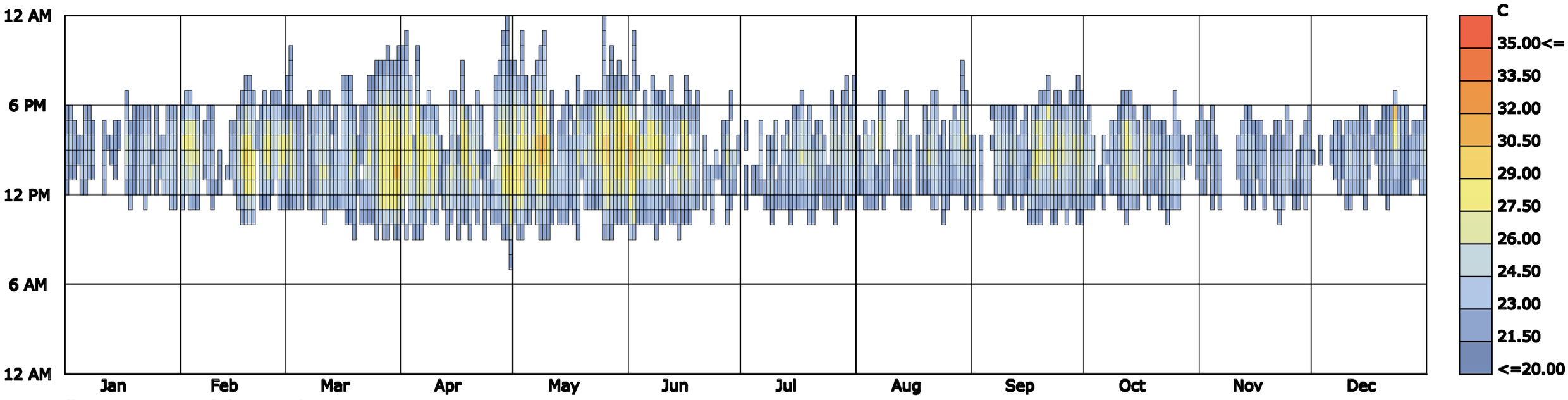
Mexico City, Vertical Farm Project

Our concept is about verticcal farming which produce food resources without harming nature sustainability. Based on the concept, we would like to study what kind of artificial lights could be used for indoor farming, how to control natural light and artificial light for algae production(fertilizers for cultivation) or natural light farming, and if it is possible to cover needs of foods production through this kind of system. Also we also concern about people's living condition besides farming conditions.

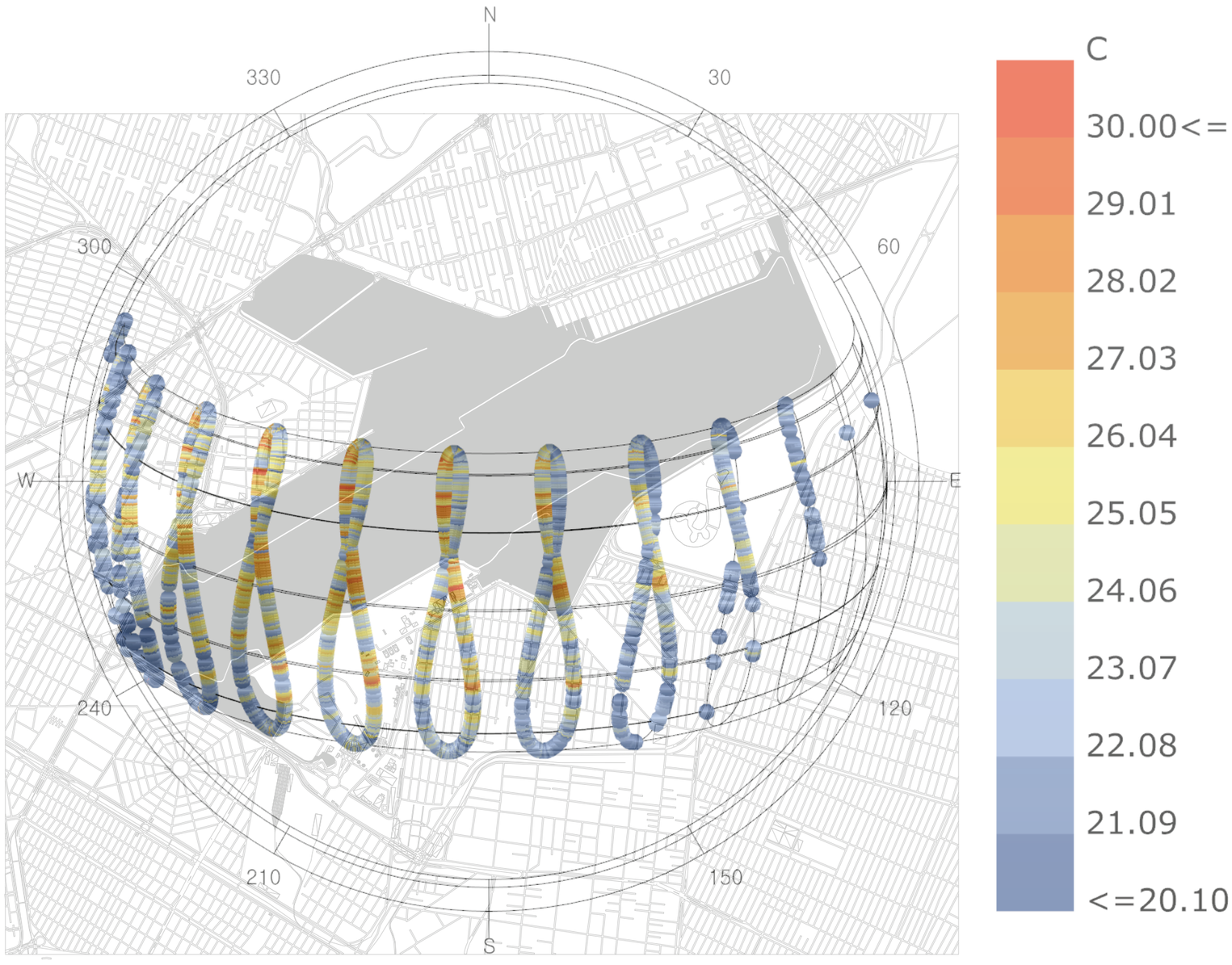
Needs for algae cultivation; 20°C~35°C, light, CO2



Dry Bulb Temperature (C) - Hourly
MEXICO CITY_MEX
1 JAN 1:00 - 31 DEC 24:00

Finding climate condition which is suitable for algae production is important for this project. Because this algae resources could be used as a energy resources for building maintanence and fertilazer for green cultivation. This image shows that how much the annual temperature in Mexico city is good for algae production. Most temperature of during 6PM to 12 PM is suitable for algae production. so if we are thinking about 24hrs production, we need to consider controling temperature for lgae production area in two third of time daily.

Analysis sunlight with temperature for algae production



Mexico City Psychrometric Chart

Based on this Mexico city's weather data, internal heat gain is most important element to ahieve comfort environment in residential and office area.
It could be achieved through installing shade, glazing windows,and ventilation system.