



Evaluation of the Cost Impact of 2015 IBC Prescriptive Code Changes

***R. Raymond Issa, PhD, JD, PE, F ASCE, API
Holland Professor & Director***

***Center for Advanced Construction Information Modeling
Rinker School of Construction Management
University of Florida***



Research Team

- R. Raymond Issa, Ph.D. Civil Eng., J.D., P.E., F. ASCE, raymond-issa@ufl.edu, (352) 273-1152
- Russel Walters, Ph.D. Electrical Eng., rwalters@ufl.edu, (352) 273-1173
- John Chyz, P.E., Affiliated Engineers, Inc (AEI), jchyz@aeieng.com, (352) 376-5500
- Mark Aaby, P.E., Fire Protection Engineer, Koffel Assoc., maaby@koffel.com, (410) 750-2246
- Kristin Steranka, Fire Protection Engineer, Koffel Assoc., ksteranka@koffel.com, (410) 750-2246

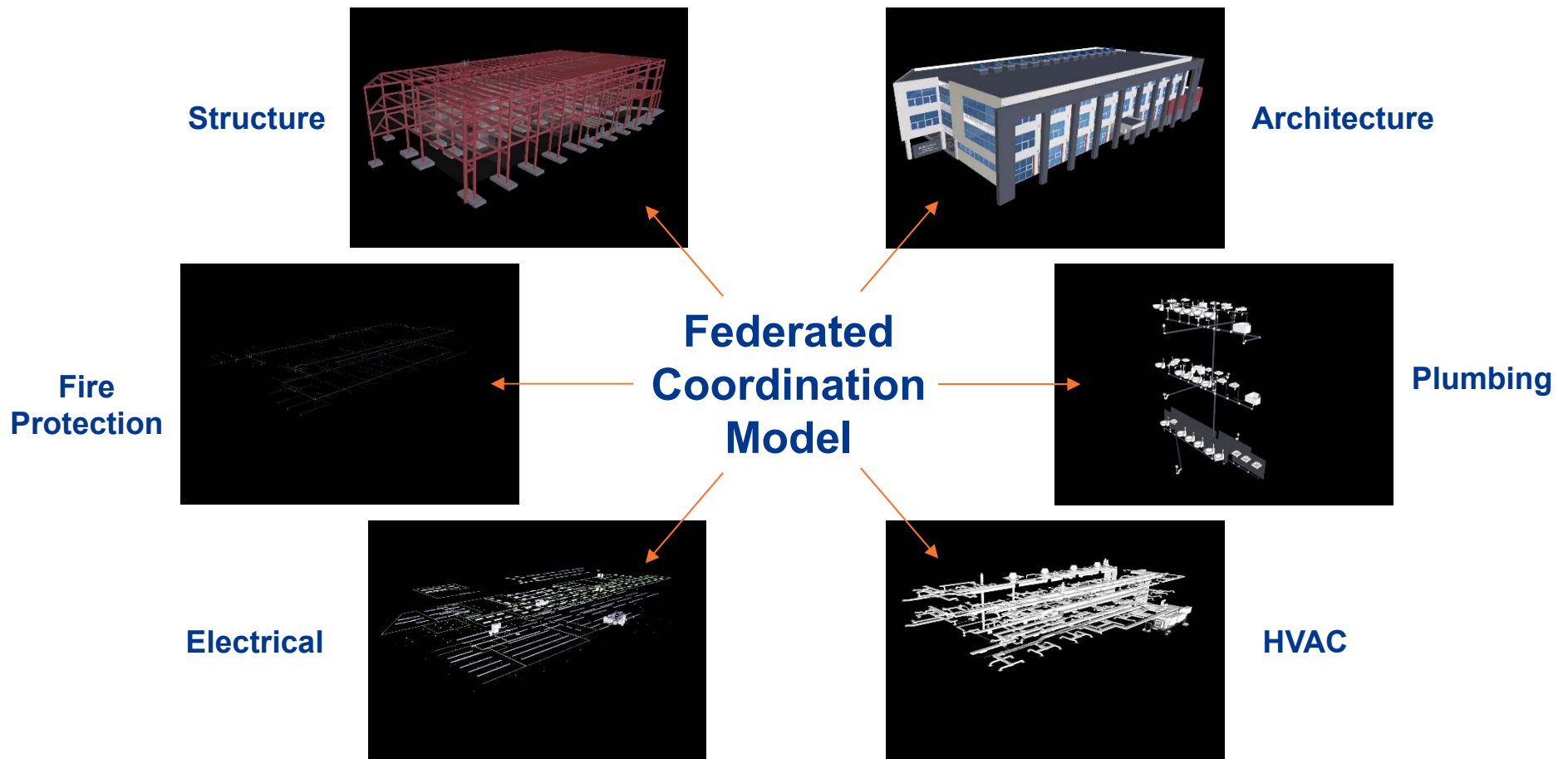
BIM: What is Building Information Modeling?

1. An intelligent 3D model with embedded **information** and specifications for all the material and system selections of a project, as well as their associated properties.
2. Virtual collaboration resource which aids in the decision making and information exchange process throughout the lifecycle of a building from conception to facilities management.

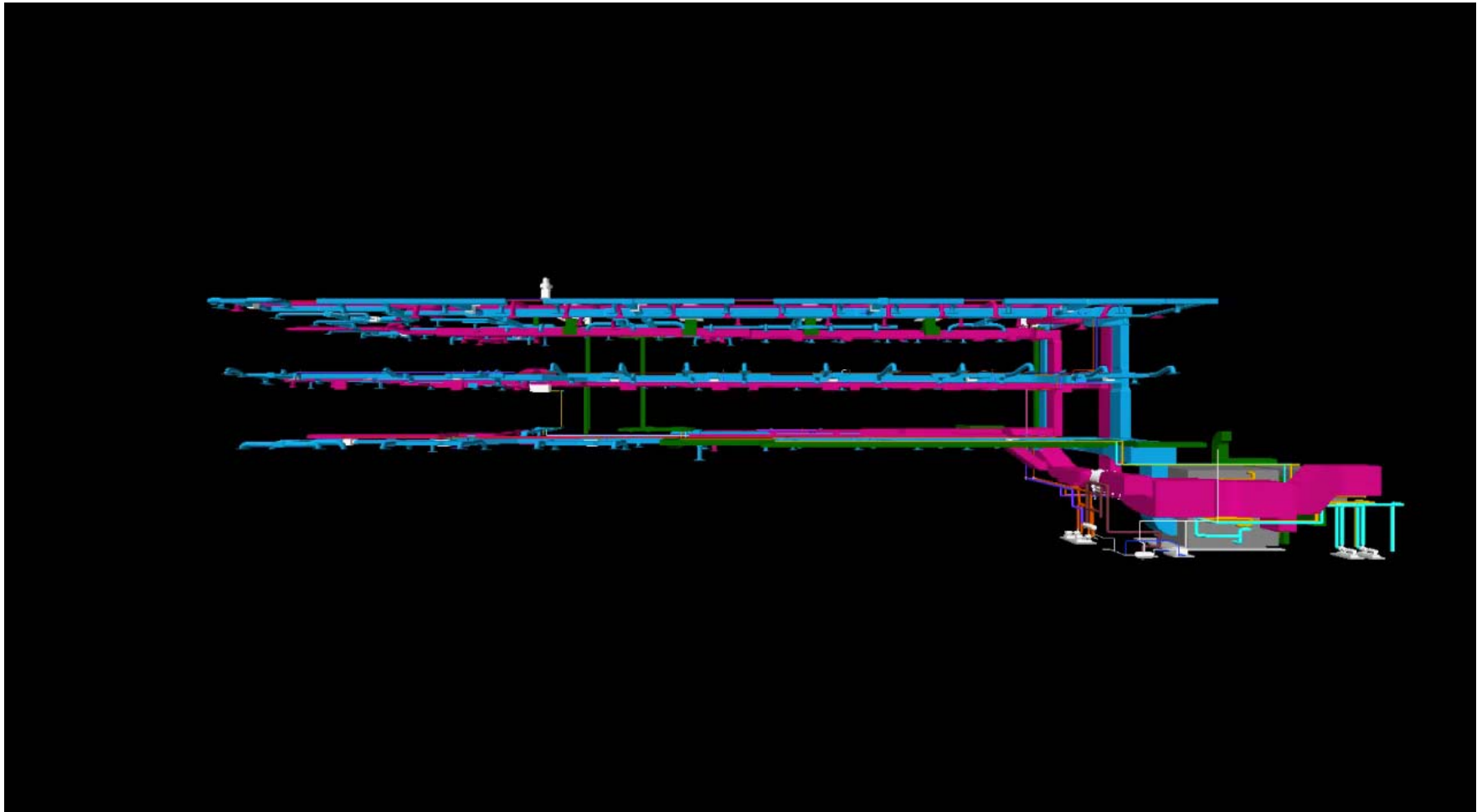
BIM: Benefits of BIM?

1. Enhanced collaboration capabilities among all members of a project team.
2. Coordination of all building systems and the testing of design alternatives prior to construction.
3. Ability to tie model to schedule for visualization and quality assurance purposes. (4D BIM)
4. Greater access to live data regarding building material quantities for more accurate cost estimates. (5D BIM)
5. Creation of more accurate and thorough as-built documents.

BIM: Collaborative Platform



BIM: HVAC Model of Rinker Hall

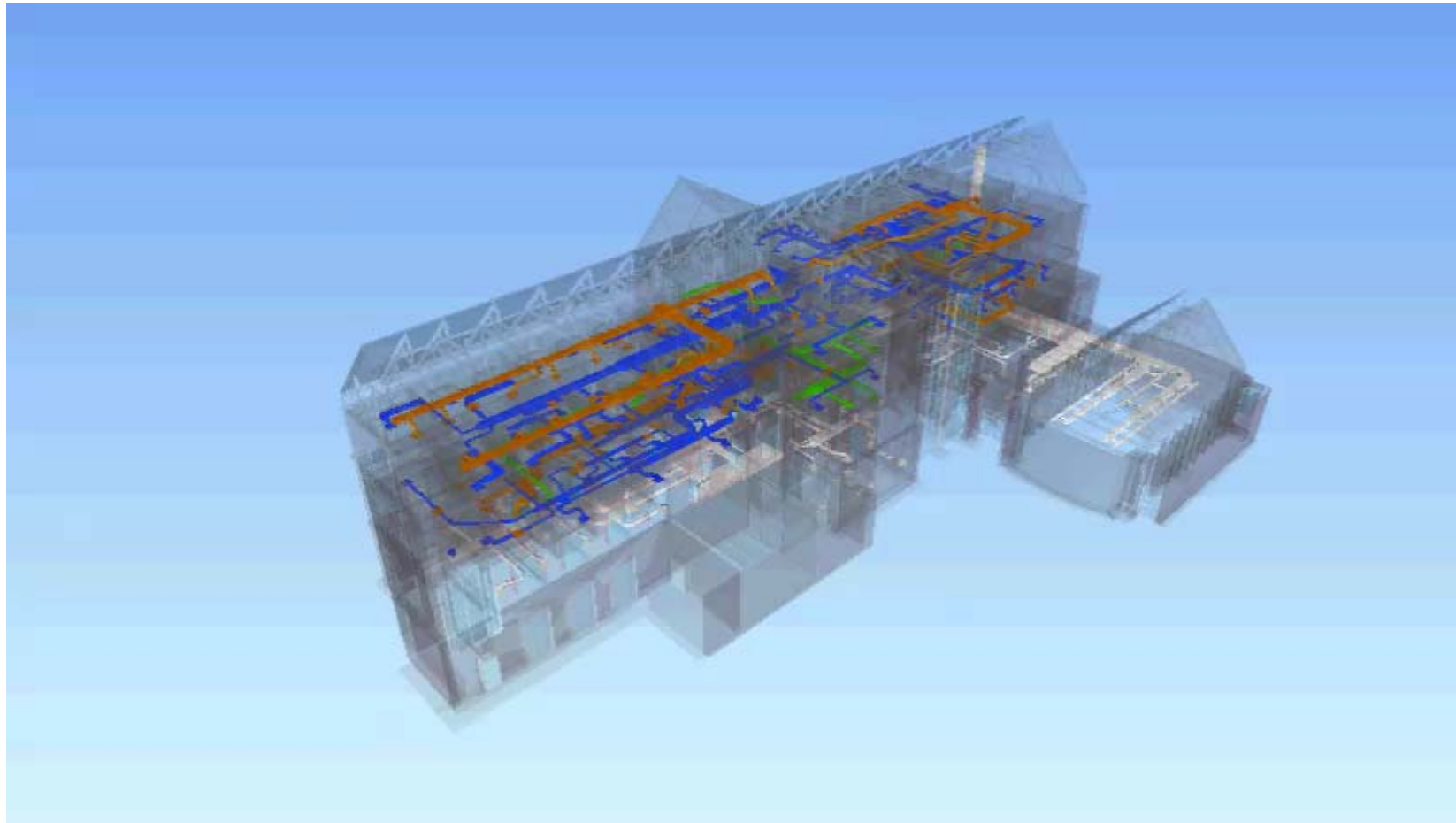


BIM: Building Information Modeling

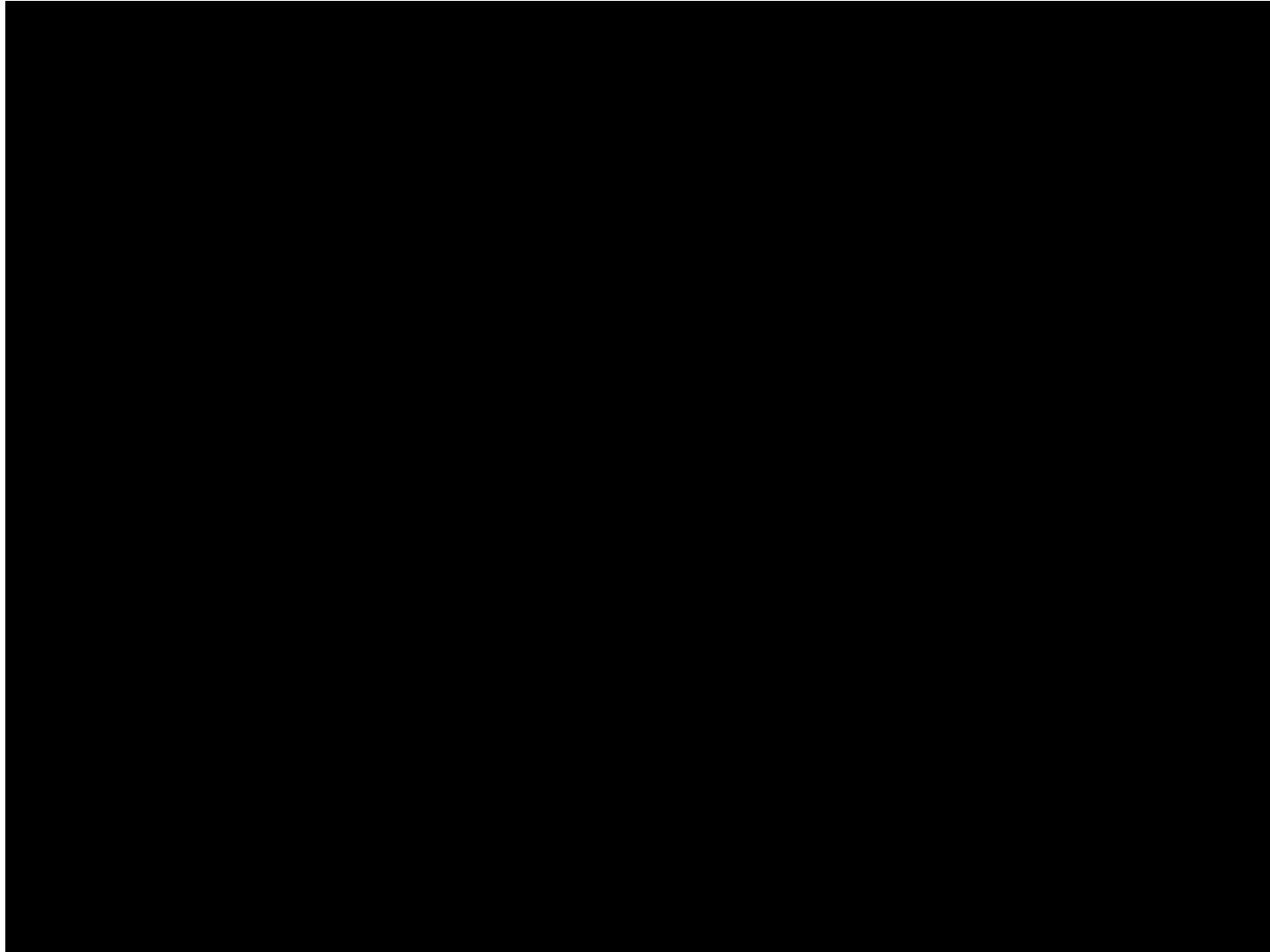
- Federated Multi-Disciplinary Model



BIM: Embedded MEP Model of Gerson Hall

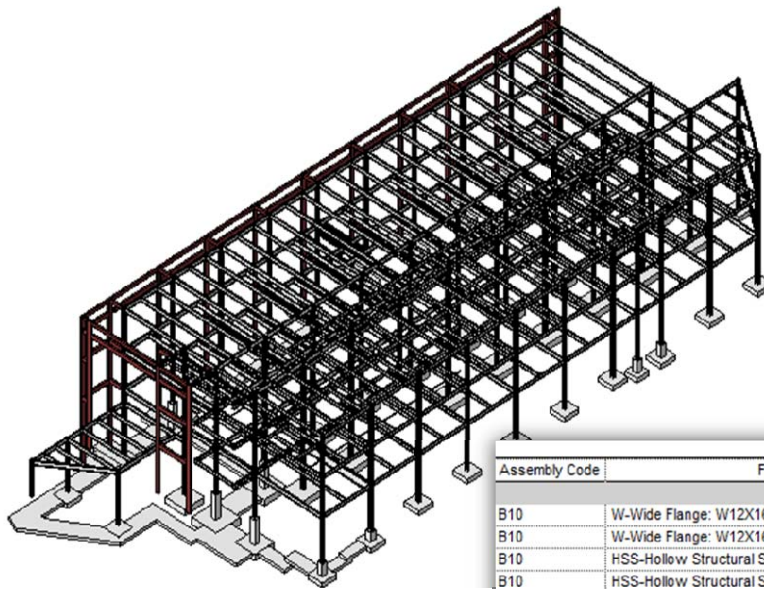


BIM: Ramp Construction Simulation



BIM: Quantity Surveys

- Material quantity data built into model for instantaneous updates as the project changes.

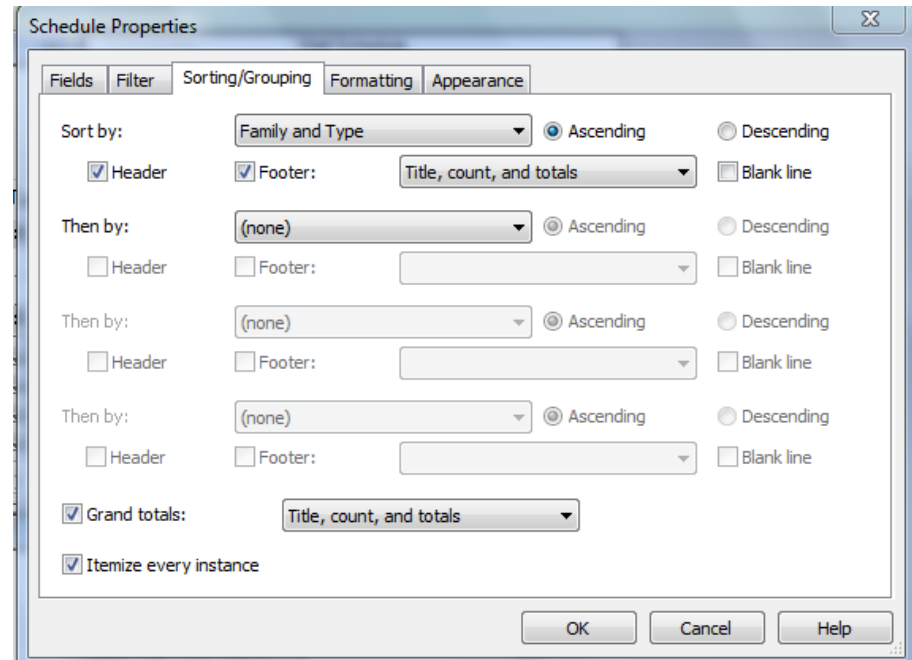
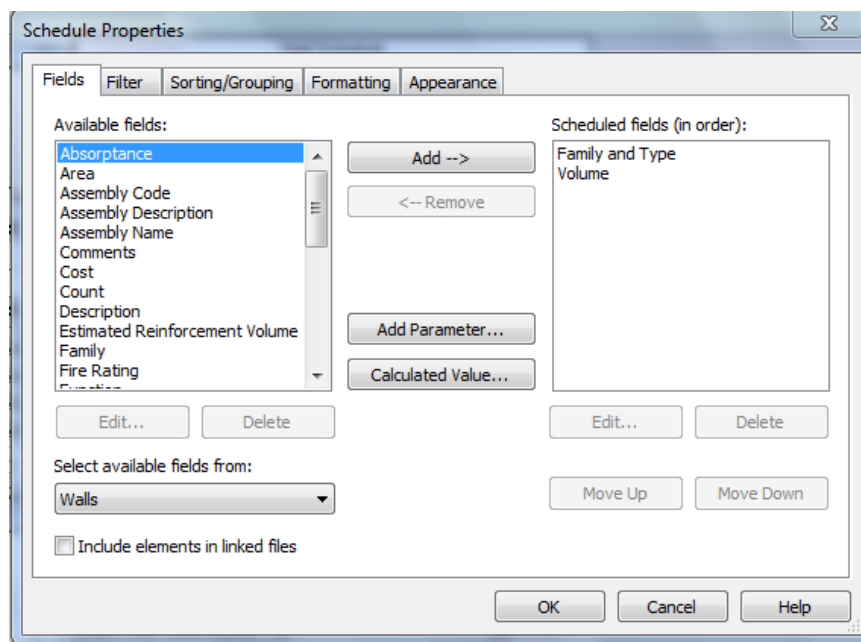


F7-84"x84"x18"						
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
A101010	Footings-Rectangular	F7-84"x84"x18"	6' - 0"	6' - 0"		1
F7-84"x84"x18": 10						10

Structural Steel				
Assembly Code	Family and Type	Count	Length	Cost
B10	W-Wide Flange: W12X16-Rinker	1	12' - 11"	
B10	W-Wide Flange: W12X16-Rinker	1	12' - 11"	
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	5' - 0"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	18' - 9 5/16"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	18' - 8"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	18' - 8"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	18' - 8"	10.00
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B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	18' - 8"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	9' - 10"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	11' - 7"	10.00
B10	HSS-Hollow Structural Section: HSS12X8X.3125-RINKER	1	26' - 11"	10.00

BIM: Quantity Surveys

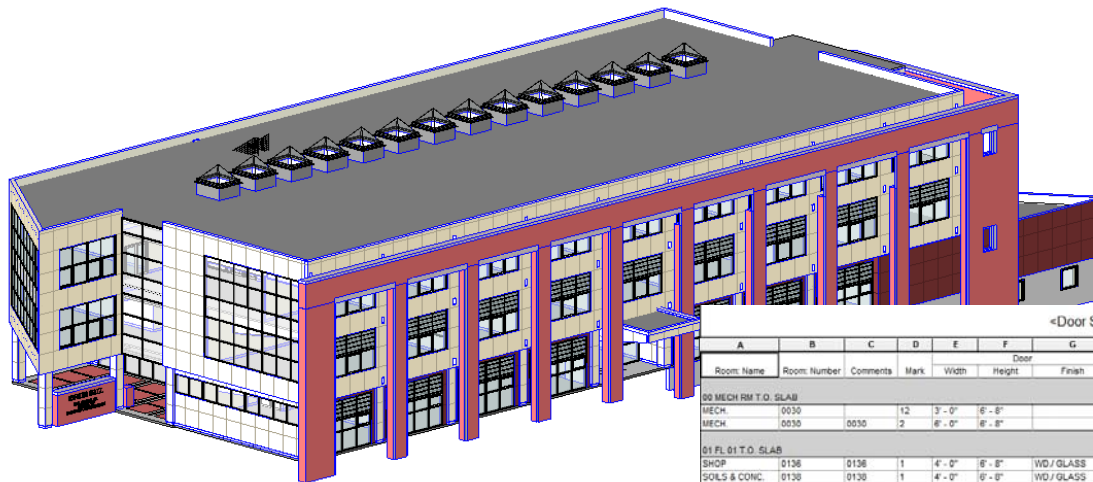
- A wide range of data fields within the BIM environment can be accessed and exported to show the specific information needed.



BIM: Quantity Surveys

- Quantities can be exported from the model of any system and used to calculate cost.

<Room Schedule>									
A	B	C	D	E	F	G	H	I	
Room Nu	Room Name	Area	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height	Comments	
0030	MECH.	1420 SF							
0030A	ELEC. ROOM	251 SF							
0106	MEDIUM CLASSROOM	908 SF							
0110	LARGE CLASSROOM	1750 SF							
0110A	ELEC.	65 SF							
0115	STUDENT LOUNGE	471 SF							
0125	M.E.P STUDIO	1611 SF							
0134	SHOWER	75 SF							
0136	SHOP	274 SF							
0138	SOILS & CONC. LAB	706 SF							
0140	STRUCTURES STUDIO	1292 SF							
0140A	STORAGE	418 SF							
0141	INTERVIEW	100 SF							
0143	INTERVIEW	100 SF							
0145	MEN	224 SF							
0146	WOMEN	253 SF							
0146A	MECH. ROOM	66 SF							
0201	BM LAB	845 SF							



<Door Schedule>													
A	B	C	D	E	F	G	H	I	J	K	L	M	
Room Name	Room Number	Comments	Mark	Width	Height	Door	Finan	Type	Frame Type	Fire Rating	Hardware	Cost	Level
00 MECH RM T.O. SLAB													
MECH	0030		12	3'-0"	8'-8"			36" x 80"					00 MECH RM T.O.
MECH	0030		2	6'-0"	8'-8"			B		45			00 MECH RM T.O.
01 FL 01 T.O. SLAB													
SHOP	0138		1	4'-0"	8'-8"	WD / GLASS	A	H.M./PTD.		60 min	9		01 FL 01 T.O. SLA
SOILS & CONC.	0138		1	4'-0"	8'-8"	WD / GLASS	G	H.M./PTD.			4		01 FL 01 T.O. SLA
SOILS & CONC.	0138		2	8'-0"	8'-8"	ALUM./GLASS	D-Double	ALUM.			4		01 FL 01 T.O. SLA
STORAGE	0140A		140	2	8'-0"	8'-8"	ALUM./GLASS	D-Double	ALUM.		6		01 FL 01 T.O. SLA
INTERVIEW	0141		141	1	3'-0"	8'-8"	ALUM./GLASS	C	ALUM.		5		01 FL 01 T.O. SLA
CORRIDOR	C1990		143	1	3'-0"	8'-8"	ALUM./GLASS	C	ALUM.		5		01 FL 01 T.O. SLA
MECH ROOM	0146A		1	3'-0"	8'-8"	H.M./PTD.	L-FIRE RATED	H.M./PTD.		45 min	4		01 FL 01 T.O. SLA
CORRIDOR	C1990		4	3'-0"	8'-9 11/16"	ALUM./GLASS	D-Left	ALUM.			1		01 FL 01 T.O. SLA
CORRIDOR	C1990		5	8'-1"	8'-9 11/16"	ALUM./GLASS	D-Double	ALUM.			3		01 FL 01 T.O. SLA
CORRIDOR	C1990		6	3'-0"	8'-9 11/16"	ALUM./GLASS	D-Right	ALUM.			2		01 FL 01 T.O. SLA
MEDIUM CLASS	0106		1	8'-0"	8'-8"	WD / GLASS	K	H.M./PTD.			10		01 FL 01 T.O. SLA
LARGE CLASS	0110		2	8'-0"	8'-8"	WD / GLASS	K	H.M./PTD.			10		01 FL 01 T.O. SLA
ELEC.	0110A		3	6'-0"	8'-8"	H.M./PTD.	B	H.M./PTD.			45	21	01 FL 01 T.O. SLA
ELEC.	0110A		4	6'-0"	8'-8"	H.M./PTD.	B	H.M./PTD.			45	12	01 FL 01 T.O. SLA
LARGE CLASS	0110		1	3'-0"	8'-8"	H.M./PTD.	A.-6'8x3'0"	H.M./PTD.		45 min	13		01 FL 01 T.O. SLA
WOMEN	0146		1	3'-0"	8'-8"	H.M./PTD.	E	H.M./PTD.			14		01 FL 01 T.O. SLA
MEN	0145		2	3'-0"	8'-8"	H.M./PTD.	E	H.M./PTD.			14		01 FL 01 T.O. SLA
STRUCTURES S	0140		3	3'-0"	8'-8"	WD / GLASS	G-6'8x3'0"	H.M./PTD.			15		01 FL 01 T.O. SLA
STUDENT LOUN	0115		4	3'-0"	8'-8"	WD / GLASS	G-6'8x3'0"	H.M./PTD.			15		01 FL 01 T.O. SLA
M E P STUDIO	0125		5	3'-0"	8'-8"	WD / GLASS	G-6'8x3'0"	H.M./PTD.			15		01 FL 01 T.O. SLA

ISSUES

- The proposed research assesses the cost impact of the 2015 International Building Code changes to the 2012 International Building Code that are prescriptive in nature and that have the potential of adding cost to construction.

STATEMENT OF WORK

- **1. Review/analyze the 2015 I-Code changes to the 2012 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.

STATEMENT OF WORK

- **2. Review available literature/studies on the subject of estimating the costs of the code changes to the 2012 I-Codes including the ICC code proceedings/ code hearings. Information gathered from this task will be used to document potential costs 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.

STATEMENT OF WORK

- **3. Estimating the additional construction cost 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.

STATEMENT OF WORK

- **4. Use a standard set of baseline residential and commercial building designs for use to determine the cost impact of code changes.**
 - A recent study for the USDOE on the cost impact of the ASHRAE Standard 90-1-2013 changes used: 1) a small office building; 2) a standalone retail building; 3) a primary school; 4) a small hotel; and 5) a mid-rise apartment building as cost reference commercial buildings, since these type of buildings represented over 74% of new construction by floor area.

STATEMENT OF WORK

- Another recent study by the NAHB on the estimated cost of the 20152 IRC changes used one-story and two-story houses on slab and basement foundations, since these type of houses represented approximately 85% of the last decade's new single-family construction. The houses were also deemed to have a gas furnace with central (electric) air conditioner in order to be representative of the majority of new US houses being built. Table 1 shows the adaptation of the NAHB Reference House Parameters proposed for this study.

Reference House	1	2
Square Feet	2,607	2,607
Foundation	Slab	Slab
Number of Stories	1	2
Number of Bedrooms	3	4
Number of Bathrooms	2	2.5
Garage, attached	2-car	2-car
Heat, Gas Furnace	Yes	Yes
Cooling, (Electric) central air	Yes	Yes
Hot Water, Gas 50 gallon tank	Yes	Yes
9 ft. Ceilings, 1 st	Yes	Yes
8 ft. Ceilings, 2 nd	n/a	n/a
Energy Star appliances	Yes	Yes
Laundry Room	Yes - Mudroom	Yes
Furnace Location	Attic	Attic
Water Heater Location	Interior	Garage
Window SF/% gross wall	360/18%	315/12%
Cladding*	Stucco, 4 sides	Stucco, 4 sides

*Changed from Brick in NAHB version to Stucco

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

STATEMENT OF WORK

- **5. Building information modeling (BIM) will be used to develop digital sets of the permit-ready residential (2 houses) and five commercial/institutional buildings models.**

STATEMENT OF WORK

- **6. Use BIM tools to produce for each of the prototype buildings for each of the 2012 and 2015 I-Codes:**
 - Schedule of Material Quantities (exportable to MS Excel)
 - Architectural 3D view and walk-through
 - Isolated Structural 3D view and walk-through
 - Isolated MEP/MEPF 3D view and walk-through

STATEMENT OF WORK

- **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.

DELIVERABLES

- A report providing technical information on the problem background, results and cost implications of the prescriptive Code changes submitted by 15 December 2016.
- An analysis of individual code changes will also be provided in the Appendix.

Cost Impact Analysis 2015 IBC-FPC

- Approximately 67% of the code changes identified resulted in no cost impact. The remaining code changes, identified as a decrease or increase in cost impact, result in 12% and 21% respectively of the total code changes summarized in Table 8.

2015 IBC-FPC Changes Cost Impact Analysis

Disclaimer - Probable Construction Costs Opinions

Assumptions

- This Estimate is not a guarantee of Final Bid Cost or of Final Project Cost.
- This is an Opinion of Probable Cost of Mechanical, Electrical, and Piping (MEP) Systems for the proposed buildings.
- The estimate was compiled using documents provided by various sources.
- The estimate is representative of average unit pricing and labor from historical job costs of similar type, cost and labor data from Mechanical Contractors Association of America (MCAA), CostWorks 2015 Qtr. 2 (Change Date and Qtr) by R.S. Means Company Inc, National Electrical Contractors Association (NECA) and Sheet Metal Estimating by Wendes.
- The subcontractor unit rates include the subcontractor's overhead and profit, unless otherwise stated.
- The mark-ups included in the unit prices cover the cost of field overhead, home office overhead and profit, and range from 15% to 25% of the costs of a particular item.
- Since we have no control over the cost of labor, material and equipment, or the contractor's method of carrying out the work and determining the price, or over competitive bidding or market conditions, this opinion of probable construction cost provided is made on the basis of experience and qualifications. This opinion represents our best judgment as professional construction consultants with the Construction Industry. However, we cannot and do not guarantee that proposals, bids or the construction cost will not vary from the opinions of probable cost in this estimate.

2015 IBC-FPC Changes Cost Impact Analysis

Disclaimer - Probable Construction Costs Opinions

General Assumptions:

- "Allowances" are considered to be an allotted sum of money for a particular system or scope of work for which sufficient detail is not available to determine a definitive cost.
- These cost allowances are included to project a final cost to include labor, material, equipment and any subcontractor costs.
- The owner receives the savings for any amount under the allowance and is at risk for any amount over the allowance.
- The estimate is in today's dollars, and has been adjusted to the local area.
- This estimate does not include any fees or permits.
- This estimate is intended to reflect construction costs only.
- This estimate is intended to reflect normal construction schedules only.
- Variations in material costs, labor efficiencies, wage rates, union practices, and bid climate will effect final costs.
- Workers will report to the actual job site.
- Materials delivered to the actual job site will need to be scheduled.
- No premium or overtime has been included.
- No General Construction costs have been included.
- All utilities have sufficient capacity for the added loads.

Excerpts – 2015 IBC-FPC Changes Cost Impact Analysis

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact		
CODE CHANGE #	2015 IBC-FPC CHANGE SUMMARY	ESTIMATED AMOUNT*
G27-12, G28-12 AMPC, G30-12	304.1 Modified: Clarification that business occupancies shall extend to training and skill development area within a school or academic program that shall include, tutoring centers, martial arts studios, gymnastics and similar uses regardless of the ages served, and where not classified as Group A occupancy.	-\$100,000
G4-13	403.3.2 Modified: Requirement for water supply to required fire pumps is changed so that only buildings that are more than 420 feet in building height shall be supplied by no fewer than two water mains for their required fire pumps. Previously required in all high-rise buildings.	-\$75,000 for water main deletion
F139-13	403.3.3 Added: Requirement for a complete secondary water supply, with a minimum duration of 30 minutes, for high-rise buildings in Seismic Design Category C, D, E, or F. An additional fire pump is not required for this supply unless needed to provide the minimum design intake pressure at the suction side of the fire pump.	\$250,000 for pump and tank
F59-13	403.4.8.2 Added: Fuel lines supplying a generator set inside a high-rise building shall be separated from the rest of the building by a fire resistance rating of not less than 2 hours. Where the building is protected throughout with an automatic sprinkler system the required fire resistance rating shall be reduced to 1 hour.	\$25/linear foot
G53-12	403.6.1 Modified: In buildings with an occupied floor more than 120 feet above the lowest level of fire department vehicle access, no fewer than two fire service access elevators must comply with §3002.4, Elevator car to accommodate ambulance stretcher.	\$50,000/per stair
G58-12 AMPC	404.10 Added: Requirement allowing a maximum of 50 percent of interior exit stairways are permitted to egress through an atrium on the level of exit discharge in accordance with §1028.	-\$100,000

*For prescriptive Code changes only.

Excerpts – 2015 IBC-FPC Changes Cost Impact Analysis

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact		
CODE CHANGE #	2015 IBC-FPC CHANGE SUMMARY	ESTIMATED AMOUNT*
F59-13	405.8.2 Deleted: Allowance for pick up time after failure of normal power supply removed.	\$10,000
G59-12 AMPC1	406.3.1 Added and Modified: Classification changed to address private garages and carports specifically as opposed to "parts of buildings". Addition of language permitting multiple private garages where each private garage is separated from other private garages by a 1 hour fire barrier or 1 hour horizontal assemblies.	\$5,000/ fire barrier
G63-12 AMPC	406.4.3 Modified: Vehicle barriers not less than 2 ft 9 in. in height shall be placed where the vertical distance from the floor of a drive line or parking space to the ground or surface below is greater than 1 ft. Previously barriers were required to be placed at the ends of a drive lane and at the end of parking spaces when the vertical distance was greater than 1 ft.	\$100/ linear foot
G94-12, G95-12	423.3 Added: In areas where the shelter design wind speed for tornadoes in accordance with Figure 304.2(1), of ICC 00 is 250 MPH, 911 call stations, emergency operation centers and fire, rescue, ambulance and police stations shall have a storm shelter constructed in accordance with ICC 500. Exception: Buildings meeting the requirements for shelter design in ICC 500.	\$100,000 /building
G94-12	423.4 Added: In areas where the shelter design wind speed for tornados is 250 MPH all Group E occupancies with an aggregate occupant load of 50 or more shall have a storm shelter constructed in accordance with ICC 500. The shelter shall be capable of housing the total occupant load of the Group E occupancy. Exceptions include Group E day care facilities, Group E occupancies accessory to places of religious workshop and buildings meeting.	-\$100,000 /building

*For prescriptive Code changes only.

Excerpts – 2015 IBC-FPC Changes Cost Impact Analysis

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact		
CODE CHANGE #	2015 IBC-FPC CHANGE SUMMARY	ESTIMATED AMOUNT*
E7-12	505.2.3 Deleted: Direct access to at least one exit at the mezzanine level is no longer required for any enclosed mezzanines regulated by Exception 2 of §505.2.3.	-\$25,000 for exterior exit deletion
G119-12 AMPC3	507.9 Added: Unlimited mixed occupancy buildings with Group H-5 are now permitted to be unlimited in area for buildings classified as B, F, H-5, M or S under the special provisions of §507.9. This section states that the building must be no more than two stories above grade plane and shall not be limited where equipped throughout with an automatic sprinkler system in accordance with §903.3.1.1 and is surrounded and adjoined by public ways or yards not less than 60 feet in width, provided all of the following criteria are met: they are Type I or II construction, they are separated from other occupancies as required in §415.11 and §508.4, and each area shall not exceed the maximum allowable area permitted for such occupancies in Section 503.1 including modifications of §506. The exception to this last criteria is that where it does exceed the maximum allowable area, the Group H-5 shall be subdivided into areas that are separated by 2 hour fire barriers.	-\$100,000 to eliminate fire wall
	603.1 #26 Added: Allowance for combustible materials in wall construction of freezers and coolers of less than 1000 square feet in size, lined on both sides with noncombustible materials and located in a building that is protected throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.	-\$5,000
FS14-12	705.2 Modified: The minimum required separation between the leading edge of a projection and the line used to determine the fire separation distance (FSD) has been changed so for all FSD greater than 3 ft but less than 30, there is a gradual increase in the size of projection permitted as the separation increases. This modification helps to eliminate the inconsistencies that occurred previously with projection requirements.	\$200/ linear foot

*For prescriptive Code changes only.

Excerpts – 2015 IBC-FPC Changes Cost Impact Analysis

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact		
CODE CHANGE #	2015 IBC-FPC CHANGE SUMMARY	ESTIMATED AMOUNT*
FS20-12 AMPC	705.3 Added: Exception 2 allows for openings through adjacent exterior walls of a Group S-2 parking garage and a Group R-2 building on the same lot and a fire separation distance of zero. The S-2 parking garage must be construction Type I or IIA construction and the openings shall only be required to be protected with 1 ½ hour fire protection rating in the exterior wall of the S-2 parking garage, not in the exterior wall openings in the R-2 building.	-\$5,000/ S-2/R-2 CONNECT
E7-12, FS50-12, G54-12	712.1.8 Deleted: Item that restricted two- story openings between adjacent levels containing a stairway or ramp required for egress was removed. Now all requirements for exit access stairways must be taken from one location, §1019.	G54-12 -\$75,000/ SC SYSTEM
FS74-12 AMPC 1	714.3.2 Added: Exception that allows for membrane penetrations of maximum 2-hour fire resistance-rated walls and partitions by steel electrical boxes that exceed 16 square inches in area or steel electrical boxes of any size having an aggregate area through the membrane exceeding 100 square inches in any 100 square feet of wall area provided such penetrating items are protected by listed putty pads or other listed materials and methods, and installed in accordance with the listing.	-\$500/ ELEC BOX
FS50-12, FS75-12	714.4.1.2 Added: Exception 3 allows floor penetrations of maximum 4 inch nominal diameter penetrating directly into metal-enclosed electrical power switchgear to not require a T rating.	-\$100/ PENETRATION
FS77-12	715.4.2 Added: Requirement to protect intersections between exterior curtain walls and vertical barrier with an approved material that is securely installed in or on the intersection for its entire length so as not to dislodge, loosen or otherwise impair its ability to accommodate expected building movements and to retard the passage of fire and hot gases.	\$500/ INTERSECTION

*For prescriptive Code changes only.

Excerpts – 2015 IBC-FPC Changes Cost Impact Analysis

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact		
CODE CHANGE #	2015 IBC-FPC CHANGE SUMMARY	ESTIMATED AMOUNT*
FS100-12	717.1.1 Modified: Requirement now allows ducts to exit a shaft, transition horizontally, and then enter another shaft using dampers at each exit point, instead of contiguous shaft construction. Note that this does not allow for the violation of any other code.	-\$1,000/ DUCT TRANSITION
F138-13	903.3.8 Added and Modified: More restrictions have been placed on limited area sprinkler systems, including a reduction in the system size to a maximum of six sprinklers within a single fire area. Additional sections were added to clarify requirements for piping arrangement, supervision, and calculations.	\$5,000/ SPRK SYSTEM
F157-13, F158-13	907.2.3 Added and Modified: Exception 1 was changed to allow Group E occupancies with an occupant load of 50 or less to be exempt from the manual fire alarm system requirement. Exception 2 was added to require only a manual fire alarm system for Group E occupancies with an occupant load ranging from 51-100.	-\$5,000/ ALARM SYSTEM
F174-13	907.6.3 Added: Initiating device identification requires that the fire alarm system identifies the specific initiating device address, location, device type, floor level status as well as indication of normal alarm, trouble, and supervisor status, as appropriate. Exceptions include single story building less than 22,500 sq ft, manual systems with no more than water flow and 10 extra initiating devices, replacing existing systems, and special initiating devices.	\$5,000
F185-13	909.4.7 Added: Requirement to consider the effects of interaction with the operation of multiple smoke control systems for all smoke control system designs scenarios.	\$3,000
FS141-12	909.21.1.1 Added: Permission for ventilation systems, other than hoist way supply air systems, to be permitted to exhaust air from adjacent spaces on the fire floor, two floors, immediately below and one floor immediately above the fire floor to the building's exterior where necessary to maintain positive pressure relationships during operation of the elevator shaft pressurization system.	\$1,000

*For prescriptive Code changes only.

Excerpts – Cursory Review of NFPA 1, 70 and 101

APPENDIX H - Table 8. IBC-FPC Changes Cost Impact

NFPA	CHANGE SUMMARY	Part of Change?	ESTIMATED AMOUNT*
101	1029.6.2 Smoke Protected Assembly Seating. Requires a life safety evaluation where reduced width requirements for smoke protected assembly seating is desired.	N	
70	108.3 Temporary Power for Temporary Structure and Uses. Temporary power to a temporary structure before completion shall comply with the requirements specified for temporary lighting, heat or power in 70.	N	
70	415.11.1.8 Electrical power in fabrication areas. All electrical equipment and devices in a fabrication area shall comply with 70	N	
70	904.3.1 Wiring for Alternative Automatic Fire Extinguishing Systems. Electrical wiring shall be in accordance with 70	N	
70	907.6.1 Wiring. All wiring for fire alarm system shall comply with 70.	N	
70	909.12.2 Wiring for Detection Systems. For all detection and control systems, in addition to meeting all requirements of 70, all wiring, regardless of voltage shall be fully enclosed within continuous raceways.	N	
70	909.16.3 Control Action and Priorities. On off and open close control actions shall have highest priority of any control point within the building, except power disconnects required by 70.	N	
70	910.4.6 Control Wiring of Smoke Control Systems. Wiring for the operation and control of mechanical smoke removal systems shall be connected ahead of the main disconnect in accordance with Section 701.12.E of 70.	Y	
70	1205.4.1 Controls for Stairway Lighting. The control for activation of the requires stairway lighting shall be in accordance with 70	N	

*For prescriptive Code changes only.

Preliminary Findings

- Table 8 (Appendix H) summarizes the key fire and life safety related changes that have occurred between the 2012 and 2015 Editions of the IBC.
- Approximately 67% of the code changes identified in the table result in no cost impact.
- The remaining code changes, identified as a decrease or increase in cost impact, result in 12% and 21% respectively of the total code changes summarized.

QUESTIONS ?