



for Homes

# LEED for Homes Project Checklist

Builder Name:	Chandler Design Build
Project Team Leader:	Michael Chandler, Chandler Design Build
Home Address (Street/City/State):	5039 Duchy Drive, Mebane, NC

## Project Description

Building Type: **Single detached**

# of Bedrooms: **3**

Project type: **Custom**

Floor Area: **2,475**

## Adjusted Certification Thresholds

Certified: **52.0** Gold: **82.0**

Silver: **67.0** Platinum: **97.0**

<b>Project Point Total</b>	<b>Final Credit Category Point Totals</b>		
Prelim: 83 + 6 maybe pts Final: 82	ID: 6.5	SS: 15	EA: 26
<b>Certification Level</b>	LL: 4	WE: 6	MR: 8.5
Prelim: Gold Final: Gold			

date last updated :

last updated by :

**Max Pts. Preliminary Rating**

**Available Y / Pts Maybe No**

**Notes**

## Innovation & Design Process (ID) (Minimum 0 ID Points Required)

**Max: 11 Y:6.5 M:0**

### 1. Integrated Project Planning

1.1 Preliminary Rating	<i>Prereq.</i>		
Target performance tier:	<b>Gold</b>		
1.2 Integrated Project Team ( <i>meet all of the following</i> )	<b>1</b>	<b>1</b>	<b>0</b>
<input checked="" type="checkbox"/> a) Individuals or organizations with necessary capabilities	<input checked="" type="checkbox"/> c) Regular meetings held with project team		
<input checked="" type="checkbox"/> b) All team members involved in various project phases			
1.3 Professional Credentialed with Respect to LEED for Homes	<b>1</b>	<b>0</b>	<b>0</b> <b>unavailable until further notice</b>
1.4 Design Charrette	<b>1</b>	<b>0</b>	<b>0</b>
1.5 Building Orientation for Solar Design ( <i>meet all of the following</i> )	<b>1</b>	<b>1</b>	<b>0</b> <b>how was D verified?</b>
<input checked="" type="checkbox"/> a) Glazing area on north/south walls 50% greater than on east/west walls	<input checked="" type="checkbox"/> c) At least 450 sq. ft. of south-facing roof area, oriented for solar applicatio		
<input checked="" type="checkbox"/> b) East-west axis is within 15 degrees of due east-west	<input checked="" type="checkbox"/> d) 90% of south-facing glazing is shaded in summer, unshaded in winter		

### 2. Quality Management for Durability

2.1 Durability Planning ( <i>meet all of the following</i> )	<i>Prereq.</i>		
<input checked="" type="checkbox"/> a) Durability evaluation completed	<input checked="" type="checkbox"/> d) Durability strategies incorporated into project documentation		
<input checked="" type="checkbox"/> b) Strategies developed to address durability issues	<input checked="" type="checkbox"/> e) Durability measures listed in durability inspection checklist		
<input checked="" type="checkbox"/> c) Moisture control measures from Table 1 incorporated			
2.2 Durability Management ( <i>meet one of the following</i> )	<i>Prereq.</i>		
<input checked="" type="checkbox"/> Builder has a quality management process in place	<input type="checkbox"/> Builder conducted inspection using durability inspection checklist		



<b>3. Innovative or Regional Design</b>						
	3.1	Innovation 1 (ruling #):	MR 1.4	1	1	0
	3.2	Innovation 2 (ruling #):	EA 09-04	1	0.5	0
	3.3	Innovation 3 (ruling #):		1	0	0
	3.4	Innovation 4 (ruling #):		1	0	0
<b>Location &amp; Linkages (LL)</b> (Minimum 0 LL Points Required)				<b>Max: 10</b>	<b>Y:4</b>	<b>M:1</b>
<b>1. LEED for Neighborhood Development</b>						
	1	LEED for Neighborhood Development		10	0	0
<b>2. Site Selection</b>						
	2	Site Selection ( <i>meet all of the following</i> )		2	2	0
		<input checked="" type="checkbox"/> a) Built above 100-year floodplain defined by FEMA		<input checked="" type="checkbox"/> d) Not built on land that was public parkland prior to acquisition		
		<input checked="" type="checkbox"/> b) Not built on habitat for threatened or endangered species		<input checked="" type="checkbox"/> e) Not built on land with prime soils, unique soils, or soils of state significance		
		<input checked="" type="checkbox"/> c) Not built within 100 ft of water, including wetlands				
<b>3. Preferred Locations</b>						
	3.1	Edge Development		1	0	0
	OR 3.2	Infill		2	0	0
	AND/OR 3.3	Previously Developed		1	1	0
<b>4. Infrastructure</b>						
	4	Existing Infrastructure		1	0	1
<b>5. Community Resources / Transit</b>						
	5.1	Basic Community Resources / Transit ( <i>meet one of the following</i> )		1	0	0
		<input type="checkbox"/> a) Within 1/4 mile of 4 basic community resources		<input type="checkbox"/> c) Within 1/2 mile of transit services providing 30 rides per weekday		
		<input type="checkbox"/> b) Within 1/2 mile of 7 basic community resources				
	OR 5.2	Extensive Community Resources / Transit ( <i>meet one of the following</i> )		2	0	0
		<input type="checkbox"/> a) Within 1/4 mile of 7 basic community resources		<input type="checkbox"/> c) Within 1/2 mile of transit services providing 60 rides per weekday		
		<input type="checkbox"/> b) Within 1/2 mile of 11 basic community resources				
	OR 5.3	Outstanding Community Resources / Transit ( <i>meet one of the following</i> )		3	0	0
		<input type="checkbox"/> a) Within 1/4 mile of 11 basic community resources		<input type="checkbox"/> c) Within 1/2 mile of transit services providing 125 rides per weekday		
		<input type="checkbox"/> b) Within 1/2 mile of 14 basic community resources				
<b>6. Access to Open Space</b>						
	6	Access to Open Space		1	1	0

**1. Site Stewardship**

<b>1.1</b>	<b>Erosion Controls During Construction</b> ( <i>meet all of the following</i> )	<b>Prereq.</b>		
	<input checked="" type="checkbox"/> a) Stockpile and protect disturbed topsoil from erosion.		<input checked="" type="checkbox"/> d) Provide swales to divert surface water from hillsides	
	<input checked="" type="checkbox"/> b) Control the path and velocity of runoff with silt fencing or equivalent.		<input checked="" type="checkbox"/> e) Use tiers, erosion blankets, compost blankets, etc. on sloped areas.	
	<input checked="" type="checkbox"/> c) Protect sewer inlets, streams, and lakes with straw bales, silt fencing, etc.			
<b>1.2</b>	<b>Minimize Disturbed Area of Site</b> ( <i>meet the appropriate requirements</i> )	<b>1</b>	<b>1</b>	<b>0</b>
	Where the site is not previously developed, meet all the following:			
	<input type="checkbox"/> a) Develop tree / plant preservation plan with "no-disturbance" zones			
	<input type="checkbox"/> b) Leave 40% of buildable lot area, not including area under roof, undisturbed			
	<b>OR</b> Where the site is previously developed, meet all the following:			
	<input checked="" type="checkbox"/> c) Develop tree / plant preservation plan with "no-disturbance" zones AND			
	<input checked="" type="checkbox"/> Rehabilitate lot; undo soil compaction and remove invasive plants AND			
	<input checked="" type="checkbox"/> Meet the requirements of SS 2.2			
	<b>OR</b> <input type="checkbox"/> d) Build on a lot of 1/7 acre or less, or 7 units per acre.			

**2. Landscaping**

<b>2.1</b>	<b>No Invasive Plants</b>	<b>Prereq.</b>	<b>Y</b>	
<b>2.2</b>	<b>Basic Landscaping Design</b> ( <i>meet all of the following</i> )	<b>2</b>	<b>0</b>	<b>2</b>
	<input checked="" type="checkbox"/> a) Any turf must be drought-tolerant.		<input checked="" type="checkbox"/> d) Add mulch or soil amendments as appropriate.	
	<input checked="" type="checkbox"/> b) Do not use turf in densely shaded areas.		<input checked="" type="checkbox"/> e) All compacted soil must be tilled to at least 6 inches.	
	<input checked="" type="checkbox"/> c) Do not use turf in areas with slope of 25%			
<b>AND/OR</b>	<b>2.3 Limit Conventional Turf</b>	<b>3</b>	<b>3</b>	<b>0</b>
	<input type="text" value="0%"/> Percentage of designed landscape softscape area that is turf			
<b>AND/OR</b>	<b>2.4 Drought-Tolerant Plants</b>	<b>2</b>	<b>2</b>	<b>0</b>
	<input type="text" value="100%"/> Percentage of installed plants that are drought-tolerant			
<b>OR</b>	<b>2.5 Reduce Overall Irrigation Demand by at Least 20%</b>	<b>6</b>	<b>0</b>	<b>0</b>
	<input type="text"/> Percentage reduction in estimated irrigation water demand		<a href="#">(calculate)</a>	

**3. Reduce Local Heat Island Effects**

<b>3</b>	<b>Reduce Local Heat Island Effects</b> ( <i>meet one of the following</i> )	<b>1</b>	<b>0</b>	<b>0</b>
	<input type="checkbox"/> a) Locate trees / plantings to provide shade for 50% of hardscapes		<input type="checkbox"/> b) Install light-colored, high-albedo materials for 50% of hardscapes	

#### 4. Surface Water Management

4.1	Permeable Lot	4	3	0
	<input type="text" value="89%"/> vegetative landscape			
	<input type="text"/> permeable paving			
	<input type="text" value="4%"/> impermeable surfaces directed to infiltration features			
	<input type="text" value="8%"/> other impermeable surfaces			
4.2	Permanent Erosion Controls ( <i>meet one of the following</i> )	1	1	0
	<input checked="" type="checkbox"/> a) For portions of lot on steep slope, use terracing and retaining walls			
	<input type="checkbox"/> b) Plant trees, shrubs, or groundcover			
4.3	Management of Runoff from Roof ( <i>meet any, see Rating System for pts</i> )	2	2	0
	<input checked="" type="checkbox"/> a) Install permanent stormwater controls to manage runoff from the home			
	<input type="checkbox"/> b) Install vegetated roof to cover 50% of roof area			
	<input type="checkbox"/> c) Install vegetated roof to cover 100% of roof area			
	<input type="checkbox"/> d) Have lot designed by professional to manage runoff from home on-site			

**Micheal can appeal the decision on**

#### 5. Nontoxic Pest Control

5	Pest Control Alternatives ( <i>meet any of the following, 1/2 pt each</i> )	2	1.5	0.5
	<input type="checkbox"/> a) Keep all wood at least 12" above soil			
	<input checked="" type="checkbox"/> b) Seal external cracks, joints, etc. with caulking and install pest-proof screens			
	<input checked="" type="checkbox"/> c) Include no wood-to-concrete connections, or separate connections with dividers			
	<input type="checkbox"/> d) Install landscaping so mature plants are 24" from home			
	e) In 'moderate' to 'very heavy' termite risk areas:			
	<input type="checkbox"/> i) Treat all cellulosic material with borate product to 3' above foundation			
	<input type="checkbox"/> ii) Install sand or diatomaceous earth barrier			
	<input checked="" type="checkbox"/> iii) Install steel mesh barrier termite control system			
	<input type="checkbox"/> iv) Install non-toxic termite bait system			
	<input type="checkbox"/> v) Use noncellulosic wall structure			
	<input checked="" type="checkbox"/> vi) Use solid concrete foundation walls or pest-proof masonry wall design			

#### 6. Compact Development

6.1	Moderate Density	2	0	0
	<input type="text"/> # of total units on the lot			
	<input type="text"/> lot size (acres)			
	<input type="text" value="N/A"/> density (units/acre)			
OR	6.2 High Density	3	0	0
OR	6.3 Very High Density	4	0	0

#### Water Efficiency (WE) (Minimum 3 WE Points Required) Max: 15 Y:6 M:0

1. Water Reuse				
1.1	Rainwater Harvesting System	4	3	0
	<input type="text" value="100%"/> Percentage of roof area used for harvesting			
	<input type="text" value="Outdoor only"/> Application			
AND/OR	1.2 Graywater Reuse System	1	0	0
OR	1.3 Use of Municipal Recycled Water System	3	0	0

## 2. Irrigation System

2.1 High-Efficiency Irrigation System (*meet any of the following, 1 pt each*)

3 0 0

- |  |  |
|--|--|
| <input type="checkbox"/> a) Irrigation system designed by EPA Water Sense certified professional | <input type="checkbox"/> g) Install timer or controller for each watering zone                     |
| <input type="checkbox"/> b) Irrigation system with head-to-head coverage                         | <input type="checkbox"/> h) Install pressure-regulating devices                                    |
| <input type="checkbox"/> c) Install central shut-off valve                                       | <input type="checkbox"/> i) High-efficiency nozzles with distribution uniformity of at least 0.70. |
| <input type="checkbox"/> d) Install submeter for the irrigation system                           | <input type="checkbox"/> j) Check valves in heads  |
| <input type="checkbox"/> e) Use drip irrigation for 50% of planting beds                         | <input type="checkbox"/> k) Install moisture sensor or rain delay controller                       |
| <input type="checkbox"/> f) Create separate zones for each type of bedding                       |  |

AND/OR 2.2 Third-party Inspection

1 0 0

OR 2.3 Reduce Overall Irrigation Demand by at Least 45%

4 0 0

Full points earned in SS 2.5

Percentage reduction in estimated irrigation water demand [\(calculate\)](#)

## 3. Indoor Water Use

3.1 High-Efficiency Fixtures and Fittings (*meet any of the following, 1 pt each*)

3 1 0

- |   |  |
|---|--|
| <input type="checkbox"/> a) Average flow rate of lavatory faucets is $\leq 2$ gpm         | <input checked="" type="checkbox"/> c) Average flow rate for all toilets is $\leq 1.3$ gpf; OR |
| <input type="checkbox"/> b) Average flow rate for all showers is $\leq 2.0$ gpm per stall | <input type="checkbox"/> Toilets are dual-flush; OR  |
|   | <input type="checkbox"/> Toilets meet the EPA Water Sense specification                        |

3.2 Very High-Efficiency Fixtures and Fittings (*meet any, 2 pts each*)

6 2 0

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> a) Average flow rate of lavatory faucets is $\leq 1.5$ gpm; OR | <input type="checkbox"/> b) Average flow rate for all showers $\leq 1.75$ gpm per stall |
| <input type="checkbox"/> Lavatory faucets meet the EPA Water Sense specification                   | <input type="checkbox"/> c) Average flow rate for all toilets is $\leq 1.1$ gpf         |

## Energy & Atmosphere (EA) (Minimum 0 EA Points Required)

Max: 38 Y:26 M:1

### 1. Optimize Energy Performance

1.1 Performance of ENERGY STAR for Homes

Prereq.

1.2 Exceptional Energy Performance

34 23 0

IECC climate zone

HERS Index

### 7. Water Heating

7.1 Efficient Hot Water Distribution System (*meet one of the following*)

2 2 0

*ask jamie if she saw this in the field*

- |  |  |
|--|--|
| <input type="checkbox"/> a) Structured plumbing system           | <input checked="" type="checkbox"/> c) Compact design of conventional system |
| <input type="checkbox"/> b) Central manifold distribution system |  |

7.2 Pipe Insulation

1 0 1

### 11. Residential Refrigerant Management

11.1 Refrigerant Charge Test

Prereq.

11.2 Appropriate HVAC Refrigerants (*meet one of the following*)

1 1 0

- |  |   |
|--|---|
| <input type="checkbox"/> a) Use no refrigerants                  | <input type="checkbox"/> c) Use refrigerants that complies with global warming potential equation |
| <input checked="" type="checkbox"/> b) Use non-HCFC refrigerants |   |

**1. Material-Efficient Framing**

1.1	Framing Order Waste Factor	<i>Prereq.</i>		
1.2	Detailed Framing Documents	1	1	0
1.3	Detailed Cut List and Lumber Order	1	0	0
	<input checked="" type="checkbox"/> Requirements of MR 1.2 have been met	<input checked="" type="checkbox"/> Detailed cut list and lumber order corresponding to framing plans or scopes		
<b>AND/OR</b>	1.4 Framing Efficiencies ( <i>meet any of the following, see Rating System for pts</i> )	3	3	0
	<input checked="" type="checkbox"/> Precut framing packages	<input checked="" type="checkbox"/> Stud spacing greater than 16" on center		
	<input checked="" type="checkbox"/> Open-web floor trusses	<input type="checkbox"/> Ceiling joist spacing greater than 16" on center		
	<input type="checkbox"/> Structural insulated panel walls	<input type="checkbox"/> Floor joist spacing greater than 16" on center		
	<input type="checkbox"/> Structural insulated panel roof	<input checked="" type="checkbox"/> Roof rafter spacing greater than 16" on center		
	<input type="checkbox"/> Structural insulated panel floors	<input checked="" type="checkbox"/> Two of the following: Size headers for loads; ladder blocking; drywall clips;		
<b>OR</b>	1.5 Off-site Fabrication ( <i>meet one of the following</i> )	4	0	0
	<input type="checkbox"/> a) Panelized construction	<input type="checkbox"/> b) Modular, prefabricated construction		

**2. Environmentally Preferable Products**

2.1	FSC Certified Tropical Wood ( <i>meet both of the following</i> )	<i>Prereq.</i>		
	<input checked="" type="checkbox"/> a) Provide wood suppliers with a notice of preference for FSC-certified products	<input checked="" type="checkbox"/> b) Only use tropical wood that is FSC-certified		
2.2	Environmentally Preferable Products ( <i>meet any, 1/2 pt each</i> )	8	5	0.5
	<b>Assembly : component</b>	<b>(a) EPP</b>	<b>(b) Low emission</b>	<b>(c) Local production</b>
	Exterior wall: framing	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Exterior wall: siding or masonry	<input type="checkbox"/>	type: <u>hard coat stucco</u> on nonmetallic lath	<input type="checkbox"/>
	Floor: flooring	<input type="checkbox"/> (45%)	type: <u>did not get bec. Of tile</u>	<input checked="" type="checkbox"/> 90% hard flooring
	Floor: flooring	<input type="checkbox"/> (90%)	type: _____	<input type="checkbox"/> SCS FloorScore
	Floor: carpet	<input type="checkbox"/>	type: _____	<input type="checkbox"/> Green Label Plus
	Floor: framing	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Foundation: aggregate	<input type="checkbox"/>		<input type="checkbox"/>
	Foundation: cement	<input checked="" type="checkbox"/>		<input type="checkbox"/>
	Interior wall: framing	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Interior wall, ceiling: gypsum board	<input type="checkbox"/>		<input type="checkbox"/>
	Interior wall, ceiling, millwork: paint	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Landscape: decking or patio	<input type="checkbox"/>	type: <u>recycled content</u> in rain garden retention ponds	<input type="checkbox"/>
	Other: cabinet	<input checked="" type="checkbox"/>	type: <u>KCMA ESP</u>	<input type="checkbox"/>
	Other: counter	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Other: door	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Other : trim	<input type="checkbox"/>	type: <u>local wood</u>	<input checked="" type="checkbox"/>
	Other : adhesive, sealant	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Other : window frame	<input type="checkbox"/>	type: _____	<input type="checkbox"/>
	Roof: framing	<input type="checkbox"/>		<input type="checkbox"/>
	Roof: roofing	<input type="checkbox"/>		<input type="checkbox"/>
	Roof, floor, wall: insulation	<input type="checkbox"/>		<input checked="" type="checkbox"/>
	Roof, floor, wall (2 of 3): sheathing	<input type="checkbox"/>	type: _____	<input type="checkbox"/>

### 3. Waste Management

#### 3.1 Construction Waste Management Planning *(meet both of the following)*

*Prereq.*

a) Investigate local options for waste diversion

b) Document diversion rate for construction waste

#### 3.2 Construction Waste Reduction *(use one of the following methods)*

**3**

**0**

**0**

**see notes**

a) pounds waste / square foot

cubic yards waste / 1,000 square feet

b) percentage of waste diverted

### Indoor Environmental Quality (EQ) (Minimum 6 EQ Points Required)

**Max: 21 Y:16 M:1**

#### 1. ENERGY STAR with Indoor Air Package

##### 1 ENERGY STAR with Indoor Air Package

**13**

**0**

**0**

#### 2. Combustion Venting

##### 2.1 Basic Combustion Venting Measures *(meet all of the following)*

*Prereq.*

a) no unvented combustion appliances

b) carbon monoxide monitors on each floor

c) all fireplaces and woodstoves have doors

d) space, water heating equipment designed with closed combustion; OR

space and water heating equipment has power-vented exhaust; OR

space and water heating equipment located in detached or open-air fac

no space- or water-heating equipment with combustion

##### 2.2 Enhanced Combustion Venting Measures *(meet one of the following)*

**2**

**2**

**0**

**passed Backdraft potential test**

##### *Type of Fireplace or stove*

##### *Better practice (1 pt)*

##### *Best practice (2 pts) (must also meet Better Practice)*

None

Masonry wood-burning fireplace

Factory-built wood-burning fireplace

Woodstove and fireplace insert

Natural gas, propane, or alcohol stove

Pelle stove

masonry heater

listed by testing lab and meets EPA standards

listed by testing lab and meets EPA standards

listed, power- or direct-vented, fixed doors

EPA certified or meets safety requirements

granted automatically

back-draft potential test

back-draft potential test

back-draft potential test

electronic pilot

power- or direct-venting

#### 3. Moisture Control

##### 3 Moisture Load Control *(meet one of the following)*

**1**

**1**

**0**

a) Additional dehumidification system

b) Central HVAC system equipped with additional dehumidification mode

#### 4. Outdoor Air Ventilation

##### 4.1 Basic Outdoor Air Ventilation *(meet one of the following)*

*Prereq.*

a) Located in a climate with  $\leq 4,500$  infiltration degree days

b) Continuous ventilation

c) Intermittent ventilation

d) Passive ventilation

##### 4.2 Enhanced Outdoor Air Ventilation *(meet one of the following)*

**2**

**2**

**0**

a) In climates with  $\leq 4,500$  infiltration degree days, install active ventilation system

b) Install heat recovery system

##### 4.3 Third-Party Performance Testing

**1**

**1**

**0**



5. Local Exhaust			
5.1	Basic Local Exhaust ( <i>meet all of the following</i> )	Prereq.	
	<input checked="" type="checkbox"/> a) Bathroom and kitchen exhaust meets ASHRAE Std. 62.2 air flow requirement	<input checked="" type="checkbox"/> c) Air exhausted to outdoors	
	<input checked="" type="checkbox"/> b) Fans and ducts designed and installed to ASHRAE Std. 62.2	<input checked="" type="checkbox"/> d) ENERGY STAR labeled bathroom exhaust fans	
5.2	Enhanced Local Exhaust ( <i>meet one of the following</i> )	1	1 0
	<input checked="" type="checkbox"/> a) Occupancy sensor	<input checked="" type="checkbox"/> c) Automatic timer tied to switch	
	<input type="checkbox"/> b) Automatic humidistat controller	<input type="checkbox"/> d) Continuously operating exhaust fan	
5.3	Third-Party Performance Testing	1	1 0
6. Distribution of Space Heating and Cooling			
6.1	Room-by-Room Load Calculations	Prereq.	
6.2	Return Air Flow / Room-by-Room Controls ( <i>meet one of the following</i> )	1	1 0
	A. Forced-Air Systems	B. Nonducted HVAC Systems	
	<input checked="" type="checkbox"/> a) Return air opening of 1 sq. inch per cfm of supply	<input type="checkbox"/> Flow control valves on every radiator	
	<input type="checkbox"/> b) Limited pressure differential between closed room and adjacent spaces		
6.3	Third-Party Performance Test / Multiple Zones ( <i>meet one of the following</i> )	2	0 0
	A. Forced-Air Systems	B. Nonducted HVAC Systems	
	<input type="checkbox"/> Have supply air flow rates in each room tested and confirmed	<input type="checkbox"/> Install at least two distinct zones with independent thermostat control	
7. Air Filtering			
7.1	Good Filters	Prereq.	
7.2	Better Filters	1	0 0
OR	7.3 Best Filters	2	2 0 replaced filter with MERV 13 (pic at
8. Contaminant Control			
8.1	Indoor Contaminant Control during Construction	1	0 0
8.2	Indoor Contaminant Control ( <i>meet any of the following, 1 pt each</i> )	2	0 1
	<input type="checkbox"/> a) Design and install permanent walk-off mats at each entry	<input type="checkbox"/> c) Install central vacuum system with exhaust to outdoors	
	<input type="checkbox"/> b) Design shoe removal and storage space near primary entryway		
8.3	Preoccupancy Flush	1	1 0
9. Radon Protection			
9.1	Radon-Resistant Construction in High-Risk Areas	Prereq.	
9.2	Radon-Resistant Construction in Moderate-Risk Areas	1	1 0

**10. Garage Pollutant Protection**

<b>10.1</b>	No HVAC in Garage	<i>Prereq.</i>			
<b>10.2</b>	Minimize Pollutants from Garage ( <i>meet all of the following</i> )		<b>2</b>	<b>0</b>	<b>0</b>
	a) In conditioned spaces above garage:				
	<input type="checkbox"/> Seal all penetrations and connecting floor and ceiling joist bays				
	<input type="checkbox"/> Paint walls and ceilings of shared walls, including garage				
	b) In conditioned spaces next to garage				
	<input type="checkbox"/> Weather-strip all doors				
	<input type="checkbox"/> carbon monoxide detectors in rooms that share a door with garage				
	<input type="checkbox"/> Seal all penetrations and cracks at the base of walls				
<b>AND/OR</b>	<b>10.3</b> Exhaust Fan in Garage ( <i>meet one of the following</i> )		<b>1</b>	<b>0</b>	<b>0</b>
	<input type="checkbox"/> a) Fan runs continuously				
	<input type="checkbox"/> b) Fan designed with automatic timer control				
<b>OR</b>	<b>10.4</b> Detached Garage or No Garage		<b>3</b>	<b>3</b>	<b>0</b>

**Awareness & Education (AE)** (Minimum 0 AE Points Required) **Max: 3 Y:2 M:0**

**1. Education of the Homeowner or Tenant**

<b>1.1</b>	Basic Operations Training ( <i>meet both of the following</i> )	<i>Prereq.</i>			
	<input checked="" type="checkbox"/> a) Operations and training manual				
	<input checked="" type="checkbox"/> b) One-hour walkthrough with occupant(s)				
<b>1.2</b>	Enhanced Training		<b>1</b>	<b>1</b>	<b>0</b>
<b>1.3</b>	Public Awareness ( <i>meet three of the following</i> )		<b>1</b>	<b>1</b>	<b>0</b>
	<input type="checkbox"/> a) Open house on at least four weekends				
	<input checked="" type="checkbox"/> b) Website about features and benefits of LEED homes				
	<input checked="" type="checkbox"/> c) Newspaper article on the project				
	<input checked="" type="checkbox"/> d) Display LEED signage on the exterior of the home				

**2. Education of the Building Manager**

<b>2</b>	Education of the Building Manager ( <i>meet both of the following</i> )		<b>1</b>	<b>0</b>	<b>0</b>
	<input type="checkbox"/> a) Operations and training manual				
	<input type="checkbox"/> b) One-hour walkthrough with building manager				

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been met for the indicated credits and will, if audited, provide the necessary supporting documents.

Project Team Leader **Michael Chandler** Company **Chandler Design Build**  
 Signature \_\_\_\_\_ Date **11/18/2009**

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed, and will provide the project documentation file, if requested.

Green Rater **Jamie Hager** Company **Southern Energy Management**  
 Signature \_\_\_\_\_ Date **11/18/2009**

By affixing my signature below, the undersigned does hereby declare and affirm to the USGBC that the required inspections and performance testing for the LEED for Homes requirements, as specified in the LEED for Homes Rating System, have been completed, and will provide the project documentation file, if requested.

Provider's Certifier **Maggie Leslie** Company **Western NC Green Building Co**  
 Signature \_\_\_\_\_ Date **12/28/2009**



for Homes

# LEED for Homes Project Checklist

## Addendum: Prescriptive Approach for Energy and Atmosphere (EA) Credits

Points cannot be earned in both the Prescriptive (below) and the Performance paths of the EA section.

Max Pts. Available	Preliminary Rating			Notes
	Y / Pts	Maybe	No	

	Max: 38	Y:26	M:1	
<b>Energy &amp; Atmosphere (EA)</b> (Minimum 0 EA Points Required)				
<b>2. Insulation</b>				
<b>2.1 Basic Insulation (meet both of the following)</b> <span style="float: right;"><i>Prereq.</i></span>				
<input type="checkbox"/> a) Insulation meets R-value requirements of IECC		<input type="checkbox"/> b) Insulation meets HERS Grade II specifications for installation		
<b>2.2 Enhanced Insulation (meet both of the following)</b> <span style="float: right;">2      0      0</span>				
<input type="checkbox"/> a) Insulation exceeds R-value requirements of IECC by 5%		<input type="checkbox"/> b) Insulation meets HERS Grade I specifications for installation		
<b>3. Air Infiltration</b>				
<b>3.1 Reduced Envelope Leakage</b> <span style="float: right;"><i>Prereq.</i></span>				
<input style="width: 50px;" type="text"/> Air leakage rate in ACH50				
<b>3.2 Greatly Reduced Envelope Leakage</b> <span style="float: right;">2      0      0</span>				
<b>OR</b> <b>3.3 Minimal Envelope Leakage</b>	<b>3</b>	<b>0</b>	<b>0</b>	
<b>4. Windows</b>				
<b>4.1 Good Windows (meet all of the following)</b> <span style="float: right;"><i>Prereq.</i></span>				
<input type="checkbox"/> a) Windows and glass doors meet ENERGY STAR BOP window specifications		<input type="checkbox"/> b) Skylight glazing area is ≤ 3% of floor area AND		
		<input type="checkbox"/> Skylights meet ENERGY STAR requirements for skylights		
<b>4.2 Enhanced Windows</b> <span style="float: right;">2      0      0</span>				
<b>OR</b> <b>4.3 Exceptional Windows</b>	<b>3</b>	<b>0</b>	<b>0</b>	
<b>5. Heating and Cooling Distribution System</b>				
<b>5.1 Reduced Distribution Losses (meet all of the following, as appropriate)</b> <span style="float: right;"><i>Prereq.</i></span>				
<b>A. Forced-Air Systems</b>		<b>B. Nonducted HVAC Systems</b>		
<input type="checkbox"/> a) Duct leakage of ≤ 4.0 CFM at 25 Pascals per 100 sq.ft.		<input type="checkbox"/> At least R-3 insulation around pipes in unconditioned spaces		
<input type="checkbox"/> b) No ducts in exterior walls unless extra insulation is added				
<input type="checkbox"/> c) At least R-6 insulation around ducts in unconditioned spaces				
<b>5.2 Greatly Reduced Distribution Losses (meet the following, as appropriate)</b> <span style="float: right;">2      0      0</span>				
<b>A. Forced-Air Systems</b>		<b>B. Nonducted HVAC Systems</b>		
<input type="checkbox"/> Duct leakage of ≤ 3.0 CFM at 25 Pascals per 100 sq.ft.		<input type="checkbox"/> Keep the boiler and pipes entirely within conditioned envelope		
<b>OR</b> <b>5.3 Minimal Distribution Losses (meet one of the following, as appropriate)</b>	<b>3</b>	<b>0</b>	<b>0</b>	
<b>A. Forced-Air Systems</b>		<b>B. Nonducted HVAC Systems</b>		
<input type="checkbox"/> a) Duct leakage of ≤ 1.0 CFM at 25 Pascals per 100 sq.ft.		<input type="checkbox"/> Outdoor reset control to set distribution temp. based on outdoor temp.		
<input type="checkbox"/> b) Air-handler and all ductwork is within conditioned envelope and EA 3.3 is met				
<input type="checkbox"/> c) Air-handler and all ductwork visibly within conditioned spaces (not in walls, etc.)				

## 6. Space Heating and Cooling Equipment

### 6.1 Good HVAC Design and Installation *(meet all of the following)*

*Prereq.*

- a) Design and size HVAC equipment using ACCA Manual J or equivalent  
 b) Install efficient heating and cooling equipment (see Table)

- c) Install ENERGY STAR programmable thermostat OR  
 Heat pump or hydronic installed and exempted from part (c)

Type of HVAC

Cooling efficiency (SEER / EER)       Heating Efficiency (AFUE / HSPF / COP)

### 6.2 High-Efficiency HVAC

2      0      0

### OR 6.3 Very High Efficiency HVAC

4      0      0

## 7. Water Heating

### 7.1 Efficient Hot Water Distribution System *(meet one of the following)*

2      0      0

- a) Structured plumbing system  
 b) Central manifold distribution system

- c) Compact design of conventional system

### 7.2 Pipe Insulation

1      0      0

### 7.3 Efficient Domestic Hot Water Equipment

3      0      0

Type of DHW system

Efficiency       Solar: Percentage of annual DHW load

## 8. Lighting

### 8.1 ENERGY STAR Lights

*Prereq.*

### 8.2 Improved Lighting *(meet one of the following, see Rating System for pts)*

1.5      0      0

- a) Indoor lighting - 3 additional ENERGY STAR lights in high-use rooms

- b) Exterior lighting - motion sensor controls or integrated PV

### OR 8.3 Advanced Lighting Package *(meet one of the following)*

3      0      0

- a) 60% of fixtures are ENERGY STAR fixtures

- b) 80% of lamps are ENERGY STAR CFLs

## 9. Appliances

### 9.1 High-Efficiency Appliances *(meet any, see Rating System for pts)*

2      0.5      0

- a) ENERGY STAR labeled refrigerator  
 b) ENERGY STAR labeled ceiling fans in living/family room and all bedrooms

- c) ENERGY STAR labeled dishwasher using 6.0 gallons per cycle or less  
 d) ENERGY STAR clothes washer

### 9.2 Water-Efficiency Clothes Washer

1      1      0

## 10. Renewable Energy

### 10 Renewable Energy System

10      0      0

Reference electric load, kWh/yr (based on HERS model)

Electricity supplied by renewable system, kWh

0.0% Percentage of annual reference electric load met by renewable system

## 11. Residential Refrigerant Management

### 11.1 Refrigerant Charge Test

*Prereq.*

### 11.2 Appropriate HVAC Refrigerants *(meet one of the following)*

1      0      0

- a) Use no refrigerants  
 b) Use non-HCFC refrigerants

- c) Use refrigerants that complies with global warming potential equation

## LEED for Homes Project Checklist, Project Notes

This section was created to give project teams additional space to make internal notes on the progress of the project. It does not need to be used and it **should not** be submitted to USGBC. This section is unlocked, so project teams are welcome to make changes to the format as necessary. Any comments or directions provided below have not been created or endorsed by the US Green Building Council.

Date project began:

Initiated by:

<i>Credits</i>	<i>Responsible Party</i>	<i>Last Updated</i>	<i>Additional Notes</i>
<b>ID 1. Integrated Project Planning</b>			
1.1	Preliminary Rating	prerequ	
1.2	Integrated Project Team		Michael Chandler - builder, Beth Williams - designer Chris Kersher, lead carpenter, Mat MacDonald, lead plumber, Paul Rockwell, metal craft and trim. Subcontractors met with project team through various phases of construction: The company pays for a pizza feed every Friday where employees and trade partners come together to
1.3			
1.4			
1.5	Building Orientation for solar Design		37" overhangs and shade trellises on south side;
<b>ID 2. Quality Mgmt for Durability</b>			
2.1	Durability Planning		
2.2	durability Planning		complete durability checklist, making sure have 3 strategies for each topic



3. Innovative or Regional Design			
3.1			
3.2			
3.3			
3.4			

<i>Credits</i>	<i>Responsible Party</i>	<i>Last Updated</i>	<i>Additional Notes</i>
----------------	--------------------------	---------------------	-------------------------

LL 1. LEED for Neighborhood Development			
1			

LL 2. Site Selection			
2	Site Selection		previously developed

LL 3. Preferred Locations			
3.1			
3.2			
3.3	Previously Developed		land was previously a mobile home park with community septic area; much remediation to be done to site do to septic removal and clean up of septic area

LL 4. Infrastructure			
4	Existing Infrastructure		are using an existing well on site

LL 5. Community Resources			
5.1			
5.2			
5.3			

LL 6. Access to Open Space			
6			publically accesibly site is an old crop duster dirt strip air field and adjacent mobile home court that has been taken over by people who build and fly experimental light air craft. T

Credits		Responsible Party	Last Updated	Additional Notes
<b>SS 1. Site Stewardship</b>				
	1.1			
	1.2	minimize disturbed areas of site		
<b>SS 2. Landscaping</b>				
	2.1			
	2.2	Basic Landscaping design		landscape area will be completely mulched to encourage naturalization of area, so will not be tilling any of the soils; still get points?
	2.3	Limit conventional turf		no turf
	2.4	Drought tolerant plants		restored meadow with regional species; little additional landscaping performed, native species used (lot mostly mulched, no turf) Rosemary Lavender, Spiraea, Liriope, Juniper, Lambs Ear, Virginia Sweetspire, Abelias
	2.5	Reduce Overall irrigation demand by at least 20%		would likely get points but leaving out for now because of time
<b>SS 3. Reduce Local Heat Island Effects</b>				
	3			



SS 4. Surface Water Management			
4.1	Permeable lot		rain garden designed for all roof space and 30% of pavings; 2.6 acres total; .3 is impermeable = 11.5% of lot impermeable; 30% of impermeable surface is directed toward raingardens, therefore total impermeable surface = 8.0%- fixed calculation to reflect Dou notes
4.2	Permanent erosion controls		raingarden doubles as retaining wall / terracing
4.3	management of runoff from roof		all run-off from roof is directed to designed rain gardens throughout the site; rain garden and retention areas designed to gravity feed water to vegetable garden beds/raised plant beds designed for home; Michael studied botany and native plants while at UNC under professor Al Radford, curator of the UNC Herbarium. He later served for ten years on the board of the Low River Assembly teaching stream ecology and native plants to high school

SS 5. Nontoxic Pest Control			
ate, stucco	Pest control alternatives		borate treated insulated concrete forms used for foundation wall of slab with metal termite flashing between block and sill plate; all cracks sealed

SS 6. Compact Development			
6.1			
6.2			
6.3			

*Credits*

*Responsible Party*

*Last Updated*

*Additional Notes*

WE 1. Water Reuse			
1.1			not a cistern but landscaped rainwater ponds
1.2			
1.3			

WE 2. Irrigation System			
2.1			
2.2			
2.3	See calcs above for not needing irrigation in the first place		

WE 3. Indoor Water Use			
3.1	High efficiency fixtures -- toilets 1.3 or less		1.28gpf
3.2	Very high efficiency fixtures -- faucets		could likely do 1.5gpm in lavatory faucets for more points?- yes switched out 2.2s, have pictures

*Credits*                      *Responsible Party*                      *Last Updated*                      *Additional Notes*

EA 1. Optimize Energy Performance			
1.1	Energy Star		
1.2	Exceptional Estar performance (HERS 56)		have hers reprot

EA 7. Water Heating			
7.1	longest branch to any fixture is to kitchen sink = 25 ft; no elbows or elbow like "t's" installed; all 1/2" lines		longest branch to any fixture is to kitchen sink = 25 ft; no elbows or elbow like "t's" install all 1/2" lines
7.2	could insulate if needed		

EA 11. Residential Refrigerant Management			
11.1			
11.2			

Credits	Responsible Party	Last Updated	Additional Notes
<b>MR 1. Material-Efficient Framing</b>			
1.1			precut
1.2	part of panelization process		panels includes exterior and interior walls
1.3			panels includes exterior and interior walls
1.4			
1.5			only walls panels
<b>MR 2. Environmentally Preferable Products</b>			
2.1			
2.2	Bostic adhesive sealants; insulation is JM Spider; maybe paint could be low VOC?		floor- fly ash with concrete, local wood (less the 45%) , all hard insulation- spider and icynene

<b>MR 3. Waste Management</b>			
3.1			
3.2	Total landfill for job, 96 yards / 2500 sf = 3.84 yds per 1,000 sf		no- 38.4

<i>Credits</i>	<i>Responsible Party</i>	<i>Last Updated</i>	<i>Additional Notes</i>
----------------	--------------------------	---------------------	-------------------------

<b>EQ 1. ENERGY STAR w/ IAP</b>			
1			

<b>EQ 2. Combustion Venting</b>			
2.1			
2.2			

<b>EQ 3. Moisture Control</b>			
3			

<b>EQ 4. Outdoor Air Ventilation</b>			
4.1			exhaust only
4.2			
4.3			

<b>EQ 5. Local Exhaust</b>				
	5.1			
	5.2			
	5.3			
<b>EQ 6. Distribution of Space Heating and Cooling</b>				
	6.1			
	6.2	true returns in all rooms		
	6.3			
<b>EQ 7. Air Filtering</b>				
	7.1			
	7.2	have info on file		
	7.3			
<b>EQ 8. Contaminant Control</b>				
	8.1	all ducts are in ceiling but were not covered at rough inspection		
	8.2			foyer at one
	8.3			
<b>EQ 9. Radon Protection</b>				
	9.1			
	9.2			

EQ 10. Garage Pollutant Protection				
	10.1			
	10.2			
	10.3			
	10.4	detached		

*Credits*

*Responsible Party*

*Last Updated*

*Additional Notes*

AE 1. Education of Home Owner / Tenant				
	1.1			
	1.2			
	1.3			also green tours

AE 2. Education of the Building Manager				
	2			

<i>Credits</i>	<i>Responsible Party</i>	<i>Last Updated</i>	<i>Additional Notes</i>
<b>EA 2. Insulation</b>			
	2.1		
	2.2		
<b>EA 3. Air Infiltration</b>			
	3.1		
	3.2		
<i>OR</i>	3.3		
<b>EA 4. Windows</b>			
	4.1		
	4.2		
<i>OR</i>	4.3		
<b>EA 5. Heating and Cooling Distribution</b>			
	5.1		
	5.2		
<i>OR</i>	5.3		

<b>EA 6. Space Heating and Cooling Equipment</b>				
OR	6.1			
	6.2			
	6.3			
<b>EA 7. Water Heating</b>				
	7.1			
	7.2			
	7.3			
<b>EA 8. Lighting</b>				
OR	8.1			
	8.2			
	8.3			
<b>EA 9. Appliances</b>				
	9.1			Energy Star qualified
	9.2			Clothes Washer Bosch WFL2090UC Axxis MEF= 2.03 WF= 6.5
<b>EA 10. Renewable Energy</b>				
	10			
<b>EA 11. Residential Refrigerant Management</b>				
	11.1			
	11.2			