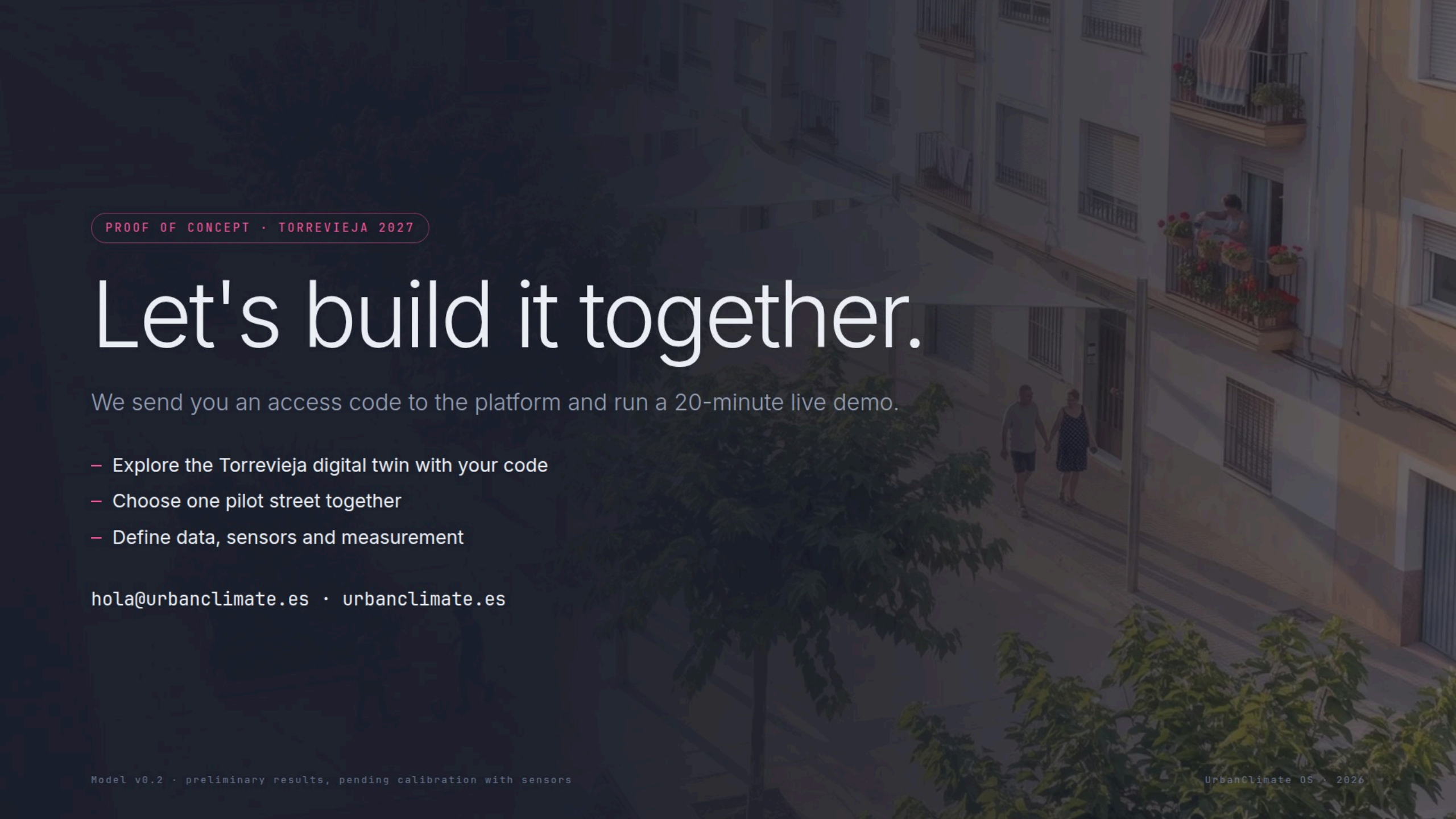
08 PILOT

One area. One intervention. One measurable result.

1 selected street / micro-area



Can we close the loop once — together?



PROOF OF CONCEPT · TORREVIEJA 2027

Let's build it together.

We send you an access code to the platform and run a 20-minute live demo.

- Explore the Torrevieja digital twin with your code
- Choose one pilot street together
- Define data, sensors and measurement

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