



# THE HARRY AND JEANETTE WEINBERG COMMONS

*CREDITS: DESIGN AND PHOTOGRAPHY, ZA+D, LLC*

ENVIRONMENTAL AND ENERGY STUDY INSTITUTE | SUSTAINABLE AFFORDABLE HOUSING



# MISSION-DRIVEN DEVELOPMENT TO *REINTEGRATE* EXISTING COMMUNITIES



CREDITS: DESIGN AND PHOTOGRAPHY, ZA+D, LLC

# BRINGING LOW-ENERGY BUILDINGS TO THE MASSES IS *NOT BUSINESS AS USUAL*

1. IMPLEMENT PASSIVE HOUSE STRATEGIES AND MEASURES
2. ASSEMBLE A TEAM THAT IS COMMITTED
3. RECOGNIZE THE EXISTING LIMITATIONS OF RETROFIT
4. ADAPT TO GIVEN CONDITIONS
5. KEEP THE RESIDENT NEEDS AS PRIORITY

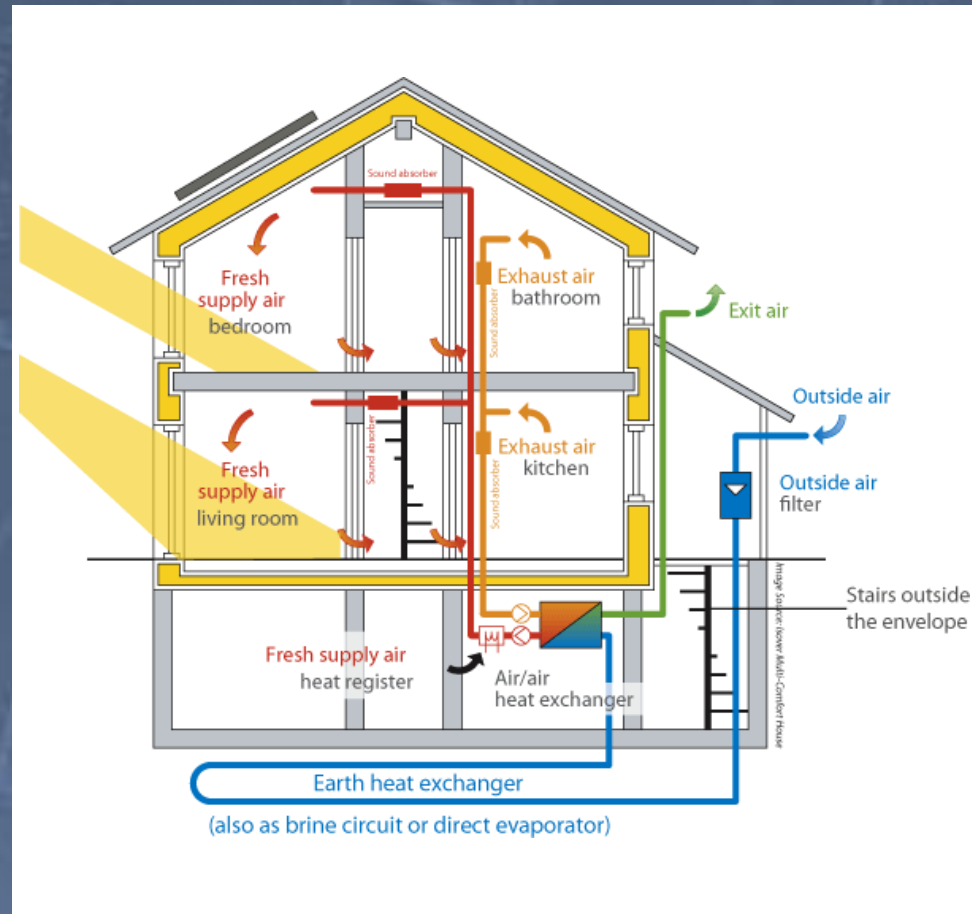
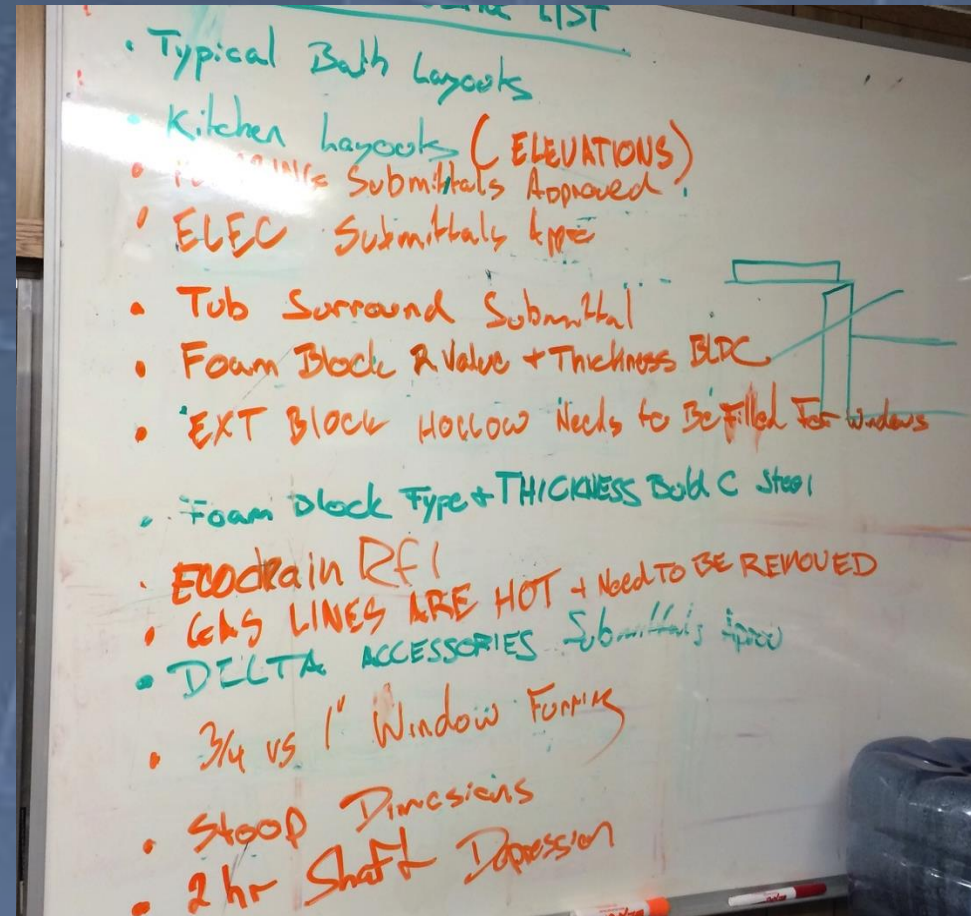


IMAGE SOURCE CREDITS: PHUS.ORG, PASSIVE HOUSE ALLIANCE

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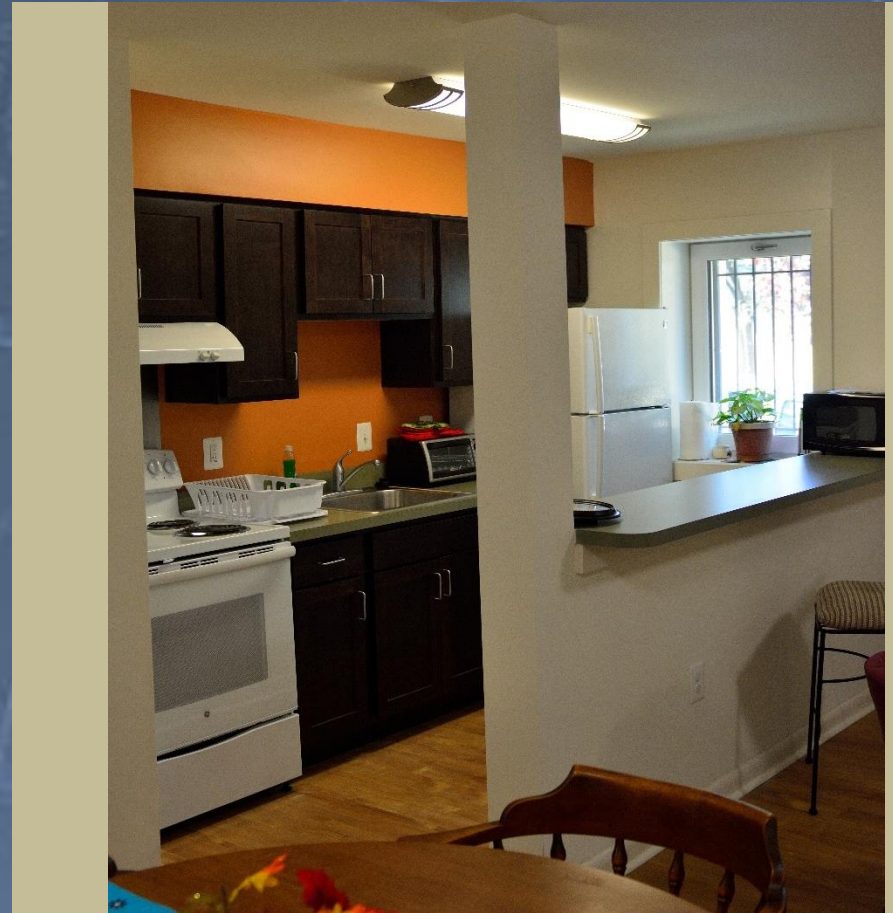


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# REPEATABLE

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# REPEATABLE + INTEGRATED DESIGN + CONSTRUCTION MEASURES

- PROVIDE ROBUST, **ABOVE CODE**, ENVELOPE W/ MINIMAL THERMAL BRIDGES

- CODE COMPLIANT  
WALL R-VALUE:

**R-20**

- WEINBERG COMMONS  
WALL R-VALUE:

**R-39**



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# REPEATABLE + INTEGRATED DESIGN + CONSTRUCTION MEASURES

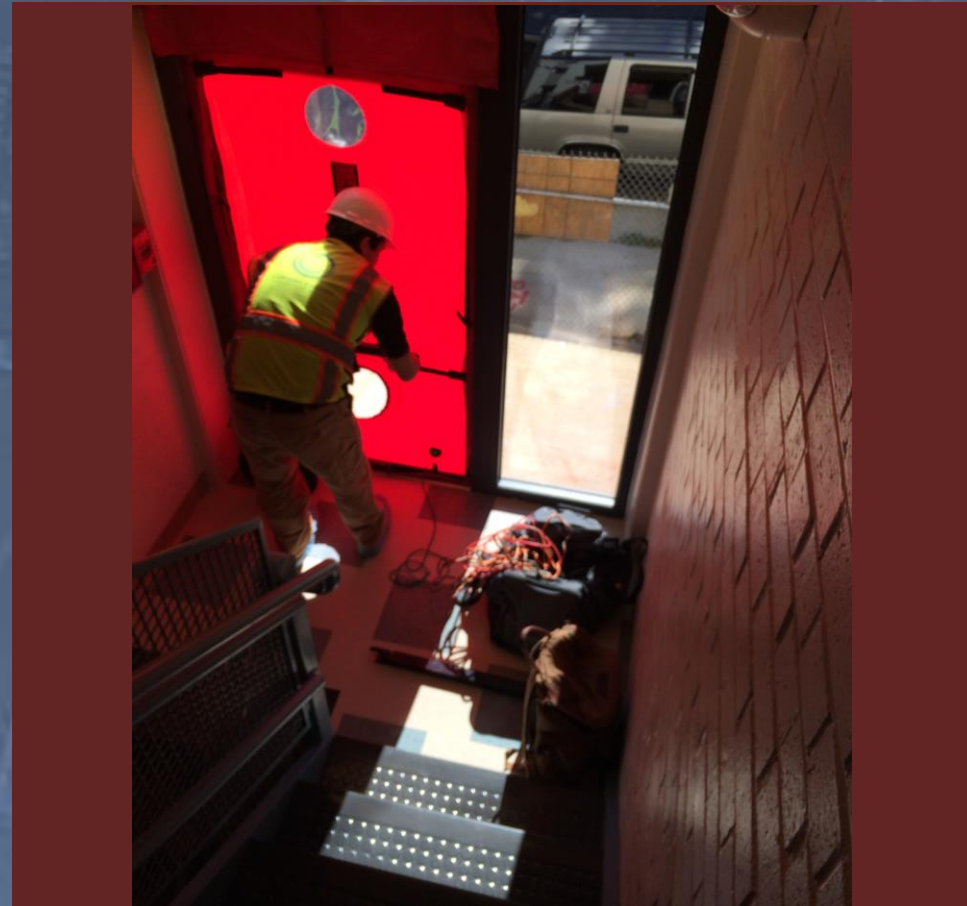


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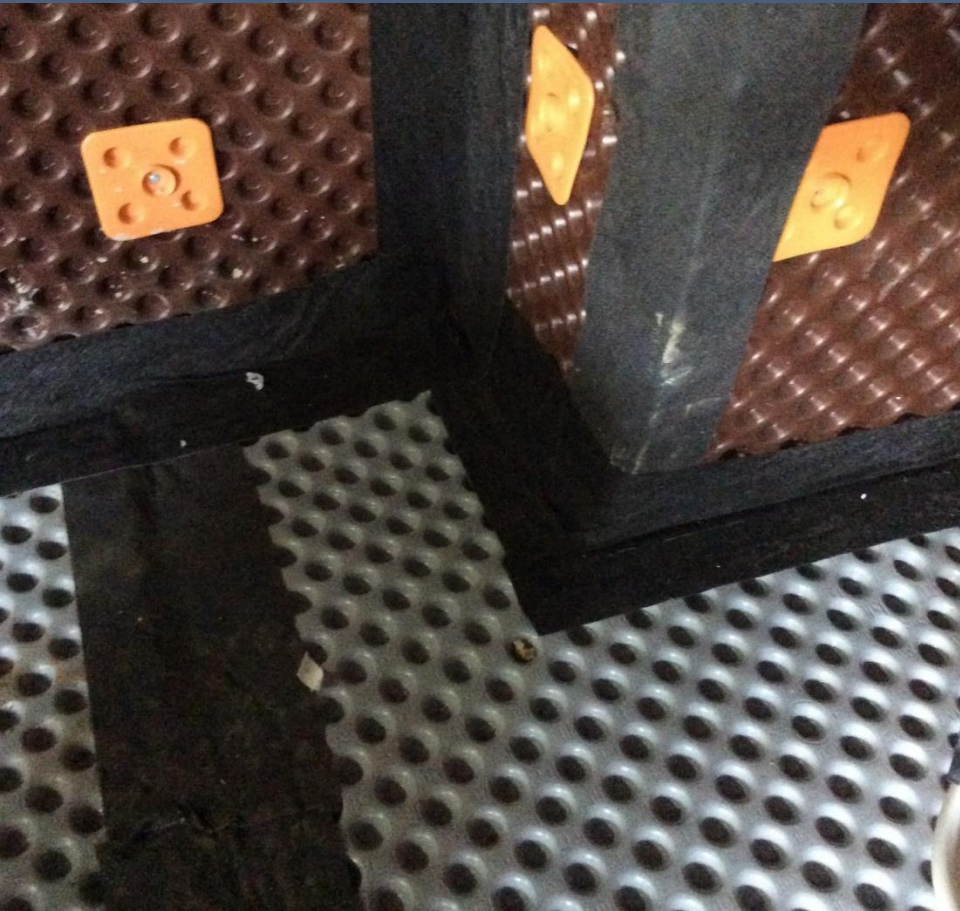
# REPEATABLE + INTEGRATED DESIGN + CONSTRUCTION MEASURES

- PROVIDE ROBUST, *ABOVE CODE*, ENVELOPE W/ MINIMAL THERMAL BRIDGES
- AIRTIGHTNESS THAT IS **5X** THE STANDARD THRESHOLD
  - CODE COMPLIANT AIRTIGHTNESS:  
**3.0 ACH<sub>50</sub>**
  - WEINBERG COMMONS AIRTIGHTNESS:  
**0.58 ACH<sub>50</sub>**



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# REPEATABLE + INTEGRATED DESIGN + CONSTRUCTION MEASURES



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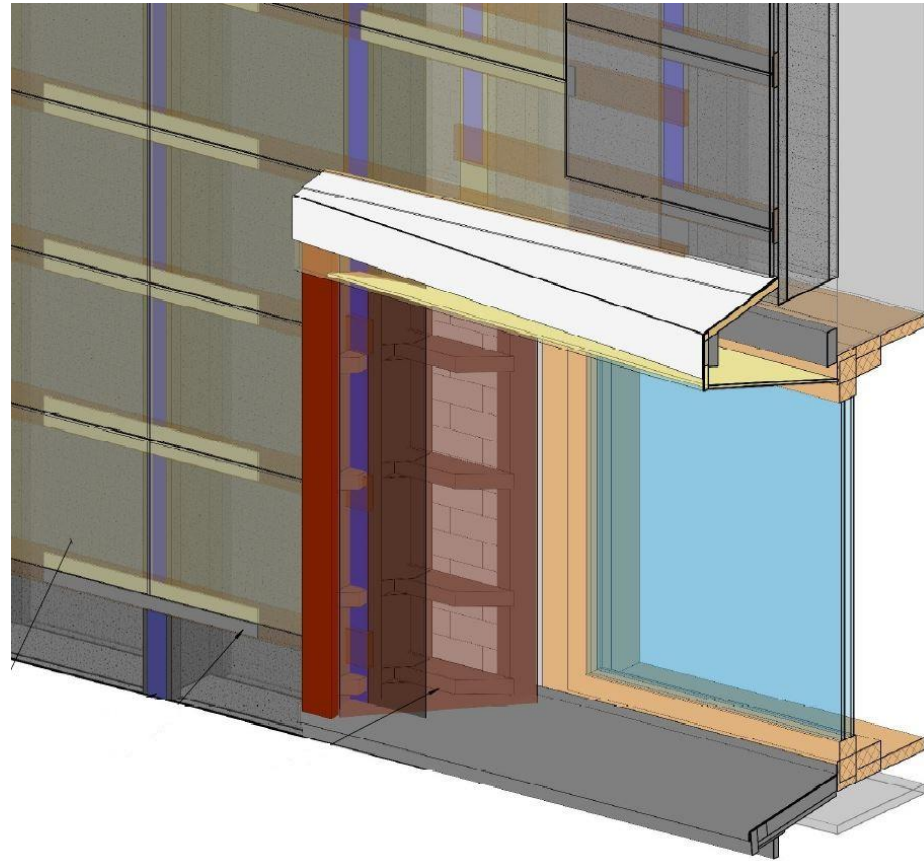
# REPEATABLE + INTEGRATED DESIGN + CONSTRUCTION MEASURES

- PROVIDE ROBUST, *ABOVE CODE*, ENVELOPE W/ MINIMAL THERMAL BRIDGES
- AIRTIGHTNESS THAT IS 5X THE STANDARD THRESHOLD
- FOR THE “HOLES” IN THE ENVELOPE, INSERT HIGH PERFORMANCE SYSTEMS
  - SPECIFICATION:  
TRIPLE-PANED GLASS W/  
COMPRESSION-SEALED  
SASHES AND DOORS



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- FOR THE “HOLES” IN THE ENVELOPE, INSERT HIGH PERFORMANCE SYSTEMS
- MANAGE SOLAR GAIN WITH WINDOW “APERTURES”
  - SITE-SPECIFIC ANGLES TO OPTIMIZE SHADE AND SUN FOR YEAR-ROUND COMFORT



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- MANAGE SOLAR GAIN WITH WINDOW “APERTURES”
- **INSTALL A RESILIENT SKIN (RAINSCREEN)**



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# REACHABLE

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# SIMPLE + REACHABLE *HIGH PERFORMANCE*

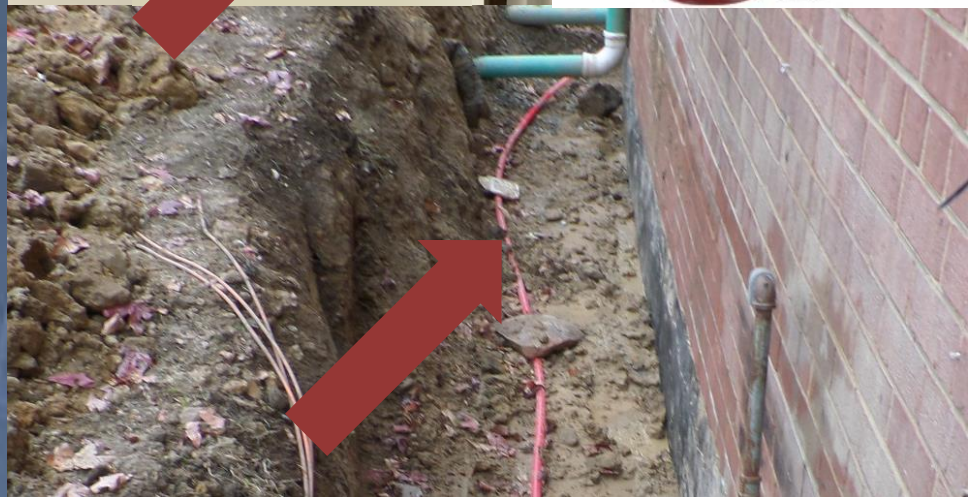
- ENERGY RECOVERY VENTILATOR (ERV)
- GROUND LOOP HEAT EXCHANGER
- HIGH EFFICIENCY HEATING AND COOLING (VRF)
- DRAIN WATER HEAT RECOVERY
- SOLAR THERMAL COLLECTOR FOR DOMESTIC HOT WATER
- ON-SITE PHOTOVOLTAIC ARRAY



CREDITS: DESIGN AND PHOTOGRAPHY, ZA+D, LLC, IMAGE SOURCE: ULTIMATEAIR.COM

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- ON-SITE PHOTOVOLTAIC ARRAY



CREDITS: DESIGN AND PHOTOGRAPHY, ZA+D, LLC, IMAGE SOURCE: [US.GRUNDFOS.COM](http://US.GRUNDFOS.COM)



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CREDITS: BUILDING DESIGN AND PHOTOGRAPHY, ZA+D, LLC, IMAGE SOURCE: LG

VRF.COM

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- **DRAIN WATER HEAT RECOVERY**
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- ON-SITE PHOTOVOLTAIC ARRAY

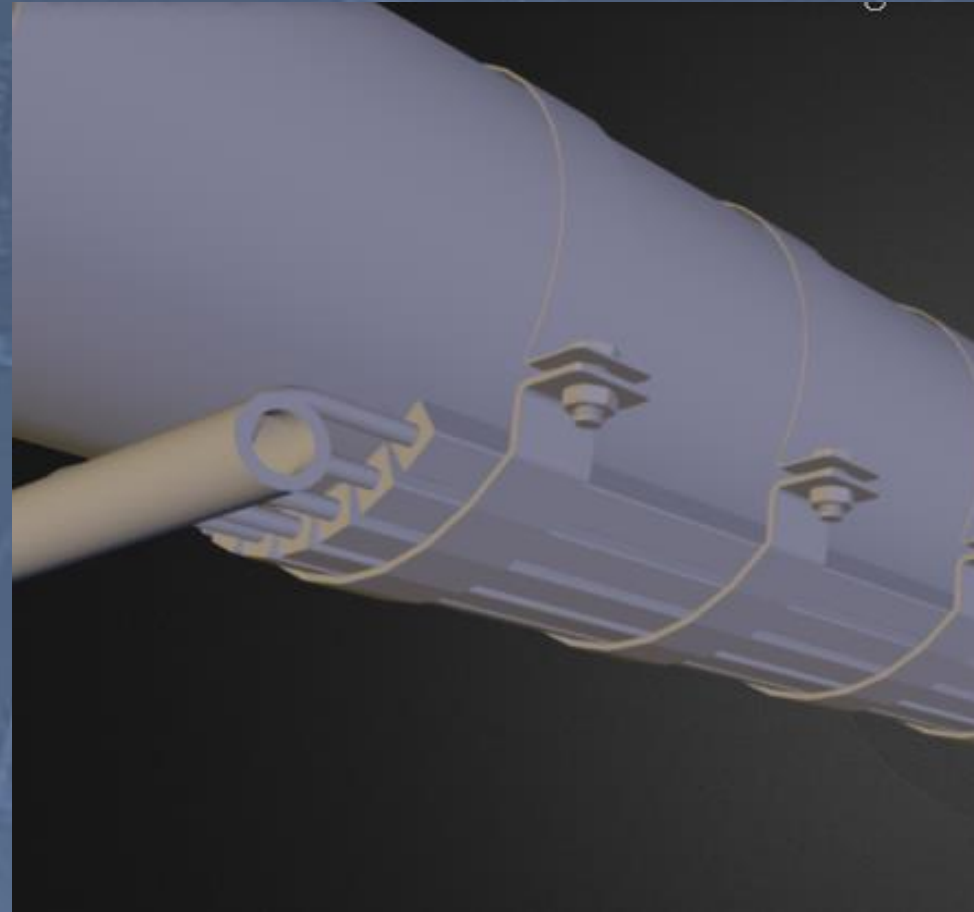
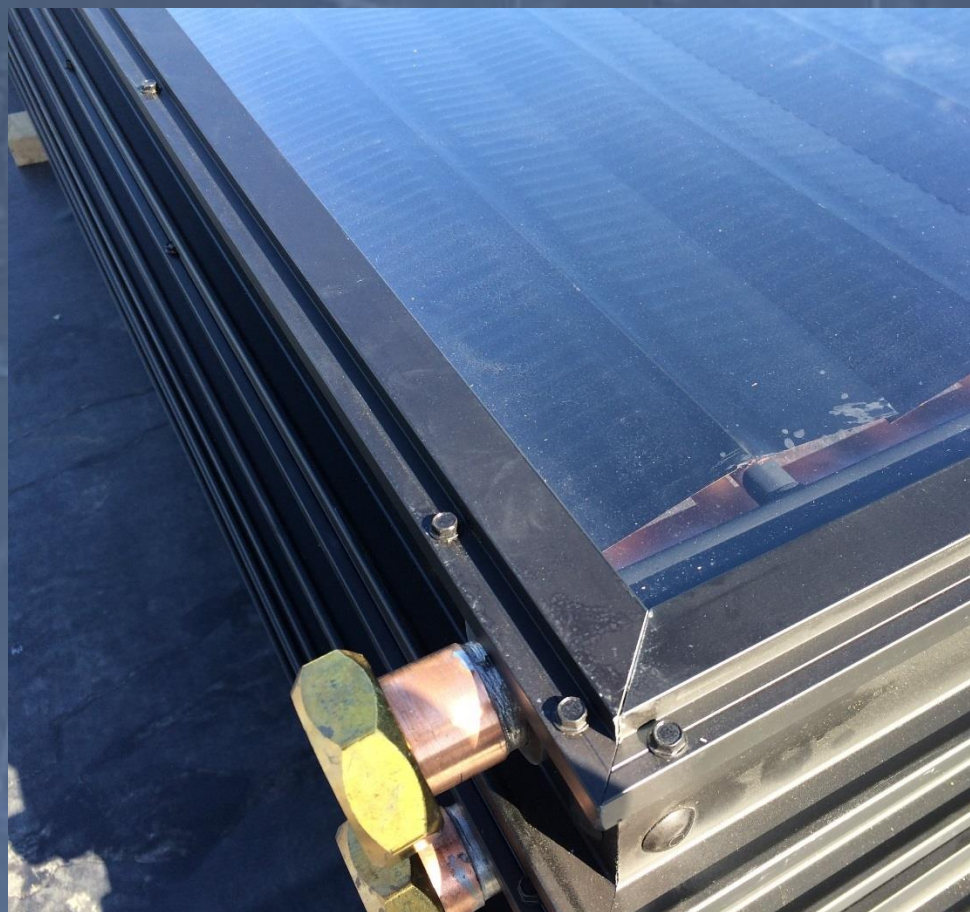


IMAGE CREDITS: ECODRAIN.COM



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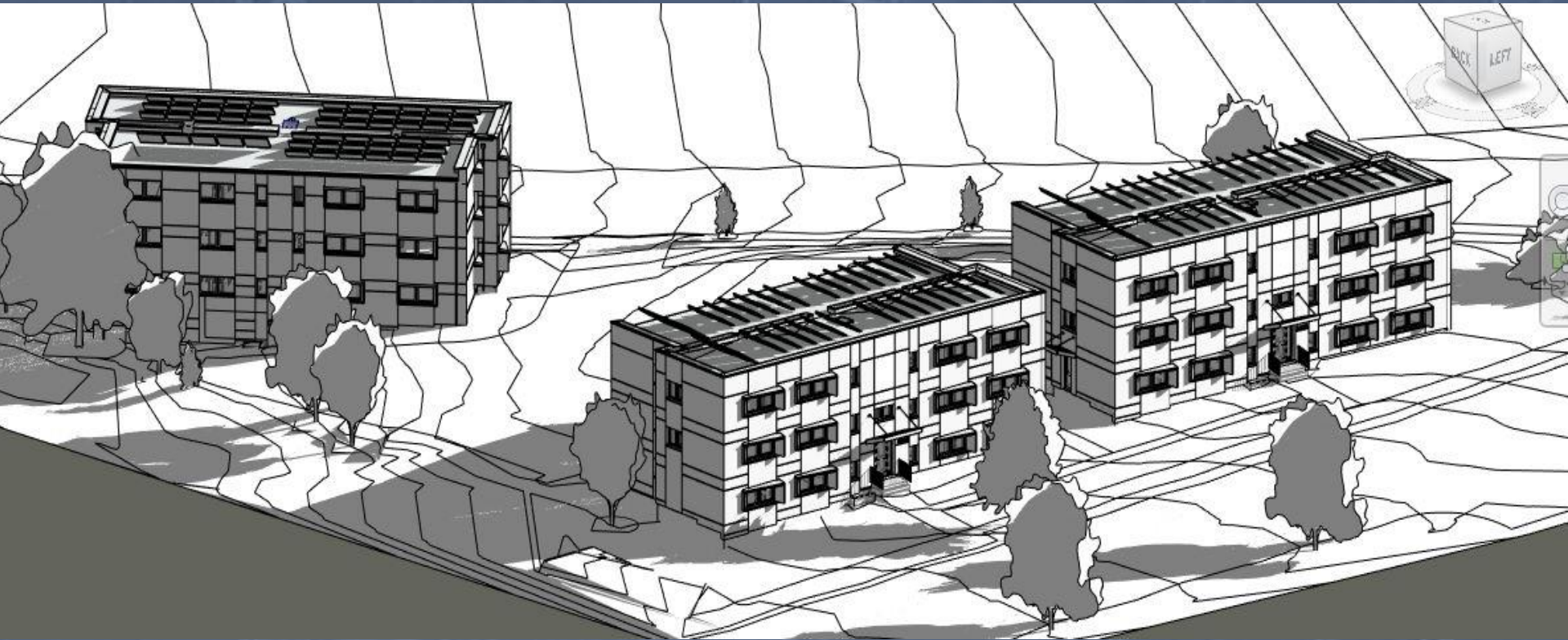
- ENERGY RECOVERY VENTILATOR (ERV)
- GROUND LOOP HEAT EXCHANGER
- HIGH EFFICIENCY HEATING AND COOLING (VRF)
- DRAIN WATER HEAT RECOVERY
- SOLAR THERMAL COLLECTOR FOR DOMESTIC HOT WATER
- ON-SITE PHOTOVOLTAIC ARRAY TO SUPPLEMENT THE *IN-PLACE* EFFICIENCIES



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