A Little History

• Created in 2001
• 5459 homes certified/guaranteed
• 50+Developers
  o Habitat for Humanity Affiliates
  o Community Dev. Corporations
  o Local Governments
  o Public Housing Authorities
SystemVision Guarantee

HEATING AND COOLING

GUARANTEED

TO COST LESS THAN

$33 A MONTH

*Monthly average of annual energy use. See guarantee for details.
SystemVision Guarantee

- Two-year guarantee
- Covers heating/cooling and comfort
- Guarantee expressed as annual kWh
- Based on energy modeling
- Typically guarantees average between $25 and $35 per month
- Guarantee verification with actual billing data.

SystemVision Guarantee Example

Total Annual Heating & Cooling Electricity Usage = 3842 kWh
- Total Annual Heating = 2691 kWh
- Total Annual Cooling = 1151 kWh

Heating & Cooling

Base Load

KWh

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>1030</td>
<td>858</td>
<td>358</td>
<td>21</td>
<td>3</td>
<td>167</td>
<td>394</td>
<td>467</td>
<td>121</td>
<td>0</td>
<td>121</td>
<td>303</td>
</tr>
</tbody>
</table>
2019 SystemVision Standards - What’s new?

• 15% better than NCECC
• Alignment with building code language
• Moisture management
• Aging in place
• Accessibility
1.2. All air leakage paths from the home to the crawl space and from the crawl space to outside shall be air sealed.
2.1. Drainage: …The grade shall fall a minimum of 6 inches within the first 10 feet from the foundation walls.

Driveway is not sloped away from the house.

Driveway is installed to slope water away from the house.
2.2. Slabs: A ground vapor/moisture barrier with a rating of no more than 0.1 perm shall be installed under the slab...
2.3.3. Vapor/moisture barrier – formerly “vapor retarder”
2.4. Metal drip edge flashing shall be installed on all roof edges according to National Roofing Contractors Association or manufacturer specifications.
2.5. Roof overhang depth from the face of the wall to the face of the fascia must be a minimum of 12 inches.
2.6. …gutters must have downspouts that terminate at least 5 feet away from the foundation…

…Minimum ¼” fall per foot of run

….and be independent of the foundation drain system.
2.7. …one entry will have a weather-protected overhang …
3.2. Insulation shall be installed to the Insulation Institute’s or manufacturer’s specifications...

What’s the BEST TYPE?
3.3. Attic accesses shall be insulated to a minimum of R-30. **Insulation must be securely fastened…**

**CRITICAL DETAILS**

**ATTIC ACCESS HATCHES: SEAL AND INSULATE**

1. **Option 1A:** Permanently attach batt insulation to the attic access. Ensure that R-Value meets or exceeds surrounding insulation levels.

2. **Option 1B:** Permanently attach rigid insulation to the attic access. Ensure that R-Value meets or exceeds surrounding insulation levels.

3. Install dams around access holes to protect the surrounding insulation.

4. Install weatherstripping on access trim. Verify seal.

**NOTICE:**
- When insulating pull-down stairs, pre-fab or site-built, insulated and weatherstripped covers are recommended.
- There are multiple options for attaching insulation to the access hatch. The intent is for the insulation to remain attached after repeated homeowner use and that the insulation has an equivalent R-Value of the surrounding attic insulation.

**CRITICAL DETAILS**

**BATT INSTALLATION: CEILINGS WITH ATTICS**

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Top plate and attic Grade I
3.4. Insulation levels shall, at minimum, equal those in the following table...

<table>
<thead>
<tr>
<th>Climate Zone</th>
<th>Slab</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>R-5</td>
</tr>
<tr>
<td>4</td>
<td>R-10</td>
</tr>
<tr>
<td>5</td>
<td>R-10</td>
</tr>
</tbody>
</table>

- Downward from top of slab:
  - Minimum 24” (Zones 4 & 5)

- Insulation can be run:
  - Vertical
  - Horizontal under the slab
3.4. If using spray foam at the roof deck to create a sealed attic, use a minimum of 6 inches of either open or closed cell spray foam with at least 1 ½ inches of overspray on the roof rafters.
3.4. If using spray foam at the roof deck to create a sealed attic, use a minimum of 6 inches of either open or closed cell spray foam with at least 1 ½ inches of overspray on the roof rafters.
3.5. In and around a crawl space...insulated framed walls must be **covered with a rigid air barrier and air sealed on all six sides**
4.1. Equipment Minimum Performance Values:

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Minimum Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furnace</td>
<td>90 AFUE</td>
</tr>
<tr>
<td>Air Conditioner</td>
<td>14 SEER</td>
</tr>
<tr>
<td>Heat Pump</td>
<td>14 SEER and 8.2 HSPF</td>
</tr>
</tbody>
</table>
4.3. Building cavities shall not be used as ducts.
Can floor joists still be used with return panning?
4.4. …ACCA Manual J total load. ACCA Manual J room-by-room load calculations, including all inputs and outputs...

http://www.ahridirectory.org
4.8. Whole-House Ventilation: …a ventilation system capable of meeting the current version of ASHRAE 62.2…

Option 1: Supply ventilation with a non-PSC motor & mechanical damper

Option 2: Balanced ventilation including ERVs or HRVs
4.8. Option 1: Supply Ventilation: Ventilation at a minimum shall occur 10% of every 24 hours and at a maximum 50% of every 24 hours
4.8. Option 2: Design and install an approved balanced ventilation strategy including ERVs or HRVs.
6.1. Water heaters shall have a UEF as indicated in the table:

<table>
<thead>
<tr>
<th>Water Heater Type</th>
<th>Minimum UEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Tank</td>
<td>.93</td>
</tr>
<tr>
<td>Gas Tank</td>
<td>.60</td>
</tr>
<tr>
<td>Gas Tankless</td>
<td>.61</td>
</tr>
<tr>
<td>Heat Pump</td>
<td>Any</td>
</tr>
</tbody>
</table>
7.2. Home shall not have any incandescent lights. All exterior lighting shall use LEDs.
8.1. One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear...
8.1. ...A visitable route from an exterior entrance through interior hallways must provide access to these interior entries, and this route must be a minimum of 36 inches clear throughout.
8.2. …continuous blocking in walls using a minimum of 2x6 with the bottom located 31 inches above the floor around both toilet and shower to allow for future grab-bar installation.
The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.

This map is not intended to determine if a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones.

All homes should be tested, regardless of zone designation.

IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of North Carolina" (USGS Open-file Report 93-292-D) before using this map. http://energy.cr.usgs.gov/radon/gprinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.

Learn more at: www.ncradon.org
9.3. Radon-ready house/passive mitigation...

Slab Detail

Crawlspace or Basement Detail
Optional: Exterior Motion Sensor Light

At least one exterior fixture shall have a motion sensor.
Optional: Smooth Surface Floors

At least one exterior fixture shall have a motion sensor
Optional: Door Levers

Door levers installed in place of knobs.
Optional: Electrical panel in covered space

Install electrical panel out of weather.
Optional: Radon Test

Conduct a radon test.
Standards Role Out

- **First Citation** is equivalent to a CWO item but not a failing inspection, keeping the conversation live around the changes.
- **Drop Dead** is the last acceptable date for the particular standard to be outside of compliance without prior approval by AE.

This plan is in pencil and is intended to get us all to compliance as soon as feasible.
• **2.1 Drainage**: Finished grade shall be sloped away from foundation…
  *Drop Dead* - Immediately

• **2.4 Metal drip edge flashing**…
  *First citation* - October 1, 2019 *Drop Dead* - December 31, 2019

• **2.5 Roof overhang**…
  *First citation* - October 1, 2019 *Drop Dead* - December 31, 2019

• **2.6 Only if installed, …**
  *Drop Dead* - Immediately

• **3.5 …insulated framed walls must be covered with a rigid air barrier …**
  *Drop Dead* – Immediately

• **7.2 All exterior lighting shall use LEDs.**
  *Drop Dead* - Immediately

• **8.1 One house entry door, one bedroom entry and one bathroom entry must be a minimum of 32 inches clear….**
  *First citation* - October 1, 2019 *Drop Dead* - December 31, 2019

• **8.2 One bathroom shall have continuous blocking in walls…**
  *First citation* - October 1, 2019 *Drop Dead* - December 31, 2019

• **9.3 Radon-ready house/passive mitigation…**
  *First citation* - October 1, 2019 *Drop Dead* - December 31, 2019
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Thank You!

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