

Water Efficiency



High Efficiency Irrigation Systems

Low Flow Showers

Low Flow Faucets ≤ 2 gpm

Waterless Urinals

Low Flow Toilets ≤ 1.3 gpf



Energy and Atmosphere



Prerequisite - Energy Star Home EA 1.1

Parallel Paths for Energy Star

- Performance Path with HERS Index
 - 2 Prerequisites
 - » Energy Star EA 1.1
 - » Refrigerant Charge Test EA 11.1
- Prescriptive Path or Builder Option Package (BOP)
 - 7 Prerequisites
 - » Checklist Addendum A EA 2-6, 8, 9, 10



Energy and Atmosphere (EA)



- 38 Points = largest point category
- 34 points based on the **HERS** Index
- Energy Star required for certification



Truly Energy Efficient,
15% better than 2004
IECC Code house

Materials and Resources



- 1. Framing Order Waste Factor Limit MR 1.1**
- 2. Tropical Woods must be FSC Certified MR 2.1**
 - Forest Stewardship Council
 - Considered Tropical wood if grown in a Country between the Tropics of Cancer and Capricorn
- 3. Construction Waste Management Planning MR 3.1**
 - Investigate and document local options for diversion
 - Document Rate of Diversion

MR 1.1 - Prerequisite

Framing Order Waste Factor Limit



- Percentage of framing material ordered in excess of the estimated material needed for construction
- Waste Factor should be no more than 10% when ordering

MR 1.2 Detailed Framing Documents- 1 point



- Prior to construction, create detailed framing plans or scopes of work and accompanying architectural details for use on the job site. Indicate the specific locations, spacing, and sizes of all framing members in the floors, wall, roof, and ceiling.

MR 1.3 Detailed Cut List and Lumber Order- 1 Point



- Must meet MR 1.2 requirements
- Also, create a detailed cut list and lumber order that corresponds directly to the framing plans and scopes of work.

MR 1.5 Off-Site Fabrication



- A) Panelized construction. Wall, roof, and floor components are delivered to the job site preframed.

OR

- B) Modular, prefabricated construction. All principal building sections are delivered to the job site as prefabricated modules.

Materials and Resources



- 1. Off-Site Fabrication**
 - MR1.5 = 4 LH pts
- 2. Environmentally Preferable Products**
 - MR2.2 = .5 to 1 LH pts
- 3. Reduce Waste to .5lbs/sf**
 - MR3.2 = 3 LH pts

Possible 8 LEED-H Points for SIPs

MR 2.1 FSC-Certified Tropical Wood- Prerequisite



Must Provide wood product suppliers with a notice containing a statement:

- a. that the builder's preference is to purchase products containing tropical wood only if FSC certified
- b. A request for the country of manufacture of each product supplied
- c. A request for a list of FSC-certified tropical wood products the vendor can supply

MR 2.2 Environmentally Preferable Products



- Environmentally Preferable
- Low Emissions
- Local Production- includes extracted, processed and manufactured within 500 miles of the home site

Material must make up 90% of the component

MR 3.1 Construction Waste Management- Prerequisite



- a) Investigate and document local options for diversion (e.g. recycling, reuse) of all anticipated major constituents of the project waste stream, including cardboard packaging and household recyclables (e.g., beverage containers).

- b) Document the diversion rate for construction waste. Record the diversion rate for land clearing and/or demolition, if applicable (e.g., on gut rehab project), separately from the rate for the new construction phase of the project.

MR 3.2 Construction Waste Reduction- Up to 3 Points



Reduce or divert waste generated from new construction activities from landfills and incinerators to a level below the industry norm. Use either of two options:

- a) Reduced construction waste. Generate 2.5 pounds (or 0.016 cubic yards) or less of net waste (not including waste diverted for reclamation or recycling) per square foot of conditioned floor area.
- b) Increased waste diversion. Divert 25% of more of the total materials taken off the construction site from landfills and incinerators.

Indoor Environmental Quality



Parallel Paths for EQ

1. **Energy Star Indoor Air Package**
 - All Prerequisites
2. **LH Checklist items**
 - 7 Prerequisites



Indoor Environmental Quality



7 EQ Prerequisites

1. Basic Combustion Venting (EQ 2.1)

- **No Un-vented appliances**
 - decorative logs
 - Gas Bathroom heaters
- **Space and Water Heating**
 - Closed Combustion
 - OR Power-vented
 - OR located in detached or open air facility
- **Carbon Monoxide Detector 1/floor**
- **Fireplaces and Wood Stoves must have doors**

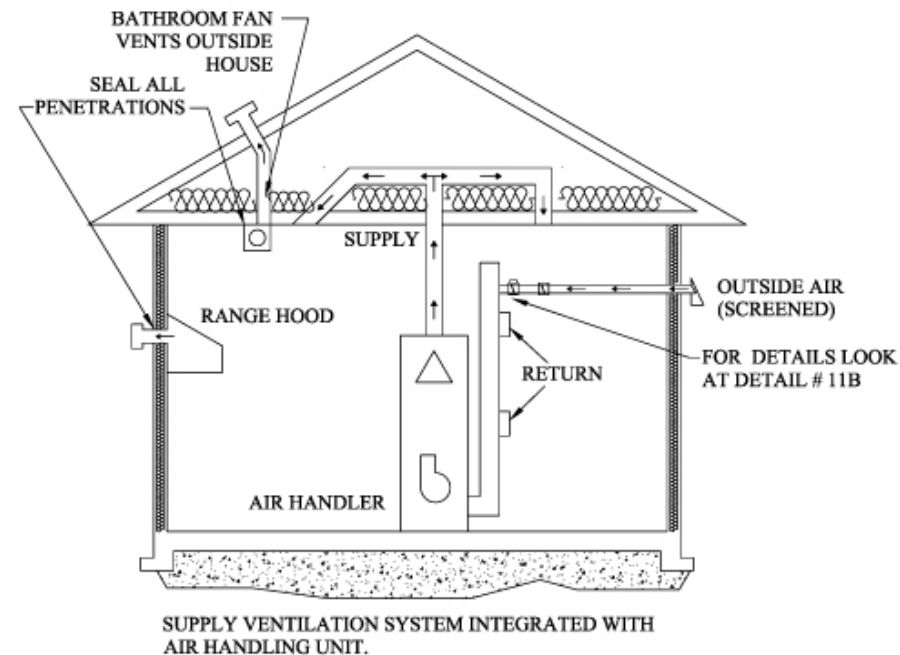
Indoor Environmental Quality



7 EQ Prerequisites

2. Basic Outdoor Air Ventilation (IEQ 4.1)

- ASHRAE Standard 62.2
 - Sections 4 and 7



Indoor Environmental Quality



7 EQ Prerequisites

3. Basic Local Exhaust (EQ 5.1)

- **Kitchen and Bath exhaust**
 - ASHRAE Standard 62.2, section 5
- **Fan and Duct design**
 - Meets ASHRAE 62.2, section 7
- **Exhaust Air to Outdoors (not attics)**
- **Use Energy Star labeled bathroom exhaust fans**
 - Except for multiple room systems

Indoor Environmental Quality



7 EQ Prerequisites

4. Room by Room Load Calculations (EQ 6.1)

- ACCA Manual-J 8th Edition load calculations
 - Also required by Energy Star

5. Good Filters (EQ 7.1)

- MERV 8 or better

6. Radon Resistant Construction (EQ 9.1)

- Only required in Radon Zone 1

7. No HVAC in Garage (EQ 10.1)

- All HVAC equipment and ducts outside the fire rated envelope of the garage (sheetrock)
 - No HVAC closet doors open to garage

Awareness and Education



Maren Enghelmohr's home in St. Louis, Enercept SIP
Belcher Homes, LH Gold

1 Prerequisite

Basic Operations Training

1) Operations and
Maintenance
Manual/Binder

2) Minimum 1 hr
Walkthrough

Awareness and Education



Basic Operations Training (AE 1.1) Prerequisite

- Operations and Maintenance Binder
 - LH Rating Certificate
 - LH Checklist
 - Signed Accountability Forms
 - Durability Inspection Checklist
 - Product Manufacturers Manuals
 - General Information on Efficient use of energy, water, and natural resources
 - Operations and Maintenance
 - Occupant Guidance
 - Educational Information on Green Power

Awareness and Education



Basic Operations Training (AE 1.1) Prerequisite

- One hour Walkthrough
 - Identification of all installed equipment
 - How to appropriately use equipment
 - How to appropriately maintain equipment



Thank You for Your Time