



How to build a SOLAR BOTTLE BULB

by [liwanag](#) on October 11, 2011



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This is the official account of Isang Litrong Liwanag (A Liter of Light). MyShelter Foundation's latest venture is a sustainable lighting project which aims to bring the eco-friendly Solar Bottle Bulb to disprivileged communities around the world. Designed and developed by students from the Massachusetts Institute of Technology (MIT), the Solar Bottle Bulb is based on the principles of Appropriate Technologies – a concept that provides simple and easily replicable technologies that address basic needs in developing communities. A Liter of Light is a program inspired by many innovations from around the world. Many cultures have used glass bottles to allow lighting through the roof, and Alfredo Moser from Brazil began pioneering methods of experimenting with plastic bottles. There has been modifications to the Philippine model, but what must be emphasized is the amount of people whose lives are being affected by this innovation.

Intro: How to build a SOLAR BOTTLE BULB

Light up dark areas in your home during **daytime** using this green and sustainable concept. Recycle used clear plastic soda bottles, add water+bleach, then install. After installation this solar light bulb can provide approximately 55 watts of light from the sun!

The comments below have noted that this is like a solar tube or deck prism.

The communities who benefit from this idea live in areas where the houses hardly have windows and live in darkness even during daytime. Their solution up until this innovation was to turn on the light bulb and use electricity.

Source: www.isanglitrongliwanag.org

Materials:

- *PET soda bottle
- *Galvanized Iron (GI) sheet
- *Rubber sealant
- *Bleach
- *Filtered Water



Image Notes

1. 55 Watts of solar powered goodness. Did we mention it's FREE!

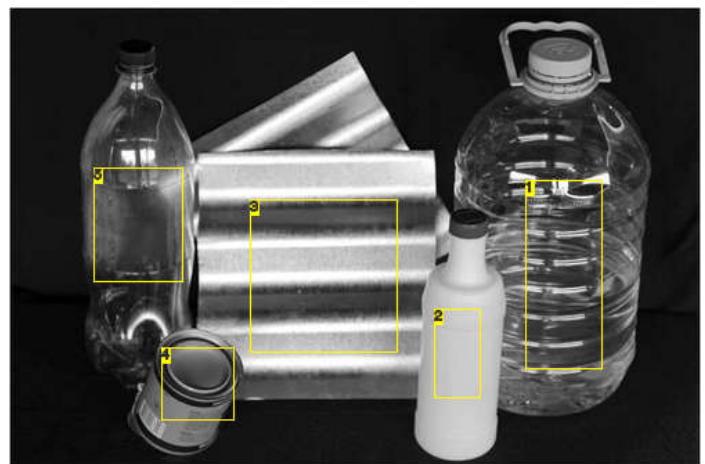
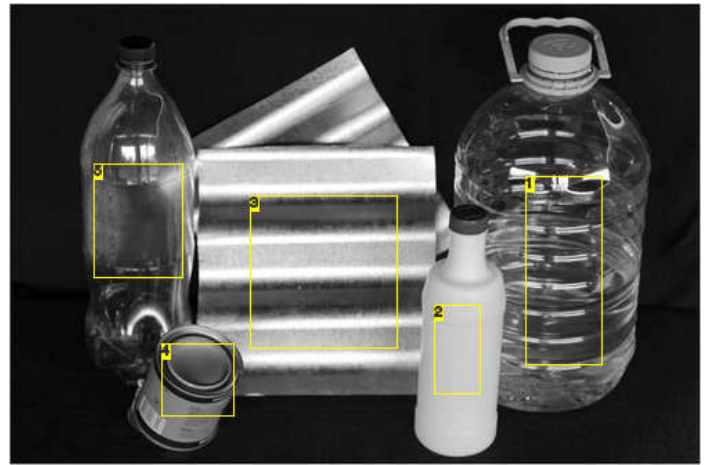


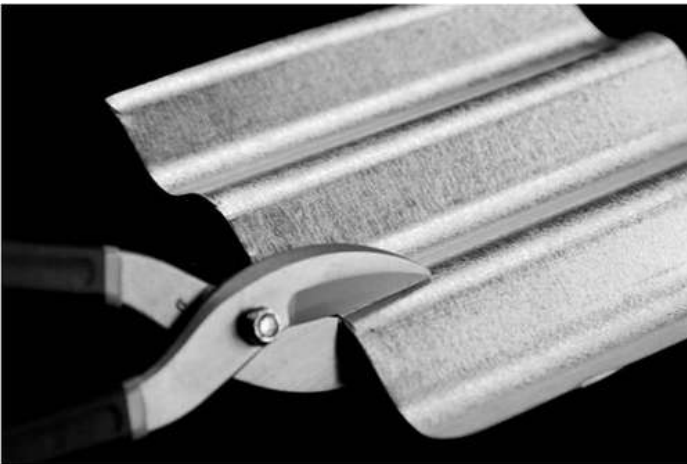
Image Notes

1. Filtered water
2. Bleach
3. Galvanized Iron (GI) Sheet
4. Sealant
5. Soda Bottle - 1.5L or 2L



Step 1: Cut approximately 9 x 10 inches of GI sheet (corrugated or flat)
(Filipino: Gumupit ng yero na may sukat na 9 x 10 inches.)

*Here is a how-to video



Step 2: At the center of the GI sheet, draw 2 circles

(Filipino: Sa gitna ng yero, gumuhit ng 2 bilog (labas: pareho sa sukat ng bote; loob: mas maliit ng 1 cm). Gupitin ang mas maliit na bilog.)

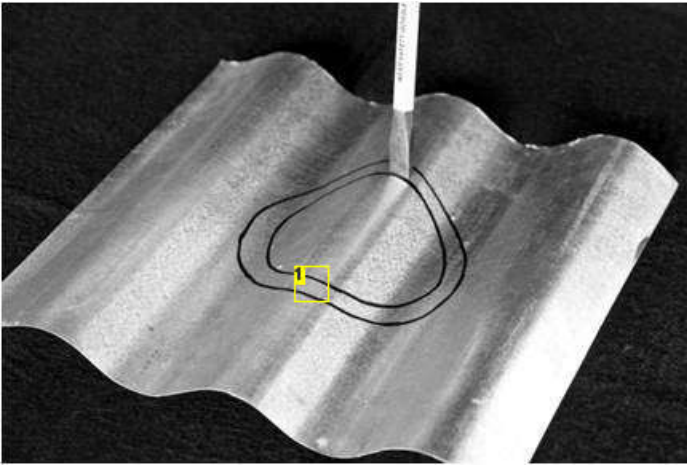


Image Notes

1. 1cm difference

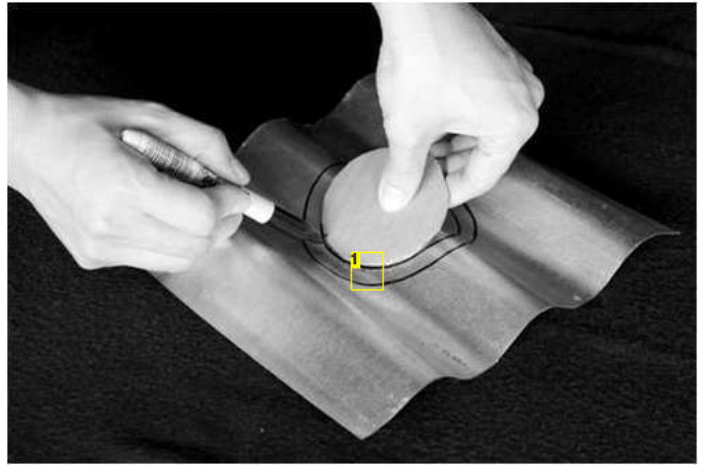


Image Notes

1. 1cm difference



Step 3: Cut the 1 cm difference radially, making strips and bend upwards, perpendicular to the GI sheet

(Filipino: Gupitin paikot ang natira na 1 cm sa maliliit na bahagi at itupi pataas, salungat sa yero.)



Step 4: Using sandpaper, scratch the surface around the upper third portion of the soda bottle where the GI sheet will be placed, to allow the rubber sealant to stick better

(Filipino: Gamit ang sandpaper, kuskusin ang ibabaw sa may ikatlong bahagi ng bote kung saan ilalagay ang GI sheet para mas dumikit ang rubber sealant.)



Step 5: Insert the bottle into the GI sheet until the upper third. Apply rubber sealant on the strips above and around the area below. Wait to dry

(Filipino: Ipasok ang bote sa gitnang butas ng yero hanggang sa itaas na ikatlong bahagi. Lagyan ng rubber sealant ang itaas at ibaba ng pinagkabitan.)



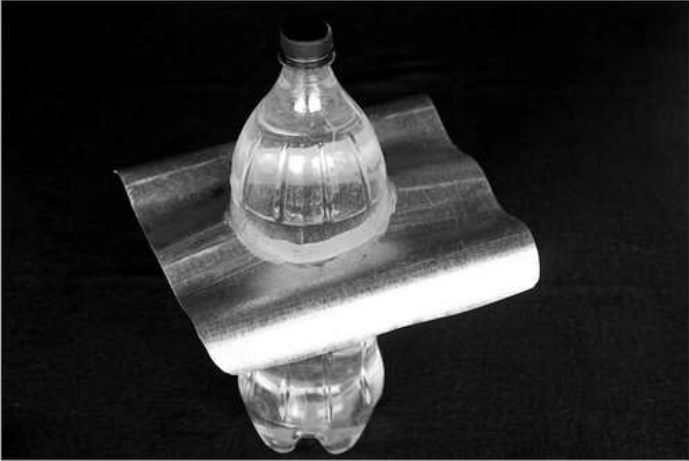


Step 6: Fill the soda bottle with filtered water and ~10 mL (2 capfuls) of bleach. Cover with its original cap
(Filipino: Punuin ang bote ng filtered na tubig at ~10 mL na bleach (2 sukat gamit ang takip). Ilagay ang takip.)



Step 7: The solar bottle bulb is now ready for installation!
(Filipino: Ang solar bottle bulb ay handa nang ikabit!)

(Proceed to next step for the installation.)



Step 8: Cut a hole on the roof, similar to the bottle circumference
(Filipino: Gumawa ng butas sa bubong, pareho sa sukat ng bote.)



Step 9: -Place the solar bottle bulb into the hole. Make sure it is firmly in place
(Filipino: Ilagay ang solar bottle bulb sa butas. Siguraduhin na maayos ang pagkalagay.)



Step 10: Drill 4 holes on each side of the solar bottle bulb using Bosch lithium-ion cordless drill and put in the rivets
(Filipino: Magbutas ng apat sa magkabilang gilid ng solar bottle bulb gamit ang Bosch lithium-ion cordless drill at lagyan ng rivets.)



Step 11: Apply rubber sealant around all edges of the GI sheet of the solar bottle bulb to avoid leakage. Make sure to cover the rivets
(Filipino: Maglagay ng rubber sealant sa lahat na gilid ng GI sheet ng solar bottle bulb upang maiwasan ang pagtulo.)



Step 12: Place a protective plastic tube on the bottle cap and apply rubber sealant
(Filipino: Lagyan ng plastic tube at rubber sealant ang takip ng bote.)

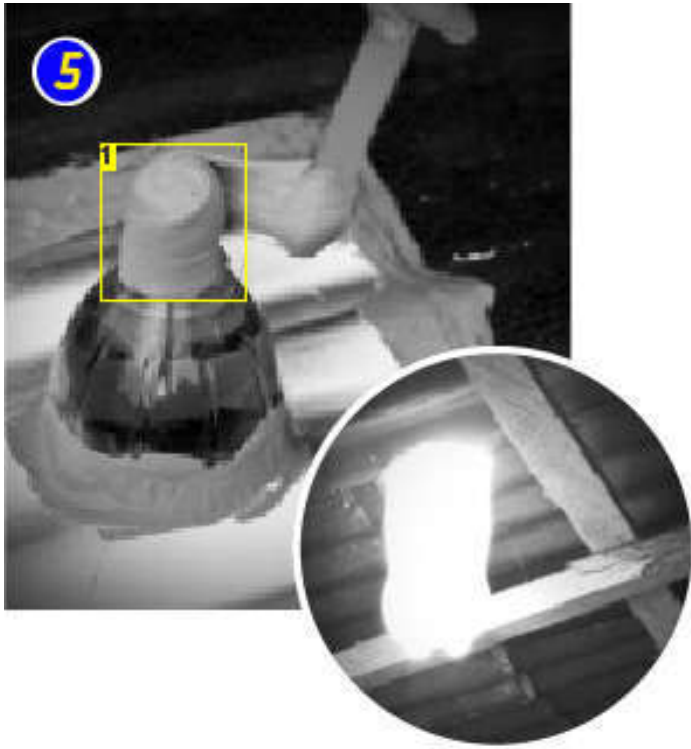


Image Notes

1. Apply sealant on the bottle cap.