

Combine / An architecture of production

Integrating robotic farming with existing infrastructure to promote community economic growth

01–09 / Project introduction

Combine explores the integration of rural infrastructure with emerging technology systems as a method of generating economic growth through knowledge sharing.

Role(s)

Definition of project strategy and vision

Economic development research

Synthesis of secondary research

Hypothesization of design conditions

Prototype creation and evaluation

Course

Architectural Design VI

Instructor

Claudia Wigger

Tools

Adobe Illustrator

Arduino

Chaos V-Ray (for Rhinoceros 3D)

Creality Ender 3 Pro

Gravity HuskyLens (Machine Vision)

Date

Winter 2020

02-09 / Design objectives

Continuing, knowledge sharing within the local community accounts for the relationships between technology availability, technology adoption rates, and system capabilities.

Community involvement

Education on emerging technologies occurs across scales and formats. This includes gathering produce collected from the structure for community use and conducting tours on how the facility operates.

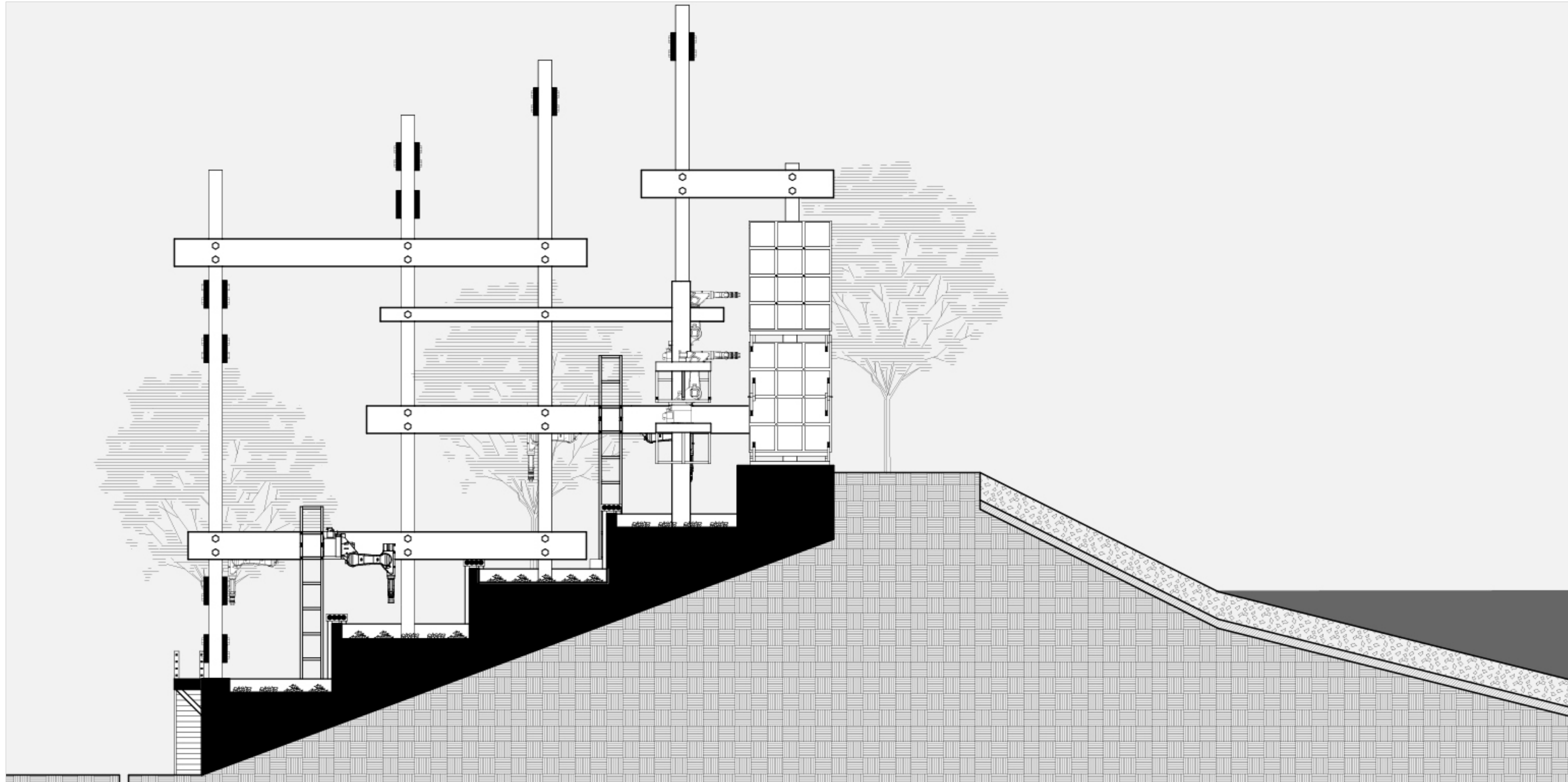
Adaptive structure

Structural elements of the project are reusable once the project's duration comes to an end. Structural system components capable of disassembly maintain structural flexibility.

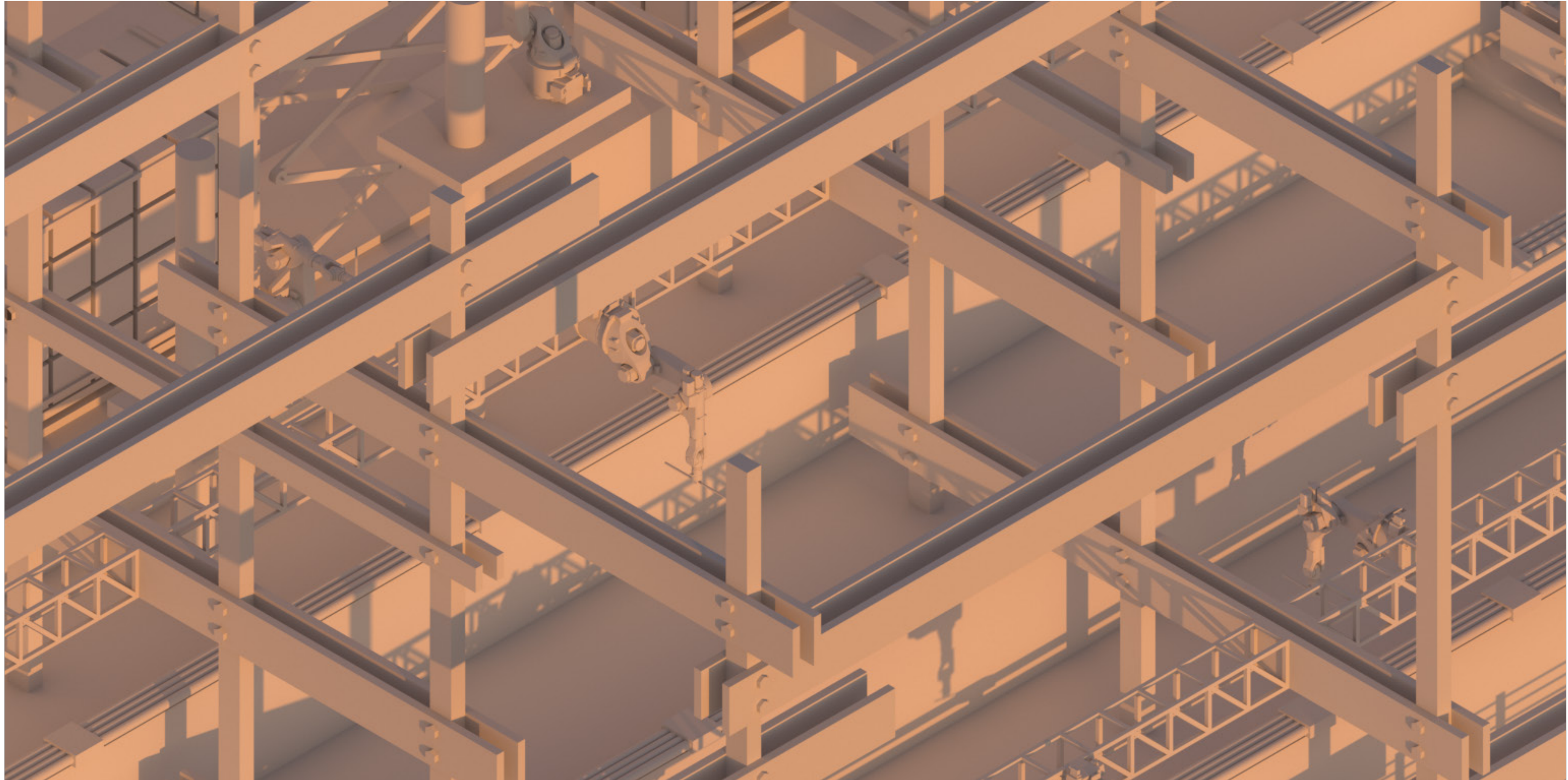
Technological responsiveness

Flexibility in the application and implementation of autonomous harvesting technologies and sensor networks accounts for technological improvements to prevent operational obsolescence.



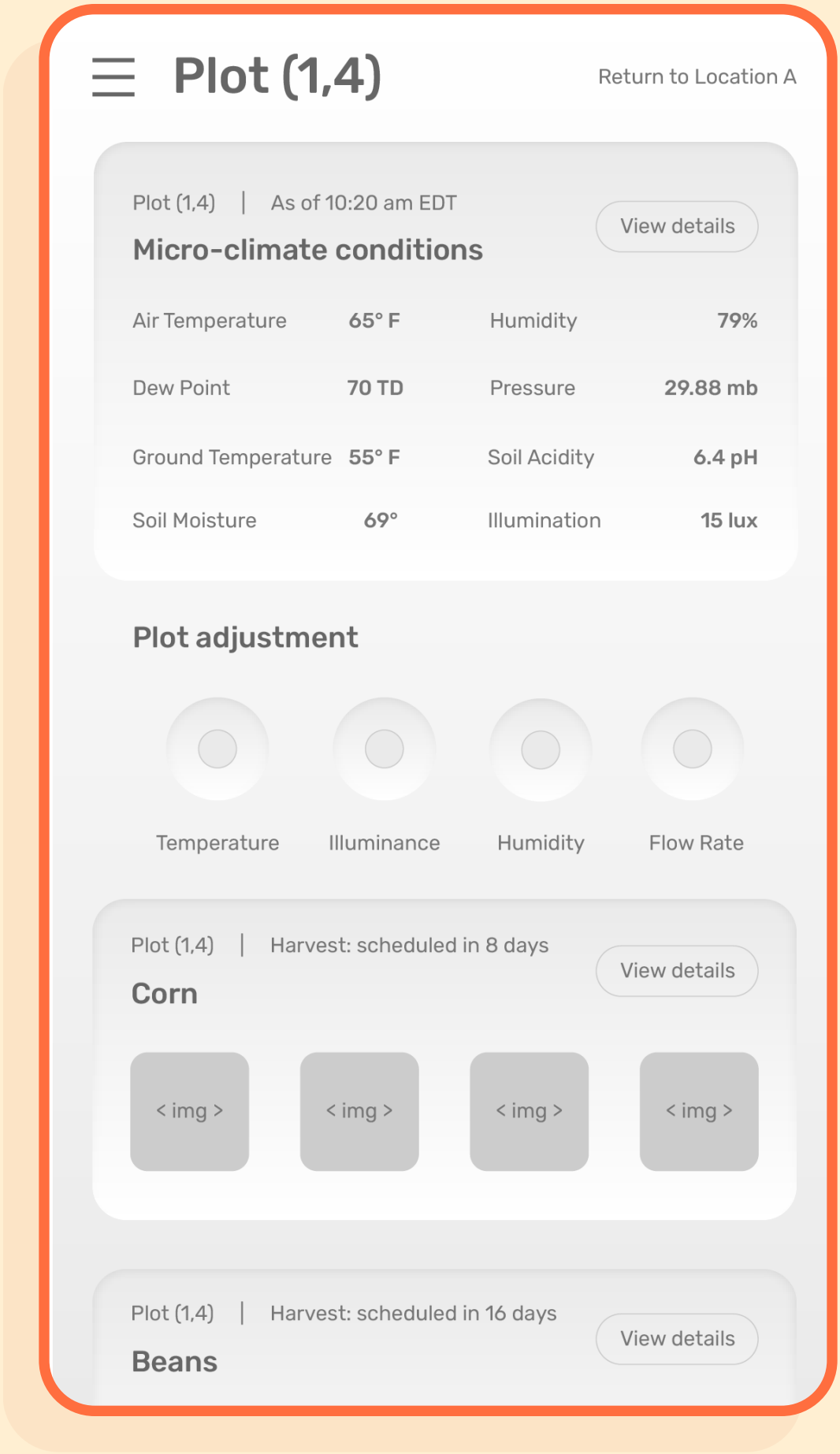
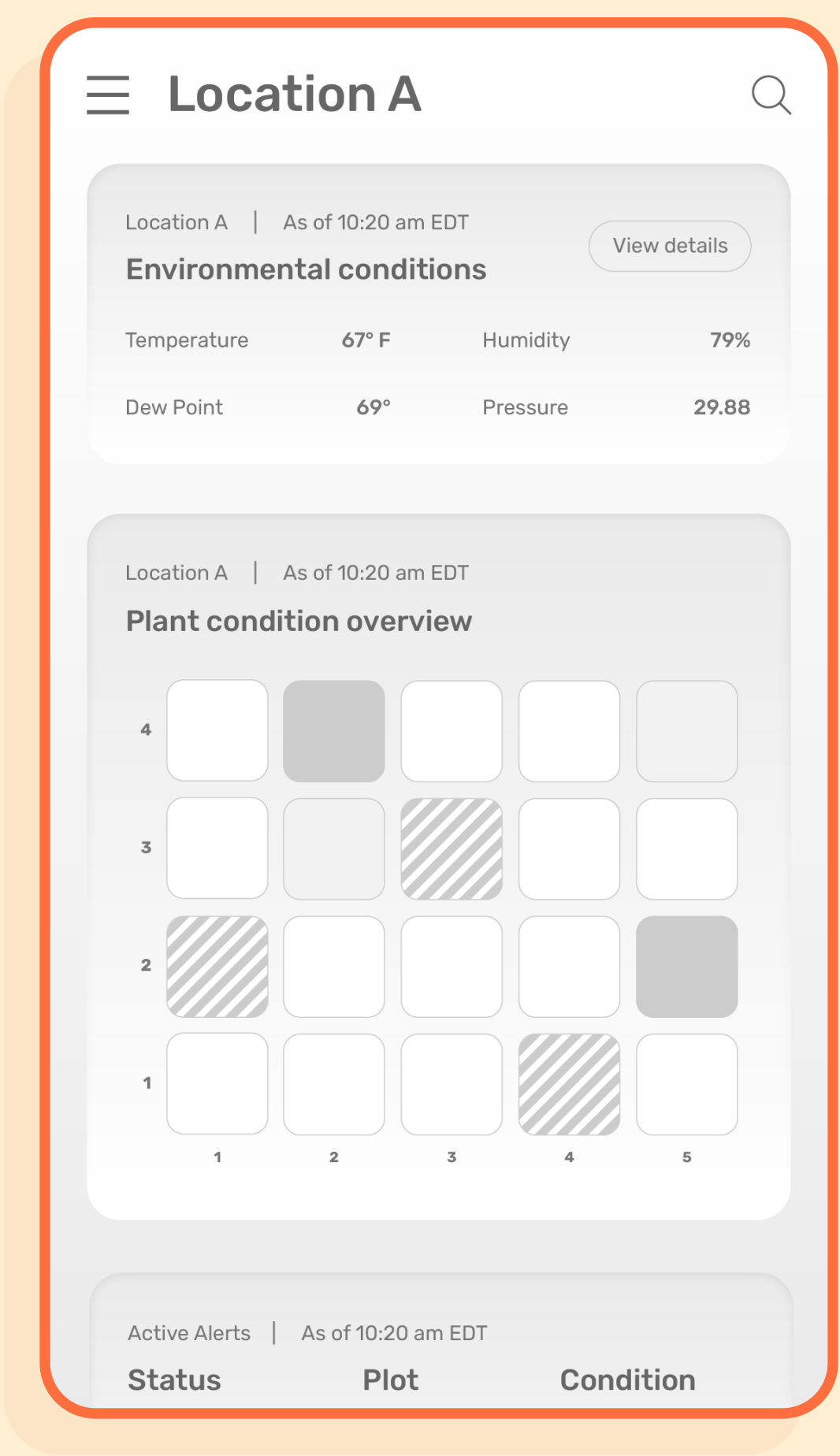


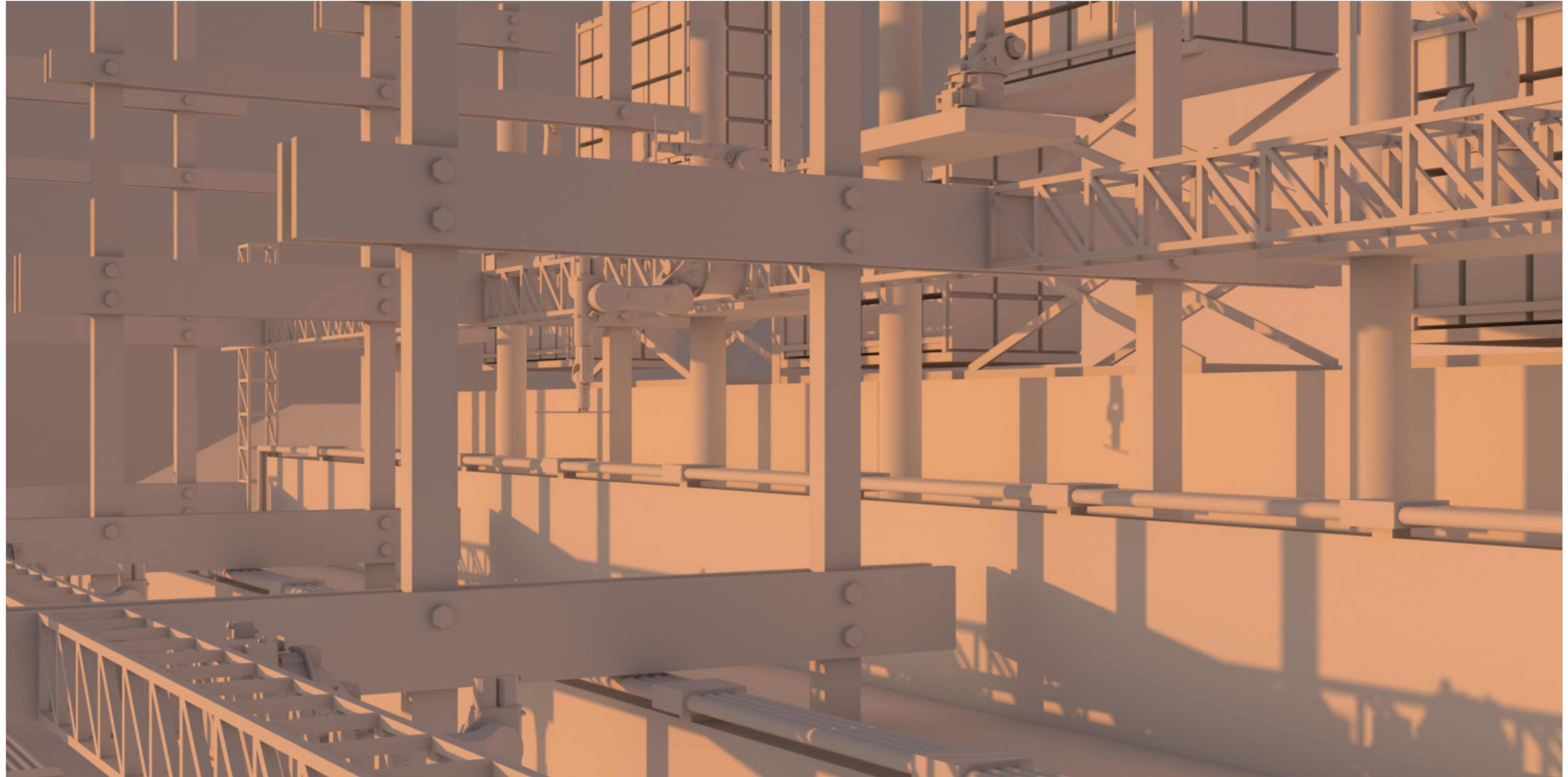
04-09 / Earthen embankment autonomous growing structure section



06-09 / Crop analytics wireframes

Embedded sensors within system elements provide the capability to monitor real-time environment conditions of each pixel plot.





08-09 / Infrastructure status wireframes

Designed for those in system operations working on site or remotely, the platform offers the ability to run system processes and monitor system elements.

