

Enabling healthier cities with Earth observation solutions



As cities face quality of life issues caused by climate change and urbanization, we help you monitor heat stress, air pollution and green and blue space availability using Earth observation (EO) data and solutions to create a Healthy Urban Habitat (HUH) index.

The number of cities exposed to extreme temperatures will nearly triple by 2050, according to [C40](#), a network of the mayors of nearly 100 world-leading cities. Rising temperatures and urbanization issues, such as the loss of green and blue areas, impact citizen health and wellbeing. Monitoring urban heat stress and the availability of parkland, other green spaces and water features (which help reduce local temperatures and benefit physical and mental health), is of growing value to city managers, planners and developers.

We help clients use EO data from satellites to:



Detect **green spaces** and **urban heat islands** at the neighborhood level



Identify **living conditions** of each neighborhood based on heat stress, air pollution and green and blue Infrastructure

Our **Land Cover Classification service** detects and displays the percentage availability of all green elements, including trees, parks and gardens, as well as water features, in every neighborhood.

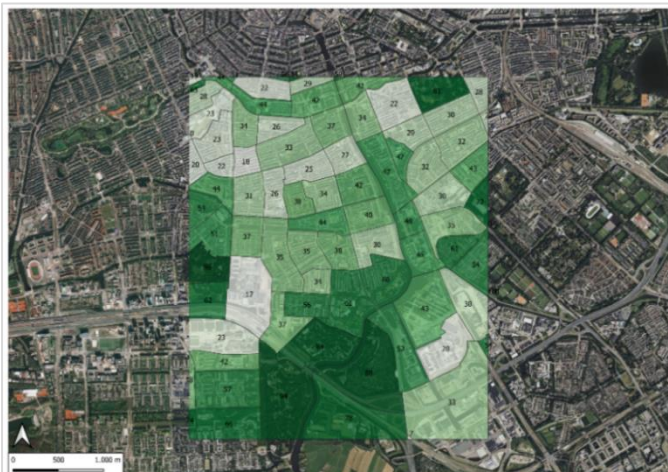


Figure 1: Southwest Amsterdam's green spaces percentage per city block in Summer 2021



Overview

CGI's EO solutions for healthier cities help communities monitor our planet's environment to improve population health.

Use cases include, but are not limited, to:

- Identifying the accessibility of each household to green and blue infrastructure
- Identifying changes to land use and how this affects healthy living and/or urban heat stress
- Assisting with greening actions by identifying when temperatures rise when green or blue spaces are removed from a neighborhood, or when temperatures decrease when such features are added

Our **Urban Heat Stress service** monitors and maps urban heat islands using a satellite data fusion approach. This produces land surface temperature maps at high spatio-temporal resolution, where individual houses can be distinguished.

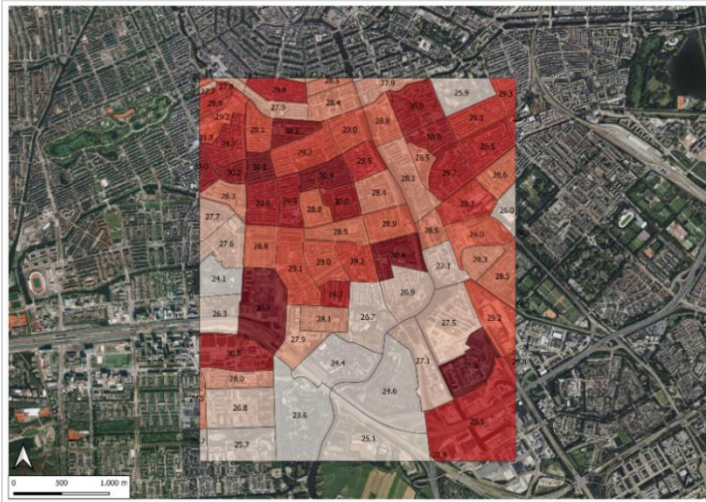


Figure 2: Southwest Amsterdam's average land surface temperature per city block in summer 2021

Classifying living conditions with a Healthy Urban Habitat (HUH) index

HUH is CGI's novel index that analyzes urban green and blue infrastructure availability, urban heat stress and air pollution. From these key inputs, statistical, spatial and spatio-statistical variables are extracted and ingested into a geographic information system (GIS) based, multi-criteria decision analysis, displaying the least and most healthy living conditions in a neighborhood (Figure 4).

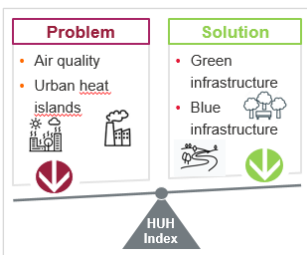


Figure 3: Inputs to HUH index

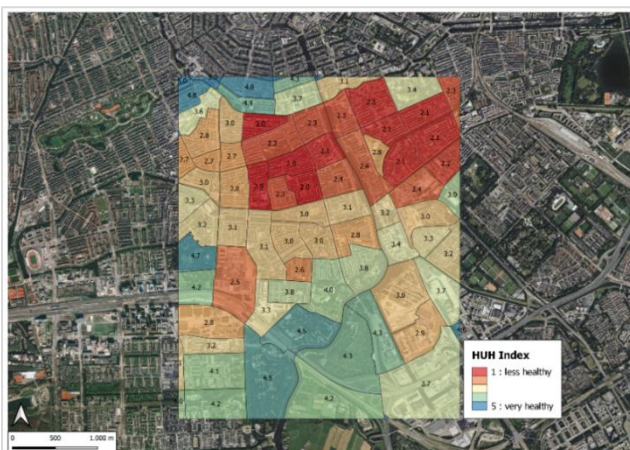


Figure 4: Southwest Amsterdam's HUH index in summer 2021.

Who can take advantage of our EO solutions for healthier cities

- Cities, municipalities
- Government entities
- Urban planners and architects
- Green advisors
- Construction companies
- Insurance providers

Learn more about our EO solutions at cgi.com/space

About CGI

Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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