NEEDED 2010 ENERGY CODE FIXES: RULE 61G20.1.001

	TEXT	RATIONALE
1	**TABLE 101.4.1** **APPLICABILITY ~~NONEXEMPT EXISTING BUILDINGS~~[a]**	***Inconsistency with State law.*** Considerable confusion has ensued concerning the treatment of existing buildings. Because it is so difficult to determine the efficiencies actually installed in existing buildings and because it is so expensive to renovate existing buildings, the mandating legislation in Chapter 553.906, *Florida Statutes*, exempted buildings not meeting the definition of RENOVATION[1,3] from compliance with the code and required only that the component(s) being changed be brought up to code where a major renovation is taking place. Also confusing the issue is recent legislation that requires equipment sizing and duct sealing. Unequal enforcement of these provisions, in conjunction with signi-ficant changes in how refrigerants are treated nationally has caused complete system replacement, additional expense and unlicensed activity. Staff recommends that the original Legislative treatment of Renovations be used across the board.

~~Date Related~~		
	~~Permitted before March 1979~~	~~Permitted after March 1979~~
Not previously conditioned (See Section 101.4.5)	Unconditioned space altered to become conditioned space shall be brought into full compliance with ~~meet~~ current code[c]. ~~Considered an addition~~ ~~Minimum efficiency levels shall be met for components being changed:~~ ~~Envelope: Section 402 or 502~~ ~~Equipment: Section 403 or 503, 504~~ ~~Lighting: Section 404 or 505~~	
Occupancy type change[a]. (See Section 101.4.4)	Spaces that will result in an increase in demand for fossil fuel or electrical energy, shall m~~M~~eet current code[c] ~~Minimum efficiency levels shall be met for components being changed:~~ ~~Envelope: Section 402 or 502~~ ~~Equipment: Section 403 or 503, 504~~ ~~Lighting: Section 404 or 505~~	
~~Not Date Related~~		
Addition	Meet code for addition[,b,c]	
Renovation[a,d]	Where a building meets the definition of renovation[d], m~~M~~inimum code envelope, equipment and lighting efficiency levels shall be met for components being changed[c]: Envelope: Section 402 or 502 Equipment: Section 403 or 503, 504 Lighting: Section 404 or 505	
New building systems[a] (HVAC, service hot water or pool heating, lighting, motors)	Where n~~N~~ew products are installed or replaced in existing buildings or structures meeting the definition of Renovation[d], they shall meet the minimum efficiency allowed for that system: Equipment: Sections 101.4.7, 403 or 503, 504 Lighting: Section 404 or 505 ~~HVAC indoor and outdoor units ≤ 65,000 Btu/h that are not designed to operate together shall be matched.~~ ~~HVAC equipment sizing is required per Sections 403 or 503.~~	

[a] An existing building or portion thereof shall not be altered such that the building becomes less energy efficient than its existing condition.

[b] Minimum equipment efficiencies shall be met only when equipment is installed to specifically serve the addition or is being installed in conjunction with the construction of the addition.

[c] If an existing building is unable to meet one or more current prescriptive code minimum requirements, it may be exempt from those minimum requirements if the entire building is brought into compliance by Section 405 or Section 506, as applicable.

[d] Buildings undergoing alteration that vary or change insulation, HVAC systems, water heating systems, or exterior envelope provided that the estimated cost exceeds 30 percent of the assessed value of the structure (See Ch. 2, Definitions).

2	**101.4.7 Building systems.** Where a building meets the definition of *renovation*, thermal efficiency standards are set for the following building systems where new products are installed or replaced in existing buildings….	***Inconsistency with State law***. Same as #1 above.
3	**101.4.8 Exempt buildings.** Buildings exempt from the provisions of the *Florida Building Code, Energy Conservation,* include **e**xisting buildings except those considered renovated buildings, changes of occupancy type, or previously unconditioned buildings to which comfort conditioning is added. Exempt buildings include those specified in Sections 101.4.8.1 through 101.4.8.5. **101.4.8.1 Federal standards.** Any building for which federal mandatory standards preempt state energy codes **101.4.8.2 Hunting or recreational buildings < 1,000 square feet.** Any building of less than l,000 square feet (93 m^2) whose primary use is not as a principal residence and which is constructed and owned by a natural person for hunting or similar recreational purposes is exempt from this code; however, no such person may build more than one exempt building in any 12-month period. **101.4.8.3 Historic buildings**. Any building meeting the criteria for historic buildings in Section 101.4.2. **101.4.8.4 Low energy buildings as described in Section 101.5.2.** Such buildings shall not contain electrical, plumbing or mechanical systems which have been designed to accommodate the future installation of heating or cooling equipment. **101.4.8.5 Buildings designed for purposes other than general space comfort conditioning.** Any building where heating or cooling systems are provided which are designed for purposes other than general space comfort conditioning. Buildings included in this exemption include: 1. Commercial service areas where only ceiling radiant heaters or spot coolers are to be installed which will provide heat or cool only to a single work area and do not provide general heating or cooling for the space. 2. Buildings heated with a system designed to provide sufficient heat only to prevent freezing of products or systems. Such systems shall not provide heating above 50°F (10°C). 3. Pre-manufactured freezer or refrigerated storage buildings and areas where the temperature is set below 40°F (4°C) and in which no operators work on a regular basis. 4. Electrical equipment switching buildings which provide space conditioning for equipment only and in which no operators work on a regular basis except that the provisions of Section 505.7 shall apply.	***Unintended results from the integration of previously adopted Florida-specific amendments with the model code.*** Buildings previously exempt from the *Florida Building Code, Energy Efficiency* have to meet the new code because exemptions were inadvertently not carried forward to the current code. For example, electrical equipment switching buildings need to exhaust heat, not retain it and should be exempt. Pre-manufactured freezer storage buildings have to meet a higher standard to begin with. The new base code is not consistent in how it lists exempt buildings, which should be listed together.

4

TABLE 402.1.1.3
EQUIVALENT U-FACTORS[a,f,g]

FENESTRATION U-FACTOR[e]	SKYLIGHT U-FACTOR	CEILING U-FACTOR[h]	FRAME WALL U-FACTOR[b]	MASS WALL U-FACTOR	FLOOR U-FACTOR	BASEMENT WALL U-FACTOR[d]	CRAWL SPACE WALL U-FACTOR[c]
0.65	0.75	0.035	0.082	0.096 ~~0.124~~	0.064	0.360	0.477

a. Nonfenestration *U*-factors shall be obtained from measurement, calculation or an approved source.
b. When more than half the insulation is on the exterior ~~interior,~~ the mass wall *U*-factors shall be a maximum of 0.105 ~~0.165~~.
c. Basement wall *U*-factor of 0.360.
d. Foundation *U*-factor requirements shown in Table 402.1.1.3 include wall construction and interior air films but exclude soil conductivity and exterior air films. *U*-factors for determining code compliance in accordance with Section 402.1.1.3 (total UA alternative) shall be modified to include soil conductivity and exterior air films.
e. Window to floor area, including skylights, shall not exceed 20 percent. See Section 402.1.2.3.
f. Limitations to compliance by Section 402 found in Section 402.1.2 shall be met.
g. Ducts and air handlers shall be located inside both the thermal and air barrier of the home. Air leakage shall be no more than Qn=0.03 when tested per Section 403.2.2.1.
h. Roof reflectance shall be no more than 0.25 in accordance with testing to Section 405.6.2.

Unintended results from the integration of previously adopted Florida-specific amendments with the model code.

Contrary to requirements of the base code, the equivalent U-factors for mass walls specific to the *FBC-Energy Conservation* code do not reflect most of the actual R-value of the concrete block, air spaces, stucco, drywall etc. which should be part of the analysis. Further, contrary to Table 402.1.1, Table 402.1.1.3 allows a mass wall with insulation on the interior of the wall to be compared with the U-factor for a concrete block wall with the insulation on the exterior of the wall (and vice versa). DEC statements DS 2012-020 and DS2012-039 request that this table be corrected. DS2012-020 found the table to be in error by the Energy TAC and the Florida Building Commission. DS2012-039 will be heard at the May 24, 2012 Energy TAC meeting.

<table>
<tr><td>5</td><td>402.3.6 Replacement fenestration. Where a building meets the definition of renovation and some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor and SHGC in Table 402.1.1</td><td>Inconsistency with State law. Same as #1 above.</td></tr>
<tr><td>6</td><td>403.2 Ducts.
403.2.1 Insulation (Prescriptive). Supply ducts, including air filter enclosures, air ducts and plenums, located ~~in attics or~~ on roofs shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.
Exceptions:
1. Ducts or portions thereof located completely inside the building thermal envelope.
2. Exhaust air ducts
3. Factory-installed plenums, casings or ductwork furnished as a part of tested and rated HVAC equipment.
403.2.2 Sealing (Mandatory). All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code and shall be shown to meet duct tightness criteria in Section 403.2.2.1.
403.2.2.1 Duct tightness. Duct tightness shall be verified by testing to ASHRAE Standard 152 by either a Class 1 BERS rater or a Class A, B or Mechanical air-conditioning contractor. All ducts and air handlers shall be either located in conditioned space or tested ~~by a Class 1 BERS rater~~ to be “substantially leak free” by one of the following methods:
1. Post construction test: Leakage to outdoors shall be less than or equal to 3 cfm (84.9 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area and ~~or~~ a total leakage less than or equal to 9 cfm (254 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer’s air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the roughed-in system, including the manufacturer’s air handler enclosure. All register boots shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 2 cfm (56.3 L/min) per 100 ft^2 (9.29 m^2) of conditioned floor area.
Exception: Duct testing is not mandatory for buildings complying by Section 405 of this code.</td><td>Conflicts within the updated code.
The only place R-8 duct insulation is required for residential buildings in Chapter 4 is on roofs. Section 405.2 specifically allows R-6 ducts for compliance by the performance alternative.

Change to State law. HB704

Equivalency of standards.
This language is incorrect for the duct test per ASHRAE Standard 152.</td></tr>
<tr><td>7</td><td>502.1.1.1 Shell buildings, renovations and alterations. The building thermal envelope shall meet the requirements of Table 502.1.1.1(1) or Table 502.1.1.1(2). See Section 101.4.3 and Section 101.4.9.</td><td>Conflicts within the updated code.
Shell buildings are governed by 101.4.9</td></tr>
<tr><td>8</td><td>TABLE 502.1.1.1 (2) [rest of the table, no change]
ENVELOPE PRESCRIPTIVE MEASURES FOR RENOVATIONS AND ALTERATIONS[1]
<table><tr><th>Building Element</th><th>Mandatory</th></tr><tr><td>Roof:
Absorptance
R-value (U-value)</td><td>
≤0.22
R-38 (U≤ 0.027 ~~0.033~~)</td></tr></table></td><td>Conflicts within the updated code.
This is a mathematical conversion error that needs to be corrected. DEC statement DS2012-019 requested that this table be corrected; it was found to be in error by the Energy TAC and FBC.</td></tr>
</table>

9

TABLE 503.2.8
MINIMUM PIPE INSULATION (in.)[1]

Fluid Design Operating Temperature Range (°F)	nsulation Conductivity		Nominal Pipe or Tube Size (in.)				
	Conductivity Btu in/(h ft^2.°F)	Mean Temperature ating	<1	1 - 1½	1 ½ - 4	4 -8	>8
Heating Systems (Steam Condensate, and Hot Water)[2,3]							
>350	0.32 - 0.34	250	2.5	3.0	3.0	4.0	4.0
251 – 350	0.29 - 0.32	200	1.5	2.5	3.0	3.0	3.0
201 – 250	0.27 - 0.30	150	1.5	1.5	2.0	2.0	2.0
141 – 200	0.25 - 0.29	125	1.01	1.0	1.0	1.5	1.5
105 – 140	0.22-0.28	100	0.5	0.5	1.0	1.0	1.0
Domestic and Service Hot Water Systems[3]							
>105	0.22-0.28	100	0.5	0.5	1.0	1.0	1.0
Cooling Systems (Chilled Water, Brine, and Refrigerant)[4]							
40 – 60	0.22-0.28	100	0.5	0.5 ~~1.0~~	1.0	1.0	1.0
<40	0.22-0.28	100	0.5	1.0 ~~1.5~~	1.0 ~~1.5~~	1.0	1.5

[1]For insulation outside the stated conductivity range, the minimum thickness (T) shall be determined as follows: $T=r\{(1+t/r)^{K/k} - 1\}$

Where T= minimum insulation thickness (in.), r=actual outside radius of pipe (in.), t=insulation thickness listed in this table for applicable fluid temperature and pipe size, K=conductivity of alternate material at mean rating temperature indicated for the applicable fluid temperature (Btu.in.[h.ft^2.°F]; and k=upper value of the conductivity range listed in this table for applicable fluid temperature.

[2]These thicknesses are based on energy efficiency considerations only. Additional insulation is sometimes required relative to safety issues/surface temperatures.

[3] Piping insulation is not required between the control valve and coil on run-outs when the control valve is located within 4 feet of the coil and the pipe size is 1 inch or less.

[4] These thicknesses are based on energy efficiency considerations only. Issues such as water vapor permeability or surface condensation sometimes require vapor retarders or additional insulation.

Equivalency of standards.

When updating Table 503.2.8 to ASHRAE 90.1-2007, errors were made which should be corrected. Values listed for 1 to 1½" and 1½ to 4" pipe are higher than those in ASHRAE 90.1-2007. Also, footnote 1 is incorrect. The equation should be fixed to agree with ASHRAE 90.1-2007 to obtain the correct minimum insulation thickness.

10

TABLE B-1.1.2(1)
SPECIFICATIONS FOR TH ESTANDARD REFERENCE AND PROPOSED DESIGNS
[rest of the table remains the same]

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Service water heating [h,k]	Fuel type: same as Proposed Design Efficiency: in accordance with prevailing federal minimum standards Use: (gal/day): 30 x N_{du} + 10 x N_{br} Where N_{du} = number of dwelling units Tank temperature: 120° F	As proposed As proposed Same as standard reference design ~~As proposed~~ Same as standard reference design ~~As proposed~~

Conflicts within the updated code. When Florida's baseline features were transferred to the *FBC-EC*, the proposed design features were transferred incorrectly. They should be returned to the 2007 code reference. Hot water use and tank temperature are variable and should not be user entered.

11

TABLE B-2.2(1)
SPECIFICATIONS FOR TH ESTANDARD REFERENCE AND PROPOSED DESIGNS
[rest of the table remains the same]

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Building envelope	The *standard reference-design* shall have identical *conditioned floor area* and identical exterior dimensions and orientations as the proposed design, except as noted in (a), (b), and (c) in this clause.	All components of the building envelope in the *proposed design* shall be modeled as shown on architectural drawings or as installed for *existing building* envelopes. *Exceptions:* The following building elements are permitted to differ from architectural drawings.
	(a) Opaque assemblies such as roof, floors, doors, and walls shall be modeled as having the same heat capacity as the *proposed design* but with the maximum ~~minimum~~ U-factor required ~~in the Commission approved compliance software~~[‡] for new non-residential buildings or *additions* and *alterations* as shown below: **CZ1 CZ2** **Roof** Insulation above deck U-0.063 U-0.063 Metal building U-0.065 U-0.065 Attic & other U-0.034 U-0.034 **Walls, above-grade** Mass U-0.580 U-0.580 Metal building U-0.113 U-0.113 Steel framed U-0.124 U-0.124 Wood framed & other U-0.089 U-0.089 **Walls, below grade** C-1.140 C-1.140 **Floors** Mass U-0.322 U-0.137 Steel joist U-0.350 U-0.052 Wood framed & other U-0.282 U-0.051	(a) Any envelope assembly that covers less than 5% of the total area of that assembly type (e.g., exterior walls) need not be separately described. If not separately described, the area of an envelope assembly must be added to the area of the adjacent assembly of that same type.

Unintended results from the integration of previously adopted Florida-specific amendments with the model code. This section refers to Commission-approved software (a Florida-specific remnant from the 2007 FBC) to contain the Standard Reference Design component efficiencies, while software developers are directed by the *Energy Simulation Tool Technical Assistance Manual* to obtain such information from the code. The Standard Reference Design features are now referenced to Chapter 11 of ASHRAE 90.1-2004 in a footnote, not contained in the code.

			Slab-on-grade floors Heated F-0.730 F-0.730 Unheated F-1.020 F-1.020 **Opaque doors** Swinging U-0.700 U-0.700 Nonswinging U-1.450 U-1.450 High-rise residential buildings shall be modeled with the maximum U-factors shown below: **CZ1 CZ2** **Roof** Insulation above deck U-0.063 U-0.063 Metal building U-0.065 U-0.065 Attic & other U-0.027 U-0.034 **Walls, above-grade** Mass U-0.151 U-0.151 Metal building U-0.113 U-0.113 Steel framed U-0.124 U-0.124 Wood framed & other U-0.089 U-0.089 **Walls, below grade** C-1.140 C-1.140 **Floors** Mass U-0.322 U-0.107 Steel joist U-0.350 U-0.052 Wood framed & other U-0.282 U-0.051 **Slab-on-grade floors** Heated F-0.730 F-0.730 Unheated F-1.020 F-1.020 **Opaque doors** Swinging U-0.700 U-0.700 Nonswinging U-1.450 U-1.450			Interested parties who want to know what level of efficiency their building is compared to have to go to ASHRAE 90.1-2004 or Chapter 13 of the 2004 *Florida Building Code* to find the information. These values properly belong in Table B-2.2(1).
			(b) Roof albedo—All roof surfaces shall be modeled with a reflectivity of 0.3.	(b) Exterior surfaces whose azimuth orientation and tilt differ by no more than 45 degrees and are otherwise the same may be described as either a single surface or by using multipliers.		
			(c) Fenestration—No shading projections are to be modeled; fenestration shall be assumed to be flush with the exterior wall or roof. If the fenestration area for new buildings or *additions* exceeds 50% of wall area ~~the maximum allowed by the Commission approved compliance software~~[1], the area shall be reduced proportionally along each exposure until the following limits are ~~set in the Commission approved compliance software~~[1] ~~is~~ met.	(c) For exterior roofs other than roofs with ventilated attics, the roof surface may be modeled with a reflectance of 0.45 if the reflectance of the proposed design roof is greater than 0.70 and its emittance is greater than 0.75. The reflectance and emittance shall be determined by a laboratory accredited by a nationally recognized accreditation organization and shall be labeled and certified by the manufacturer. All other roof surfaces shall be modeled with a reflectance of 0.3.		

<table>
<tr>
<td></td>
<td></td>
<td></td>
<td>
<table>
<tr><th>% of wall area</th><th>Max.U</th><th>SHGC</th><th>CZ1</th><th>CZ 2</th></tr>
<tr><td>0 – 10%</td><td>Ufixed 1.22</td><td>SHGCall</td><td>0.25</td><td>0.39</td></tr>
<tr><td></td><td>Uoper 1.27</td><td>SHGCnorth</td><td>0.61</td><td>0.61</td></tr>
<tr><td>10.1 – 20%</td><td>Ufixed 1.22</td><td>SHGCall</td><td>0.25</td><td>0.25</td></tr>
<tr><td></td><td>Uoper 1.27</td><td>SHGCnorth</td><td>0.61</td><td>0.61</td></tr>
<tr><td>20.1 – 30%</td><td>Ufixed 1.22</td><td>SHGCall</td><td>0.25</td><td>0.25</td></tr>
<tr><td></td><td>Uoper 1.27</td><td>SHGCnorth</td><td>0.61</td><td>0.61</td></tr>
<tr><td>30.1 – 40%</td><td>Ufixed 1.22</td><td>SHGCall</td><td>0.25</td><td>0.25</td></tr>
<tr><td></td><td>Uoper 1.27</td><td>SHGCnorth</td><td>0.44</td><td>0.61</td></tr>
<tr><td>40.1 – 50%</td><td>Ufixed 1.22</td><td>SHGCall</td><td>0.19</td><td>0.17</td></tr>
<tr><td></td><td>Uoper 1.27</td><td>SHGCnorth</td><td>0.33</td><td>0.42</td></tr>
</table>
Fenestration U-factor shall be the maximum required for the climate, and the solar heat gain coefficient shall be the maximum allowed for the climate and orientation. The fenestration model for envelope alterations shall reflect the limitations on area, U-factor, and solar heat gain coefficient as allowed by Section 101.4.3.
</td>
<td>Manually operated fenestration shading devices such as blinds or shades shall not be modeled. Permanent shading devices such as fins, overhangs, and light shelves shall be modeled.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td colspan="4">B-1.1.3.1 Following normalization of the heating, cooling and hot water….If the total normalized modified loads of the Proposed Design home (nMEULtot) are equal to or less than 80 percent of the total reference loads of the Standard Reference Design home (REULtot) the Proposed Design complies with this code.</td>
<td>Conflicts within the updated code.
This section needs to be consistent with Sec. B-1.1.1.</td>
</tr>
<tr>
<td>13</td>
<td colspan="4">B-2.6 HVAC systems
B-2.6.1 Standard reference design.
[1 – 7, 9-10 No change]
8. Fan system efficiency (BHP per cfm of supply air including the effect of belt losses but excluding motor and motor drive losses) shall be the limit allowed in Table 503.2.10.1(1). ~~same as the proposed design or up to the limit prescribed in Section 503.2.10.1, whichever is smaller. If this limit is reached, each fan shall be proportionally reduced in brake horsepower until the limit is met. Fan electrical power shall then be determined by adjusting the calculated fan HP by the minimum motor efficiency prescribed by Section 505.7.5 for the appropriate motor size for each fan.~~</td>
<td>Unintended results from the integration of previously adopted Florida-specific amendments with the model code. These Florida-specific clauses which were adopted from Chapter 11 of ASHRAE 90.1 were not previously in the code or in the program. By including them designers are facing an unanticipated increase in overall stringency of the code and are effectively unable to comply with the code in some cases. The previous credit for installing more efficient fans was inadvertently removed.</td>
</tr>
<tr>
<td>14</td>
<td colspan="4">Appendix C
Form 402-2010
Table 402B MANDATORY REQUIREMENTS
<table>
<tr><th>Components</th><th>Section</th><th>Requirements</th><th>Check</th></tr>
<tr><td>Air distribution system</td><td>403.2</td><td>Ducts ~~in attics or~~ on roofs insulated to R-8; other ducts~~-~~R-6. Ducts tested to Qn=0.03 by a Class 1 BERS rater or a Class A, B or Mechanical air-conditioning contractor.</td><td></td></tr>
</table>
</td>
<td>Conflicts within the updated code.
The only place R-8 duct insulation is required for residential buildings in Chapter 4 is on roofs.

Change to State law. HB704</td>
</tr>
</table>

1. Section 553.903, *Florida Statutes*, Applicability, states: "This part shall apply to all **new and renovated buildings in the state, except exempted buildings**, for which building permits are obtained after March 15, 1979, ***and*** **to the installation or replacement of building systems and components with new products** for which thermal efficiency standards are set by the Florida Energy Efficiency Code for Building Construction." [NOTE: 2 clauses]
2. Section 101.4.7 of the *FBC-Energy Conservation*, states: "Thermal efficiency standards are set for the following building systems **where new products are installed or replaced in existing building** and for which a permit must be obtained. New products shall meet the minimum efficiencies allowed by this code for the following systems: Heating, ventilating or air conditioning systems; Service water or pool heating systems; Electrical systems and motors; Lighting systems."
3. Sec. 553.902, *Florida Statutes,* defines RENOVATED BUILDING as "a residential or nonresidential building undergoing alteration that varies or changes insulation, HVAC systems, water heating systems, or exterior envelope conditions, **provided the estimated cost of renovation exceeds 30 percent of the assessed value of the structure**." Section 202 of the FBC-*Energy Conservation*, further clarifies that the cost shall be cumulative **over a 1 year period**.