

Florida Building Commission
Building Codes and Standards Office
2555 Shumard Oak Blvd
Tallahassee, Florida 32399-2100

September 5, 2018

RE: Submission of IESVE software version 2018 for approval for the 6th edition Florida Energy Code for Commercial Buildings

Integrated Environmental Solutions is pleased to submit IESVE for approval for the 6th Edition Florida Energy Code for Commercial Buildings.

Certification

To the best of our knowledge, judgement and interpretation, we certify that the software submitted for approval meets the requirements to demonstrate compliance of the 2017 6th Edition Florida Energy Code for Commercial Buildings.

IESVE Software End User License Agreement

www.iesve.com/software/eula_pdfs/eula-standard_licence.pdf

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Cover sheet for request for approval by the Florida Building Commission as a Compliance Software Tool

Date of Submittal: September 5, 2018

Software Company: Integrated Environmental Solutions Ltd.

Contact Person: Matthew Duffy

Contact Email: matthew.duffy@iesve.com

Contact Phone Number: 415.420.9314

Name of Product: IESVE

Version Number: 2018

Code Compliance Methods this software calculates (only those):

- ASHRAE Prescriptive Method
- ASHRAE Energy Cost Budget Method
- ASHRAE Envelope Trade-off Option Method
- IECC Prescriptive Method
- IECC Total Building Performance Method
- IECC Component Performance Alternative Method

As an official of the software company named above, I certify the software listed meets the requirements of the Florida Building Code, Energy Conservation 6th Edition (2017) for the methods indicated and that this submittal includes the required documentation as given in the Energy Simulation Tool Approval – Technical Assistance Manual or as requested by the Florida Building Commission:

Matthew Duffy

Signature

September 5, 2018

Date

Matthew Duffy

Printed Name

Business Development Manager

Title



IESVE Software for Certification Authority

About IES Ltd.:

Integrated Environmental Solutions Ltd. (IES Ltd.) is an international organization and develops software which is supported in over 130 countries. IES have multiple offices in North America as well as on other continents.

About IESVE Software:

Current capabilities of IESVE software relevant to North America include:

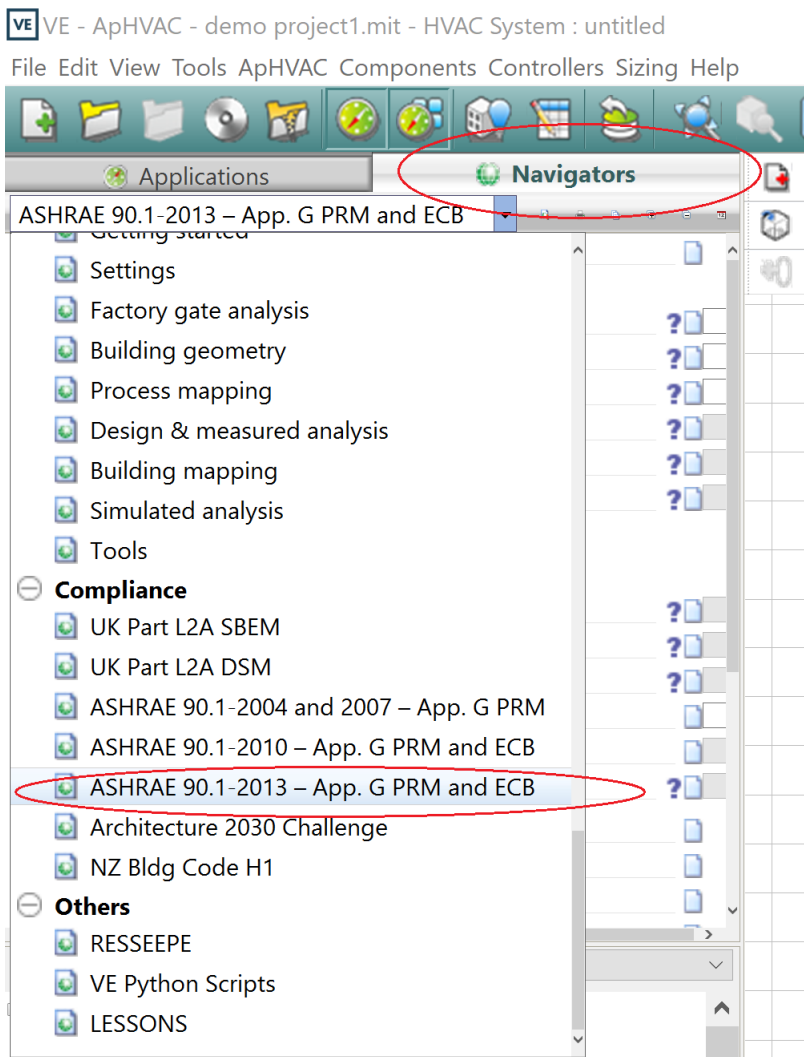
1. Energy Modeling:
This can include modeling as per ASHRAE 90.1 Appendix G (Performance Rating Method) and ECB (Energy Cost Budget). 90.1 versions include 2004, 2007, 2010 and 2013.
2. ASHRAE Standard 140:
IESVE software has been tested in accordance with ASHRAE Standard 140 and meets or exceeds all requirements of this test. Results of the ASHRAE 140 test are available on the IES website. See: <http://www.iesve.com/software/software-validation>.
3. The DOE (IRS 179D & EAct):
IESVE software is approved by the DOE to qualify for tax deductions (Internal Revenue Code 179D). The approval is referenced on the DOE website: http://energy.gov/sites/prod/files/2014/02/f7/qs_iesve_v2013_20140127.pdf. Please note all of the passive, low-energy strategies capable within the VE software.
4. LEED Automation and LEED Project Management:
IES Ltd. are partners with the USGBC and are approved for LEED Automation. See <http://www.usgbc.org/leedautomation/leedautomation.aspx>.
5. LEED Credits (various LEED versions):
 - Optimize Energy Performance (Energy Modeling with ASHRAE 90.1)
 - Increased Ventilation (ASHRAE 62.1)
 - Thermal Comfort for Occupants (ASHRAE 55)
 - Daylighting and Views
 - Water Use and Water Efficiency Landscaping
 - Green Power (Renewable Energy) and Controllability of Systems

For further information, please contact matthew.duffy@iesve.com or call: +1 415-420-9314.



Choosing the Compliance Option in IESVE 2018

The option to select the compliance path is located in the IESVE software under *Navigators*. Please note a 30-day trial version of the software is available to the public with full software capability for that trial period; the [trial version is available at this link](#).



A range of individual software applications and features are available within the IESVE suite which can be used to construct a detailed PRM and ECB Budget model. The user needs to manually switch between applications and know at which point in the process a specific feature needs to be used. The IESVE PRM/ECB Navigator is a tool which brings all of the individual IESVE applications and features together in a single area and presents the user with step-by-step smart navigation and management of the PRM workflow and analysis process. The Navigator is driven through the



successful execution of specific actions and commands which are activated by the user in a defined sequence.

This smart navigation leads the user through the process of basic geometry creation, to constructions/thermal data assignment, and ultimately to the automatic generation of a full set of PRM compliant results which are presented in a format similar to the LEED EAc1 Letter Template.

The Navigator also provides the user with predefined prototypical ASHRAE data which can be used to populate the model with default baseline information. The main structure of the PRM Navigator workflow includes:

1. Preliminary Data setup
2. Envelope Thermo/Physical Properties
3. Room/Zone Thermal Template Data
4. HVAC systems
5. Other Input Data
6. Generate Baseline
7. Sizing runs
8. Simulations
9. Results

The ASHRAE 90.1 App – G PRM/ECB Navigator functions as a series of hyperlinks that are accessed within the smart navigator tree structure that is located on the upper left side of the interface. The hyperlinks take the user to the relevant IESVE application and dialog box to complete the tasks associated with that topic.



IESVE Software Validation for ASHRAE 140

IESVE software has been tested in accordance with ASHRAE Standard 140 and meets or exceeds all requirements of this test. Results of the ASHRAE 140 test are available on the IES website. See: <http://www.iesve.com/software/software-validation>.

The specific documents for the IESVE ASHRAE 140-2014 reports and results are located in the following compressed folder.

http://www.iesve.com/software/validation/ASHRAE-140_2014_IESVE_2017_179D_no_results.rar

The compressed folder contains the directory with the models, results, weather files, reports (*ASHRAE 140 ApacheSim – Envelope.pdf*, *ASHRAE 140 ApacheSim - Space Cooling.pdf*, *ASHRAE 140 ApacheSim - Space Heating.pdf*), and a readme file. The following is an image of the directories and files after extracting the compressed folder.

Name	Date modified	Type	Size
models	30/05/2018 17:01	File folder	
results	30/05/2018 17:01	File folder	
weather_files	30/05/2018 17:01	File folder	
ASHRAE 140 ApacheSim - Envelope.pdf	20/03/2017 14:59	Adobe Acrobat D...	16,734 KB
ASHRAE 140 ApacheSim - Space Cooling.pdf	20/03/2017 15:05	Adobe Acrobat D...	8,165 KB
ASHRAE 140 ApacheSim - Space Heating.pdf	20/03/2017 15:07	Adobe Acrobat D...	1,037 KB
README_ASHRAE140_IESVE_2017.txt	20/03/2017 15:21	Text Document	3 KB

Should you have any questions, concerns, or comments, please reach out to Matthew Duffy at IES.



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Software User Manual

A supplemental document has been included with the submittal, *IESVE Model Review – Quick Start Guide.pdf*. This document outlines the process of obtaining the software, opening the projects, pertinent directory locations, project input/output, and generating reports.

Furthermore, the software user manual is now located online for IESVE. It is complete with a search and index function on the following site.

<https://help.iesve.com/ve2018/>

The screenshot shows a web browser window with the URL <https://help.iesve.com/ve2018/#>. The website has a dark blue header with the IES logo and navigation links for SOFTWARE, CONSULTING, RESEARCH, and DISCOVERIES. Below the header is a navigation bar with 'Menu', 'Index', and 'Search' buttons. A sidebar menu is open, listing various topics with expand/collapse icons. The main content area displays a list of links under the heading 'Getting Started'.

Menu Index Search

- Getting Started
- Model Geometry
- Location
- Create & Assign Data
- Solar Analysis
- Thermal Energy Analysis
- Lighting Analysis
- Results Analysis
- Regulations & Rating Systems
- Computational Fluid Dynamics
- Lifecycle Analysis
- Evacuation
- Application Programming Interf
- Third Party Integration

Getting Started

- General Software Information
 - Registration
 - Introducing the Virtual Environment
 - Components of the Virtual Environment
 - File Menu
 - Activating & Archiving Projects
 - View Menu
 - Tools Menu
 - Texture Rendering & Colour Preferences
 - User Preferences
 - Help Menu
 - Keyboard Shortcuts
- Installation & Keys



Results and Output Reports

The results of the compliance software application are located in the spreadsheet, ***CommercialPerformanceMethodsResultsIESVE.xlsm***. This is located in the submittal directory

Each of the prototype buildings and the subsequent baseline or reference building has its own ECB output report. These are located in the specific directory in the 'PROTOTYPE BUILDING NAME...\Content\Compliance Report' directory.



Description of Differences

- The extra exterior lighting allowance is not included in the ECB baseline simulations; thus, the exterior lighting is the same in the proposed and ECB baseline.
- The ASHRAE 90.1 Space-by-Space method is used for the lighting power densities.