

Appendix I: Design Project Abstract

Product Description: Larger Single Light Collecting and Focusing Mechanism

A mechanism such as solar reflector/optical lens will direct sun light into one or more fiber optics cables.

Abstract:

As part of the EverGreen project (<http://www.evergreen.txstate.edu/>) plants will grow in an enclosed environment (a reefer shipping container) using hydroponic method. Natural light needs to be delivered to them accessible to different racks and trays. It is intended that thick fiber optics cables (0.7 inch in diameter) to be used as the media for the light delivery. To maximize the efficiency of the process, a system is needed to collect sun light beyond the cable's thickness (e.g., using solar reflectors to reflect and focus the light into the entry point of the fiber optics cable(s)). Also, it should be compatible with a sun tracking system to be design parallel to this system by another team.

The system should be durable for an outdoor environment and will be installed on top of the shipping container. It should look professional and design should contain enough information to be expandable for reproducing several similar products.

Project Customer:

Bahram Asiabanpour, Ph.D., CMfgE
Email: ba13@txstate.edu
Office: RFM2212
Office Phone: 512-245-3059
Graduate student: Ricardo Ramirez

