



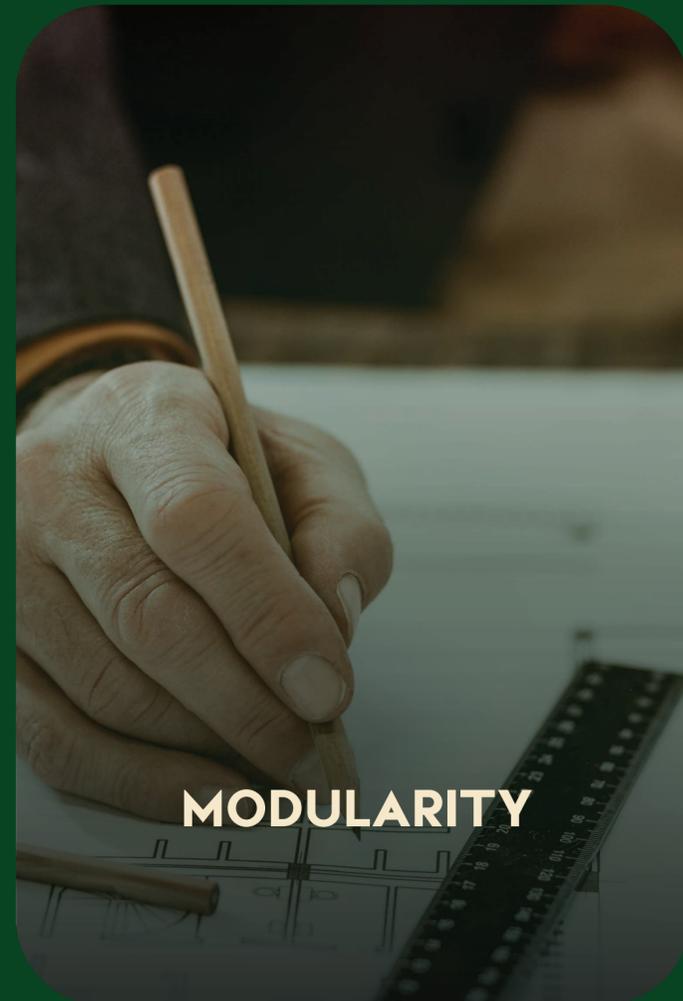
Aquafinity
Aquaponic Solutions

Unlocking a Billion-Dollar
Market for Sustainable Food
Production and a Healthier
Planet.

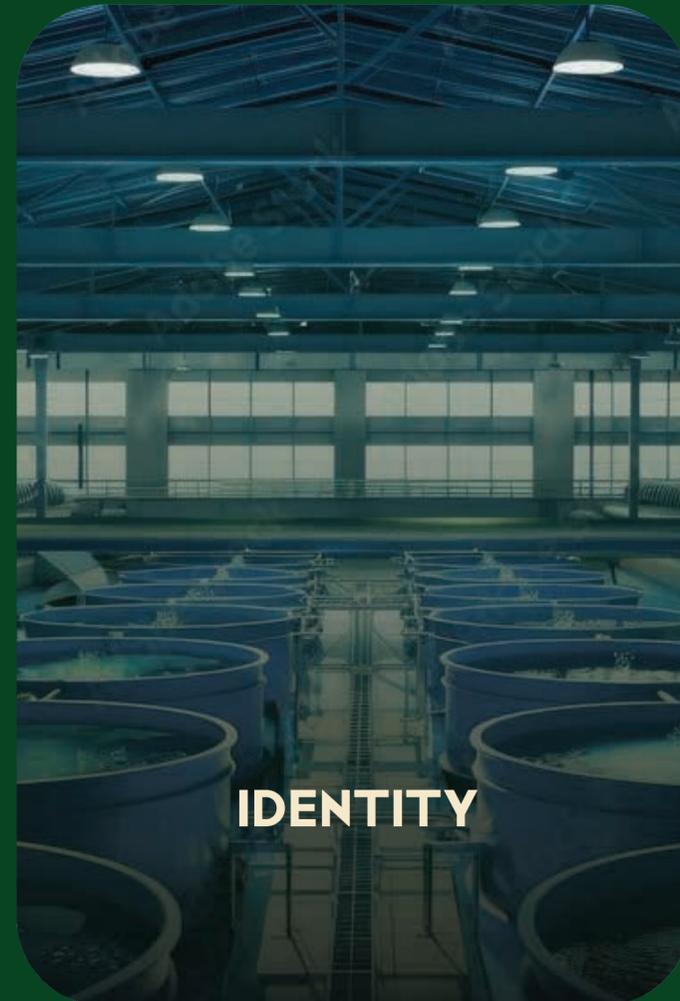


OUR APPROACH

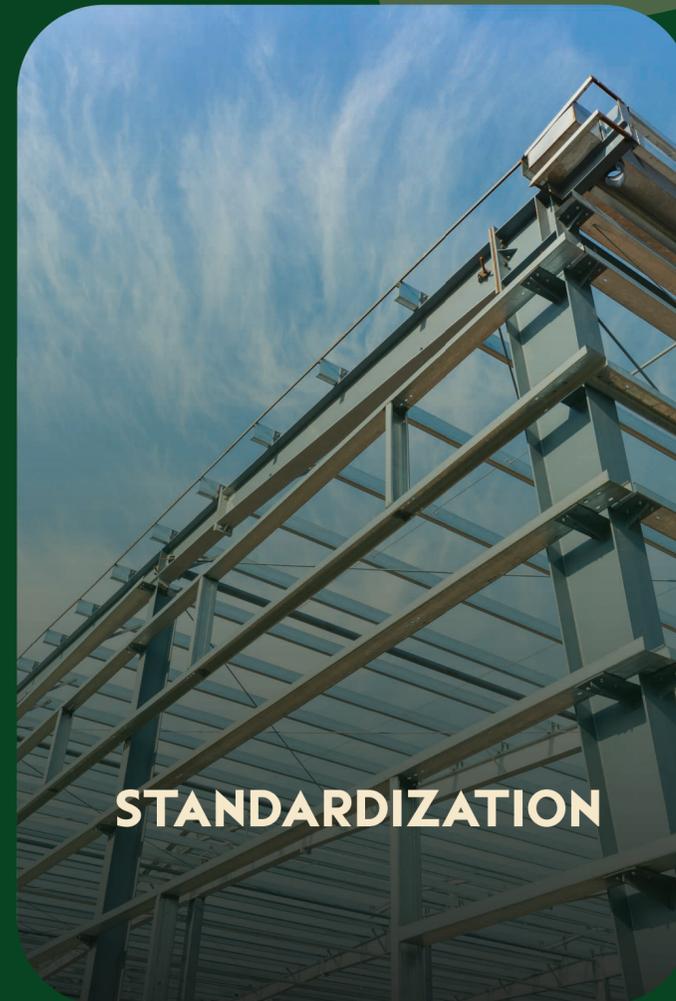
A key advantage and strong selling point of this design is its modularity and flexible configuration. To achieve this, we implemented a standardization approach for the farm: each unit is designed to fit within uniform modules and align with market-standard dimensions. This allows end users to order in batches, significantly reducing costs. Additionally, the design facilitates easy implementation and construction, following a "Lego-style" approach, where components can be quickly assembled with minimal effort.



MODULARITY



IDENTITY



STANDARDIZATION



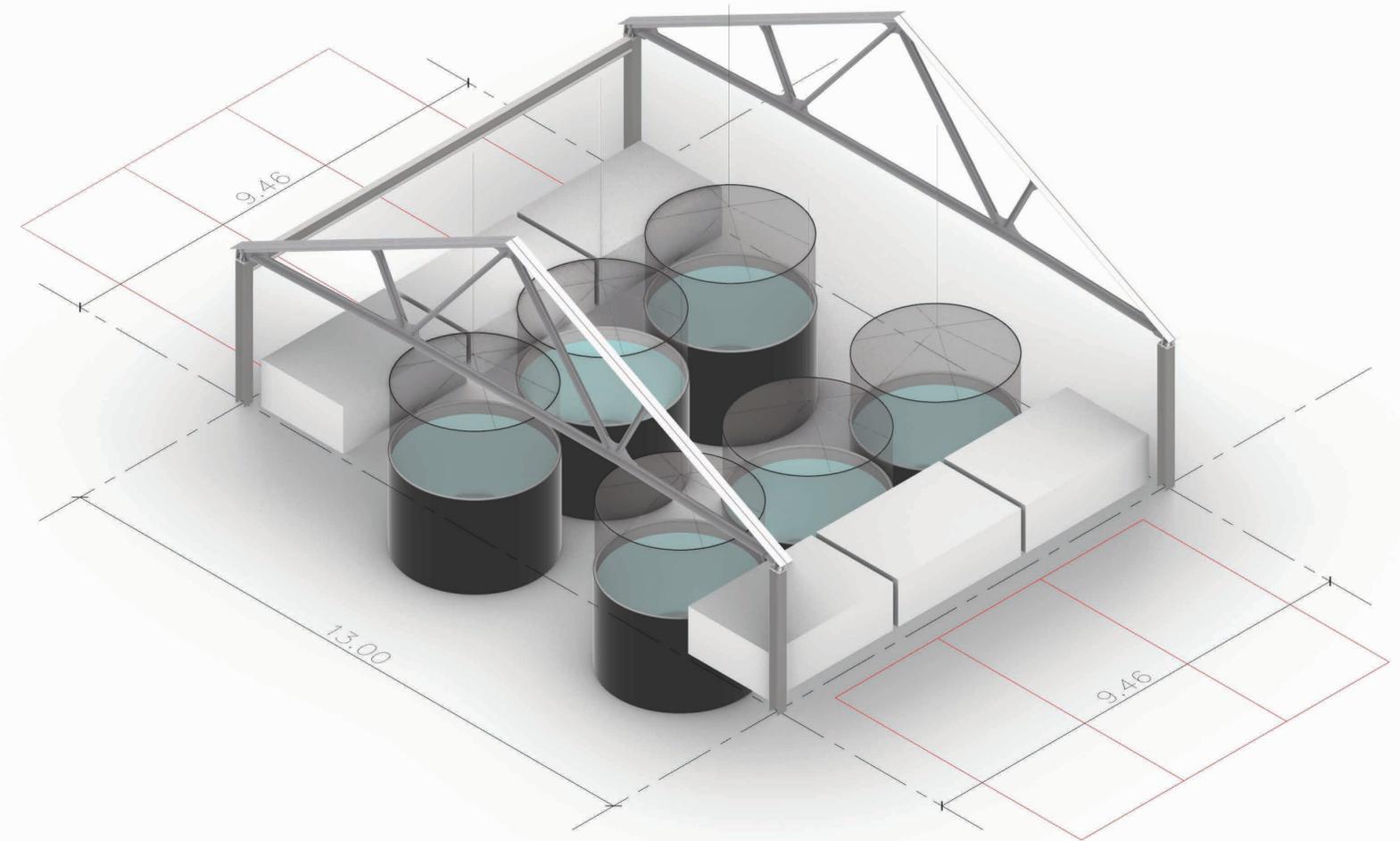
ECONOMY

PROPOSED BAY

The proposed bay measures 13 meters by 9.46 meters, with the height of the pillars at 3 meters, and accommodates three growing tanks with biofilters and pipes. The layout is optimized to fit these tanks while also allowing space for three car parking spots on the side.

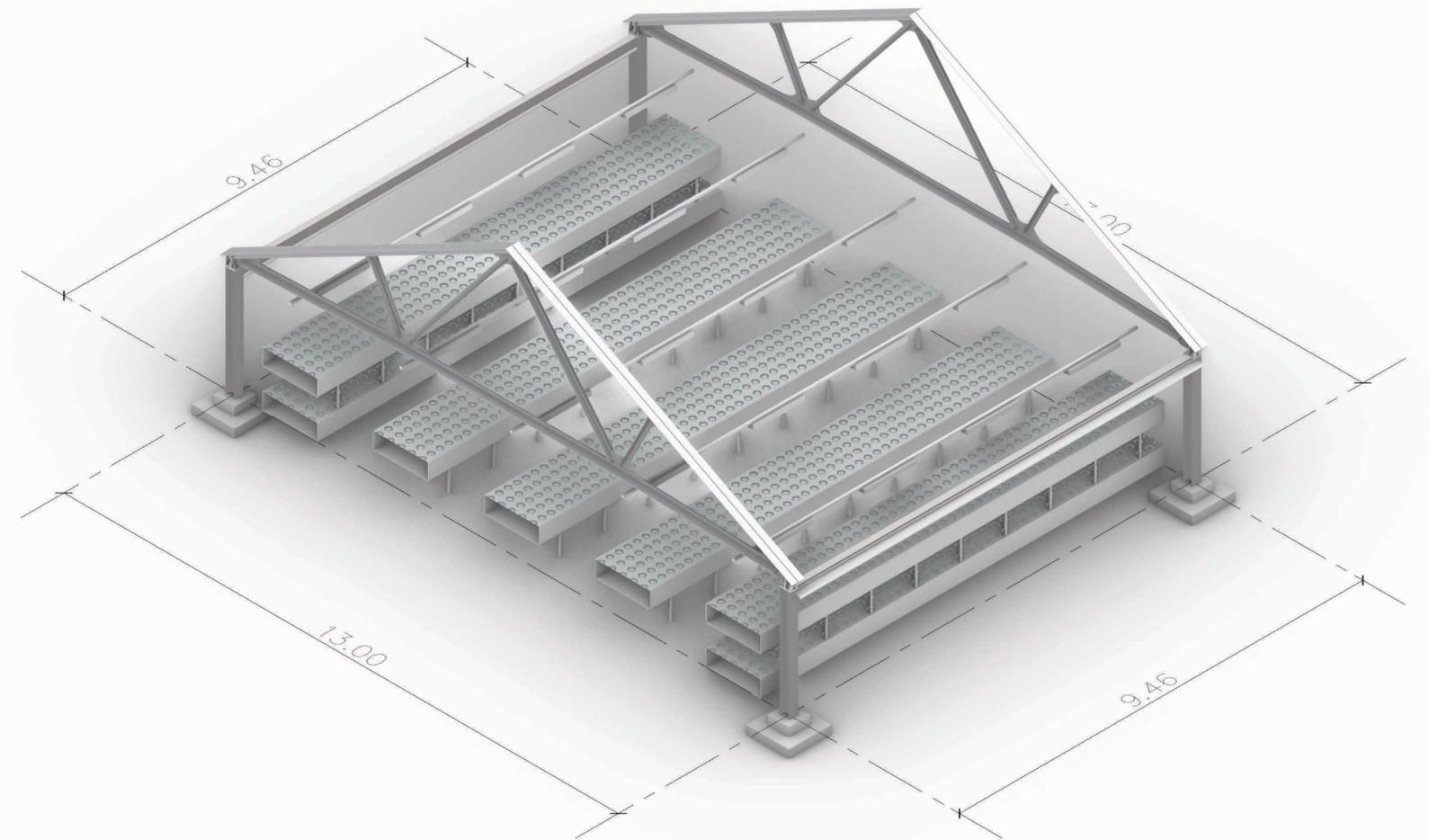
Additionally, the design includes space for up to five trucks in the front, suitable for storage or operational needs such as loading and unloading.

This configuration is versatile and applies equally well to both the vegetable module and administrative areas.



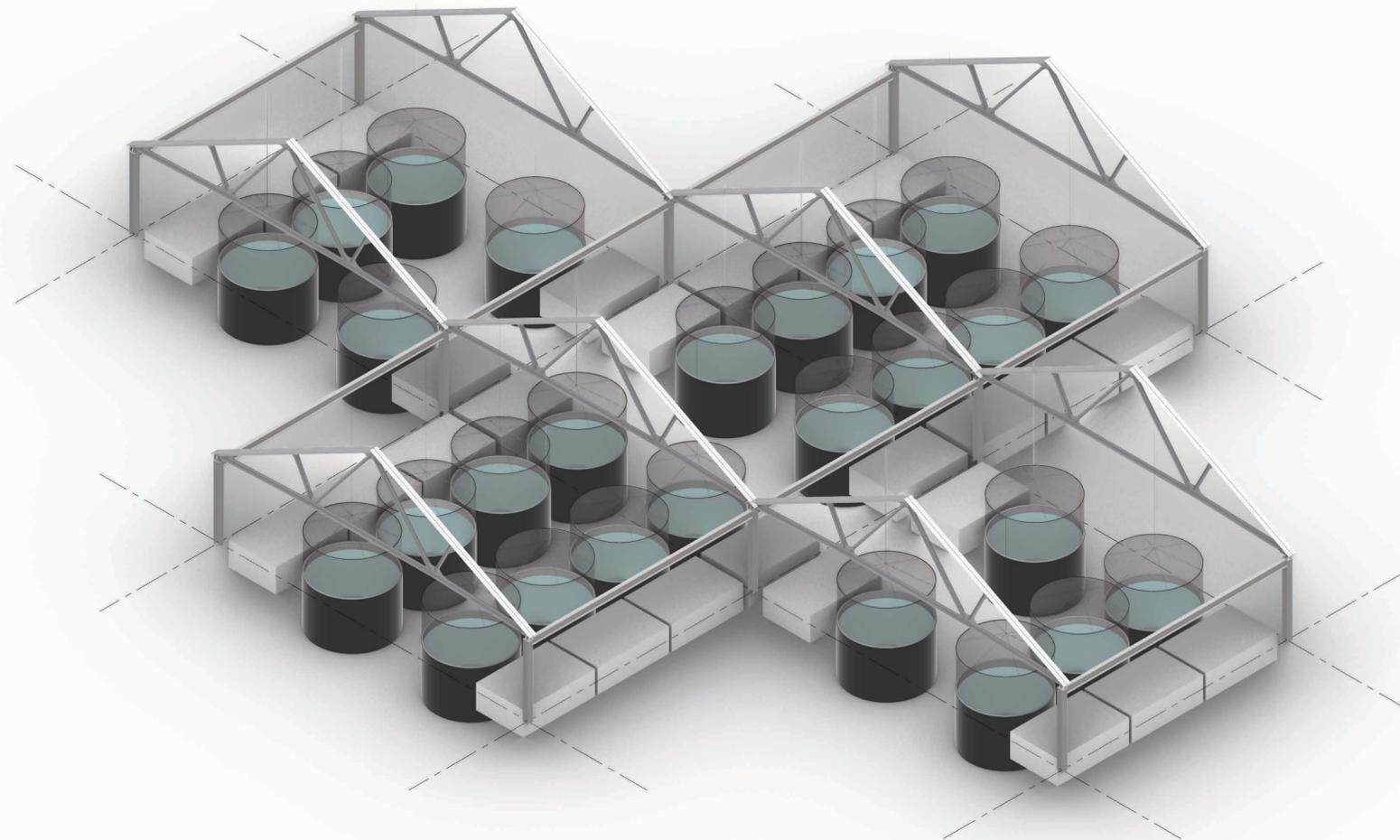
PROPOSED BAY

The proposed bay measures 13 meters by 9.46 meters, is also perfectly accommodating a linear grid divided into 1.3-meter intervals, ideal for vegetable units.



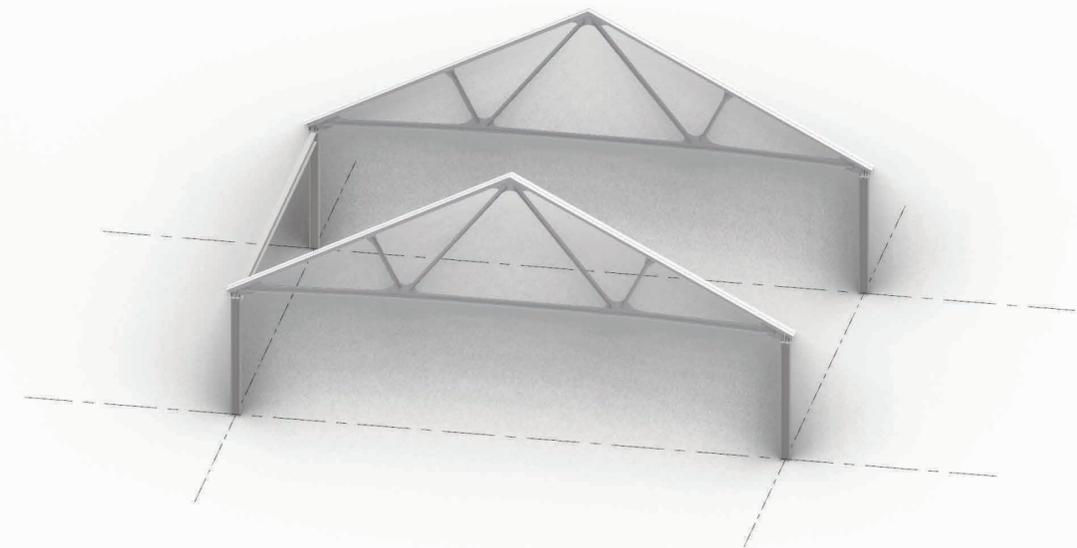
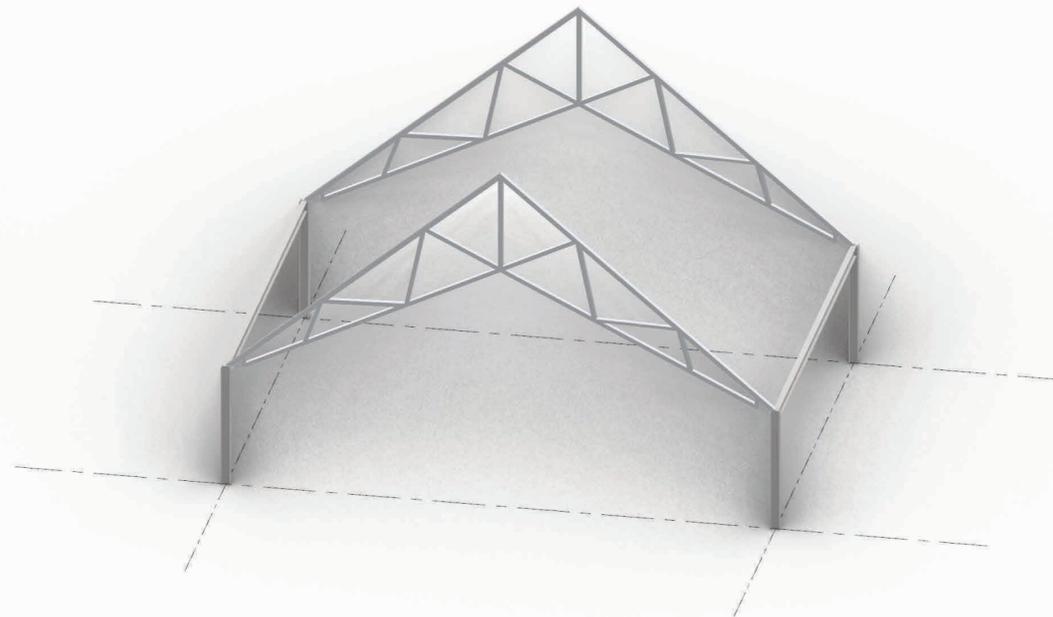
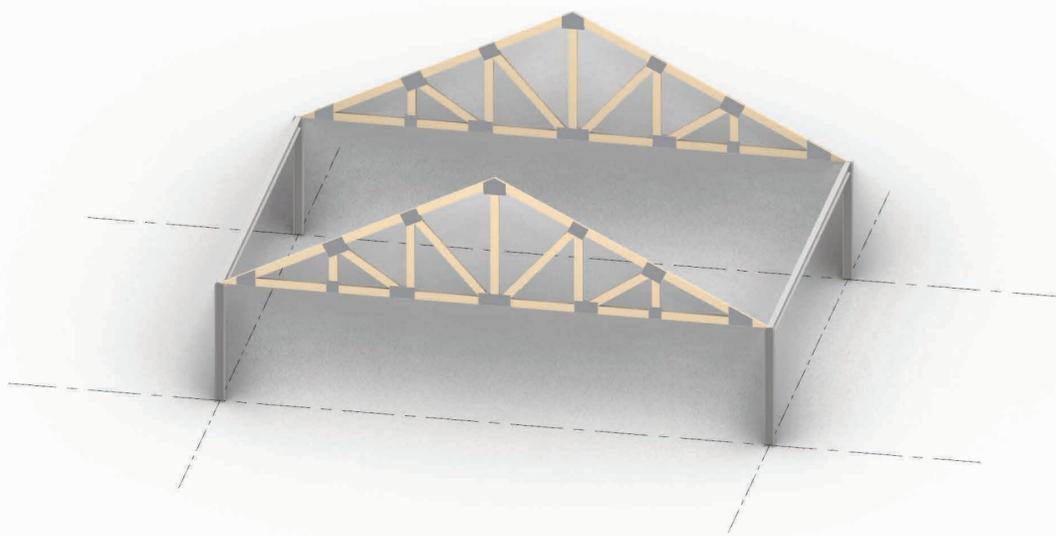
SCALABILITY

The modular design allows for easy scalability in all directions. By adding more modules to the sides or the front, the system can be expanded to accommodate increasing needs. This flexibility ensures that as the project grows, additional modules can be seamlessly integrated, maintaining efficiency and functionality while maximizing available space.



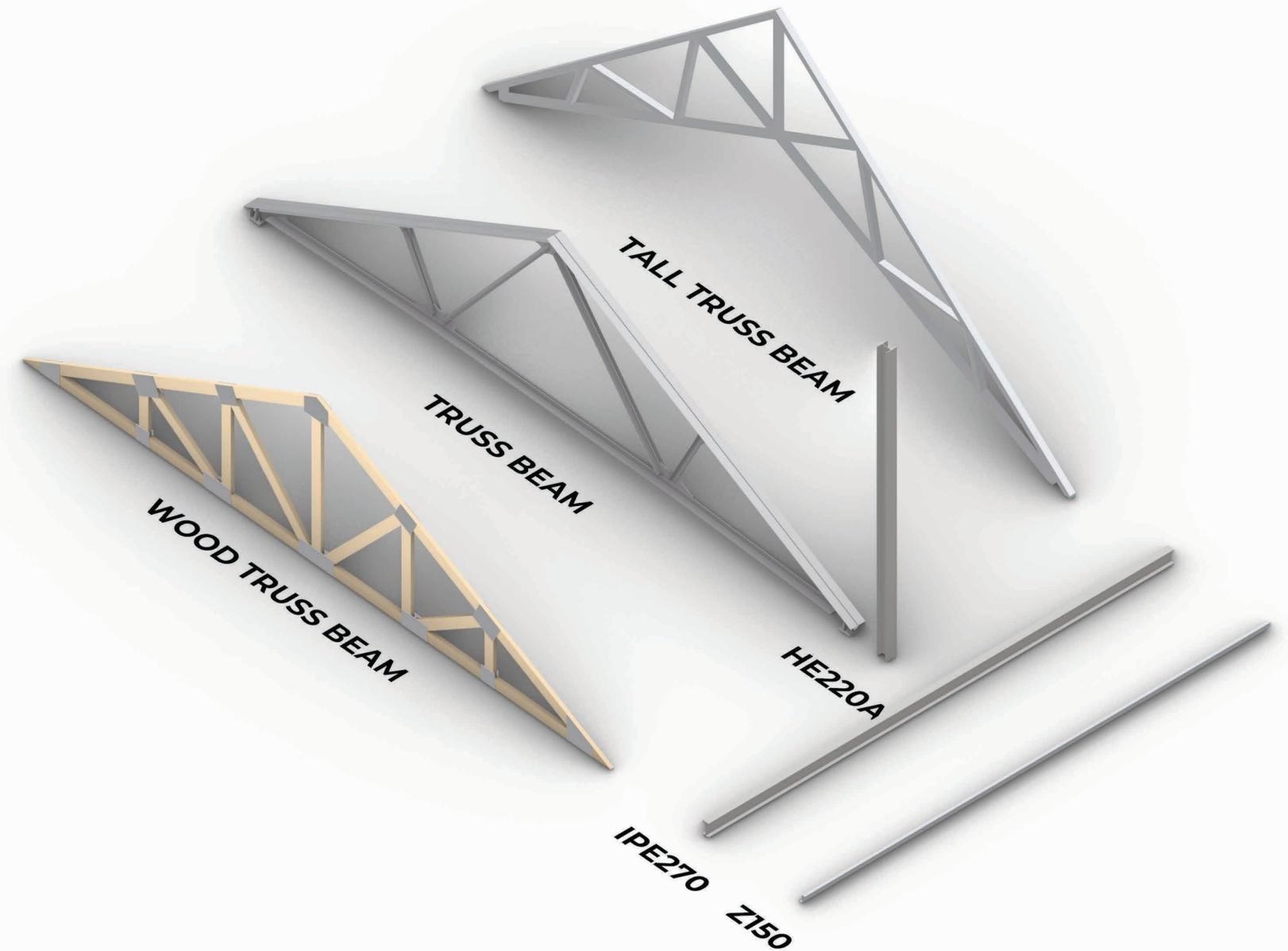
IDENTITY

The truss beam comes in three options, each catering to different needs and environmental conditions. One option is made from wood, offering a natural, sustainable aesthetic. The two steel variants provide greater strength and durability, with one being taller and more rigid, making it especially suited for regions with heavy snow or colder climates due to its enhanced ability to handle additional load and stress. These different options allow for adaptability in both design and performance, ensuring the structure can be tailored to its specific location while maintaining functionality and visual identity.



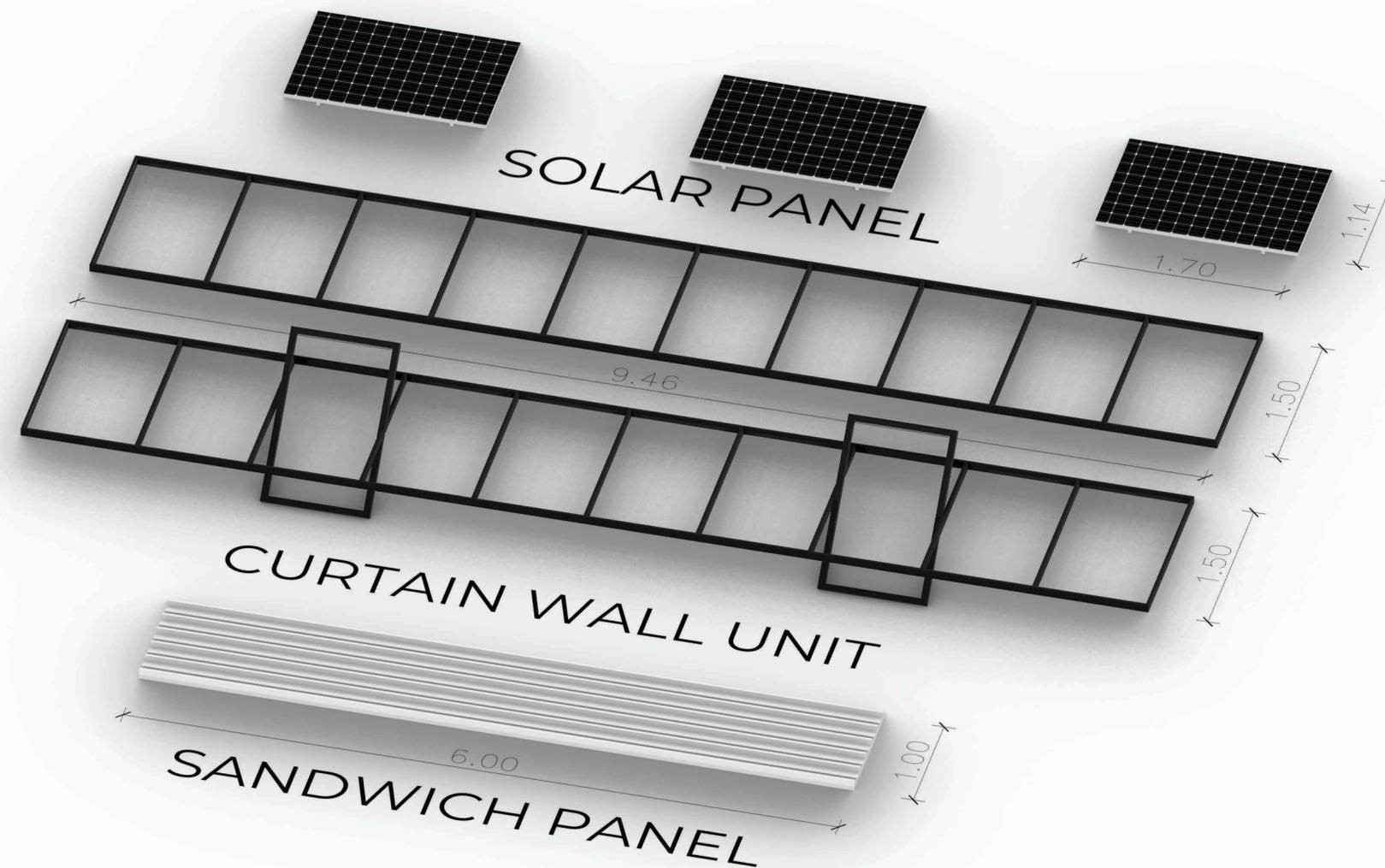
STANDARDS

The structure follows a standardized design to ensure efficiency and ease of construction. Each bay consists of four columns, supported by two spaced trusses and two steel beams for added strength and stability. The entire structure is then covered with Z-beams, providing a secure and durable finish. This approach simplifies the assembly process while maintaining the necessary support and structural integrity, making it adaptable to various configurations and locations.



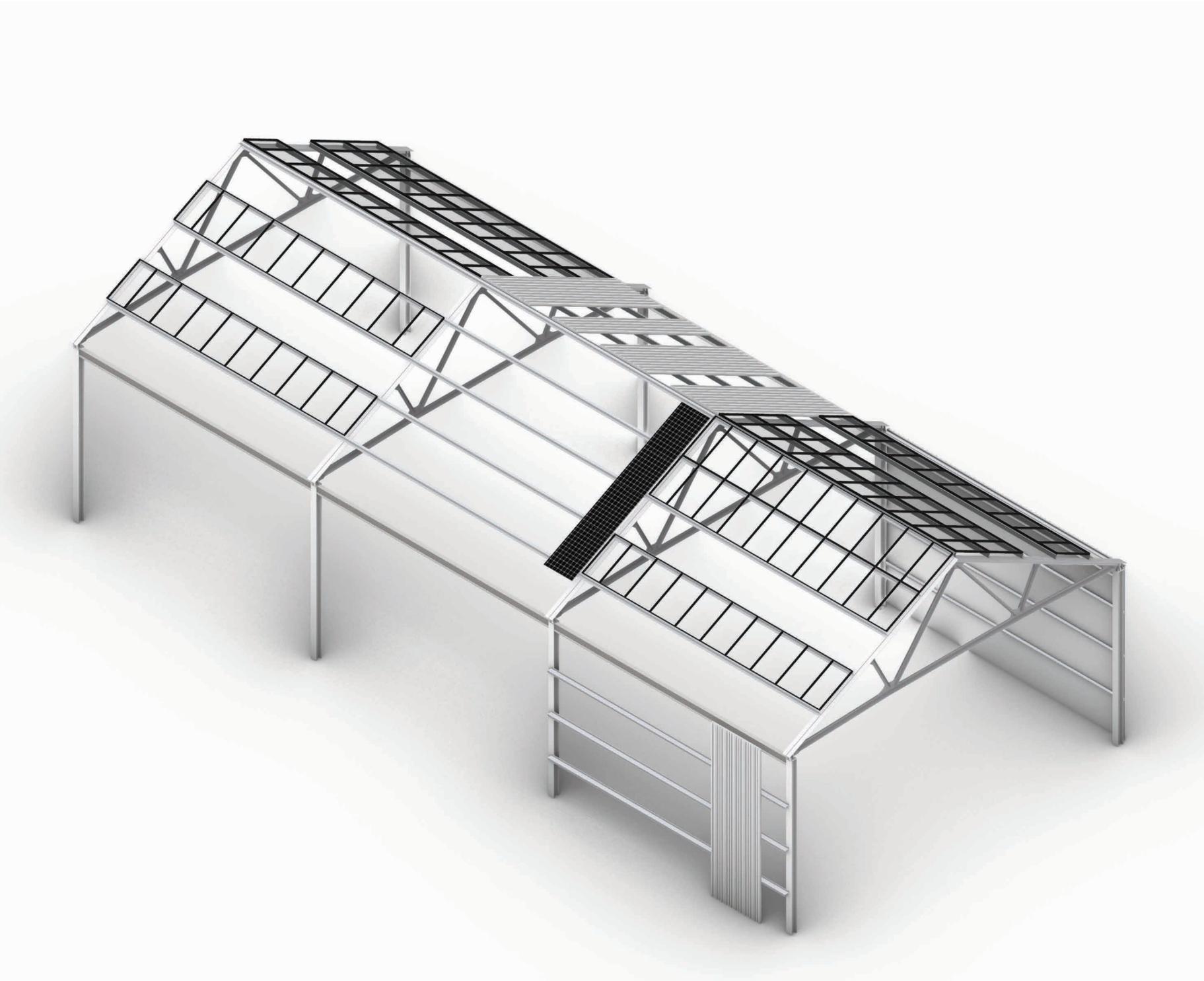
STANDARDS

The cover units are designed with a standardized approach for simplicity and versatility. The structure includes a sandwich panel for thermal insulation and durability, a curtain wall module for seamless integration and aesthetic appeal, and a solar panel for energy efficiency. This combination ensures that the units are not only functional and weather-resistant but also adaptable to different environments and energy needs, offering a sustainable and efficient solution for various applications.



MODULARITY

The design ensures easy assembly with a Lego-like construction approach. The modular components fit together seamlessly, simplifying the process and reducing construction time.



FISH FARM

The world is running out of water, land, and time. With food demand set to increase by 70%, what's our next move?



FIXTURES

16 Growing Tanks with Biofilters

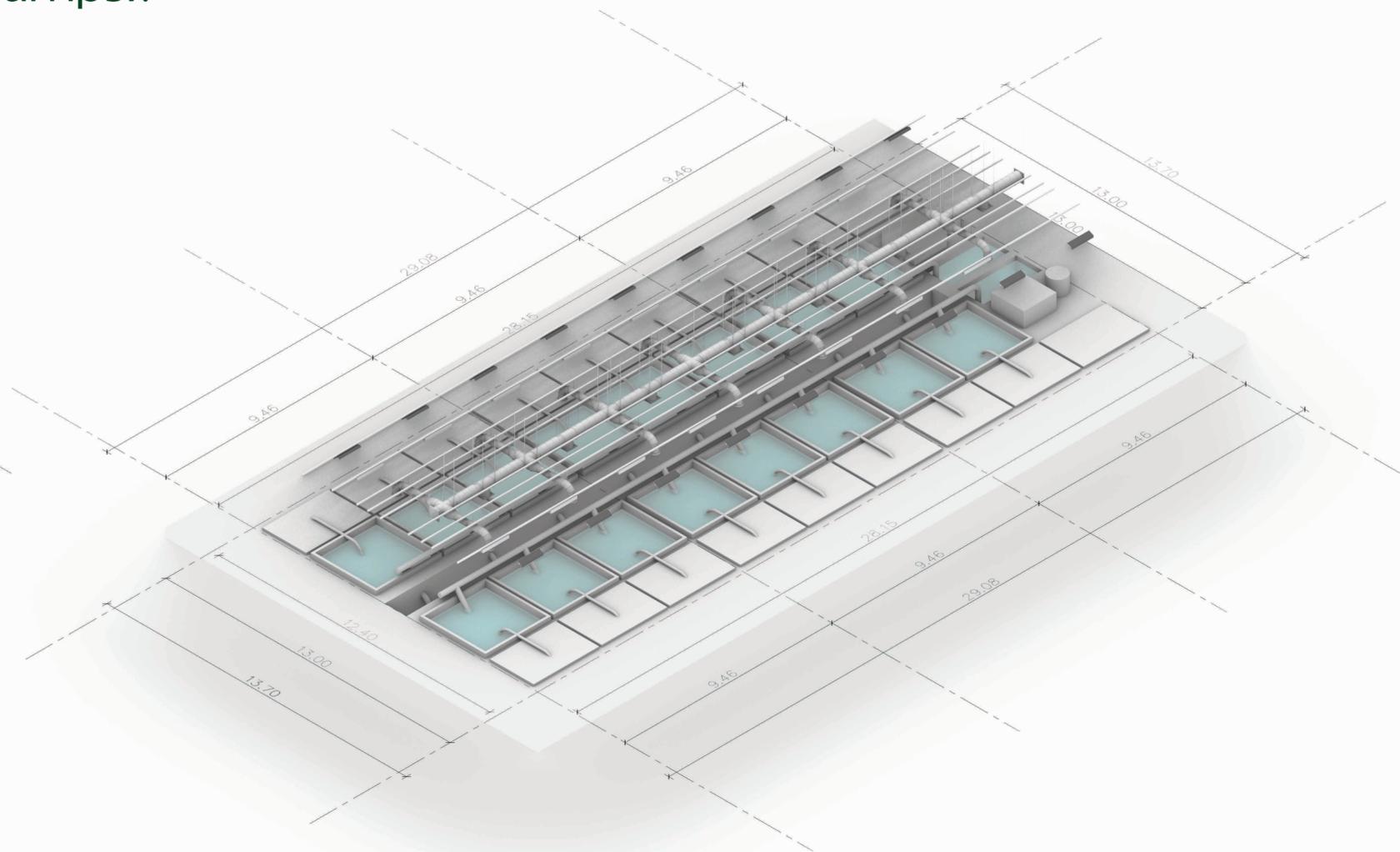
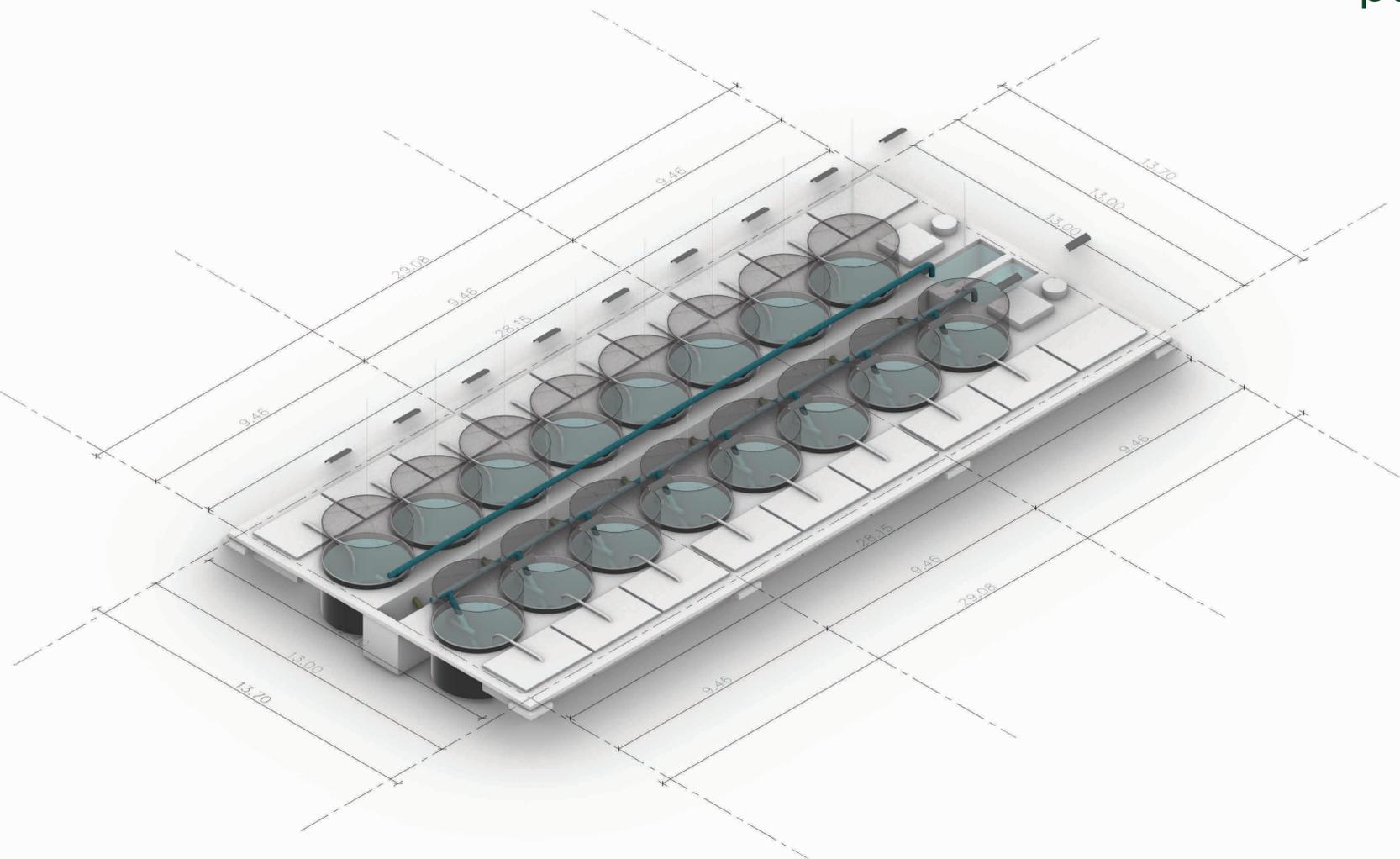
2 Sump Tanks

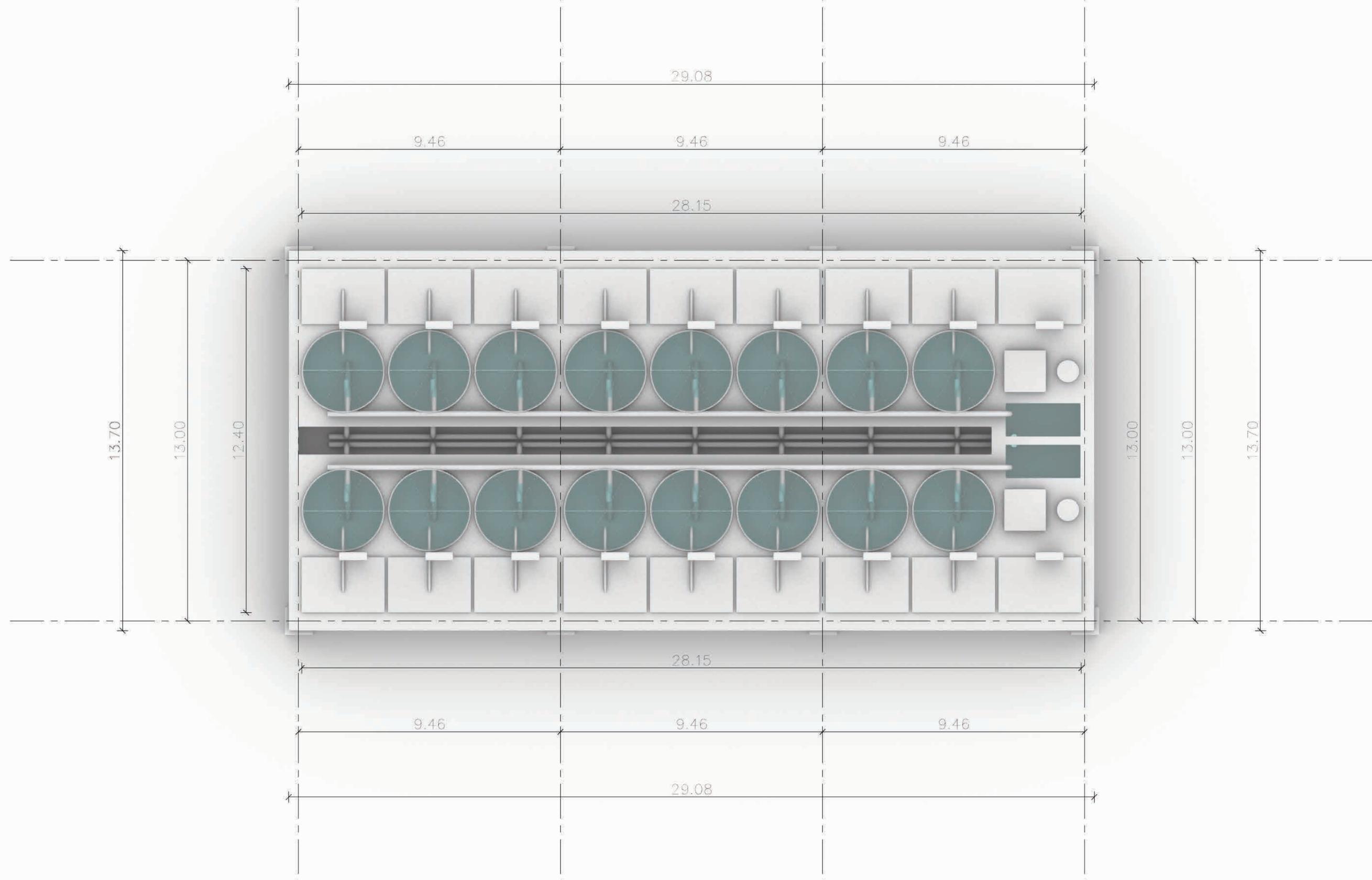
2 Pumps

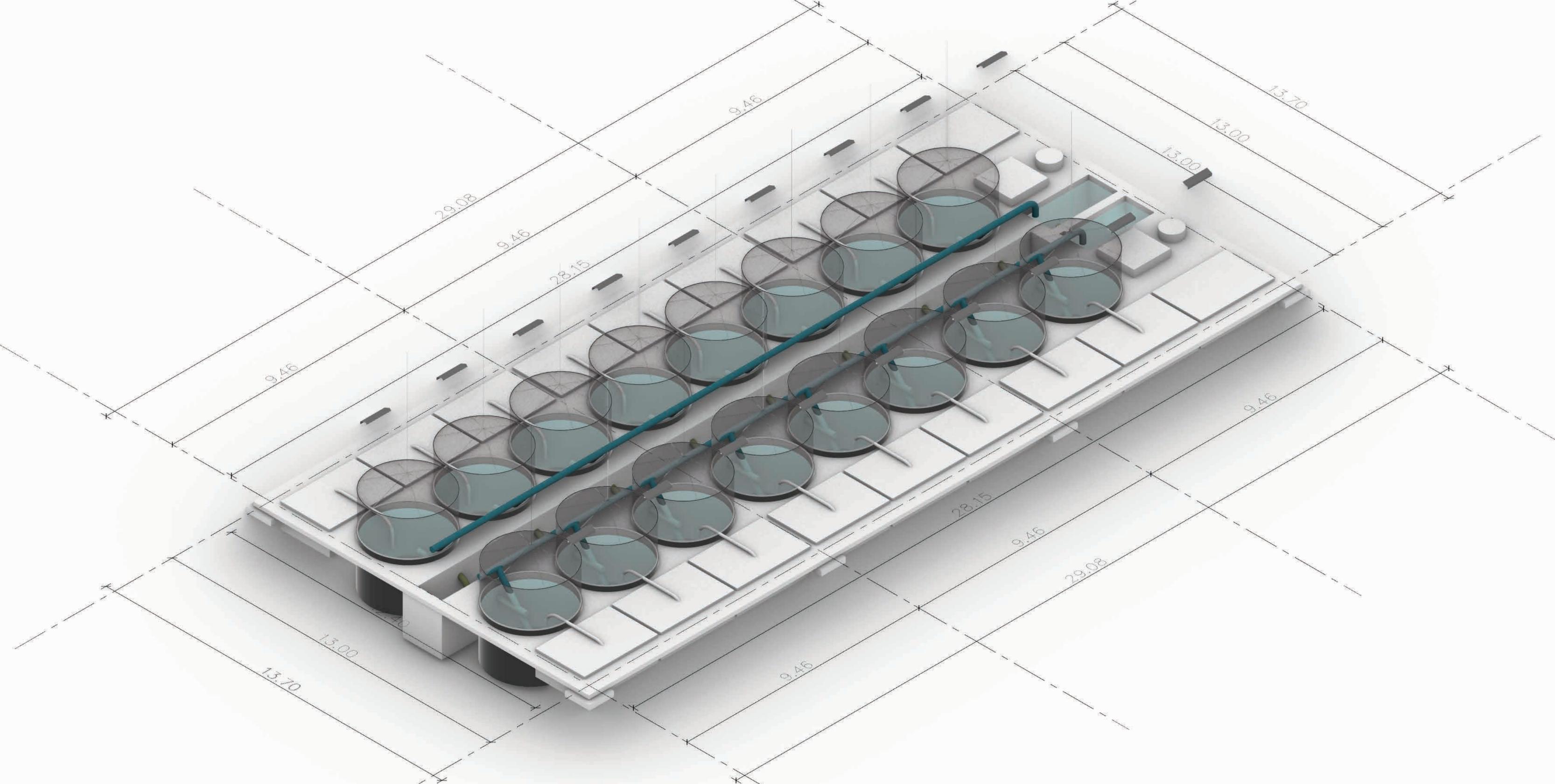
2 Mechanical filters

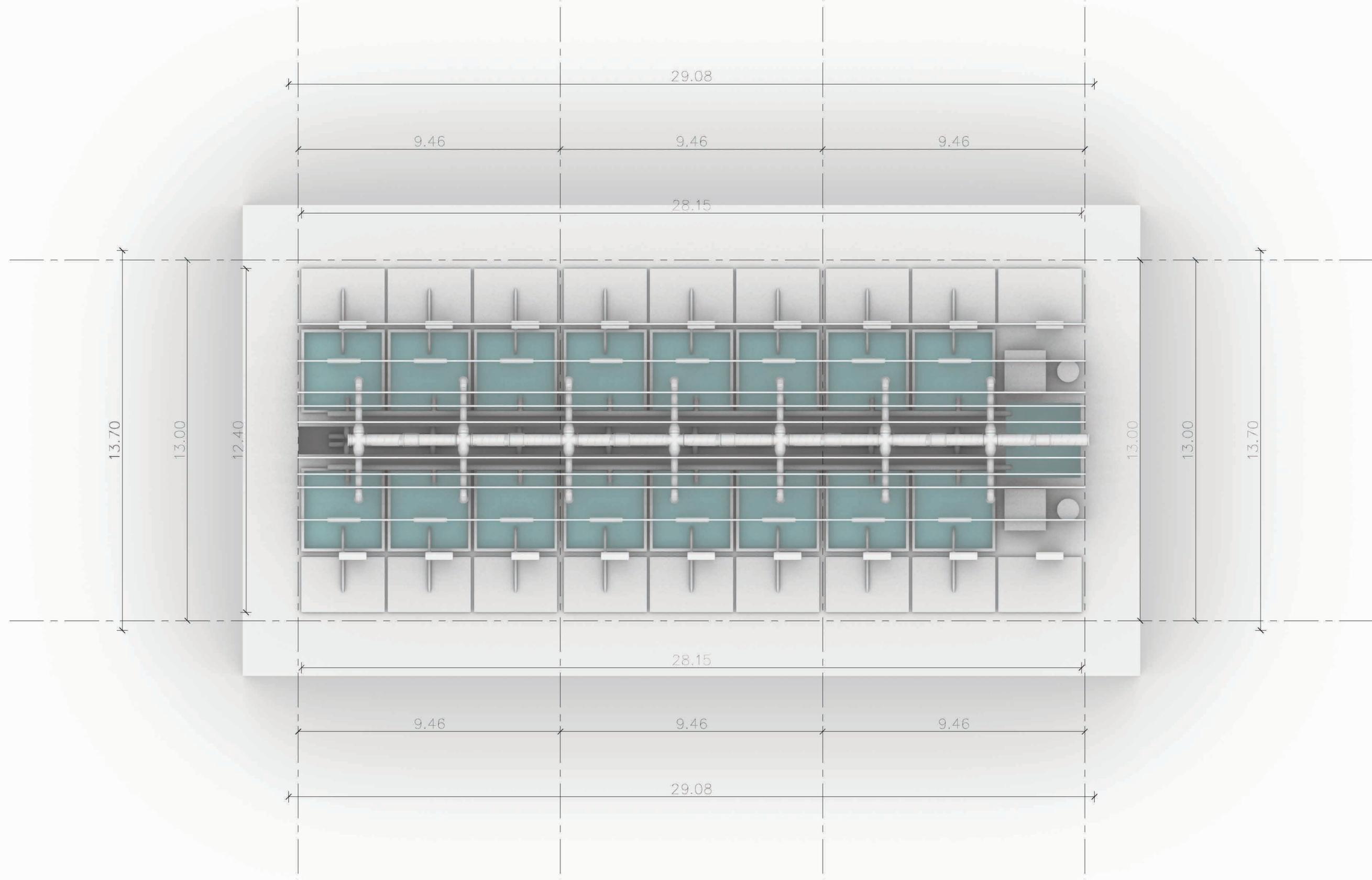
Pressure Pipes (Arteries): Diameter of 10 cm (from pumps to tanks).

Return Pipes (Veins): Diameter of 16 cm (from tanks to pumps).







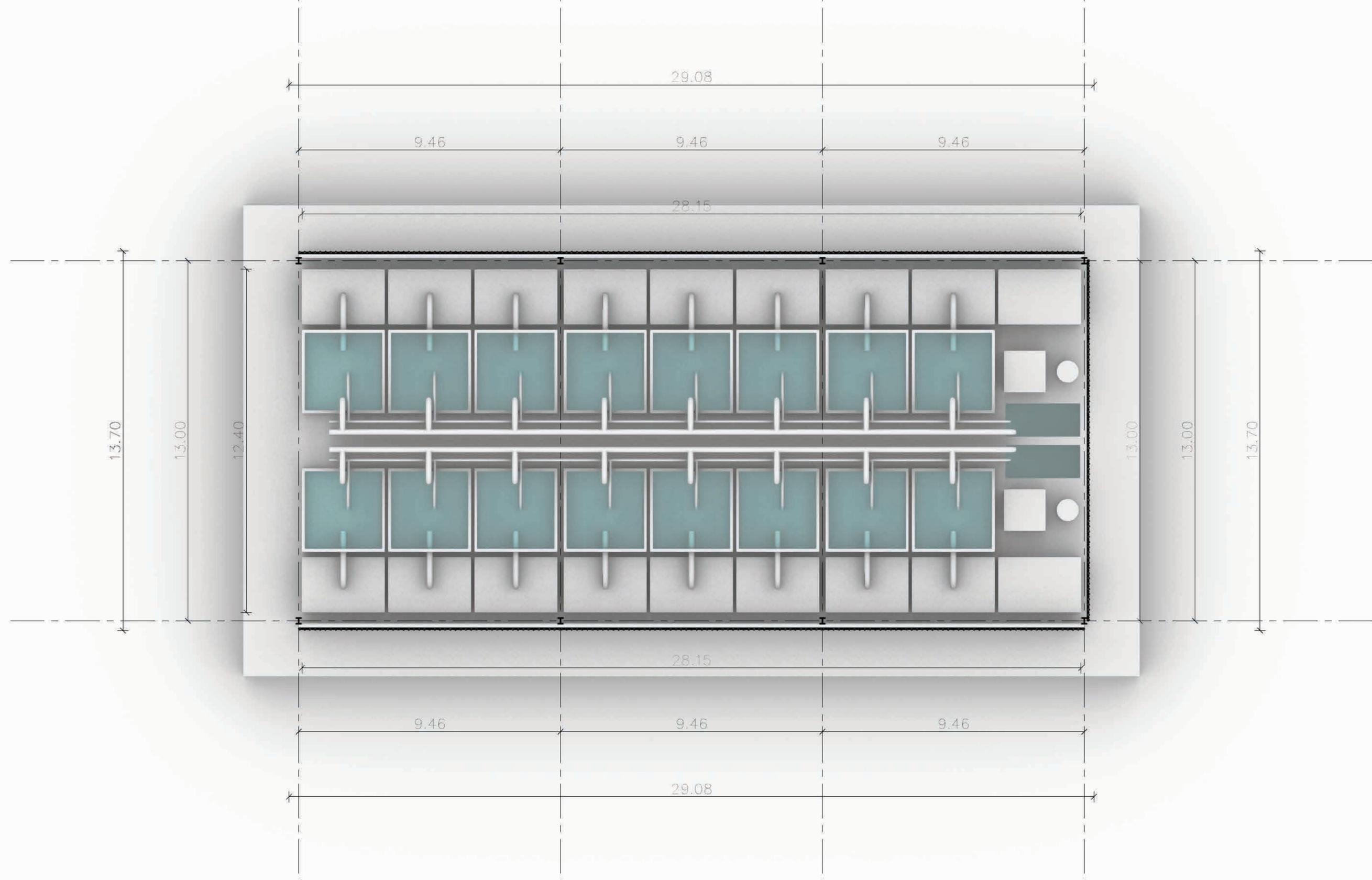


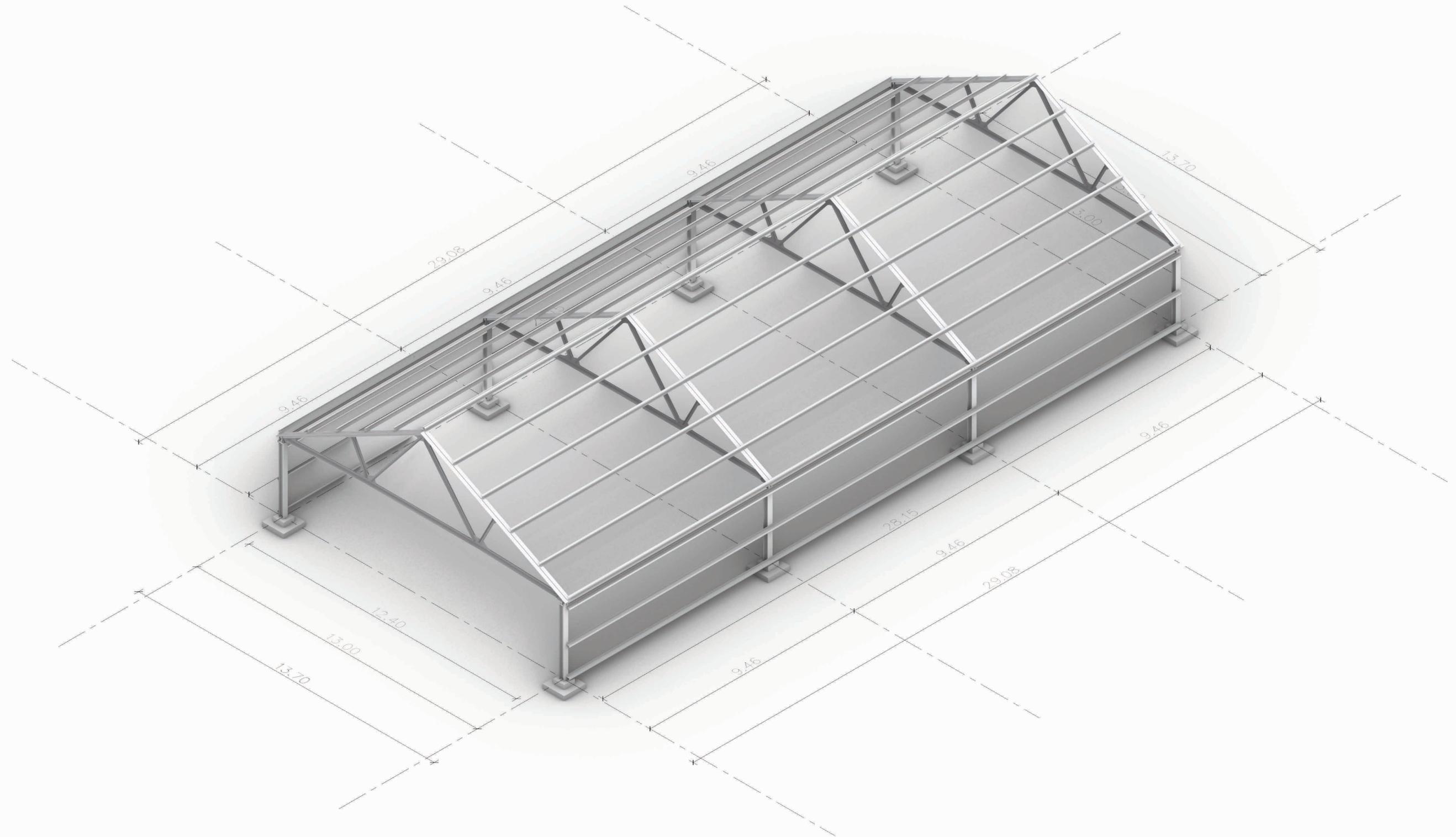
PROJECT

Our project offers a flexible, scalable, and efficient solution with modular design, easy assembly, and sustainable features, tailored to meet evolving needs and diverse environments.



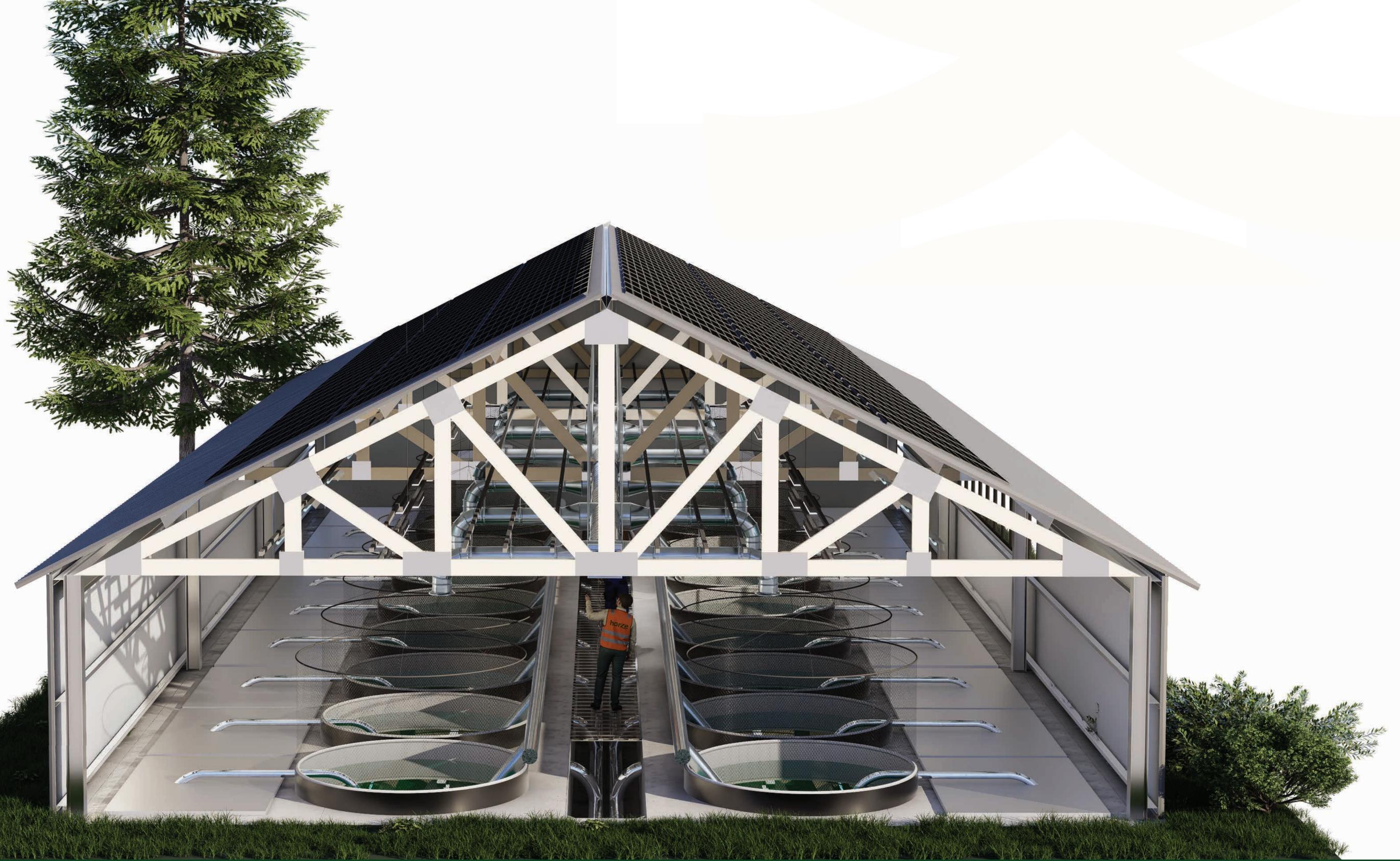
















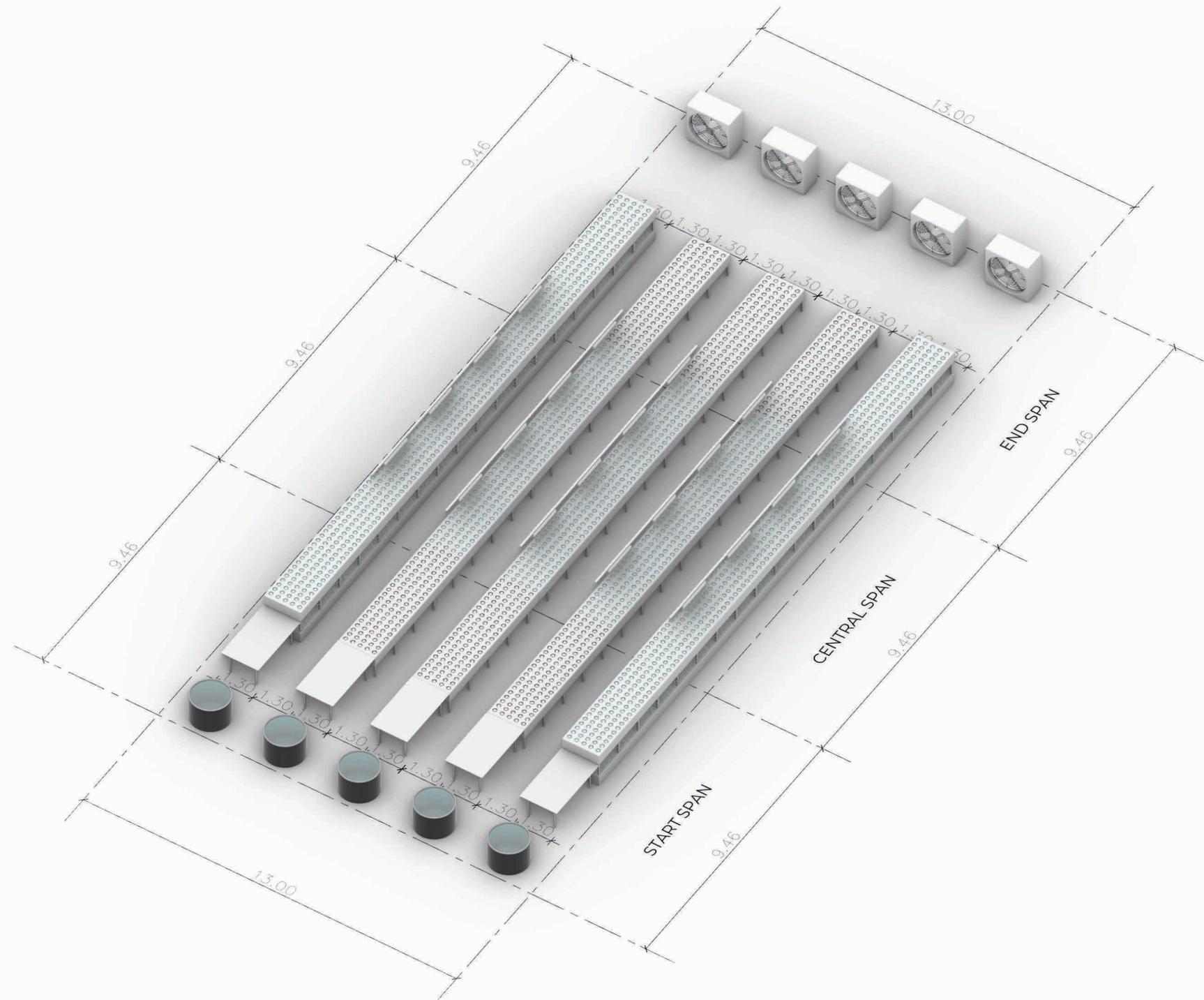
PLANT FARM

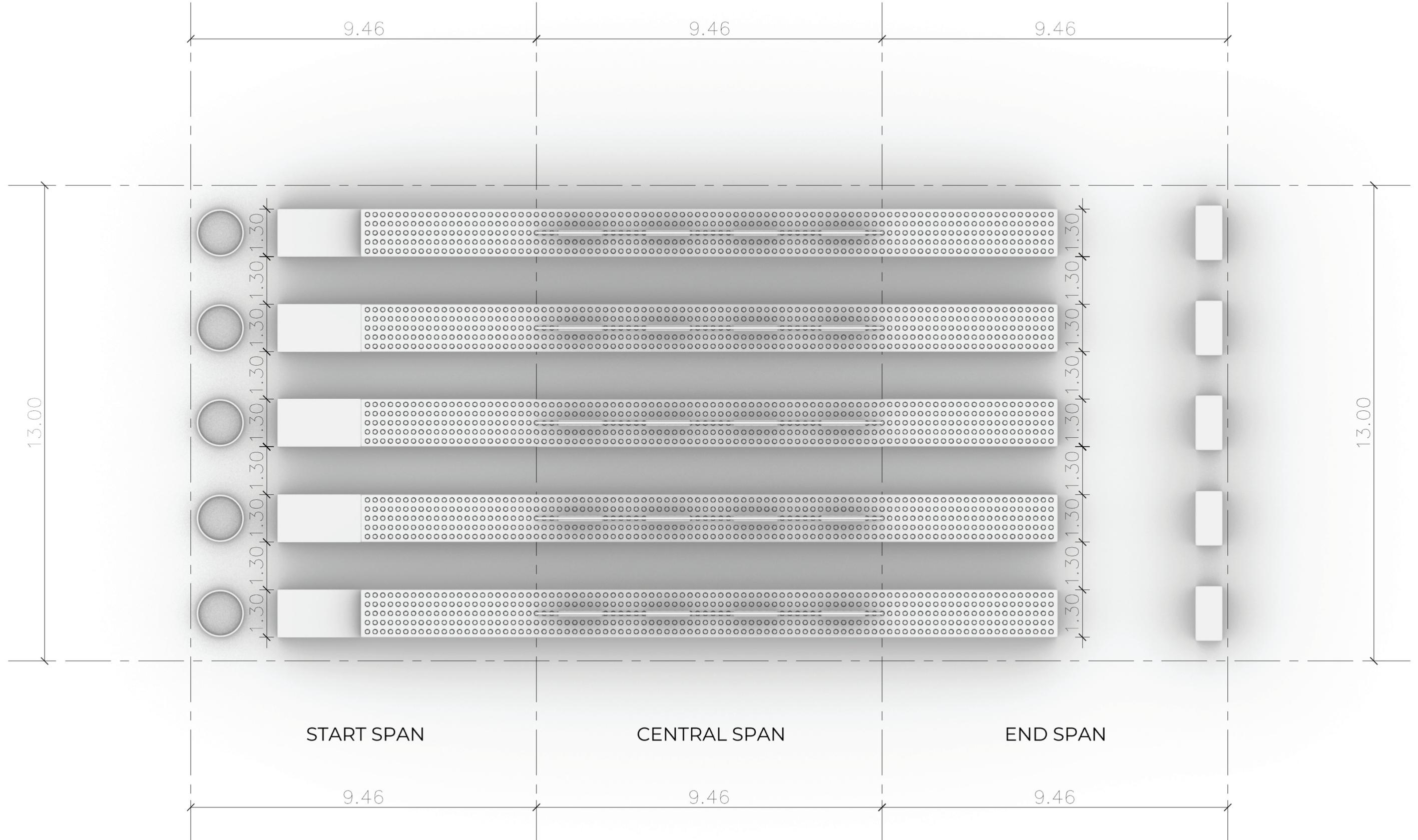
The world is running out of water, land, and time. With food demand set to increase by 70%, what's our next move?

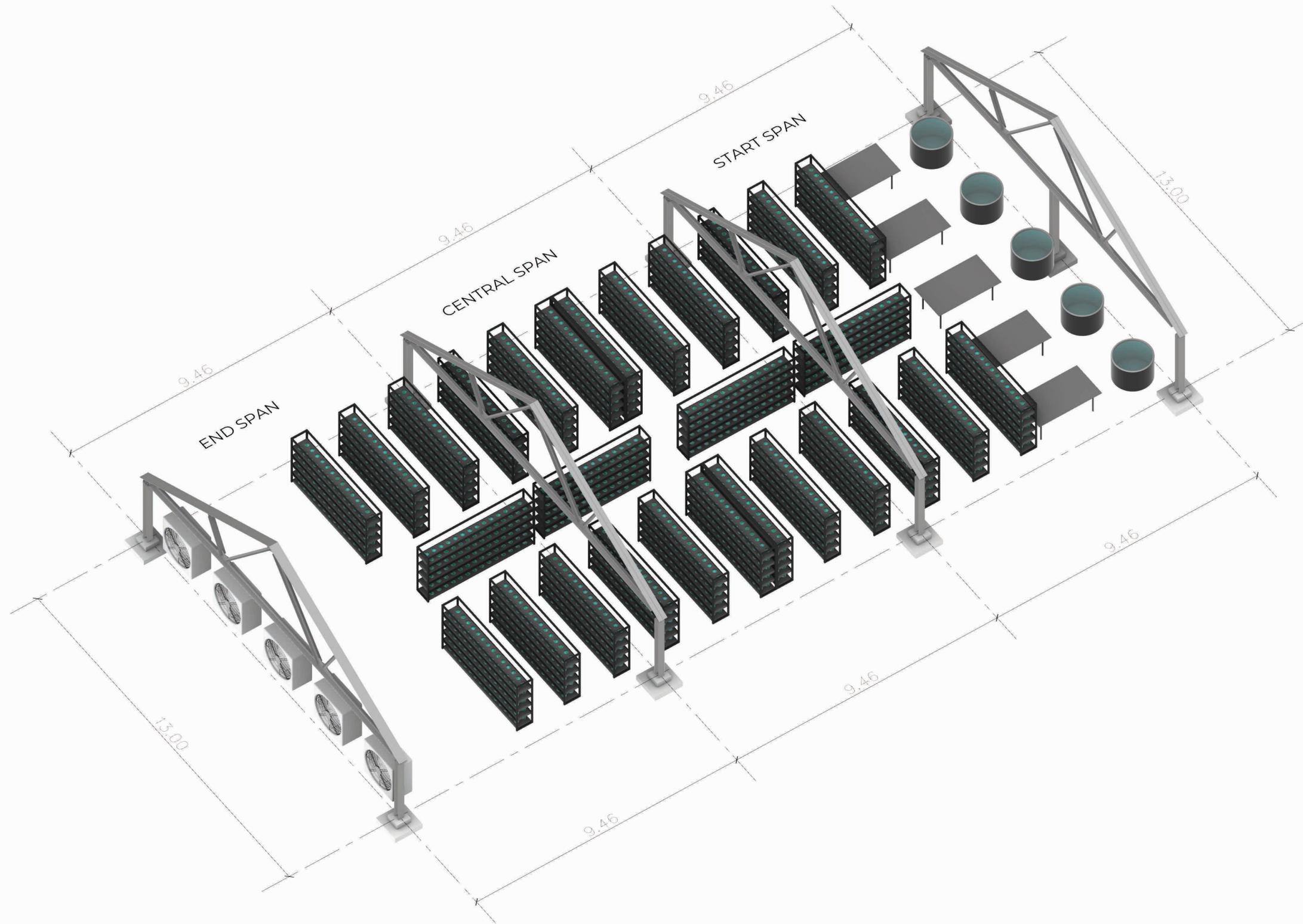


FIXTURES

To determinate the fixtures across the entire surface of 8,000 square meters, we will start by examining how the modules are configured along the spans. Thus, we have the starting module, which contains 5 tables, 5 tanks, and 5 customizable testing tank modules. The central span includes only the containers for the 5 plant-growing tanks. Finally, the end module contains the termination of the 5 plant-growing tanks and an additional 5 industrial

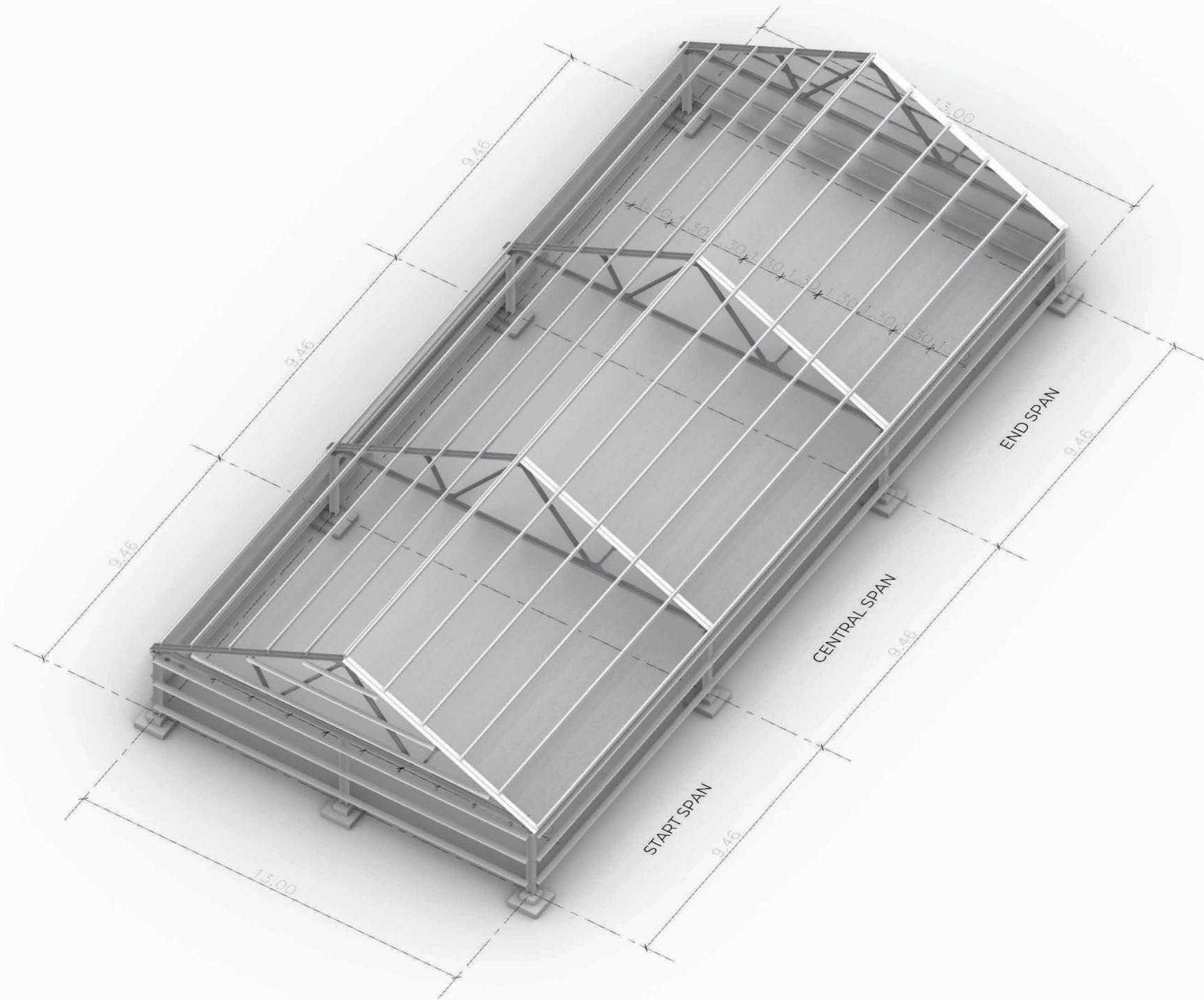


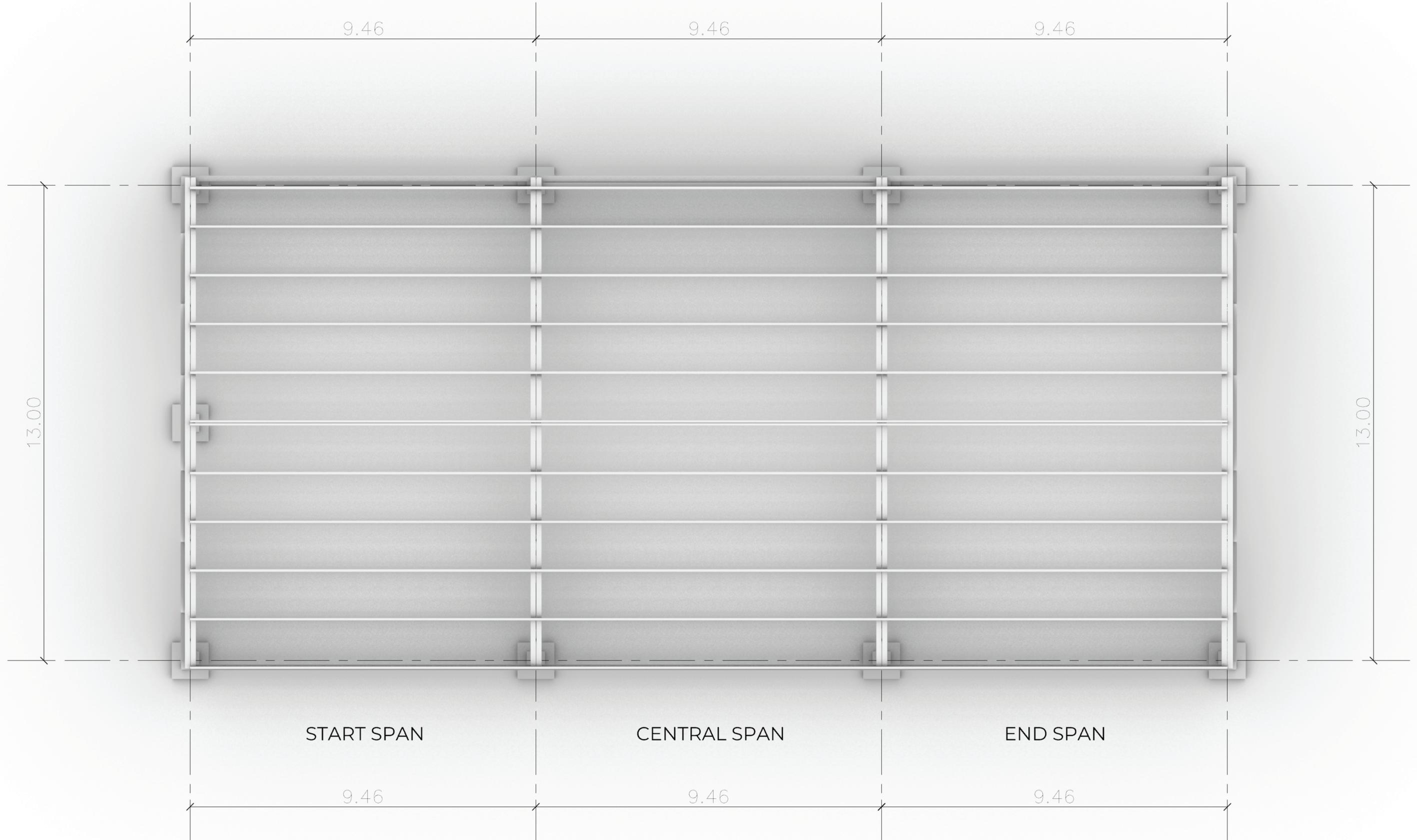




STRUCTURE

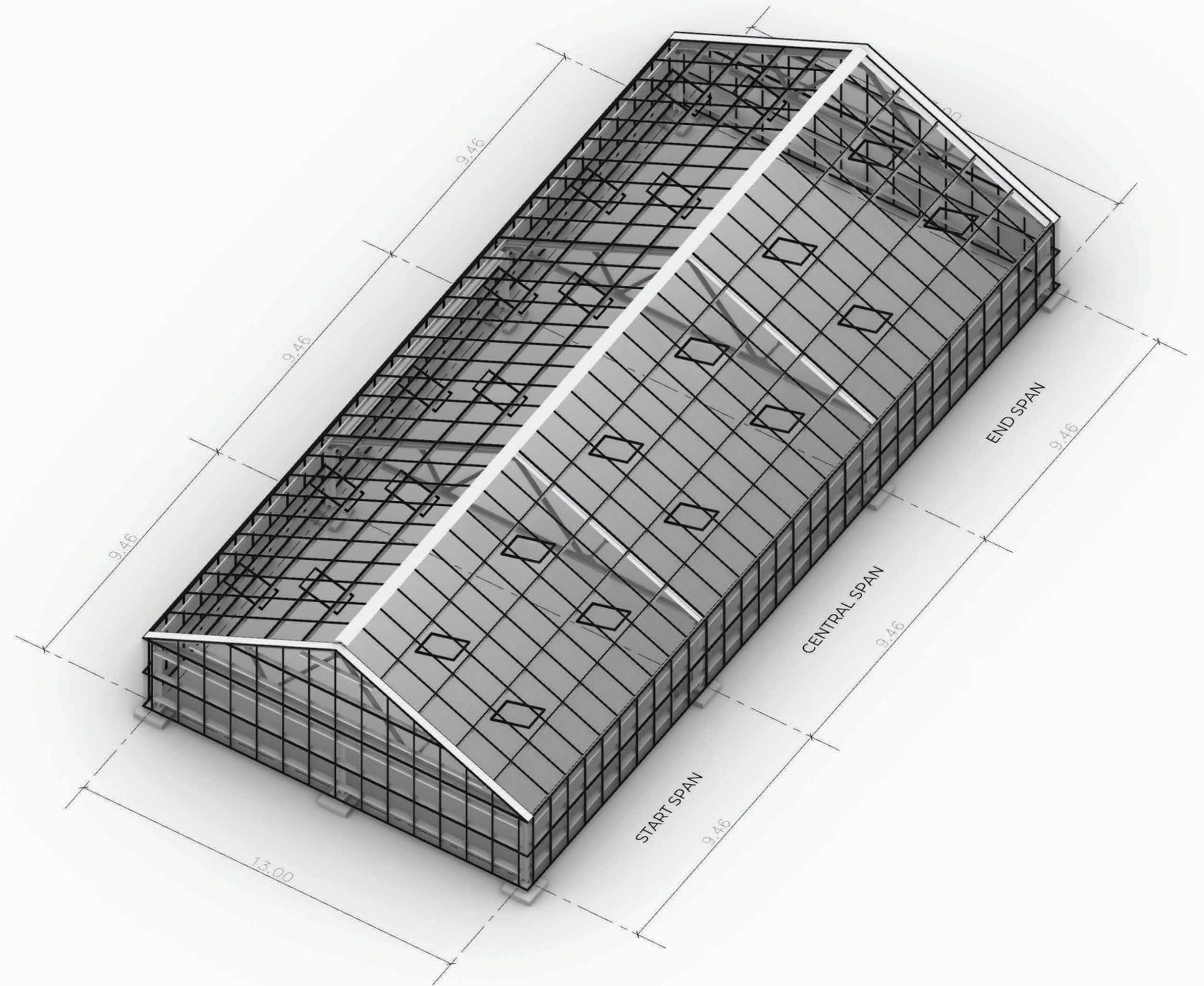
For the plant farm, the structure remains unchanged compared to the fish farm, retaining the same configuration to optimize costs.

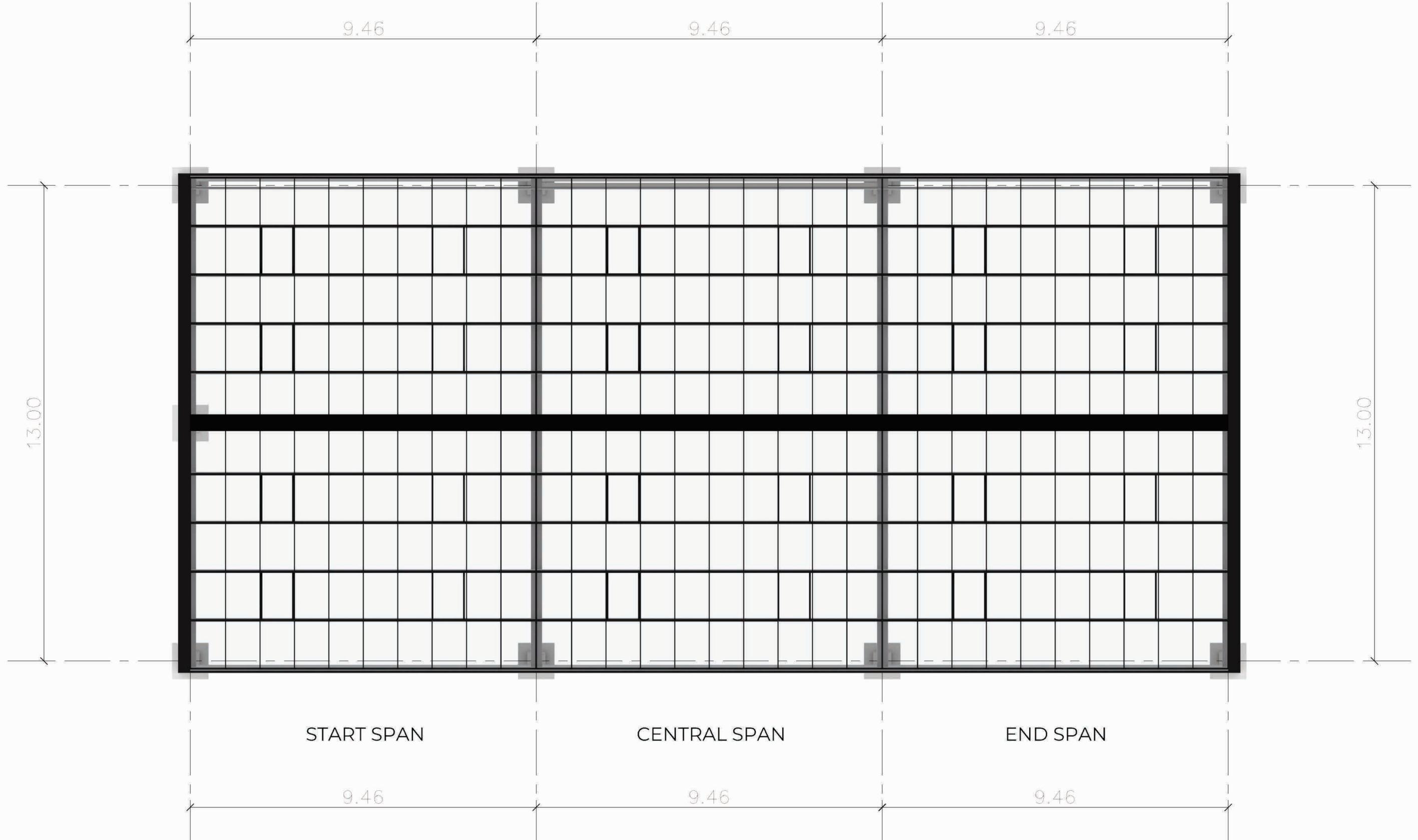




SHELL

The exterior covering is strictly made from the already presented curtain wall modules. These are designed with infill options made either from glass or UV-stabilized plastic films to maximize light transmission and enhance plant growth.





VENTILATION

Roof ventilation is key in the plant form module of an aquaponic farm. The ridge detail allows natural airflow, preventing moisture buildup and condensation. This ensures a stable environment for plant health and the aquaponic system, while improving energy efficiency and protecting the structure



PROJECT

To sustain a viable business, the minimum required area would be 8,000 square meters, translating to 5 modules in width and 13 in length. This configuration would result in a total of 55 field bays, with 23 bays containing the initial modules, 5 starting modules, and 5 end modules.



