Alright, im going to explain another fascinating fascet of the technology used to make the SAGE garden possible.

Climate is a measure of the average weather patterns in a given area. Does anyone know the two main components of climate? (Temperature and precipitation)

What is a microclimate?

A microclimate is a local atmospheric zone where the **climate** differs from the surrounding area. An area which can harbor life unlike any around it.

They play a critical role in successful gardening and allow certain crops to grow year-round by allowing vulnerable plants to grow in unfavorable conditions.

Are microclimates always man made? No!!!!!

Inland mountains, lakes, forests and many other natural occurring features can result in a shift in the climate of a specific area.

In the arctic, microclimates exist between the soil and low-growing shrubbery, which ultimately impact the warming and cooling of the atmosphere. As atmospheric temperatures increase, heat becomes trapped in these microclimates and prevents the storage of atmospheric carbon dioxide. Higher temperatures support the growth of more shrubs, creating a dangerous cycle which drastically affects the ability of excess carbon to be stored in the Arctic permafrost and accelerates global warming.

Chances are microclimates already exist around your house. It’s a good idea to keep these in mid when planting crops.

**Structures:** Your house, garden shed, and other buildings create many small microclimates throughout your property. The structures absorb heat during the day and radiate it back at night.

**Focus on hard surfaces:** Driveways, sidewalks, patios, and paved paths can absorb heat during the day and reradiate it at night, moderating night-time temperatures

Incorporate raised beds, row covers, and mulches to help store, warm, or cool the soil artificially.

SAGE Garden utilizes hoop houses (PVC pipe frames covered with heavy-duty plastic sheets) in order to protect their leafy greens from excess water and cold temperatures during the winter months. Some microclimates can be man-made (such as the SAGE hoop houses or brick shelters which utilize heat radiation to maintain higher temperatures or natural. Microclimates also affect local communities due to changes in “urban geometry” through civil engineering, which leads to warmer cities and cooler suburbs. Understanding microclimates and their roles in agriculture, engineering, and nature is vital to ensuring a stable atmosphere despite man-made changes.