



AGRONOMICAL SHELTER AS AN EDUCATION CENTER FOR URBAN FARMING AWARENESS

Amirul Hidayat Hussin

Faculty of Architecture and Ekistics, University Malaysia Kelantan,
Bachok Campus, 16300, Bachok, Kelantan, Malaysia
amirulhidayat@gmail.com

Wan Azlina Wan Ismail, Ramly Hasan, Noorliyana Ramlee, Nor Diana Aziz

Faculty of Architecture and Ekistics, University Malaysia Kelantan,
Bachok Campus, 16300, Bachok, Kelantan
azlina@umk.edu.my, ramly.h@umk.edu.my, liyana.r@umk.edu.my, dianaaziz@uitm.edu.my

Highlights: As people become more conscious of the food supply chain and its influence on the environment, it becomes evident that much more work is required to make a significant change. By localising crop supply, urban farming aims to reduce the carbon footprint associated with mass production and distribution. In addition to tackling challenges of urban food insecurity, the concept aims to make healthy food both affordable and accessible to those who need it. In 2018, urban farming is a contentious topic. When you consider the rise of the eco-friendly movement, which has been fuelled by increased awareness of global warming, as well as the global economic climate over the last decade, the trend toward sustainable living makes perfect sense.

Key words: Agronomic, urban farming, bamboo, Shelter, garden enhanced learning, sustainable

Introduction

The current demand for food in the world and the need to conserve natural resources guide the science and technology community to seek strategies for sustainable farming, that is economically profitable, socially just and environmentally friendly. Agronomical shelter was designed to increasing interest in garden-enhanced learning and a place for gathering and workshops to reconnect communities with the natural environment and improve health outcomes. The communities who live in this area developments can become urban farm customers, gaining access to fresh produce grown in their communities and learning about sustainable living and urban farming from specialists. Agronomical Shelter also focuses on food and agricultural entrepreneurship innovation. Besides, under the agronomical shelter another technology was provided such as hydroponics, which involves growing plants in a water-circulation system. There is no need for soil and may stack up to 12 plants vertically in a tiny area. Bamboo is the main material utilised to construct the agronomical shelter. Bamboo will assist both our home garden and the environment if we use it to create a more visually appealing garden. This is because bamboo is an environmentally beneficial and long-lasting gardening alternative. Bamboo absorbs and produces more carbon dioxide and oxygen than most plants. Other than that, it is termite, insect, and wear resistant, and can last for over 20 years.

Besides that, the agronomical shelter has a few design principles applied to the innovation through a 13-meter shelter that maximizes sunshine and natural ventilation, the idea blends produce production into the area. Recognizing the shrinking agricultural acreage in the developing globe, the concept intends to address the growing need for crop farming in urban areas. In terms of the material used, this designed shelter uses bamboo as the main construction material, Tetra Pak Peel roof as the roofing, onduclair for lighting resources, solar panel for energy source, and hollow blocks for flooring. In general, Bamboo is a renewable resource that can assist to reduce deforestation by growing quickly in the correct conditions. Bamboo, in fact, can reach full maturity in as little as seven years, which is a very short period when compared to most tree species. The pace of growth of a plant is significant since it reflects how rapidly the plant may replace wooded areas. Without the use of specialized tools or equipment, bamboo is simple to cut, handle, repair, reposition, and maintain. The bamboo's natural surface is smooth and clean, with a pleasing hue that does not require painting, scraping, or polishing. For the dimension of this Agronomical Shelter. Overall height is about 3800mm, and the length is about 13000mm as shown in the (figure 5.8). Tetra Pak Peel Roof is a roofing material manufactured from used beverage cartons that are recycled into corrugated roofing sheets. Next, for daylighting, transparent roof sheets enable natural light into the space, which has been strategically placed to maximize solar collection for the indoor plants while reducing glare and heat gain. Some areas of the roof will be covered with clear roofing sheets (onduclair), which will let natural light inside the bamboo shelter, allowing the plants to thrive. The solar panels utilized in this shelter are intended to provide an energy source for the grid system, which will power lights, fans, and other light-duty utilities. For the flooring, the material used is hollow blocks. These concrete blocks are lighter than traditional blocks because they are made of concrete. These hollow blocks help trap air, resulting in a cooler wall or floor.