

## COMMERCIAL ENERGY (EXISTING BUILDINGS) PLAN REVIEW CHECKLIST

Identify the project scope and refer to the appropriate checklist.

<input type="checkbox"/>	Historical Building Alterations
<input type="checkbox"/>	Addition to an Existing Building
<input type="checkbox"/>	Alterations to an Existing Building
<input type="checkbox"/>	Fenestration Replacement

### HISTORICAL BUILDINGS

<input type="checkbox"/> Complies	C501.6 <b>Historic buildings.</b> If the applicant is taking an energy code exemption, a report, signed by a registered design profession, or a representative of the Philadelphia Historical Commission, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the building. Otherwise, refer to the ALTERATIONS section of this checklist.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

### ADDITIONS

C502.1 Additions to an existing building, building system or portion thereof must be treated like new construction for envelope, mechanical, service hot water, and electric power & lighting, except for the fenestration requirements below. Complete the vertical fenestration and skylight checklist below, then use the [IECC Commercial Plan Review Checklist](#) for all other components.

#### Windows

#### C502.2 Compliance options (select the applicable scenario):

- New vertical fenestration resulting in a total building vertical fenestration area  $\leq 30\%$  may use Prescriptive, COMcheck, or Performance
- New vertical fenestration resulting in a total building fenestration area  $>30\%$  but less than  $40\%$ , or additions that have a vertical fenestration area  $>30\%$  but less than  $40\%$  may use Prescriptive (provided daylighting requirements are met), COMcheck, or Performance.
- New vertical fenestration resulting in a total building fenestration area  $>40\%$  must use COMcheck or Performance.

<input type="checkbox"/> Prescriptive	Identify the chosen compliance path
<input type="checkbox"/> COMcheck	
<input type="checkbox"/> Performance	
<input type="checkbox"/> Complies	The chosen compliance path is acceptable give the limitations describe above.
<input type="checkbox"/> Does not comply	

#### Prescriptive

<input type="checkbox"/> Complies	Vertical fenestration <b>SHGCs</b> are $\leq 0.36$ or meet the values in IECC Table C402.4 where the applicant demonstrates window orientation and overhang Projection Factor.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> Complies	Vertical fenestration <b>SHGCs</b> are less than or equal to the values in IECC Table C402.4. If SHGC exceeds 0.36, applicant demonstrates window orientation and overhang projection factor.
<input type="checkbox"/> Does not comply	

<input type="checkbox"/> Complies	C402.2.1.1 Where insulation is located entirely above deck, skylight curbs have R-5 insulation
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	New vertical fenestration resulting in a total building fenestration area >30% and ≤40%, or additions that have a vertical fenestration area >30% and ≤40%, comply with Section C402.4.1.1 Increased vertical fenestration area with daylight responsive controls: 1. In buildings 2 stories or less, at least 50% of the floor area is within a daylight zone 2. In buildings 3 stories or more, at least 25% of the floor area is within a daylight zone 3. Lighting within daylight zones is controlled with daylight responsive controls per C405.2.3.1 4. Visible transmittance (VT) of vertical fenestration is at least 1.1X the SHGC (VT / SHGC ≥1.1)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>COMcheck</b>	
<input type="checkbox"/> Complies	COMcheck certificate: Vertical fenestration areas, U-factors, and SHGCs match the plans and the certificate says PASS
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Performance (C407)</b>	
<input type="checkbox"/> Complies	Software-generated performance report: Vertical fenestration areas, U-factors, and SHGCs match the plans and the energy cost of the proposed design is ≤ the energy cost of the reference design.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Skylights</b>	
C502.2 Compliance options (select the applicable scenario): <input type="checkbox"/> New skylight area resulting in a total building skylight area ≤3% may use Prescriptive, COMcheck, or Performance <input type="checkbox"/> New skylight area resulting in a total building skylight area >3% and ≤6% and additions with >3% and ≤6% skylight area may use Prescriptive (provided daylighting requirements are met), COMcheck, or Performance <input type="checkbox"/> New skylight area resulting in a total building skylight area >6% must use COMcheck, or Performance	
<b>Prescriptive</b>	
<input type="checkbox"/> Complies	Skylight U-factors are ≤U-0.50
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

<input type="checkbox"/> Complies	Skylight SHGCs are $\leq$ U-0.40
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	C402.2.1.1 Where insulation is located entirely above deck, skylight curbs are shown to have R-5 insulation
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Additions with new skylight area resulting in a total building skylight area $>$ 3% and $\leq$ 6% and additions with $>$ 3% and $\leq$ 6% skylight area comply with Section C402.4.1.2 Increased skylight area with daylight responsive controls: Lighting in all toplit zones under new skylights is provided with daylight responsive controls.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

### COMcheck

<input type="checkbox"/> Complies	COMcheck certificate: Skylight areas, U-factors, and SHGCs match the plans and the certificate says PASS
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Skylight air leakage rates are $\leq$ 0.2 cfm/ft <sup>2</sup> (0.3 for skylights with condensation weepage openings)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

### Performance

<input type="checkbox"/> Complies	Software-generated performance report: Vertical fenestration areas, U-factors, and SHGCs match the plans and the energy cost of the proposed design is $\leq$ the energy cost of the reference design
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates are $\leq$ 0.2 cfm/ft <sup>2</sup> (0.3 for skylights with condensation weepage openings)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

### Other Building Components

For the remaining components of the addition, use the IECC Commercial Plan Review Checklist as you would for new construction to verify:

- Envelope (C402)
- Mechanical Systems (C403)
- Service Hot Water (C404)
- Electric Power & Lighting (C405)

## ALTERATIONS

### General

<input type="checkbox"/> Complies	C503.1 The alteration or alterations do not make the existing structure less energy efficient
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

<input type="checkbox"/> Complies	<b>C503.2 Change in space conditioning.</b> Any unconditioned or low-energy space that is converted to a conditioned space is in full compliance with the IECC for new construction (IECC Ch. 4 [CE]). Refer to the <i>IECC Commercial Plan Review Checklist</i> . Exceptions: <ol style="list-style-type: none"> <li>When using COMcheck, the proposed UA is <math>\leq 110\%</math> the target UA</li> <li>When using total building performance (C407), the energy cost of the proposed design is <math>\leq 110\%</math> of the reference design</li> </ol>
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Building Thermal Envelope</b>	
<input type="checkbox"/> Complies	<b>C503.3</b> New thermal building envelope components that are part of the alteration comply as they would for new construction (C402.1 through C402.5). Refer to the <i>IECC Commercial Plan Review Checklist</i> .
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	<b>C503.1</b> Existing ceiling, wall, and floor cavities exposed during construction are filled with insulation. (Existing cavities do not need to meet the R-value requirements for new construction.)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Roof Recovers and Replacements</b>	
Exempt from energy requirements	<b>C503.1</b> Alterations to roofs comprised of installing an <u>additional covering over an existing roof</u> without removing the existing covering
<b>Fenestration Replacements</b>	
<input type="checkbox"/> Complies	Plans clearly indicate all fenestration U-factors and solar heat gain coefficients (SHGC)
<input type="checkbox"/> Does not comply	
<b>C502.2 Compliance options (select the applicable scenario):</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Alterations that do not increase the total vertical fenestration area of the existing building may use Prescriptive, COMcheck, or Performance</li> <li><input type="checkbox"/> Alterations where the total building fenestration area is increased but remains <math>\leq 40\%</math> may use Prescriptive (provided daylighting requirements are met), COMcheck, or Performance.</li> <li><input type="checkbox"/> Alterations where the total building fenestration is increased to <math>&gt;40\%</math> must use COMcheck or Performance.</li> </ul>	
<input type="checkbox"/> Prescriptive	Identify the chosen compliance path
<input type="checkbox"/> COMcheck	
<input type="checkbox"/> Performance	
<input type="checkbox"/> Complies	The chosen compliance path is acceptable give the limitations describe above.
<input type="checkbox"/> Does not comply	
<b>Prescriptive</b>	
<input type="checkbox"/> Complies	Vertical fenestration U-factors are less than or equal to the values in IECC Table C402.4 Fixed windows $\leq 0.38$ Operable windows $\leq 0.45$ Entrance Doors $\leq 0.77$ Skylights $\leq 0.50$
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> Complies	Vertical fenestration SHGCs are $\leq 0.36$ or meet the values in IECC Table C402.4 where the applicant demonstrates window orientation and overhang Projection Factor.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

<input type="checkbox"/> Complies	For buildings with >30% total building vertical fenestration and ≤40%, lighting in daylight zones adjacent to new vertical fenestration has daylight-responsive controls
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>COMcheck</b>	
<input type="checkbox"/> Complies	COMcheck certificate: Vertical fenestration areas, U-factors, and SHGCs match the plans and the certificate says PASS
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Performance (C407)</b>	
<input type="checkbox"/> Complies	Software-generated performance report: Vertical fenestration areas, U-factors, and SHGCs match the plans and the energy cost of the proposed design is ≤ the energy cost of the reference design
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates do not exceed the values in Table C402.5.2
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<b>Skylights</b>	
C502.2 Compliance options (select the applicable scenario):	
<input type="checkbox"/> New skylight area resulting in a total building skylight area ≤3% may use Prescriptive, COMcheck, or Performance	
<input type="checkbox"/> New skylight area resulting in a total building skylight area >3% and ≤6% and additions with >3% and ≤6% skylight area may use Prescriptive (provided daylighting requirements are met), COMcheck, or Performance	
<input type="checkbox"/> New skylight area resulting in a total building skylight area >6% must use COMcheck, or Performance	
<b>Prescriptive</b>	
<input type="checkbox"/> Complies	Skylight U-factors are ≤U-0.50
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Skylight SHGCs are ≤U-0.40
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	C402.2.1.1 Where insulation is located entirely above deck, skylight curbs have R-5 insulation
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Alterations with new skylight area resulting in a total building skylight area >3% and ≤6% comply with Section C402.4.1.2 Increased skylight area with daylight responsive controls: Lighting in all toplit zones under new skylights is provided with daylight responsive controls.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	

COMcheck	
<input type="checkbox"/> Complies	COMcheck certificate: Skylight areas, U-factors, and SHGCs match the plans and the certificate says PASS
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Skylight air leakage rates are $\leq 0.2$ cfm/ft <sup>2</sup> (0.3 for skylights with condensation weepage openings)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
Performance	
<input type="checkbox"/> Complies	Software-generated performance report: Vertical fenestration areas, U-factors, and SHGCs match the plans and the energy cost of the proposed design is $\leq$ the energy cost of the reference design
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	Vertical fenestration air leakage rates are $\leq 0.2$ cfm/ft <sup>2</sup> (0.3 for skylights with condensation weepage openings)
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
Heating and Cooling Systems	
<input type="checkbox"/> Complies	C503.4 New heating, cooling, and duct systems that are a part of the alteration comply as they would for new construction (C403). Refer to the <a href="#">IECC Commercial Plan Review Checklist</a> .
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
Service Hot Water Systems	
<input type="checkbox"/> Complies	C503.4 New service hot water systems that are a part of the alteration comply as they would for new construction (C404). Refer to the <a href="#">IECC Commercial Plan Review Checklist</a> .
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
Lighting Systems	
<input type="checkbox"/> Complies	C503.4 New lighting systems that replace $\geq 10\%$ of luminaires in a space comply as they would for new construction (C405). Refer to the <a href="#">IECC Commercial Plan Review Checklist</a> .
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	
<input type="checkbox"/> Complies	C503.4 New lighting systems that replace $< 10\%$ of luminaires in a space are exempt provided they do not increase the installed interior lighting power.
<input type="checkbox"/> Does not comply	
<input type="checkbox"/> N/A	