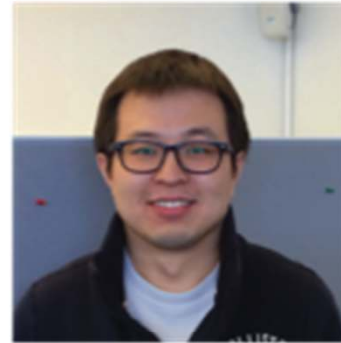
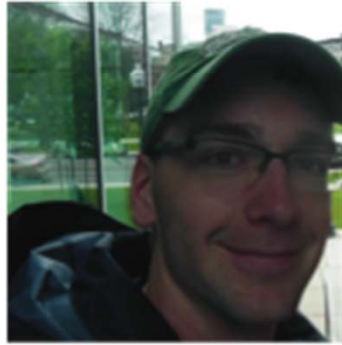
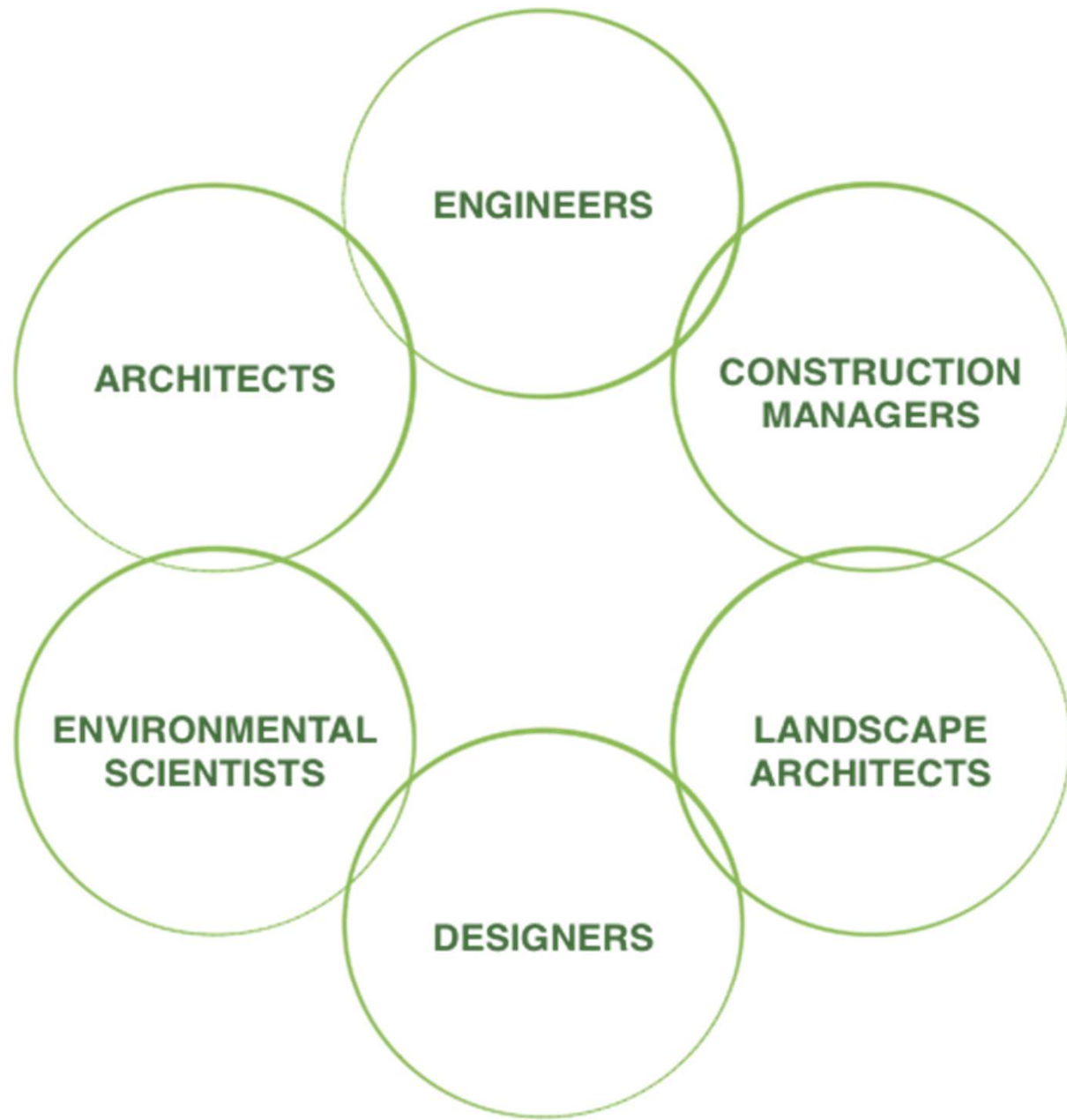


# THE MONTAGE

By Montage Builders Northern Forest







# Weighted Decision matrix

Superior Wall Foundation													
Weight:	14.9	14.2	14.7	15.2	13.9	13.8	10	15.3	11.4	11.7	14.1	13.7	13.9
Attribute:	Design Challenge	Budget	Build-ability	Indoor Air Quality	Water MGMT	Visit-ability	Net-Zero	Climate Change	Local	Recycled/ Recycl-able	Dur-ability	Resili-ence	No/Low Environ-mental Toxicity
David	97%	100%	100%	100%	100%	0%	95%	90%	85%	100%	100%	95%	70%
Jacek	95%	100%	100%	90%	100%	0%	100%	80%	75%	100%	100%	95%	89%
Gamika	90%	100%	95%	100%	100%	0%	90%	25%	15%	100%	100%	90%	73%
Jeff	95%	98%	100%	92%	100%	0%	100%	80%	75%	100%	100%	95%	65%
Zhauzhou	95%	99%	90%	95%	100%	0%	95%	52%	58%	100%	100%	95%	62%
Sarnai	94%	100%	100%	100%	100%	0%	100%	80%	75%	100%	100%	95%	80%
Mike	90%	100%	92%	89%	100%	0%	90%	25%	15%	100%	100%	90%	87%
Adam	87%	98%	100%	90%	100%	0%	100%	80%	75%	100%	100%	95%	90%
Talia	95%	99%	100%	95%	100%	0%	95%	52%	58%	100%	100%	95%	90%
Elizabeth	95%	100%	100%	100%	100%	0%	100%	80%	75%	100%	100%	95%	87%
Brent	90%	100%	88%	100%	100%	0%	90%	25%	15%	100%	100%	90%	95%
Andrew	95%	98%	100%	90%	100%	0%	100%	80%	75%	100%	100%	95%	89%
PJ	95%	99%	97%	95%	100%	0%	95%	52%	58%	100%	100%	95%	92%
Michelle	95%	98%	99%	90%	100%	0%	100%	80%	75%	100%	100%	95%	90%
<b>Total %:</b>	<b>95%</b>	<b>99%</b>	<b>97%</b>	<b>95%</b>	<b>100%</b>	<b>0%</b>	<b>95%</b>	<b>52%</b>	<b>58%</b>	<b>100%</b>	<b>100%</b>	<b>95%</b>	<b>92%</b>
<b>Score:</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>14</b>	<b>14</b>	<b>0</b>	<b>10</b>	<b>8</b>	<b>7</b>	<b>12</b>	<b>14</b>	<b>13</b>	<b>9</b>

Score

143



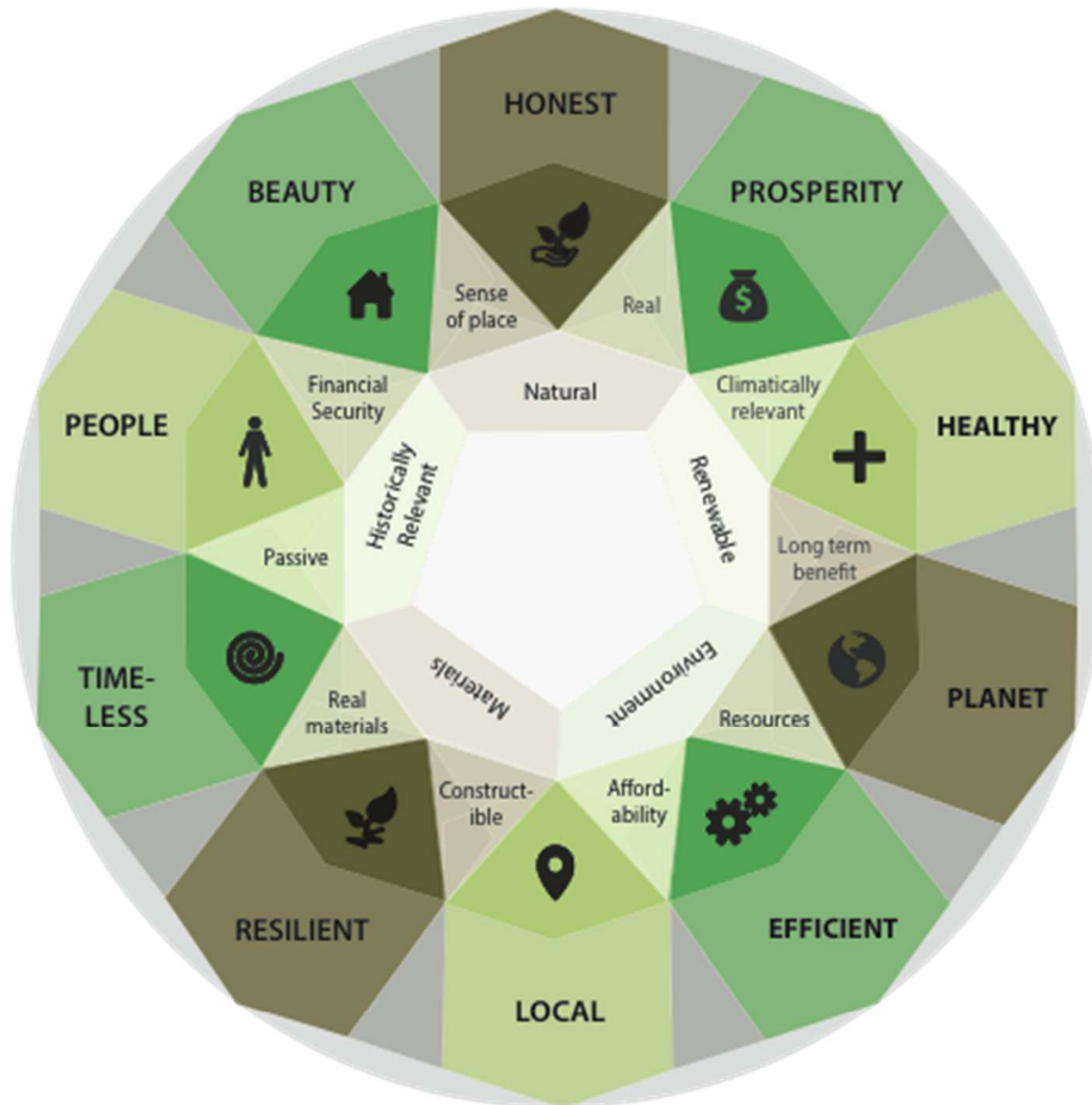
Design and build **regionally appropriate** and truly **sustainable** homes for our community



Holistic thinking and collaboration

# Local Relevance







# Performance Goals // HERS Index 50 or less



# The Montage



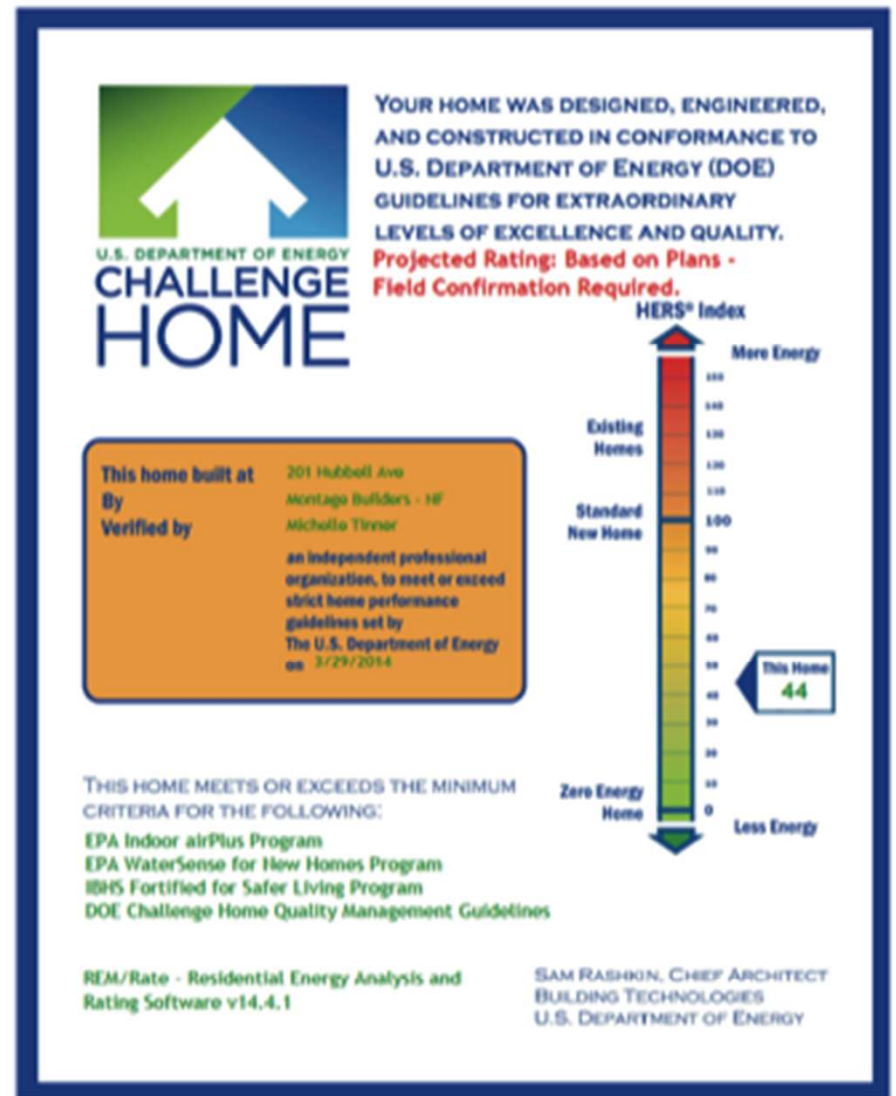
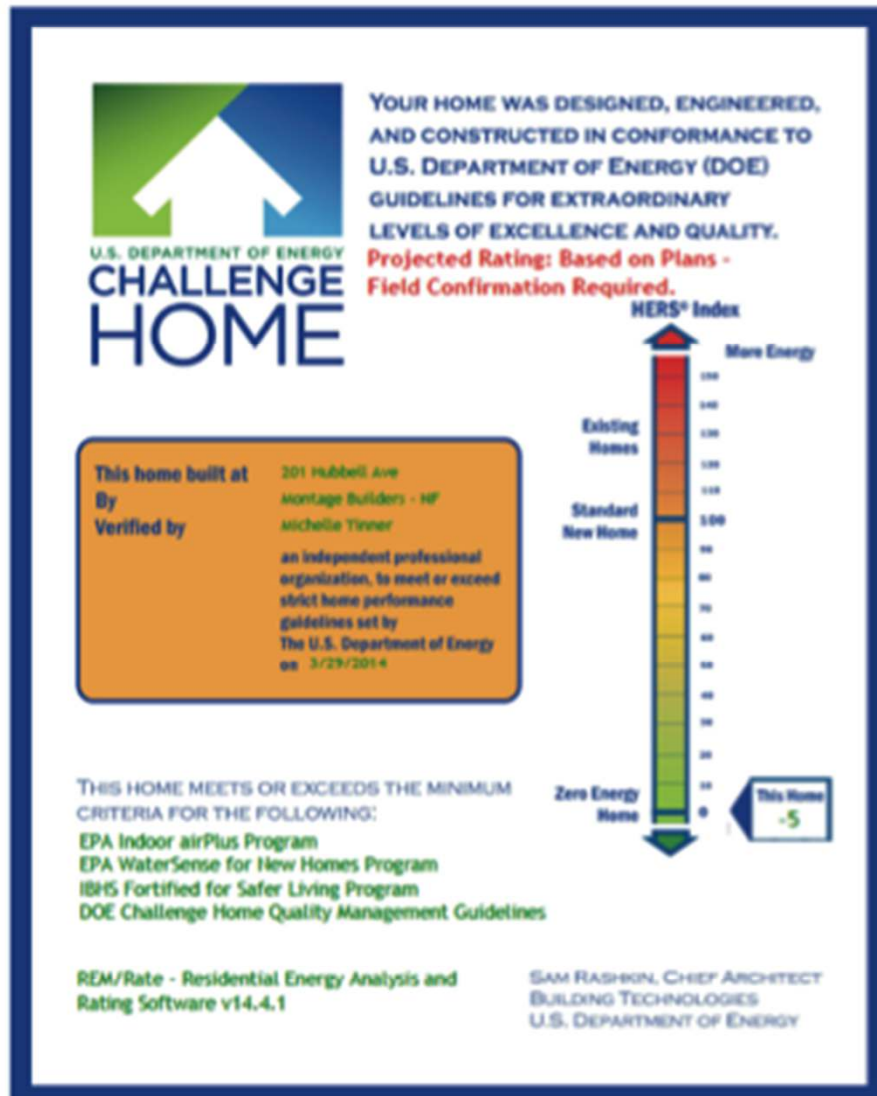
Focus first on one **hundred-plus** year components



Reduce the building's load while optimizing rapidly evolving "plug and play" mechanical systems.

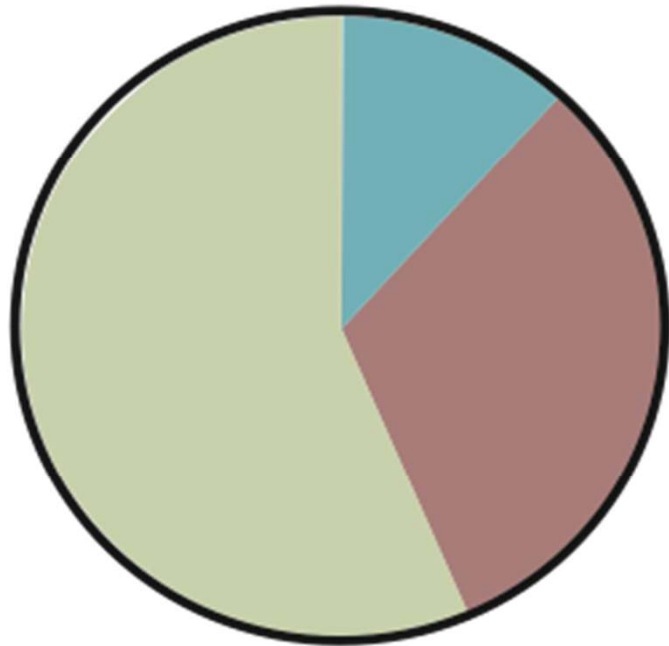
# The Montage

# The Montage No Solar



# Energy Use Distribution

National Average



The Montage



DHW



Space Conditioning

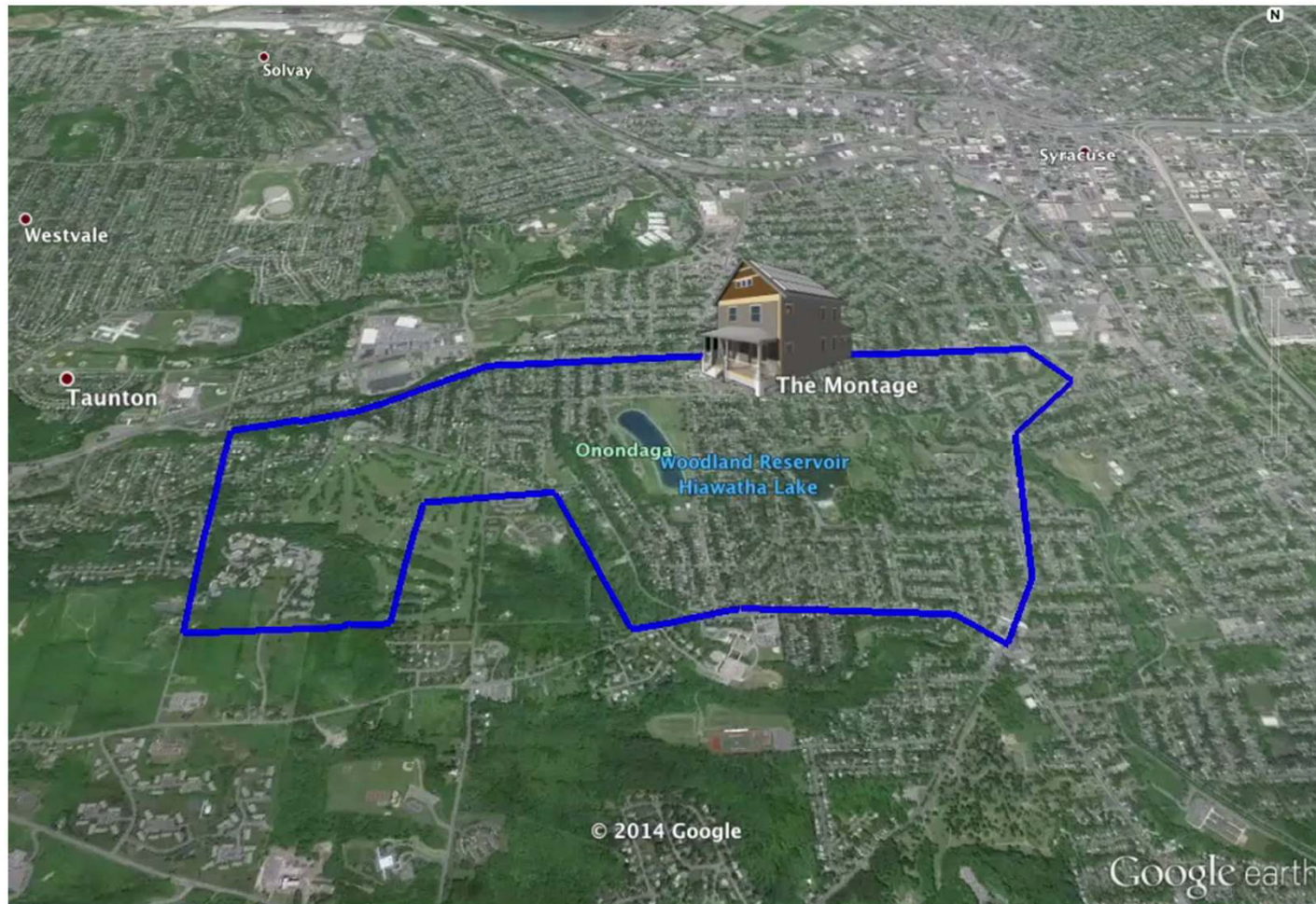


DHW

# Syracuse, New York Strathmore Neighborhood



# 201 Hubbell Ave., Syracuse, NY



# The Montage



NORTH



SOUTH

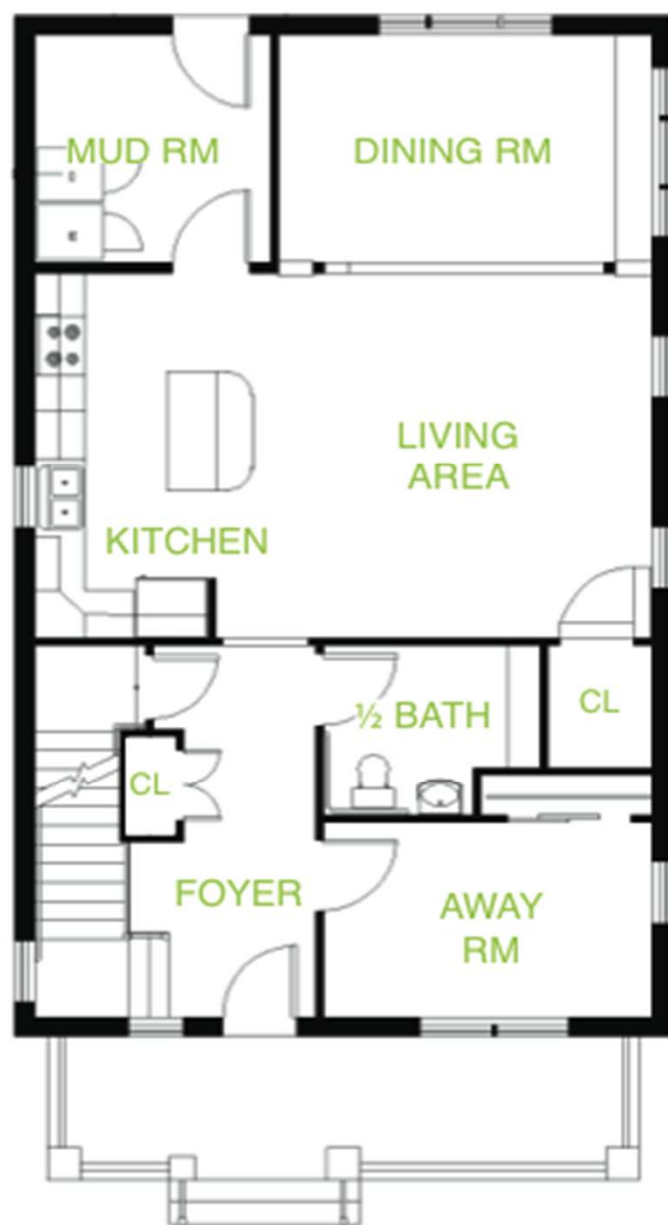


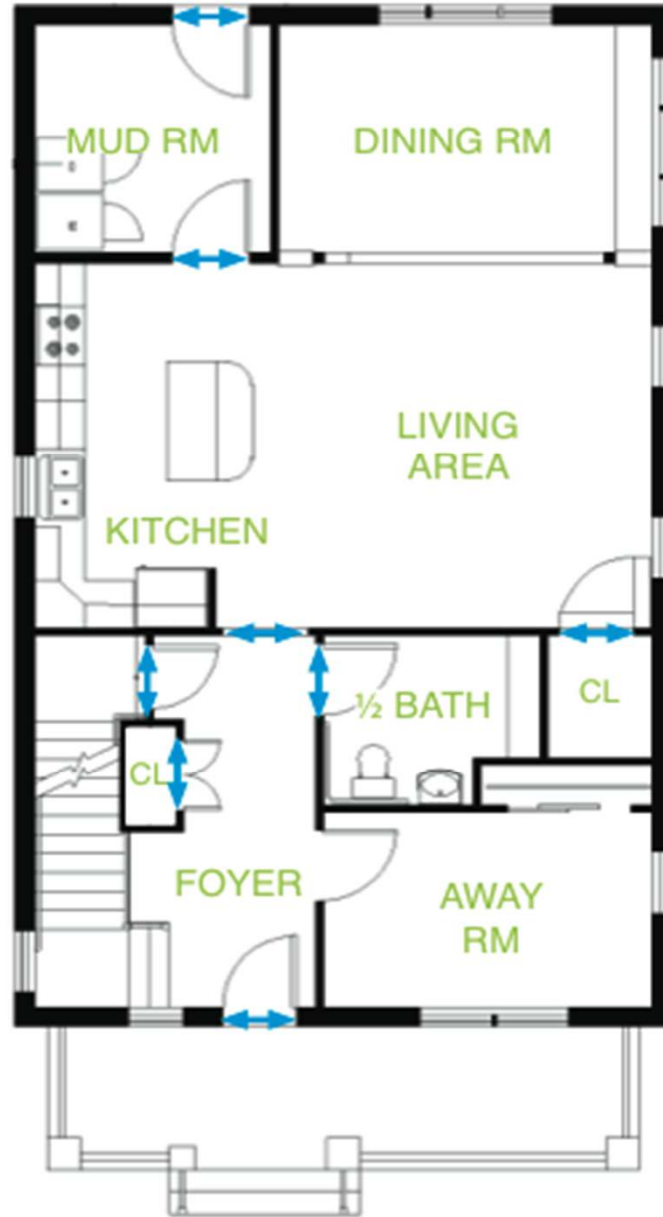
# Pattern Language

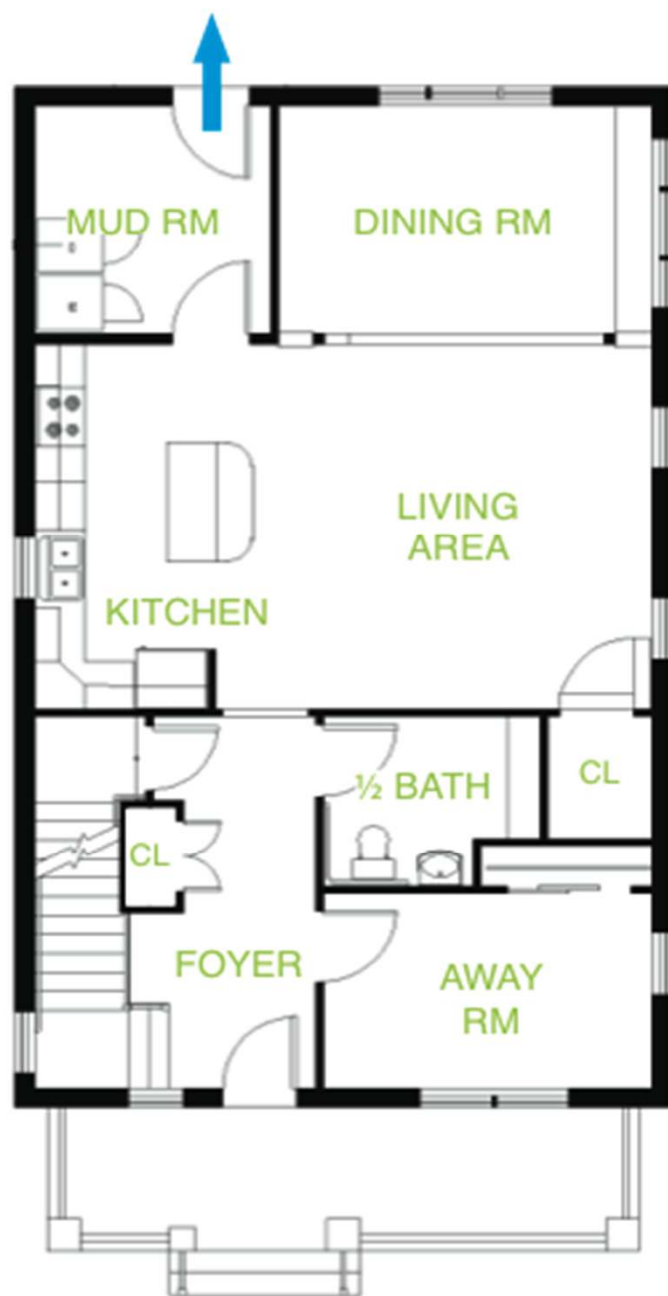


THE MONTAGE

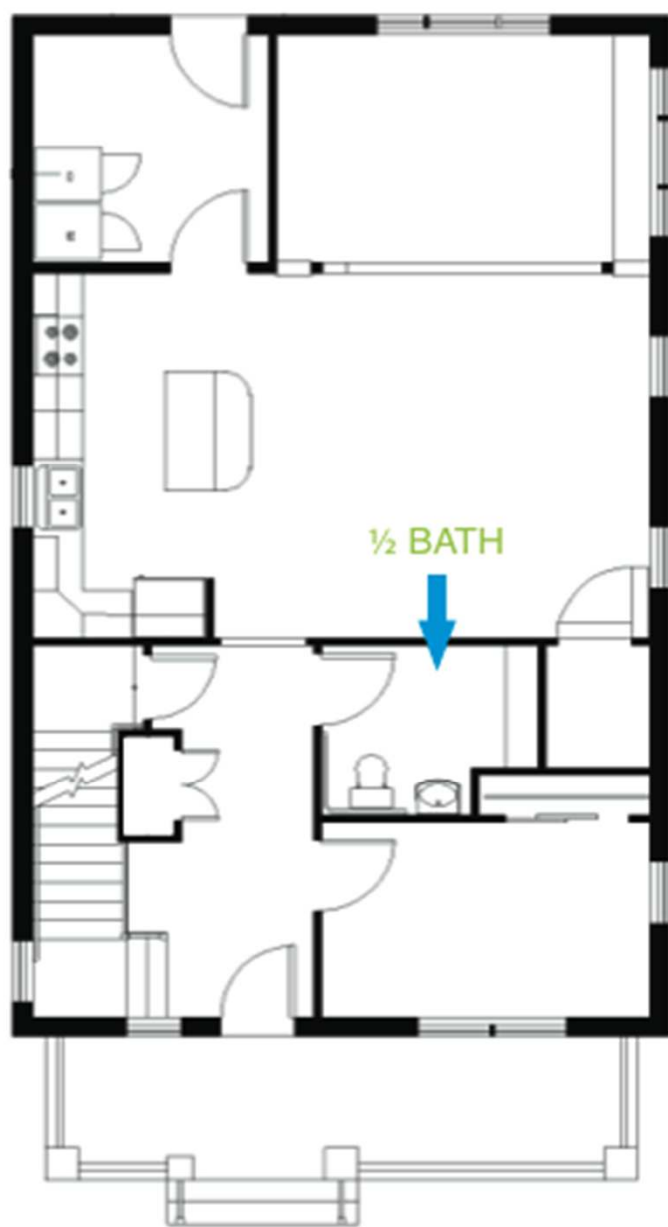


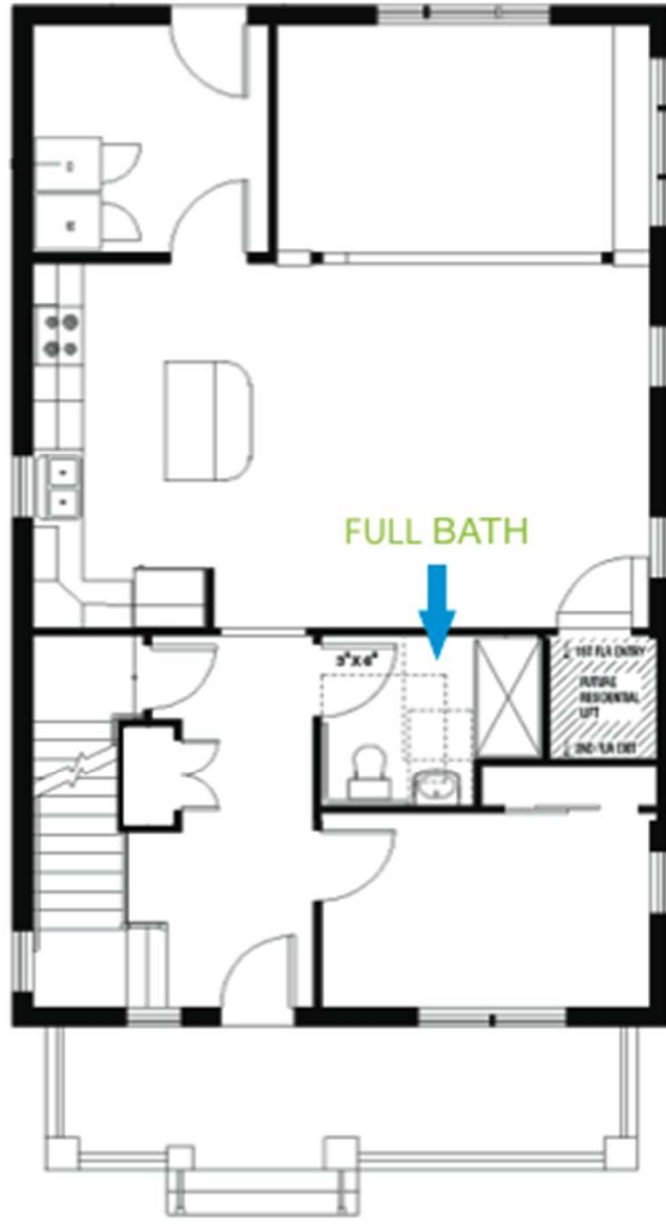










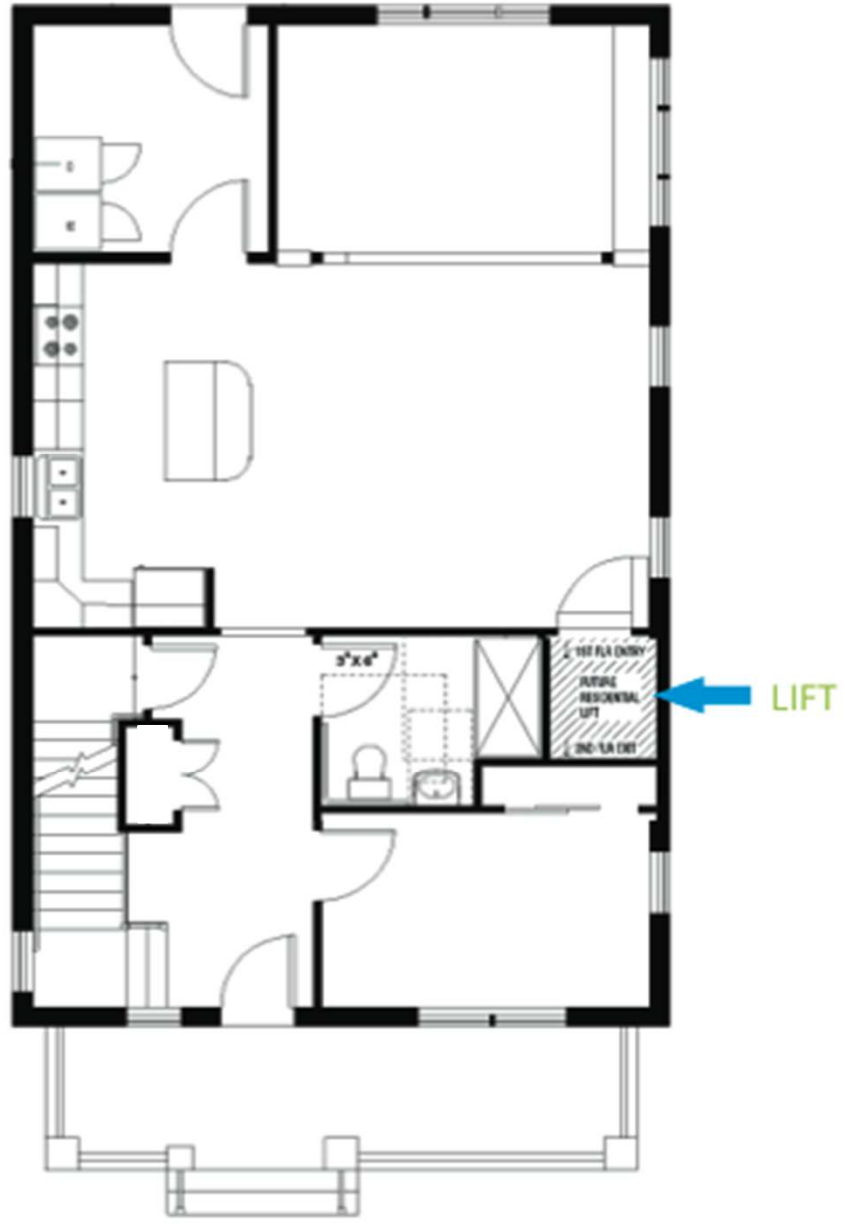


FULL BATH

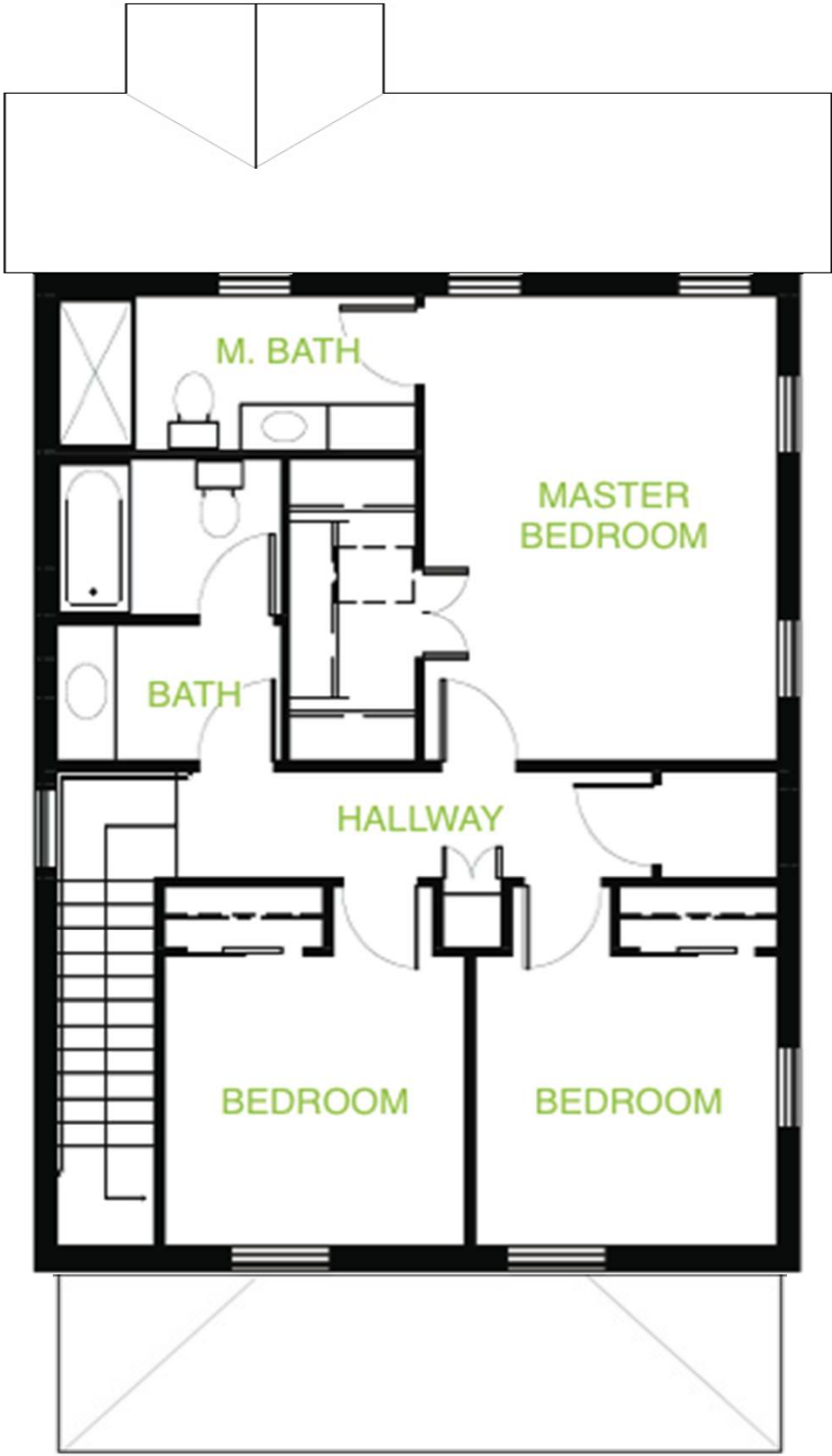


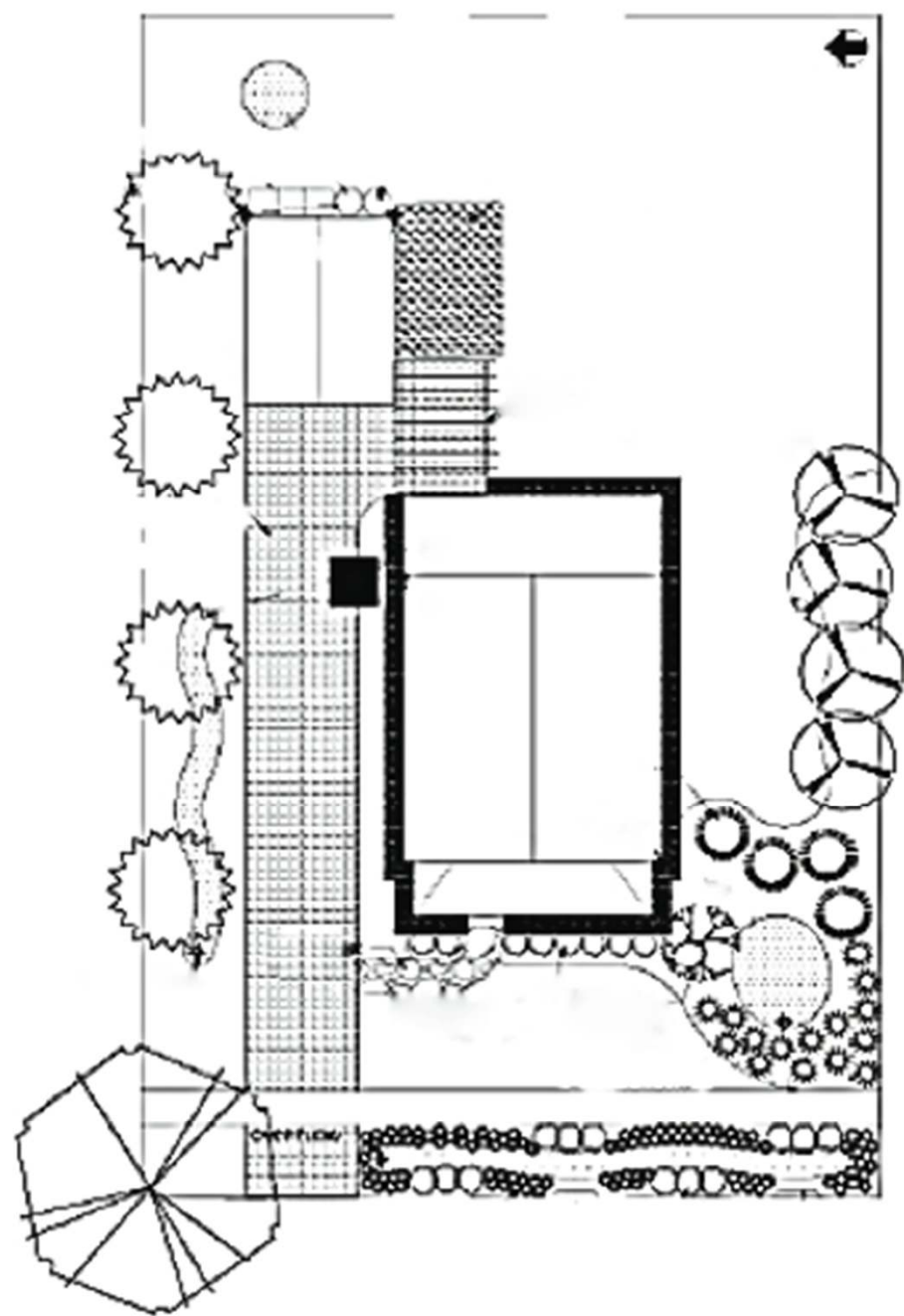
3'x6"

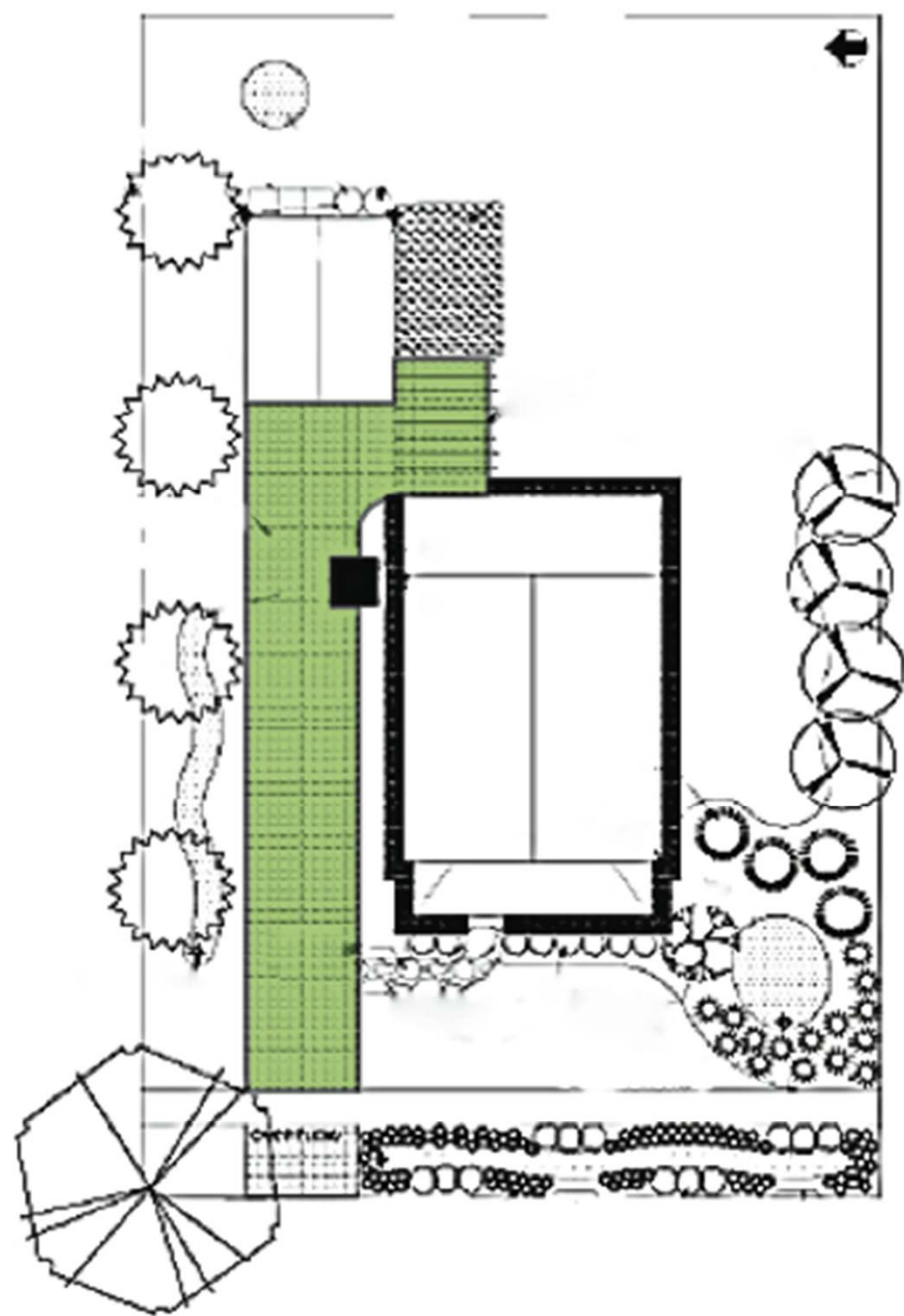
1ST FLR ENTRY  
FUTURE  
RESIDENTIAL  
LIFT  
2ND-FLR EXIT

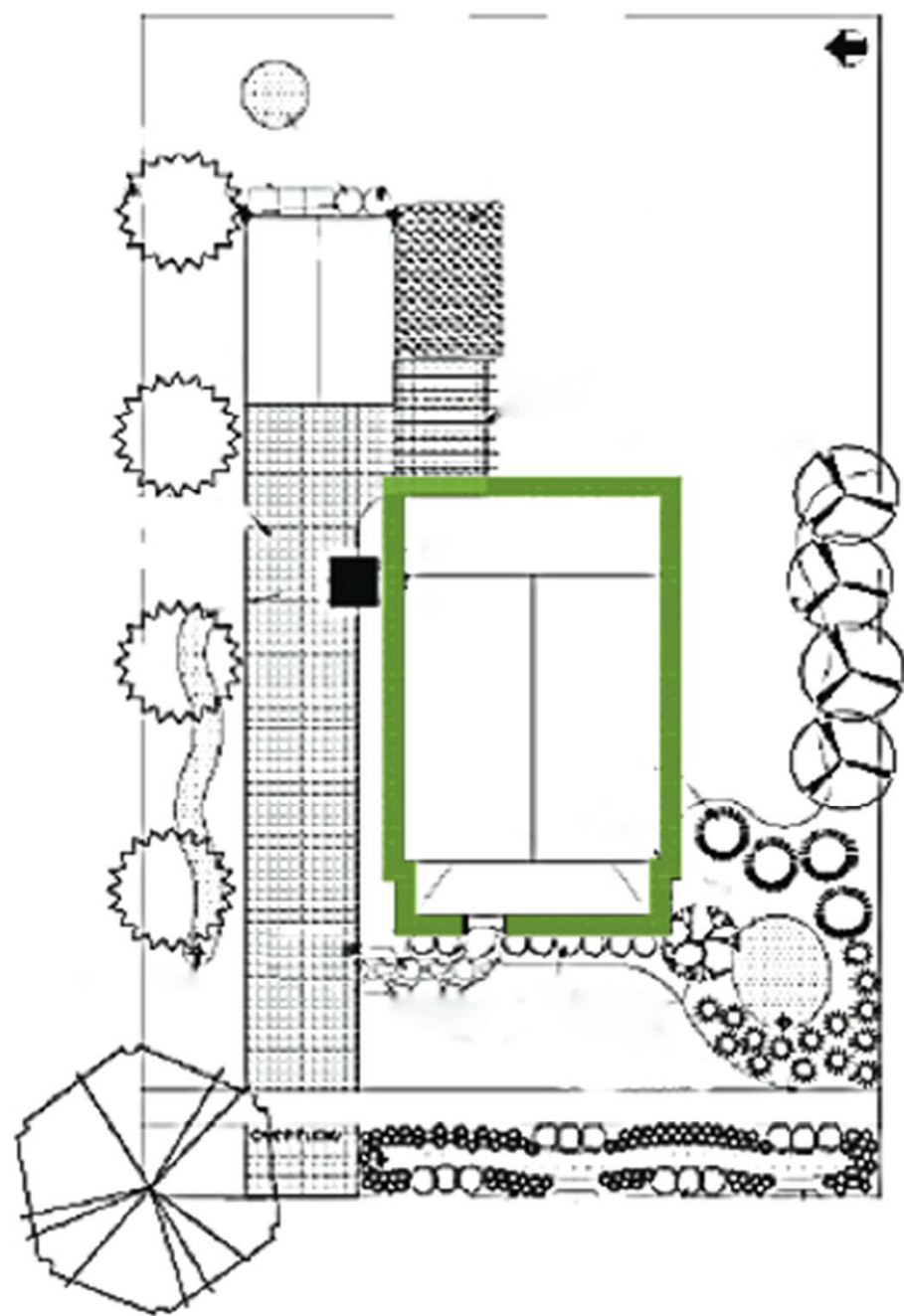


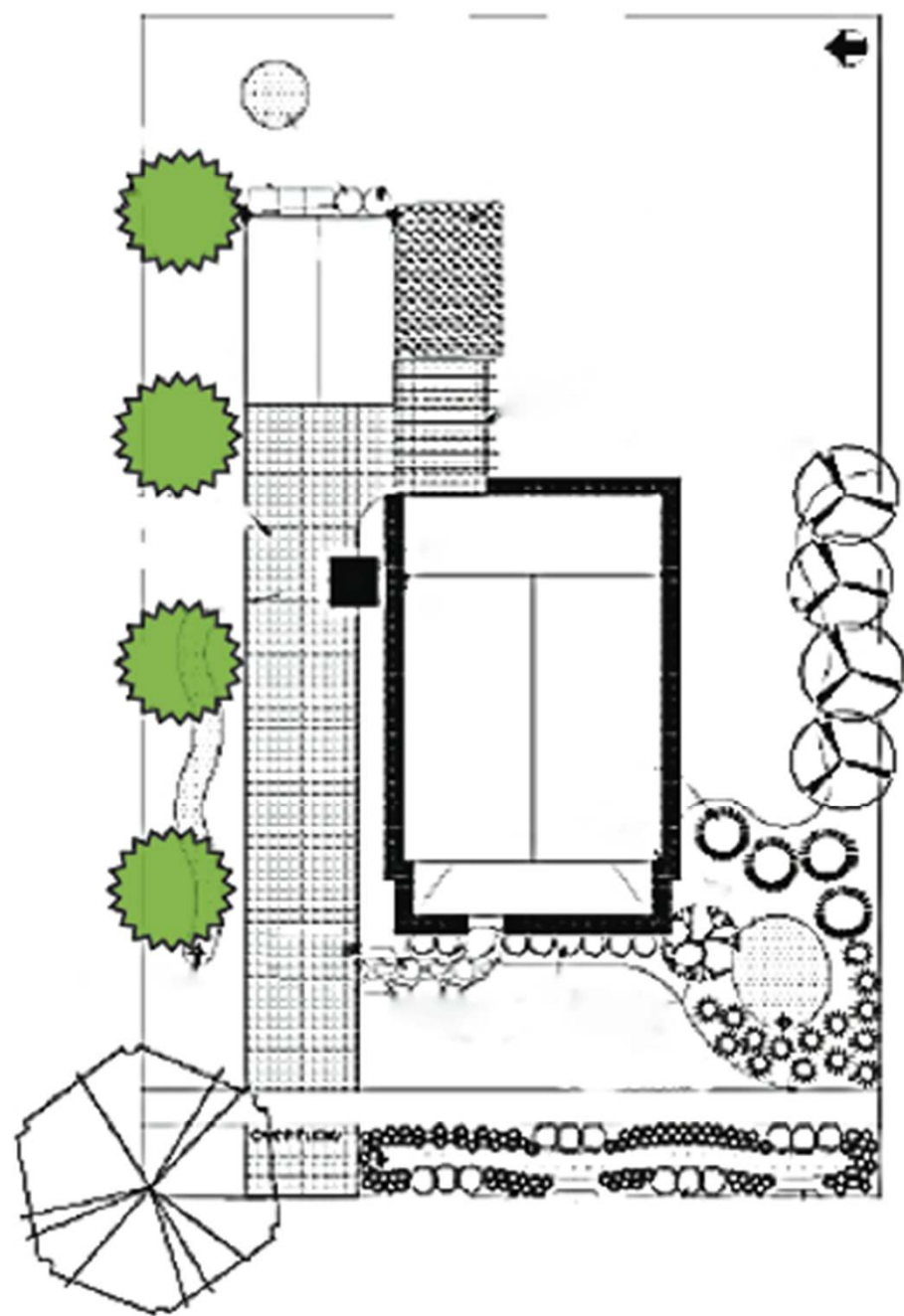


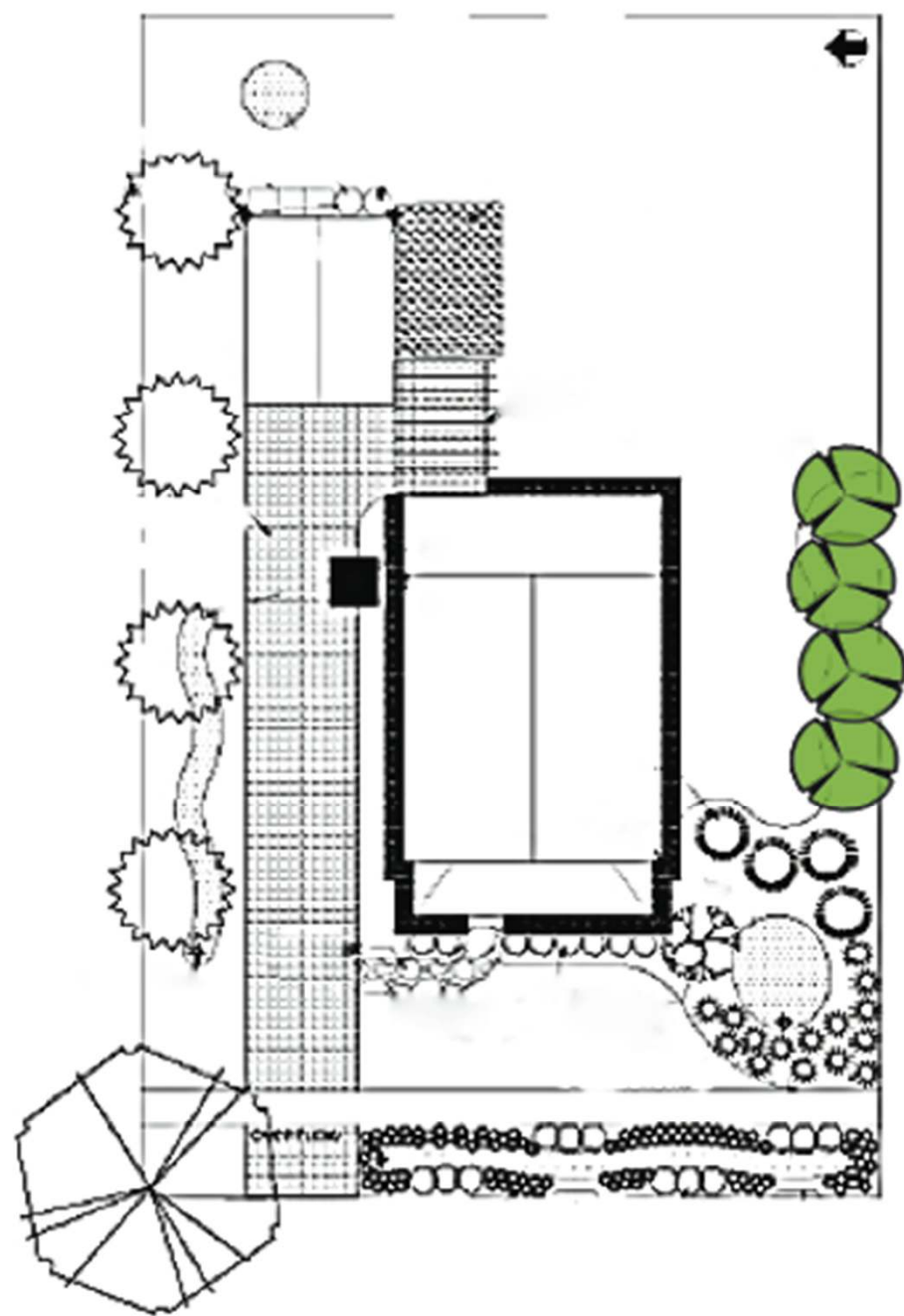


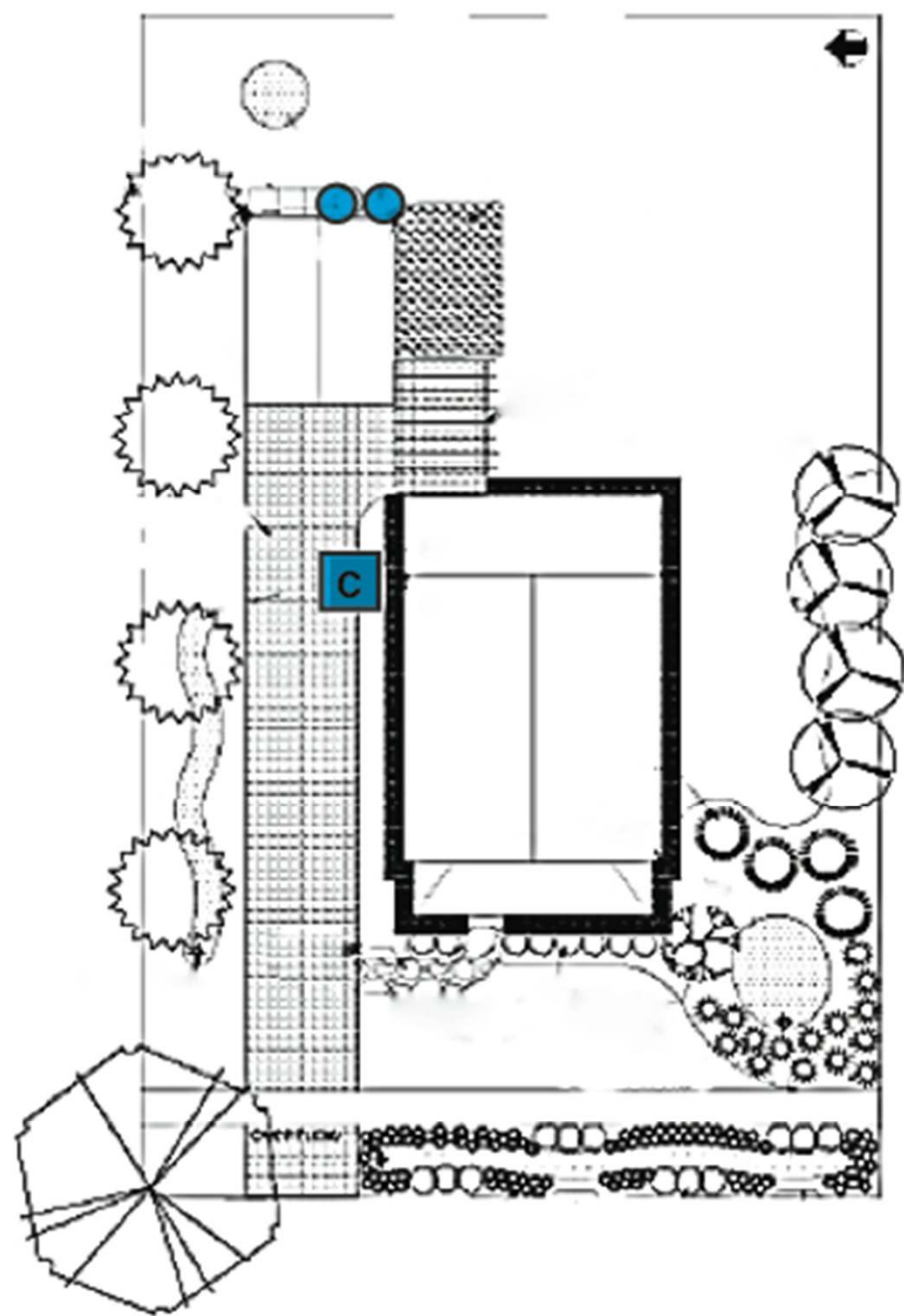


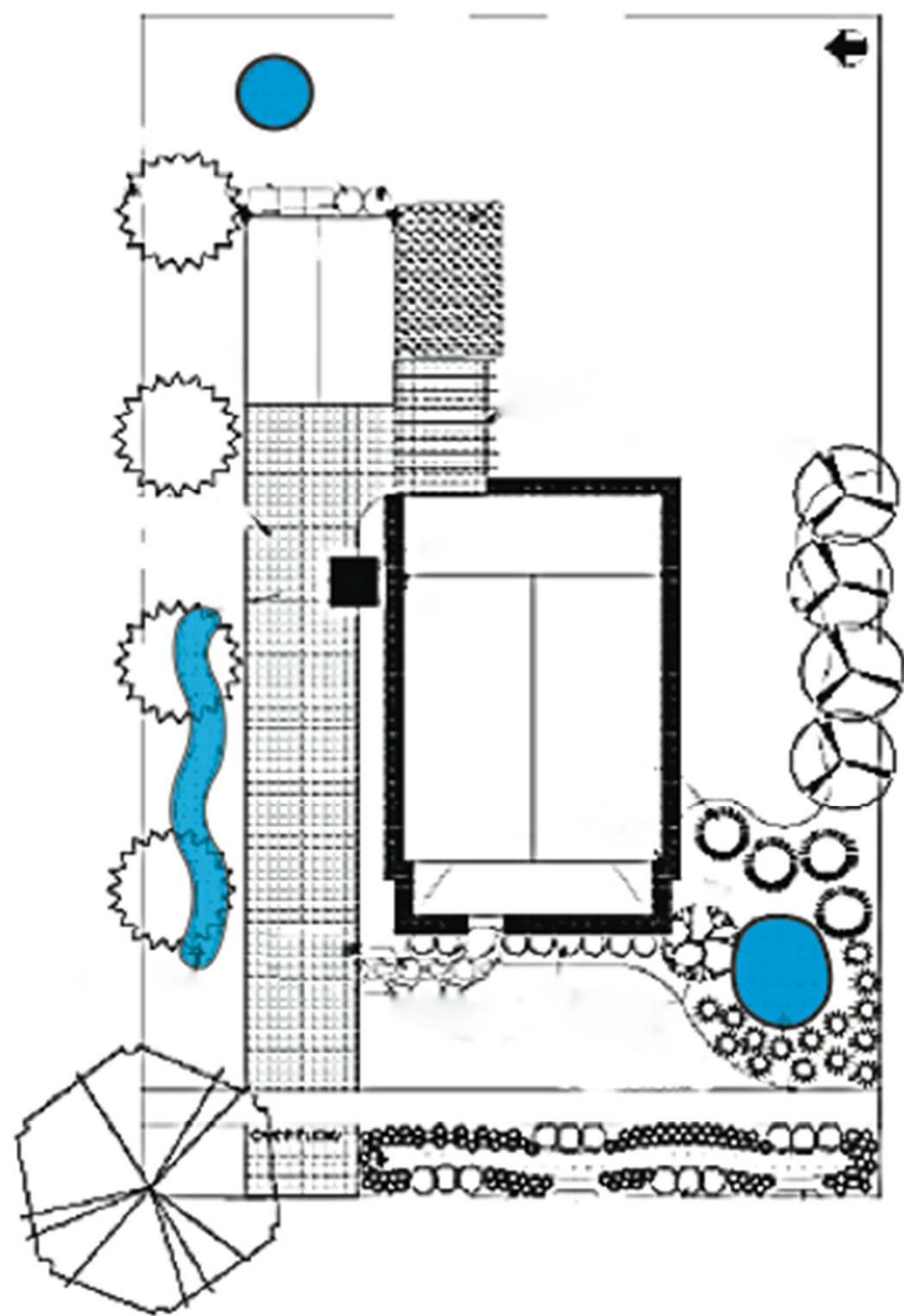












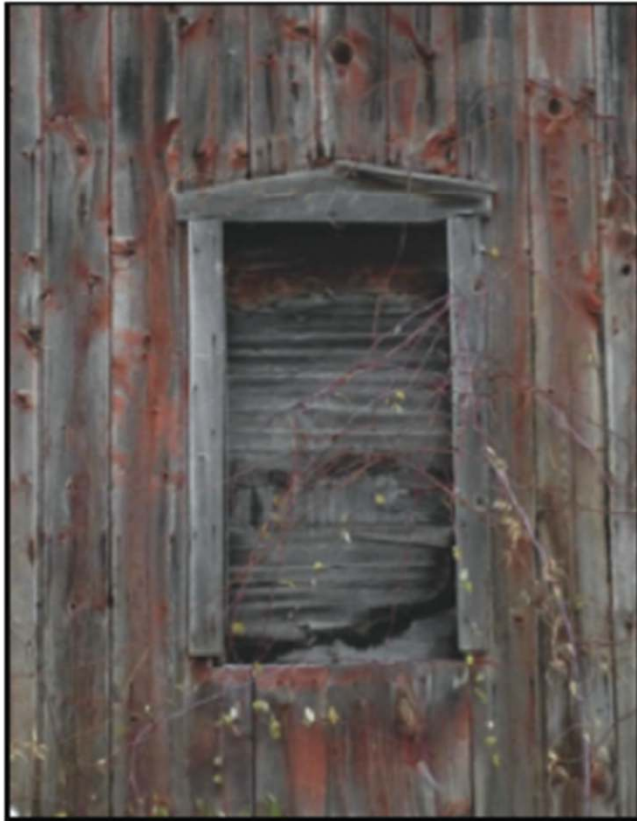


# ENVELOPE DURABILITY

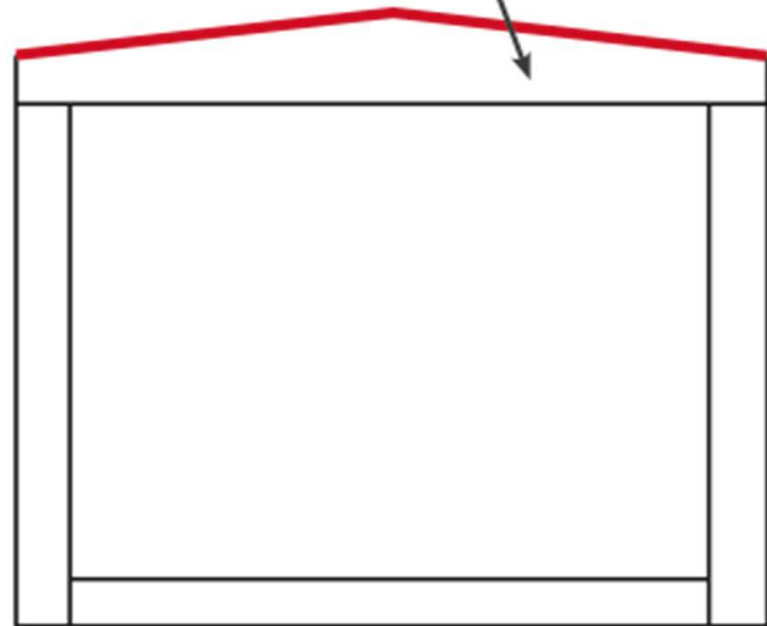


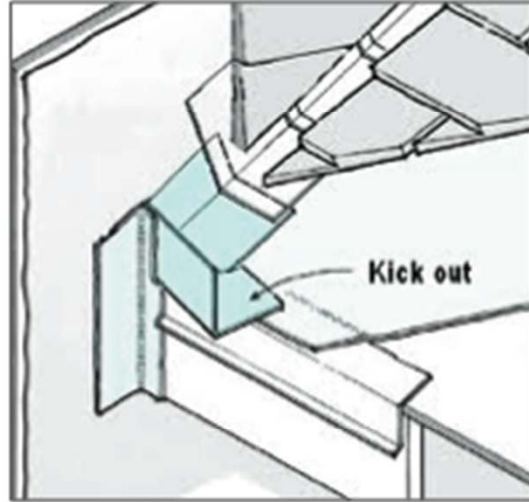
TIMELESS

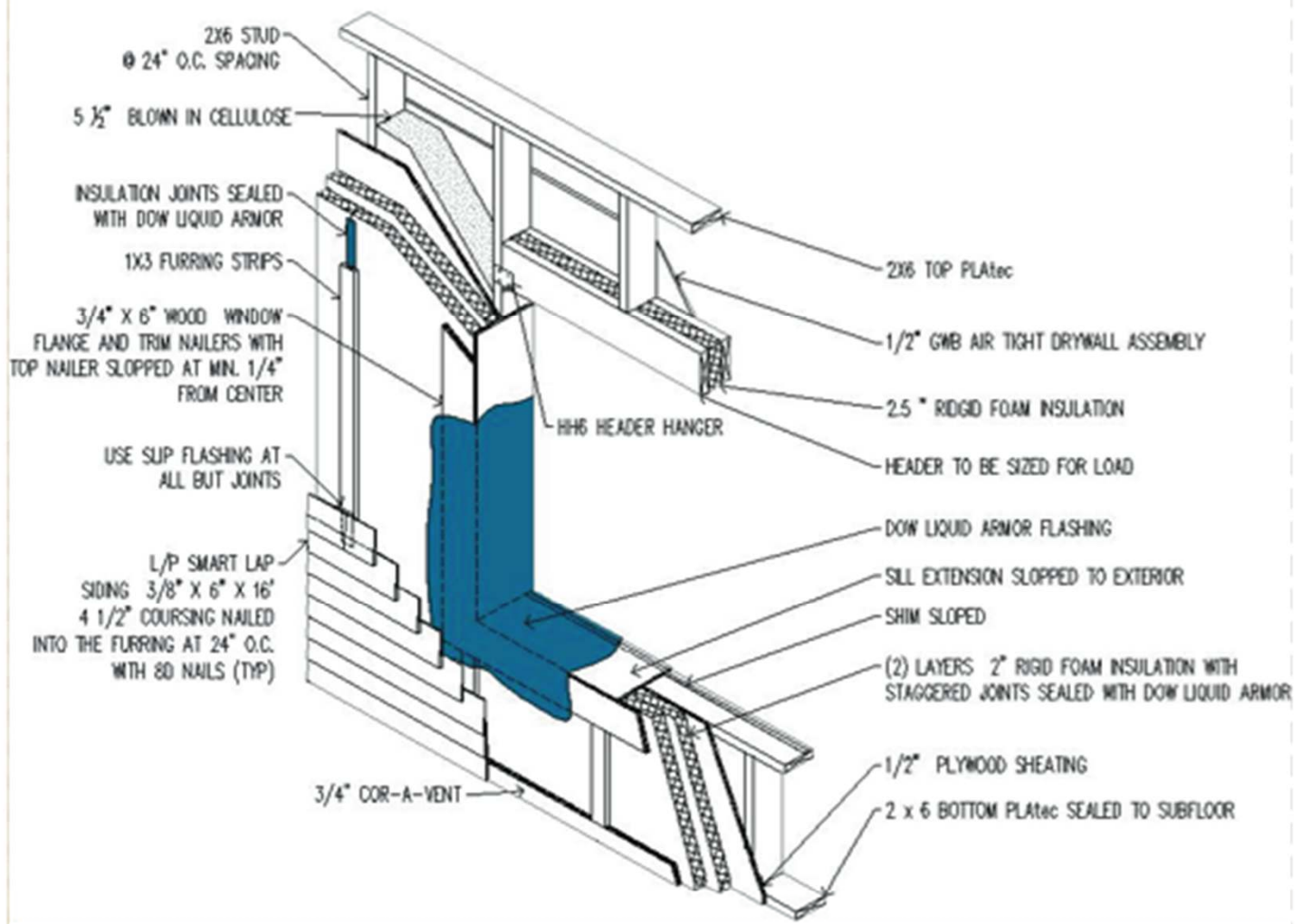
# Traditional Ecological Knowledge



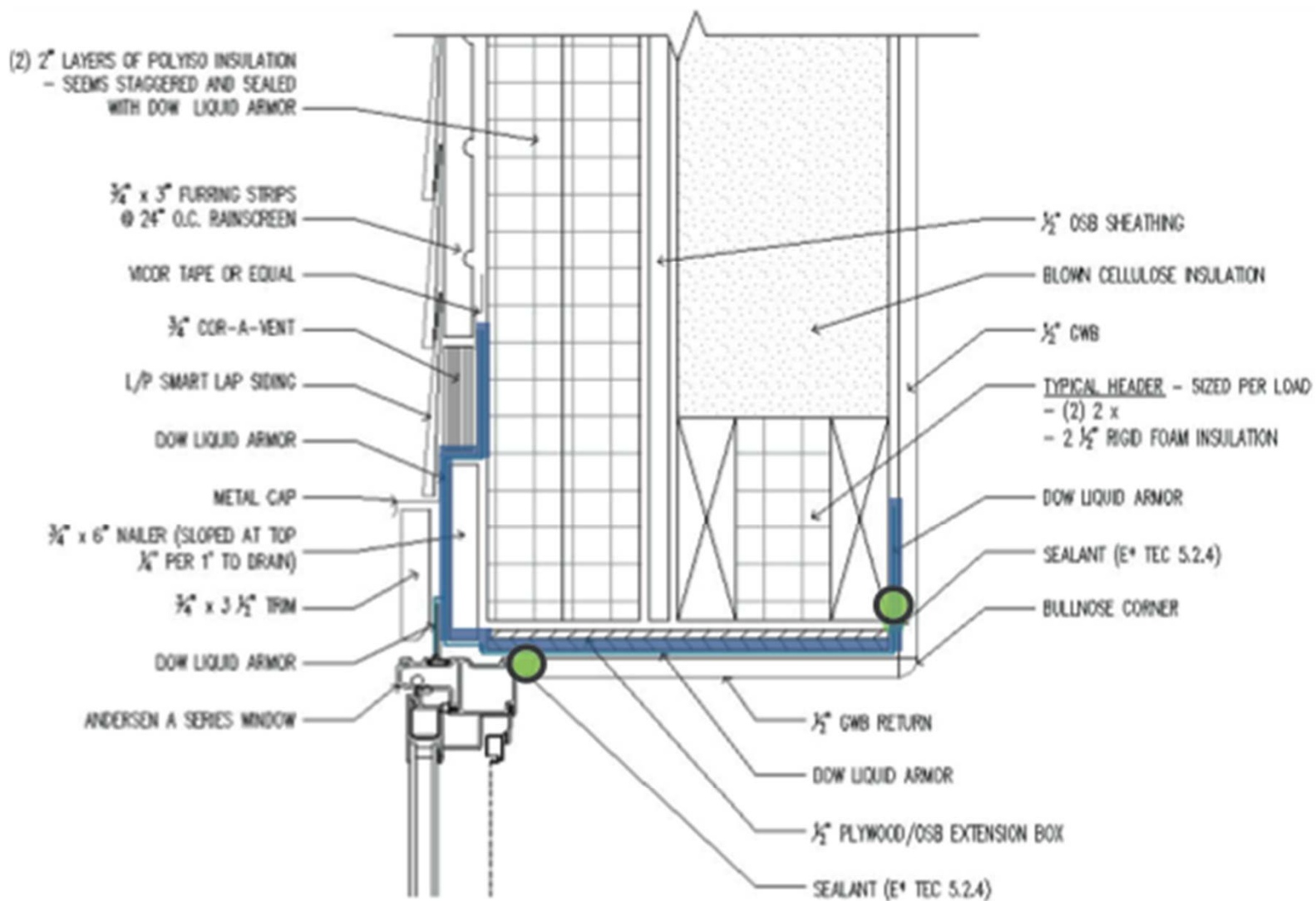
3/4" X 6" Nailers for trim and siding  
top nailer sloped at minimum 1/4" per  
foot from center and integrated with  
vapor diffusion retarder

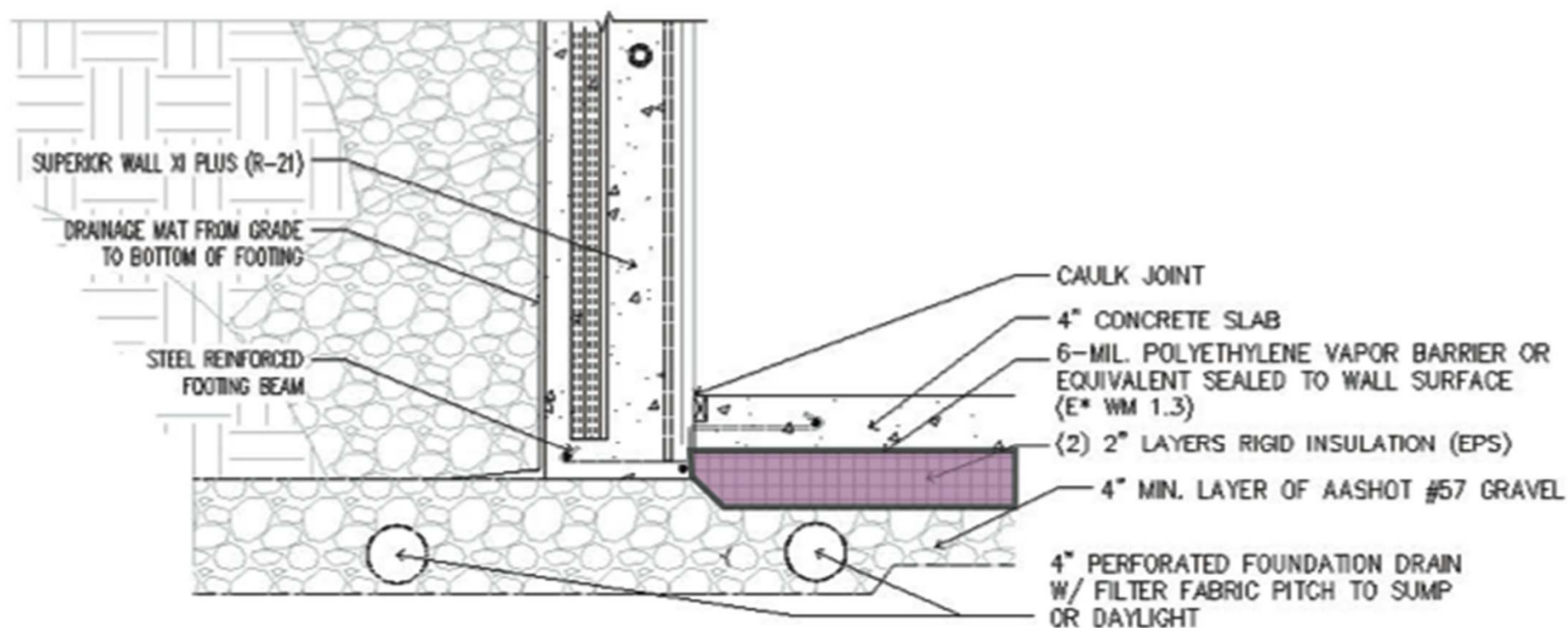


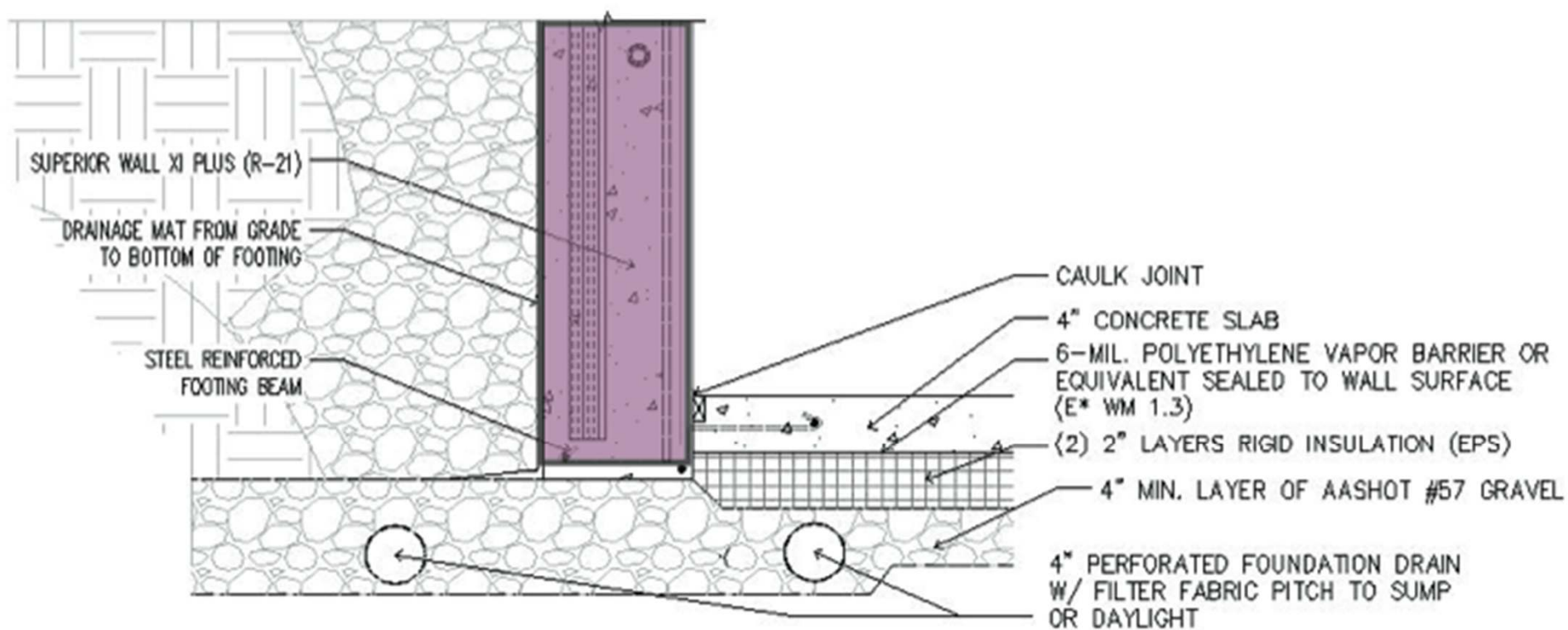


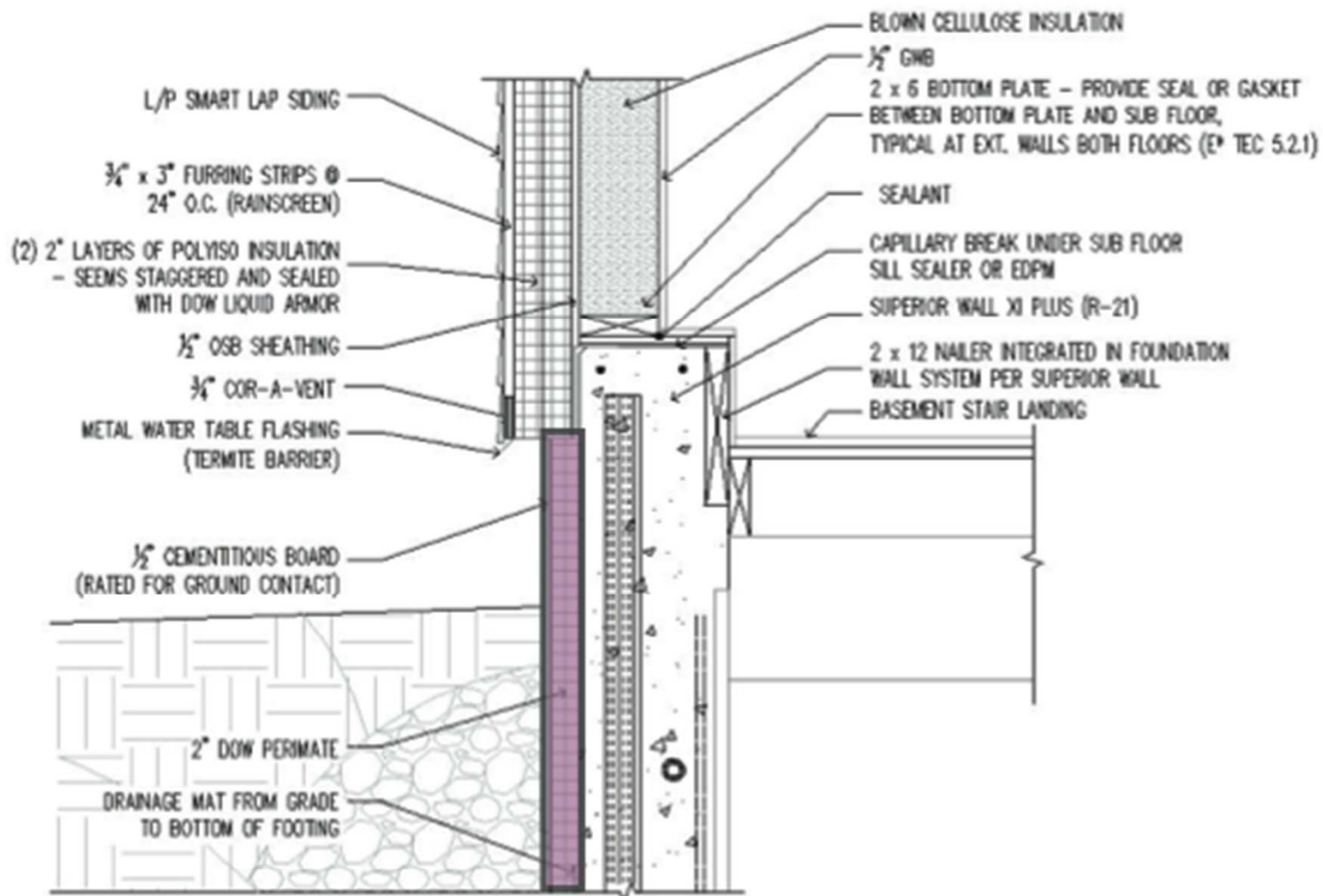


# Typical Window Head Detail

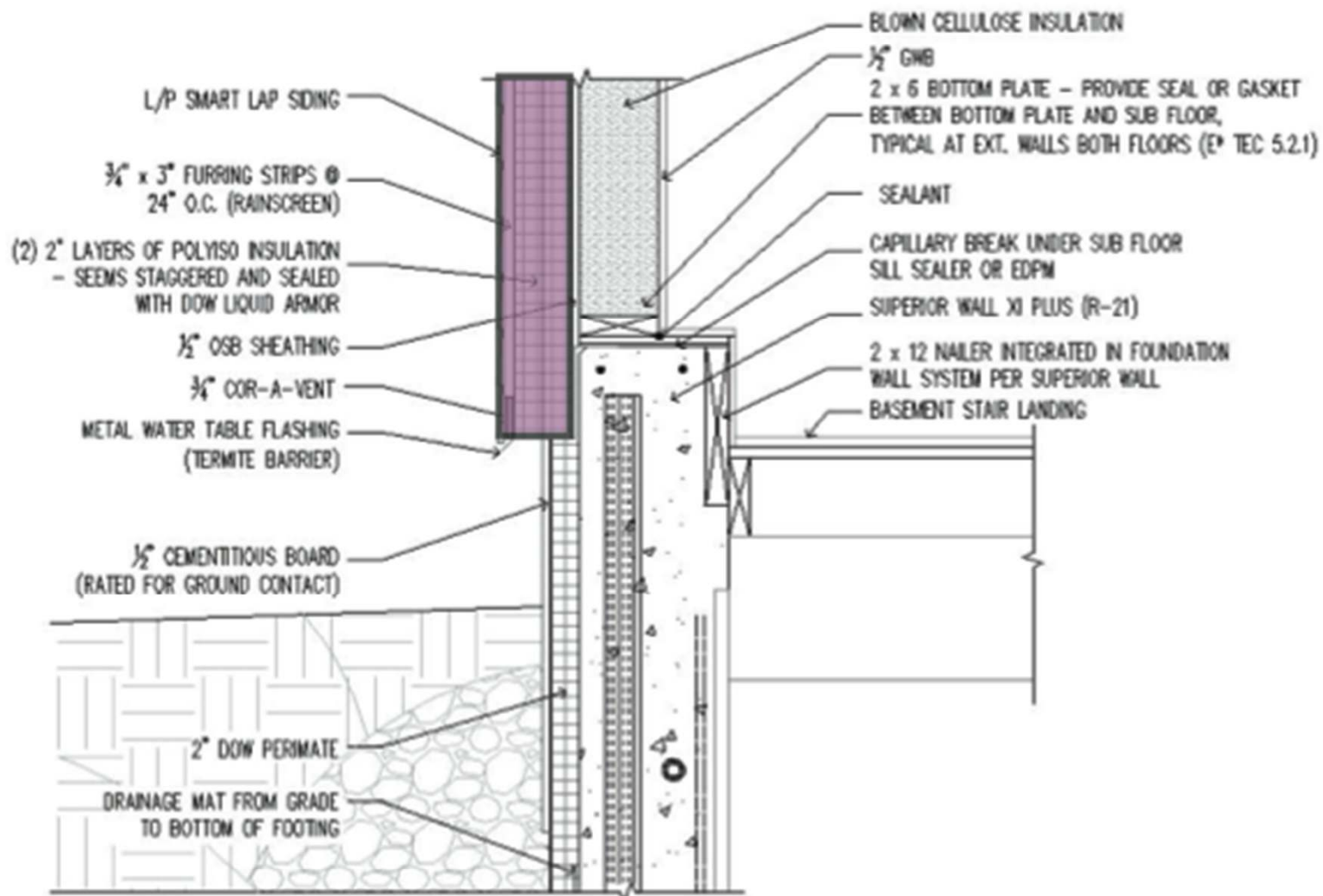


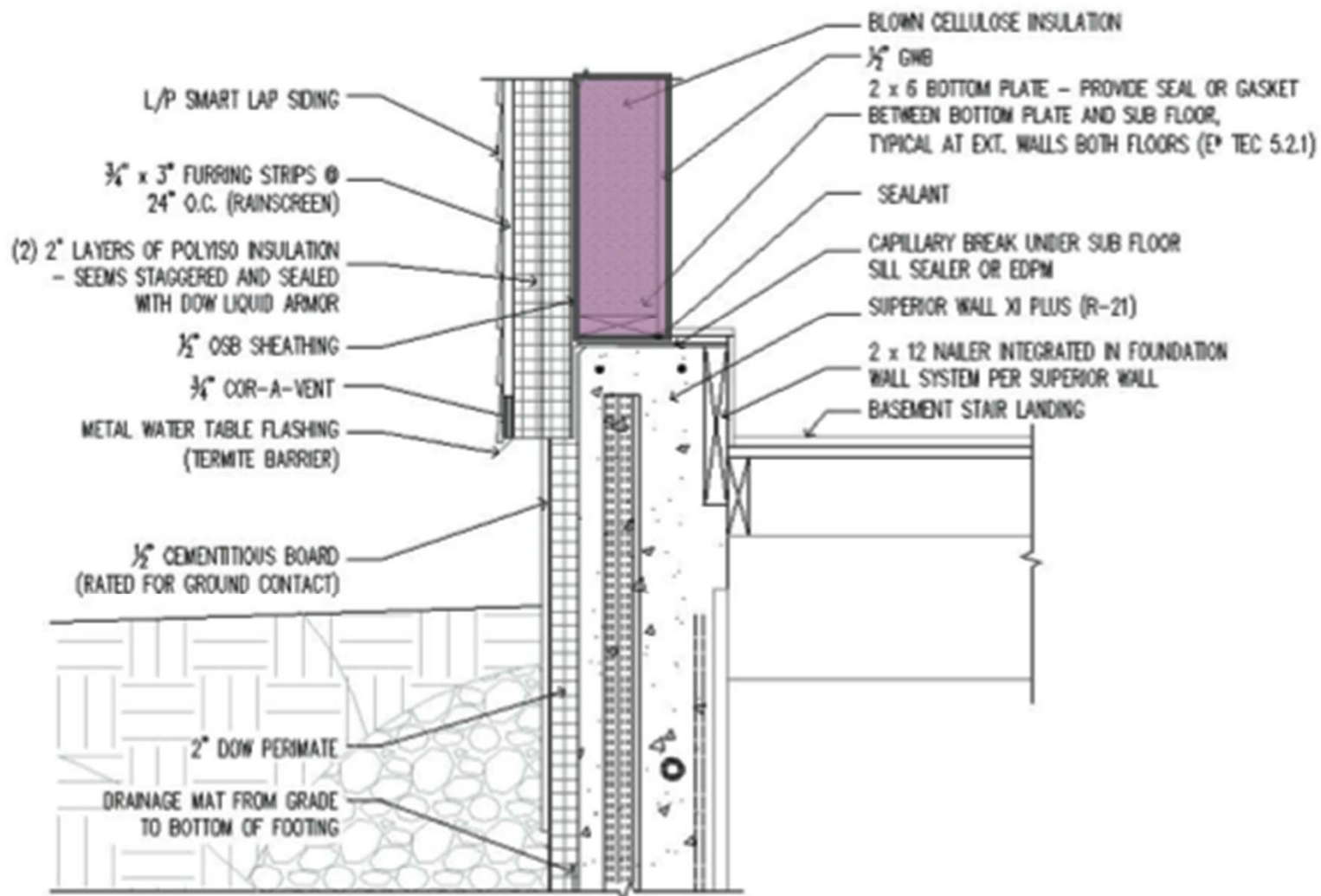


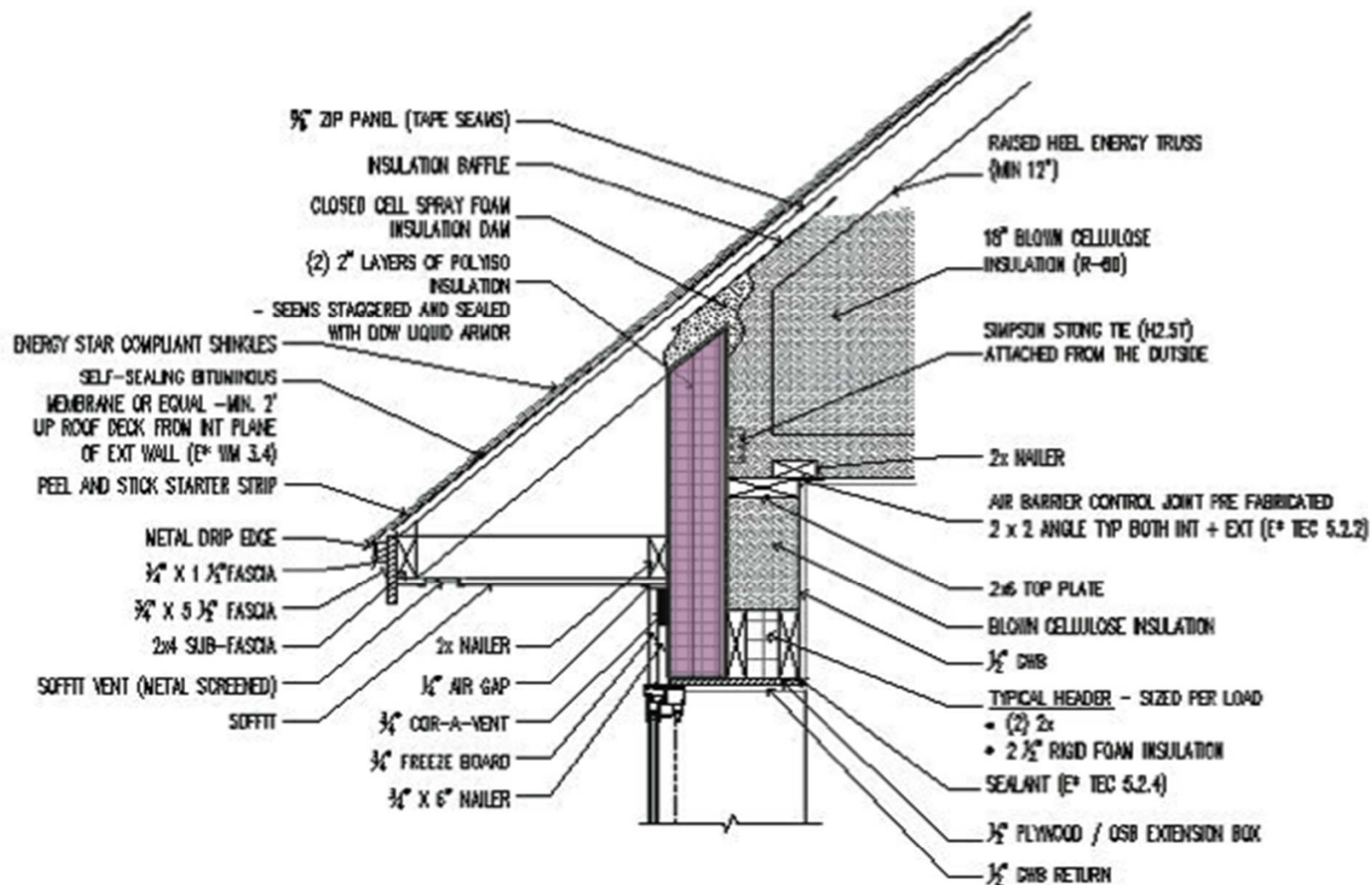


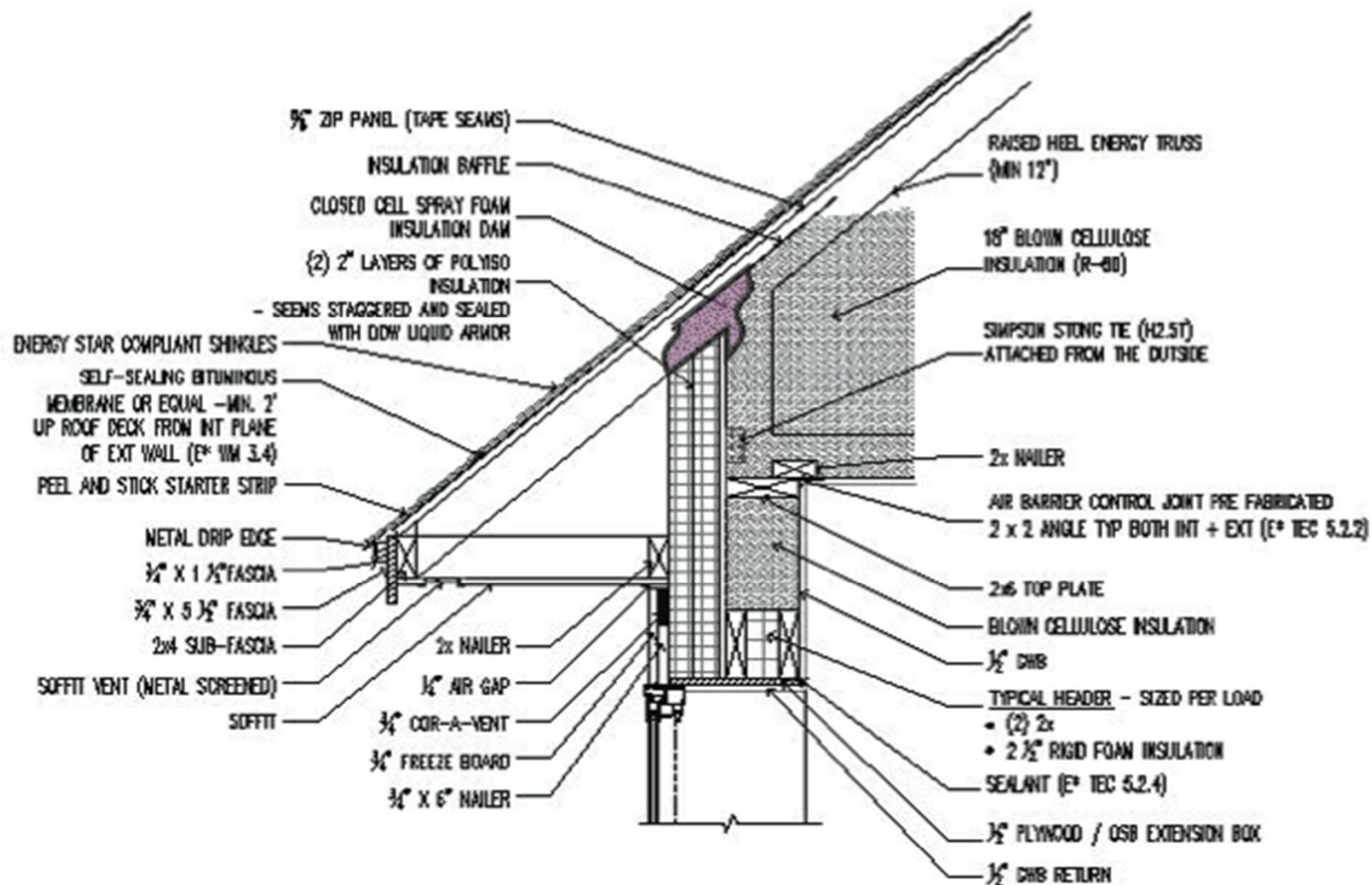


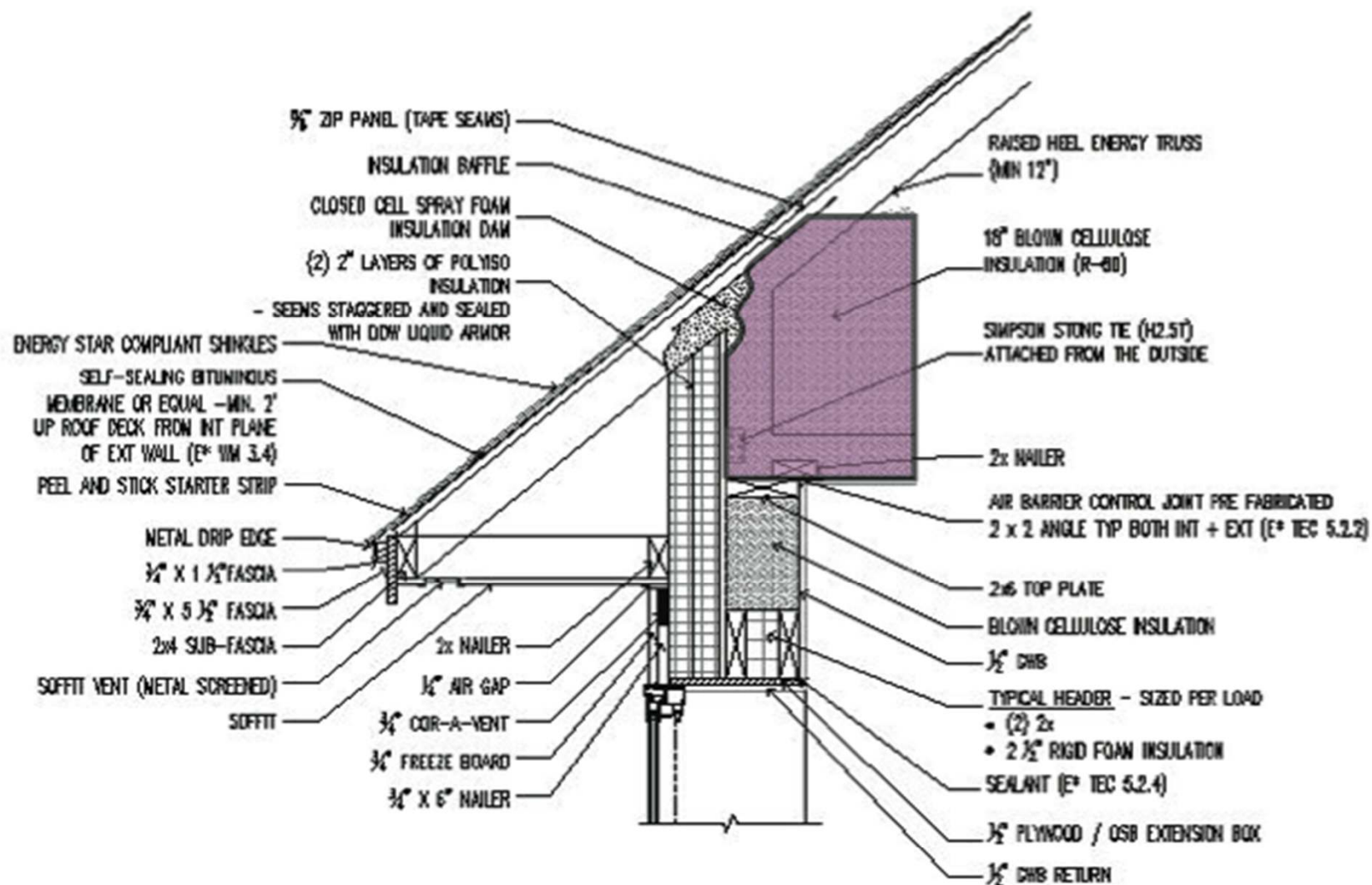


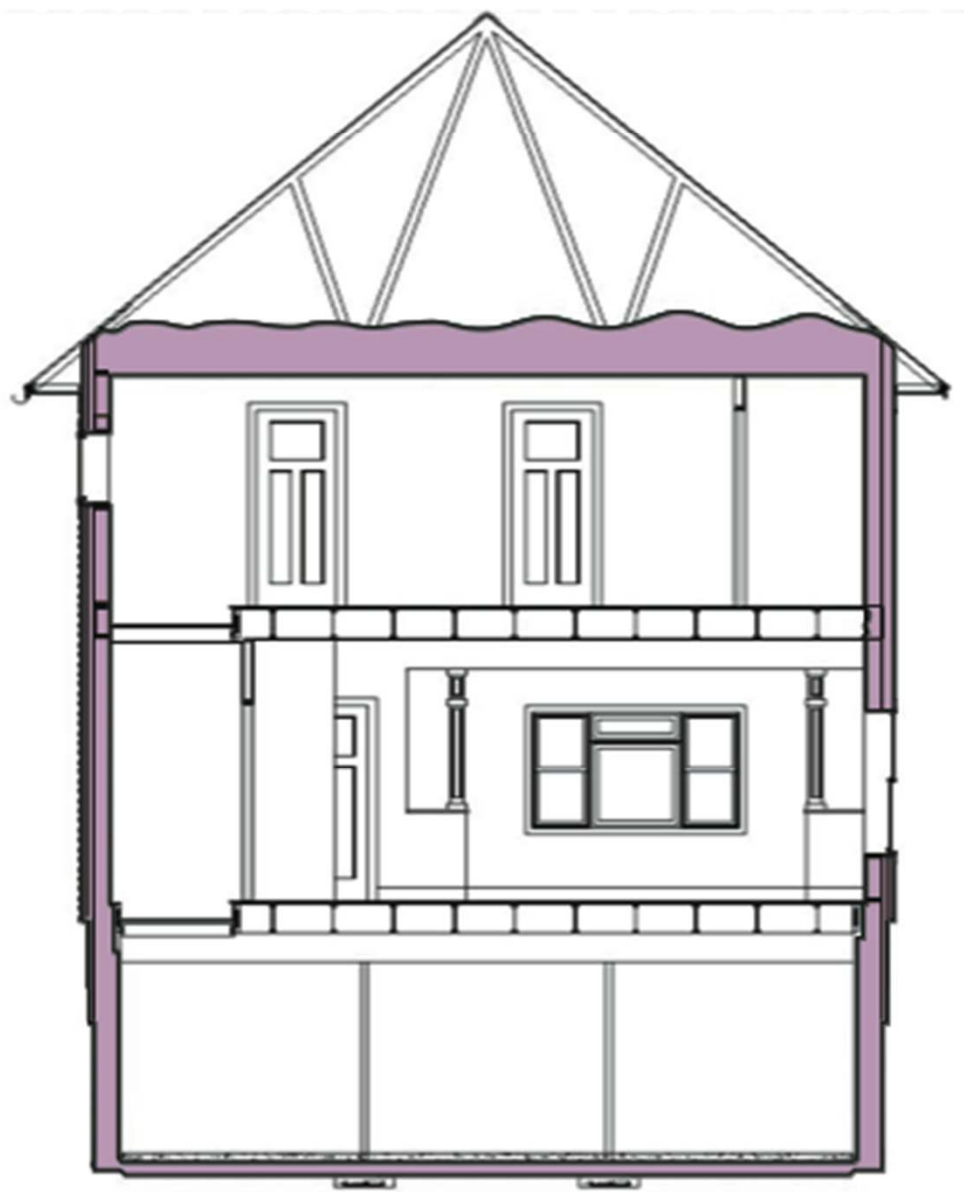




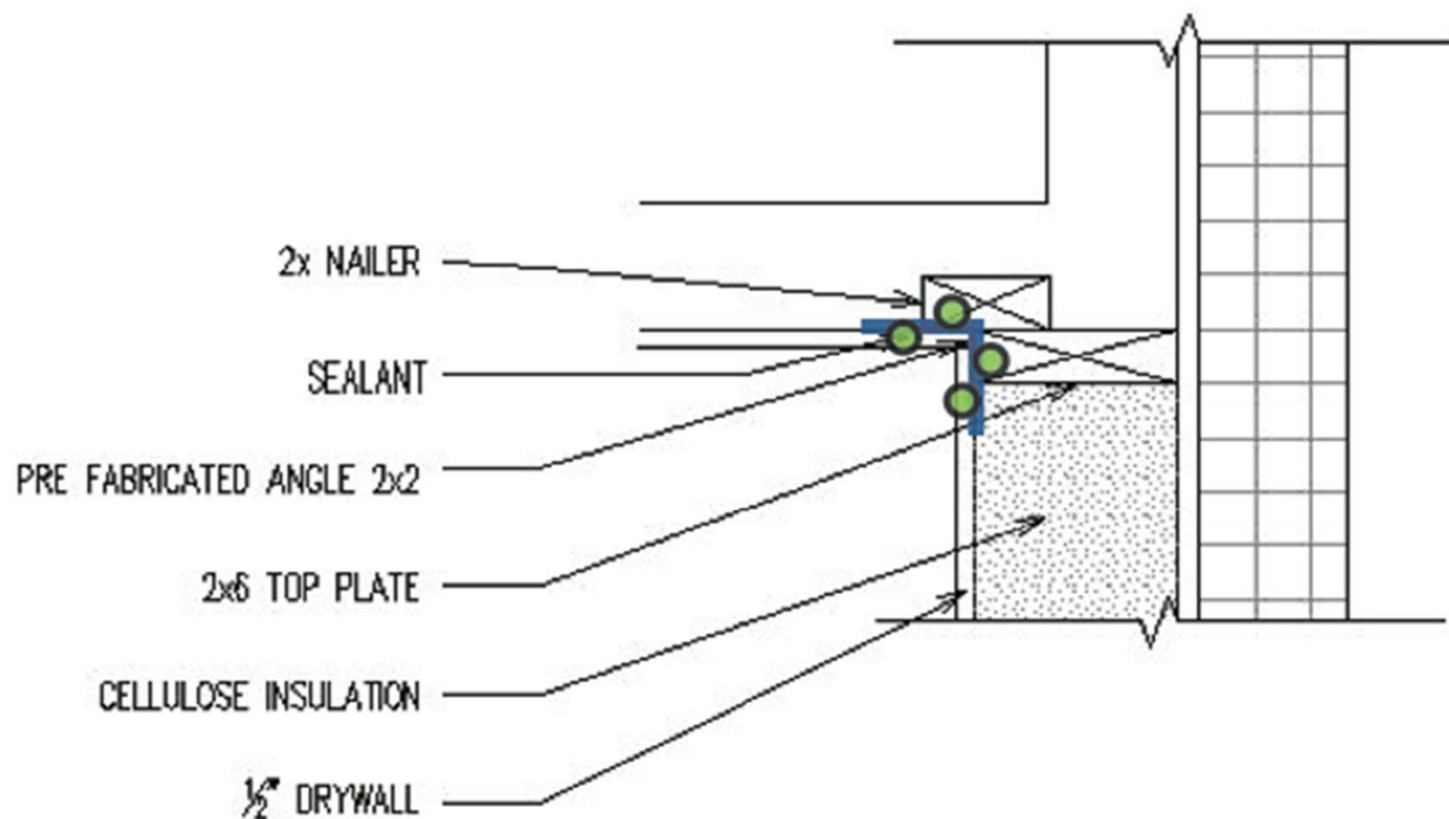








# Typical Air Sealing Detail



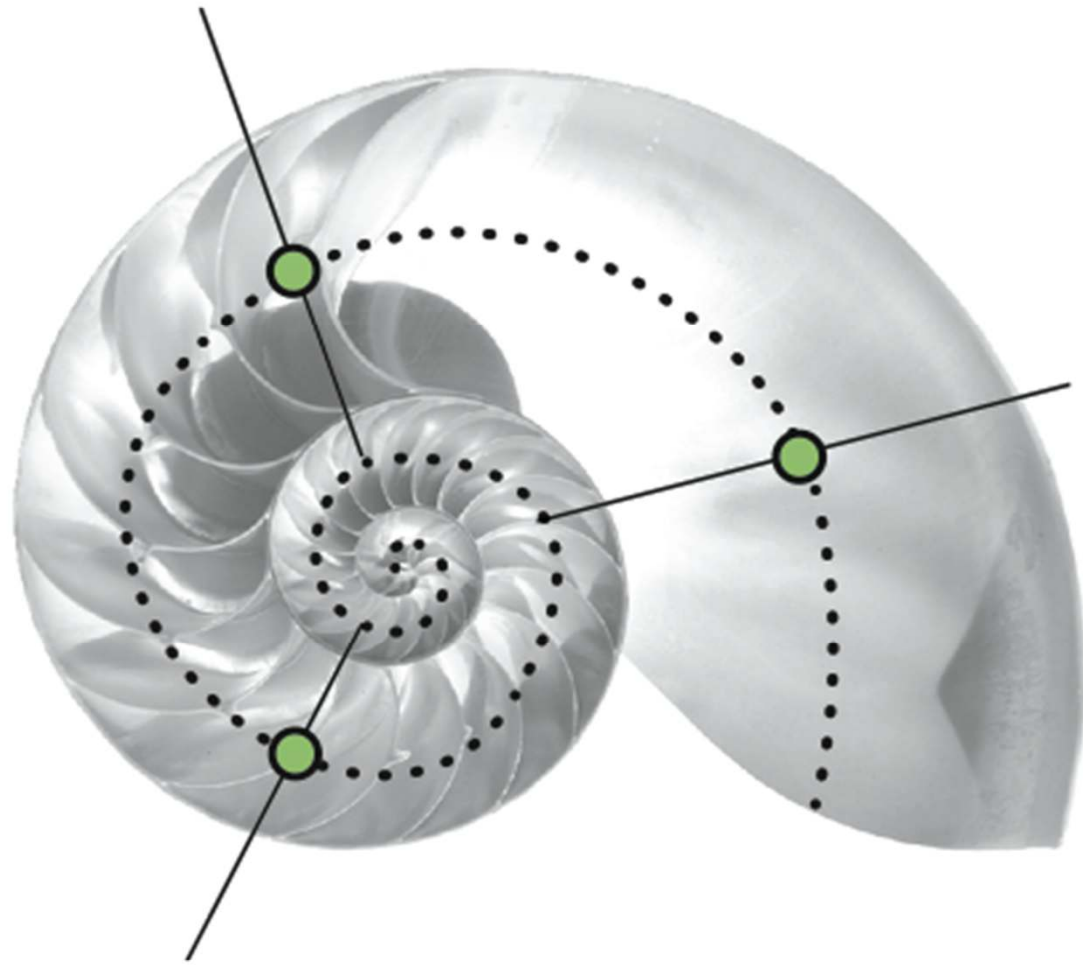
INDOOR AIR QUALITY



HEALTHY

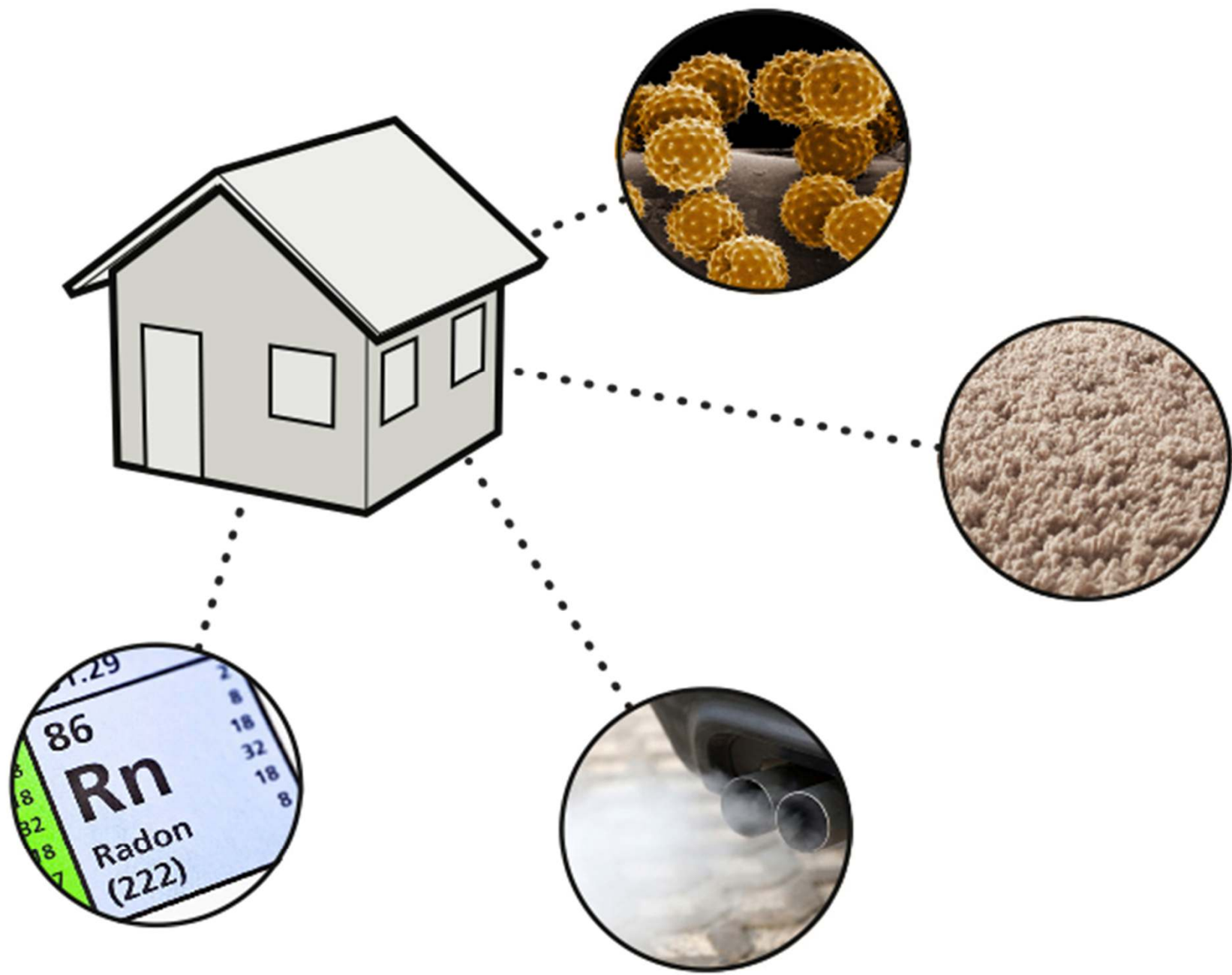


Provide Adequate  
Mechanical Ventilation



Operable  
Windows for  
Natural ventilation

Remove Pollutants  
at the Source



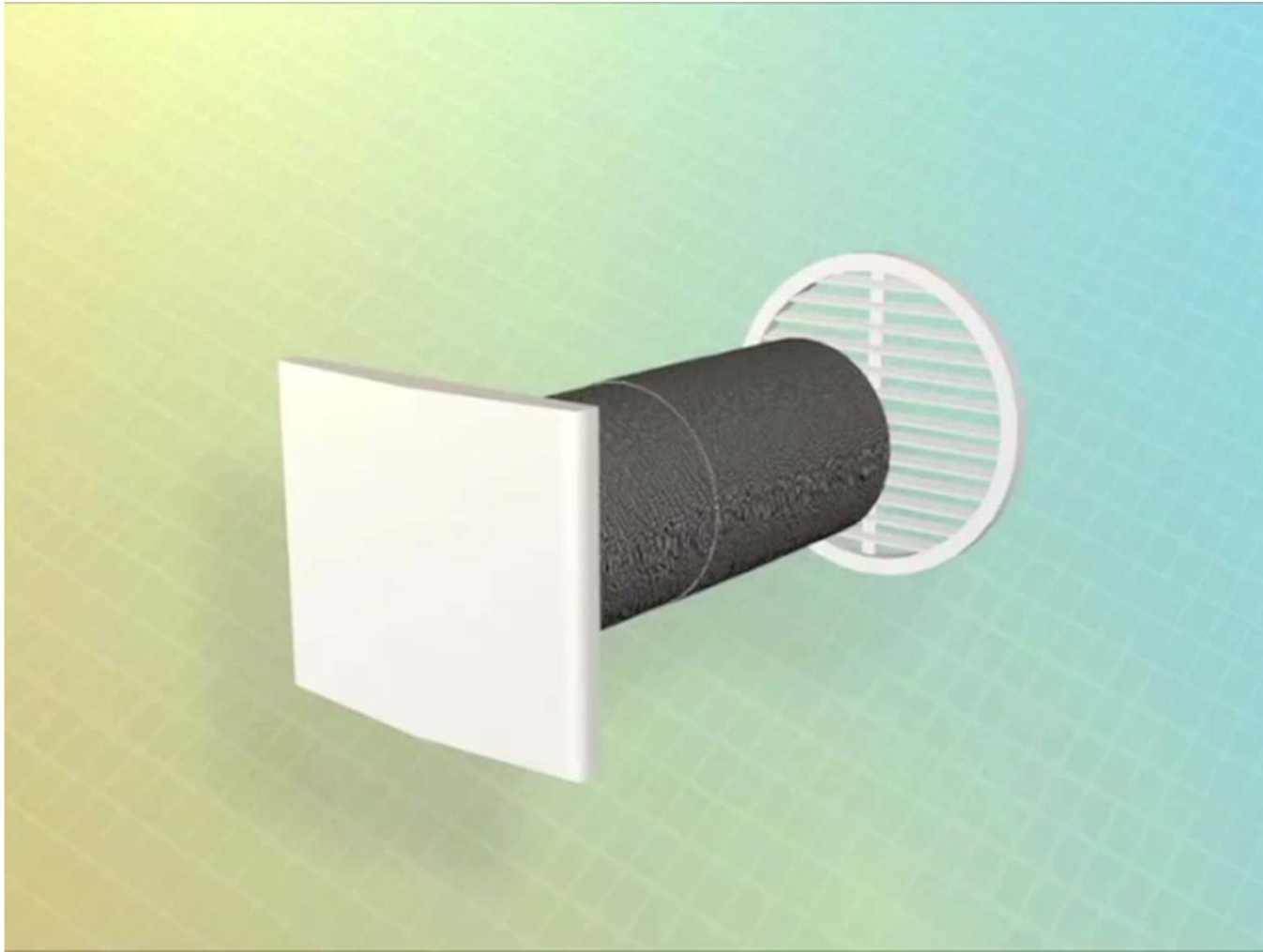
# Lunos e2 HRV

Decentralized Heat Recovery System



# Lunos e2 HRV

Decentralized Heat Recovery System



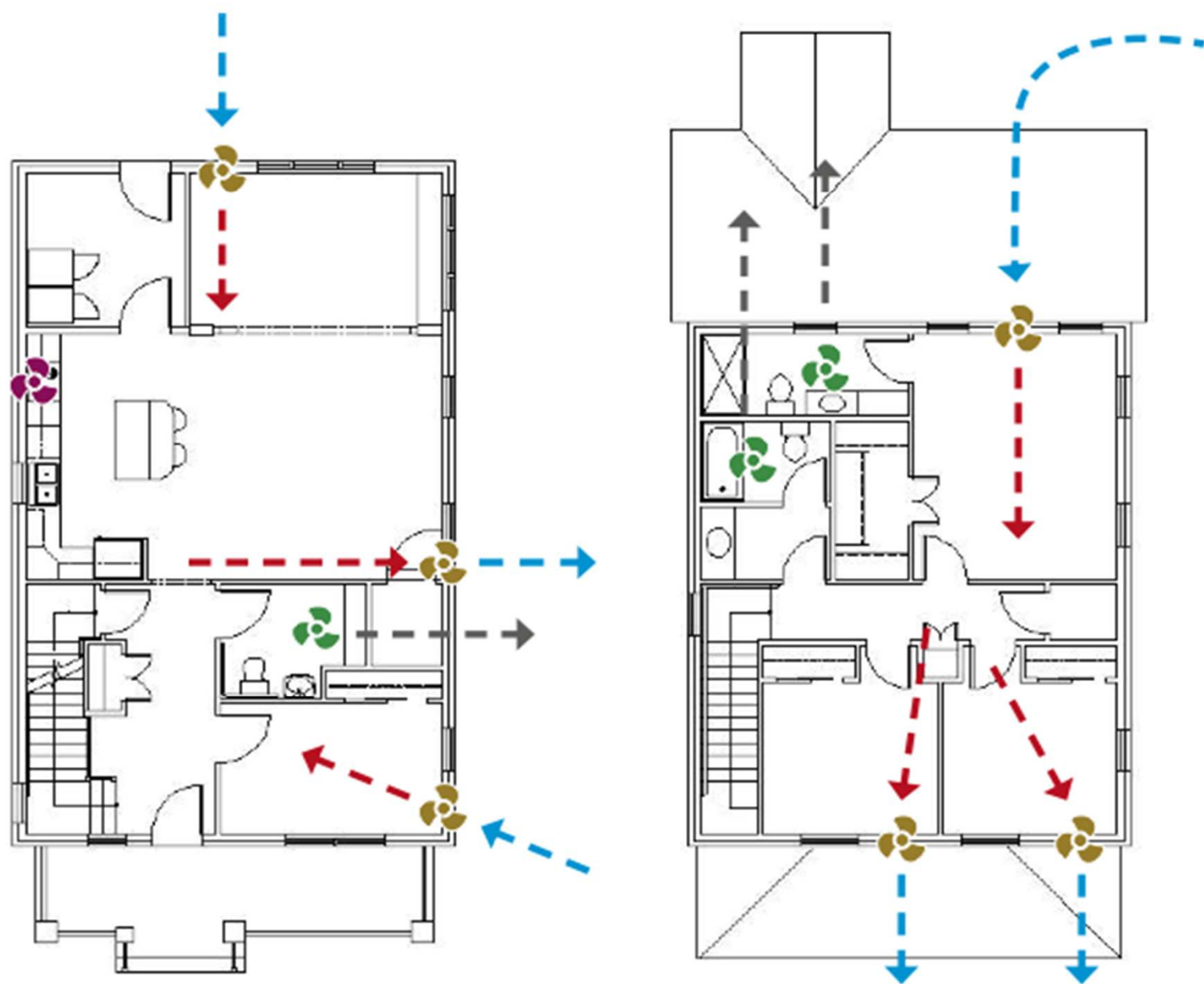
# Local Exhaust Ventilation

Panasonic WhisperGreen



Range Hood



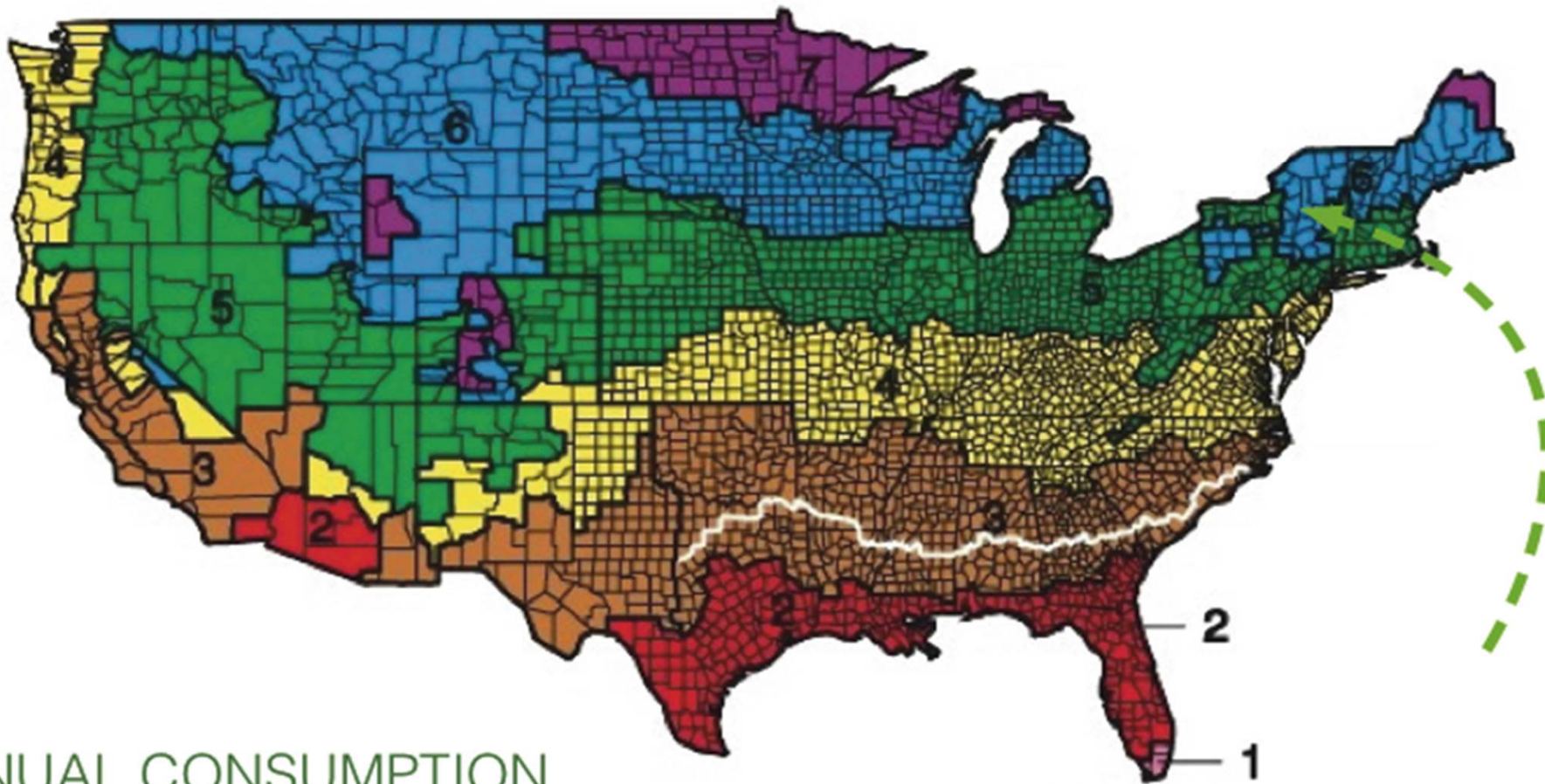


 Lunos e2 HRV
  Panasonic WhisperGreen Exhaust Fan
  Rangehood

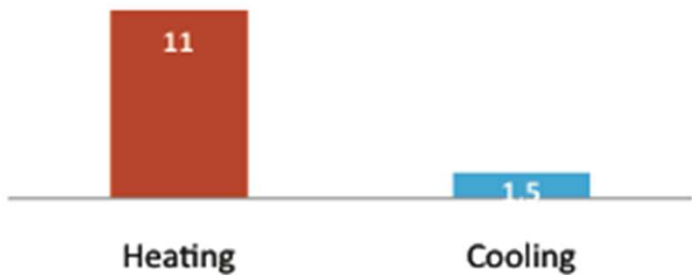
# SPACE CONDITIONING



EFFICIENT



ANNUAL CONSUMPTION  
(MMBTU/YEAR)

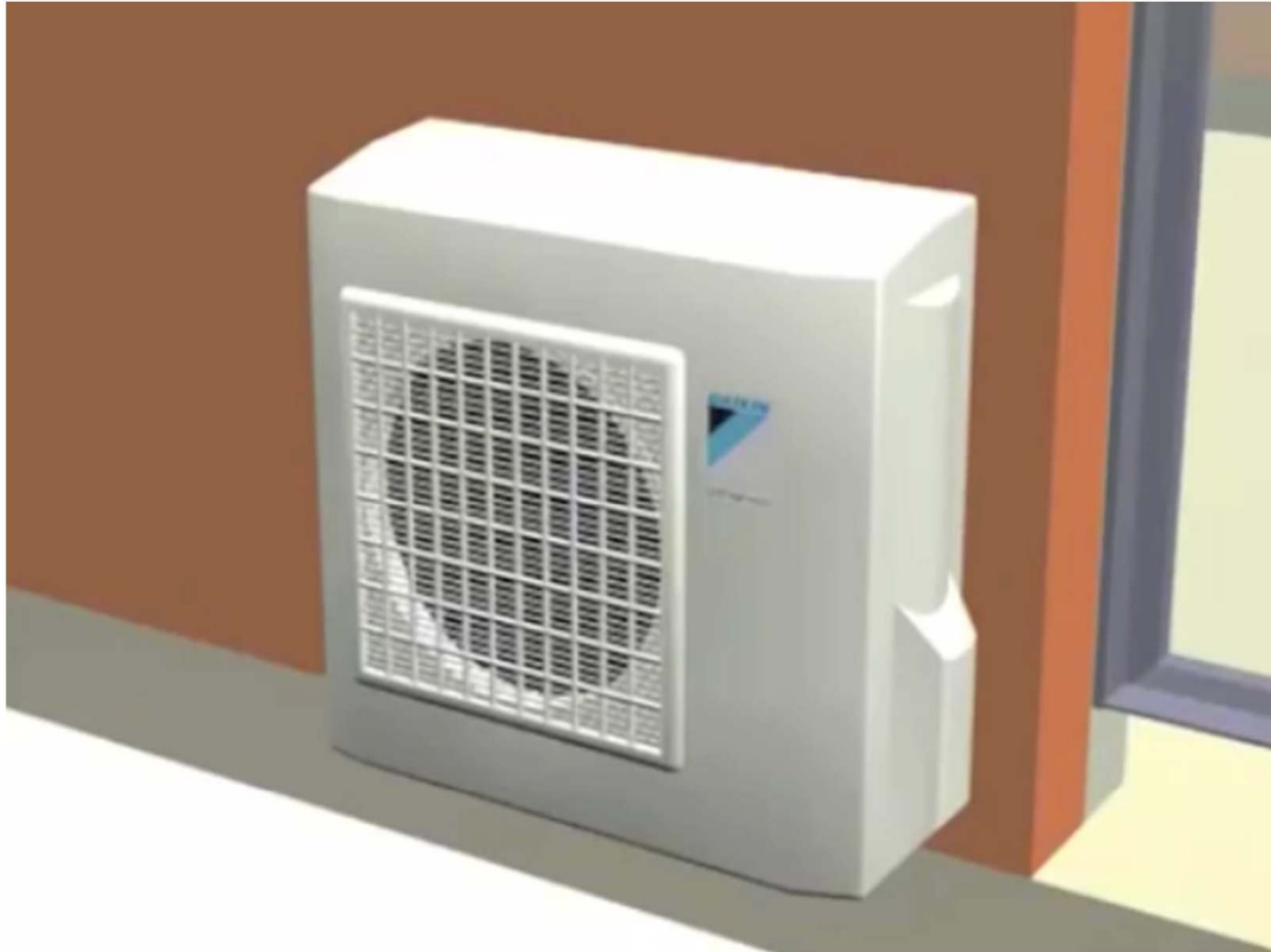


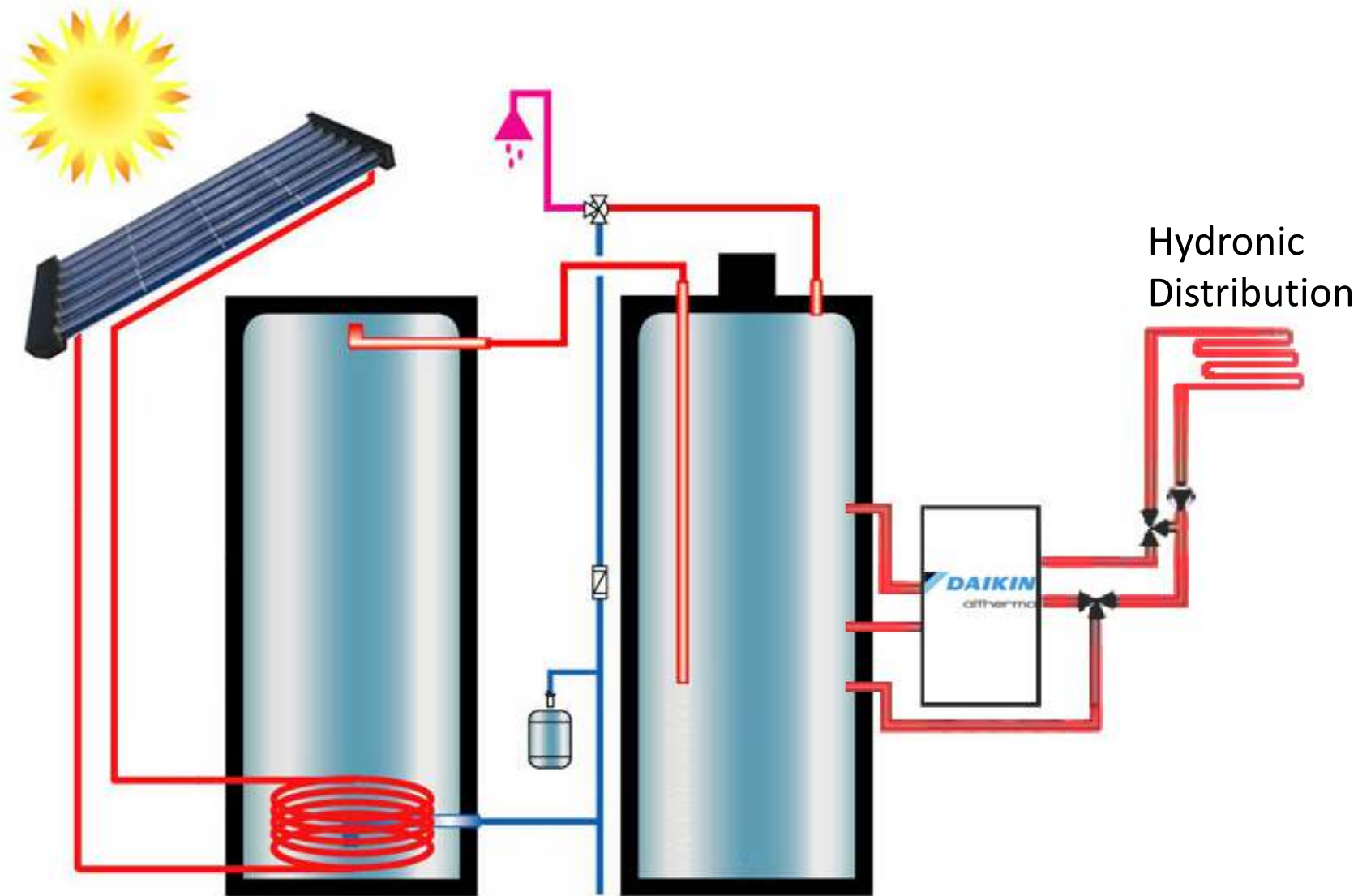
CLIMATE ZONE 5a



# Daikin Altherma

Air-source to Water Heat Pump





## Distribution

	<b>Low temp Baseboard</b>	<b>Staple-up Radiant</b>	<b>Warm board Radiant</b>
<b>Energy consumption heating</b>	3824 kWh	3199 kWh	<b>2402 kWh</b>
<b>Energy cost heating</b>	570 \$	477 \$	<b>358 \$</b>
<b>Spare capacity</b>	19777 BTU/h	20029 BTU/h	<b>21490 BTU/h</b>
<b>Seasonal COP</b>	2.3	2.8	<b>3.7</b>

# Warm Board

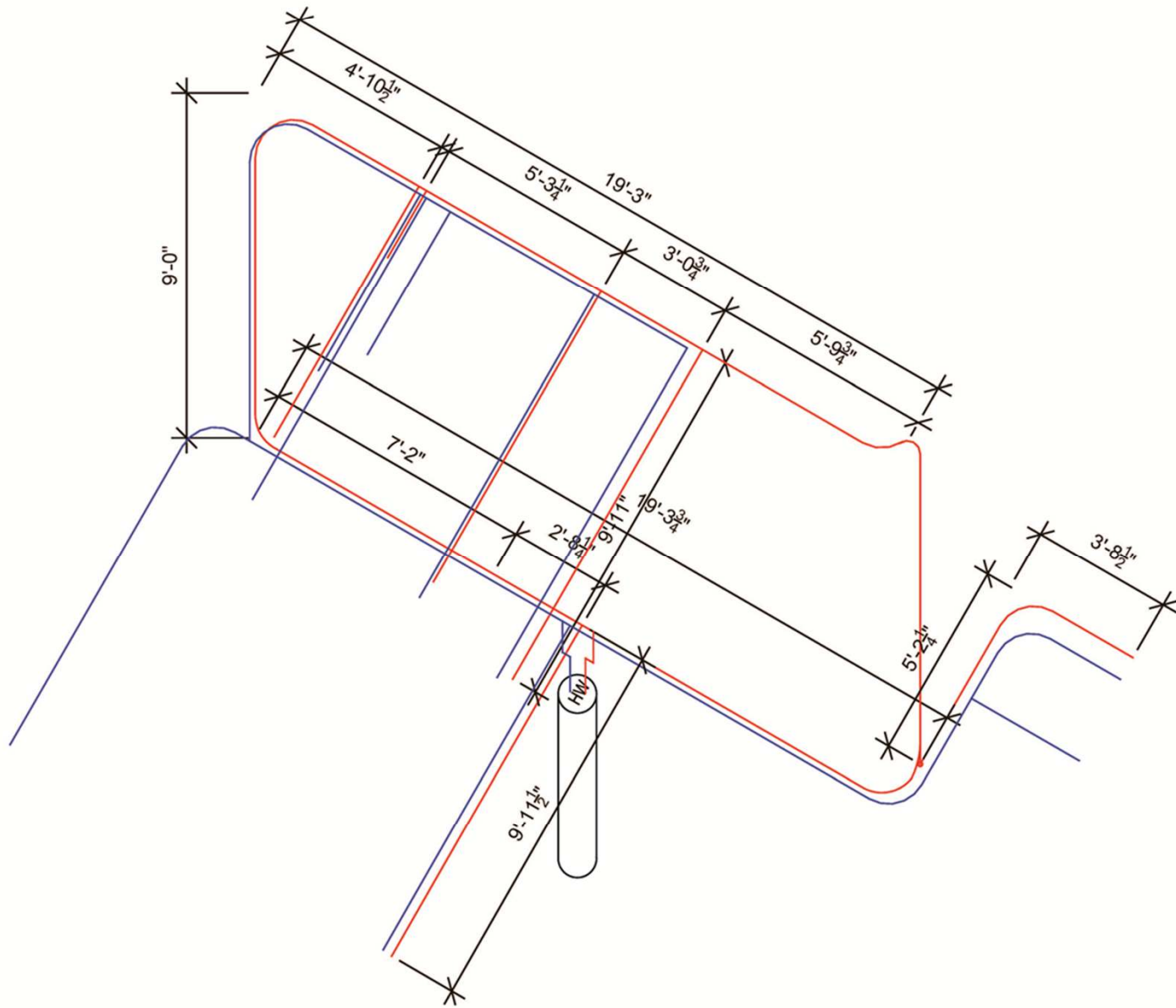


# DOMESTIC HOT WATER

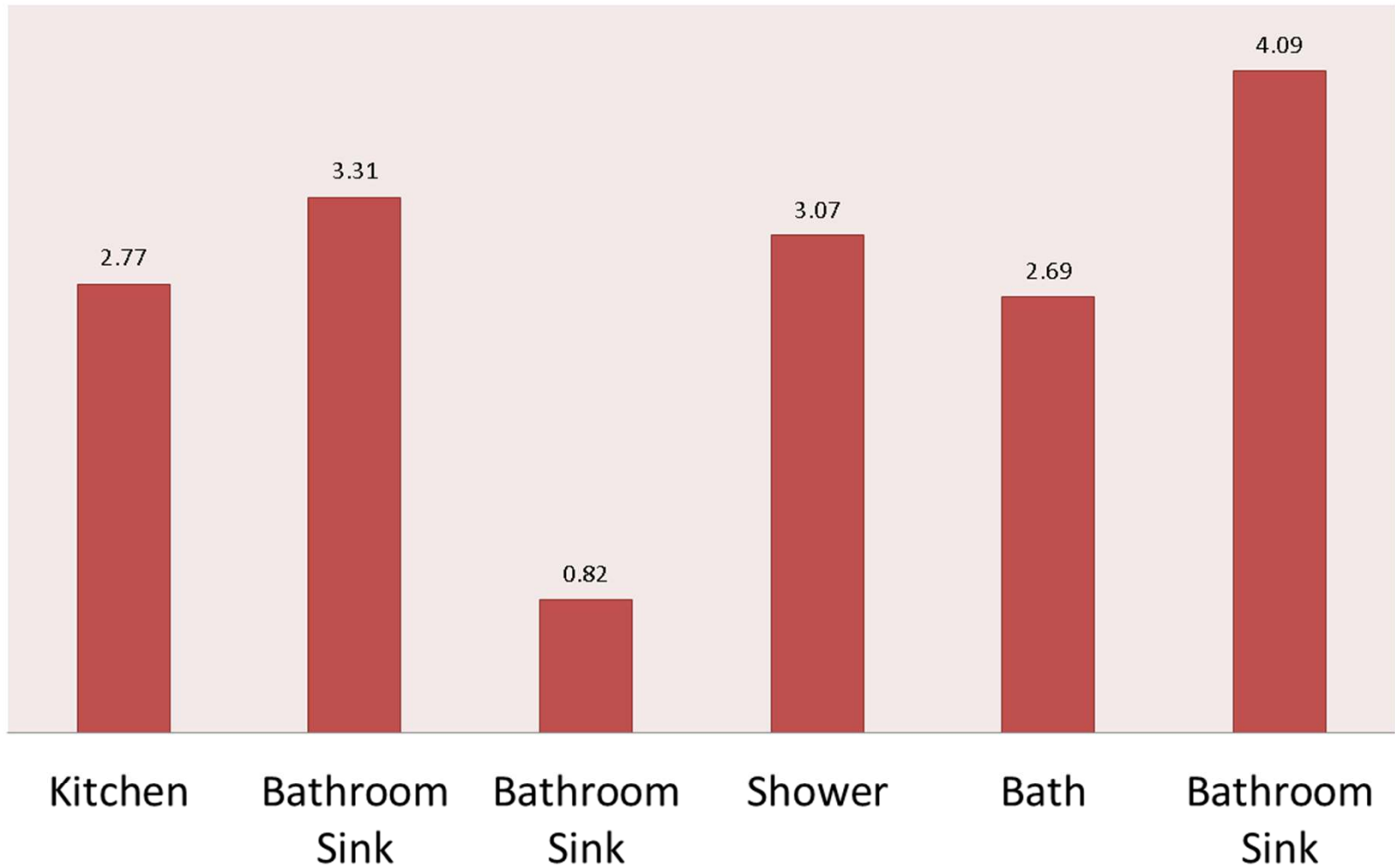


PLANET

# Plumbing Riser Diagram



# Hot Water Wait Time (Seconds)



NET ZERO



PROSPERITY



## HIGH EFFICIENCY



- HVAC
- Lighting
- Appliances
- Construction

## NET ZERO ENERGY



SOLAR  
ELECTRIC  
THERMAL  
ELECTRIC



# Solar Study

Winter Solstice



# Net Zero



Energy



Water Ready



Money



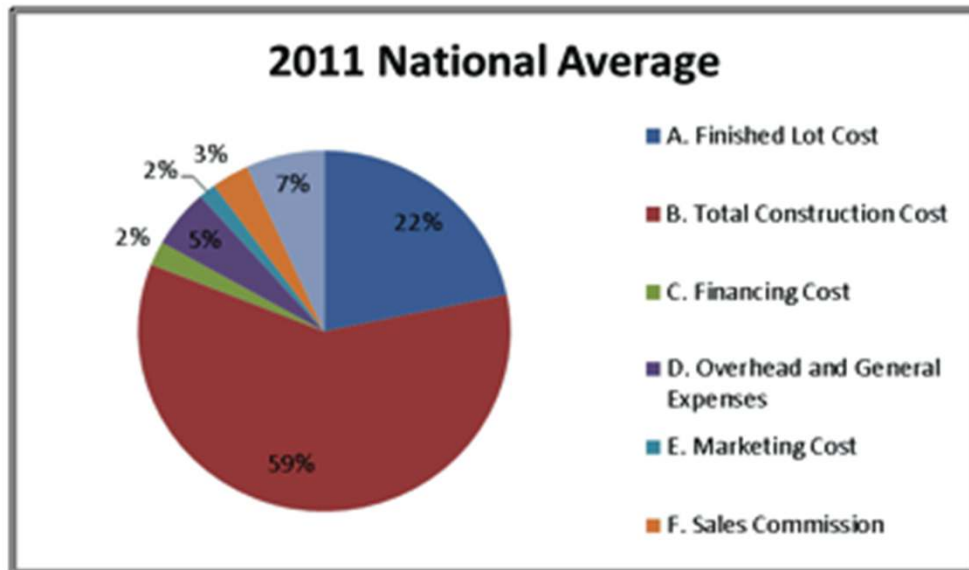
Fossil Fuels

FINANCIAL



LOCAL

# Sales Price Breakdown

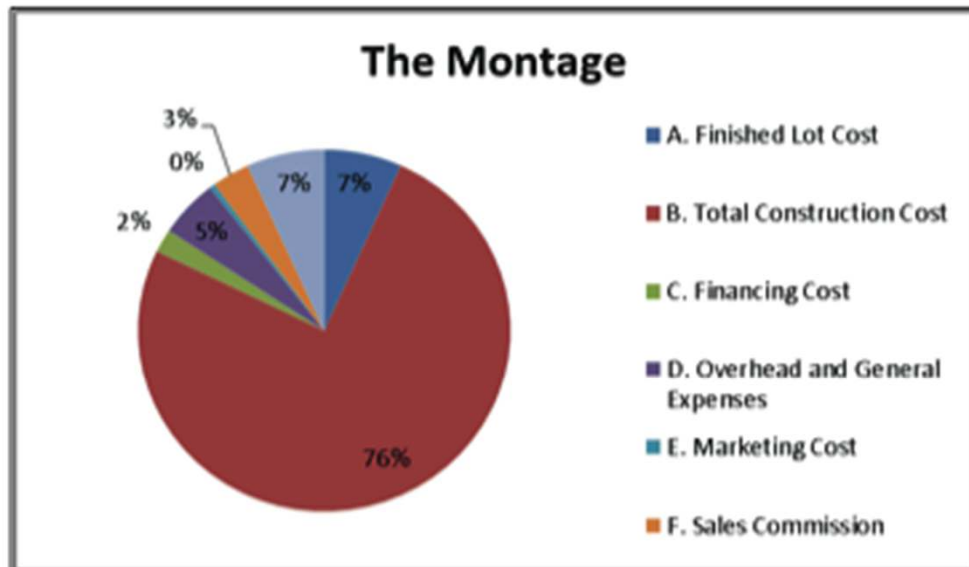


- 2011 NAHB AVERAGE

- \$310,618
- \$134 / SF

- THE MONTAGE

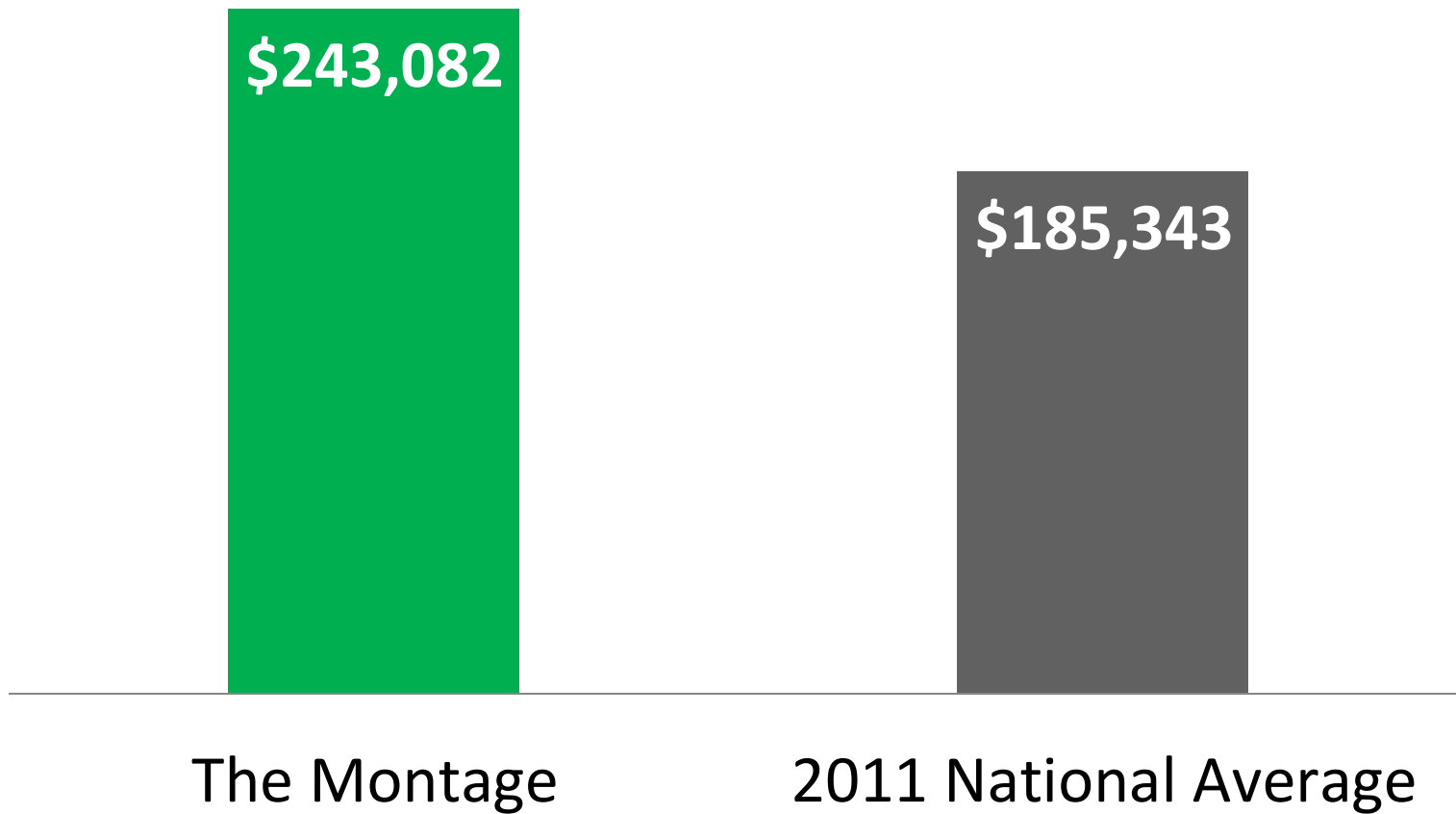
- \$321,977
- \$169 / SF



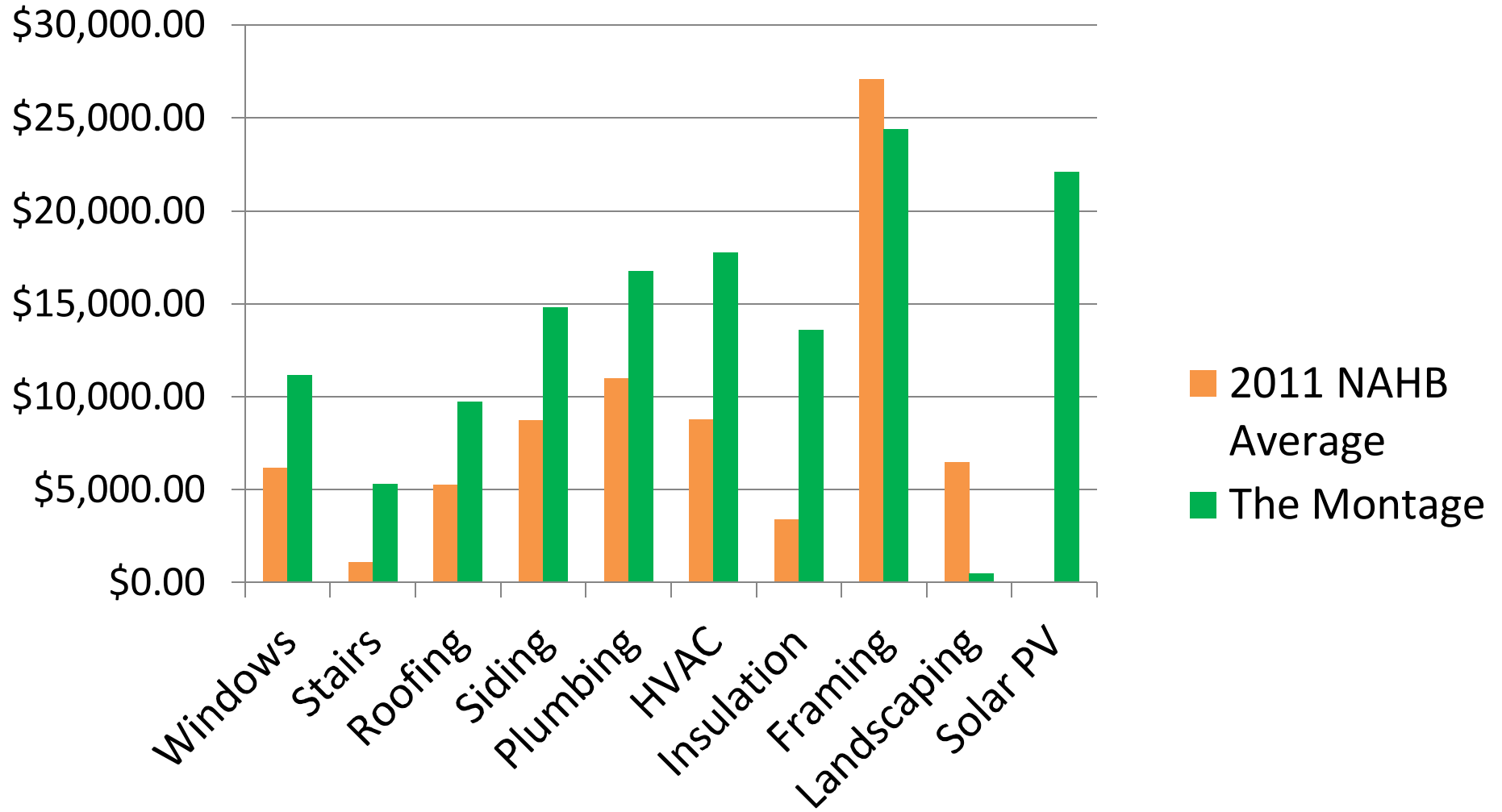
- DIFFERENCE:

- \$11,359
- 3.65% Increase

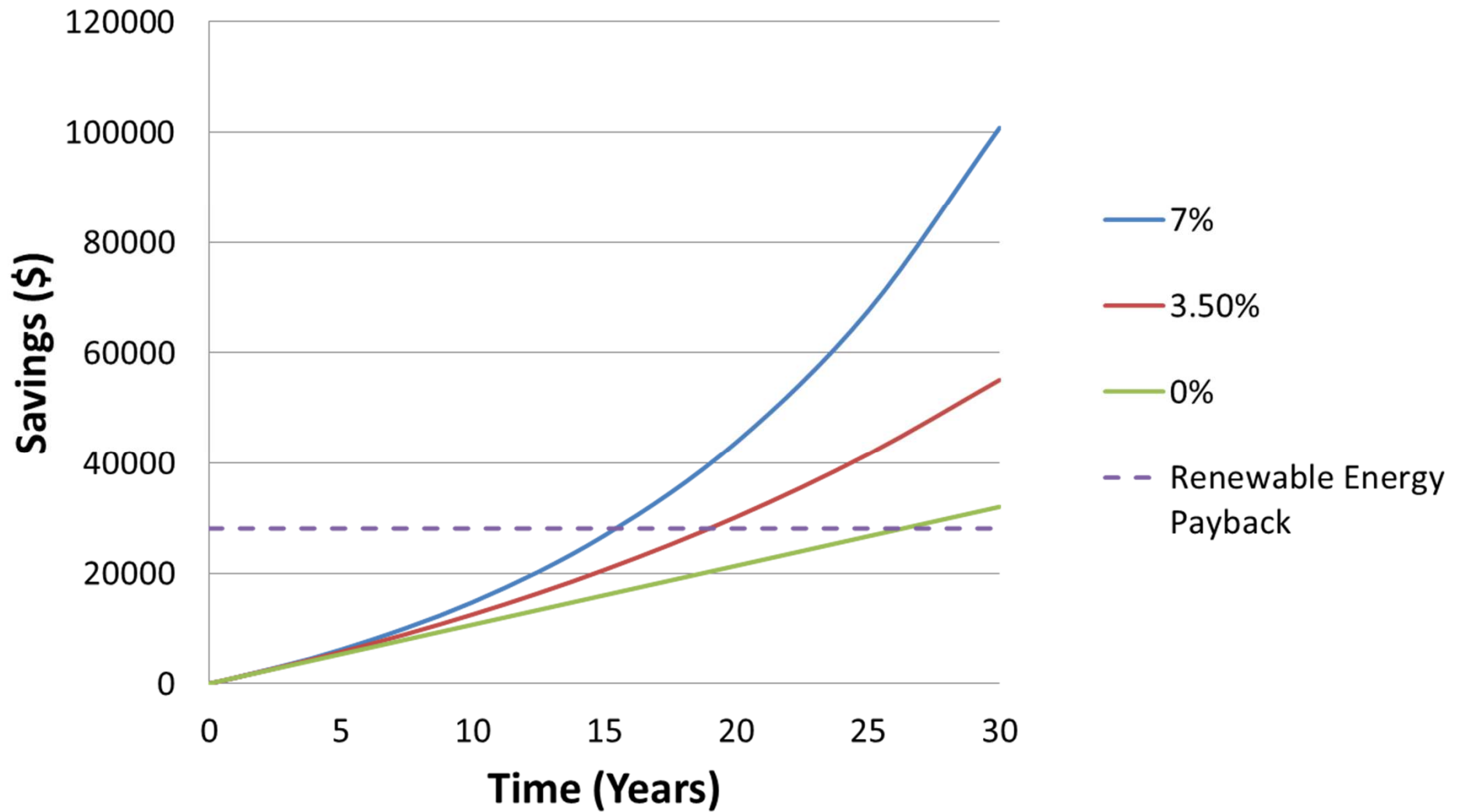
# Construction Cost



# Construction Cost



# Utility Cost Savings





THANK YOU!



QUESTIONS?