Code Amendment Proposal Form
For public amendments proposed to the 2018 editions of the International Codes

Instructions: Upload this form and all accompanying documentation at www.denvergov.org/BuildingCode. If you are submitting your proposal on a separate sheet, make sure it includes all information requested below.

All proposals must be received by April 26, 2019.

CONTACT INFORMATION

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Signature: ____________________________

Co-proposed by: Jim Meyers, Southwest Energy Efficiency Project

AMENDMENT PROPOSAL

Please use a separate form for each proposal.

1) Code(s) associated with this proposal. Please use acronym: IECC
If you submitted a separate coordination change to another code, please indicate which code: ____________________________

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Code Name</th>
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<tbody>
<tr>
<td>DBC-xxxx</td>
<td>Denver Building Code–xxxx (code) amendments (e.g., DBC-IBC, DBC-IEBC)</td>
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<tr>
<td>IBC</td>
<td>International Building Code</td>
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<tr>
<td>IEBC</td>
<td>International Existing Building Code</td>
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<td>IECC</td>
<td>International Energy Conservation Code</td>
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<td>IFC</td>
<td>International Fire Code</td>
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<td>IFGC</td>
<td>International Fuel Gas Code</td>
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<td>IGCC</td>
<td>International Green Construction Code</td>
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<td>IMC</td>
<td>International Mechanical Code</td>
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<td>IPC</td>
<td>International Plumbing Code</td>
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<tr>
<td>IRC</td>
<td>International Residential Code</td>
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</tbody>
</table>

2) Please check here if a separate graphic file is provided: ☐

Graphics may also be embedded within your proposal below.

3) Use this template to submit your proposal or attach a separate file, but please include all items requested below in your proposal. The only formatting needed is BOLDING, STRIKEOUT AND UNDERLINING. Please do not provide additional formatting such as tabs, columns, etc., as this will be done by CPD.

Code Sections/Tables/Figures Proposed for Revision:

C401.2

Proposal:
C401.2 Application. Commercial buildings shall comply with one of the following:

1. The requirements of ANSI/ASHRAE/IESNA 90.1.
   2. The requirements of Sections C402 through C405 and C408. In addition, commercial buildings shall comply with Section C406 and tenant spaces shall comply with Section C406.1.1.

2. The requirements of Sections C402.5, C403.2, C403.3 through C403.3.2, C403.4 through C403.4.2.3, C403.5.5, C403.7, C403.8.1 through C403.8.4, C403.10.1 through C403.10.3, C403.11, C403.12, C404, C405, C407 and C408. The building energy cost shall be equal to or less than 85 percent of the standard reference design building.

Supporting Information:

Purpose:

The purpose of this proposal is to eliminate the code loophole that would be created by increasing the stringency of all of the energy code compliance paths except the ASHRAE 90.1 prescriptive path.

Reason:

This proposal is meant to work in conjunction with P82 which is focused on modeling. That proposal limited the original ASHRAE reference in C401.2 to just the prescriptive path and added a new compliance option for the modified Appendix G. This proposal would eliminate that compliance option, and with it the prescriptive path, leaving only the new compliance option defined by P82 for Appendix G.

The codes committee is making substantial changes to all of the compliance paths in the IECC except the reference to the prescriptive path in ASHRAE 90.1. Therefore, if that path remains at ASHRAE 90.1-2016 levels, it effectively defeats the purpose of the whole codes process by leaving an unaltered path through the Denver code. If buildings can comply with the Denver code without complying with any of the Denver code advancements, few buildings will be incentivized to pursue the more efficient path and Denver will fall short of its goals.
The ASHRAE prescriptive path is about 4% more stringent than the 2018 IECC (see figure above). If the new Denver Energy Code meets City of Denver goals, the new energy code would be 18% more efficient than that. Even if the committee decides on a lower level of improvement for the Denver Code, it will not require much to create a negative performance gap for the ASHRAE prescriptive path.

Previous committee discussions have identified the metering requirements in ASHRAE 90.1 as somewhat of a deterrent to using that path. However, those requirements already have substantial exceptions, including all buildings under 25,000 sf, all tenant spaces under 10,000, dwelling units and Group R buildings without large common areas. Additionally, the development process for ASHRAE 90.1 is very attuned to cost effectiveness and that process found this measure to be cost effective. The limited metering requirements in ASHRAE can actually be met with relatively simple equipment and costs can be brought down substantially by considering metering requirements early in the electrical system design process. Therefore, it seems that the Denver market’s unfamiliarity with effective metering practices is the barrier and not the metering requirements themselves. Once the market sees the much lower compliance bar that the ASHRAE prescriptive path requires, they will quickly find the cost-effective ways to meet the metering requirements.

Even high window to wall ratio buildings may find this path to be more cost effective. The ASHRAE prescriptive path allows projects to exceed its 40% WWR – not a very stringent bar to start with – by effectively doing a whole-building weighted U-factor calculation. There are technical and cost barriers to just how high of WWR can be achieved with this method, but considering how far the window requirements in the prescriptive path lag what is available in the market, buildings can go a long way to increase WWR beyond 40% just by moving to thermally broken curtain or window wall systems before hitting those limits.

Referenced Standards:

NA

Note: List any new referenced standards that are proposed to be referenced in the code.

Impact:

The effect of the proposal on the cost of construction:  ☒ Increase  ☐ Reduce  ☐ No Effect

- The proposal would require improved performance from the rest of the wall thermal envelope which would increase cost of wall construction.

The effect of the proposal on the cost of design:  ☒ Increase  ☐ Reduce  ☐ No Effect

- There may be a minor increase in the cost of design for projects that are not already doing the UA approach.

Is the proposal more or less restrictive than the I-codes:  ☒ More  ☐ Less  ☐ Same

- This is a loophole in the IECC that this proposal closes.

Departmental Impact: (To be filled out by CPD staff)
Note: CITY STAFF ONLY. Discuss the impact of this proposal in this section AND indicate the impact of this amendment proposal for each of the following:

- The effect of the proposal on the cost of review:  
  - [ ] Increase  
  - [ ] Reduce  
  - [ ] No Effect

- The effect of the proposal on the cost of enforcement/inspection:  
  - [ ] Increase  
  - [ ] Reduce  
  - [ ] No Effect