

# L'AVENIR NET ZERO LIVING FORT COLLINS, COLORADO

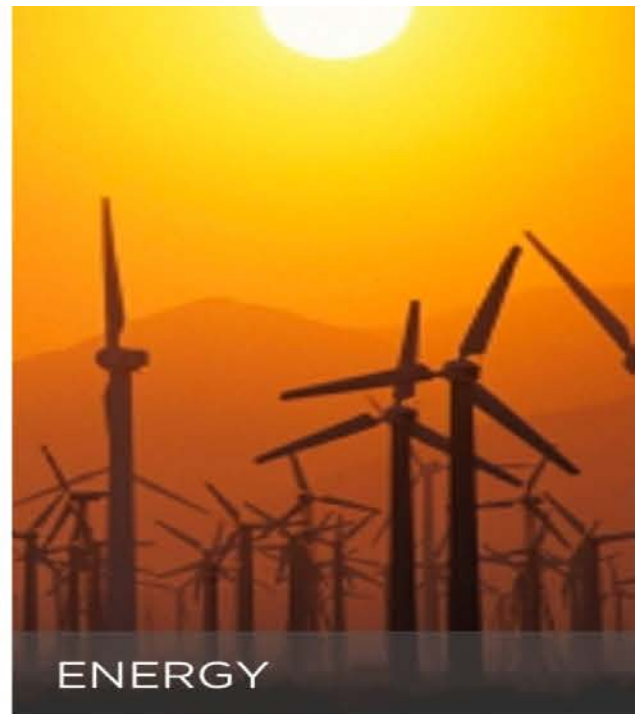




SITE



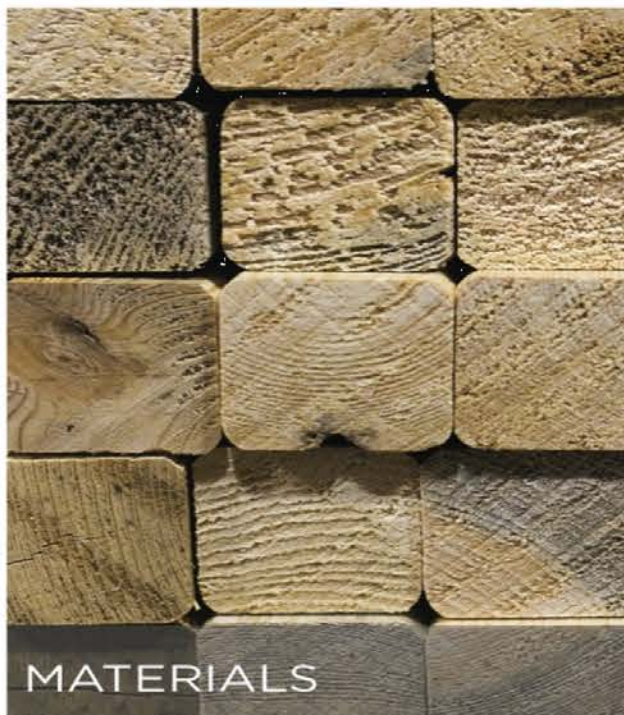
WATER



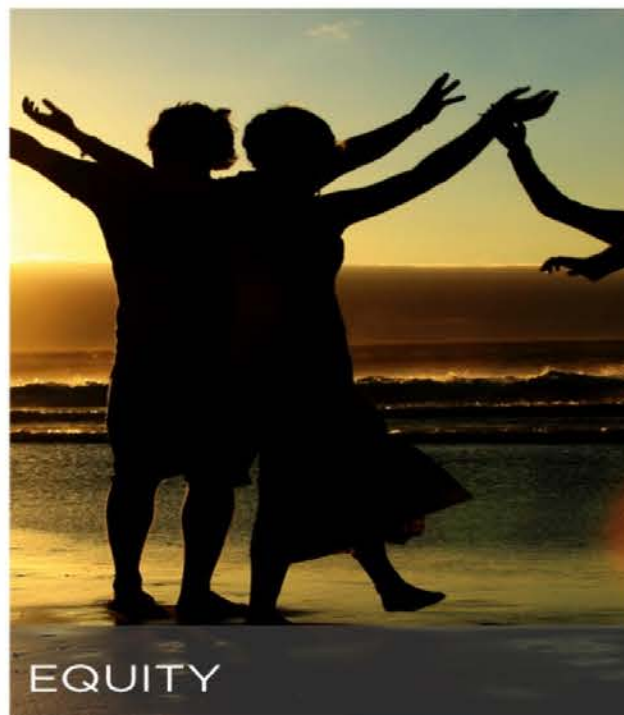
ENERGY



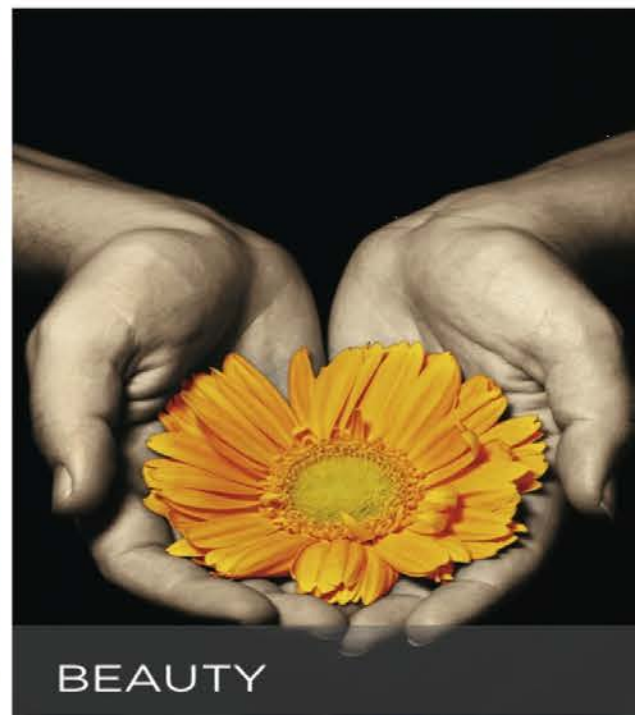
HEALTH



MATERIALS



EQUITY



BEAUTY



## PATHWAYS TO CERTIFICATION

### Living Building Certified Projects in the US

15 Full Certifications  
22 Petal Certifications  
26 Net Zero Certifications

Over 300 in process

One Petal/NZE in Colorado  
Rocky Mountain Institute in  
Basalt, CO



#### LIVING CERTIFICATION

A project achieves Living Certification or Living Building Certification by attaining all Imperatives assigned to its Typology. All twenty Imperatives are required for Buildings, sixteen for Renovations, and seventeen for Landscape + Infrastructure projects.

#### PETAL CERTIFICATION

While achieving Living Certification is the ultimate goal, meeting the Imperatives of multiple Petals is a significant achievement in and of itself. Petal Certification requires the achievement of at least three of the seven Petals, one of which must be the Water, Energy, or Materials Petal.

Imperatives 01, Limits to Growth, and 20, Inspiration + Education, are also required.



#### NET ZERO ENERGY CERTIFICATION

The marketplace has characterized net zero energy in many different ways. The Institute has a simple definition:

One hundred percent of the building's energy needs on a net annual basis must be supplied by on-site renewable energy. No combustion is allowed.

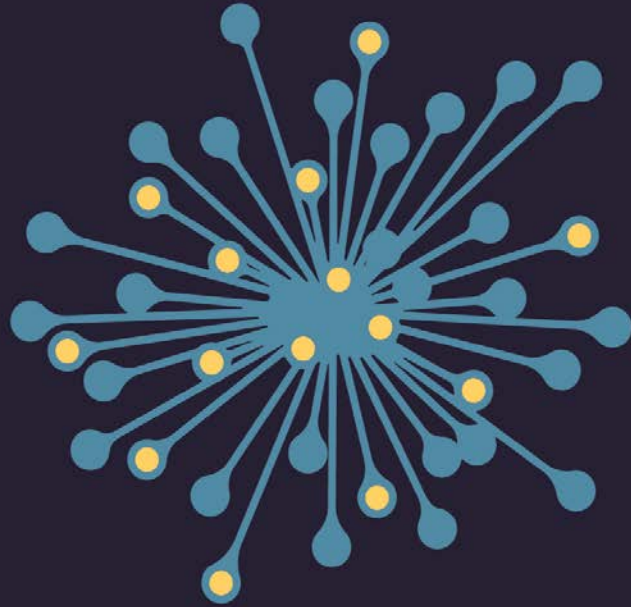
The Net Zero Energy Building Certification® program uses the structure of the Living Building Challenge 3.1 to document compliance and requires four of the Imperatives to be achieved: 01, Limits to Growth, 06, Net Positive Energy (reduced to one hundred percent), 19, Beauty + Spirit, and 20, Inspiration + Education.

The requirement for Imperative 06, Net Positive Energy, is reduced to one hundred percent and does not require storage for resilience. One hundred and five percent energy production and storage for resilience are required for Petal Certifications targeting I-06 Net Positive Energy, and for all Living Building Certifications.

As with Living Building and Petal Certification, NZEB certification is based on actual performance rather than modeled outcomes.

SUMMARY MATRIX

Imperative omitted from Typology				
Solutions beyond project footprint are permissible				
The 20 Imperatives of the Living Building Challenge: Follow down the column associated with each Typology to see which Imperatives apply.				
	LIVING BUILDING CHALLENGE 3.1			
	BUILDINGS	RENOVATIONS	LANDSCAPE + INFRASTRUCTURE	
PLACE				01. LIMITS TO GROWTH
	SCALE JUMPING		SCALE JUMPING	02. URBAN AGRICULTURE
			SCALE JUMPING	03. HABITAT EXCHANGE
				04. HUMAN-POWERED LIVING
WATER			SCALE JUMPING	05. NET POSITIVE WATER
ENERGY			SCALE JUMPING	06. NET POSITIVE ENERGY
HEALTH + HAPPINESS				07. CIVILIZED ENVIRONMENT
				08. HEALTHY INTERIOR ENVIRONMENT
				09. BIOPHILIC ENVIRONMENT
MATERIALS				10. RED LIST
			SCALE JUMPING	11. EMBODIED CARBON FOOTPRINT
				12. RESPONSIBLE INDUSTRY
				13. LIVING ECONOMY SOURCING
				14. NET POSITIVE WASTE
EQUITY				15. HUMAN SCALE + HUMANE PLACES
				16. UNIVERSAL ACCESS TO NATURE + PLACE
			SCALE JUMPING	17. EQUITABLE INVESTMENT
				18. JUST ORGANIZATIONS
BEAUTY				19. BEAUTY + SPIRIT
				20. INSPIRATION + EDUCATION



**L'AVENIR**  
**NET ZERO LIVING**

### 3 REQUIRED FOR PETAL CERTIFICATION

#### PLACE

- 01. LIMITS TO GROWTH
- 02. URBAN AGRICULTURE
- 03. HABITAT EXCHANGE
- 04. HUMAN POWERED LIVING

#### ENERGY

- 06. NET POSITIVE ENERGY

#### BEAUTY

- 19. BEAUTY + SPIRIT
- 20. INSPIRATION + EDUCATION

### BONUS FOURTH

#### HEALTH & HAPPINESS

- 07. CIVILIZED ENVIRONMENT
- 08. HEALTHY INTERIOR ENVIRONMENT
- 09. BIOPHILIC ENVIRONMENT





## OLD TOWN FORT COLLINS

### Public Amenities Nearby

- Restaurants
- Breweries
- Civic Buildings
- Cultural Buildings
- Parks and Squares
- Transportation Options
- Bike Trails
- The Poudre River
- Music Venues
- Public Library
- Shopping



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## BUILDING STATS:

- Multi-Family Residential
- 10,000 SF Building
- 4,600 SF Lot
- 4 Townhome/Condos
- 2,300 SF + 200 SF Basement
- Shared Electric Vehicle, located in service drive on the south

37.7 kW Photovoltaic System

-HERS -7 interior Units

-HERS -3 with PV

7 Geothermal Wells



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## WHAT IT IS:

- Sustainable Design
  - Net Zero Energy
  - Super Tight Envelope and High IAQ
  - Low Water Usage
- Compact and Trim
- Urban Lifestyle
- Smart Technology
- Elegant and Simple Design
- European Feel
- Flexible Design
- Low Maintenance Materials
- High Value and Quality



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# Home Energy Rating Certificate

## Projected Report

Rating Date: 10/2/17  
Registry ID: Unregistered  
Rating Number:



### HERS® Index Score:

# -7

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$3,597

\*Relative to an average U.S. home

### Home:

221 East Oak Street, Fort Collins, CO

### Builder:

Davis Davis

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	7.9	\$280
Cooling	1.1	\$39
Hot Water	2.7	\$97
Lights/Appliances	20.3	\$721
Service Charges		\$0
Generation (e.g. Solar)	38.9	-\$1,137
<b>Total:</b>	<b>32.0</b>	<b>\$0</b>

### This home meets or exceeds the criteria of the following:

Energy Star v3  
Energy Star v3.1  
2012 International Energy Conservation Code  
2015 International Energy Conservation Code

### Rating Completed by:

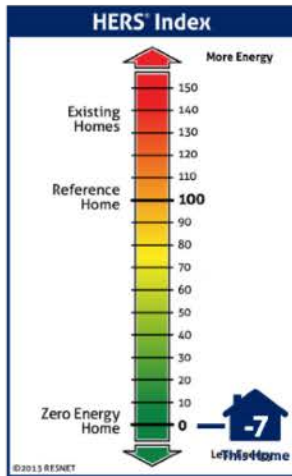
**Energy Rater:** Peter Oberhammer  
RESNET ID: 9189857

**Rating Company:** EnergyLogic  
PO Box N Berthoud, CO 80513  
(970) 556-0839

**Rating Provider:** EnergyLogic  
PO Box N Berthoud, CO 80513  
(970) 556-0839



Peter Oberhammer, Certified Energy Rater



### Home Feature Summary:

Home Type:	Townhouse, inside unit
Conditioned Floor Area:	2,152 sq. ft.
Number of Bedrooms:	3
Primary Heating System:	Ground Source Heat Pump • Electric • 4.5 COP
Primary Cooling System:	Ground Source Heat Pump • Electric • 18 EER
Primary Water Heating:	Water Heater • Electric • 3.5 Energy Factor
House Tightness:	2 ACH50
Duct Leakage to Outside:	1 CFM25
Above Grade Walls:	R-31
Ceiling:	R-50
Window Type:	U-Value: 0.300, SHGC: 0.320
Foundation Walls:	R-10



Ekotrope HERS Rating Tool - Version: 2.2.0.1779  
The Home Energy Rating Standard Disclosure for this house is available from the rating provider.  
This report does not constitute any warranty or guarantee.



# L'AVENIR

## NET ZERO LIVING

# Home Energy Rating Certificate

## Projected Report

Rating Date: 10/2/17  
Registry ID: Unregistered  
Rating Number:



### HERS® Index Score:

# -3

Your home's HERS score is a relative performance score. The lower the number, the more energy efficient the home. To learn more, visit [www.hersindex.com](http://www.hersindex.com)

### Annual Savings

# \$3,940

\*Relative to an average U.S. home

### Home:

221 East Oak Street, Fort Collins, CO

### Builder:

Davis Davis

### Your Home's Estimated Energy Use:

	Use [MBtu]	Annual Cost
Heating	10.5	\$371
Cooling	1.7	\$61
Hot Water	2.7	\$97
Lights/Appliances	20.3	\$721
Service Charges		\$0
Generation (e.g. Solar)	38.9	-\$1,250
<b>Total:</b>	<b>35.2</b>	<b>\$0</b>

### This home meets or exceeds the criteria of the following:

Energy Star v3  
Energy Star v3.1  
2012 International Energy Conservation Code  
2015 International Energy Conservation Code

### Rating Completed by:

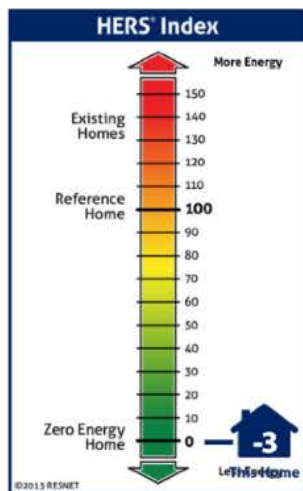
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Peter Oberhammer, Certified Energy Rater



### Home Feature Summary:

Home Type:	Townhouse, end unit
Conditioned Floor Area:	2,152 sq. ft.
Number of Bedrooms:	3
Primary Heating System:	Ground Source Heat Pump • Electric • 4.5 COP
Primary Cooling System:	Ground Source Heat Pump • Electric • 18 EER
Primary Water Heating:	Water Heater • Electric • 3.5 Energy Factor
House Tightness:	2 ACH50
Duct Leakage to Outside:	1 CFM25
Above Grade Walls:	R-31
Ceiling:	R-50
Window Type:	U-Value: 0.300, SHGC: 0.320
Foundation Walls:	R-10

ekotrope™

Ekotrope HERS Rating Tool - Version: 2.2.0.1779

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# L'AVENIR

## NET ZERO LIVING





## UNIQUE LBC NZE FEATURES:

- 100% Energy Produced on Site
- No Combustion (Gas) on Site
- Naturally Daylit
- Tall Floor to Floor Heights
- Windows at Ceiling Height
- Radiant Floor Heating and Cooling
- Energy Monitoring
- Shared Electric Vehicle
- Urban Agriculture
- Mitigated Brownfield
- Triple-Pane Windows
- LED lighting throughout



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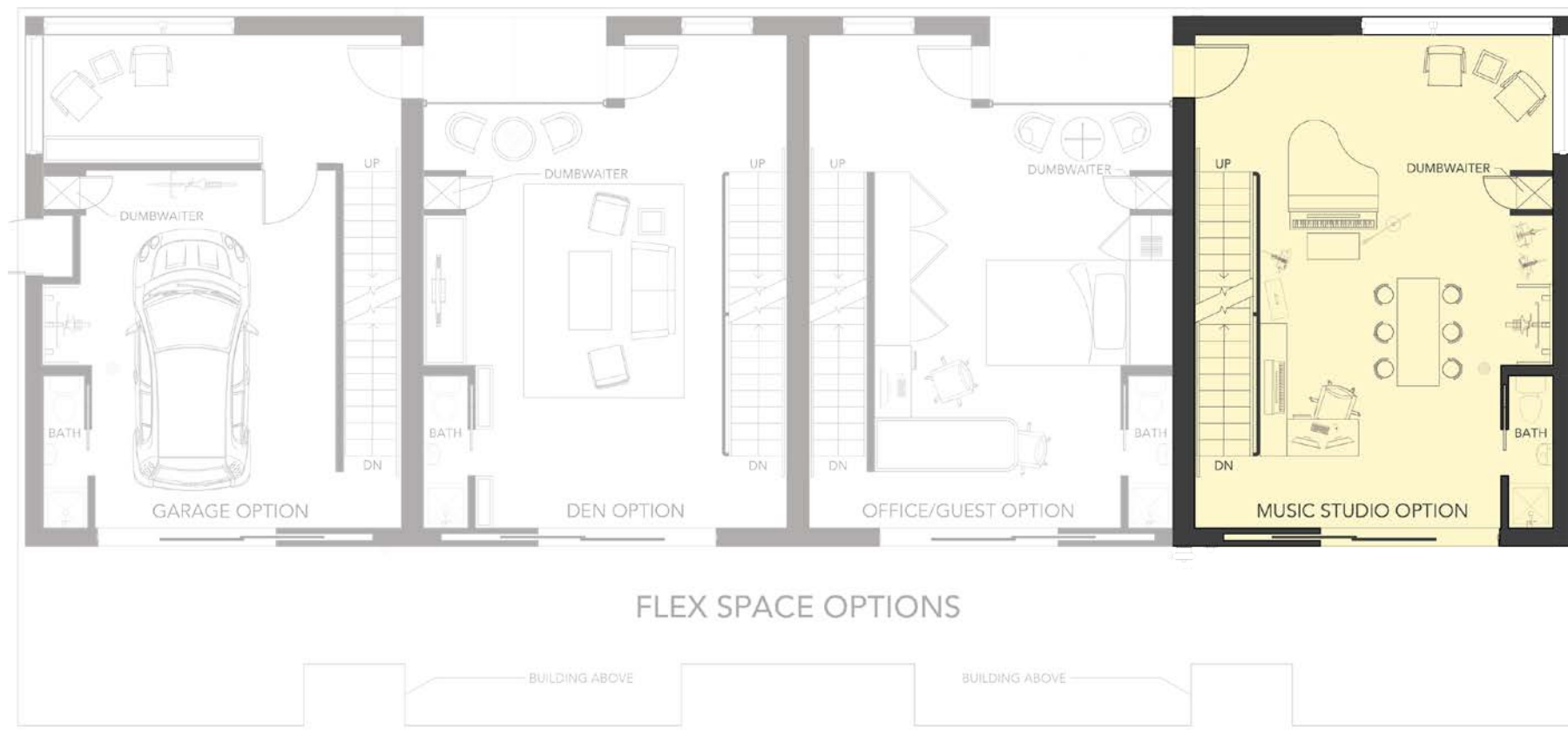


## SITE PLAN



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## FIRST FLOOR



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## SECOND FLOOR



**L'AVENIR**  
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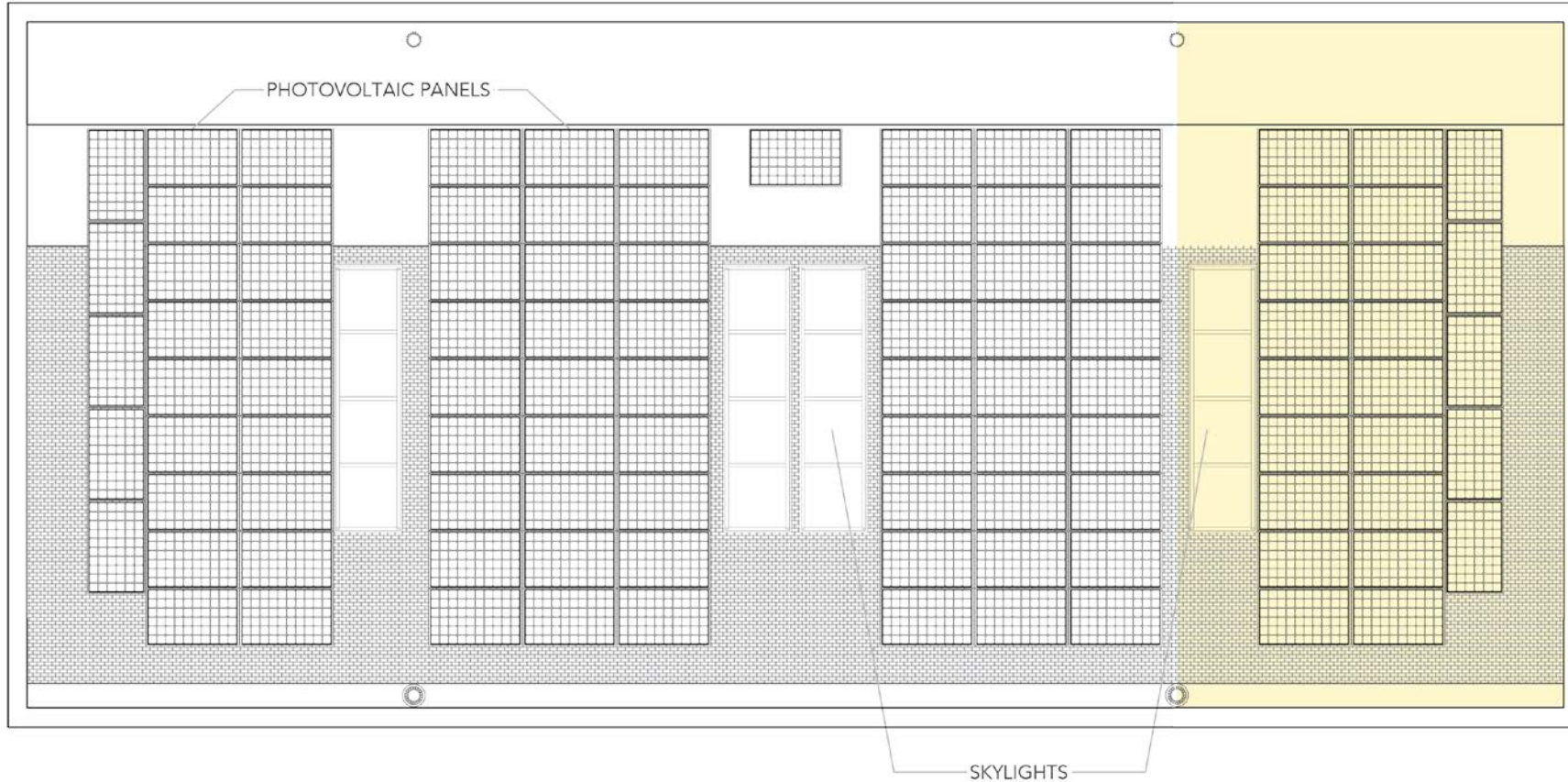




## THIRD FLOOR



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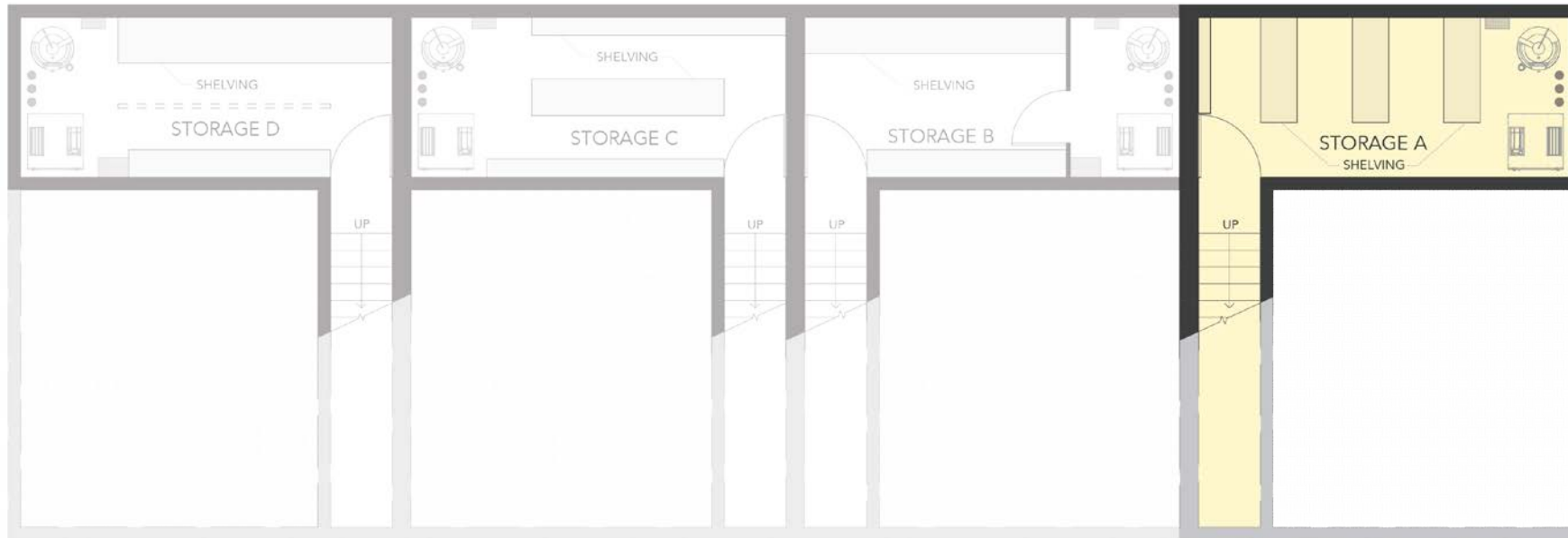


**ROOF PLAN**  
**37.7 kW of PV**



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## BASEMENT



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THANK YOU FOR YOUR TIME!



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NET ZERO LIVING

[WWW.LAVENIRLIVING.COM](http://WWW.LAVENIRLIVING.COM)





## GRUENBERG LAW OFFICE

### BUILDING STATS

Law Office

2,900 SF

1.7 MIL

San Diego, CA complete 2013

### ACCOLADES:

-San Diego AIA **Honor Award**,  
2014

-Living Building Challenge  
candidate, **Net Zero Status**  
**Pending**



## DAVIS CALIFORNIA HOUSE

## BUILDING STATS

Single Family Residential

3,000 SF

\$330,000

San Diego, CA complete 2002

## ACCOLADES:

-Better Homes and Gardens, July 2005

-San Diego Home and Garden, May 2004

-Book;, by 25 Houses Under 3000 SF, by James Grayson Trulove

-Coastal Design, Union Tribune, 2010















