To create an “Indoor Community Garden” as an all-new freestanding semi-permanent structure for year-round crop growing, we have designed a “Walipini” unit.

WHAT, you may ask, IS a Walipini? Here’s how Wikipedia defines it:

“A walipini is an earth-sheltered cold frame. It derives its name from the Aymaran languages. It is similar in concept to the pineapple pit that was used, as the name implies, to cultivate pineapple and other exotic fruits in Victorian era Britain and in the cold plains of pre-revolution Russia.

In the Soviet era, similar techniques were developed to grow citrus fruits (oranges, lemons, mandarins, tangerines, grapefruits, limes, pomelos) at temperatures of minus 30 degrees Celsius. By 1950, the Soviet Union boasted 30,000 hectares of citrus plantations producing 200,000 tonnes of fruits per year.

The walipini is attractive to practitioners of permaculture and the sustainability movement because it allows for crops to be grown in greenhouse-like settings whilst requiring little to no heating.”

What makes our design unique? We use repurposed, used shipping containers as the core structure. Our system primarily uses local suppliers and contractors for the build-out. We simply provide the

expertise, training and operating systems for local community groups to get on their feet. We share our expertise in hydroponic farming – the crop selection and agricultural knowledge – the construction plans – the H.R. manuals – the local website connected to the national shared information portal – the "WIC" set-up to sell food – even the staff motivational programs.

DESIGN CONSIDERATIONS

To meet local building codes, we recommend placing your walipini near a building that can supply the water / toilets / support services. You can even use one or more shipping containers as a "tunnel" to an existing building to help meet codes without extensive build-out costs.

To help insulate the structure and reducing heating / cooling costs, we use repurposed 330-gallon tote tanks as a heat sink. Water is an excellent insulator, giving us maximum R value and allowing the use of Walipinis in any weather conditions.

Note that we use a repurposed shipping container as the back wall, and we line the 40-foot wide growing pit with 330-gallon repurposed syrup tanks (tote tanks). Water has a very high R value and the weight of the water provides stability. The only caveat is that the water table at the installation site needs to be 5 feet or lower to prevent flooding. We do, however, have plans for a totally above-ground unit.

Our plan calls for building the angled roof from the top of the shipping container, using 2" x 10" joists. Heavy plastic goes above and below the joists, and the sealed air provides excellent insulation. Rainwater collects the plastic sheeting into traditional gutters which feed the water into the connected network of tanks that form the walls of the

growing pit. Walipini experts say that plastic works far better than glass because it blocks the most harmful rays of the sun which glass does not.

The key advantages that we see in this approach are:

* Easy to build. Shipping containers generally meet code.

* Container area is used to clean and package the food for distribution.

* Access is through a door in the container, which is above ground so no flooding.

* Very low build-out cost. Easy to replicate the design nationwide and have local contractors install it.

* We use low-cost LED lights to supplement the sun for year-round growing, pretty much in any part of the nation. Note that the Russians have been growing citrus year-round in walipinis in places like Siberia since the 1950's.

* We use all-natural hydroponic nutrients to maximize the nutritional value and maximize yield.

For details on how a walipini can function for your organization, please see the "Indoor Community Garden" project on this website.