

Solar Domestic Water Heating

Dunne Residence Hall
2015 SCU Sustainability Showcase

Kayla Ayres, Vince Heyman, Nick Matera



Why Dunne?

Summer Renovation

Santa Clara University

Climate Action Plan

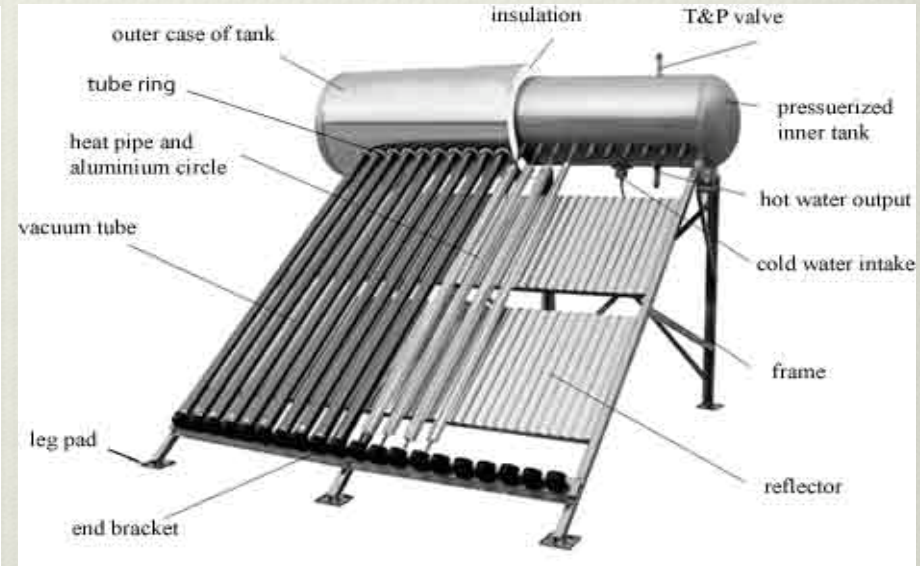
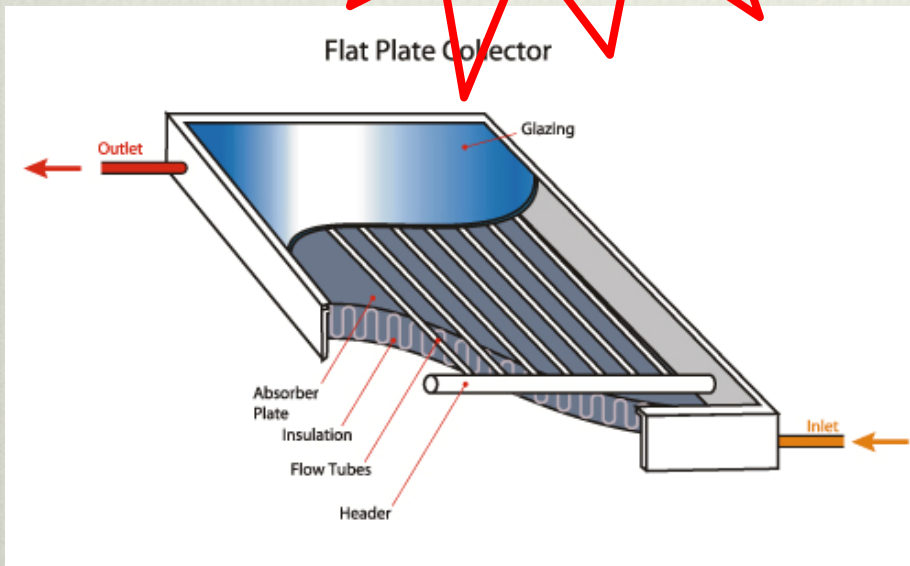
- ❖ “Goal: Systematically **improve energy efficiency of existing buildings** and design new buildings to be as energy efficient as possible in order to **reduce greenhouse gas emissions.**
- ❖ Encourage **adoption of further energy saving strategies** that promote a shift in campus culture.”



Types of collectors

Flat Plate

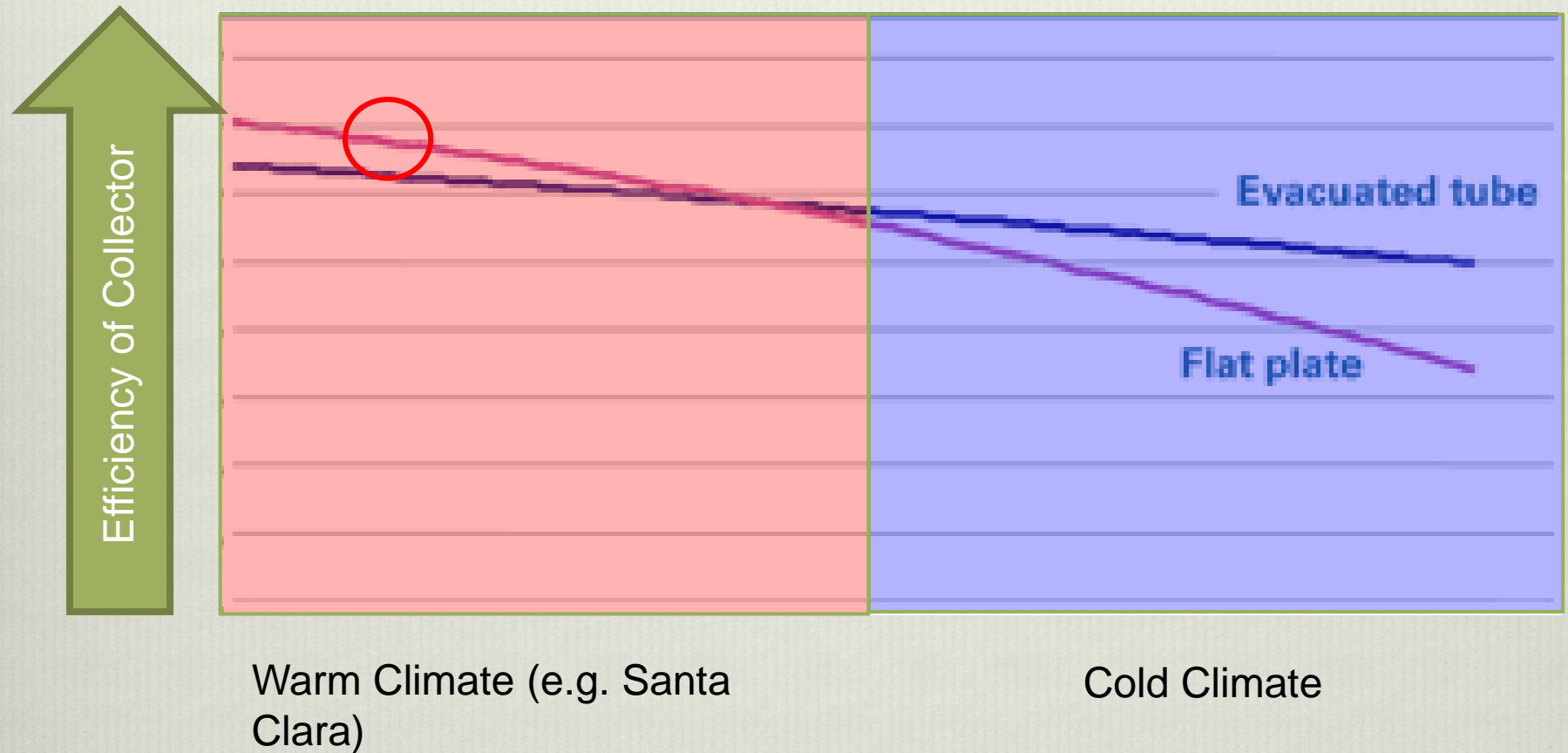
Evacuated Tube



- Bulky
- Plate difficult to install
- Piping fairly easy to install

- Simple
- Easy to install
- Not as many manufacturers

Collector Efficiency



Collector Manufacturers



Heliodyne Gobi 410



BOSCH

Centertown

- ❖ San Rafael, CA
- ❖ 60 unit apartment complex
- ❖ 14 Heliodyne Gobi 410
 - ❖ System cost: \$51,000
 - ❖ Average utility savings: \$5,400
- ❖ Payback time= 9 years
- ❖ Life expectancy 25 years



- ❖ 39,379 kWh saved
- ❖ 47,255 lbs of CO2 saved

Dunne Estimates

- ❖ 30 Heliodyne Gobi 410 collectors
 - ❖ \$40,000 plus installation
- ❖ About **84,400 kWh/** year saved
- ❖ **101,260 lbs** of CO2 per year
- ❖ Estimated pay back time = **9 years**
- ❖ System forecasted to function for **20-25 years**
- ❖ **Sunwater Solar, Sunlight & Power, Santa Clara Solar**

