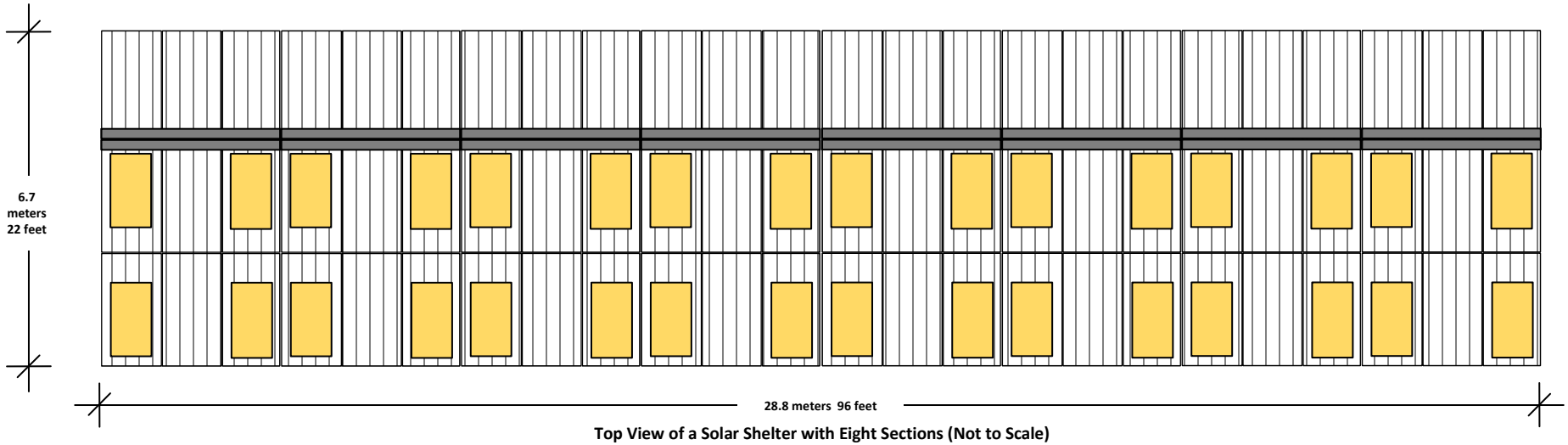
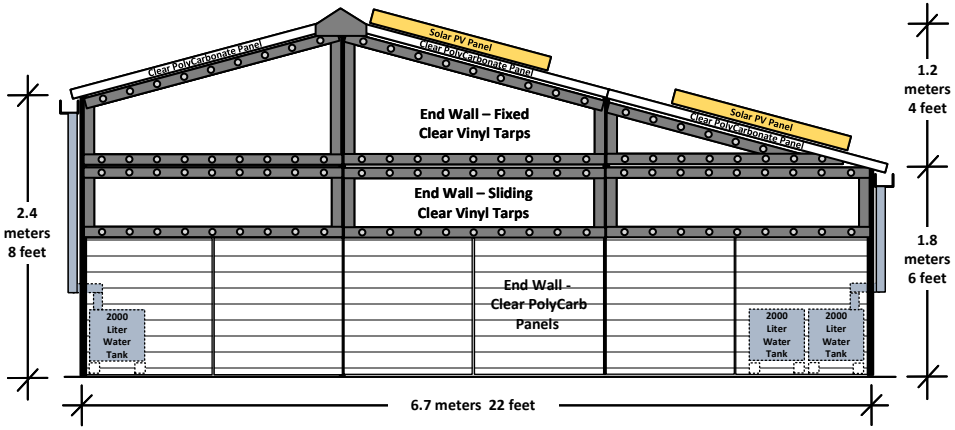
Solar Shelter for Decentralized Food Security and Access to Energy

- The prevalence of food insecurity and energy poverty are closely related in less developed countries. An integrated approach to concurrently addressing both challenges is required to promote sustainable development in rural and remote communities.
- By elevating the solar PV & polycarbonate panels, the food gardens, plant nurseries and pollinator habitat in the climate sheltered space below are complimentary to the energy provided by the solar PV panels.
- The shaded area below the solar PV & polycarbonate panels has adequate light for plant growth, and has lower temperatures and evaporation rates.
- The design of the solar shelter is sustainable regarding use of local goods & services and end of life recycling. As well, the design knowledge is transferable, the design is adaptable to diverse environments and local requirements, and shelter assembly is repeatable with a high degree of quality assurance.



Top View of a Solar Shelter with Eight Sections (Not to Scale)
Concept Only – Not for Construction



Side View of Solar Shelter (Not to Scale)
Concept Only – Not for Construction

Component or Assembly	Dimensions	Power Rating
Each Clear PolyCarbonate Panel	4 feet x 8 feet 1.2 meters x 2.4 meters	Not Applicable
Each Solar PV Panel	3.3 feet x 5.4 feet .99 meters x 1.64 meters	270 Watts
Each Section (Array)	12 feet x 22 feet 3.6 x 6.7 meters	1080 Watts (1.08 kW)
Solar Shelter w/ Eight Sections (System)	22 feet x 96 feet 6.7 meters x 28.8 meters	8,640 Watts (8.64 kW)

Solar Shelter Concept, Design & Diagrams by: Steve O'Gorman

Solar Shelter – Infographic
Rev 4.5 07Sept2022

STAR ENERGY