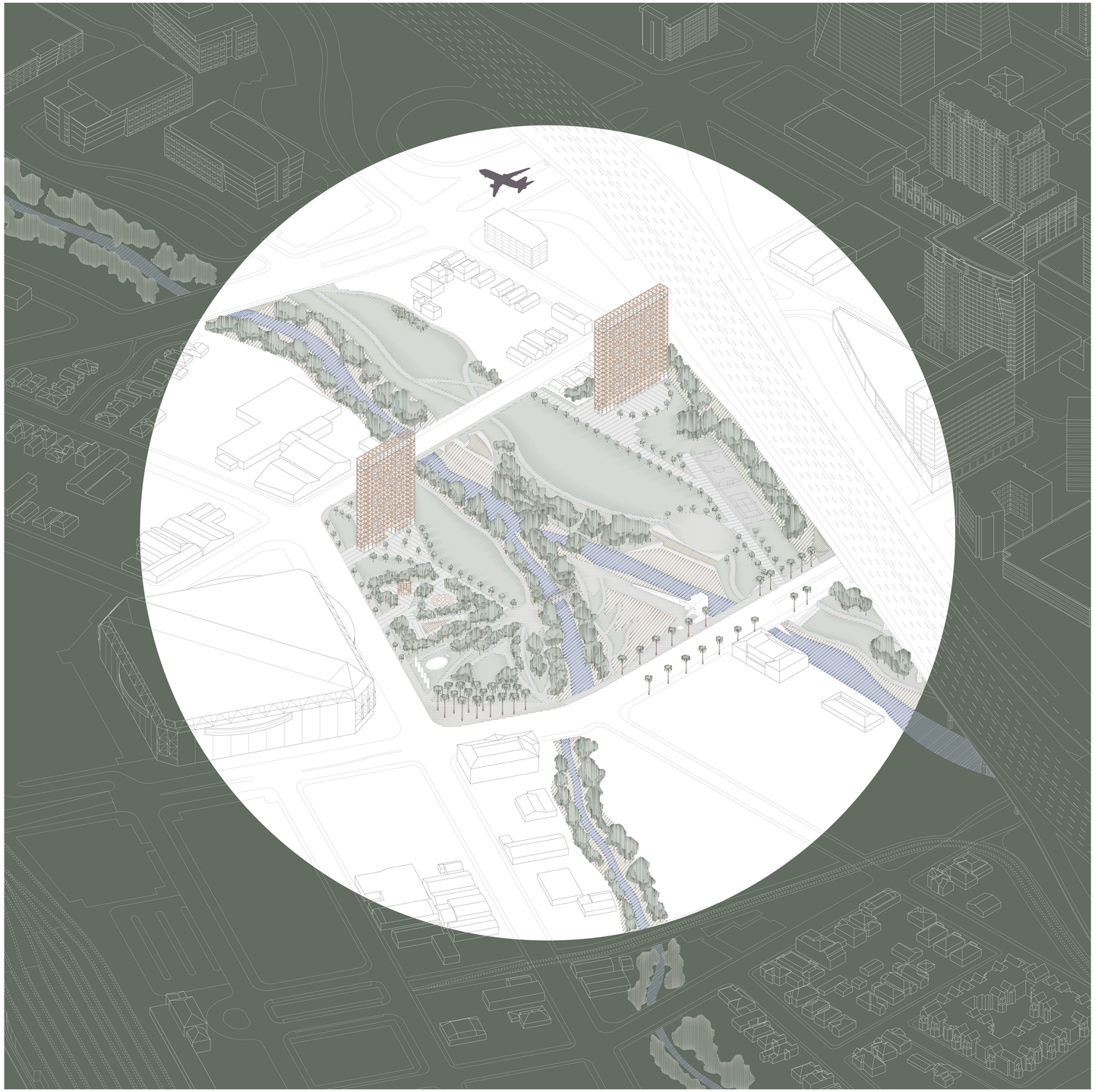
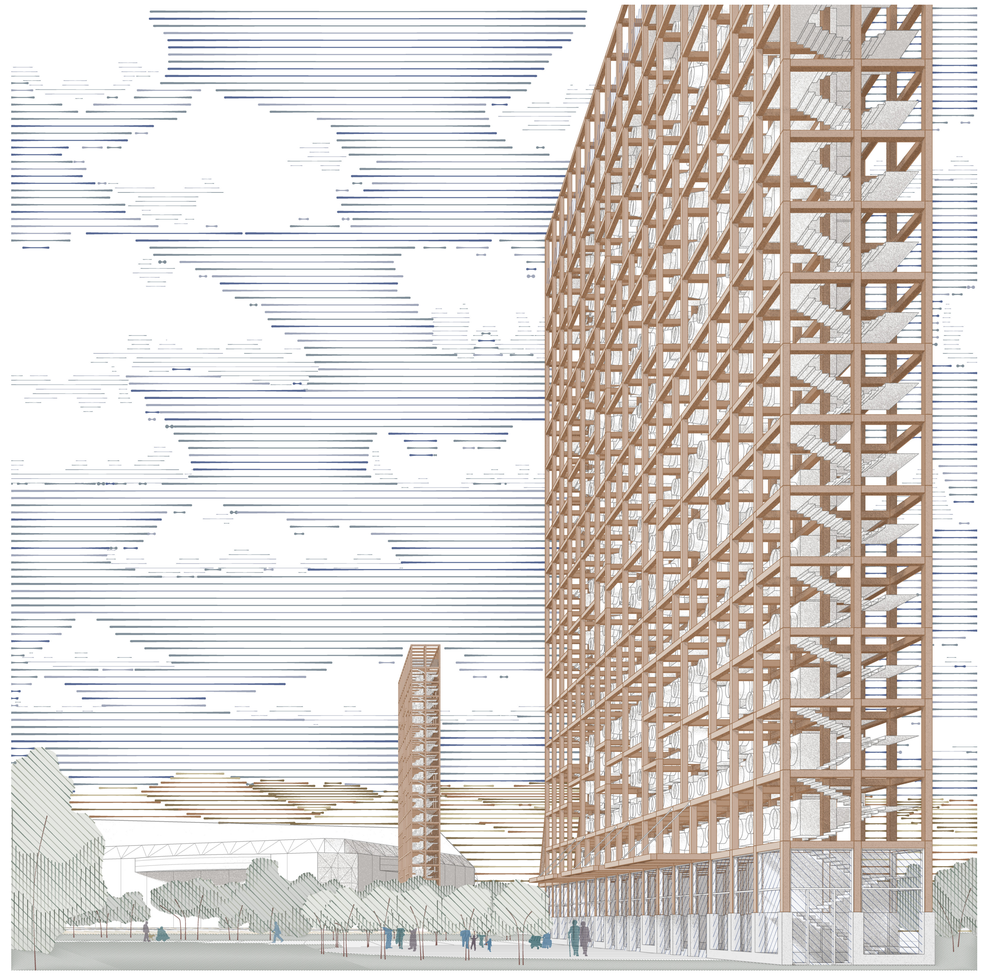
Arena Respirator



site axonometric

The icons of the 21st century will necessarily be the result of our attempts to mitigate the worse effects of climate change and provide resilience to enable the continued flourishing of humankind. This means abandoning forms and materials associated with carbon. Beyond carbon neutrality, carbon negative solutions that simultaneously sequester carbon in their construction while actively seeking its removal from the atmosphere will inevitably be iconic of our era. The urban CO_2 dome created by Arena Green's proximity to the arrival flight path of the San Jose International Airport and the Guadalupe Highway is ideal for the deployment of systems that facilitate air-borne carbon removal. The Arena Respirator is born.

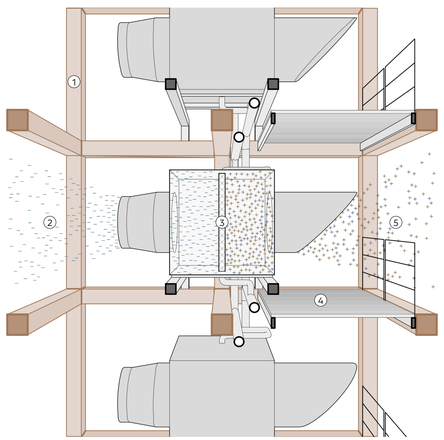
Imagine returning nearly twenty square miles of Silicon Valley back into orchards - Arena Respirator's atmospheric effect operates at that magnitude of carbon removal within the 15 acres of Arena Green. Direct Air Capture (DAC) is a burgeoning technology that scrubs CO_2 from the air to be used for greenhouse growing and fossil fuel alternatives or can be injected into the ground. By leveraging the attributes of this specific location, the Arena Respirator orients itself to the predominant wind direction to drive air through the system. Rising on each side of the river, this pairing of a large-scale porous framework visually links the east and west sides of the park and would permit a phased approach to realization.



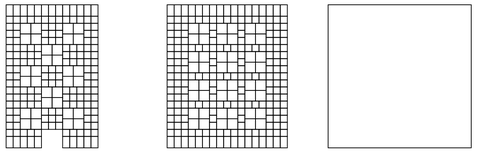
plaza level perspective - looking west toward SAP Center

roof level perspective - looking east toward downtown San Jose

① CLT structure
② CO_2 free air
③ CO_2 trapping filter
④ Maintenance walkway
⑤ Ambient, exhaust-filled air



direct air capture detail



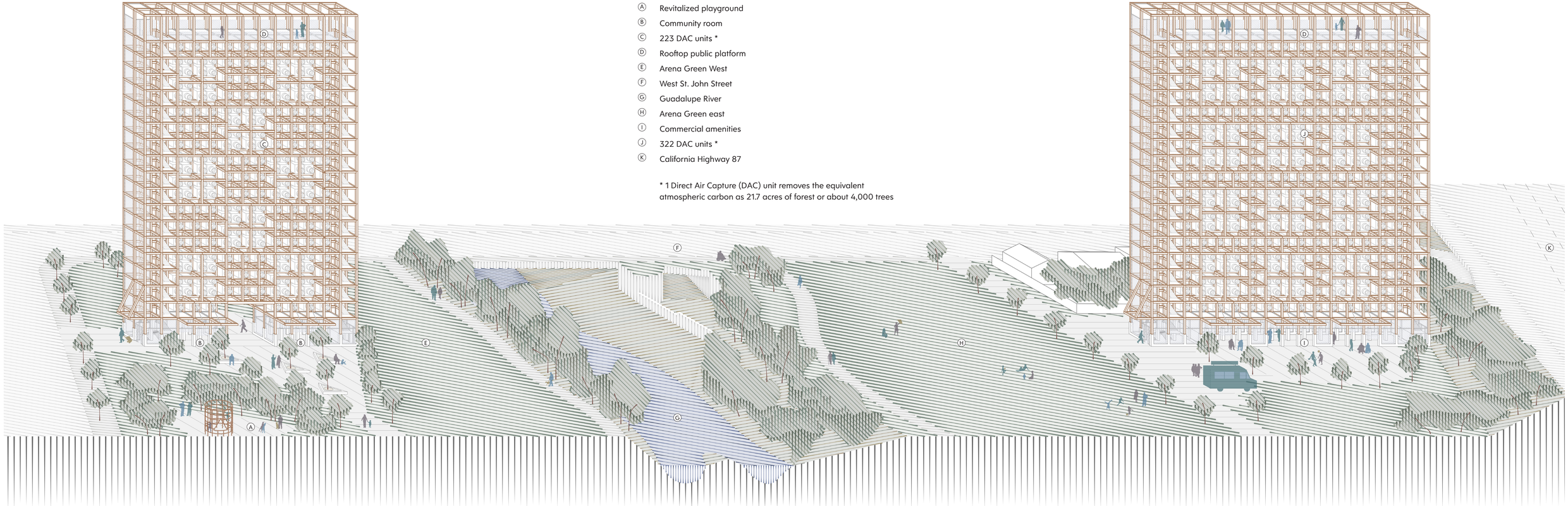
Concept Reminiscent of the formal organizations of computer processors and the racks used to hold computer hardware, a readily legible narrative specific to Silicon Valley conveys the uniqueness of this place. Like its inspiration, this framework anticipates technological change while drawing from the grid's immutable presence.

Materials Limiting the materials that contribute to further carbon release, Arena Respirator uses a cross-laminated timber (CLT) structure that permanently sequesters carbon. The size and spans of the structure are calibrated to meet currently available DAC units and enable CLT construction on a superlative, iconic scale.

Program These two structures will provide publicly available amenities at the ground and roof levels. We envision working with the community and park leadership to determine the best and most economically viable solutions to activate the internal spaces and surrounding exterior plazas. As illustrated here, this could be a community education room on the west side to work in conjunction with a revitalized playground and could be rentable for birthday parties and other events. The east side functions as a beer garden where several vendors could house operations that spill out into a public plaza. At the roof level, viewing platforms allow for a unique vantage point from which to observe the area and host events.

Ⓐ Revitalized playground
Ⓑ Community room
Ⓒ 223 DAC units *
Ⓓ Rooftop public platform
Ⓔ Arena Green West
Ⓕ West St. John Street
Ⓖ Guadalupe River
Ⓗ Arena Green east
Ⓘ Commercial amenities
Ⓙ 322 DAC units *
Ⓚ California Highway 87

* 1 Direct Air Capture (DAC) unit removes the equivalent atmospheric carbon as 21.7 acres of forest or about 4,000 trees



elevation oblique