

# Pre-Conference Workshop

## “Ball Park” Estimating

*Facilitators:*

Milt Hetrick

John Bringenberg



Interfaith Green Building Conference  
11-12 April 2019

# Introductions



## ▶ John Bringenberg, First Universalist Green First Task Force

- ▶ John currently provides District Development for Petros PACE Finance, an Austin based national PACE funding company. Petros is a leading provider of clean energy financing for commercial properties throughout the United States. John is responsible for establishing new business, channel partners and deal flow in the Colorado.
- ▶ He has been elected for 6 years on the Board and 2 years as President of the Colorado Solar Energy Industries Association (COSEIA) and serves on its State Policy Committee.
- ▶ John was recently appointed to the City of Denver Green Roof Task Force to help the city implement the 2017 voter enacted Green Roof Ordinance.
- ▶ John also teaches sustainability as a member of the faculty for Ecotech Institute, a unique renewable energy college in the Denver area.



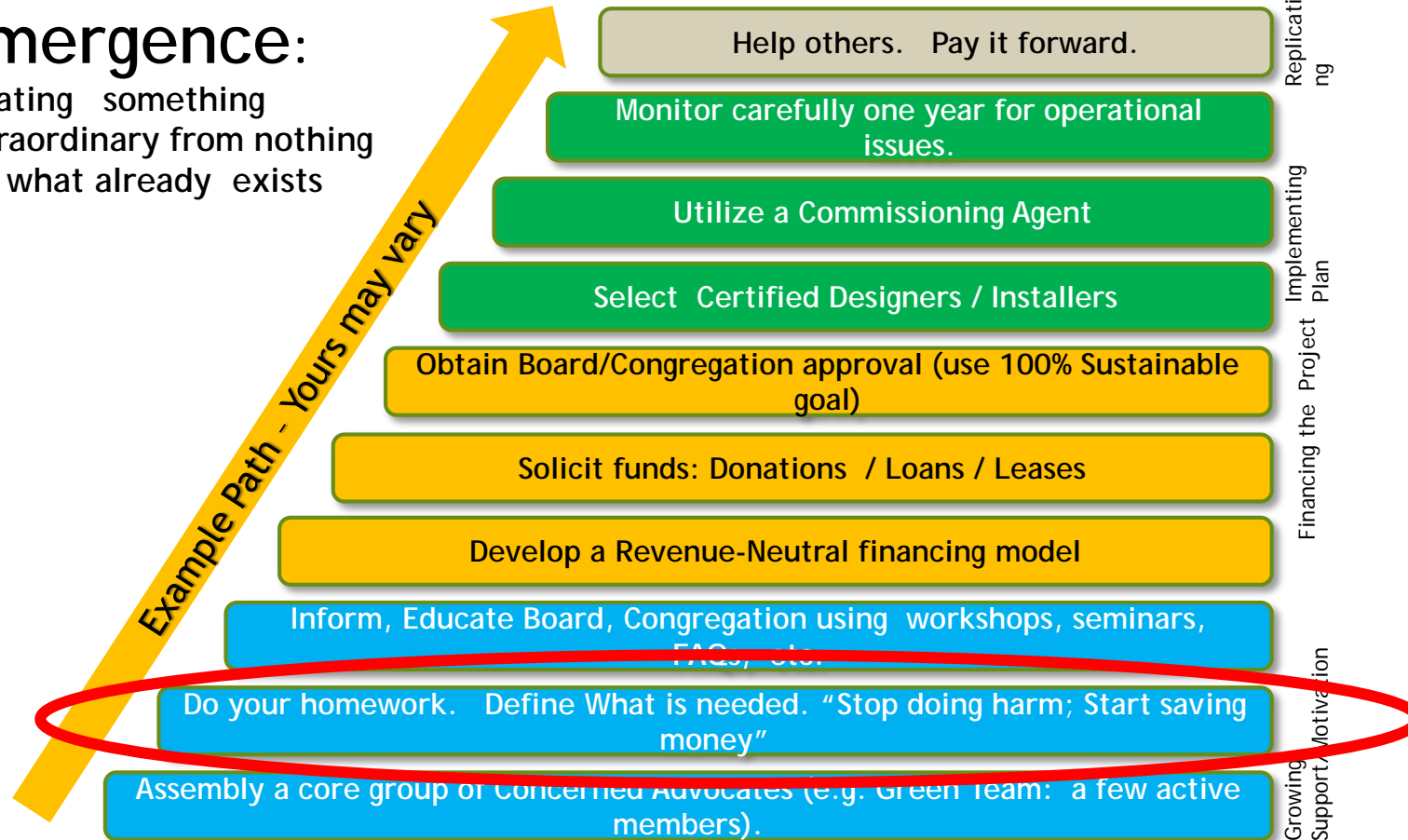
## ▶ Milt Hetrick, First Universalist Green First Task Force

- ▶ **Milt** is a retired aerospace engineer with a background in engineering and physics.
- ▶ In 2011, he added rooftop solar electric and replaced their natural gas furnace with a ground source heat pump. A year later he traded in an old Volvo for a Chevrolet Volt. He then published a small book entitled "***Living without Fire: Just the Sun and Earth: Illustrating a way to retrofit a 1974 home for more sustainable living***" that documented how easy it was to transition to renewable energy and live without burning ancient hydrocarbons.
- ▶ Milt is currently documenting how First Universalist Church, Denver successfully transitioned to solar and geothermal sustainable energy sources that have zero greenhouse gas emissions. "***Transitioning to Sustainable Energy: Using Solar electric and Ground –Source Heating & Cooling.***"



Credit: Halkin Aerial Services

**Emergence:**  
 creating something  
 extraordinary from nothing  
 but what already exists



# Sustainable Zero GHG Emissions Energy System



57 kW Solar PV System  
180 Modules



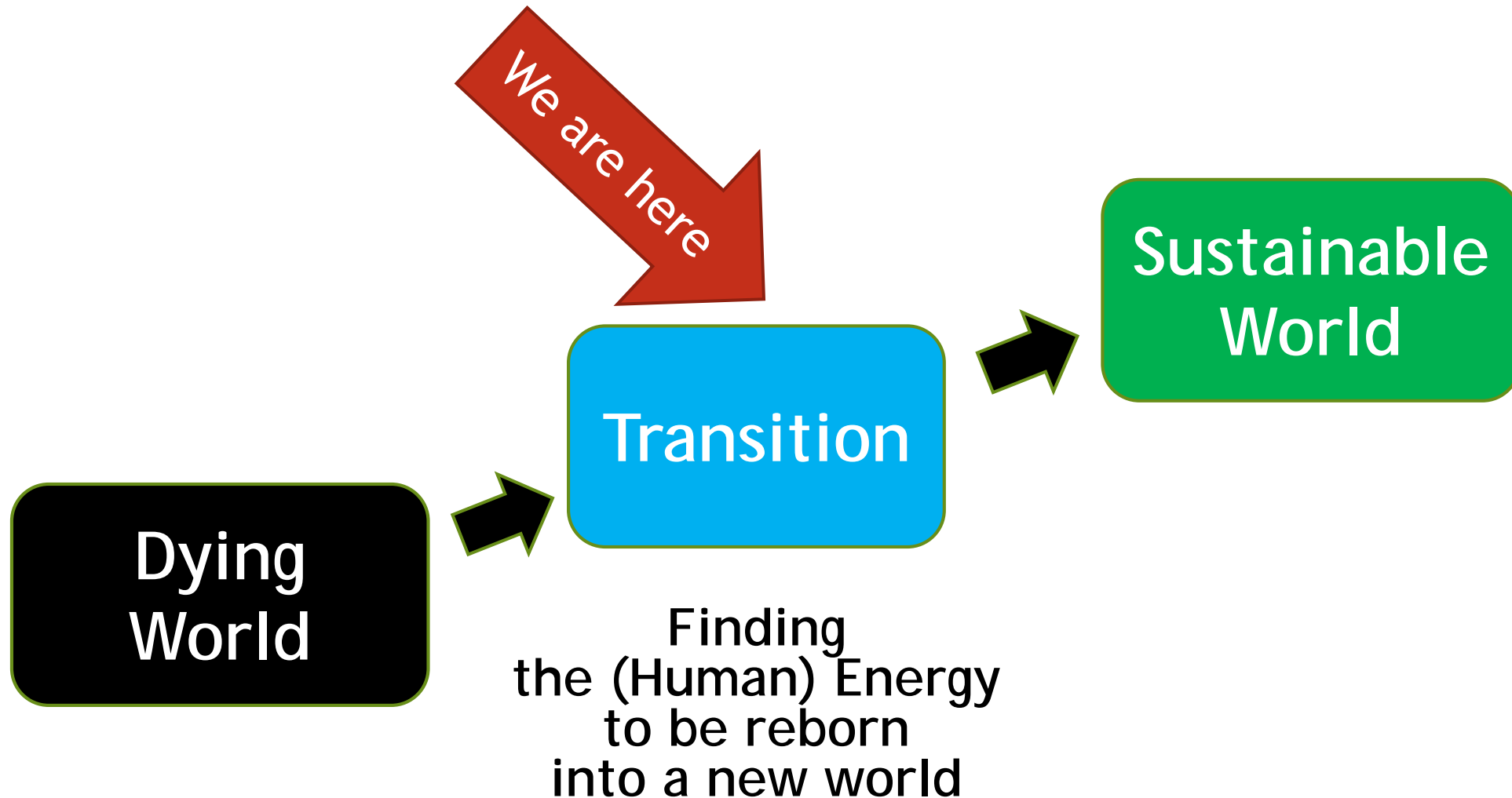
45 Ton rated Ground-Source  
Geothermal Heating & Cooling System  
(12 vertical holes in North Parking lot)

# “Ball Park” Estimating

- ▶ **“Do Your Homework and Define What is Needed”**
- ▶ **Workshop provides basic background information**
  - ▶ For better communication with Solar and Heat Pump experts/contractors
  - ▶ For better communicating with the Board/Vestry/Council and Congregation
- ▶ **Use these Ball Park energy system size and cost estimates to better envision and articulate:**
  - ▶ Your path to zero GHG emissions
  - ▶ Your financial challenge, and
  - ▶ How much financial gain to expect over next 20 years.



# Map of the Great Work



# Transition Process Overview

