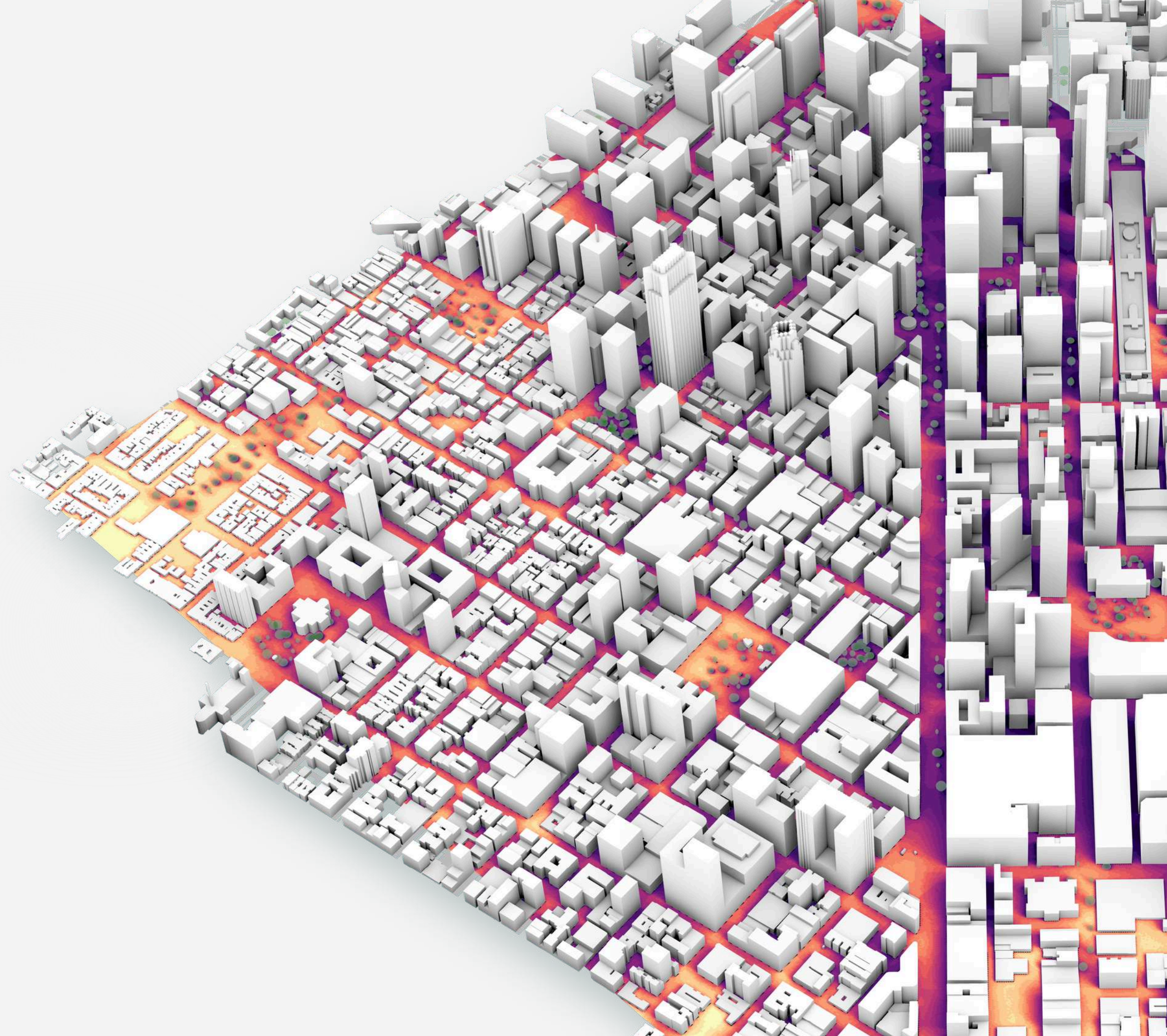


RESILIENCE THROUGH INTELLIGENCE

AI-powered climate simulations for
evidence based decisions

2025



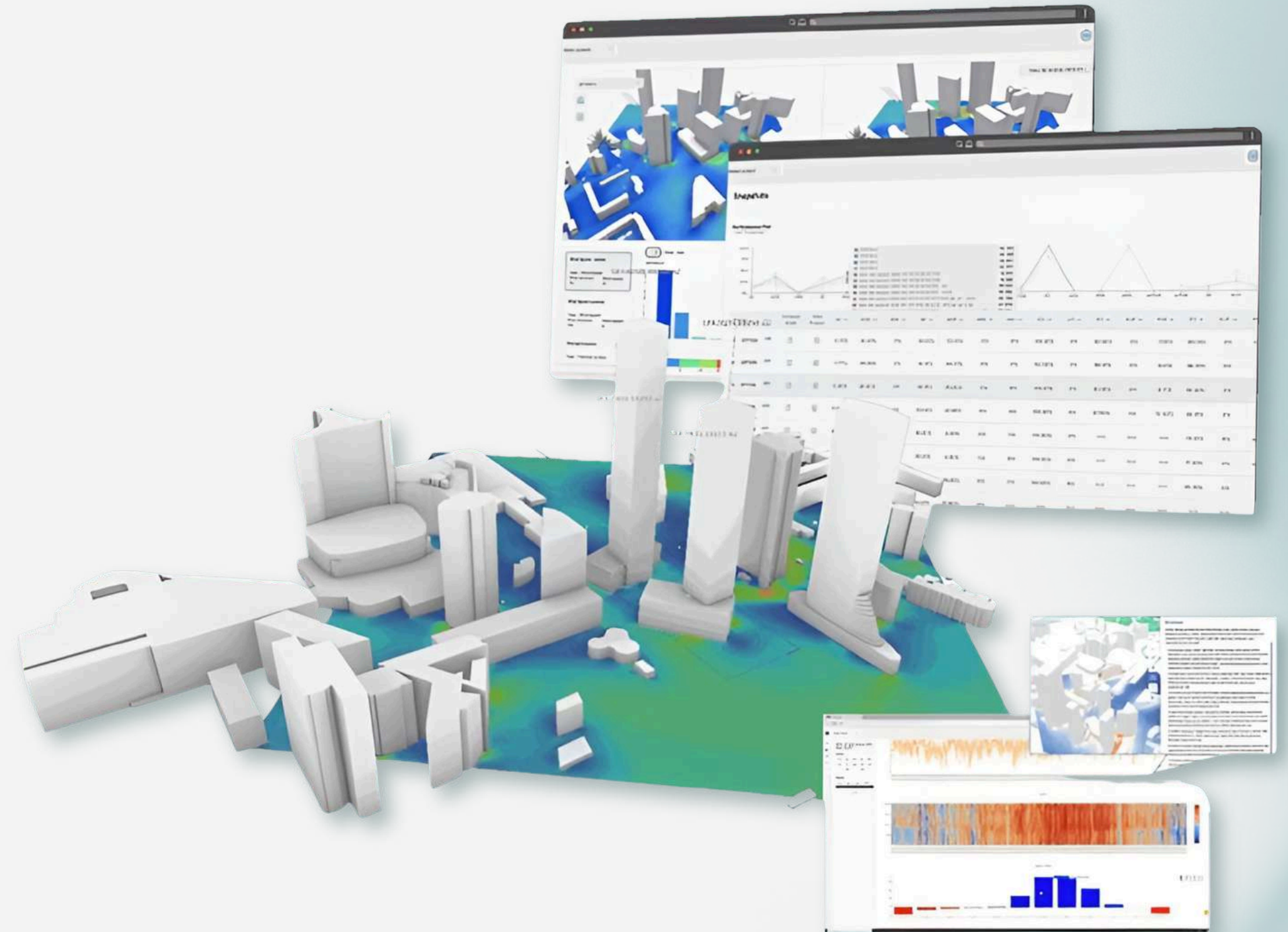
DESIGN. SIMULATE. ITERATE.

infrared.city transforms climate adaptation from a months-long expert consultation into **instant, iterative intelligence** embedded in your **collaborative workflow**.

We face accelerating climate risks while traditional simulation tools remain prohibitively slow and expensive. Meanwhile, stakeholders need smart city solutions and environmental intelligence that delivers insights in real-time.

With infrared.city urban stakeholders get a **customizable smart city platform** complete with **data layers, real-time simulations, custom KPI's, and AI agents** able to extract actionable insights and present the data in meaningful ways.

Make better climate resilience decisions faster. Justify investments with quantified impact. Engage stakeholders with transparent, visual comparisons. Build resilience while reducing costs and approval times **100x**.





THE CLIMATE CHALLENGE

CLIMATE ADAPTATION NEEDS REAL-TIME INTELLIGENCE

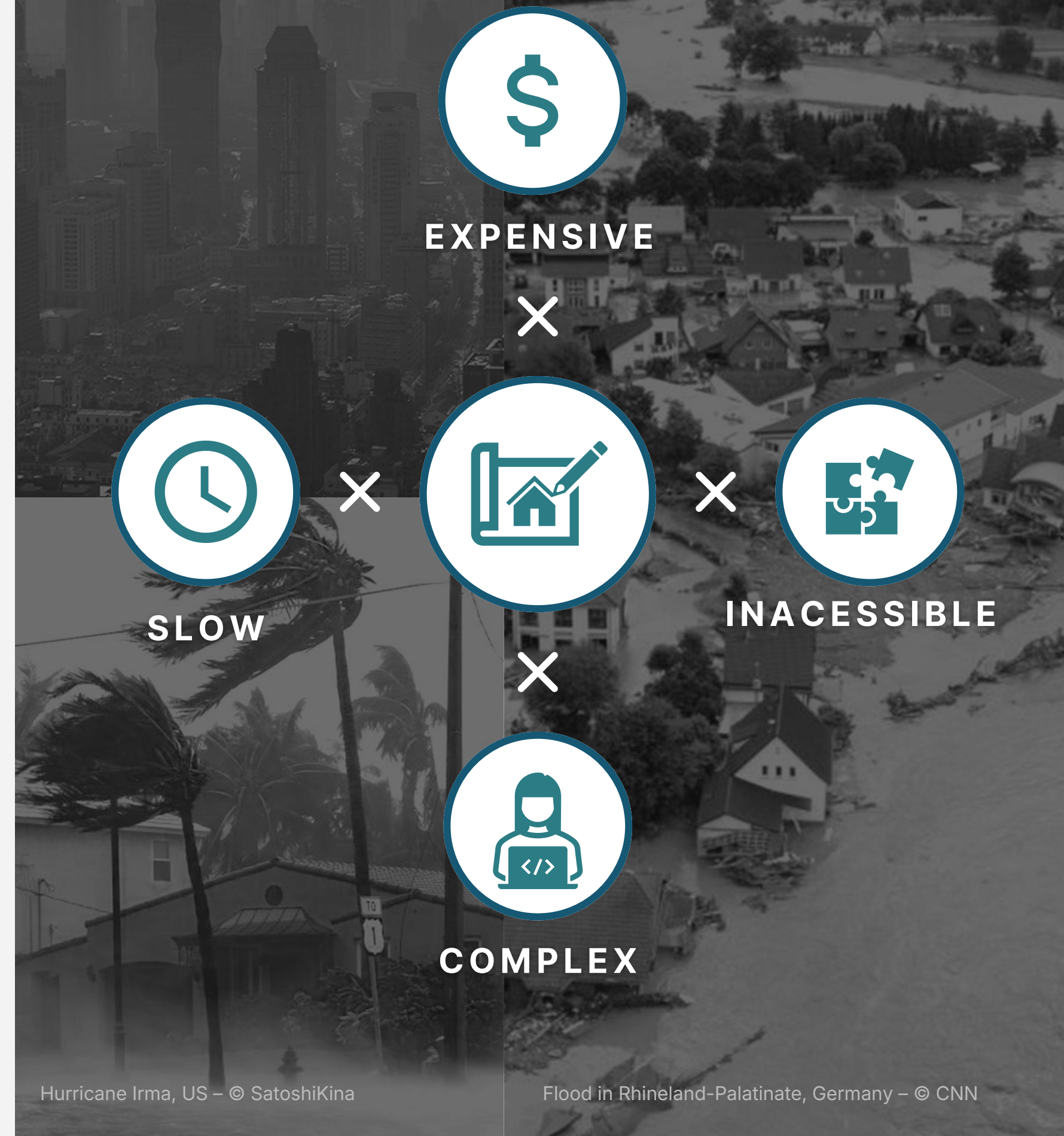
By 2050, 70% of people will live in cities facing unprecedented climate challenges. Heat kills **170,000+** people annually in Europe alone. In 2030, 1.6 billion people will live in unsafe buildings.

Yet today:

- **80% of buildings have no climate assessment;**
- **45% of cities lack an adaptation plan;**
- Environmental data is inaccessible to decision-makers;
- Traditional climate assessment take weeks and cost hundreds of thousands.

We can't design resilience without understanding climate impact — but current tools are too slow, expensive, complex, and inaccessible for the speed cities need.

Heat Wave Montreal, Canada, US – © AFP/GETTY



Hurricane Irma, US – © SatoshiKina

Flood in Rhineland-Palatinate, Germany – © CNN



THE SOLUTION

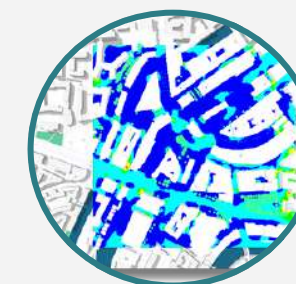
CLIMATE-INFORMED DIGITAL TWIN

A LIVING DIGITAL TWIN THAT THINKS, SIMULATES, AND GUIDES CLIMATE DECISIONS

infrared.city delivers an AI-powered, conversational digital twin platform that transforms how cities plan for climate resilience through:

- **Conversational Intelligence:** Ask "What metrics indicate resilience in this district?" and get instant analysis across current and future climate scenarios;
- **Real-Time Simulation:** Test any intervention (tree planting, cool surfaces, shade structures) and see wind, thermal comfort, and heat stress impacts in seconds;
- **Multi-Layer Intelligence:** Seamlessly integrate climate data, GIS layers, socio-demographic info, and custom KPIs;
- **Automated Insights:** AI agents generate comprehensive reports, recommendations, and ROI calculations without expert software users;
- **Stakeholder Transparency:** Interactive dashboards accessible to citizens, planners, and policymakers.

From baseline assessment to optimized intervention in minutes, not months.



WIND



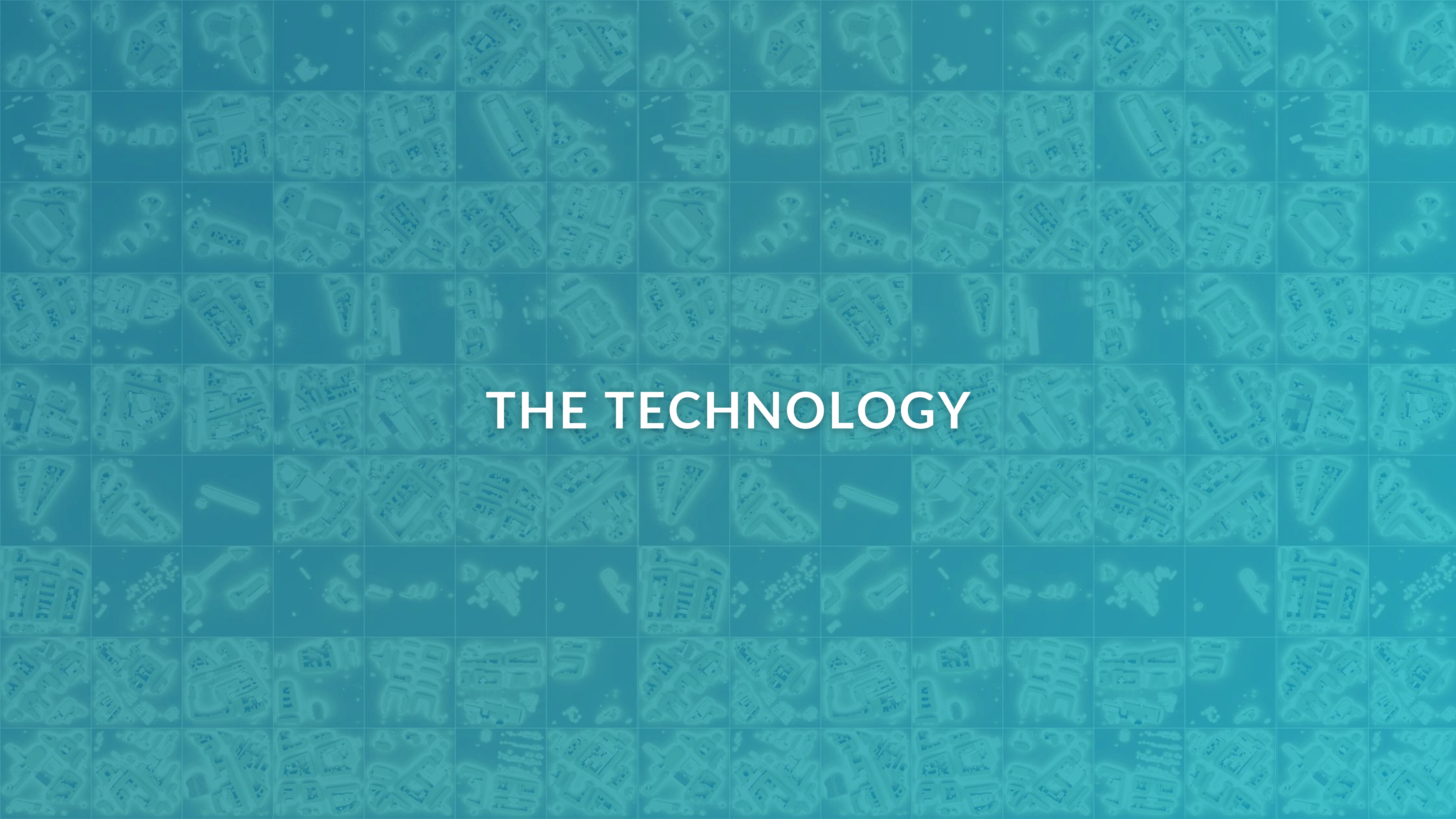
SOLAR



HEAT



COMFORT



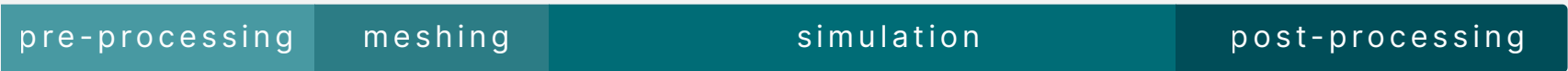
THE TECHNOLOGY

100X FASTER CLIMATE SIMULATIONS

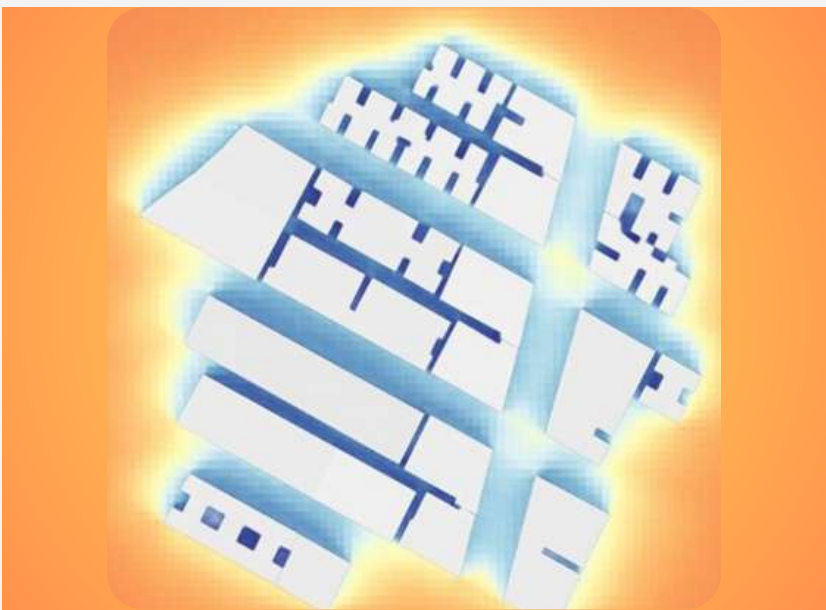
THROUGH PROPRIETARY AI

- Trained on **500K simulations** from **100x cities worldwide**;
- Predicts complex **wind, solar, thermal effects** with **90%+ accuracy**;
- Delivers results in **1 second vs. 3 days** for traditional CFD;
- Costs **0.1%** of conventional simulation approaches;
- Continuously learning from **expanding dataset**.

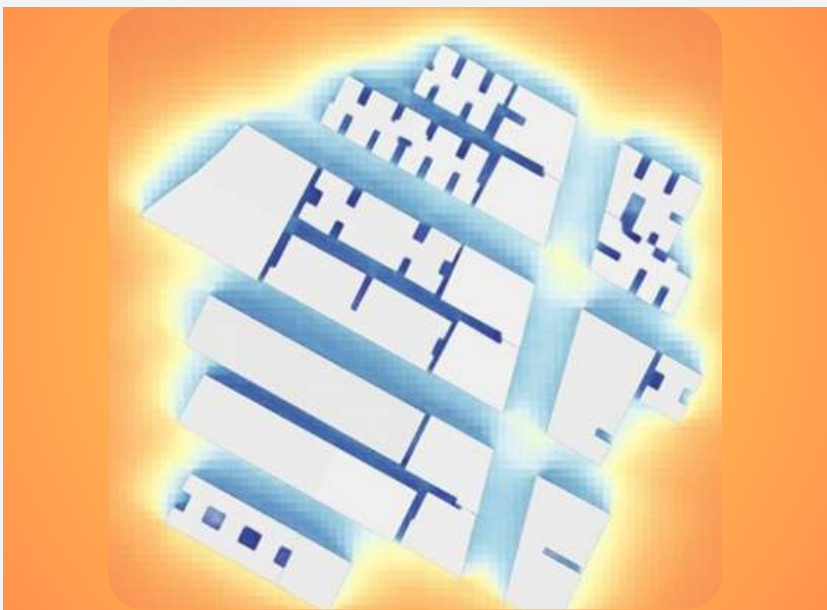
Typical wind simulation: **3 days**



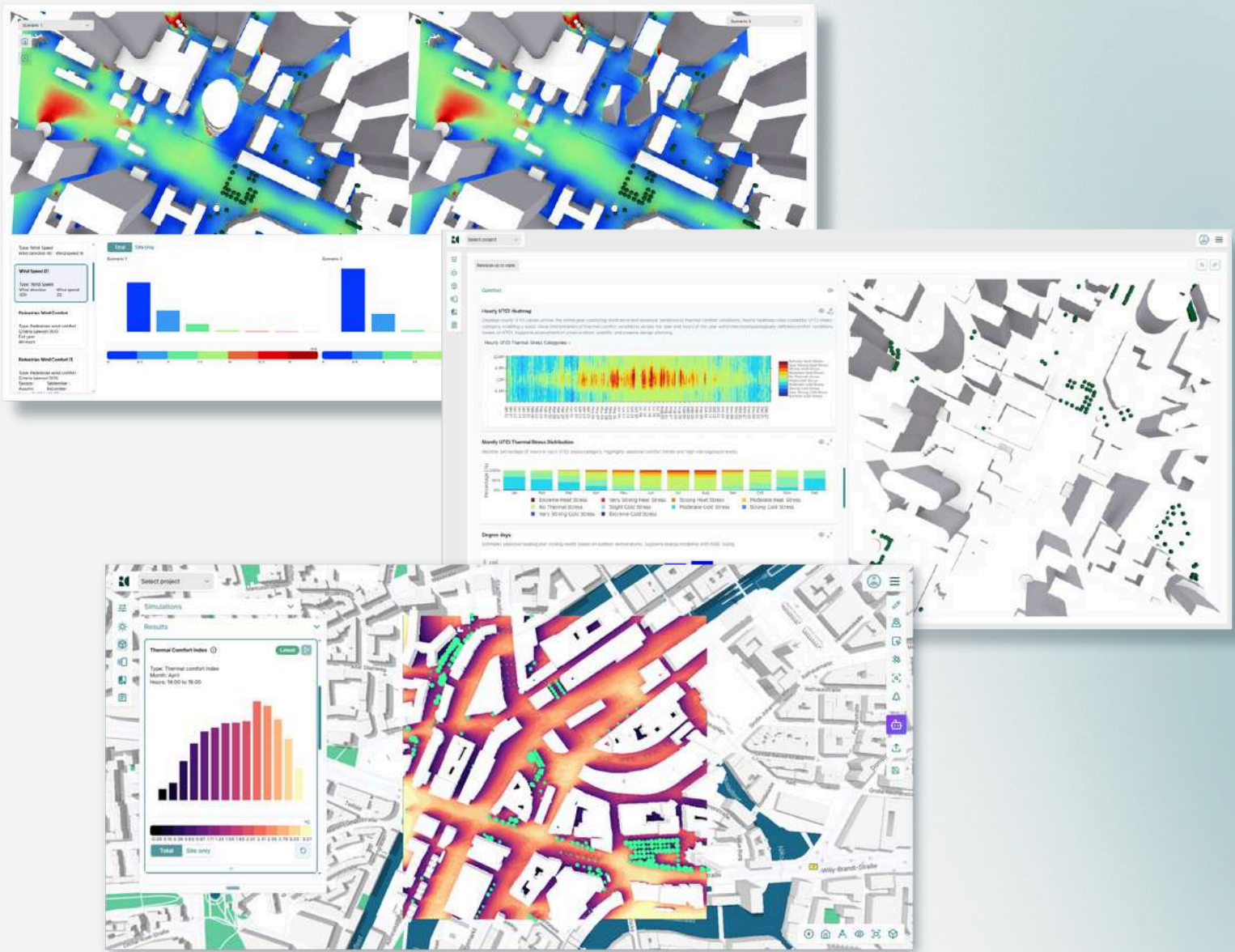
infrared.city AI prediction: **1 second**



typical annual
solar radiation



infrared.city AI-driven
annual solar radiation



COMPREHENSIVE SIMULATION FRAMEWORK

- **Current capabilities:** Wind comfort, solar radiation, thermal comfort, and outdoor heat stress.
- **Coming Q1 2026:** 3D wind visualization, facade-level analysis, indoor simulation platform.
- **Roadmap 2026:** Flooding risk, noise propagation, ventilation potential, precipitation.

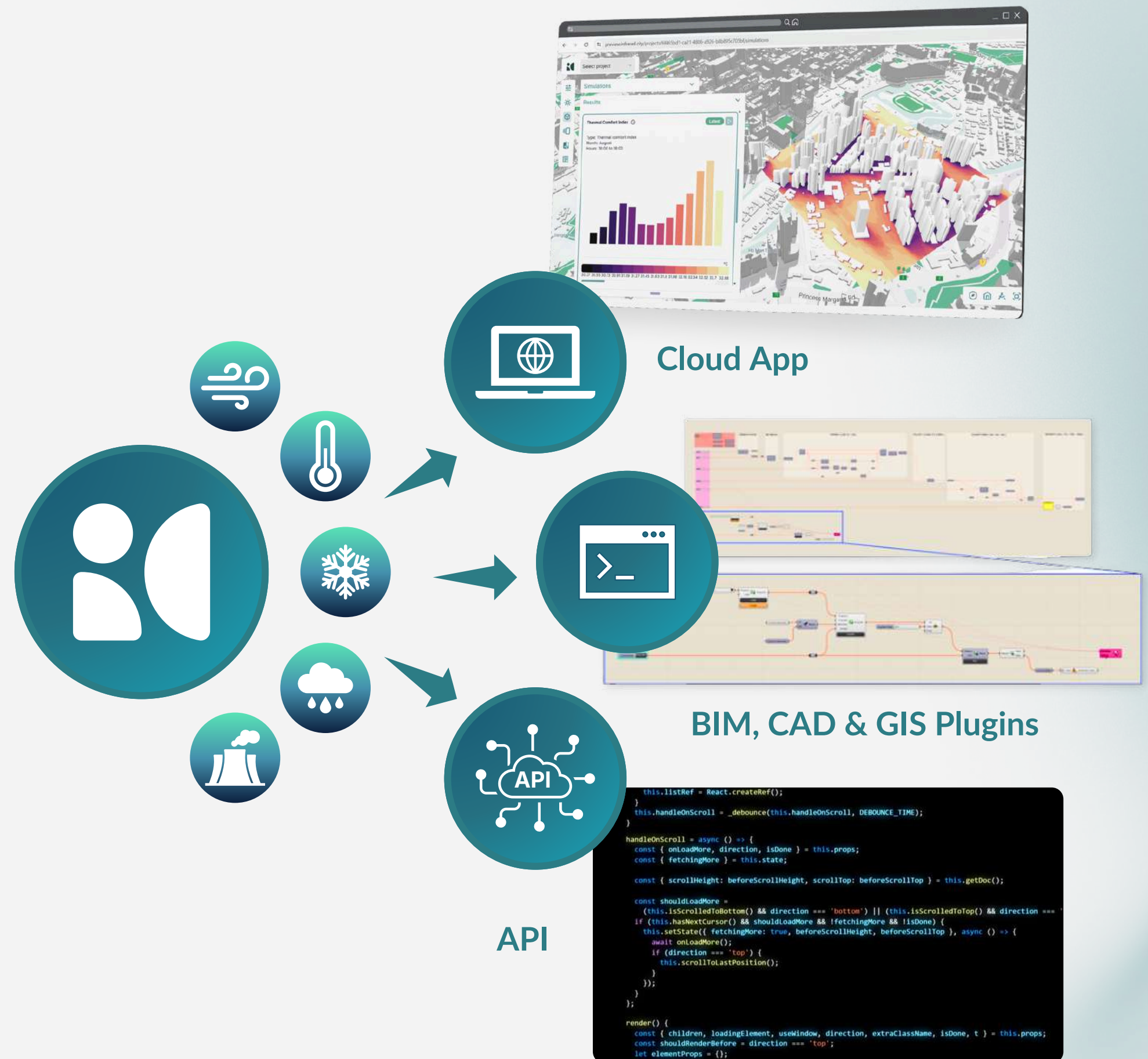
THE PLATFORM EXPERIENCE

infrared.city meets you where you work. Start projects in our **cloud app** with automatic site context loading, or use it directly from your **CAD, BIM, or GIS tools**, where a single click syncs designs and triggers instant simulations.

For cities and enterprises, our API embeds into existing digital twin platforms as an invisible environmental intelligence layer.

This transforms collaboration. Design teams iterate with live environmental feedback. Planners test interventions and see immediate impacts. Managers access customized dashboards, ask AI for insights, and generate reports in minutes.

Your workflow stays familiar, your tools become powerful, and you don't need to learn complex software. **Climate intelligence adapts to how you already work.**



AI-DRIVEN INSIGHTS ENGINE

FROM RAW DATA TO ACTIONABLE RECOMMENDATIONS AUTOMATICALLY

Our AI agents transform complex simulation results into clear decision support:

Automated Performance Analysis:

- Access context data and provide insights based on scientifically vetted analyses;
- Sets up simulation scenarios and automates processing;
- Generates key performance indicators (KPIs) tailored to project goals;
- Compares across multiple options/sites and climate metrics;
- Identifies problem areas and quantifies improvement opportunities;
- Calculates ROI for interventions (cost-benefit of tree planting, cooling surfaces, etc.).

Context-Aware Recommendations:

- Accesses relevant data layers and public data sources with geographical awareness;
- Provides recommendations aligned with climate policy and expert reports.

Transparent Reporting:

- Instant generation of comprehensive technical reports;
- Stakeholder-ready visualizations and summaries;
- Methodology documentation for compliance/approval;
- Shareable interactive dashboards for stakeholder engagement.

Example: "What metrics are important for a new mixed-use tower here?"
→ AI analyzes coastal wind patterns, runs pedestrian comfort simulation, identifies safety concerns at the southeast corner, and recommends geometric modifications.





OUR SERVICE

CUSTOMIZED INTEGRATION

WE SEAMLESSLY INTEGRATE INTO YOUR PLATFORM

Every organization has unique workflows, existing platforms, and specific output requirements. Rather than forcing you to adapt to our interface, **we bring climate intelligence directly into your ecosystem through customized API integration.**

WE CAN SUPPORT YOU WITH:

- **Complete Integration Service:** Our team connects infrared.city's simulation engine to your digital twin, GIS platform, asset management system, or custom application.
- **Security & Governance:** Data flows, authentication, and permissions configured to match your requirements.
- **Custom Output Formats:** KPIs, visualizations, and reports tailored to your brand, standards, and stakeholder needs.

Your team gets world-class climate simulations without changing workflows. We handle the complexity, you get intelligence that feels like it was always part of your system.



FINE-TUNED CUSTOM AI MODELS

YOUR DATA, YOUR MODEL. AI ASSISTANTS TRAINED FOR YOUR USECASE

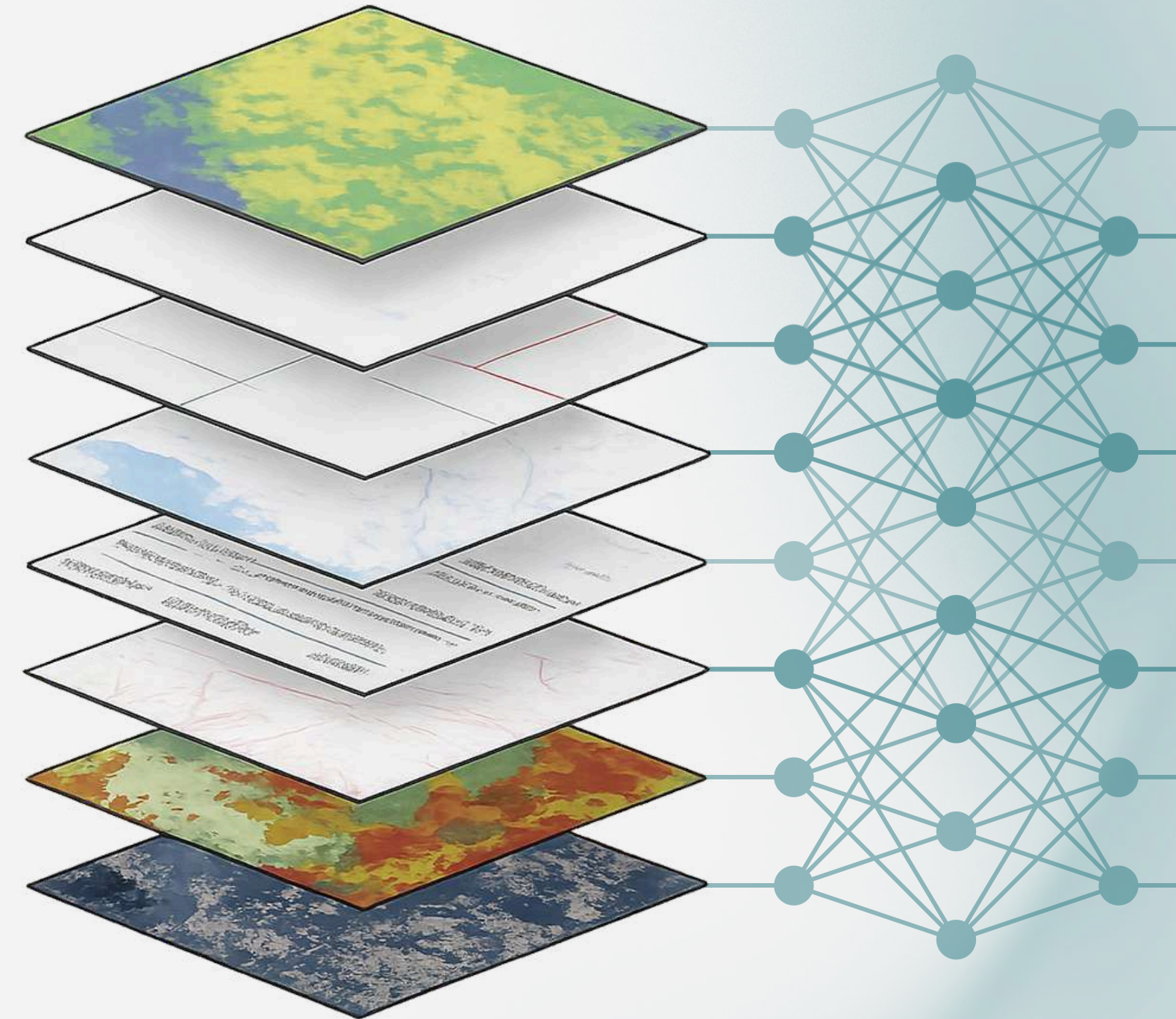
We train and develop new simulation models tailored to your specific environmental challenges. *Planning heat mitigation for desert climates with unique wind patterns? Managing coastal developments with specific microclimate conditions? Operating infrastructure in extreme environments?*

We research and develop specific AI models using your existing data or synthetic data custom-built to match your scenario. These become proprietary models that capture contextual nuances, giving you a competitive advantage through better predictions calibrated to exactly what you care about.

WE CAN SUPPORT YOU WITH:

- **Custom Model Development:** New simulation models tailored to your geographic region, building typologies, or specific environmental challenges — proprietary models that give you a competitive advantage;
- **Fine-Tuning models with Your Data:** Refine our existing models using your data points, sensor measurements, or field studies for higher accuracy on your specific portfolio;
- **Learning Your Standards:** We develop models that adapt to your performance benchmarks, design guidelines, and climate context over time;
- **Proprietary Expert System:** Your decades of institutional expertise, amplified by AI and accessible instantly to every team member.

Transform your accumulated data and expertise into **custom AI models and intelligent assistants** that deliver better predictions and insights specific to your projects.





WHY infrared.city

WHO WE SERVE

TRUSTED BY THE MOST DEMANDING USERS IN CLIMATE-RESILIENT DESIGN



SUCCESS CASES - PROVEN AT SCALE

DELIVERING AI-DRIVEN SIMULATIONS TO WORLD-LEADING PROJECTS



AI-driven City Planning



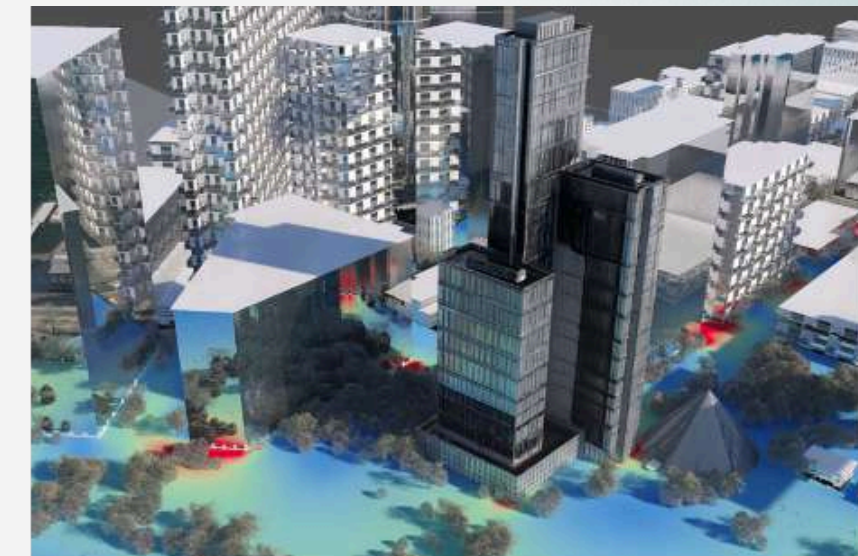
- **Challenge:** Enable real-time wind comfort assessment during master planning.
- **Solution:** Integrated platform following open geometry standards (CityGML).
- **Outcome:** Planners access instant simulations within existing GIS workflows.
- **Impact:** Fast-tracked climate-responsive zoning decisions.



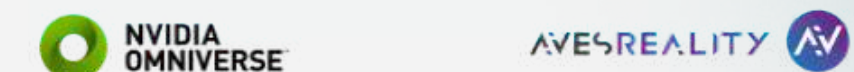
AI-driven Landscaping

LAND

- **Challenge:** Deliver detailed thermal comfort analysis for masterplan feasibility studies.
- **Solution:** Custom workflows for iterative testing of planting and shading proposals.
- **Outcome:** Large-scale comfort simulations supporting design iterations.
- **Impact:** Climate performance data integrated into client presentations and approvals.



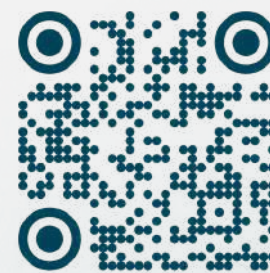
AI-driven Digital Twins



- **Challenge:** Demonstrate real-time climate assessment in high-fidelity digital twin.
- **Solution:** API integration enabling instant simulations within Omniverse.
- **Outcome:** Cities can build climate-informed digital twins in minutes.
- **Impact:** Showcased at major industry conferences, validating scalable architecture.

Get in Touch

We'd love to hear from you!



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