

Chapter Five: Green Remodeling Illustrations

New Addition

Consider the following green remodeling options in a new addition.

Site

- Recycle Job Site Construction and Demolition Waste
- Salvage Reusable Building Materials
- Design Resource-Efficient Landscapes and Gardens
- Provide for On-Site Water Catchment / Retention
- Remodel for Mixed Use, Adaptive Reuse, and Historic Preservation
- Install High Efficiency Irrigation Systems
- Reuse Materials or Use Recycled-Content Materials for Landscape Areas
- Protect Native Soil
- Minimize Disruption of Existing Plants and Trees
- Implement Construction Site Stormwater Practices

Foundation

- Incorporate Recycled Flyash in Concrete
- Use Recycled-Content Aggregate for Backfill Drainage
- Insulate Foundation Before Backfill

Structural Frame

- Substitute Solid Sawn Lumber with Engineered Lumber
- Use FSC Certified Wood for Framing
- Use Wood I-Joists for Floors and Ceilings
- Use OSB for Subfloor and Sheathing
- Use Finger-Jointed, Engineered or Steel Studs for Vertical Applications
- Use Reclaimed Lumber
- Use Web Floor Trusses
- Design Energy Heels on Roof Trusses 6" or More
- Apply Advanced Framing Techniques

Exterior Finish

- Use Sustainable Decking Materials
- Use Treated Wood that Does Not Contain Chromium or Arsenic for Decking and Sill Plates
- Use Fiber-Cement Siding Materials
- Install House Wrap Under Siding

Plumbing

- Install Hot Water Jacket Insulation
- Convert Storage to Tankless Water Heaters
- Insulate Hot and Cold Water Pipes
- Retrofit all Faucets and Showerheads with Flow Reducers
- Replace Toilets with Ultra-Low-Flow Models
- Install Chlorine Filter on Showerhead
- Install Water Filtration Units at Faucets
- Install On-Demand Hot Water Circulation Pump

Light colored 40-year composition shingles

Existing ceiling insulated to exceed Title 24

Solar hot water heating system

Engineered lumber in roof

High performance glazing

Low/No VOC interior paint

Finger-jointed or Engineered studs

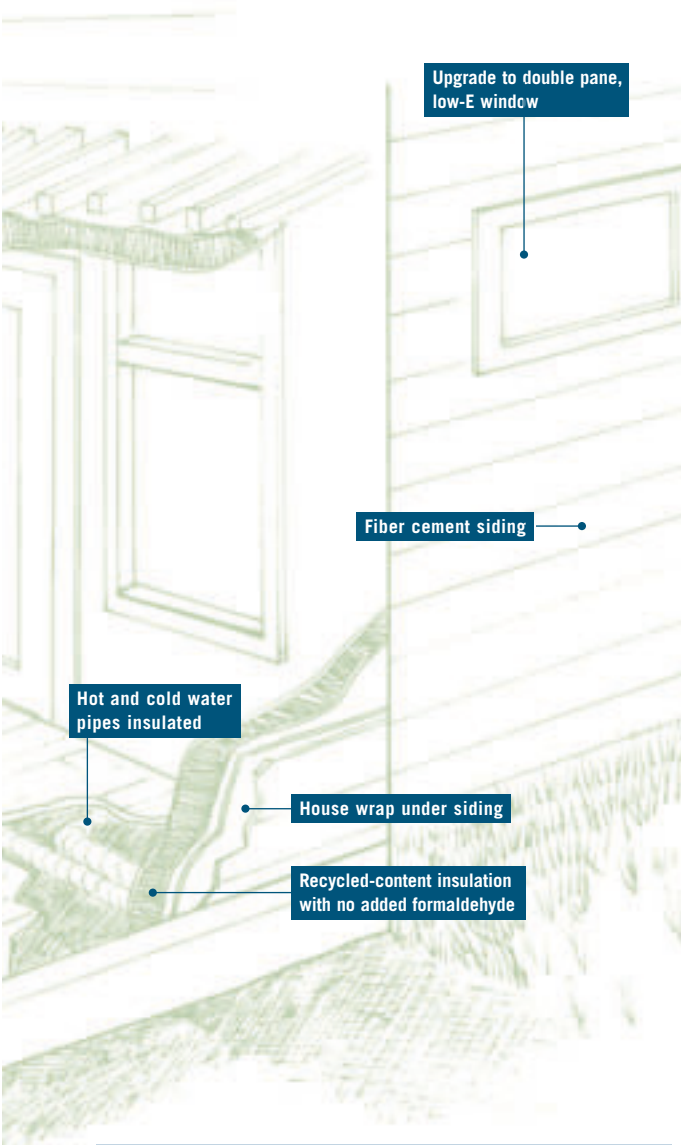
Low-VOC finish

Flyash concrete

Sustainable flooring

Electrical

- Install Compact Fluorescent Light Bulbs
- Install Lighting Controls
- Install High Efficiency Ceiling Fans with CFLs
- Install Insulation-Compatible, Air-Tight Recessed Lighting Fixtures with CFLs



Insulation

- Upgrade Wall and Ceiling Insulation to Exceed Title 24 Requirements
- Install Recycled-Content Fiberglass Insulation with No Added Formaldehyde
- Use Advanced Infiltration Reduction Practices
- Use Cellulose Insulation
- Install Floor Insulation Over Crawl Space

Windows

- Install Energy-Efficient Windows
- Install Low Solar Heat Gain Coefficient Window Film on Single-Glazing

Heating, Ventilation and Air Conditioning (HVAC)

- Use Duct Mastic on all Duct Joints
- Install New Ductwork within Conditioned Space
- Install 90% or Greater Efficiency Gas Forced Air Furnace
- Install Attic Ventilation Systems or Solar Attic Fan
- Clean all Ducts Before Occupancy
- Install Whole House Fan
- Replace Wall-Mounted Electric and Gas Heaters with Heat Pumps
- Install Zoned, Hydronic, Radiant Heating
- Retrofit Wood Burning Fireplaces
- Install Heat Recovery Ventilation Unit (HRV)
- Install High Efficiency Filter
- Install 13 SEER and 11 EER (or higher) Air Conditioning with Non HCFC Refrigerant with a TXV
- Install Sealed Combustion Units

Renewable and Solar Energy

- Pre-Plumb or Install Solar Water Heating System
- Pre-Wire or Install Photovoltaic (PV) System
- Install Radiant Barrier
- Select Safe and Durable Roofing Materials

Natural Heating and Cooling

- Incorporate Passive Solar Heating
- Install Overhangs or Awnings over South Facing Windows
- Plant Deciduous Shade Trees over the West and South Sides

Indoor Air Quality / Finishes

- Use Low/No-VOC Paint
- Use Low VOC, Water-Based Wood Finishes
- Use Low/No VOC Adhesives
- Use Exterior Grade Plywood for Interior Uses
- Use FSC Certified Materials for Interior Finish
- Seal all Exposed Particleboard or MDF
- Use Finger Jointed or Recycled-Content Trim
- Use Salvaged Building Materials for Interior Finish
- Use Engineered Sheet Goods with No Added Formaldehyde
- Install Whole House Vacuum System

Flooring

- Select FSC Certified Wood Flooring
- Use Rapidly Renewable Flooring Materials
- Use Recycled-Content Ceramic Tile
- Install Natural Linoleum in Place of Vinyl
- Use Exposed Concrete as Finished Floor
- Install Recycled-Content Carpet with low VOCs

Second Floor

Consider the following green remodeling options in a second floor.

Site

- Recycle Job Site Construction and Demolition Waste
- Salvage Reusable Building Materials
- Implement Construction Site Stormwater Practices

Structural Frame

- Substitute Solid Sawn Lumber with Engineered Lumber
- Use FSC Certified Wood for Framing
- Use Wood I-Joists for Floors and Ceilings
- Use OSB for Subfloor and Sheathing
- Use Finger-Jointed, Engineered or Steel Studs for Vertical Applications
- Use Web Floor Trusses
- Design Energy Heels on Roof Trusses 6" or More
- Apply Advanced Framing Techniques

Exterior Finish

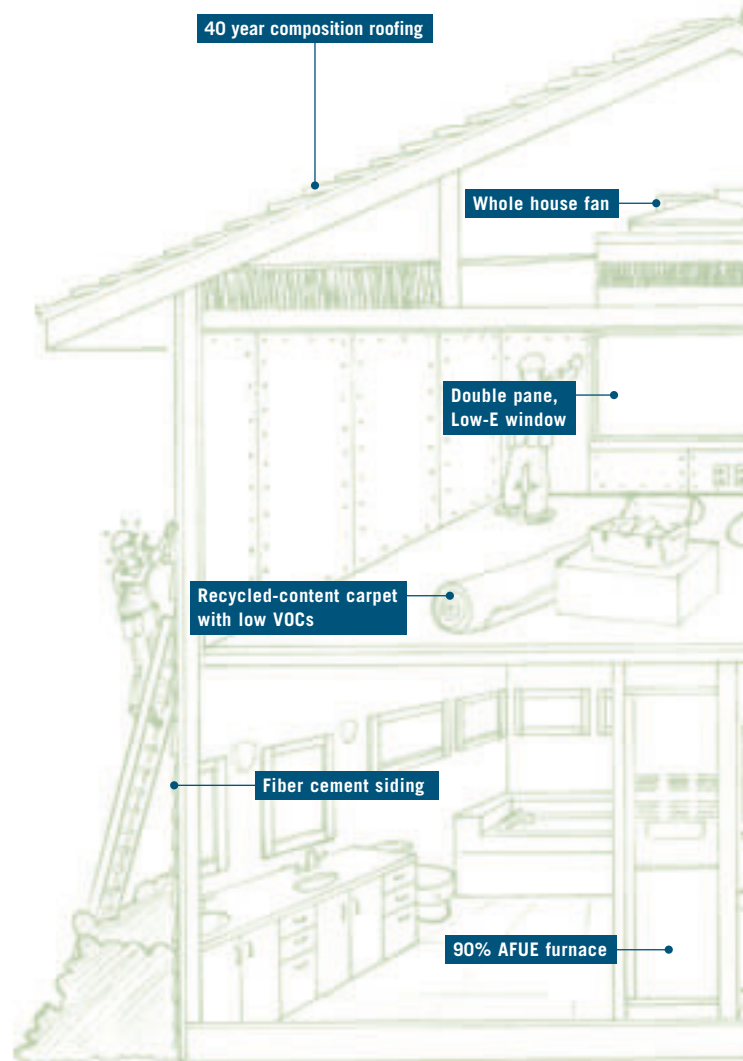
- Use Treated Wood that Does Not Contain Chromium or Arsenic for Decking and Sill Plates
- Use Fiber-Cement Siding Materials
- Install House Wrap Under Siding

Plumbing

- Insulate Hot and Cold Water Pipes
- Install Chlorine Filter on Showerhead
- Install Water Filtration Units at Faucets
- Install On-Demand Hot Water Circulation Pump

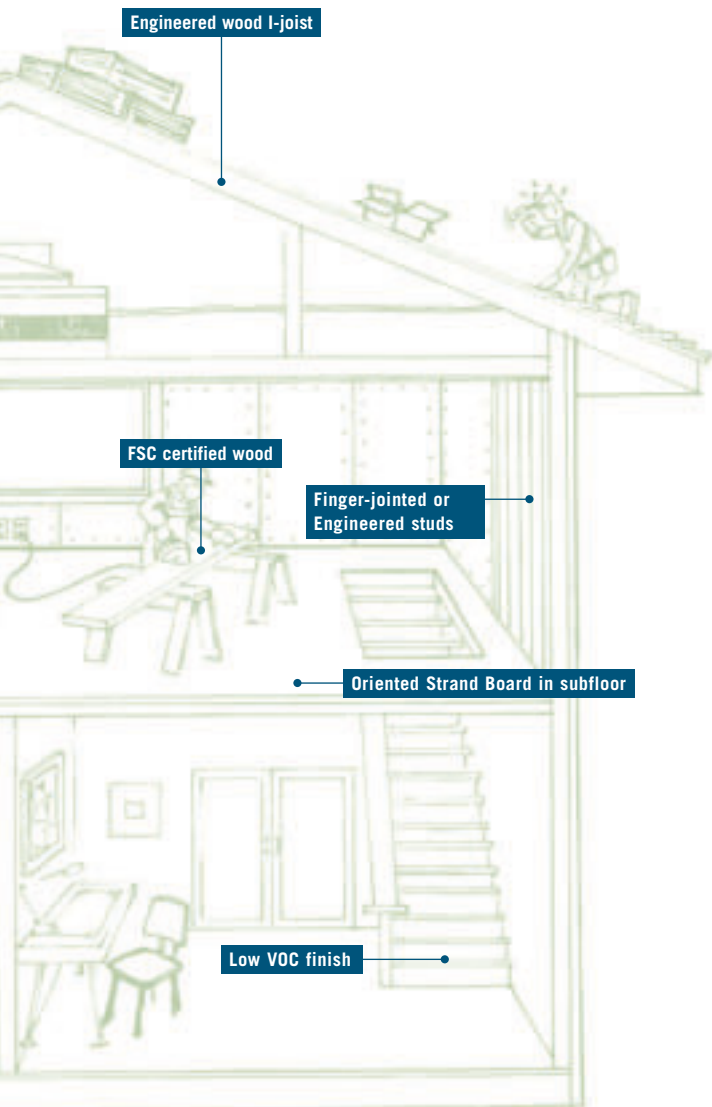
Electrical

- Install Compact Fluorescent Light Bulbs (CFLs)
- Install Lighting Controls
- Install High Efficiency Ceiling Fans with CFLs
- Install Insulation-Compatible, Air-Tight Recessed Lighting Fixtures with CFLs



Insulation

- Upgrade Wall and Ceiling Insulation to Exceed Title 24 Requirements
- Install Recycled-Content Fiberglass Insulation with No Added Formaldehyde
- Use Cellulose and Other Alternative Insulation
- Install Floor Insulation Over Crawl Space



Windows

- Install Energy-Efficient Windows
- Install Low Solar Heat Gain Coefficient Window Film on Single-Glazing

Heating, Ventilation and Air Conditioning (HVAC)

- Use Duct Mastic on all Duct Joints
- Install New Ductwork within Conditioned Space
- Clean all Ducts Before Occupancy
- Install Whole House Fan
- Install 90% or Greater Efficiency Gas Forced Air Furnace
- Install Heat Recovery Ventilation Unit (HRV)
- Install High Efficiency Filter
- Install 13 SEER and 11 EER (or higher) Air Conditioning with Non HCFC Refrigerant with a TXV
- Install Sealed Combustion Units
- Install Attic Ventilation Systems or Solar Attic Fan

Renewable Energy and Roofing

- Install Radiant Barrier
- Pre-Wire or Install Photovoltaic (PV) System
- Select Safe and Durable Roofing Materials

Natural Heating and Cooling

- Incorporate Passive Solar Heating
- Install Overhangs or Awnings over South Facing Windows

Indoor Air Quality / Finishes

- Use Low/No-VOC Paint
- Use Low VOC, Water-Based Wood Finishes
- Use Low/No VOC Adhesives
- Use Exterior Grade Plywood for Interior Uses
- Use FSC Certified Materials for Interior Finish
- Seal all Exposed Particleboard or MDF
- Using Finger Jointed or Recycled-Content Trim
- Using Engineered Sheet Goods with No Added Formaldehyde

Flooring

- Select FSC Certified Wood Flooring
- Use Rapidly Renewable Flooring Materials
- Use Recycled-Content Ceramic Tile
- Install Natural Linoleum in Place of Vinyl
- Install Recycled-Content Carpet with low VOCs

Bathroom

Consider the following green remodeling options in a bathroom.

Site

- Recycle Job Site Construction and Demolition Waste
- Salvage Reusable Materials

Structural Frame

- Substitute Solid Sawn Lumber with Engineered Lumber
- Use FSC Certified Wood for Framing
- Use Wood I-Joists for Floors and Ceilings
- Use OSB for Subfloor and Sheathing
- Use Finger-Jointed, Engineered or Steel Studs for Vertical Applications
- Apply Advanced Framing Techniques

Plumbing

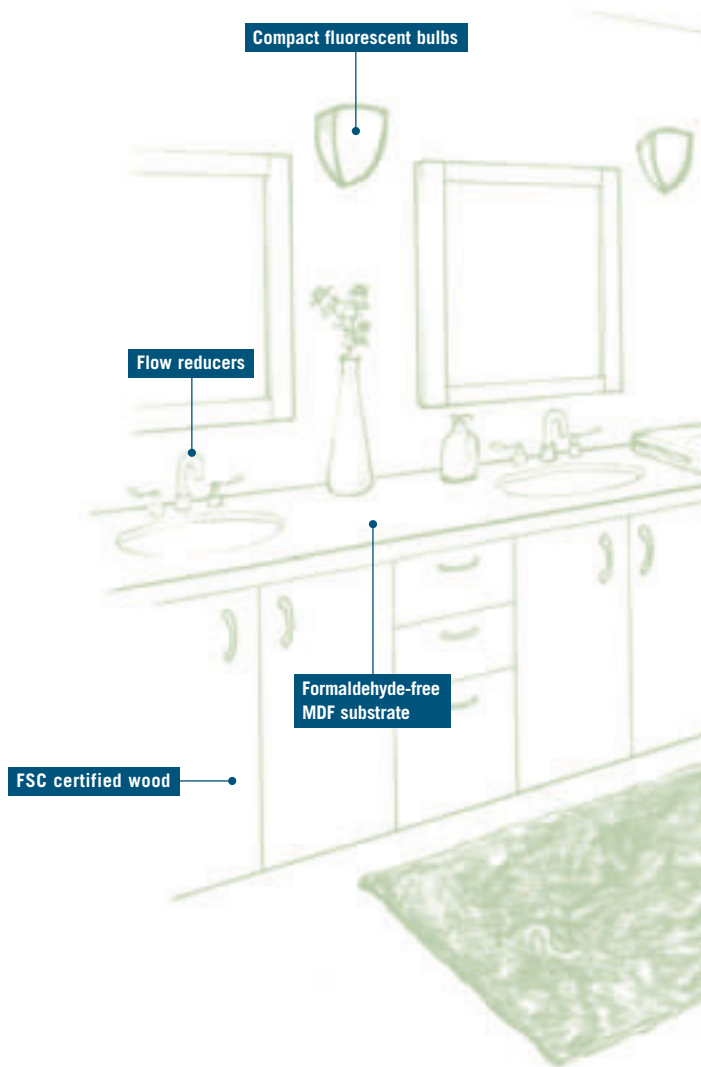
- Install Water Heater Jacket
- Convert Storage to Tankless Hot Water Heaters
- Insulate Hot and Cold Water Pipes
- Retrofit all Faucets and Showerheads with Flow Reducers
- Replace Toilets with Ultra-Low-Flow Models
- Install Chlorine Filter on Showerhead
- Install Water Filtration Units ar Faucets
- Install On-Demand Hot Water Circulation Pump

Electrical

- Install Compact Fluorescent Light Bulbs
- Install Lighting Controls
- Install High Efficiency Ceiling Fans with CFLs
- Install Insulation-Compatible, Air-Tight Recessed Lighting Fixtures

Insulation

- Upgrade Wall and Ceiling Insulation to Exceed Title 24 Requirements
- Install Recycled-Content Fiberglass Insulation with No Added Formaldehyde
- Use Advanced Infiltration Reduction Practices
- Use Cellulose and Other Alternative Insulation
- Install Floor Insulation Over Crawl Space

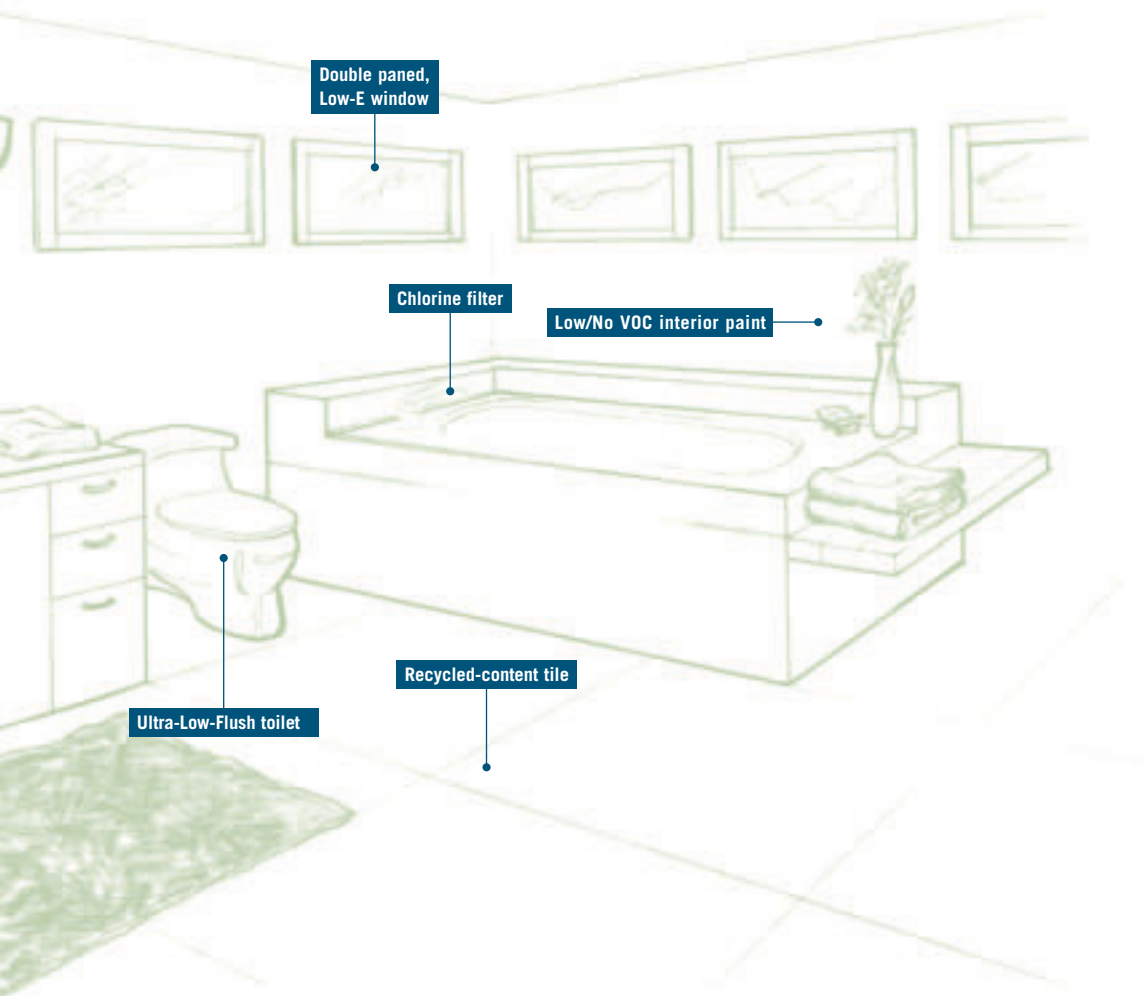


Windows

- Install Energy-Efficient Windows
- Install Low Solar Heat Gain Coefficient Window Film on Single-Glazing

Heating, Ventilation and Air Conditioning (HVAC)

- Use Duct Mastic on all Duct Joints
- Install New Ductwork within Conditioned Space
- Clean all Ducts Before Occupancy
- Install Sealed Combustion Units
- Install High Efficiency Filter



Indoor Air Quality / Finishes

- Use Low/ No-VOC and Formaldehyde-Free Paint
- Use Low VOC, Water-Based Wood Finishes
- Use Low/No VOC Adhesives
- Use Exterior Grade Plywood for Interior Uses
- Use FSC Certified Materials for Interior Finish
- Seal all Exposed Particleboard or MDF
- Using Finger Jointed or Recycled-Content Trim
- Use Salvaged Building Materials for Interior Finish
- Use Engineered Sheet Goods with No Added Formaldehyde

Flooring

- Use Recycled-Content Ceramic Tile
- Install Natural Linoleum in Place of Vinyl
- Use Exposed Concrete as Finished Floor
- Install Recycled-Content Carpet with Low VOCs

Kitchen Remodel

Consider the following green remodeling options in a kitchen remodel.

Site

- Recycle Job Site Construction and Demolition Waste
- Salvage Reusable Materials

Plumbing

- Insulate Hot and Cold Water Pipes
- Retrofit all Faucets with Flow Reducers
- Install Water Filtration Units at Faucets
- Install On-Demand Hot Water Circulation Pump

Electrical

- Install Compact Fluorescent Light Bulbs
- Install Lighting Controls
- Install High Efficiency Ceiling Fans with CFLs
- Install Insulation-Compatible, Air-Tight Recessed Lighting Fixtures

Appliances

- Install Energy Star® Dishwasher
- Install Washing Machine with Water and Energy Conservation Features
- Install Energy Star® Refrigerator
- Install Built-In Recycling Center

Insulation

- Upgrade Wall and Ceiling Insulation to Exceed Title 24 Requirement
- Install Recycled-Content Fiberglass Insulation with No Added Formaldehyde
- Use Advanced Infiltration Reduction Practices
- Use Cellulose and Other Alternative Insulation
- Install Floor Insulation Over Crawl Space

Windows

- Install Energy-Efficient Windows
- Install Low Solar Heat Gain Coefficient Window Film on Single-Glazing

Heating, Ventilation and Air Conditioning (HVAC)

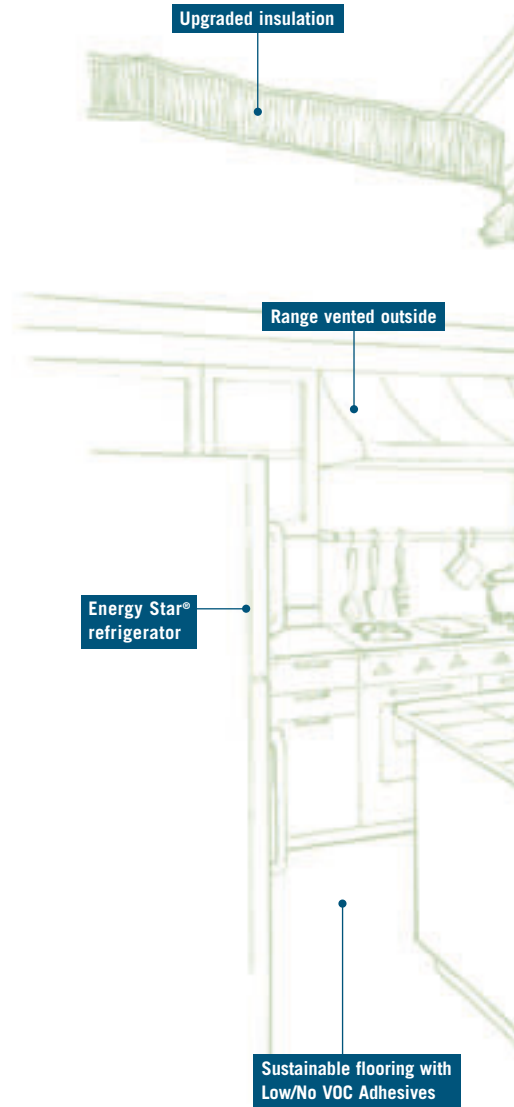
- Use Duct Mastic on all Duct Joints
- Vent Range Hood to the Outside
- Install Sealed Combustion Units
- Install High Efficiency Filter

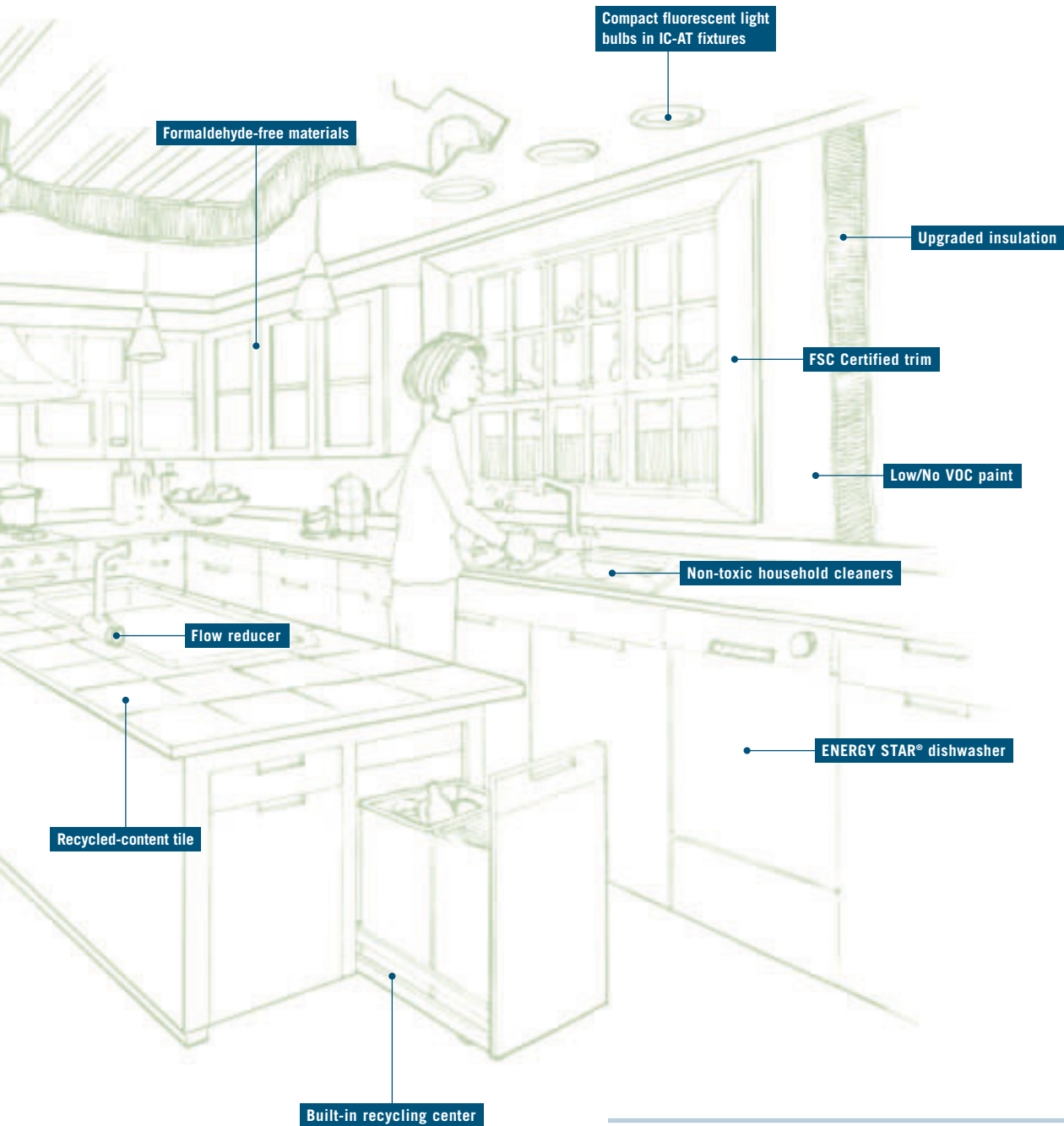
Natural Heating and Cooling

- Install Overhangs or Awnings over South Facing Windows
- Plant Deciduous Shade Trees on the West and South Sides

Indoor Air Quality / Finishes

- Use Low/No-VOC Paint
- Use Low VOC, Water-Based Wood Finishes
- Use Low/No VOC Adhesives
- Use Exterior Grade Plywood for Interior Uses
- Use FSC Certified Materials for Interior Finish
- Seal all Exposed Particleboard or MDF
- Using Finger Jointed or Recycled-Content Trim
- Use Salvaged Building Materials for Interior Finish
- Use Engineered Sheet Goods with No Added Formaldehyde





Flooring

- Select FSC Certified Wood Flooring
- Use Rapidly Renewable Flooring Materials
- Use Recycled-Content Ceramic Tile
- Install Natural Linoleum in Place of Vinyl
- Use Exposed Concrete as Finished Floor

