The When

2005 - Gov. Carcieri signed an Executive Order requiring all State Buildings to “Strive” to become LEED Certified at the Silver Level.

2009 - Gov. Carcieri signed the Green Buildings Act into law.


2015 – Gov. Raimondo signed an Executive Order (#15-17) requiring the Office of Energy Resources (OER) to establish a voluntary stretch building code base on the IgCC.

2017 – The Green Buildings Act is amended to include a pilot program for LEED for Sites and LEED ND.

The Why

Legislative Findings

(1) Energy costs for public buildings and public projects are skyrocketing and will likely continue to increase.
CURRENT IMPACT of U.S. BUILDINGS ON OUR RESOURCES...

- 12% water use
- 39% CO₂ emissions
- 65% waste output
- 71% electricity consumption
The Why

Complying with the Green Buildings Act at a minimum saves:

- 20% of project water use
- 10% of project energy use
- 65% of construction & demolition waste

- Provides for Improved Indoor Air Quality
- Requires the use of sustainable building materials
- Requires Sustainable Site Development Strategies
The Green Buildings Act requires that:

All new construction projects over 5,000 gsf, and all renovation projects over 10,000 gsf, constructed by a “public agency”... be designed and constructed to LEED Certified or equivalent high performance green building standard.
How to Comply

Compliance Path Considerations:
• Compliance path options all address the five key areas of sustainability but vary in details and flexibility
• Project teams should evaluate compliance options on a project by project basis. One size does not fit all!
• Energy model summary reports should be provided for all projects pursuing performance based energy compliance
• Commissioning is required for all compliance options but commissioning scope may vary
• The latest versions of LEED-NC, NE-CHPS, RI Stretch Codes, or Green Globes should be used, unless otherwise specified by the Advisory Committee
How To Comply

LEED-NC, Green Globes & NE-CHPS:

• Projects shall formally register and pursue third-party certification
• A rating system scorecard shall be submitted with pre and post construction certification letters
• A “Good Faith Effort” is recognized if:
  • Third-party certification is pursued
  • The minimum number of credits is submitted AND
  • No more than 15% of the total number of required credits are denied
Howard To Comply

IGCC / Rhode Island Stretch Code:
• Table 302.1 and Project Elective selections shall be submitted with pre and post construction certification letters.
• A “Good Faith Effort” is recognized if:
  • Table 302.1 is provided
  • Project Electives are selected
  • All applicable requirements of the Stretch Code are incorporated into the contract documents
  • Systems completion is verified by the Designer of Record, CxA & Owner per IgCC/Stretch Code requirements (e.g., submittal reviews, periodic site observation, etc.)
Rhode Island Stretch Code

- In 2016/17 the Green Buildings Advisory Committee (GBAC) worked with the RI Office of Energy Resources to create Rhode Island’s first voluntary stretch codes.
- Rhode Island’s Commercial Stretch Code is based on the 2015 IgCC
- The GBAC worked to ensure that both the residential and commercial Stretch Codes are truly an equivalent high performance building standard

Access the Rhode Island’s Stretch Codes at: [www.energy.ri.gov/policies-programs/lead-by-example/rhode-island-stretch-codes.php](http://www.energy.ri.gov/policies-programs/lead-by-example/rhode-island-stretch-codes.php)
What is the RI Stretch Code?

2015 IGCC + RI-Specific Amendments = Rhode Island Commercial Stretch Code
Rhode Island Stretch Code

What is the IgCC?

• An overlay code to the existing family of ICC codes
• Translates the principals of sustainability contained in rating systems into a code
• It provides flexibility for adopting jurisdictions to customize to meet regional needs
• Applies to new and existing commercial and high rise residential buildings
• Does not apply to single family homes or low rise residential buildings
• Provides a predictive, enforceable and reliable framework for regulating green building
What does the IgCC Cover?

The IgCC provides model code language to establish baseline regulations for new and existing buildings for:

- Site Development and Land Use
- Material Resource Conservation
- Energy Conservation
- Water Resource Conservation
- Indoor Environmental Quality and Comfort
- Commissioning and Operations and Maintenance
Rhode Island Stretch Code

How does the IgCC Compare?
IgCC 2015 vs. IECC 2015

- +/-10% energy use reduction
- The IgCC Addresses more than just energy
  - Site Development and Land Use
  - Material Resource Conservation and Efficiency
  - Water Resource Conservation and Quality
  - Indoor Environment Quality
  - Operations and Maintenance
How does the IgCC Compare?
IgCC 2015 vs. LEED-NC V4.1

- Both address; Site, Material, Energy, Water & IEQ
- Base IgCC compliance would achieve 38 points and would not qualify for LEED Certification
- Jurisdictional Requirements and Project Electives could achieve an additional 43 points and qualify for up to 81 points and LEED Platinum Certification
### Benefits, Compliance Options and Updates

The Rhode Island Green Buildings Act (RIGL § 37-24) Benefits, Compliance Options and Updates  
**Rhode Island Green Buildings Advisory Council**

#### Rhode Island Stretch Code

**Certified 40-49 points** | **Silver 50-59 points** | **Gold 60-79 points** | **Platinum 80-110 points**
---|---|---|---
Yes | Yes | Yes | Yes

**Christopher Armstrong**

**Certified 40-49 points** | **Silver 50-59 points** | **Gold 60-79 points** | **Platinum 80-110 points**
---|---|---|---
38 | 40 | 41 | 1

**IgCC = zEPI of 46 / ASHRAE 90.1 2016 (LEED Baseline) = zEPI of 50 per USDOE determination of 8% Reduction from 90.1-2013**

#### IgCC does not include LEED's Bicycle Network requirement. IgCC Section 407 requires for buildings >10,000 s.f. A104.7 requires for buildings < 10,000 s.f.

#### Addressed in by selection of Sections 402.2.1, 402.2.2, 402.3 & 402.4 as Jurisdictional Requirements in Table 302.1

#### IgCC monitoring and BECx requirements not extensive enough to qualify for LEED credits

#### General

<table>
<thead>
<tr>
<th>Credit</th>
<th>1 Point</th>
<th>Phase</th>
<th>IgCC Section:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative Process</td>
<td>D</td>
<td>Not addressed in the IgCC</td>
<td></td>
<td></td>
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</tbody>
</table>

#### Location and Transportation

<table>
<thead>
<tr>
<th>Credit</th>
<th>Points</th>
<th>Phase</th>
<th>IgCC Section:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEED for Neighborhood Development</td>
<td>8 to 16</td>
<td>D</td>
<td>Table 302.1 &amp; 402</td>
<td>Addressed by selection of Sections</td>
</tr>
<tr>
<td>Sensitive Land Protection</td>
<td>1</td>
<td>D</td>
<td>A104.3 &amp; A104.4</td>
<td>Could meet credit intent through selection of Project Electives A104.3 or A104.4</td>
</tr>
<tr>
<td>High Priority Site</td>
<td>1 to 2</td>
<td>D</td>
<td>A104.5</td>
<td>No correlation between IgCC requirements and LEED credit</td>
</tr>
<tr>
<td>Surrounding Density and Diverse Uses</td>
<td>1 to 5</td>
<td>D</td>
<td>407 &amp; A104.7</td>
<td>No correlation between IgCC requirements and LEED credit</td>
</tr>
<tr>
<td>Access to Quality Transit</td>
<td>1 to 5</td>
<td>D</td>
<td></td>
<td>IgCC does not include LEED's Bicycle Network requirement. IgCC Section 407 requires for buildings &gt;10,000 s.f. A104.7 requires for buildings &lt; 10,000 s.f.</td>
</tr>
<tr>
<td>Bicycle Facilities</td>
<td>1</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced Parking Footprint</td>
<td>1</td>
<td>D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric Vehicles</td>
<td>1</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Sustainable Sites

<table>
<thead>
<tr>
<th>Credit</th>
<th>Points</th>
<th>Phase</th>
<th>IgCC Section:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Activity Pollution Prevention</td>
<td>Required</td>
<td>D</td>
<td>405</td>
<td>Only a prerequisite for Schools &amp; Healthcare</td>
</tr>
<tr>
<td>Environmental Site Assessment</td>
<td>Required</td>
<td>D</td>
<td>401.2</td>
<td>General intent of the LEED credit appears to be addressed in Section 401.2 but not as extensively</td>
</tr>
<tr>
<td>Protect or Restore Habitat</td>
<td>1 to 2</td>
<td>D</td>
<td>A104.5</td>
<td>Could meet credit intent through selection of Project Elective A104.5</td>
</tr>
<tr>
<td>Open Space</td>
<td>1</td>
<td>D</td>
<td>A104.2</td>
<td>A loose correlation could be made between the LEED credit intent and the intent of IgCC Project Elective A104.2</td>
</tr>
<tr>
<td>Rainwater Management</td>
<td>2 to 3</td>
<td>D</td>
<td>403</td>
<td>IgCC Section 403 requires management of a 95th percentile rainfall event.</td>
</tr>
<tr>
<td>Heat Island Reduction</td>
<td>1 to 2</td>
<td>D</td>
<td>408.2, 408.3 &amp; A104.2</td>
<td>IgCC sections require at least 50% of site hardscape. At least 75% of roof area only required for climate zones 1-3. Project Elective A104.9.4 must also be selected to meet LEED credit requirements</td>
</tr>
<tr>
<td>Light Pollution Reduction</td>
<td>1</td>
<td>D</td>
<td>409</td>
<td></td>
</tr>
</tbody>
</table>

#### Water Efficiency

<table>
<thead>
<tr>
<th>Credit</th>
<th>Points</th>
<th>Phase</th>
<th>IgCC Section:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor Water Use Reduction</td>
<td>Required</td>
<td>D</td>
<td>404</td>
<td>LEED requires no irrigation or a minimum 30% reduction. IgCC requires at least 50% reduction.</td>
</tr>
<tr>
<td>Indoor Water Use Reduction</td>
<td>Required</td>
<td>D</td>
<td>702.1</td>
<td>20% reduction</td>
</tr>
<tr>
<td>Building-Level Water Metering</td>
<td>Required</td>
<td>D</td>
<td>701.2</td>
<td>50% = 1 point / 100% = 2 points</td>
</tr>
<tr>
<td>Outdoor Water Use Reduction</td>
<td>1 to 2</td>
<td>D</td>
<td>404 &amp; A107.3</td>
<td>Additional 5% reductions from 20% = 1 point. IgCC = approx. 33% reduction from baseline</td>
</tr>
<tr>
<td>Indoor Water Use Reduction</td>
<td>1 to 2</td>
<td>D</td>
<td>702.1 &amp; A107.2</td>
<td>Requires metering for two or more water subsystems (e.g., irrigation, flows into, DI/FR, boilers, reclaimed water, other process water)</td>
</tr>
<tr>
<td>Cooling Tower Water Use</td>
<td>1 to 2</td>
<td>D</td>
<td>703.7</td>
<td></td>
</tr>
<tr>
<td>Water Metering</td>
<td>1</td>
<td>D</td>
<td>701.2</td>
<td></td>
</tr>
</tbody>
</table>

#### Energy & Atmosphere

<table>
<thead>
<tr>
<th>Credit</th>
<th>Points</th>
<th>Phase</th>
<th>IgCC Section:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental Commissioning and Verification</td>
<td>Required</td>
<td>C</td>
<td>903</td>
<td>IgCC monitoring and BECx requirements not extensive enough to qualify for LEED credits</td>
</tr>
<tr>
<td>Minimum Energy Performance</td>
<td>Required</td>
<td>D</td>
<td>602.1 &amp; 602.2.1</td>
<td>IgCC = AEP of 46/ASHRAE 90.1 2016 (LEED Baseline) = AEP of 50 per USDOE determination of 8% reduction from 90.1-2013</td>
</tr>
<tr>
<td>Building-Level Energy Metering</td>
<td>Required</td>
<td>D</td>
<td>603</td>
<td></td>
</tr>
<tr>
<td>Fundamental Refrigerant Management</td>
<td>Required</td>
<td>D</td>
<td>903</td>
<td></td>
</tr>
<tr>
<td>Enhanced Commissioning</td>
<td>2 to 6</td>
<td>D</td>
<td>602.1</td>
<td>1 point if AutoDR program not available. 2 points if AutoDR program is available. Confirm AutoDR availability with NRGi.</td>
</tr>
<tr>
<td>Optimize Energy Performance</td>
<td>1 to 18</td>
<td>D</td>
<td>602.1</td>
<td>2% = 1/5% = 2 / 10% = 3 / 20% = 4 / 40% = 5. Section 610 requires 0.50 W/sf or 3%</td>
</tr>
<tr>
<td>Advanced Energy Metering</td>
<td>1</td>
<td>D</td>
<td>603</td>
<td>Not addressed in the IgCC</td>
</tr>
<tr>
<td>Grid Harmonization</td>
<td>1 to 2</td>
<td>D</td>
<td>A106</td>
<td></td>
</tr>
<tr>
<td>Renewable Energy Production</td>
<td>1 to 5</td>
<td>D</td>
<td>610</td>
<td></td>
</tr>
<tr>
<td>Enhanced Refrigeration Management</td>
<td>1</td>
<td>D</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Why base the Stretch code on the IgCC?

- It is written in enforceable mandatory language
- It is consistent and coordinated with other I-Codes
- It provides flexibility to address regional priorities
- It addresses:
  - Conservation of:
    - Natural resources
    - Energy
    - Materials
  - Indoor Environmental Quality and Comfort
  - Commissioning and Operations and Maintenance
Benefit of a Voluntary Stretch Code

• National Grid has agreed to provide additional incentive funding to projects electing to follow the voluntary stretch code adopted by the State.

• Incentives would be offered up to 75% of the incremental cost of the project for projects exceeding current energy code, similar to existing programs.

• The Stretch Code can be used for compliance with the RI Energy Code AND the Green Buildings Act AND to qualify for utility incentives.