TRI-COUNTY
REGIONAL ENERGY NETWORK
SAN LUIS OBISPO • SANTA BARBARA • VENTURA

Critical Details for Accurate Load Calculations

Judy Rachel – Home Performance Pro

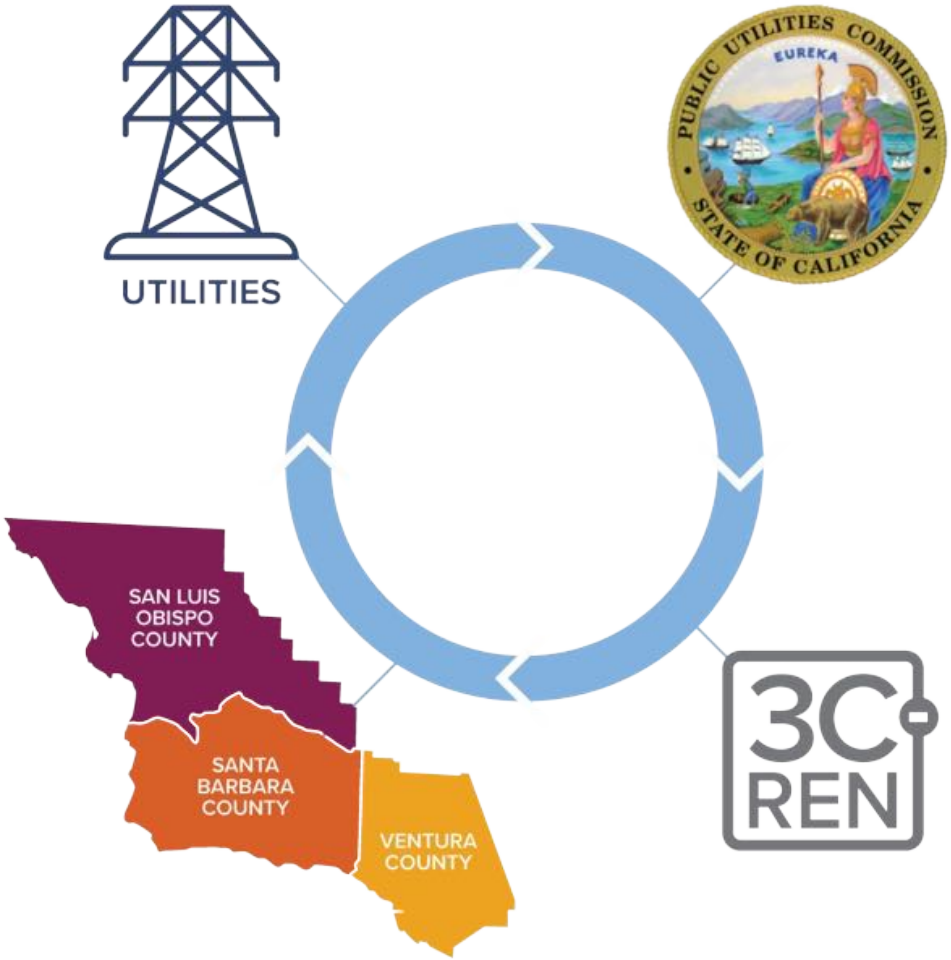
September 2, 2026



Before We Begin

Here are some quick reminders:

- Call in? Please **share** full name to confirm attendance
- To receive LUs, you **must attend** at least 80% of the training. Attendance will be verified
- Use the "**Chat**" to share questions or comments
- Slides/recording are **shared** after most events and can be found on 3C-REN's on-demand page
- 3C-REN does **not** allow **AI notetakers**, unless used to accommodate a disability



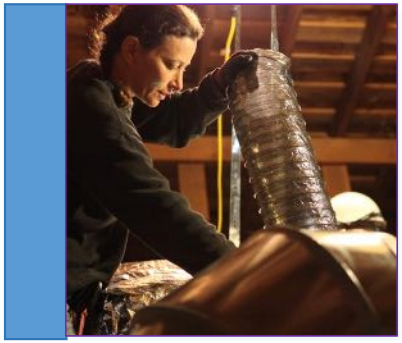
Tri-County Regional Energy Network

3C-REN is a collaboration between the tri-counties

Our programs reduce energy use for a more sustainable, equitable and economically vibrant Central Coast

Our free services are funded via the CPUC, bringing ratepayer dollars back to the region

PRESENTER – JUDY RACHEL



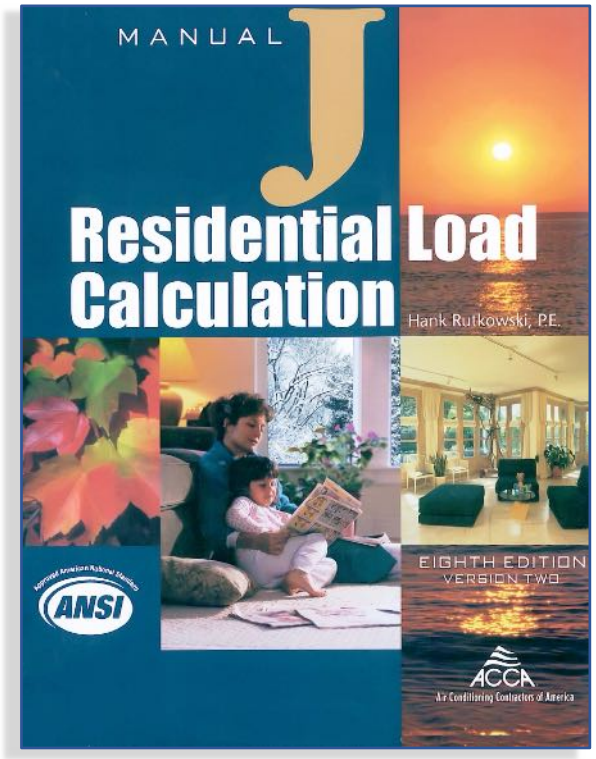


1. Home Performance Technician
2. Contractor Field Mentor
3. Perform load calculations and HVAC system design
4. Field Research/Building Performance Testing
5. Diagnostic testing of existing HVAC systems
6. Trainer for Home/High Performance Homes, ACCA load calculations, Healthy Homes, use of diagnostic test equipment, combustion safety, etc.

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Objectives

- ❑ Gain knowledge of the critical details needed to create accurate load calculations based upon ACCA Manual J procedures.
- ❑ Have a list of ACCA Manual J do's. The mandatory requirements for an accurate load calculation.
- ❑ Have a list of ACCA Manual J don'ts that will result in oversized, wildly inaccurate load calculations.



We will not covering every aspect of the ACCA Manual J procedures.

We will not be covering system selection, system design or air distribution.

WHY A LOAD CALCULATION IS NECESSARY

BUILDINGS ARE ENVIRONMENTAL SEPARATORS





What A Load Calculation Is

The measure of energy the heating and / or cooling system needs to add or remove from a space to provide the desired level of comfort.

Benefits of a Detailed and Accurate Load Calculation

Using the smallest defensible load approach to equipment sizing optimizes system performance and maximizes customer satisfaction.

Manual J v2.5 pg xv





ACCA *MANUAL J* DO'S

Excerpts of Mandatory Requirements

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Protocols for Estimating Heating and Cooling Loads

Be honest and aggressive.

Manual J is an engineering tool that has an inherent and appropriate factor of safety.

Any attempt to add other safety factors or to manipulate the procedure may result in unacceptable performance (especially at part load).

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Extreme conditions are not used for load calculations because, on average, they only occur for 1% of the hours per year (88 hours, or less).

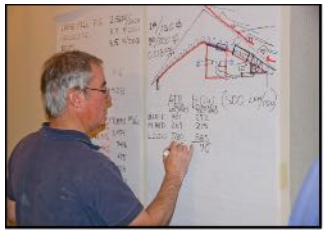
Bin Temperature Data

Location: San Luis Obispo, CA, US

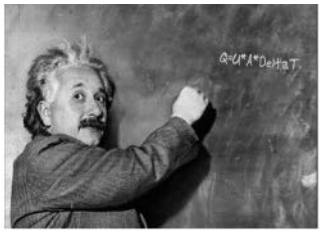
Temp Range	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
105 to 109	0	0	0	0	0	0	0	0	0	0	0	0	0
100 to 104	2	0	0	0	0	0	0	0	0	1	1	0	0
95 to 99	10	0	0	0	1	1	1	0	1	3	3	0	0
90 to 94	28	0	0	0	1	2	2	3	3	8	8	1	0
85 to 89	59	0	1	2	3	4	6	7	8	12	13	3	0
80 to 84	169	3	4	5	7	10	15	29	28	32	24	11	1
75 to 79	370	8	9	13	16	22	37	67	75	56	41	20	6
70 to 74	684	23	18	30	33	51	93	110	105	97	67	40	17
65 to 69	752	32	28	52	55	83	91	79	73	84	87	57	31
60 to 64	1398	82	77	97	109	130	117	139	161	145	143	112	86
55 to 59	2104	149	140	157	141	170	189	245	237	200	176	155	145
50 to 54	1768	176	179	208	210	204	149	63	51	73	126	157	172
45 to 49	851	135	121	117	109	58	19	2	2	9	46	100	133
40 to 44	332	76	54	43	25	7	1	0	0	0	8	41	77
35 to 39	192	47	34	19	9	2	0	0	0	0	1	20	60
30 to 34	39	12	7	1	1	0	0	0	0	0	0	3	15
25 to 29	2	1	0	0	0	0	0	0	0	0	0	0	1
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	8760	744	672	744	720	744	720	744	744	720	744	720	744



This is a decision to optimize occupant comfort, and system efficiency for 99% of the hours per year; knowing that extreme weather may result in a minor indoor temperature excursion for a few hours per year, and also knowing that such temperature excursions may not occur.



No Safety Factors Needed



A usable load calculation procedure is a gross simplification of the physics and mathematics that apply to the problem.

This reduction is based on a set of assumptions, and a set of procedural defaults. Good engineering practice, must error on the safe side when such decisions are made.

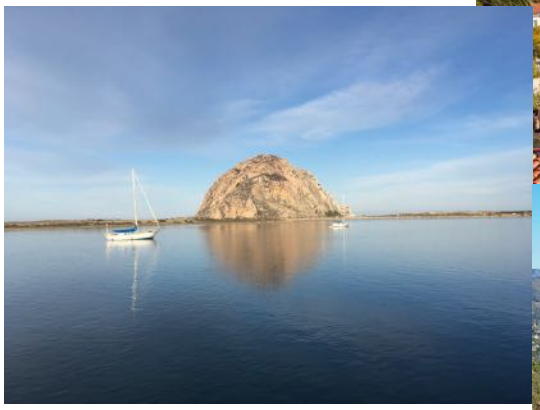
Therefore, there are a set of implicit factors of safety embedded in a simplified procedure, so it is highly probable that the aggregate safety factor will compensate for a few hours of extreme weather.

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The Dwelling's Location

- When making this decision consider:
  - Elevation
  - Proximity to a large body of water
- If city data cannot be found consult the local building department







Outdoor Design Conditions

The weather data used for outdoor design temperatures shall be extracted from:

Either Manual J Table 1A or Table 1B

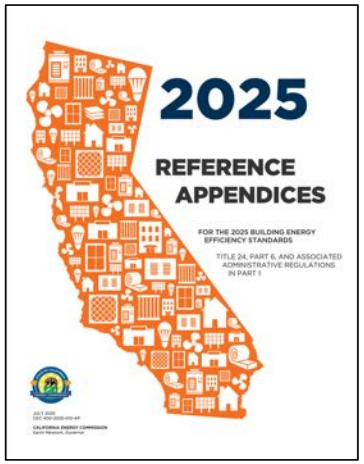
OR

ASHRAE climatic database

(As specified by the local building code or superseded by local code)

Select the nearest similar city or town



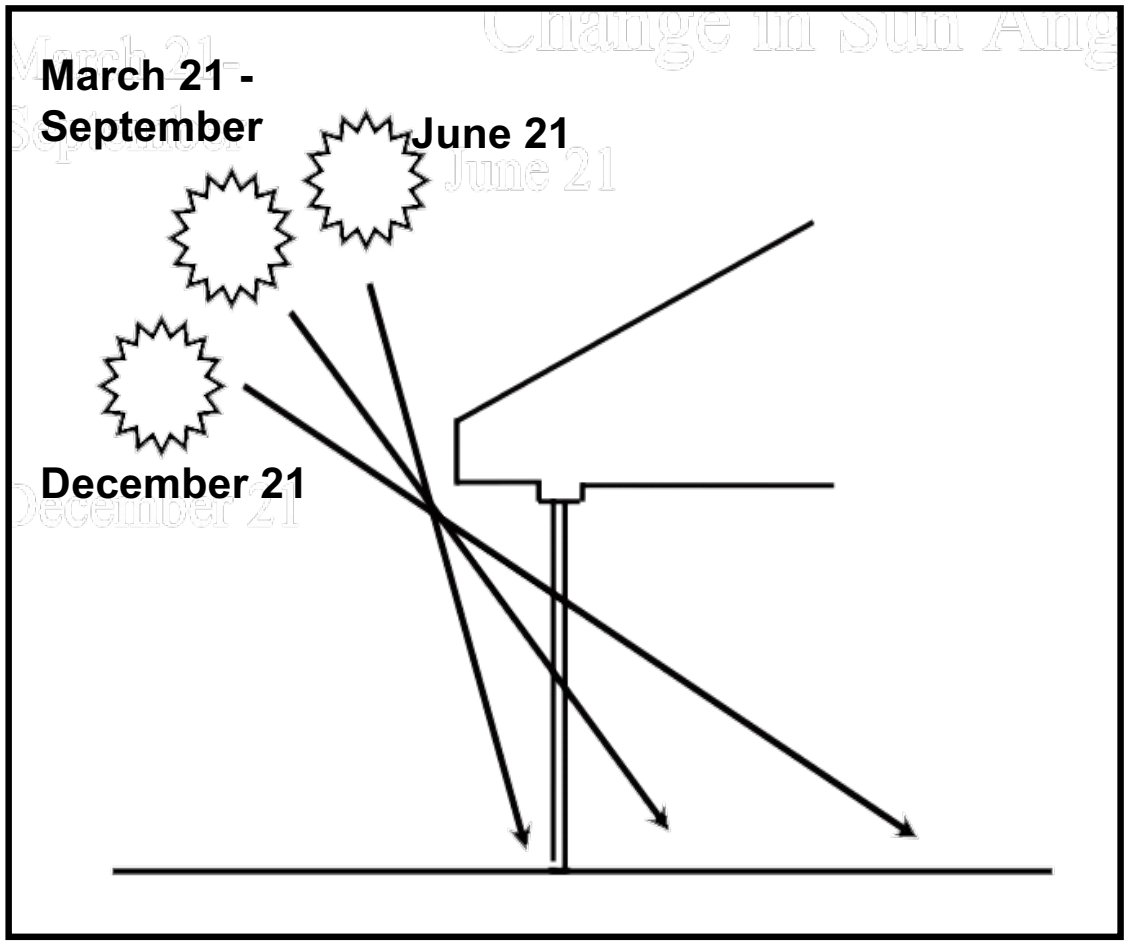


City	Latitude	Elevation (ft)	Longitude	Cooling 0.10% DB	Cooling 0.10% MCWB	Cooling 0.50% DB	Cooling 0.50% MCWB	Cooling 1.00% DB	Cooling 1.00% MCWB	Cooling 2.00% DB	Cooling 2.00% MCWB	Design Wetbulb 0.1%	Design Wetbulb 0.5%	Outdoor Daily Range	Heating Winter Median of Extremes	Heating Design Drybulb (0.2%)	Heating Design Drybulb (0.6%)	Heating HDD*
Cachuma Lake	34.6	781	120	97	69	92	67	91	67	87	65	70	68	19	26	31	34	-
Calabasas	34.2	1100	118.6	102	71	98	70	97	70	93	69	73	71	26	26	30	33	2348
Calaveras Big Trees	38.3	4696	120.3	92	61	88	60	87	60	84	58	64	62	33	11	18	23	5848
Calexico	32.7	12	115.5	114	74	110	73	109	73	106	71	81	79	28	26	31	34	-
California City	35.1	2400	118	107	69	104	68	103	68	99	66	72	70	33	10	17	22	2572
Callahan	41.3	3185	122.8	97	63	93	62	92	62	88	60	66	64	35	7	15	20	-
Calwa	36.8	330	119.8	105	73	101	71	100	70	97	68	75	73	34	23	27	29	-
Camarillo	34.2	147	119.2	91	69	84	68	82	68	78	67	71	69	22	28	32	35	
Cambria AFS	35.5	690	121.1	78	62	72	61	70	61	66	59	64	62	16	30	35	38	3646
Cameron Park	38.6	1800	121	101	67	98	66	97	66	93	65	70	68	42	20	26	29	2235
Camp Pardee	38.2	658	120.9	106	71	103	70	102	70	98	69	74	72	36	27	32	35	2812
Camp Pendleton	33.4	50	117.4	88	69	85	68	84	68	80	67	71	69	12	34	38	40	-
Camp Roberts	35.8	765	120.8	106	72	101	71	99	71	95	69	74	72	45	16	24	27	2890
Campbell	37.3	195	121.8	93	69	88	66	87	66	83	65	71	68	30	28	33	36	-
Campo	32.6	2630	116.5	101	67	95	66	94	66	90	66	71	69	41	16	23	27	3303
Canoga Park	34.2	790	118.6	104	71	99	70	97	70	93	69	74	72	38	25	30	33	1884
Cantil	35.3	2010	118	111	71	107	71	106	71	103	70	74	73	32	12	19	24	-
Canyon Dam	40.1	4555	121.1	93	60	90	59	89	59	85	57	64	62	39	1	6	13	6834
Canyon Lake	33.8	1500	117.3	105	70	101	69	100	69	97	68	74	72	39	22	27	30	-
Capitola	37	64	122	94	67	88	66	86	65	81	63	69	67	24	27	32	35	-
Cardiff-by-the-Sea	33	80	117.3	87	68	83	67	81	67	77	65	70	68	12	35	39	41	-
Carlsbad	33.2	44	117.4	87	68	83	67	81	67	77	65	70	68	10	34	38	40	-
Carmel Valley	36.5	425	121.7	94	68	88	66	86	66	80	65	69	67	20	25	30	33	-
Carmel-by-the-Sea	36.5	20	121.9	87	65	78	62	76	62	71	61	66	63	20	30	35	38	968

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Latitude

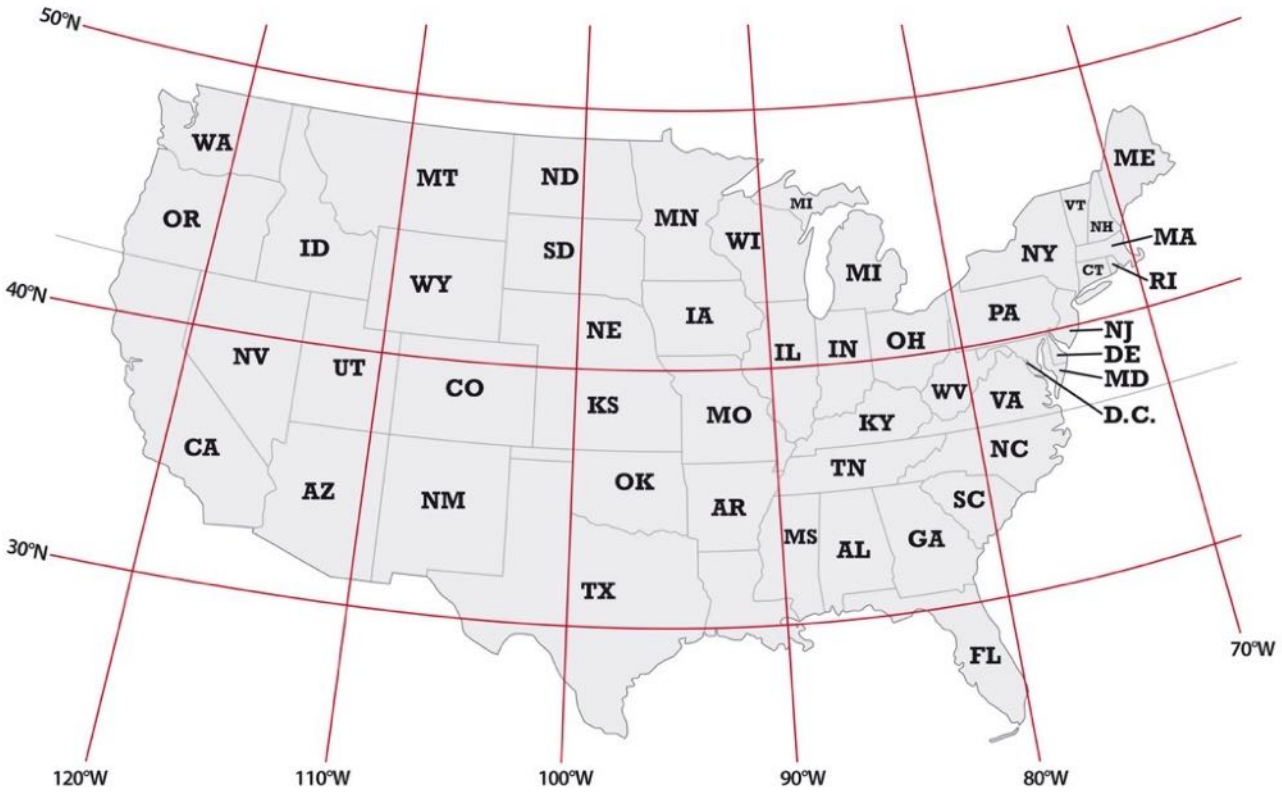
Latitude has an effect on solar gain through glazing systems



Latitude

Latitude determines the amount of shade provided by overhangs.

The significance of this effect depends on exposure direction.



Default Indoor Design Conditions

The default indoor design conditions shall be:

Cooling: 75° F db and 50% RH

Heating: 70° F db

Unless superseded by local code

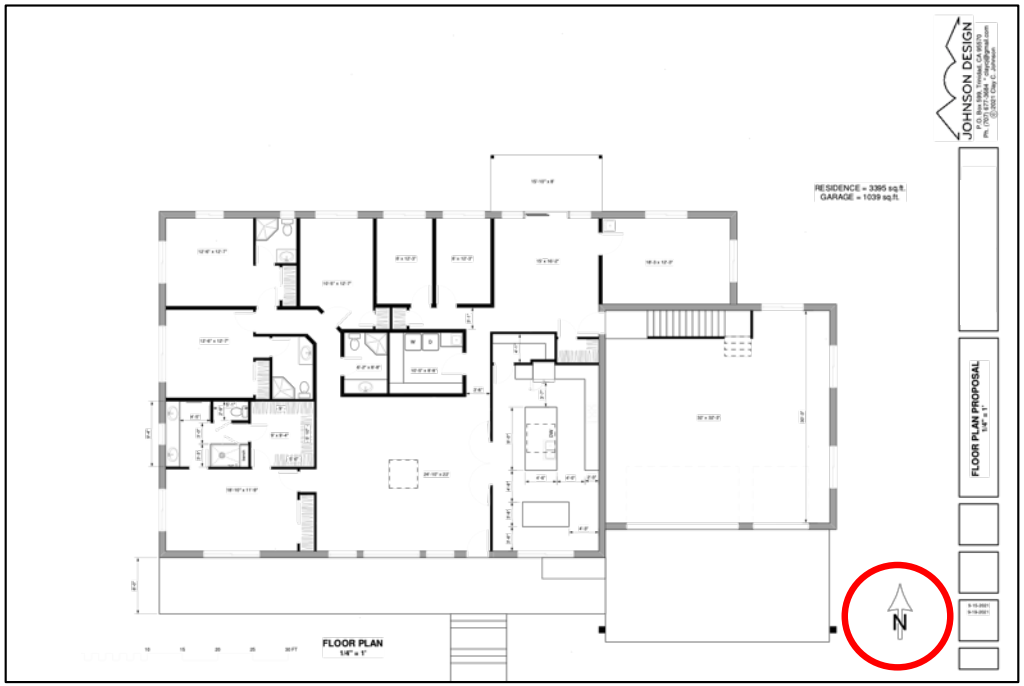
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Structure Site Orientation

Choose proper structure site orientation.

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Compass Direction





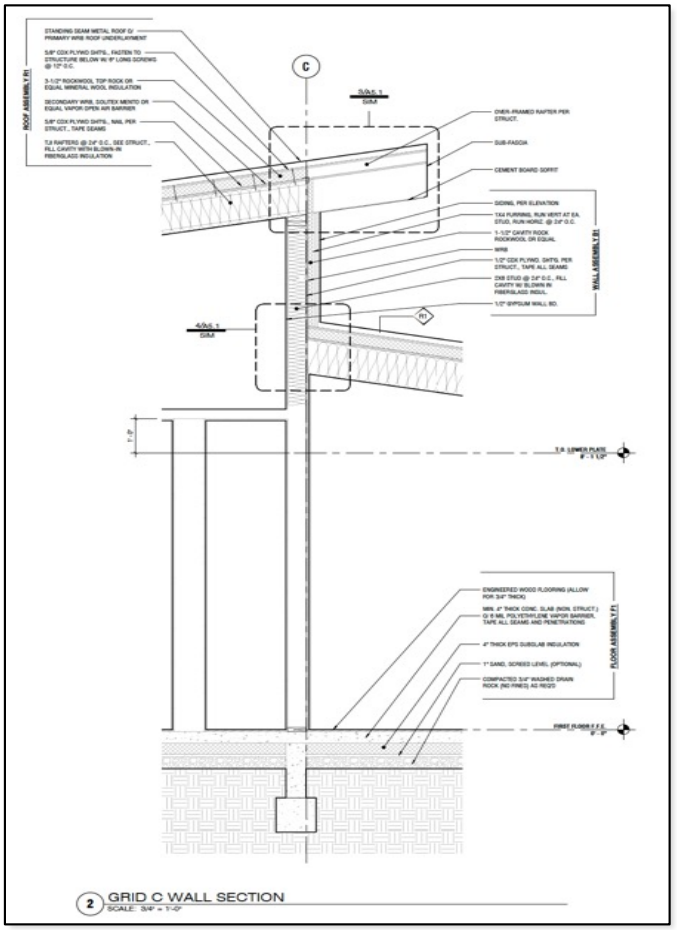
The Site Survey Provides the Input Data

The accuracy of the load estimating procedure is only as good as the input, and the input is only as good as the survey.

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Construction Assembly Details

- ❑ Verify all construction details prior to calculating loads.
  - Roof/Ceilings
  - Skylights
  - Walls
  - Windows and doors
  - Floors
    - Basement
    - Ground slabs
    - Daylight basement
    - Floor
  - Attached Garages
  - Envelope leakage evaluation



Different Assemblies - Same Room

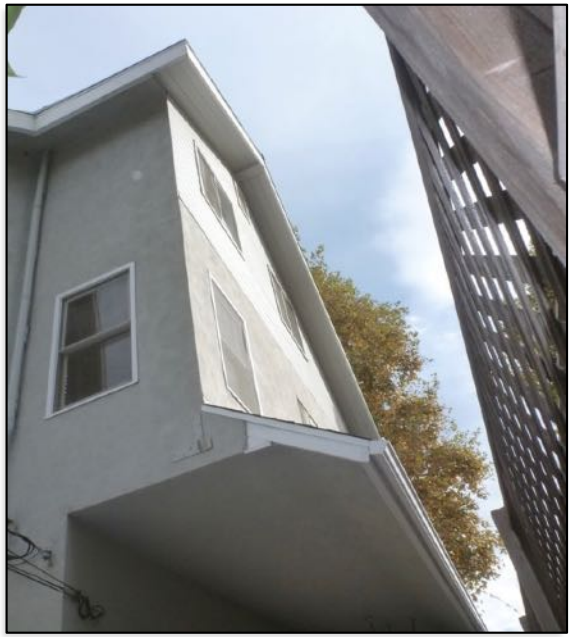


Construction Details

Measure framing, estimate R-value of any insulation.



Cantilevers are Exterior Floors

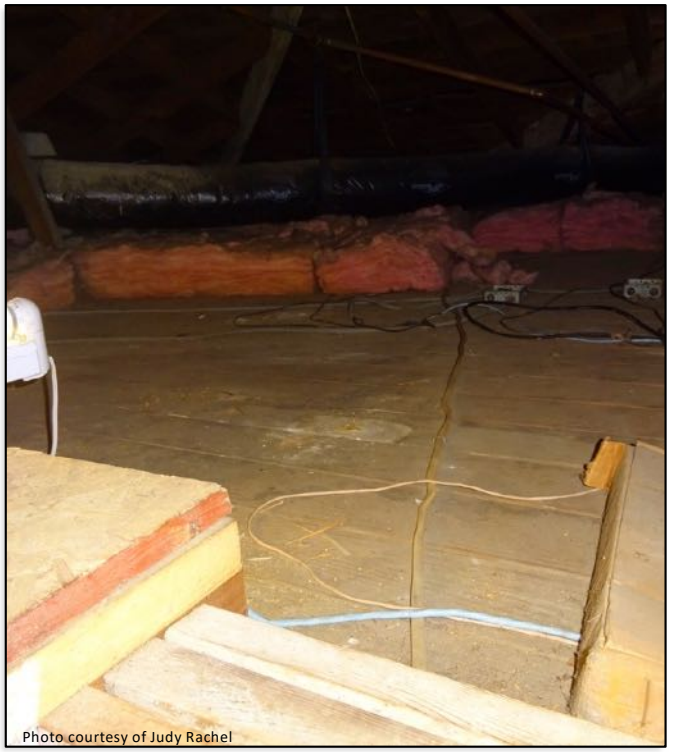


Verify Construction Assembly Details



Determine Assembly R-Value





Rated Performance

- Take full credit for rated performance of construction materials, insulation and construction features.


Photo courtesy of Judy Rachel


Photo courtesy of Judy Rachel

Attached Conditioned and Unconditioned Spaces

- ❑ Measure attached spaces.
- ❑ Describe the partition assembly construction details.
- ❑ Note any details that will help determine the temperature in attached spaces, i.e. garage doors kept open or closed



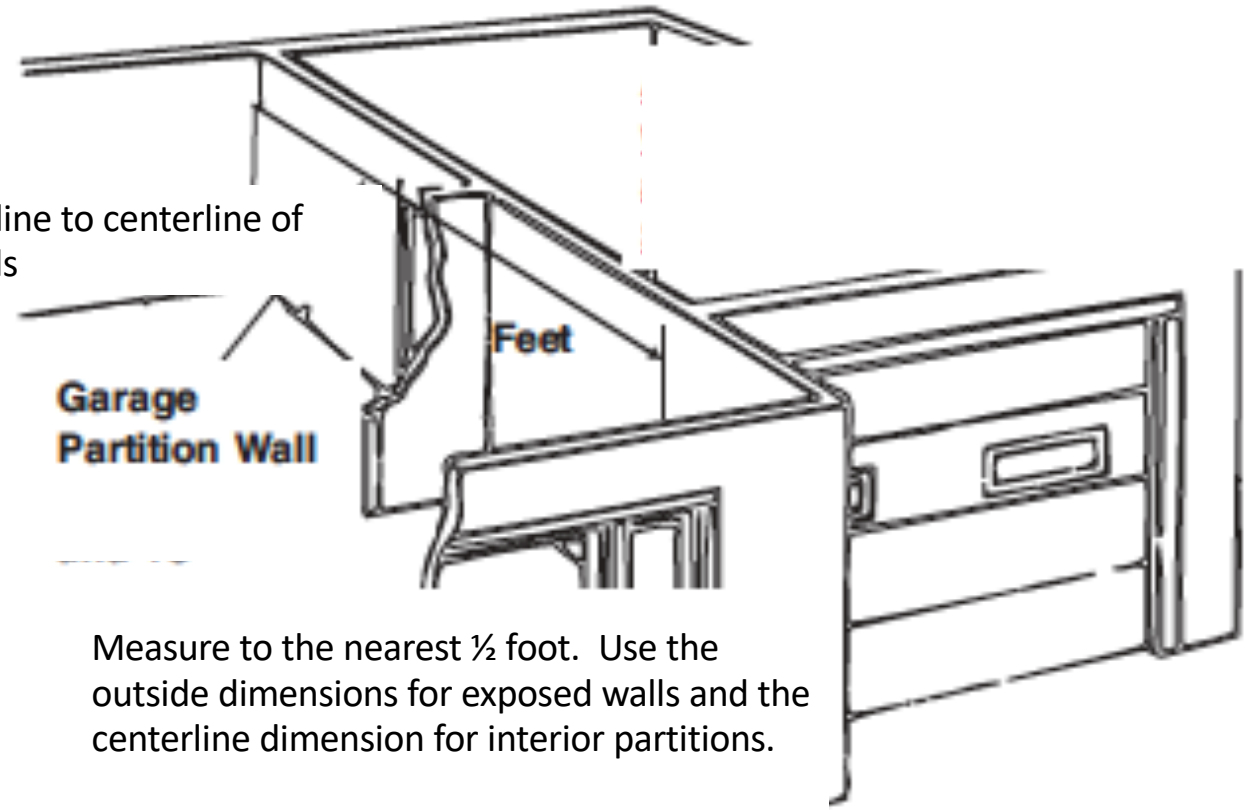
Manual J has Tables with Default U-Values

When explicit U-factor of construction materials or for fenestrations both U-factor and SHGC value are not available, the closest construction match for the actual construction of each and every assembly are taken from one or more sets of generic Manual J tables.

12C — R-13 Insulation In 2 x 4 Stud Cavity						
12C-0b w/m 12C-0s w/m	Cavity: R-13 Board: None	Frame construction, R-13 cavity insulation, no board insulation, wood sheathing	Brick Siding	0.091	0.115	I C
12C-2b w/m 12C-2s w/m	Cavity: R-13 Board: R-2	Frame construction, R-13 cavity insulation, R-2 board insulation	Brick Siding	0.081	0.101	J D
12C-3b w/m 12C-3s w/m	Cavity: R-13 Board: R-3	Frame construction, R-13 cavity insulation, R-3 board insulation	Brick Siding	0.075	0.092	K E
12C-4b w/m 12C-4s w/m	Cavity: R-13 Board: R-4	Frame construction, R-13 cavity insulation, R-4 board insulation	Brick Siding	0.069	0.084	K E
12C-5b w/m 12C-5s w/m	Cavity: R-13 Board: R-5	Frame construction, R-13 cavity insulation, R-5 board insulation	Brick Siding	0.064	0.078	K F
12C-6b w/m 12C-6s w/m	Cavity: R-13 Board: R-6	Frame construction, R-13 cavity insulation, R-6 board insulation	Brick Siding	0.060	0.072	K G

Measurement Procedures

Measure centerline to centerline of intersecting walls



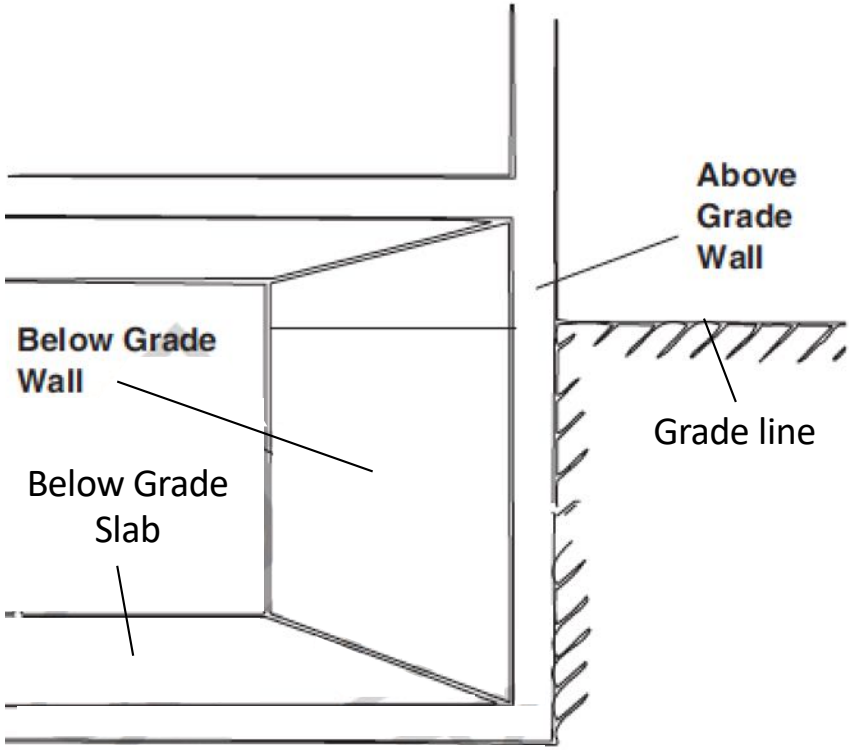
Measure to the nearest ½ foot. Use the outside dimensions for exposed walls and the centerline dimension for interior partitions.

Below Grade Walls

The depth of a below grade wall determines if the wall is above grade or below grade.

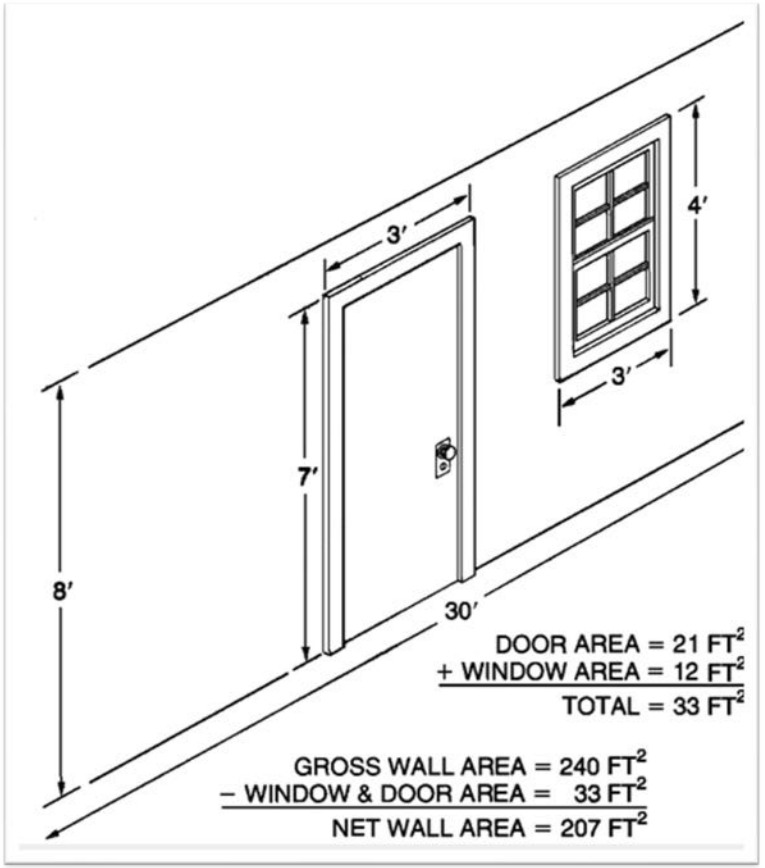
If a foundation wall is two feet deep or less, the wall is classified as an above grade wall.

If the foundation wall is more than two feet deep, the wall is classified as a below grade wall, and the below grade area equals the length of the wall multiplied by the depth of the wall (measured from grade).



Measuring Fenestrations

- Measure the rough opening for doors, windows, skylights and daylight tubes.
- If an opening is over 50% glass draw it as a window.
- Multiply width by height for total area then round to nearest square foot



Fenestration Energy Features

- ❑ Take full credit for documented window, glass door and skylight U-values and SHGC values.

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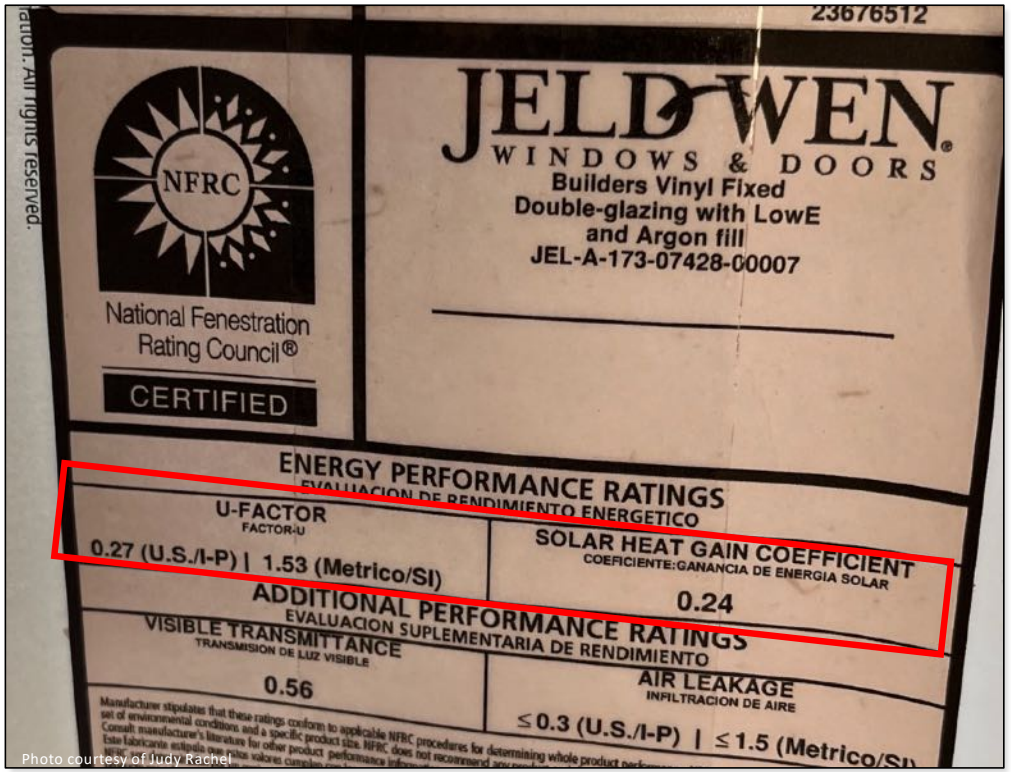


Photo courtesy of Judy Rachel

Additional Fenestration Features

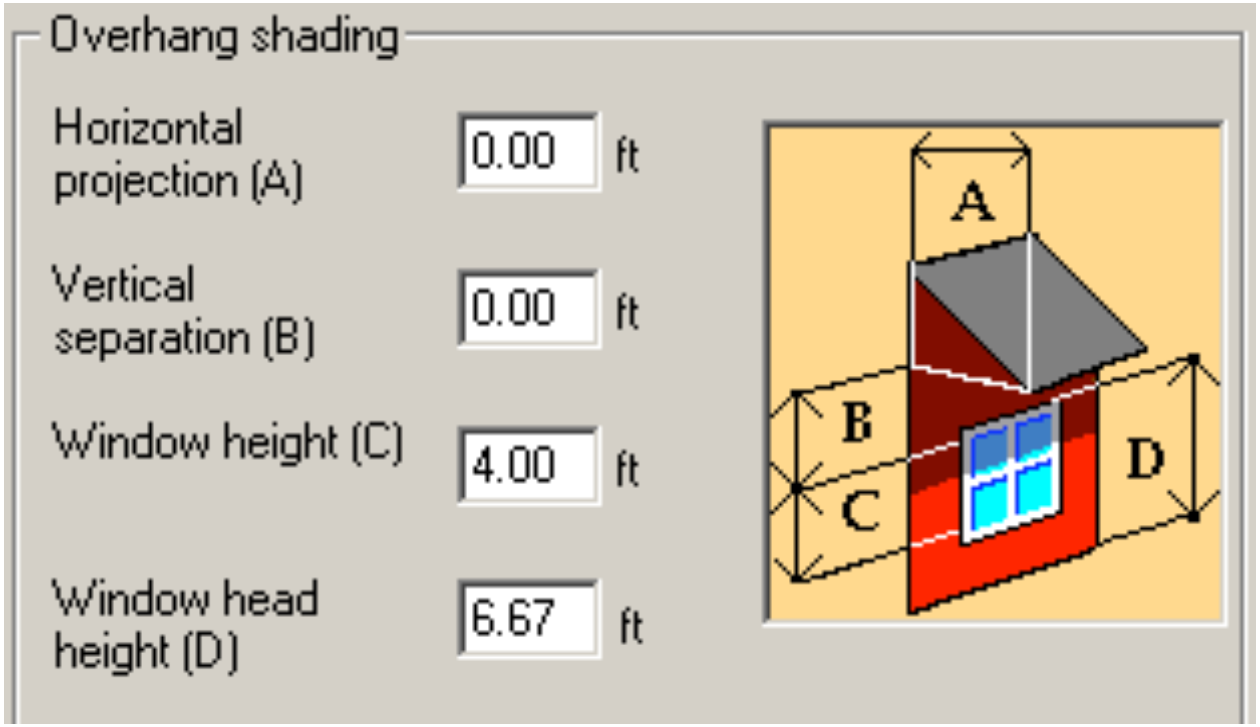
For each fenestration individually:

- ❑ Take credit for overhangs
- ❑ Take credit for internal shade (the default is a medium color blind with slats at 45 degrees, or use the actual device).
- ❑ Take credit for insect screens when installed or specified.

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Photo courtesy of Judy Rachel

Overhang Measurements

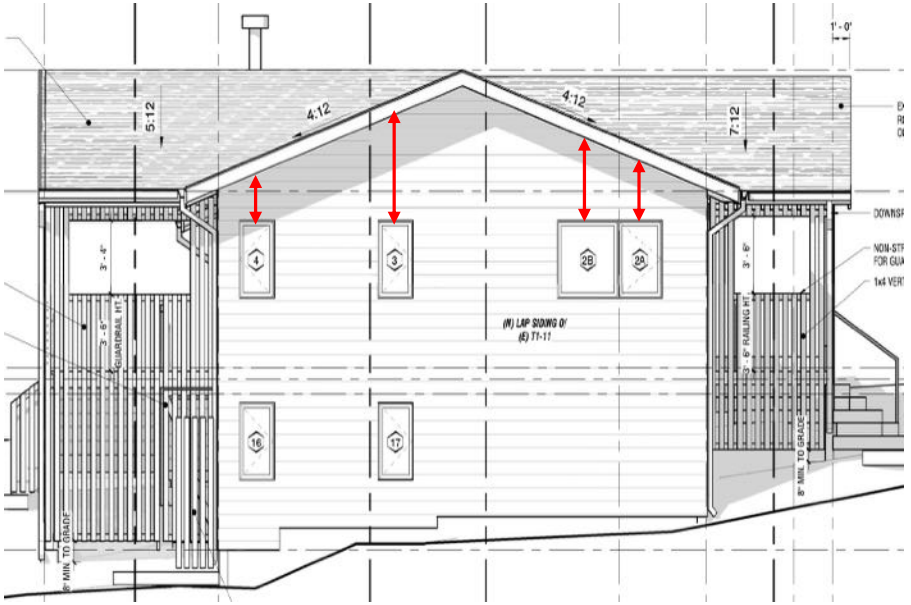


Note: Vertical Separation (B) is from the top of the window to the lowest point of the overhang

Gable End Overhangs

Eaves on the gable end wall may, or may not, shade the glass below the eave.

For this scenario, the B value equals the average distance from the top of a window or glass door to the eave line.



Manual J has No Protocol

Manual J has no protocol for reducing the sensible cooling load for the shade effect of nearby trees or structures



Skylight Details

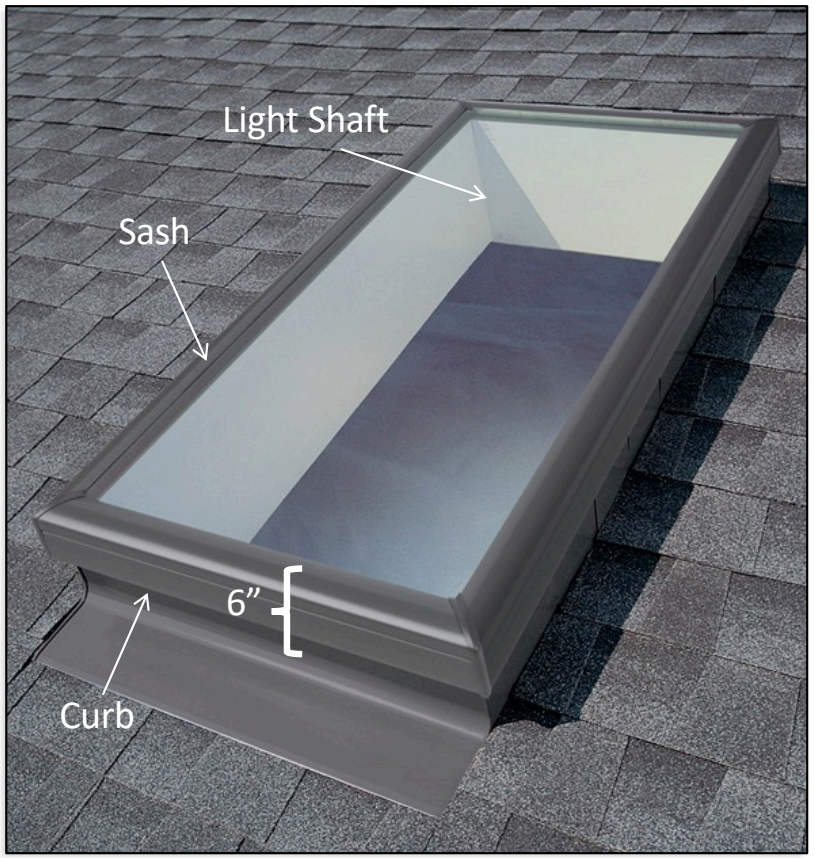
Measure the rough opening – width and length.

Note glazing type.

Measure the curb height.

Identify and note all materials in the curb and light shaft assemblies.

Note sash material.



Enclosure Infiltration

❑ Take full credit for the tightness of the envelope construction.

Three methods are available to determine building leakage:

ACH Method – least accurate

Component Leakage Method – difficult to perform, inaccurate

Blower Door – most accurate


Photo courtesy of Judy Rachel

Simplified Infiltration Method

Structural tightness is estimated by comparing the existing or expected construction details with the definitions of *tight, semi-tight, average, semi-loose* and *loose.*

This evaluation is subjective. Use *semi-tight* if the construction is between *average* and *tight*, or use *semi-loose* if the construction is between *loose* and *average*.

This method relies upon a visual evaluation of enclosure leakage

Definition - Tight

All structural panels, corners, cracks, joints and penetrations are sealed by meticulous workmanship using some combination of air barrier, taping, packing and caulking. Window and door assemblies are rated at less than 0.25 Cfm per running foot of crack at 25mph (wind speed). Bath exhaust fans, kitchen exhaust fans, and dryer vents are equipped with back draft dampers. The home does not have ceiling recessed light fixtures or, if so, there is a negligible amount of leakage around the fixture. No combustion equipment (furnaces, water heaters, dryers, etc.) contained within the conditioned space, or, if so, they are to be of the direct vent variety. The maximum Cfm for the kitchen range hood is 150 Cfm, or less. (A high power hood that has its own source of makeup air is acceptable). Fireplaces, if any, receive combustion air from the outdoors and have tight glass doors.

Definition - Average

All structural panels, corners, cracks, joints and penetrations reasonably sealed by adequate workmanship using some combination of air barrier, taping, packing and caulking. Window and door assemblies rated between 0.25 and 0.50 Cfm per running foot of crack at 25mph (wind speed). All bath exhaust fans, kitchen exhaust fans, and dryer vents are equipped with back draft dampers. The home does not use ceiling recessed light fixtures or, if so, there is a minor amount of leakage around the fixture. No envelope openings (per National Fuel Gas Code) are required for combustion air. The maximum Cfm for the kitchen range hood is 150 Cfm, or less. (A high power hood that has its own source of makeup air is acceptable). Fireplaces, if any, receive combustion air from the indoors but have tight glass doors and a chimney damper.

Definition - Loose

There has been no effort or inadequate effort (regarding methods, materials and workmanship) to seal the structural panels, the associated corners, cracks, joints and penetrations and/or there is a large amount of ceiling recessed light fixture leakage. Window and door assemblies are not rated; or are rated at more than 0.50 Cfm per running foot of crack at 25mph (wind speed). Some, or all, of the bath exhaust fans, kitchen exhaust fans, and dryer vents are not equipped with back draft dampers. Envelope openings (per National Fuel Gas Code) are required for combustion air. A range hood that exhausts more than 150 Cfm air does not have its own source of engineered makeup air and requires an open window for makeup air, or some form of a negative pressure relief that substantially increases infiltration. Fireplaces, if any, receive combustion air from the indoors and do not have tight glass doors or chimney dampers.

Visual Evaluation of Ceiling Leakage



Ceiling leakage is a primary consideration.

Pay particular attention to the seal at the wall-ceiling interface,

The number of ceiling penetrations

The seal at the ceiling penetrations.

Ceiling Tightness Descriptions



A tight ceiling shall have no visible gap at the ceiling-wall interface, no ceiling penetrations,: or all ceiling penetrations shall be thoroughly sealed.

An average ceiling may have a tiny gap (not more than the thickness of a business card) at the wall-ceiling interface, and a few reasonably sealed penetrations.

A loose ceiling has a significant gap at the wall-ceiling interface or a considerable number of penetrations (pay special attention to can lights), or may show both deficiencies.

Visual Evaluation of Wall Leakage

Wall leakage is also a primary consideration.

Pay particular attention to the location and integrity of the infiltration retarder (air barrier)

The number of wall penetrations

The seal at the wall penetrations and note visible cracks.



Wall Tightness Descriptions

A tight wall shall be completely covered (including all corners, headers, plates, sills and frames) by an external air barrier wrap that has no significant cuts, unsealed penetrations or unsealed seams.

A semi-tight wall may have an interior membrane (vapor retarder) that has no significant cuts, unsealed penetrations or unsealed seams, or an exterior membrane that has some local deficiencies.



Wall Tightness Descriptions



An average wall may have a membrane that is intact, but is degraded by a number of local deficiencies.

A semi-loose wall may have foil backed sheathing boards unsealed seams and no coverage at sills and headers and no coverage at the plywood corner panels.

A loose wall is characterized by an obvious lack of effort to seal the wall.

Component Leakage Method

Detailed Method Infiltration for Entire House

Conditions for Entire House

☐ Isolated zone

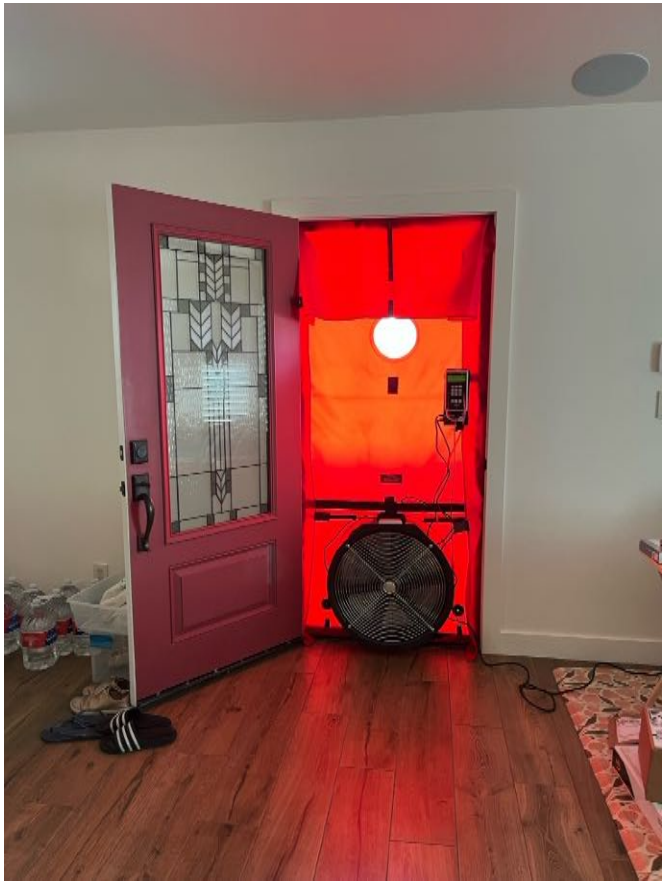
Wind shielding: 3 (partial)

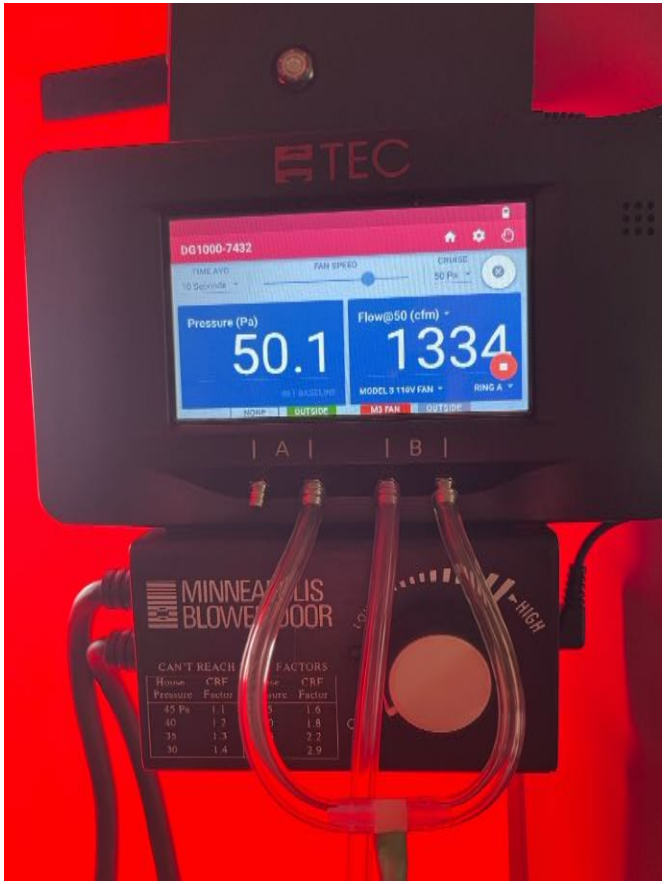
Number of stories: 1



Component	Quality	Leakage factor	Area/Count Heat	Area/Count Cool	Leakage area (in²) Heat	Leakage area (in²) Cool
Recessed lights in ceiling	Leaky	3.300	20	20	66.00	66.00
Surface mounted ceiling lights	Leaky	0.130	5	5	0.65	0.65
Ceiling, no membrane/caulk	Leaky	0.053	1860	1860	98.58	98.58
Ceiling piping/wiring, uncaulked	Leaky	3.700	57	57	210.90	210.90
Wall, Frame,leaky sheath,uncaulked	Leaky	0.068	1300	1300	88.40	88.40
Window frame,frame wall uncaulked	Average	0.025	120	120	3.00	3.00
Door frame, frame wall, uncaulked	Average	0.024	60	60	1.44	1.44
Electrical box, no gasket	Leaky	0.960	30	30	28.80	28.80
Wall piping or wiring, uncaulked	Leaky	3.700	75	75	277.50	277.50
Door, Single with weatherstrip	Average	1.900	2	2	3.80	3.80
Door, Sliding glass	Average	3.400	3	3	10.20	10.20
Door, Attic/crawl, weatherstrip	Average	2.800	1	1	2.80	2.80
Fireplace, w/ flue damper & door	Average	4.000	1	1	4.00	4.00
	Average	0	0	0	0	0
	Average	0	0	0	0	0
	Average	0	0	0	0	0
	Average	0	0	0	0	0

Blower Door Infiltration Method





The blower door test needs to be done with the duct system taped off



Ventilation

Engineered ventilation is outdoor air that is purposely introduced to the conditioned space in a controlled manner

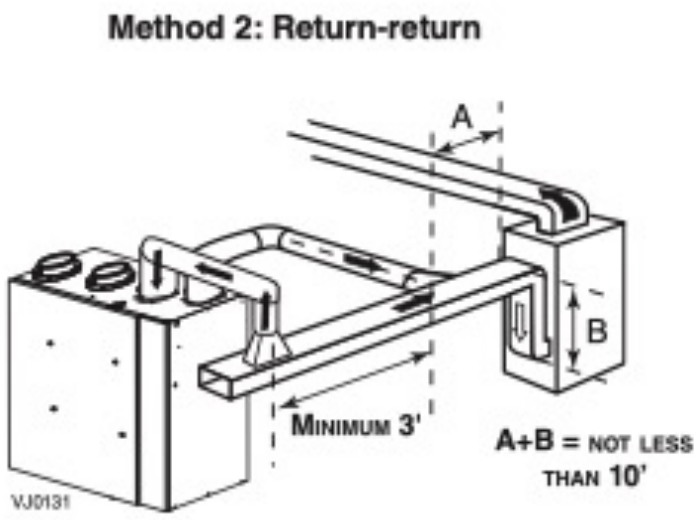
- An engineered ventilation load is a **system load** when outdoor air is routed to the return side of the equipment.

- An engineered ventilation load is a **space load** when a fan for an engineered ventilation system pulls outdoor air into a conditioned space.

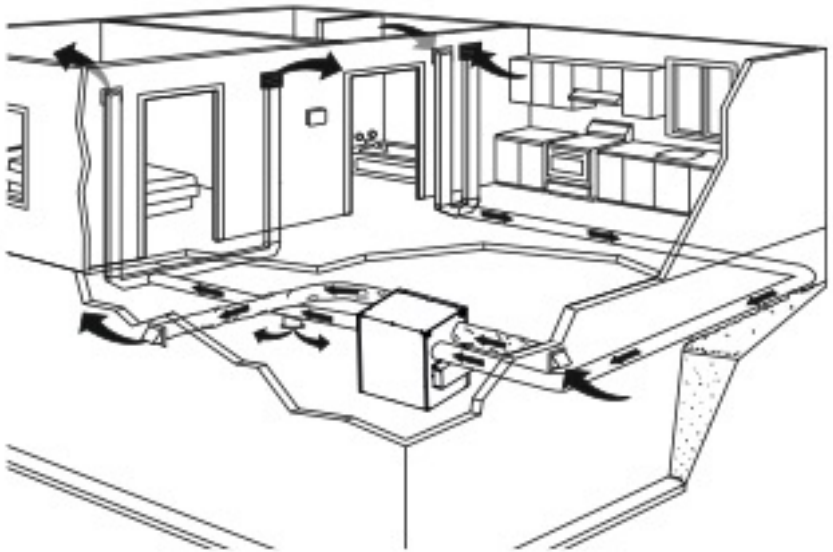
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Types of Ventilation Loads

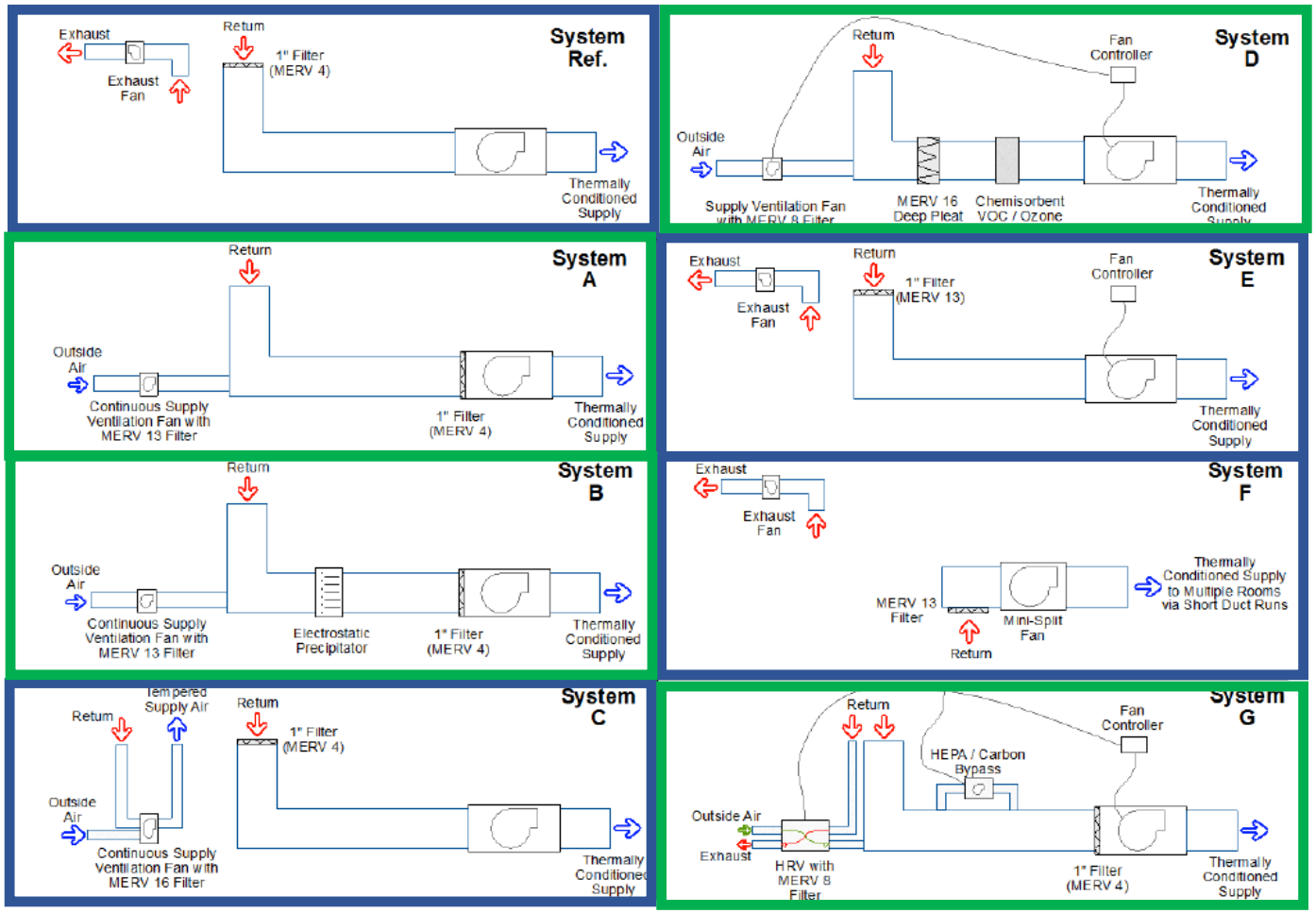
System load



Space load



System Loads & Space Loads



Ventilation Adjustment

Outdoor air loads may be for raw outdoor air (not processed by a heat recovery device), or for outdoor air that passes through an HRV or ERV device.

For an HRV or ERV, the OEM's **sensible effectiveness** values for heating and cooling shall be used to calculate the sensible heat load and the sensible cooling load for engineered ventilation.

For an ERV device, the OEM's **latent effectiveness** value for cooling shall be used to calculate the latent cooling load for engineered ventilation.

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Ventilation Adjustment

ENERGY PERFORMANCE

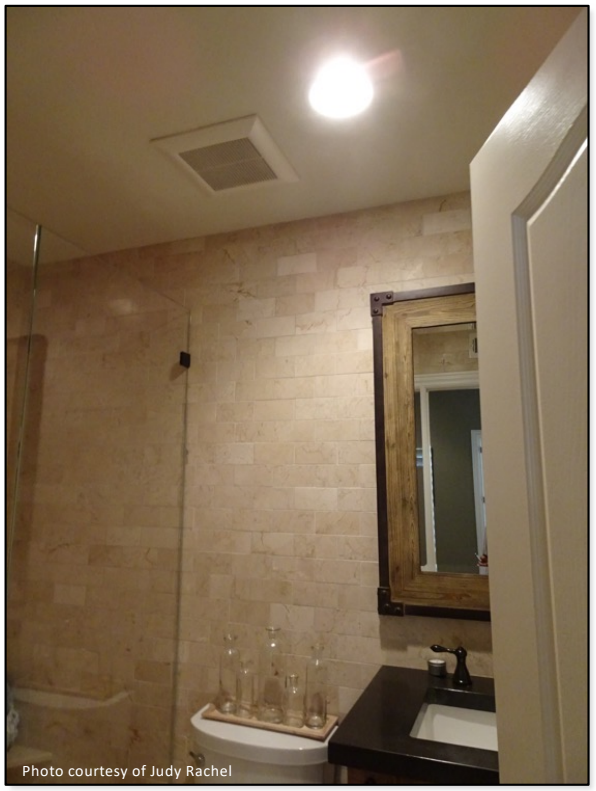
SUPPLY TEMPERATURE		NET AIR FLOW			POWER CONSUMED WATTS	SENSIBLE RECOVERY EFFICIENCY	ADJUSTED SENSIBLE RECOVERY EFFICIENCY	APPARENT SENSIBLE EFFECTIVENESS*	LATENT RECOVERY/ MOISTURE TRANSFER
°C	°F	L/S	CFM	M^3/H					
HEATING									
0	32	30	64	109	19	81	82	85	0
0	32	47	100	170	28	75	77	80	0
0	32	66	140	238	47	70	72	75	0
-25	-13	30	64	109	32	73	74	88	0
-25	-13	46	97	167	45	68	69	83	0

IGNORE On-Demand Exhaust Ventilation

Common, manually operated, kitchen and bath exhaust fans that are not part of an engineered ventilation system have no effect on ventilation loads and infiltration loads

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Ducts Loads

- Take full credit for duct system sealing and duct insulation. Manual J v2.5 pg 24


Photo courtesy of Judy Rachel

Duct Location

- Describe the locations of both the supply and return ducts accurately



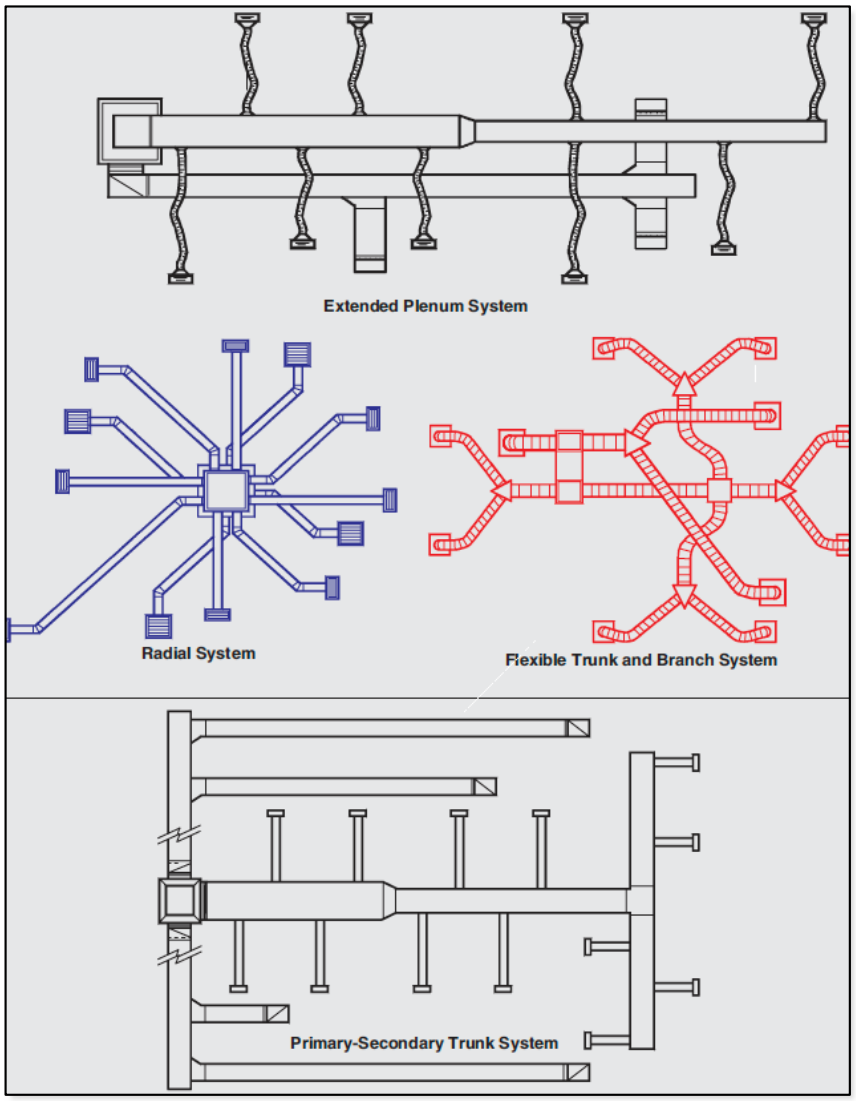
Attic Ducts

- ❑ Note roofing material
- ❑ Roof color
- ❑ Use of radiant barrier or
- ❑ Encapsulating foam
- ❑ Vented or unvented attic
- ❑ Duct system configuration



Duct Layout

- ❑ Match duct supply and return system geometry
- ❑ Describe grill locations as perimeter or center of rooms



Internal Loads

- ❑ The number of occupants shall not deviate from the number of bedrooms + 1
- ❑ The sensible internal load shall be determined by the set of major appliances and electric equipment that is actually found in the home, or which is logically associated with the room and space names on a floorplan drawing.
- ❑ The set of equipment and devices that are switched on and off by occupants is based on what would commonly be in use during the late afternoon, or early evening, on a summer design day.

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ACCA *MANUAL J* DON'TS

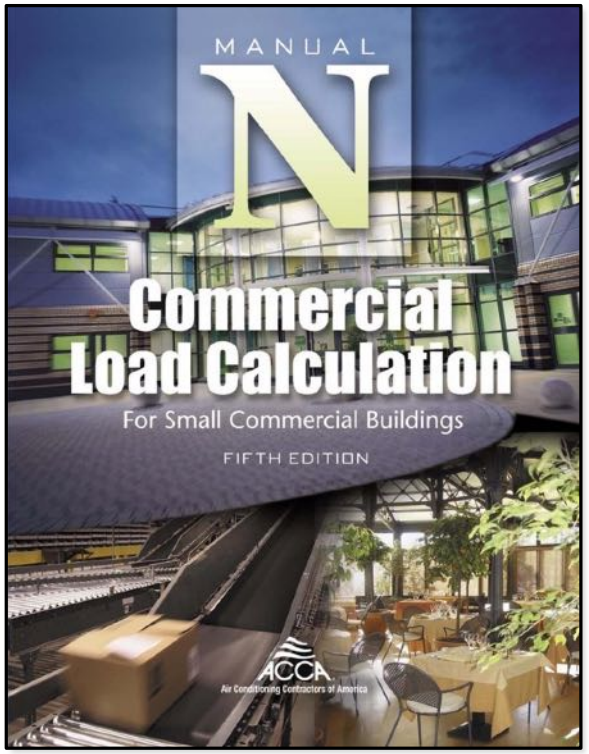
Excerpts of Forbidden Practices

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Manual J is for Residential Load Calculations

- ❑ Do not use Manual J for commercial applications.
- ❑ Large multifamily buildings.
- ❑ A room or space containing an indoor swimming pool or hot tub.
- ❑ Earth berm or earth covered dwellings.
- ❑ Solar homes that have passive features.

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Design Conditions

- ❑ Do not design for record breaking, or news making weather conditions.
- ❑ Do not add a “safety factor” to the design conditions.
- ❑ Do not design for abnormally low or high indoor temperature or humidity conditions (unless there is a certified medical reason for doing so.

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Be Honest and Aggressive in Describing the Home

- ❑ Do not assume there is no internal shade on ordinary windows and glass doors.
- ❑ Do not fail to take credit for overhangs.
- ❑ Do not reduce known ceiling, wall or floor R-values “just to be safe”.
- ❑ Do not assume that windows and doors will be open when making an infiltration estimate.

HVAC Equipment Is Not To Be Designed For Extreme Events

- ❑ Do not make worst case “everything is going full blast” assumptions about internal loads.
- ❑ Do not add extra occupancy loads for “entertaining groups of people.”
- ❑ Do not add internal loads for special events.

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Safety Factors

- ❑ Do not apply “safety factors” during any stage of the load calculation process.
- ❑ Do not apply a “safety factor” to the final answer or to the equipment selection procedure.

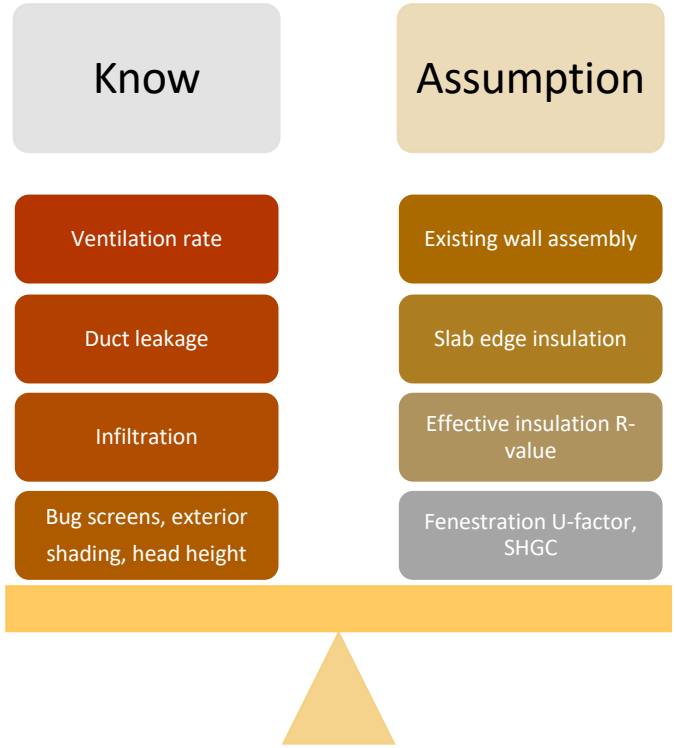
Manual J v2.5 pg 25

Balancing Act

Producing an accurate load calculation is a balance between:

1) Accurately describing what you do know about a building's assembly

2) Making informed, aggressive, best assumptions regarding the details of the building assembly you are unable to precisely determine.



Trust the Load Calculation Process

Trust your work

Summary

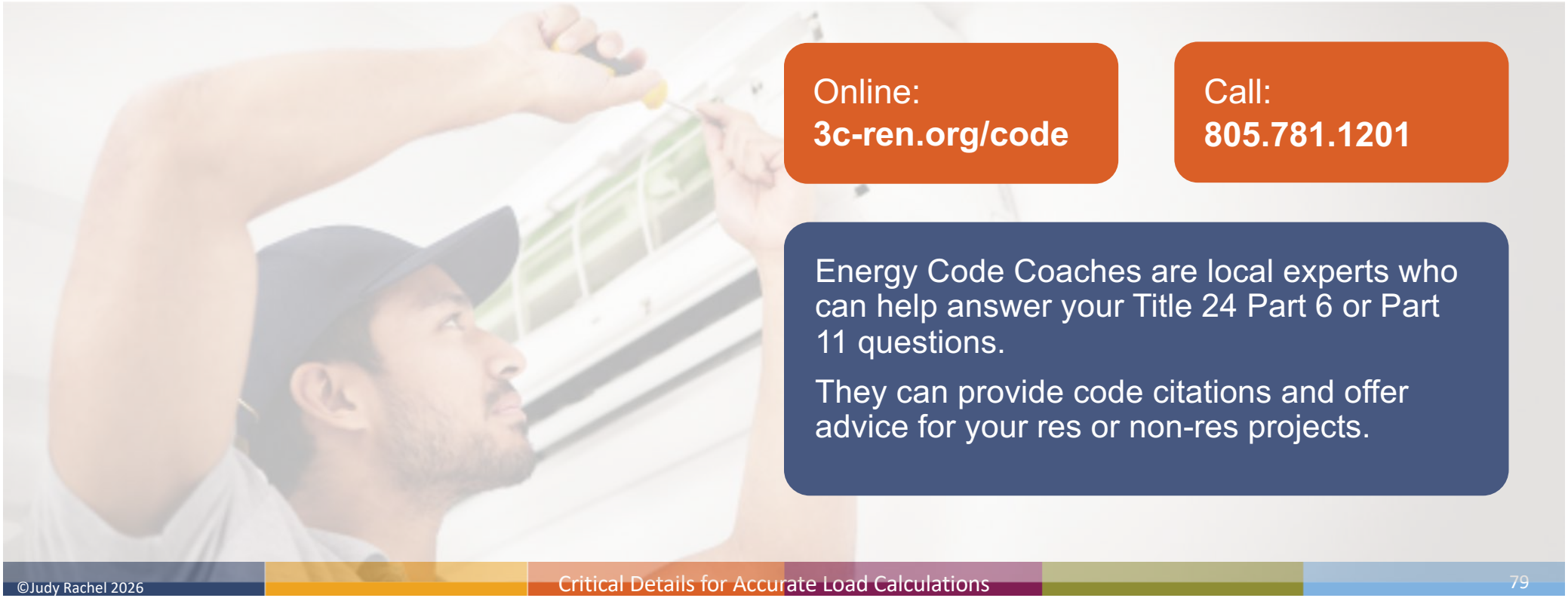
- Comfort system performance is only as good as the accuracy of the load calculation.
- Software is a powerful and useful tool, but it must be used with knowledge of the procedures.
- If Manual J software is not used correctly it will produce an inaccurate and misleading answer.
- Perform a rigorous load calculation grounded in sound, up-to-date building science, with proper assumptions, correct methodology, and no application of any type of safety factor.


Photo courtesy of Judy Rachel

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Questions about Title 24?

3C-REN offers a *free* Code Coach Service



Online:
3c-ren.org/code

Call:
805.781.1201

Energy Code Coaches are local experts who can help answer your Title 24 Part 6 or Part 11 questions.

They can provide code citations and offer advice for your res or non-res projects.

Do you or your clients have questions about energy upgrade incentives?

Our Energy Concierges can help!



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Commercial Concierge

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Itzel Torres
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Naomi Newman
Single Family Concierge

Phone: 805-957-7843

Email: nnewman@3c-ren.org

Thanks for coming!

Continuing Education Units Available

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  - In-person forum in San Luis Obispo!
- ASK THE EXPERTS! With Judy Rachel, Home Performance Pro (11/12)