

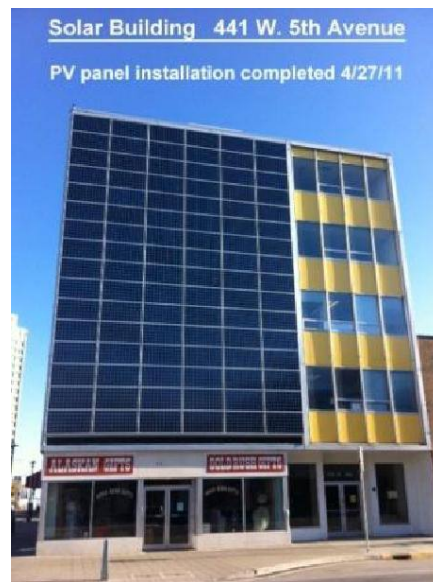
Please visit [alaskasolartour.org](http://alaskasolartour.org) for updates on this tour

## **Anchorage Solar Tour: Tour day is Saturday, June 8th, 2013 – Tour Starts At 9:45am**

Start Of Tour Meeting Location: Meet at downtown Kaladi Bros. Coffee (621 W. 6th Ave) by 9:45am. Tour organizer Andy Baker (cell 350-2084) will be there and the group will walk across Town Square Park to the Solar Building @ 10am. There is plenty of free parking downtown on Saturday mornings, however the annual Womens 10K Run will block off some of the streets, so plan to arrive downtown by 9:30am so you have plenty of time to park before the tour starts. You can meet up with other tour goers at this first site and car pool to other sites, the time slots for other tour site visits are given below.

<u>Sites</u>	<u>Times</u>	<u>Building</u>	<u>Address</u>	<u>Area of town</u>
Site #1	10am – 11:30am	<b>Solar Building</b>	441 W. 5th Avenue	Downtown
Site #2	11:30am – 1pm	<b>Kittleson House</b>	5976 Muirwood Drive	Sand Lake Area
Site #3	1pm – 2:30pm	<b>H2Oasis Water Park</b>	1520 O'Malley Road	South Anchorage
Site #4	2pm - 4pm	<b>Lowe Residence</b>	18700 England Circle	Potter Marsh Hillside
Site #5	2:30pm – 4pm	<b>White Residence</b>	12141 Galena Circle	Upper Hillside
Site #6	3pm – 4:30pm	<b>Solcab House</b>	19949 Meadow Canyon Drive	Eagle River

### **Site #1: Solar Building – Downtown Anchorage – 441 W. 5th Avenue**



**Commercial office building.** The solar building features a photovoltaic solar array of 96 Trina Solar tsm180-da01 at 180 watts = 17.28 kilowatts output. Three SMA 6000 watt inverters convert the dc power into ac and feed it into the building electrical service. This system is now the largest net metered solar PV array in the Anchorage area, the local utility is ML&P. Part of the south facade was used to place the panels at 90 degree tilt. This incorporates the array into the existing building envelope with very little maintenance requirements. Building Owner: **Steve Zelener**; Architect: **Mayer Sattler-Smith**; Contractor: **Renewable Energy Systems**. **This tour site is open from 10am to 11:30am; tours will start at the 5th Avenue street entrance to the building. If you arrive while a tour is in progress, please wait outside until the next tour starts.**

## Site #2 – Kittleson House – Sand Lake Area, Anchorage – 5976 Muirwood Drive



This cutting edge house was designed from the start with the correct roof angle and orientation for great solar gain. Here is how owners Nicholas & Joann Kittleson describe the solar performance of their 2,000 sq ft house (new in May 2011): ***“Amazing! Passive overheats house unless we regulate by opening windows. In winter we use HRV to keep and circulate heat. Our domestic hot water has been provided nearly completely by solar collection since early March.”*** Built by Levi Smith of Alaska Decks & More LLC, with solar energy consulting by YourCleanEnergy LLC. The passive solar performance is enhanced by a large area of south facing Shiloh windows, moderate east and west window area, and minimal windows on the north side. The active solar hot water system consists of two Heliodyne 4 ft x 10 ft cold climate flat plate collectors, plus two 80 gallon storage tanks inside the building envelope. Federal Tax Credit of \$4,000. 5Star+ rebate = \$7,500. **This tour site is open from 11:30am to 1pm, park on street.**

## Site #3 - H<sub>2</sub>Oasis Indoor Water Park – South Anchorage – 1520 O’Malley Road



Commercial water park. Solar Thermal System Pre-heats Pool Water In Summer Months: A total of 60 Vortex 4ft x 12ft polyethylene flat plate collectors are located on the roof, along with a 50 gallon Progressive Tube Solar Water Heater. City water is used as make-up water for the large swimming pools and this enters the facility at 45F. The solar thermal collectors heat the city water up to about 120F before it is piped into the pool that is maintained at 85F. It is necessary to climb a steep set of stairs to access the roof and see the collectors. The owner of contact is Dennis Prendeville and the system was installed by the staff of H<sub>2</sub>Oasis.

**This site is open from 1pm to 2:30pm; please park in the H<sub>2</sub>Oasis customer parking lot.**

## Site #4 - Lowe Residence - 18700 England Circle - Potter Marsh Hillside



This owner built- custom 5+ star home was completed in the fall of 2012 and is thought to be the first of it's kind to hold an "off-grid" status that meets all building code requirements for the Municipality of Anchorage. At least 80% of the energy needed is produced by our hybrid off-grid renewable energy system (by Alaska Efficient Energy Solutions) harnessing both wind and solar.

In order to accomplish this, the building location had to work with the many elements of nature that are unique to the lot. The home was developed with an orientation facing Northwest so it could deflect high winds, as well as capture majestic views of Cook Inlet and the Alaska Range. This energy efficient home has a high insulation value, a natural gas high efficiency hydronic system and Energy Star appliances. It was also constructed using the "remote wall" concept of CCHRC (Cold Climate Housing Research Center). The idea of using this wall design was to create a higher R-value that makes for an extremely air tight home and eliminates thermal bridging. In addition to these features and benefits, the owners believe this home is the first of it's kind to obtain financing through a local bank (FNBA) with an off grid status.

### **Off Grid RE System Consist of the following equipment:**

- 12 – Sharp 240 W PV Panels
- 1 – WattSun AZ-225 Solar Tracker
- 1 – UGE 1000 W EDDY GT/X VAWT
- 12 – Surrrette 4KS 21ps 4 V batteries
- 1 – Xantrex XW Hybrid Inverter/Charger Generator

- 1– Xantrex XW MPPT 80 600 solar charge controller
- 1 – Xantrex XW SCP (system control panel)
- 1 – Xantrex BSM (battery status monitor)
- 1 – Xantrex XW AGS (automatic generator start)
- 1 – Cummins Onan 20KW Natural Gas backup
- 1 – Xantrex XW Power Distribution Panel

**This tour site is open from 2pm thru 4pm**

## Site #5 - White Residence - 12141 Galena Circle - Upper Hillside





A complete energy rehab of the home was finished in 2012 changing the energy rating from 0 to 5 stars. Major energy efficiency improvements included:

- new spray foam insulation installed throughout all walls and A frame roof.
  - Replacement of heating system with 95% efficient Viessmann boiler and DHW tank
  - Replacement of all lighting to CFL
  - Replacement of existing windows to energy start certified alternatives
  - Installation of HRV system and wood stove
  - Installation of Viessmann flat plate solar thermal collectors (x3) for DHW -provides roughly 40% of annual DHW needs
- Solar System Audit and Design: YourCleanEnergy, LLC                      Solar Installer: Bowman Mechanical

In 2012, an earth sheltered solar greenhouse was also installed on the property. The greenhouse is heated (in part) through a small solar electric system and a hydronic/wood heating system. For the greenhouse, we had Anchorage Excavation & Concrete do the block work for the structure (owner designed/finished it up).

**This tour site is open from 2:30pm to 4pm. Please park in the driveway and allow room for other vehicles.**

## Site #6 - Solcab House – Eagle River – 19949 Meadow Canyon Drive



**Solcab** - The house faces south for maximized solar exposure. The first floor elevation, generated by the shadow line at winter solstice of Mt. Gordon Lyon, approximate 5 miles to the south, will ensure that the house will get solar exposure even at the shortest day of the year. The structural system is made up of post and beam with a super-insulated exterior shell finished with corrugated metal for ease of maintenance and added security for potential wildfires. The main space of the home is a south facing room with floor to ceiling glass. An intimate window seat to the west is centered on the view of volcano Mt. Redoubt. Over the open stair are monitor windows, allowing for ever-changing light conditions to be announced within the house. The interior of the house is revealing its structure and materiality in a cabin like reference to its location and the informal life style of its occupants. The 1800 sq ft, home, designed by architect Klaus Mayer, was built in 2000. **This site is open from 3pm to 4:30pm; please park in the driveway, leave room for others.**