

Evaluation of the Cost Impact and Benefit of 2018 IBC Prescriptive Code Changes

Presented to the

Florida Building Commission
State of Florida Department of Business and Professional Regulation by

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Project Lead: R. Raymond Issa

1. Issues

The proposed research assesses the cost impact of the 2018 International Building Code changes to the 2015 International Building Code that are prescriptive in nature and that have the potential of adding cost to construction.

2. Relevant Sections of the Code (and related documents)

- 2015 International Building Codes as incorporated in 2017 Florida Building Code (effective June 30, 2017) and 2018 International Building Codes including International Building Code (IBC); International Residential Code (IRC); International Energy Conservation Code; International Mechanical Code; International Plumbing Code; International Fuel Gas Code; International Code for Existing Buildings; and National Electrical Code.

3. Statement of Work

- (1) Review/analyze the 2018 I-Code changes to the 2015 I-Code to identify those code changes/provisions that are prescriptive in nature and have the potential of adding cost to construction.**

The listed consultants will participate in this process to help the research team with the specifics of the design changes.

- (2) Review available literature/studies on the subject of estimating the costs of the code changes to the 2015 I-Codes including the ICC code proceedings/code hearings. Information gathered from this task will be used to document potential cost impacts for the code changes as identified in (1) and as applicable.**

The research team will conduct an extensive literature review on cost estimates due to Code changes.

- (3) Estimating the construction cost impacts of those provisions that are not covered under (2) using good engineering judgment and feedback from general contractors and consulting engineers.**

The listed consultants and general contractors will help the research team with the

cost estimates for these changes.

(4) Qualitatively determine the benefits of the changes to the 2015 I-Codes

(5) Use a standard set of baseline residential and commercial building designs for use to determine the cost impact of code changes.

For the purposes of this study the five commercial buildings and a one-story and a 2-story house on slab foundation used to cost out the 2016 codes will be used as the initial base prototypes.

(6) Use BIM tools to produce for each of the prototype buildings for each of the 2015 “as amended via the 6th Edition (2017) FBC” and 2018 I-Codes:

- a. Schedule of Material Quantities (exportable to MS Excel)
- b. Architectural 3D view and walk-through
- c. Isolated Structural 3D view and walk-through
- d. Isolated MEP/MEPF 3D view and walk-through

(7) Use the information in 6(a) and cost databases to produce cost estimates and extract cost impact of changes on the reference houses and commercial buildings.

Sources of cost data will include R.S. Means Cost Data; distributors’ or big box retailers’ websites, and building contractors.

Cost estimates of the code changes that do not directly apply to the selected reference houses will be listed separately and can be added or subtracted from the aggregated costs for these reference houses.

4. Deliverables

- An interim report providing technical information on the problem background, results and cost implications of the prescriptive Code changes will be submitted by November 15, 2017. The report will include documentation “in matrix format” delineating the sub-codes, code sections/changes and whether these changes will result in increased, decreased or no cost. The report will be presented to the Commission’s appropriate Technical Advisory Committee at a time agreed to by the Contractor and the Department’s Project Manager.
- A final report providing background data/information, analysis, results and implication by June 1, 2016. An analysis of individual code changes will also be provided in the Appendix. The report will be presented to the Commission’s appropriate Technical Advisory Committee at a time agreed to by the Contractor and the Department’s Project Manager.
- A breakdown of the number of hours or partial hours, in increments of fifteen (15) minutes of work performed and a brief description of the work performed. The Contractor agrees to provide an additional documentation requested by the Department to satisfy audit requirements.

5. Budget

				Budget	
(a) Salaries and Wages (Prime)				9/1/17 - 6/15/18	
<i>Name</i>	<i>Role in Study</i>	<i>Direct Hourly Rate</i>	<i>Hours</i>	<i>Cost</i>	
Raymond Issa	PI	\$92.50	150	\$ 13,875.00	
Graduate Student	Research Assist.	\$20.00	800	\$ 16,000.00	
Subtotal			950	\$ 29,875.00	
(c) Consultants (0)					
				\$ 30,000.00	
				\$ -	
Subtotal				\$ 30,000.00	
(d) Subcontracts (0)					
				\$ -	
				\$ -	
Subtotal				\$ -	
(e) Tuition					
<i>Graduate Student (1)</i>				6732	
				0	
Subtotal				6732	
(f) Materials and Services (Prime)					
<i>N/A</i>				0	
				0	
Subtotal				0	
(g) Communications and Shipping (Prime)					
<i>Printing</i>				100	
<i>Postage</i>				50	
				0	
Subtotal				150	
(h) Travel (Prime)					
<i>FBC Meetings</i>				500	
Subtotal				500	
(i) Employee Benefit Plan & Payroll Taxes (Prime)					
(1) Employee Benefit Plan & Payroll Taxes 27.4%	<i>Faculty</i>			3802	
(2) Employee Benefits 10.2%	<i>Graduate Student</i>			1632	
SUBTOTAL EMPLOYEE BENEFITS & PAYROLL TAXES (PRIME)				5434	
(j) Overhead (Prime) 10.0%				7269	
GRAND TOTAL PROJECT			950	79960	