

FROM SACRAMENTO STATE



[WWW.SOLARNEST.ORG](http://WWW.SOLARNEST.ORG)

# JURY NARRATIVE

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TEAM SOLAR  
**NEST**

# reflect home

t|e|c FAMILY LIVING with ENVIRONMENTAL CONSCIOUSNESS

## Hello, and Welcome Home

Welcome to Your home - Reflect Home.

As you read through this you will find why we chose to be part of the U.S. Department of Energy Solar Decathlon 2015, what we chose to focus as our goals, and how we hope the City of Trees, our dear Sacramento, is reflected in our home.

We strived to discover the future of sustainable, energy-efficient housing and deliver these innovations to home buyers at an affordable price. To make strategic improvements to conventional building methods with regard to aesthetics, performance, and affordability. Through our efforts, we aspire to redefine the possible by building tomorrow one home at a time.

Do enjoy!





WELCOME HOME!

# OUR ARCHITECTURAL APPROACH

The reason why we chose to call our house Reflect Home is simple. We believe that it is a reflection of any family who lives within it and their way of life. The Reflect Home is a model of a sustainable living, yet stylish and comfortable. It allows the homeowner to generate and use power in a way that leaves a smaller footprint on the planet, without sacrificing the comforts and conveniences of a modern and affordable home. This house is perfect for the single working person, a married couple planning to start a family, or even the empty nester.



When the design of the home began, the focus was on the end user with the full intention of making the home as functional, livable & comfortable of a space as possible. This is the epitome of the type of living that Sacramento is accustomed to.

This is a home that is easily imagined on any neighborhood street. Team Solar NEST believes net-zero design will achieve widespread application only when future home buyers realize that sustainability can be achieved without sacrificing any common accommodations. The Reflect Home's real innovation lies in its appeal not only to people who prioritize environmentally conscious living, but also to people who may not have yet considered that a net-zero energy home could meet their needs.

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Inspiration for the home's exterior is drawn from styles found in Sacramento's most desirable neighborhoods, including craftsman bungalows and small mid-century ranch homes. By incorporating these elements, the home brings these higher-end, desirable design features to the older neighborhoods at a reasonable price.

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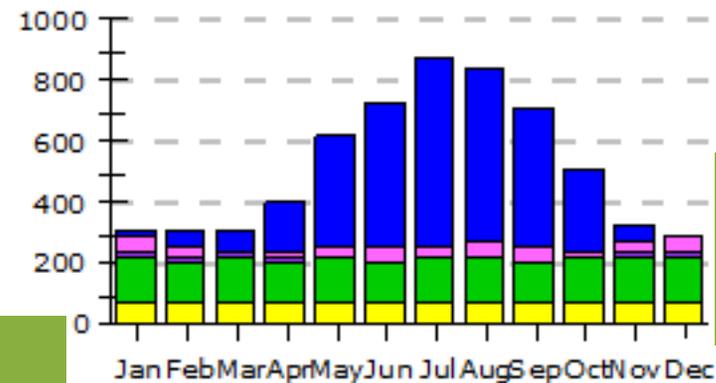
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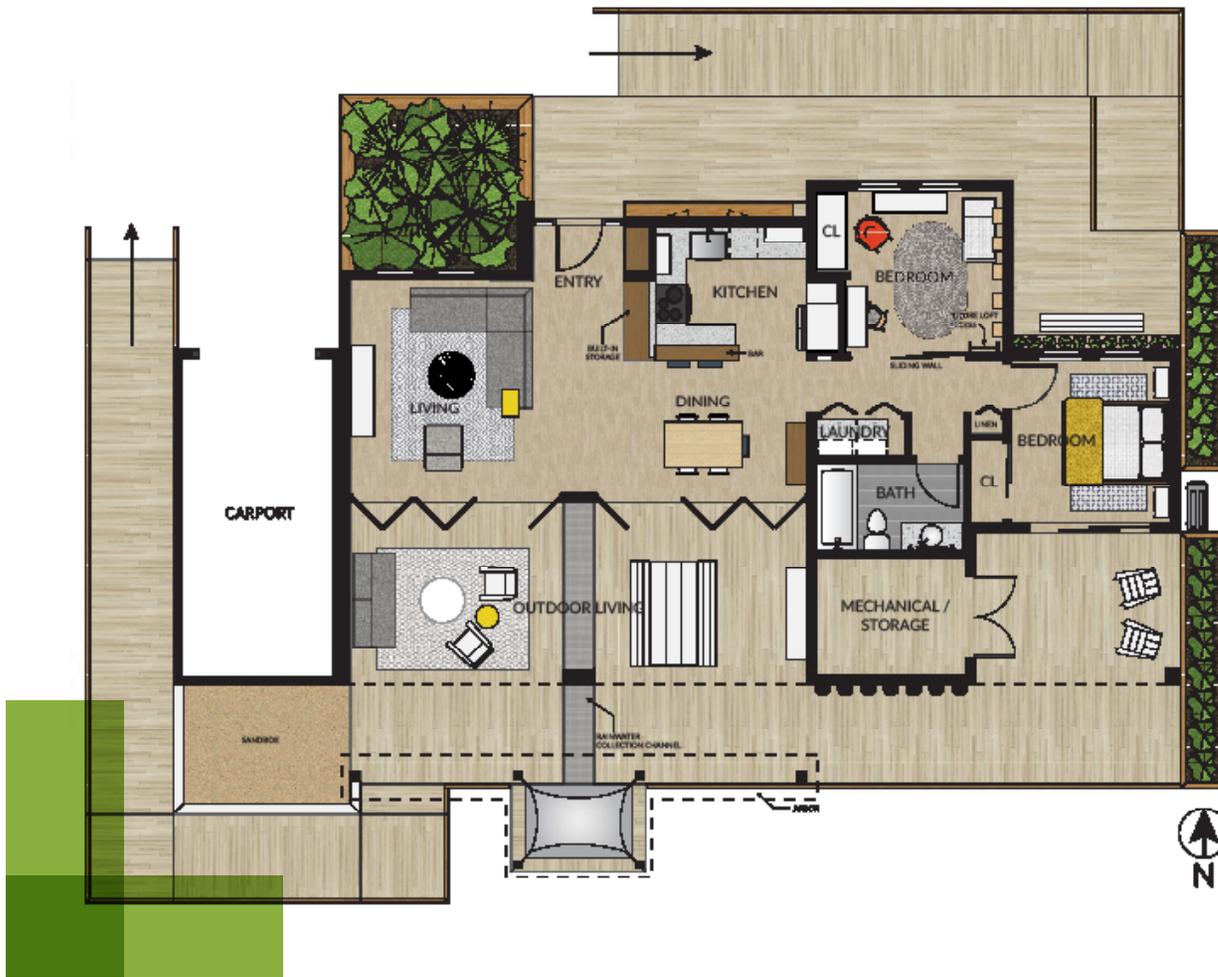
### Zone Checksums

By Glumac

**Kitchen**

COOLING COIL PEAK					CLG SPACE PEAK			HEATING COIL PEAK			TEMPERATURES		
Peaked at Time: Mo/Hr: 7 / 15					Mo/Hr: 7 / 15			Mo/Hr: Heating Design			Cooling Heating		
Outside Air: OADB/WB/HR: 85 / 70 / 86					OADB: 85			OADB: 39			SADB	52.0	82.0
Space Sens. + Lat.	Plenum Sens. + Lat.	Net Total	Percent Of Total	Space Sensible	Percent Of Total	Space Peak	Coil Peak	Percent	Ra Plenum	77.1	69.1		
Btu/h	Btu/h	Btu/h	(%)	Btu/h	(%)	Space Sens	Tot Sens	Of Total	Return	77.1	69.1		
						Btu/h	Btu/h	(%)	Fn MtrTD	0.0	0.0		
<b>Envelope Loads</b>													
Skylite Solar	0	0	0	0	0	0	0	0.00	Fn BldTD	0.0	0.0		
Skylite Cond	0	0	0	0	0	0	0	0.00	Fn Frict	0.0	0.0		
Roof Cond	0	306	306	11	0	0	-106	10.84	<b>AIRFLOWS</b>				
Glass Solar	356	0	356	13	356	20	0	0.00	Cooling Heating				
Glass/Door Cond	84	0	84	3	84	5	-281	28.85	Diffuser	68	68		
Wall Cond	67	23	90	3	67	4	-111	15.67	Terminal	68	68		
Partition/Door	0	0	0	0	0	0	0	0.00	Main Fan	68	68		
Floor	0	0	0	0	0	0	0	0.00	Sec Fan	0	0		
Adjacent Floor	0	0	0	0	0	0	0	0.00	Nom Vent	0	0		
Infiltration	0	0	0	0	0	0	0	0.00	AHU Vent	0	0		
Sub Total ==>	508	329	836	30	508	29	-393	55.36	Infil	0	0		
<b>Internal Loads</b>													
Lights	134	34	168	6	134	8	0	0.00	MinStop/Rh	7	7		
People	1,500	0	1,500	54	750	43	0	0.00	Return	68	68		
Misc	285	0	285	10	285	16	0	0.00	Exhaust	0	0		
Sub Total ==>	1,919	34	1,953	70	1,169	67	0	0.00	Rm Exh	0	0		
Ceiling Load	65	-65	0	0	65	4	-27	0.00	Auxiliary	0	0		
Ventilation Load	0	0	0	0	0	0	0	0.00	Leakage Dwn	0	0		
Adj Air Trans Heat	0	0	0	0	0	0	0	0	Leakage Ups	0	0		
Dehumid. Ov Sizing	0	0	0	0	0	0	-489	50.15	<b>ENGINEERING CKS</b>				
Ov/Undr Sizing	0	0	0	0	0	0	0	0.00	% OA	0.0	0.0		
Exhaust Heat	0	0	0	0	0	0	0	0.00	cfm/ft²	0.69	0.69		
Sup. Fan Heat	0	0	0	0	0	0	0	0.00	cfm/ton	292.79			
Ret. Fan Heat	0	0	0	0	0	0	0	0.00	ft²/ton	422.94			
Duct Heat Pkup	0	0	0	0	0	0	54	-5.51	Btu/hr-ft²	28.37	-9.92		
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0.00	No. People	3			
Supply Air Leakage	0	0	0	0	0	0	0	0.00					
Grand Total ==>	2,492	297	2,789	100.00	1,742	100.00	-909	-975					

COOLING COIL SELECTION										AREAS		HEATING COIL SELECTION			
Total Capacity	Sens Cap.	Coil Airflow	Enter DB/WB/HR			Leave DB/WB/HR			Gross Total	Glass	Capacity	Coil Airflow	Ent	Lvg	
ton	MBh	cfm	°F	°F	gr/lb	°F	°F	gr/lb		ft² (%)	MBh	cfm	°F	°F	
Main Clg	0.2	2.8	2.0	68	77.1	64.0	68.5	52.0	49.9	50.0	Floor	98			
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0			
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0			
Total	0.2	2.8									ExFlr	0			
											Roof	98	0	0	
											Wall	147	41	28	
											Ext Door	0	0	0	
											Main Htg	-1.0	68	69.1	82.0
											Aux Htg	0.0	0	0.0	0.0
											Preheat	0.0	0	0.0	0.0
											Humidif	0.0	0	0.0	0.0
											Opt Vent	0.0	0	0.0	0.0
											Total	-1.0			



Team Solar NEST is attempting to use a communications strategy that is interaction based. Our main goal is to show our community and our partners that this project is more than about us. It is about the future and the very essence of what it can look like from a housing perspective. Because of our commitment to our community and boosting them up, we hope to see a reciprocation from them not because we asked, but because they see the value in our work. Through the use of online mediums like facebook, twitter and instagram. we hope to encapsulate our targets audiences by using them in different ways to provide perspective and fresh content on every medium.

Facebook is our community catalyst. It allows us to reach a broad spectrum of people, businesses and community partners. We tend to cater our content on Facebook to be more interactive and end with a question. This is all in hopes of encouraging interaction. With Twitter, we are engaging with our university and its ever changing need for information. It is also used as a way to share important articles about sustainability and generally be a beacon of information, often times leading to other sites and news bits.

Instagram is our “show me” medium. This allows us to “pull back the curtain” and show our followers a more intimate and less serious side of our team. Pictures are always a great way to tell a story, thus Instagram is seen as an important part of our strategy as we move into the final phase of our competition. By diversifying how we use these mediums, we can cover more ground and produce more compelling content, instead of just rehashing the same stuff on all three mediums.

The measurement of success with these goals is simple. Does our community engage with us and find our content to be fulfilling their need for all things Team Solar Nest? Are our partners pleased with the level of “shout-outs” and praise they are receiving? These are ultimately what we believe to be the measures of success.



## COMMUNICATIONS APPROACH



**CONTACT**

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**GARETH FIGGESS**

LEAD FACULTY ADVISOR  
PHONE: 916.769.1761

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6000 J STREET SACRAMENTO, CA 95819-6126

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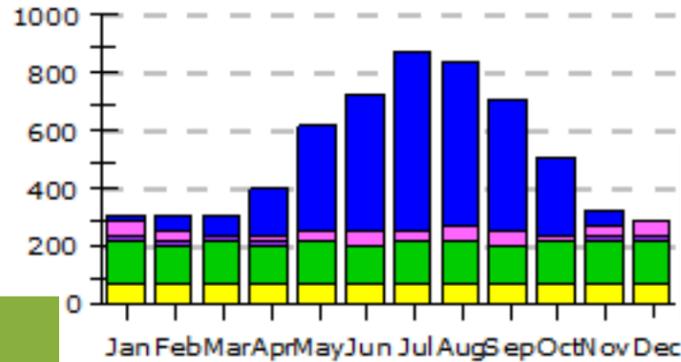
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<b>Envelope Loads</b>				<b>Envelope Loads</b>				<b>Envelope Loads</b>				Return 77.1 69.1		
Skylite Solar	0	0	0	0	0	0	0	0.00	Fn MtrTD 0.0 0.0					
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Sub Total ==>	1,919	34	1,953	70	1,169	67	0	0	0.00	Sec Fan 0 0				
<b>Ceiling Load</b>				<b>Ceiling Load</b>				<b>Ceiling Load</b>				Nom Vent 0 0		
Ventilation Load	65	-65	0	0	65	4	-27	0	0.00	AHU Vent 0 0				
Adj Air Trans Heat	0	0	0	0	0	0	0	0	0.00	Infil 0 0				
Dehumid. Ov Sizing	0	0	0	0	0	0	-489	-489	50.15	MinStop/Rh 7 7				
Ov/Undr Sizing	0	0	0	0	0	0	0	0	0.00	Return 68 68				
Exhaust Heat	0	0	0	0	0	0	0	0	0.00	Exhaust 0 0				
Sup. Fan Heat	0	0	0	0	0	0	0	0	0.00	Rm Exh 0 0				
Ret. Fan Heat	0	0	0	0	0	0	0	0	0.00	Auxiliary 0 0				
Duct Heat Pkup	0	0	0	0	0	0	0	0	0.00	Leakage Dwn 0 0				
Underflr Sup Ht Pkup	0	0	0	0	0	0	0	0	0.00	Leakage Ups 0 0				
Supply Air Leakage	0	0	0	0	0	0	0	0	0.00					
Grand Total ==>	2,492	297	2,789	100.00	1,742	100.00	-909	-975	100.00					

COOLING COIL SELECTION										AREAS			HEATING COIL SELECTION						
	Total ton	Capacity MBh	Sens Cap. MBh	Coil Airflow cfm	Enter DB/WB/HR °F °F gr/lb			Leave DB/WB/HR °F °F gr/lb			Gross Total	Glass ft² (%)	Capacity MBh	Coil Airflow cfm	Ent °F	Lvg °F			
Main Clg	0.2	2.8	2.0	68	77.1	64.0	68.5	52.0	49.9	50.0	Floor	98		Main Htg	-1.0	68	69.1	82.0	
Aux Clg	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Part	0		Aux Htg	0.0	0	0.0	0.0	
Opt Vent	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	Int Door	0		Preheat	0.0	0	0.0	0.0	
Total	0.2	2.8									ExFlr	0		Humidif	0.0	0	0.0	0.0	
											Roof	98	0	0	Opt Vent	0.0	0	0.0	0.0
											Wall	147	41	28	Total	-1.0			
											Ext Door	0	0	0					

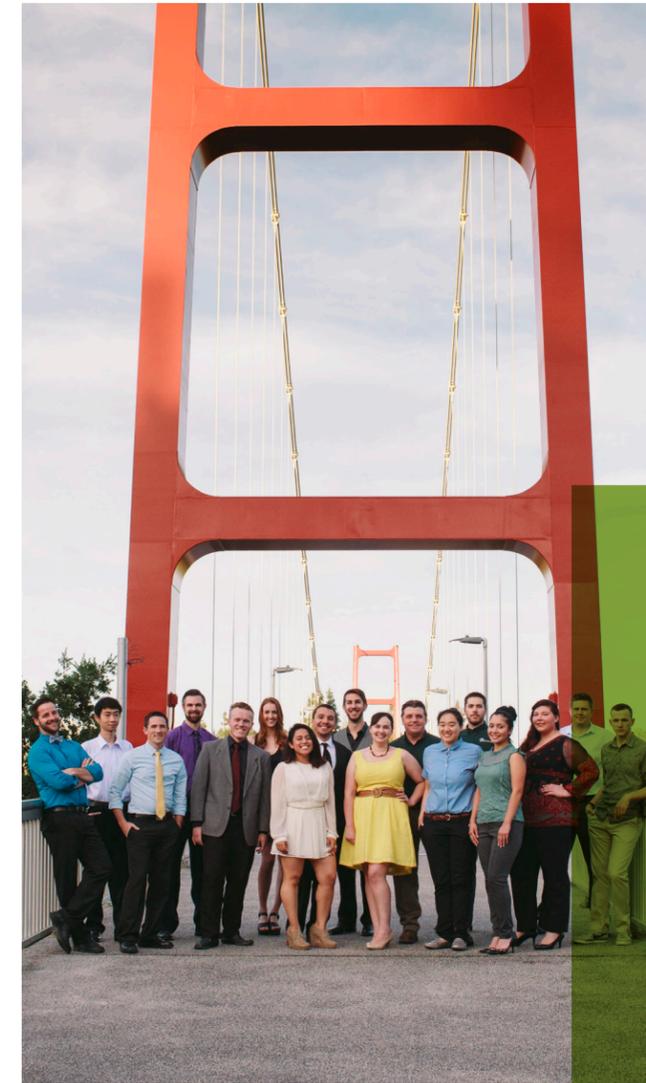


Team Solar NEST is attempting to use a communications strategy that is interaction based. Our main goal is to show our community and our partners that this project is more than about us. It is about the future and the very essence of what it can look like from a housing perspective. Because of our commitment to our community and boosting them up, we hope to see a reciprocation from them not because we asked, but because they see the value in our work. Through the use of online mediums like facebook, twitter and instagram. we hope to encapsulate our targets audiences by using them in different ways to provide perspective and fresh content on every medium.

Facebook is our community catalyst. It allows us to reach a broad spectrum of people, businesses and community partners. We tend to cater our content on Facebook to be more interactive and end with a question. This is all in hopes of encouraging interaction. With Twitter, we are engaging with our university and its ever changing need for information. it is also used as a way to share important articles about sustainability and generally be a beacon of information, often times leading to other sites and news bits.

Intstagram is our "show me" medium. This allows us to "pull back the curtain" and show our followers a more intimate and less serious side of our team. Pictures are always a great way to tell a story, thus instagram is seen as a important part of our strategy as we move into the final phase of our competition. By diversifying how we use these mediums, we can cover more ground and produce more compelling content, instead of just rehashing the same stuff on all three mediums.

The measurement of success with these goals is simple. Does our community engage with us and find our content to be fulfilling their need for all things Team Solar Nest? Are our partners pleased with the level of "shout-outs" and praise they are receiving? These are ultimately what we believe to be the measures of success.



## OUR COMMUNICATIONS APPROACH



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