Energy Code Compliance Roundtable

July 11, 2024

Alamo Area Council of Governments

Who is SPEER?

- REEO – Regional Energy Efficiency Organization
- Member-based, non-profit 501(c)3 organization
- 50+ members from a wide cross section of Energy Efficiency Industries
- Focused on Outreach Education and Collaboration on Clean Energy

SPEER

The South-central Partnership for Energy Efficiency as a Resource

CELC Community Efficiency Leadership Coalition

What is the CELC? (have over 50+ active members)

A collaborative network of Texas cities, school districts, and other public entities engaged in partnership and resource exchange to expand adoption of energy management best practices in the public sector.

How can my city get involved?

•Apply at this link

Who can join CELC?

•Open to staff of any public jurisdiction including:

- City and county governments
- Public school districts
- Universities
- State agencies

Cost?

FREE, funded by State Energy Conservation Office

For more information:
Shaun Auckland M.S. LEED GA
Local Governments Program Manager, SPEER
512-279-0765 | cities@eepartnership.org

Benefits of Joining

- **Monthly Virtual Coffee Hours:** Engage in informal, informative sessions to network and share insights.
- **Personal Invitations to Cohorts:** Exclusive access to join specialized groups tailored to your needs.
- **Portfolio Baselining and Benchmarking Assistance:** Get help in setting benchmarks and baselining your projects.
- **Network of 1,000+ Professionals:** Connect with a vast community of like-minded professionals.
- **Ten Hours of Technical Assistance:** Benefit from expert advice and support for your projects.
- **Access to Templates:** Utilize ready-made templates for climate plans, support letters, and energy plans.
- **Monthly Resource-filled Newsletters:** Stay informed with the latest resources and updates.
- **Closed CELC LinkedIn Group:** Join a private group for information sharing and collaboration.

SPEER is here to help!

- Webinars
- In-Person Trainings
- Field or Jobsite Trainings
- Assist with Energy Code adoption
- Assist with Code amendments
- Technical Assistance with any version of the IECC both Residential and Commercial
- Technical Assistance with ASHRAE 90.1 for commercial

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What are the Benefits of an Energy Code

- **Energy Efficiency**
  - Energy codes set standards for the design and construction to ensure lower energy usage
- **Cost Savings**
  - Homeowners can save money on their utility bills
- **Environmental Impact**
  - Reduces greenhouse gas emissions, helps combat climate change
- **Comfort and Health**
  - Better insulation, ventilation, and air quality lead to better living conditions
- **Durability and Resilience**
  - Homes can withstand extreme weather events and environmental stresses
- **Market Value**
  - Increased demand for energy efficient homes
- **Compliance and Consistency**
  - Ensures construction practices and compliance are met
- **Incentives and Rebates**
  - Homeowner could benefit from tax incentives and rebates from efficient appliances
- **Future-Proof**
  - Homeowner is better protected from increases in the cost of energy

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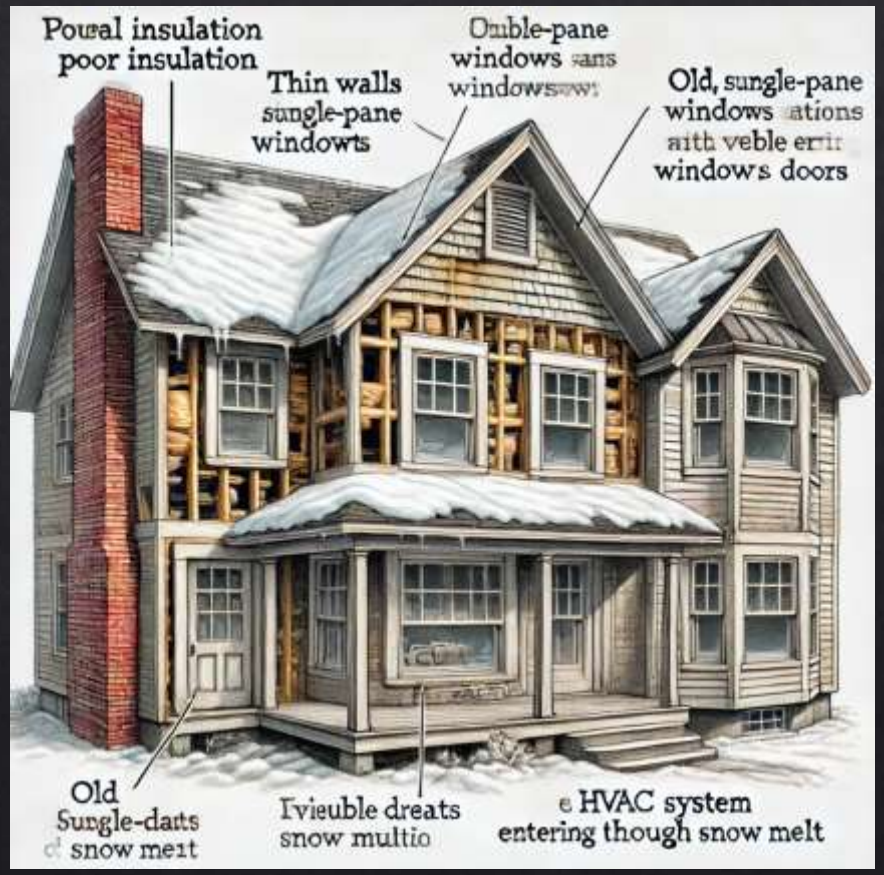
Consequences of Non-compliance

- Increased Energy Costs
  - Homeowner is forced to pay higher utility costs
- Decreased Comfort and Health
  - Poorly insulated results in uncomfortable living conditions
- Environmental Impact
  - Higher energy consumption, greater greenhouse gas emissions
- Legal and Financial Penalties
  - Builders and Developers could be forced to pay fines or legal actions
- Reduced Property Value
  - Loss of potential buyers for non-compliant homes
- Loss of Incentives
  - Ineligible for benefits
- Increased Maintenance Costs
  - More frequent repairs and maintenance costs
- Future Compliance Costs
  - Bringing a non-compliant home up to code will cost the seller or buyer more



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2024 IECC Highlights

R103.2.2 – Solar-Ready System: Construction Documents shall provide details for dedicated roof area, structural design for roof dead and live load, and routing of conduit for pre-wiring from solar-ready zone to electrical service panel

R105.2 – Required Inspections: Now includes framing and air barrier rough-in inspection in addition to the insulation/pre-rock inspection

R303.2.2 – Radiant Barriers: Where installed, shall comply with ASTM C1313/C1313M

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2024 IECC Highlights

R401.2.5 – Additional Energy Efficiency Options: The 5 options have been replaced with a credit system. Minimum of 2 selected that must total 10 points or more

R401.3 – Certificate: Must now include the credit measures taken and any solar-ready zone information

R402.2.3 – Attic Kneewalls: They are now defined and listed the specific requirements of have the same R-value as the exterior walls and MUST include an air barrier on the attic side

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2024 IECC Highlights

R402.2.3.1 – Truss framing: This is now addressed in the code language stating that any truss separating conditioned from unconditioned spaces MUST have the same R-value insulation requirement as the above-grade walls

R402.2.13 – Heated Garages: Has been added to the Sunroom section for specific insulation requirements. Not required IF thermally isolated from the conditioned space

R402.5.1.1 – Air Barrier, Air Sealing and Insulation Table: Lots of changes were made. Now includes specific requirements for Common and Double Walls

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2024 IECC Highlights

R402.5.1.2 – Testing: Blower Door testing limits reduced to 4 ACH or 0.27 cfm/sq ft from 5 ACH or 0.30 cfm/sq ft.

R402.5.1.4 – Sampling: A sampling protocol was established for multi-family buildings. Includes blower door, duct testing and mechanical ventilation testing. Must include testing from each type, (top floor, ground floor, middle floor)

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2024 IECC Highlights

TABLE R403.3.6
MAXIMUM TOTAL DUCT SYSTEM LEAKAGE

	ROUGH IN	POST CONSTRUCTION
Duct systems serving more than 1,000 ft^2 of conditioned floor area	**cfm/100 ft^2 (LPM/ 9.29 m^2)**	**cfm/100 ft^2 (LPM/ 9.29 m^2)**
Air handler is not installed	3 (85)	NA
Air handler is installed	4 (113.3)	4 (113.3)
Duct systems located in conditioned space, with air handler installed	8 (226.6)	8 (226.6)
Duct systems serving less than or equal to 1,000 ft^2 of conditioned floor area	**cfm (LPM)**	**cfm (LPM)**
Air handler is not installed	30 (849.5)	NA
Air handler is installed	40 (1132.7)	40 (1132.7)
Duct systems located in conditioned space, with air handler installed	80 (2265.4)	80 (2265.4)

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2024 IECC Highlights

TABLE R403.5.4
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION TUBING

OUNCES OF WATER PER FOOT OF TUBE									
NOMINAL SIZE (inches)	COPPER TYPE M	COPPER TYPE L	COPPER TYPE K	CPVC CTS SDR 11	CPVC SCH 40	CPVC SCH 80	PE-RT SDR 9	COMPOSITE ASTM F1281	PEX CTS SDR 9
3/8	1.06	0.97	0.84	N/A	1.17	-	0.64	0.63	0.64
1/2	1.69	1.55	1.45	1.25	1.89	1.46	1.18	1.31	1.18
3/4	3.43	3.22	2.90	2.67	3.38	2.74	2.35	3.39	2.35
1	5.81	5.49	5.19	4.43	5.53	4.57	3.91	5.56	3.91
1 1/4	8.70	8.36	8.09	6.61	9.66	8.24	5.81	8.49	5.81
1 1/2	12.18	11.83	11.45	9.22	13.20	11.38	8.09	13.88	8.09
2	21.08	20.58	20.04	15.79	21.88	19.11	13.86	21.48	13.86

For SI: 1 foot = 304.8 mm, 1 inch = 25.4 mm, 1 liquid ounce = 0.030L, 1 oz/ft^2 = 305.15 g/m^2.

N/A = Not available.

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2024 IECC Highlights

TABLE R403.6.2
WHOLE-DWELLING MECHANICAL VENTILATION SYSTEM FAN EFFICACY[a]

~~FAN LOCATION~~SYSTEM TYPE	AIRFLOW RATE ~~MINIMUM~~ (CFM)	MINIMUM EFFICACY (CFM/ WATT)	TEST PROCEDURE
HRV, ERV, or balanced	Any	1.2 ~~cfm/ watt~~	HRV or ERV: CAN/CSA 439; Balanced without heat or energy recovery: ASHRAE Standard 51 (ANSI/AMCA Standard 210)
Range hood	Any	2.8	ASHRAE 51 (ANSI/AMCA Standard 210)
In-line supply or exhaust fan	Any	3.8 ~~cfm/ watt~~	
Other exhaust fan	< 90	2.8 ~~cfm/ watt~~	
	≥ 90 and < 200	3.5	
	≥ 200	4.0	
Air-handler that is integrated to tested and *listed* HVAC equipment	Any	1.2 ~~cfm/ watt~~	Outdoor airflow as specified. Air-handler fan power determined in accordance with the HVAC appliance's test method referenced by Section C403.3.2 of the IECC-Commercial Provisions.

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TABLE R404.1
LIGHTING POWER ALLOWANCES FOR BUILDING EXTERIORS

Base site allowance	400 watts
Uncovered parking areas and drives	0.4 W/ft^2
Building Grounds	
Walkways and ramps less than 10 feet wide	0.50 W/linear foot
Walkways and ramps 10 feet wide or greater, plaza areas, special feature areas	0.10 W/ft^2
Dining areas	0.65 W/ft^2
Stairways	0.70 W/ft^2
Pedestrian tunnels	0.12 W/ft^2
Landscaping	0.04 W/ft^2
Building Entrances and Exits	
Pedestrian and vehicular entrances and exits	14 W/linear foot of opening
Entry canopies	0.25 W/ft^2

TABLE R408.2
CREDITS FOR ADDITIONAL ENERGY EFFICIENCY

Measure Number	Measure Description	Credit Value								
		Climate Zone 0 & 1	Climate Zone 2	Climate Zone 3	Climate Zone 4	Climate Zone 4C	Climate Zone 5	Climate Zone 6	Climate Zone 7	Climate Zone 8
R408.2.1.1(1)	≥2.5% Reduction in total UA	0	0	0	1	1	1	1	1	1
R408.2.1.1(2)	≥5% reduction in total UA	0	1	1	2	2	3	3	3	3
R408.2.1.1(3)	>7.5% reduction in total UA	0	1	2	2	2	3	3	4	4
R408.2.1.2(1)	0.22 U-factor windows	1	2	2	3	3	4	4	4	5
R408.2.1.2(2)	U-factor and SHGC for windows per Table R408.2.1	1	1	1	0	0	0	0	1	2
R408.2.1.3	Cool Roof	TBD	TBD	TBD	TBD	TBD	0	0	0	0
R408.2.2(1)	High performance cooling system option 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
R408.2.2(2)	High performance cooling system option 2	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
R408.2.2(3)	High performance gas furnace option 1	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
R408.2.2(4)	High performance gas furnace option 2	0	0	0	0	0	TBD	TBD	TBD	0
R408.2.2(5)	High performance gas furnace and cooling system option 2	TBD	TBD	TBD	TBD	TBD	0	0	0	TBD

R408.2.1.1 Enhanced envelope performance UA The proposed total building thermal envelope UA shall be calculated in accordance with Section R402.1.5 and shall meet one of the following:

1. Not less than 2.5 percent of the total UA of the *building thermal envelope*.
2. Not less than 5 percent of the total UA of the *building thermal envelope*.
3. Not less than 7.5 percent of the total UA of the *building thermal envelope*.

R408.2.1.2 Improved fenestration Vertical fenestration shall meet one of the following:

1. U-factor equal to or less than 0.22
2. U-factor and SHGC equal or less than that specified in Table R408.2.1.2

TABLE R408.2.1.2
IMPROVED FENESTRATION

Climate Zone	Fenestration U-factor	Fenestration SHGC
0	0.32	0.23
1	0.32	0.23
2	0.30	0.23
3	0.25	0.25
4	NA	NA
5	NA	NA
6	NA	NA
7 and 8	0.25	NA

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2024 IECC Highlights

- Changes to Chapter 5 for Alterations, Additions, and Remodels
  - Includes HVAC sizing requirements, including Manual J & S and Duct Design, and Controls
- Additions must comply to the Additional Efficiency Packages from the 2021 IECC

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The South-central Partnership for Energy Efficiency as a Resource

Any Questions?

Thank you!

My Contact Info:

Randy Plumlee

214.803.2330

rplumlee@eepartnership.org

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The South-central Partnership for Energy Efficiency as a Resource

PLAN REVIEW ENERGY TEAM

DEVELOPMENT SERVICES

TEAM FORMATION

ENERGY TEAM

- Supervisor
  - Jasmine Cigarroa

- Senior Plans Examiners
  - Emmanuel Guerrero
  - Joseph Tovar
  - Raul Melendez
  - Richard Rosales

COSA CODE ADOPTION

COSA CODE ADOPTION

- First IECC adoption in 2007
- COSA Development Services is an active participant in ICC Committee Action Hearings
- IAS Accredited
- COSA Development Services hosts two SABCA events annually

WHAT HAS CHANGED?

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- Dedicated staff performs an all inclusive and thorough Technical Energy Review for Commercial projects. Reviews are no longer divided amongst the disciplines (Building, Mechanical, Electrical, Plumbing).

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- Staff is now available for Preliminary Plan Reviews for new construction to address IECC compliance.

- Revised Information Bulletin 221 to indicate required information per IECC/ASHRAE 90.1

WHAT HAS CHANGED?

- Self-certification and review by architects and engineers a.k.a ‘Letter of Energy Review’ has been eliminated from the Commercial application process.

WHAT HASN'T CHANGED?

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- Residential Energy reviews will be conducted as part of the Residential review process.

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- Residential Energy reviews will be conducted as part of the Residential review process.
- Inspections will be conducted in accordance with approved plans.
- Energy Compliance letters and Commissioning reports submitted to DSD prior to issuance of Certificate of Occupancy, e.g. Preliminary Report of Commissioning for Mechanical, Plumbing Hot Water and Lighting Control Systems.

CITY OF SAN ANTONIO TEXAS

INFORMATION BULLETIN 221

CITY OF SAN ANTONIO — TEXAS —

DEVELOPMENT SERVICES

TO: Development Services Customers

SUBJECT: **INFORMATION BULLETIN 221**
Commercial 2021 IECC Submittal Requirements

DATE: August 6, 2018 / *Revised January 2019 / June 12, 2023 / March 1, 2024*

CREATED BY: Plan Review Division

Purpose:

As a customer service initiative, the Development Services Department (DSD) created this bulletin to guide customers through the application process regarding compliance with the International Energy Conservation Code (IECC). This information bulletin defines, clarifies, and sets specific requirements and guidelines for both DSD customers and DSD employees. *This IB was modified to list requirements for plan review submittal and the 2021 Energy Compliance Forms for inspections.*

Scope:

This Information Bulletin consists of several parts:

Part I lists and describes the energy submittal specific information needed (design elements, data, calculations, reports) to submit to Plan Review as part of a commercial building permit application package.

Part II describes when, and for what types of buildings the 2021 Commercial IECC is applicable. This includes information about remodels of existing buildings, how to submit for shell and interior finish out phased permits, and how to submit for mixed use buildings that include R-2, R-3, and R-4

ENERGY SUMMARY SHEET

Each compliance Path and sub-paths have mandatory provisions that must be met as follows

ENERGY SUBMITTAL FOR PLAN REVIEW - A Building Permit Package shall include the following energy information for all new buildings, shells/interior finish outs, as well as additions/remodels where required by Chapter 5 of the 2021 IECC:

A. REQUIRED – **Energy Summary Sheet(s)** -Submit as part of the design drawings within the pdf construction documents. The Energy Summary Sheet should be a sheet within the plans itself for review and inspection purposes. The Energy Summary Sheet(s) shall contain the following information:

1. Compliance Path Chosen.
2. Additional Energy Efficiency Package(s) chosen if one of the three IECC Prescriptive Paths is chosen.
3. The Energy Summary Sheet must include either the required information below OR must indicate which sheet(s) or the document in which the information is located.

INORMATION BULLETIN 221

- Outlines IECC and ASHRAE compliance paths:

- IECC Prescriptive
  Sections C402 through C406 w/ 3 sub-options
- Total Building Performance Path
  Section C407
- 2019 ASHRAE 90.1 Prescriptive
  Section 5.5
- ASHRAE Energy Cost Budget Performance Path
  Section 11
- ASHRAE Performance Rating Method
  Appendix G

INORMATION BULLETIN 221

Updated Submittal Requirements:

Building Systems –

- Air Barrier and air sealing methods shown on the plans, indicating materials used and the location of the air barrier
- Specify method chosen for C402.1.3: R-Value Method, U-Factor Method, or Component Performance Alternative
- Provide vertical fenestration area
- Provide skylight area
- Provide projection factor and calculation
- Indicate Additional Efficiency Packages chosen and

INORMATION BULLETIN 221

Updated Submittal Requirements:

Total Building Performance Path –

- Provide a third-party compliance report showing:
  Envelope values and fenestration areas
  Inspection checklist that shows the estimated annual energy cost of the standard reference design and the proposed design
- Documentation of the DCV Demand Control Ventilation, ERV Energy Recovery Ventilator or HRV Heat Recovery Ventilator

INORMATION BULLETIN 221

Updated Submittal Requirements:
Mechanical Systems –

- Economizer description including controls and fault detection and diagnostics.
- Commissioning Plan Mechanical and Hot Water if required by C408.2. Provide narrative of testing activities, list of equipment to test, functions and controls to test, conditions required for the test and measurement criteria.

INORMATION BULLETIN 221

Updated Submittal Requirements:
Electrical / Lighting / Power Systems –

- Location of primary and secondary daylight zones shown on the floor plans
- Lighting fixture schedule with wattage and control narrative shown on the plans
- Interior and exterior lighting power with building area method and calculations
- Commissioning and Lighting Control Testing Plan. Indicate testing for Occupant Sensors, Time Switch Controls, Daylight Responsive Controls.

Mechanical Systems – Generally on Mechanical Sheets

Energy System	Location of Information
Mechanical Load Calculations for heating and cooling loads	For Engineered Designs – provide basic climatic input data and total BTUH For non-engineered – provide Manual N or equivalent calculations
Mechanical System Equipment - type, sizes and efficiencies	Show in notes or in a table
Economizer - provide description, indicate if fault detection and diagnostics are included	Show in notes or in a table
Mechanical Control System – general description for controls for a system/components	Show in notes or in a table related to the equipment/component
Mechanical Duct/HVAC Piping insulation – provide R-Values	Show in notes typically
HVAC System Fan Motor – horsepower, efficiencies and controls	Shown in tables or notes

Hot Water System – Generally on Plumbing Sheets

Energy System	Location of Information
Hot Water System Controls	Show in notes
Service Hot Water Equipment - type, sizes and efficiencies	Show in notes or in a table
Hot Water Piping insulation – provide R-Values	Show in notes typically

Electrical Power / Lighting Systems – Electrical / Architectural Sheets

Energy System	Location of Information
Daylight Zones – Primary and Secondary Daylight Zones	Shown on Floor Plans
Lighting Fixture Schedule – Fixture Wattage and Control narrative	Show in a table
Interior and Exterior Lighting Power Calculations – provide Building Area method or the Space by Space method	Show in notes or in a table, or may be in the COMcheck

TRENDING REVIEW COMMENTS

- “Include on plans how proposed automatic receptacles will function.”
- “Please update wattage for lights and fixture count on submitted COMCheck.”
- “Items are not matching what is shown as proposed on lighting floor plan.”
- “Corridors, classrooms, multipurpose room, breakrooms are missing vacancy sensors.”
- “Indicate on plans controls for circulation pump.”
- “Hot water circulation loop – lavatories are not tied to true loop, allowable distance not met”.
- “Pipe size must be maintained in loop for lavatories.”
- “Missing deadband information.”

- “Provide certification for doors and windows regarding air leakage.”
- “Please provide specification sheets for economizers.”
- “Provide walk in cooler and walk in freezer spec sheets.”
- “Please provide in submittal documents the voltage drop.”
- “Missing required Annual Energy Cost Report.”
- “Provide a commissioning plan for the electrical and mechanical systems.”

CITY OF SAN ANTONIO TEXAS

INSPECTIONS AND COMPLIANCE LETTERS

Directions for Submittal of Letters/Reports to Clear Inspections

Attached are two forms:

1. **Commercial Energy Compliance System Letter(s)** – this form (two pages) covers six (6) different inspections. The form may be submitted once to cover all inspections, or up to six different forms submitted, one letter for each inspection. The second page requires a list of items (energy values) installed.
2. **Commercial – Preliminary Commissioning Report / Testing Reports** –This form may only be submitted by the architect, engineer, or the certified commissioning agent.

Not every project requires all inspections or commissioning or other testing. These are dependent on the energy systems being installed. The on-line permit lists all the inspections required for your specific project.

The Energy Compliance System Letter(s) covers the following inspections:

Inspection on Permit:	**Energy Conservation Letter to Clear Inspection**
Energy - Commissioning Insulation Air Barrier	Building Thermal Envelope – Insulation Wall Insulation R-Values Ceiling Insulation R-Values Air Barrier
Energy - Commissioning Insulation Roof	Building Thermal Envelope – Roof Reflectance Roof Solar Reflectance & Thermal; Emittance
Energy - Commissioning Windows	Building Thermal Envelope – Windows Fenestration U-factors SHGC and VT Minimum and Maximum Skylights
Energy - Commissioning Hot Water Recirculation	Plumbing Systems– Service Hot Water Systems Water Heating Equipment Efficiencies, Hot Water Piping Insulation, Controls for Hot Water Recirculation
Commercial Mechanical System Letters	Mechanical Systems Minimum Equipment Efficiencies (Required) HVAC System Controls (Required) Duct Insulation and Sealing (Required) Energy Recovery System, Kitchen Exhaust System, Demand Controlled Ventilation, Fan Efficiencies Economizers, Walk-in Coolers Freezers/Refrigeration
Energy - Commercial Electrical System Letters	Electrical Systems Occupant Sensors, Time Switch Controls, Daylight Responsive Controls, Electric Motor Efficiencies

The Preliminary Commissioning / Testing Reports Form covers the following inspections:

Preliminary-Commissioning Report and Testing Reports	**Commissioning or Testing Inspection –** With the form, the preliminary commissioning report or duct/air barrier testing report is required.
Energy - Commissioning Mech Control System Energy - Commissioning Hot Water Recirculation	Commissioning Mechanical System Controls System Adjusting and Balancing Functional Performance Testing, Equipment Controls and Economizers Commissioning Hot Water Recirculation Controls
Energy - Commissioning Electrical Controls*	Commissioning Lighting Controls Occupant Sensor Controls, Time Switch Controls, Daylight Responsive Controls
Energy - Commissioning HighPressDucts	Duct Leakage Testing for High Pressure Ducts – submit the report
Energy - Batch Test for Apartments	Building Pressure Testing of the Air Barrier – submit the report

*Corresponds to the Commissioning Plan submitted with the permit application

DEVELOPMENT SERVICES

Commercial Energy Compliance System Letter(s)

The following Energy Conservation Letters section may be filled out by the Architect, Engineer, General Contractor, Installer, Commissioning Agent or Owner's Agent.

Your Name: _____

Company Name _____

Address _____

_____

Phone: _____ **Email Address** _____

Project Permit A/P Number(s): _____

Project Address: _____

Building Number(s) _____

Suite Number _____

Energy Conservation Letters (*Check only the appropriate systems being submitted*)

SYSTEM	(X)	SYSTEM	(X)
Building Thermal Envelope – Insulation:		**Mechanical Systems:**	
Wall Insulation R-Values		Minimum Equipment Efficiencies	
Ceiling Insulation R-values		HVAC System Controls	
Air Barrier		Duct Insulation and Sealing	
Building Thermal Envelope - Roof:		Energy Recovery System	
Roof Solar Reflectance & Thermal Emittance		Kitchen Exhaust System	
		Demand Controlled Ventilation	
Building Thermal Envelope – Windows:		Fan Efficiencies	
Fenestration U-factors SHGC, and VT		Economizers	
Minimum and Maximum Skylights		Walk-in Coolers Freezers/Refrigeration	
Plumbing – Service Hot Water Systems:		**Electrical Systems:**	
Water Heating Equipment Efficiencies		Occupant Sensors (installed per plan)	
Hot Water Piping Insulation		Time Switch Controls (installed per plan)	
Controls for Hot Water Recirculation		Daylight Responsive Controls (installed per plan)	
		Electric Motor/Transformer Efficiencies	

(Fill out and submit the next page providing details of the installation)

DEVELOPMENT SERVICES

Commercial Energy Compliance System Letter(s)

Provide the following information: (provide detail(s) of the installation based on which energy system is being submitted) - Provide on a separate sheet as needed) Place "N/A" for items that do not apply to this Energy Compliance System Letter being submitted.

R Values or U-Factors of the Roof system/Ceiling_____

_____

R Values or U-Factors of the Exterior Envelope Walls_

_____

R Values or U-Factors of Floor if applicable_____

Roof Solar Reflectance / Thermal Emittance_____

Fenestration – Vertical Window and Skylights U-Factors, Solar Heat Gain Coefficients, and Vertical Transmittance

_____

_____

Insulation R Values of Mechanical ducts_____

Insulation R Values of Plenum_____

Insulation R Values of Plumbing Hot water piping systems_____

Mechanical Equipment Efficiencies (in units as appropriate to the particular equipment)_____

_____

Plumbing Hot Water Equipment Efficiencies (in units as appropriate to the particular equipment) _____

_____

COMPLIANCE STATEMENT:

By checking this box, I am confirming that at the time of this inspection all items checked and noted above were installed, and/or inspected in accordance with the International Energy Conservation Code. I am affirming that this project Is consistent with the City approved plans and the Energy Compliance Path chosen during design and permitting. ☐

DEVELOPMENT SERVICES

COSA Energy Preliminary Commissioning Form

The following Pre-Commissioning Statement must be filled out by either the Architect, Engineer, or Certified Commissioning Agent

Preliminary Commissioning Report & Testing Reports, Including High Pressure Ducts and/or Air Barrier (attach testing results/report(s) are required to be submitted with this form)

Project Name:_____ Permit Number:_____

Project Address:_____

(check which Preliminary Commissioning Report and/or Testing Report is being submitted to fulfill inspection requirements of this project – Check any that apply to this submittal) (Check the appropriate Commissioning/Report being submitted)

Type of Commissioning	(Check)
Commissioning Mechanical System Controls	
System Adjusting and Balancing C408.2.2	
Functional Performance Testing, Equipment Controls and Economizers C408.2.3	
Commissioning Hot Water Recirculation Controls C408.2.3.2	
Commissioning Lighting Controls C408.3	
Occupant Sensor Controls	
Time Switch Controls	
Daylight Responsive Controls	
Duct Leakage Testing for High Pressure Ducts if applicable C403.12.2.3	
Building Pressure Testing of the Air Barrier (if required by the Architect) C402.5.3	

COMPLIANCE STATEMENT:
Qualified individuals from this office visited the site to perform the Preliminary Commissioning and/or Duct/Air Barrier Testing checked above for general conformance with the previously submitted Commissioning Plan, Architect/Engineer's design and requirements of the currently adopted International Energy Conservation Code.

In my opinion, based on our experience, knowledge, information and belief, the Preliminary Commissioning Report and/ or Testing Report(s) submitted accurately reflects the testing of controls or systems checked above.

Upload these forms as pdf documents to the Commercial Permit record within the BuildSA Customer Portal: https://aca.sanantonio.gov/CitizenAccess/Welcome.aspx

Date:_____

Name (Print): _____

THANK YOU!

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THIRD PARTY AUDITS/CX

AGENDA

INTRODUCTION

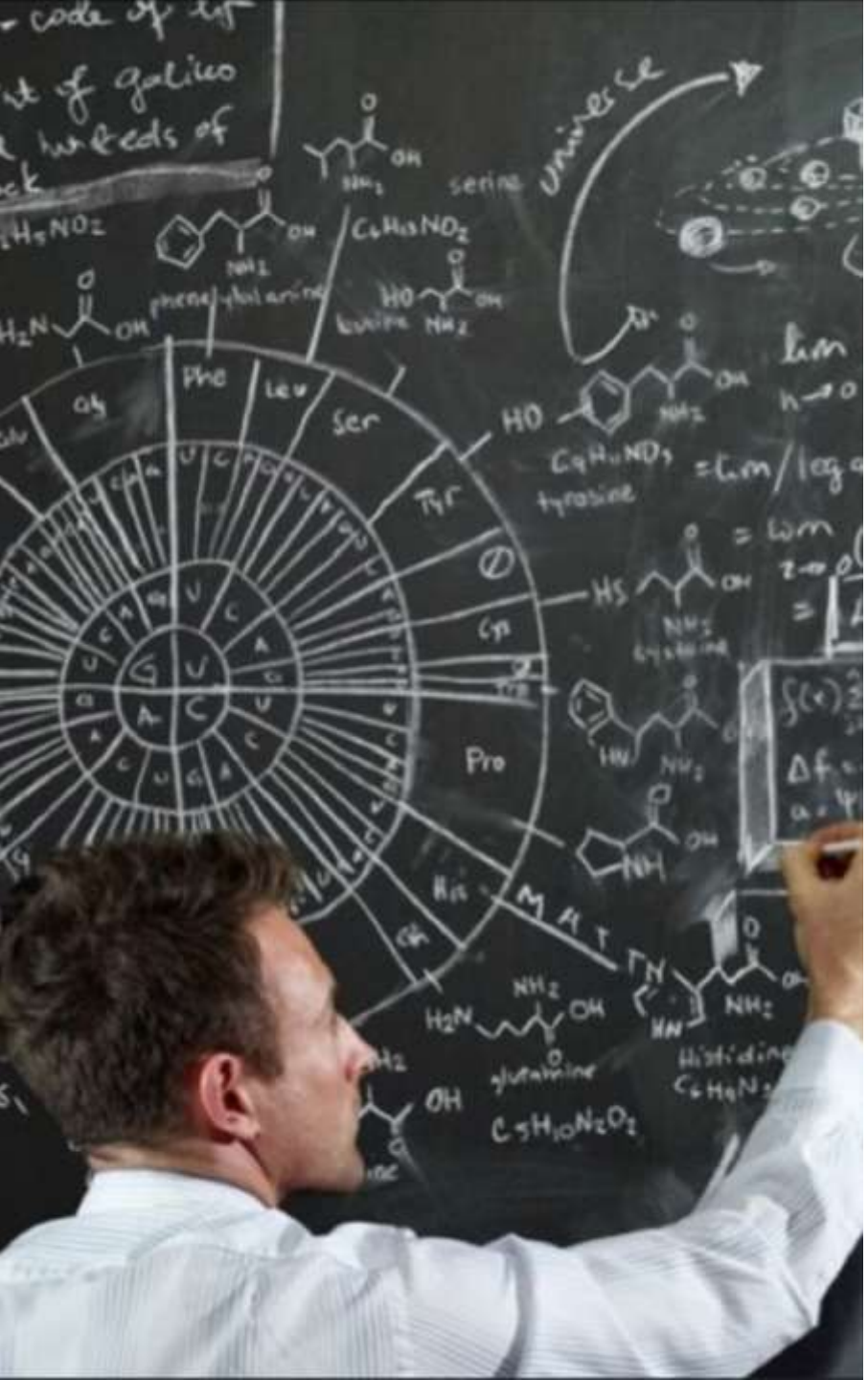
WHAT IS ENERGY AUDITING/CX

ADVANTAGES OF DATA

TIPS & TAKEAWAYS

QUESTIONS

INTRO – JONATHAN HENDERSON TECHNICAL SERVICES SOUTH



WHAT IS AN AUDIT/CX?

- AUDIT - Verification of energy usage for existing facilities, modeling for new buildings. Verifying accurate scope and specs followed.
- COMMISSIONING (CX) – Verifying correct equipment installed and functional performance testing is accurate and all data recorded for customer.
- Holds contractors and subcontractors to their word
- Prevents liability

ADVANTAGES OF INTEGRATION / MSI

Streamlined Accuracy and oversite

- Creates baseline of truth for project

Ability to hold Subcontractors accountable

- Data creates log of systems/ practices for project and if they meet code/ scope

Cost savings

- Auditing and CX create accountability

Better overall understanding of systems

Easier to provide training to customers

Create more accountability

Historical record for future

Creates and incentivizes pricing options – apples to apples

FINAL TIPS & TAKEAWAYS

Understand what an energy audit / CX means -

- Create accountability at outset of design

Gather as much info as possible

- Drawings, schematics, as-builts, O&M Manuals, pics

Align expectations with building owners, reps and subs

- More information may be needed prior to any commitments
- Gain understanding of their site

Audits and CX are a powerful tool for a customer in creating an accurate representation of a building design

Care must be taken at the discovery phase to set expectations

Gain as much insight into the project as possible to minimize risk

Utilize existing building standards as your guide

QUESTIONS?

THANK YOU!

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Effective Discussion Tips

- One speaker at a time
- Ensure everyone has an opportunity to contribute
- Respect each others' thinking and contributions
- There are no wrong answers

01 Discussion

- How do you ensure personnel are trained in new code(s)?

02 Discussion

- What are the challenges in keeping up with the frequency of energy code updates?

03 Discussion

- How do you handle non-compliance?

04 Discussion

- What resources do you lack and how do they impact your ability to enforce energy codes effectively?

05 Discussion

- How do you work with builders and developers to ensure they understand code requirements before construction begins?

06 Discussion

- How thorough and reliable is the documentation provided by builders and developers in demonstrating compliance with energy codes?

07 Discussion

- What are barriers to achieving accurate energy code data?

08 Discussion

- What has been your experience with third-party verification for energy codes?
- What has been your overall experience with enforcing energy codes?

Thank You For Your Time

Take Our Survey!

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