

GROWING ROOM

HOUSING IS UNDENIABLY NEEDED ACROSS CALIFORNIA FOR FARMWORKERS AND THEIR FAMILIES. Concentrated in California's Central Valley and South Coast, these hard-working professionals are the backbone of a 50 billion-dollar industry¹. Yet, multiple farm-worker households, often with children, live in overcrowded dwellings meant for one family². Even single farmworkers who qualify for the U.S. H-2A Visa program are often crammed into rundown hotels by the companies that hire them³. While many communities fight against the development of farmworker housing, and low wages keep these professionals from putting down roots and revitalizing local economies, many farm employers view the labor shortage as their main challenge to success⁴. In just one California county with over 400,000 acres currently in agricultural production, over 33,000 dwelling units are needed to alleviate critical overcrowding for farmworkers and their families⁴. This is an opportunity to meet the needs of both farmworkers and landowners.

CALIFORNIA FARMS CAN CONTINUE TO GROW FOOD THAT FEEDS THE WORLD, BEGIN GROWING ROOM FOR THEIR WORKERS, AND ALSO ADDRESS THE CLIMATE CRISIS. Growing Room utilizes a closed loop, flexible, building system that sequesters carbon, decreases waste, reduces greenhouse gas emissions, and raises living standards for farmworkers and their families.

THE CYCLE BEGINS IN THE FIELD. Harvested endemic grasses, rice chaff, or waste products like nut hulls seeded with mycelium are processed in a cost effective, efficient factory setting. On the factory floor, Grow Blocks are framed, then insulated to requisite R-values with one of the three plant-based materials to create standard dimension structural insulated panels (SIP) components. Windows and doors are also added at this stage. Grow Blocks are then delivered to the build site where many are light enough to stack by hand into endless wall configurations. Walls are built inside a glue-lam post framework. This architectural flexibility allows dwellings to be tucked into interstitial spaces on agricultural land, thereby decreasing the amount of land removed from agricultural production. Additionally, living on agriculturally productive land means driving fewer miles, thereby reducing GHG emissions. The versatility of Grow Blocks easily allows for site specific sustainable building construction that make optimal use of seasonal sun exposure and prevailing winds. Over time, dwellings can grow and change -- new rooms, walls, and dwellings can be added to existing structures as uses change or housing densities increase. This lends well to workers who follow crops throughout the state, as well as landowners who can't afford to install extensive permanent infrastructure on arable land. My Micro-home is grown naturally, it contributes to a more sustainable and equitable agricultural system, and its structure can grow and change as well.

NATURAL INSULATION

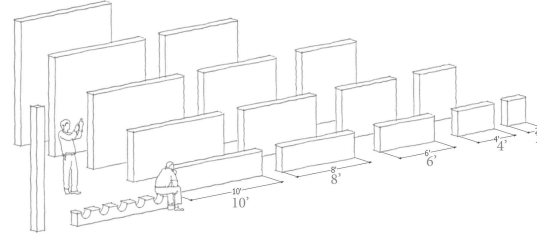


NATIVE GRASSLAND
Rewilding in California could be made economically viable by sustainably harvesting native grass preserves.

RICE CHAFF
California produced 2 million tons of rice in 2018¹. Farmers currently burn the chaff after harvesting.

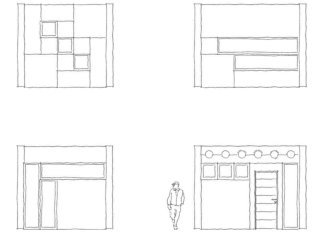
MYCELIUM
Tree nut hulls are a proven growth medium for mycelium - the vegetative tissue of mushrooms. Using an inert mycelium/hull composite as grown-in insulation creates a safe, high performing, well insulated, breathable wall system.

GROW BLOCKS

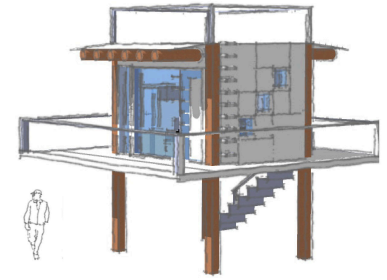
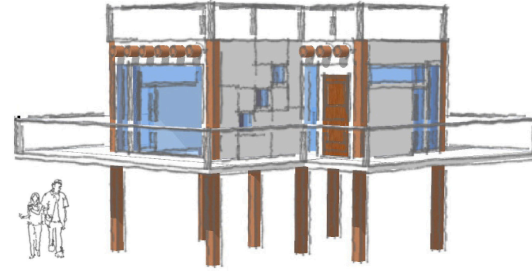
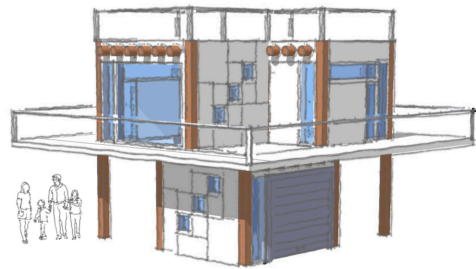


PLANT MATTER IS FABRICATED INTO STANDARD SIZE GROW BLOCK SIPs with desired exterior and interior finishes, windows, and doors. R-VALUES MEET OR EXCEED THOSE OF STANDARD CONSTRUCTION⁵ with breathable, chemical-free wall systems for healthier indoor air. Posts are cut to size and shipped with blocks.

WALL PANELS



GROW BLOCKS CAN CREATE ENDLESS WALL DESIGNS to take optimal advantage of local climates, exposures, and prevailing winds while maintaining privacy and openness for inhabitants in a wide range of applications.



SINGLE OCCUPANCY PROTOTYPE - 120^{SQFT}



ROLLING DOOR

FOLD-AWAY SLIDING TABLE slides along wall for use as desk, bedside, and dining table. folds down against wall

FOLD-AWAY COUNTER & 2 BURNER INDUCTION STOVE

REFRIGERATOR

MODULAR FUTON can seat 2 for meals, create a full size bed, become a couch, or love seat with ottoman

COMPOSTING TOILET & FULL SIZE VANITY

3'x3' SHOWER

ADDITIONAL LIVING SPACE
REPURPOSED HOP POLE VIGA CEILING
WESTERN GLAZING maintains sunset view while eyes moderate temperatures

WALNUT ORCHARD & HOP YARD
ADDITIONAL LIVING SPACE
TUCKED INTO SPACE LEFT BY DEAD TREE
RAISED DWELLING allows farm equipment access



1. California Farm Labor Shortage: A Review of the Industry's Dependence on H-2A Visa Workers, Center for Labor-Community Cooperation, University of California, Berkeley, 2019.
2. Overcrowded Housing: A Review of the Industry's Dependence on H-2A Visa Workers, Center for Labor-Community Cooperation, University of California, Berkeley, 2019.
3. Farmworker Housing: A Review of the Industry's Dependence on H-2A Visa Workers, Center for Labor-Community Cooperation, University of California, Berkeley, 2019.
4. California Farm Labor Shortage: A Review of the Industry's Dependence on H-2A Visa Workers, Center for Labor-Community Cooperation, University of California, Berkeley, 2019.
5. R-Value of Mycelium Insulation, Mycelium Building Products, 2019.