KAMPALA HEAT ATLAS · 3D URBAN CLIMATE MODEL

Roofs are not the constraint

Kampala's roofs could make several times Uganda's electricity. The real question is what the grid can take at noon. Swipe →



By Gava Charles

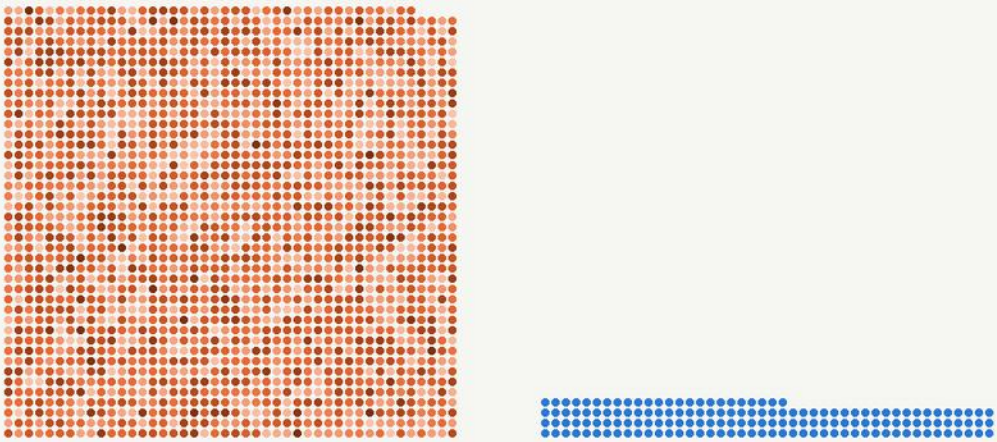
Two million roofs under an equatorial sun



1,917 kWh/m² a year

of sunshine on Kampala's roofs (ERA5-Land 2015–2024) · each dot ≈ 1,003 roofs

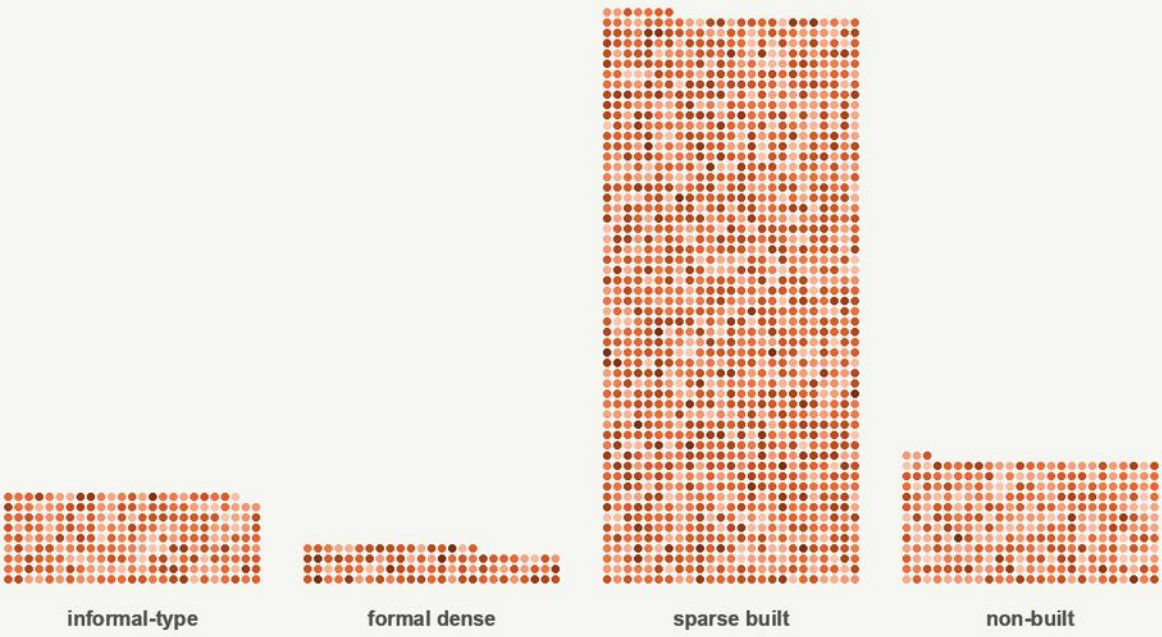
Neighbours barely shade the roofs



8% of roofs shaded

the sun is nearly overhead; the 3D model puts the loss at 1–2% of yearly output

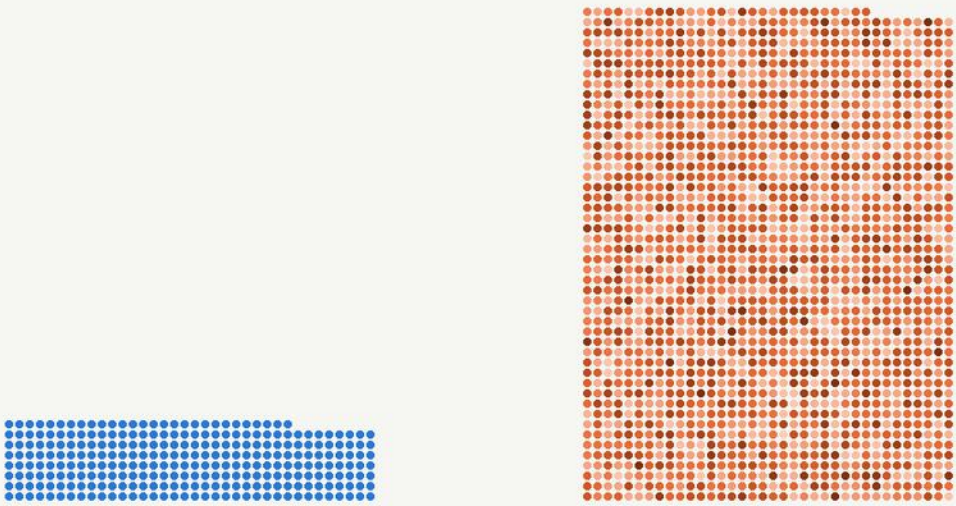
Informal roofs are small but many



212,000 roofs

66 m² on average in informal-type areas · 2.8 TWh a year

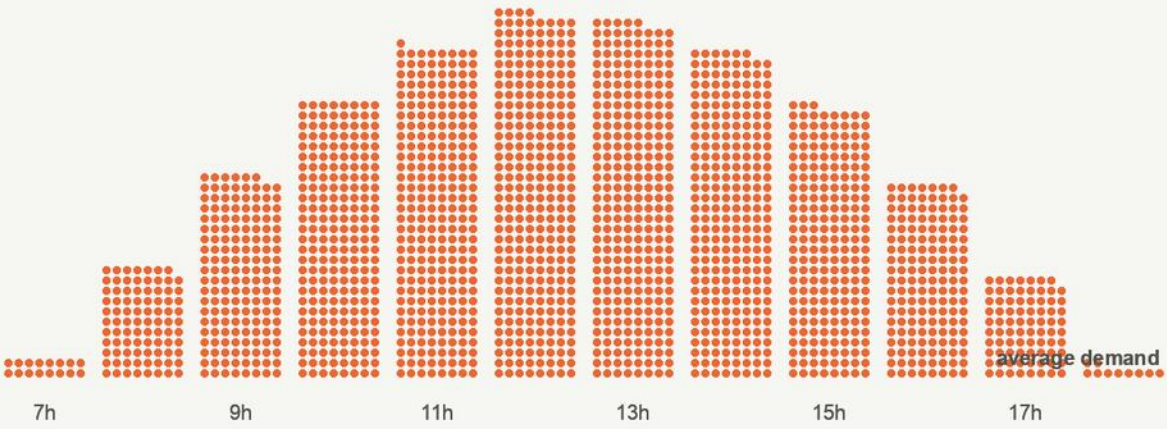
Roofs could make 7× Uganda's electricity



33 TWh vs 4.7 TWh

technical potential of all roofs vs Uganda's 2024 distribution sales (Umeme)

But it all arrives at midday



12.7 GW at noon

against 0.53 GW average demand: the grid, not roof space, is the limit

Explore it yourself

gavacharles.github.io/kampala-heat-atlas

maps, the 3D model and every figure