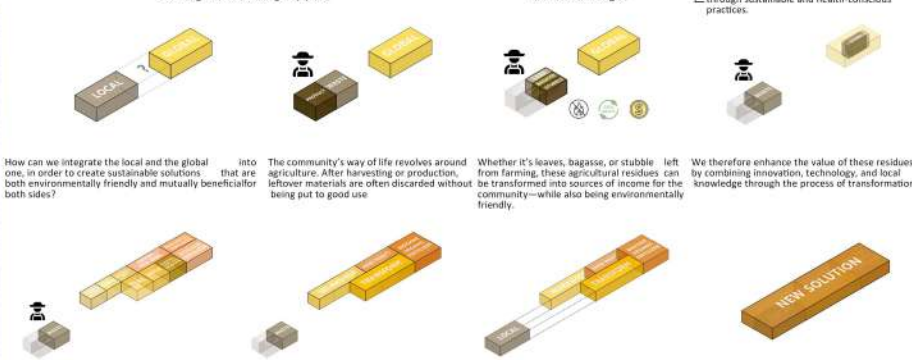


GROW FROM THE EARTH...RETURN TO THE EARTH



The Zero Isoline is a suitable area for sugarcane cultivation due to its fertile soil, adequate moisture, and convenient transportation network for delivering crops to sugar mills. During the harvesting season, which typically occurs from late to early in the year, farmers often burn sugarcane before cutting to ease the process. This practice generates large amounts of smoke and PM2.5 particles. Combined with calm and cool weather conditions during this period, the pollutants tend to accumulate in the air rather than disperse, leading to significantly high dust levels in the Zero Isoline area. Open burning from agricultural activities contributes to around 30–40% of global PM2.5 emissions, especially in farming-intensive regions like Southeast Asia, Africa, and South America. Farmers often burn crop residues to save time and cost, releasing fine dust and greenhouse gases that harm human health and accelerate climate change.

Today, many farmers are viewed as the culprits behind air pollution caused by the burning of agricultural waste, especially during the harvest season. However, this method is often their only option—it is fast, inexpensive, and practical in the face of rising production costs. With no effective support from any organizations and only strict government regulations banning all forms of burning, farmers are left with increasing burdens and fewer choices. As a result, they face growing hardship and a lack of sustainable alternatives, making the problem more difficult to solve. This project aims to offer a solution by managing agricultural waste—such as sugarcane leaves and residues—through value-added processes. By transforming these materials into useful products like construction materials, organic fertilizers, or woven goods, the project not only reduces the need for burning but also generates additional income for the community. It helps ease the economic pressure on farmers while promoting environmental sustainability and providing a long-term, practical alternative.



SECTION A-A



SECTION B-B



In the initial stage of sugarcane planting, the soil is plowed to prepare it for planting. The plowing is usually done about 3 to 4 times to ensure the soil is properly aerated and ready for the crops.



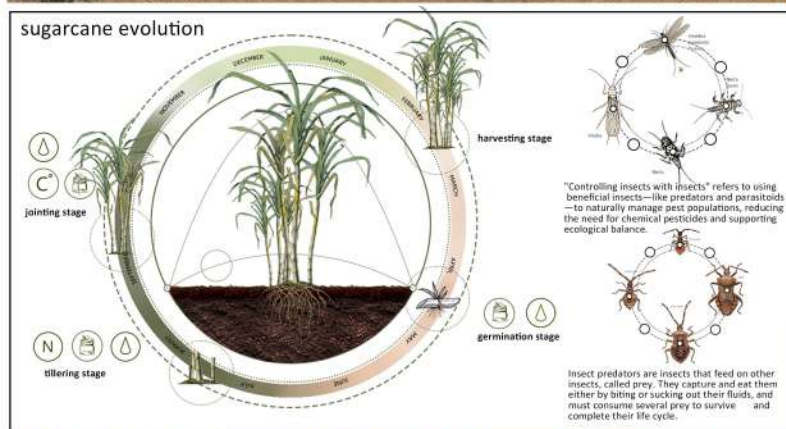
Once the soil has settled, it will be left to rest in preparation for the next planting season. During this time, villagers will take the opportunity to inspect and prepare the land again, ensuring everything is ready for the upcoming planting phase.



Plowing will be done to create furrows for planting sugarcane, with a spacing of about 1.5 meters between each furrow. This spacing ensures that the sugarcane has enough room to grow properly and achieve high yields.



Next, the villagers will work together to plant sugarcane by placing the cane cuttings into the furrows that were plowed earlier. During this process, the project area can also be used as a space to take shelter from the sun or rain and rest while having meals, as it is set up for both planting and providing comfort.



When the sugarcane reaches its first growth stage, predatory insects and parasitoids raised within the project will be released to control pests, particularly during the early stages when aphid infestations occur. This natural pest control method helps protect the crops without relying on chemical pesticides.



In the second stage, before the sugarcane matures, villagers can use this area to observe the progress of the crops. It will also serve as a resting space, providing shade and comfort while they wait.



The colors chosen for the design are inspired by the sugarcane's color cycle throughout different seasons, from the growth phase to the final transformation into sugar blocks. This approach reflects the changing context of each season, allowing users to feel a connection with the surrounding nature. The use of orange, the most prominent color in the design, symbolizes the vibrancy of the sugarcane. Additionally, some plywood panels are incorporated at specific points to create contrast while still maintaining harmony with the overall project.



During the period when the sugarcane reaches full maturity, the project will begin to function as a building that supports the community's traditional sugar block production process and other value-added processing activities. It will provide a space for the villagers to carry out their work efficiently and sustainably.



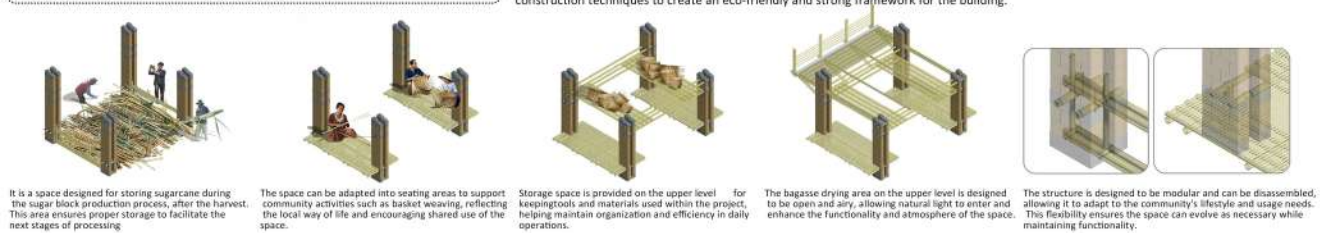
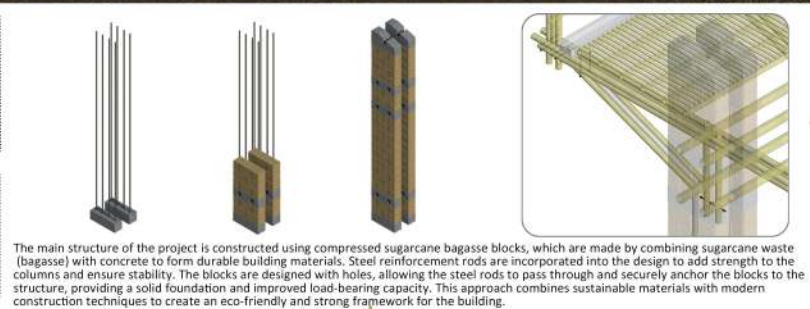
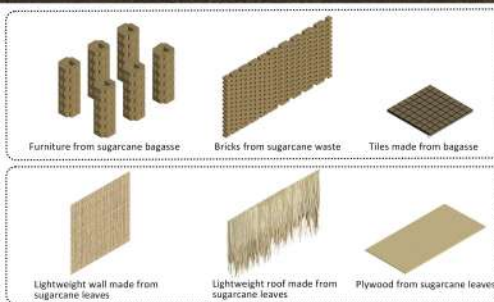
The architecture will function according to the different seasons and activities of the community, adapting to their needs throughout the year. It will also ensure that agricultural waste is properly managed in an environmentally friendly way, supporting sustainable practices in the community.



The exhibition area in this project is designed to showcase the importance of reducing open burning in agriculture. It highlights the benefits of efficiently using resources and preserving the environment by transforming agricultural waste, like sugarcane residues, into valuable products such as construction materials, fertilizers, or furniture. This reduces PM2.5 emissions and greenhouse gases. The exhibition also raises awareness in the community about the impact of resource depletion caused by burning and promotes sustainable practices that benefit both the community and the environment.



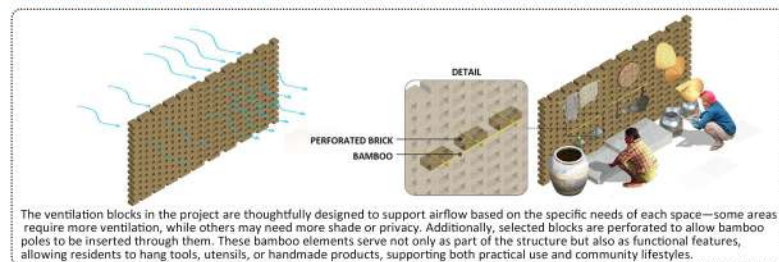
This project focuses on water circulation within the system to reduce the issue of water wastage, which helps decrease pollution. It includes a rainwater and wastewater collection system integrated into the building's structure, allowing the collected water to be reused for various activities such as cleaning or agriculture. This approach reduces the need for external water sources and helps conserve natural resources.





The "Tup Aoi" area is where the community produces traditional sugar blocks. The leftover materials from the process are incorporated into the project to create value and sustainability. These blocks are repurposed, helping to minimize waste and generate useful products, such as construction materials or fertilizers, which contribute to a circular economy. By reusing these materials, the project fosters both economic value and environmental sustainability, ensuring long-term benefits for the community.

The bagasse, a byproduct from sugarcane production, is dried on the second-floor roof of the building. The roof is designed with transparent panels to allow natural sunlight to filter through, providing adequate lighting for the drying process. This setup not only helps in drying the bagasse efficiently but also makes use of sustainable energy, reducing reliance on artificial lighting. The space is specifically designed to ensure that the drying process is optimal, benefiting from both sunlight and airflow.



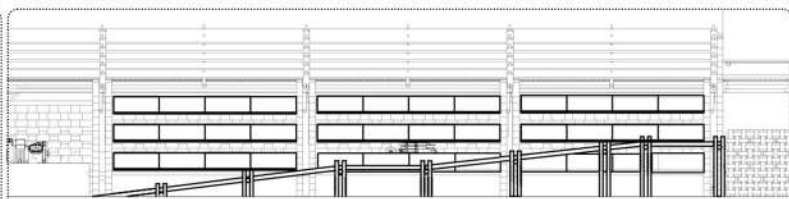
The ventilation blocks in the project are thoughtfully designed to support airflow based on the specific needs of each space—some areas require more ventilation, while others may need more shade or privacy. Additionally, selected blocks are perforated to allow bamboo poles to be inserted through them. These bamboo elements serve not only as part of the structure but also as functional features, allowing residents to hang tools, utensils, or handmade products, supporting both practical use and community lifestyles.



All furniture in the project is made from processed sugarcane bagasse, reflecting the local lifestyle and promoting sustainability. This approach not only adds value to agricultural waste but also ensures the design stays closely connected to the community's way of living.

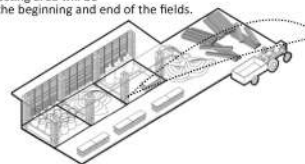


A designated space allows tourists to try making sugar blocks, offering a hands-on experience with local traditions. This activity helps promote cultural understanding and provides an additional source of income for the community.



The project features a modular lab that can be assembled and disassembled as needed. This flexibility allows the rooftop space to be utilized during peak seasons, particularly for drying bagasse and producing roofing materials. By making the space adaptable, it can serve different functions throughout the year, maximizing its use while supporting the agricultural and community activities. This approach ensures the project remains efficient and functional, accommodating the seasonal demands of the community.

The composting area will be placed at the beginning and end of the fields.



There will be small composting sheds at the beginning and end of the sugarcane fields to help manage sugarcane leaves and stalks in areas far from the community center, making waste disposal more convenient.

