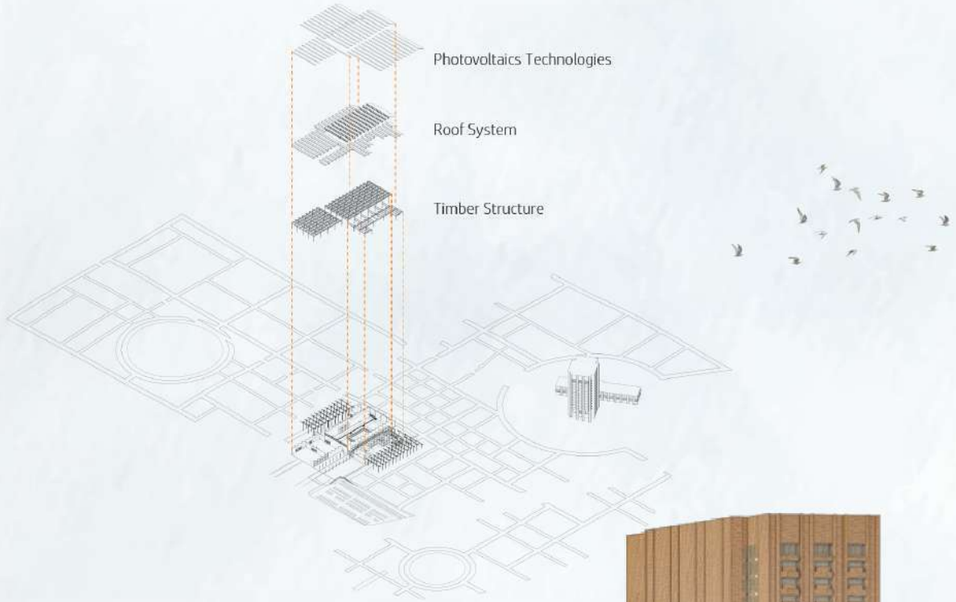
BAnished Into Existence:

Agritecture at The Intersection of Architecture and Agriculture

University of Maryland, College Park | Spring 2023
Student: Yan Konan | Chair: Michael Ezban
Project: Manufacturing Facility
Location: National Agricultural Library | Beltsville, Maryland
Architecture Thesis Defense



Building operating emissions account for 28% of global greenhouse gas emissions while building components for 11%. To mitigate these effects, we must reduce the carbon footprints of construction activities, building materials, and sequestering carbon dioxide in forests and farmland. Industrial hemp is a solution to all these challenges. Hemp is a carbon-negative crop, absorbing more carbon dioxide than trees, and thus represents a unique sequestration opportunity. By using hemp as a construction material, we can improve the thermal efficiency of our buildings, thus reducing operational carbon. Finally, by substituting hempbrick, a mixture of hemp and various binders, for more carbon- intensive materials, we can reduce the embodied carbon of the built environment.

This thesis proposes a productive hemp landscape that will be open to the public as an agritourism destination. The project will raise public awareness about hemp cultivation as an agricultural opportunity and demonstrate the potential of hemp as a construction material, highlighting its multiple possible contributions to tackling the climate crisis.