

Click here bring up the project information sheet

Enter the information. This will help the plan review personnel.

Project Information

Customer

Name: John Doe
Company: Worlds Best Builder
Address:
City:
State/Province: ZIP/Postal code:
Phone: Fax:
Email:
Web:

Designer

Name: Great Designs
Company:
Address:
City:
State/Province: ZIP/Postal code:
Phone: Fax:
Email:
Web:
License #:

Site

☒ Same as Customer
Address:
City:
State/Province: ZIP/Postal code:
Phone: County:
Lot info:

Job

Number:
Date/Prep.By:

Design date would be nice but not required.


This would be for a custom home. We will show you later for worst case direction for a production home.

Model home plan number or custom home.

Add any special notes here for the plan review personnel. Indicating the whole house ventilation system is very helpful.

Not all locations are in the data base. Choose the location that is reasonably close to the actual location. The example is Amarillo, TX.

Job	
Number	<input type="text"/>
Date/Prep.By	<input type="text"/>
Orientation	House Front <input type="text"/> faces: South <input type="text"/>
Plan #	Number of bedrooms <input type="text" value="2"/>
Jurisdiction	

Notes	
	<p>Adds helpfull notes here:</p> <p>Exhaust Only Ventilation system</p>

Location	
Library	(none) <input type="text"/>
Weather location	Amarillo Rick Husband Intl, TX, US <input type="text"/>
Elevation	[3604] ft
Latitude	[35.23] °N
Longitude	[101.70] °W
Time zone	[-6.0]
Weather and shielding factor	[0.68]
Bin data city	Amarillo Rick Husband Intl, TX, US <input type="text"/>
Earth temperature city	Fort Worth <input type="text"/>
Mean earth temperature	[68] °F
Annual surface earth temperature swing	[21] °F
Day of minimum earth surface temperature	[34] day

Bin data shows the number of days at a temperature range for an average weather year.

Location

Library: (none) ...

Weather location: [Amarillo Rick Husband Intl, TX, US] ...

Elevation: [3604] ft Latitude: [35.23] °N

Longitude: [101.70] °W Time zone: [-6.0]

Weather and shielding factor: [0.68]

Bin data city: Amarillo Rick Husband Intl, TX, US ...

Earth temperature city: Fort Worth ...

Mean earth temperature: [68] °F

Annual surface earth temperature swing: [21] °F

Day of minimum earth surface temperature: [34] day

Bin Temperature Data

Location: Amarillo Rick Husband Intl, TX, US

Temp Range	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
110 to 114	0	0	0	0	0	0	0	0	0	0	0	0	0
105 to 109	2	0	0	0	0	0	2	0	0	0	0	0	0
100 to 104	23	0	0	0	0	1	10	7	4	1	0	0	0
95 to 99	100	0	0	0	0	8	24	37	24	7	0	0	0
90 to 94	252	0	0	0	2	23	53	79	71	22	2	0	0
85 to 89	372	0	0	3	12	37	71	103	89	45	12	0	0
80 to 84	469	0	1	8	24	55	88	102	93	67	28	3	0
75 to 79	602	1	3	19	43	71	104	120	111	81	37	11	1
70 to 74	768	5	12	32	53	86	117	133	142	105	58	21	4
65 to 69	875	13	19	44	68	104	117	119	141	131	75	32	12
60 to 64	796	21	31	55	88	118	90	39	58	120	108	46	22
55 to 59	685	35	41	75	94	105	34	5	10	73	113	64	36
50 to 54	687	54	56	93	103	75	9	0	1	43	117	87	49
45 to 49	633	69	71	93	91	37	1	0	0	18	86	98	69
40 to 44	612	83	84	95	69	18	0	0	0	5	56	109	93
35 to 39	574	102	98	95	40	5	0	0	0	2	31	95	106
30 to 34	557	128	108	72	23	1	0	0	0	0	14	76	135
25 to 29	377	108	72	33	9	0	0	0	0	0	4	46	105
20 to 24	210	69	40	16	1	0	0	0	0	0	2	22	60
15 to 19	98	36	18	7	0	0	0	0	0	0	1	8	28
10 to 14	38	13	8	2	0	0	0	0	0	0	0	2	13
5 to 9	20	6	6	2	0	0	0	0	0	0	0	0	6
0 to 4	8	1	3	0	0	0	0	0	0	0	0	0	4
-5 to -1	2	0	1	0	0	0	0	0	0	0	0	0	1
-10 to -6	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

Close

Based on the bin data the 99% (meaning that only 1% of the hours in a year is it colder) winter design temperature. If the jurisdiction has an adopted design temperature, then place the cursor over the cell and left click. Then press the F8 key and enter the adopted temperature.

No Need to change the default for wind speed.

Based on the bin data the 1% (meaning that 99% of the hours in a year it is colder) summer design temperature. If the jurisdiction has an adopted design temperature. Then place the cursor over the cell and left click. Then press the F8 key and enter the adopted temperature.

Conditions

Heating

Dry bulb

[16] °F

Cooling

Annual ▾

Wind speed [15.0] mph

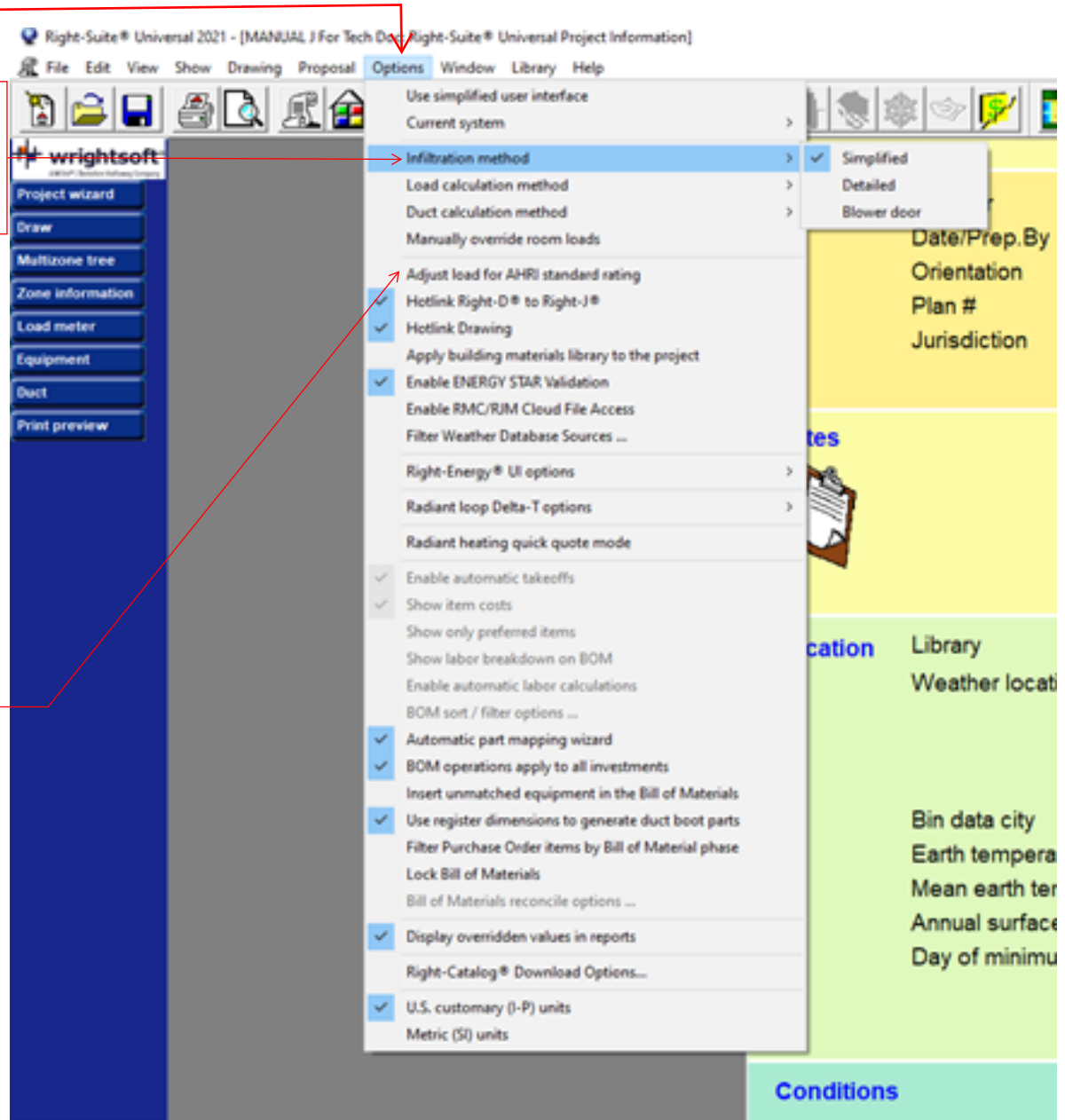
Wind speed [7.5] mph

	Month	DB (°F)	Daily range (°F)	WB (°F)	RH (%)	Daylight saving
	Annual (Jul)	95.8	24.5	65.8	21	<input checked="" type="checkbox"/>
<input type="checkbox"/>	January	65.6	25.5	45.2	18	<input type="checkbox"/>
<input type="checkbox"/>	February	70.4	26.3	48.3	18	<input type="checkbox"/>
<input type="checkbox"/>	March	77.9	27.7	51.7	15	<input type="checkbox"/>
<input type="checkbox"/>	April	84.4	27.8	54.7	13	<input type="checkbox"/>
<input type="checkbox"/>	May	92.8	26.5	59.8	14	<input type="checkbox"/>
<input type="checkbox"/>	June	98.6	25.7	63.7	14	<input type="checkbox"/>
<input type="checkbox"/>	July	97.7	24.5	67.0	21	<input type="checkbox"/>
<input type="checkbox"/>	August	96.5	23.9	66.7	22	<input type="checkbox"/>
<input type="checkbox"/>	September	92.5	24.6	64.4	23	<input type="checkbox"/>
<input type="checkbox"/>	October	84.2	26.2	58.9	22	<input type="checkbox"/>
<input type="checkbox"/>	November	74.4	25.8	52.2	22	<input type="checkbox"/>
<input type="checkbox"/>	December	65.3	24.2	46.0	21	<input type="checkbox"/>

Most designers will use the simplified infiltration method. Will show later the settings.

Recommend not selecting the AHRI adjustment. This is an attempt to provide air conditioning appliance size.

There are NO softwares that have a Manual S capability. The heating and cooling appliance selection must be done by the designer.



I know sorry for the blurry picture

Right-Suite® Universal 2021 - [MANUAL J For Tech Doc: Right-Suite® Universal Project Information]

File Edit View Show Drawing Proposal Options Window Library Help

Use simplified user interface
Current system
Infiltration method
Load calculation method
Duct calculation method
Manually override room loads
Adjust load for AHRI standard rating
✓ Hotlink Right-D® to Right-J®
✓ Hotlink Drawing
Apply building materials library to the project
✓ Enable ENERGY STAR Validation
Enable RMC/RJM Cloud File Access
Filter Weather Database Sources ...
Right-Energy® UI options
Radiant loop Delta-T options
Radiant heating quick quote mode
✓ Enable automatic takeoffs
✓ Show item costs
Show only preferred items
Show labor breakdown on BOM
Enable automatic labor calculations
BOM sort / filter options ...
✓ Automatic part mapping wizard
✓ BOM operations apply to all investments
Insert unmatched equipment in the Bill of Materials
✓ Use register dimensions to generate duct boot parts
Filter Purchase Order items by Bill of Material phase
Lock Bill of Materials
Bill of Materials reconcile options ...
✓ Display overridden values in reports
Right-Catalog® Download Options...
✓ U.S. customary (I-P) units
Metric (SI) units

Change default method ...
ACCA Manual J 7th Edition [Right-J®] Ctrl-7
✓ ACCA Manual J 8th Edition [Right-J®] Ctrl-8
HRAI / CAN F280 [Right-F280™] Ctrl-4
CSA / CAN F280-12 [Right-F280™]
ASHRAE CLTD Method [Right-CommLoad®] Ctrl-6
ASHRAE RTS Method [Right-CommLoad®] Ctrl-0
ACCA Manual N 5th Edition [Right-N®] Ctrl-5

Multizone tree
Zone information
Load meter
Equipment
Duct
Print preview

Design
Presentation

Conditions
Heating

Library
Weather location [Amarillo R]
Elevation []
Longitude [10]
Weather and sh
Bin data city [Ama]
Earth temperature city [FO]
Mean earth temperature
Annual surface earth temperature
Day of minimum earth surface ten

Notes
Adds helpfull not
Exhaust Only Ver

This drop down will provide the calculation method. Choose Manual J 8th Edition.

I know sorry for the blurry picture

File Edit View Show Drawing Proposal Options Window Library Help

Project wizard
Draw
Multizone tree
Zone information
Load meter
Equipment

Zone Information for Entire House

Indoor Conditions

70/75/50

Heating Cooling

Design temperature 70 °F 75 °F

Design TD 54 °F 21 °F

Relative humidity 30 % 50 %

Moisture difference [26.2] gr/lb [-13.2] gr/lb

System Characteristics

Heating Cooling

Atmospheric combustion ☒ 40000 Btuh

Humidification ☐

Room vent type ... None None

Central vent type ... None None

Blower power

Hot water piping ... 0 ft

Ventilation

MJ8

Number of bedrooms < 2 >

Heating Cooling

(cfm) (cfm)

Room vent supply AVF 0 0

Central vent supply AVF

Exhaust AVF < 40 > < 40 >

Select this icon for the zone information screen.

Set at 70 heating and 75 minimum for cooling. Code would allow 72 for heating.

Auto calculated based on outside design temperatures.

50% RH at 75° is considered "comfort" for a residential occupancy. Keep heating design at 30% maximum.

This will be based on your location. Amarillo, Texas is reasonably dry as is Colorado. So the grains difference for cooling will be a negative number. Places Florida would be a positive number. This will determine the latent load for cooling.

If you have any combustion air. Enter the Btuh for the appliances requiring combustion air.

If you are providing individual ventilation for each bedroom, then enter the number of bedrooms here.

Check this box if you wish to add blower heat for the air conditioning load.

Use this icon for the pop up screens.

Several choices for ventilation. None would be if a exhaust only ventilation system is proposed.

If an Heat Recovery Ventilator or Energy Recovery Ventilator is used. Enter the efficiency found in the manufacturers data.

Zone Information for Entire House

Indoor Conditions		70/75/50	...
Design temperature	Heating	70 °F	Cooling 75 °F
Design TD	Heating	54 °F	Cooling 21 °F
Relative humidity	Heating	30 %	Cooling 50 %
Moisture difference	Heating	[26.2] gr/lb	Cooling [-13.2] gr/lb

System Characteristics

Heating		Cooling
Atmospheric combustion	<input checked="" type="checkbox"/> 40000 Btuh	
Humidification	<input type="checkbox"/>	
Room vent type	...	None
Central vent type	...	None
Blower power		
Hot water pipe		

Ventilation

MJ8

Number of bedrooms

Room vent size

Central vent size

Exhaust AVF

Imbalance

Central Vent System Details for Entire House

Heating		Cooling
Type	(none)	(none)
Recovery effectiveness		
Sensible (SER)	0 %	0 %
Latent (LER)	0 %	0 %
Leaving air state		
Dry bulb temperature	0 °F	0 °F
Humidity ratio	0 gr/lb	0 gr/lb

Help OK Cancel

Central Vent System Details for Entire House

Heating		Cooling
Type	Heat recovery	Heat recovery
Device Model	Really good HRV	
Recovery effectiveness		
Sensible (SER)	85 %	85 %
Latent (LER)	0 %	0 %
Leaving air state		
Dry bulb temperature	62 °F	78 °F
Humidity ratio	11.2 gr/lb	61 gr/lb

Help OK Cancel

Zone Information for Entire House

Indoor Conditions

Outside air would be for a ventilation system that has an outside air duct connected to the return air ductwork.

Design temperature
Design TD
Relative humidity
Moisture difference

System Characteristics

Atmospheric combustion
Humidification
Room vent type
Central vent type
Blower power
Hot water piping

There are several calculations that the software performs for the cfm. Combustion air required, number of people and a 0.35 ACH. The software will use the highest number. If your actual ventilation rate is different you can override using the F8 key.

The code does not include the ASHRAE ventilation standard. Some jurisdictions may allow or require.

Central Vent System Details for Entire House

	Heating	Cooling
Type	Outside air	Outside air
Device Model		
Recovery effectiveness		
Sensible (SER)	0 %	0 %
Latent (LER)	0 %	0 %
Leaving air state		
Dry bulb temperature	16 °F	96 °F
Humidity ratio	11.2 gr/lb	61 gr/lb

Help OK Cancel

Ventilation

MJ8

Number of bedrooms < 2 >

	Heating (cfm)	Cooling (cfm)
Room vent supply AVF	0	0
Central vent supply AVF	[36]	[36]
Exhaust AVF	[36]	[36]
Imbalance	0	0

Ventilation

MJ8

MJ8 < 2 >

	Heating (cfm)	Cooling (cfm)
ASHRAE 62.2-2019	0	0
ASHRAE 62.2-2016	[36]	[36]
ASHRAE 62.2-2013	[36]	[36]
ASHRAE 62.2-2010	[36]	[36]
Exhaust AVF	[36]	[36]
Imbalance	0	0

Zone Information for Entire House

Indoor Conditions

Design temperature
Design TD
Relative humidity
Moisture difference

When an exhaust only system is proposed then use the "None" option.

System Characteristics

Atmospheric condensation
Humidification
Room vent type
Central vent type
Blower power
Hot water piping

Room Vent System Details for Entire House

	Heating	Cooling
Type	(none)	(none)
Recovery effectiveness		
Sensible (SER)	0 %	0 %
Latent (LER)	0 %	0 %
Leaving air state		
Dry bulb temperature	0 °F	0 °F
Humidity ratio	0 gr/lb	0 gr/lb

Help OK Cancel

... None None
Blower power ☒ 500 W
Hot water piping ... 0 ft

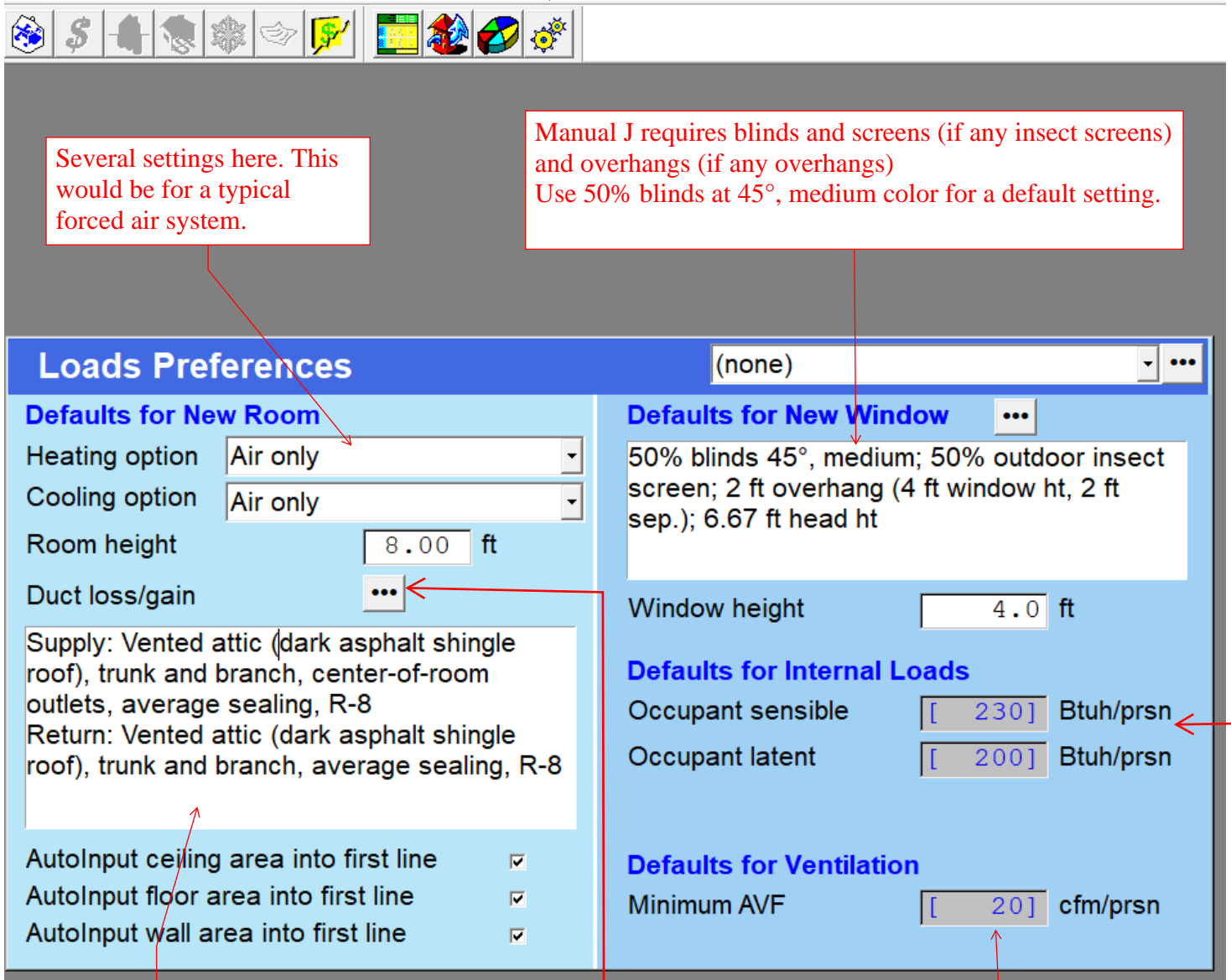
Ventilation

MJ8
Number of bedrooms < 2 >
Room vent supply AVF 0 0
Central vent supply AVF
Exhaust AVF < 36 > < 36 >
Imbalance -36 -36

Heating (cfm) Cooling (cfm)

Use the F8 key to enter the proposed exhaust ventilation CFM. The software will calculate as infiltration.

This icon will take you to the load preferences.



Defaults for New Room

Heating option: Air only

Cooling option: Air only

Room height: 8.00 ft

Duct loss/gain: ...

Supply: Vented attic (dark asphalt shingle roof), trunk and branch, center-of-room outlets, average sealing, R-8

Return: Vented attic (dark asphalt shingle roof), trunk and branch, average sealing, R-8

AutoInput ceiling area into first line ☒

AutoInput floor area into first line ☒

AutoInput wall area into first line ☒

Defaults for New Window

50% blinds 45°, medium; 50% outdoor insect screen; 2 ft overhang (4 ft window ht, 2 ft sep.); 6.67 ft head ht

Window height: 4.0 ft

Defaults for Internal Loads

Occupant sensible: [230] Btuh/prsn

Occupant latent: [200] Btuh/prsn

Defaults for Ventilation

Minimum AVF: [20] cfm/prsn

Several settings here. This would be for a typical forced air system.

Manual J requires blinds and screens (if any insect screens) and overhangs (if any overhangs)
Use 50% blinds at 45°, medium color for a default setting.

Use this icon to set the default duct loss and gain. This project is set for a vented attic with R-8 insulated ducts.

Default loads and ventilation cfm for each person. We have found no reason to change.



This icon will take you to the infiltration screen.



You have choices. Tight, Semi-Tight, Average, Semi-Loose and Loose. For new homes never use Semi-Loose or Loose. Using average as a starting place for new homes is acceptable. As your designer gets comfortable with consistent blower door test results, many will use Semi-Tight and Tight.

Simplified Method Infiltration for Entire House

Conditions

☐ Isolated zone



Construction quality

Average

Number of above grade stories

1

Exposures

☐ 1 or 2

☒ 3 or 4

Number of fireplaces

0

Fireplace quality

Average

Summary

Conditioned floor area

Heating

[1808] ft²

Above grade volume

[14464] ft³

Air change rate

[0.380] ach

Unadjusted AVF

[92] cfm

Vent adjustment

0 cfm

Net AVF

92 cfm

Cooling

[1808] ft²

[14464] ft³

[0.200] ach

[48] cfm

0 cfm

48 cfm



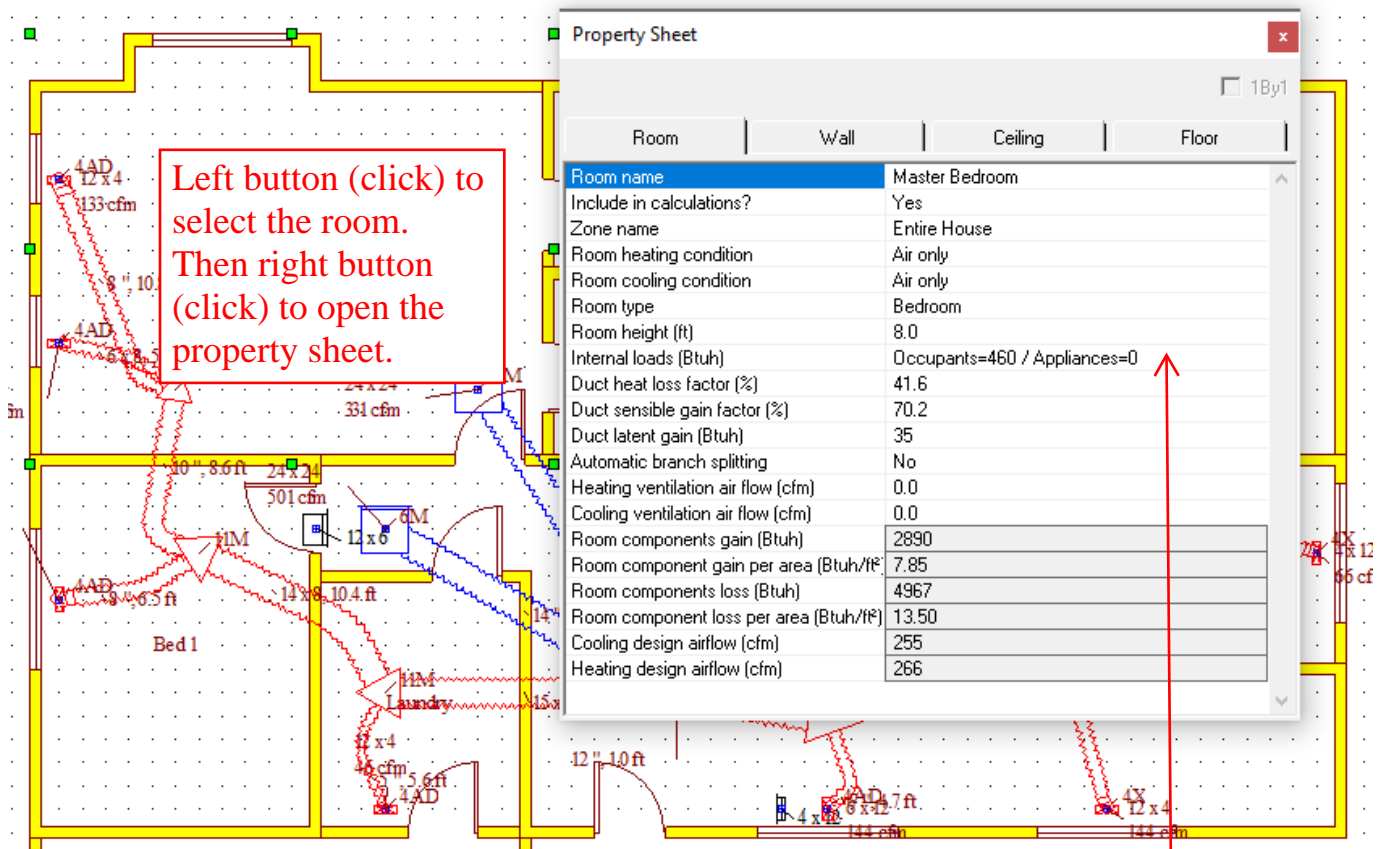
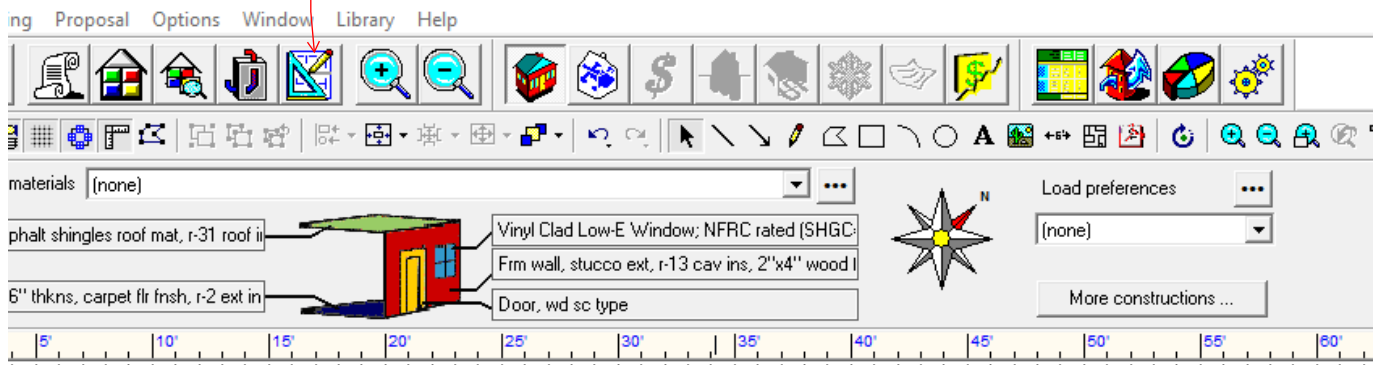
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This icon will open the draw screen.



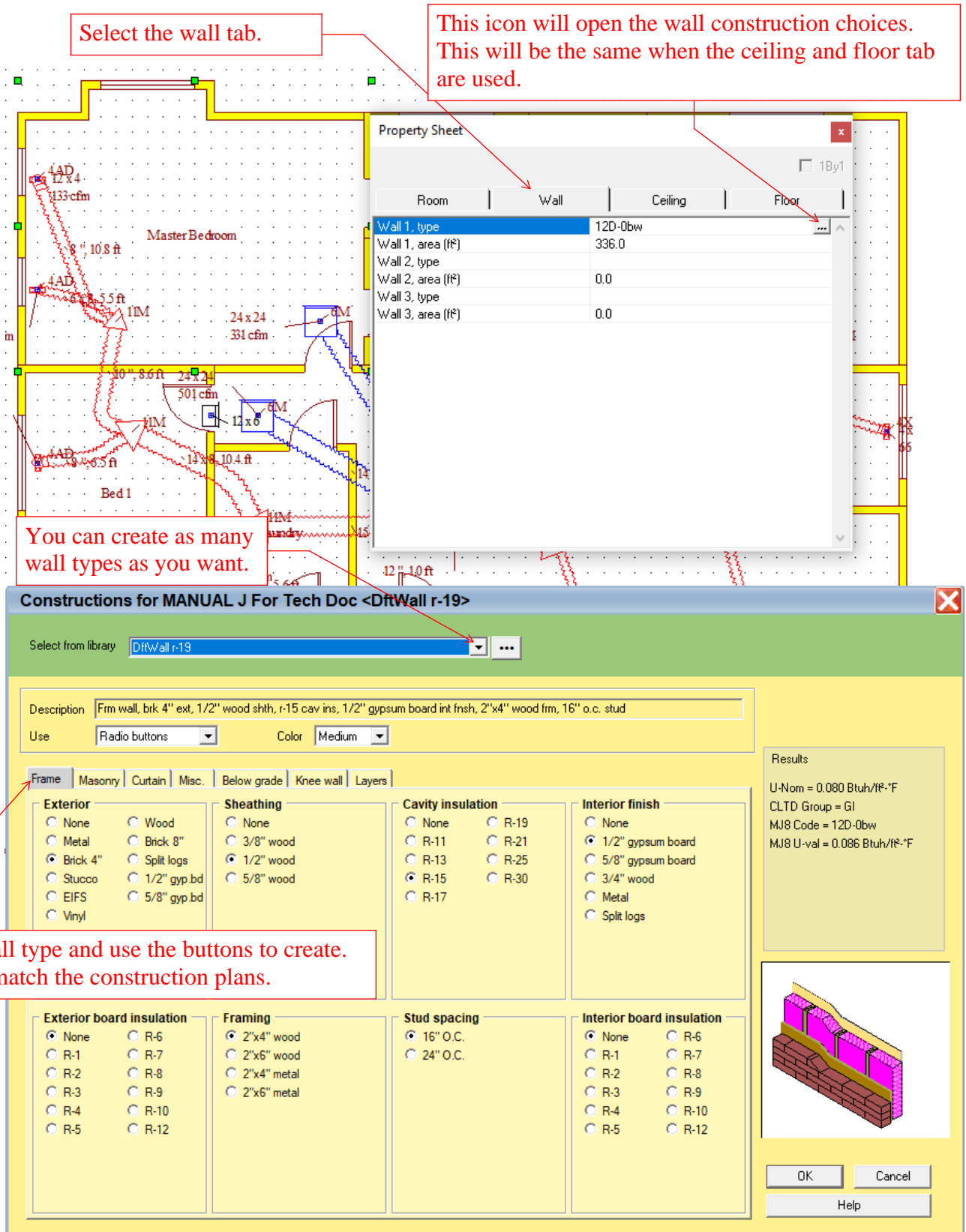
Click on each area that needs to be updated. Most will fill in automatically. The number of occupants is entered here.

Select the wall tab.

This icon will open the wall construction choices. This will be the same when the ceiling and floor tab are used.

You can create as many wall types as you want.

Select the wall type and use the buttons to create. These must match the construction plans.



Property Sheet

Room	Wall	Ceiling	Floor
Wall 1, type	12D-0bw		
Wall 1, area (ft²)	336.0		
Wall 2, type			
Wall 2, area (ft²)	0.0		
Wall 3, type			
Wall 3, area (ft²)	0.0		

Constructions for MANUAL J For Tech Doc <DfrWall r-19>

Select from library: **DfrWall r-19**

Description: Firm wall, brk 4" ext, 1/2" wood shth, r-15 cav ins, 1/2" gypsum board int fnsh, 2"x4" wood frm, 16" o.c. stud

Use: **Radio buttons** Color: **Medium**

Frame Masonry Curtain Misc. Below grade Knee wall Layers

Exterior

- ☐ None
- ☐ Metal
- ☒ Brick 4"
- ☐ Stucco
- ☐ EIFS
- ☐ Vinyl
- ☐ Wood
- ☐ Brick 8"
- ☐ Split logs
- ☐ 1/2" gyp.bd
- ☐ 5/8" gyp.bd

Sheathing

- ☐ None
- ☐ 3/8" wood
- ☒ 1/2" wood
- ☐ 5/8" wood

Cavity insulation

- ☐ None
- ☐ R-11
- ☐ R-13
- ☒ R-15
- ☐ R-17
- ☐ R-21
- ☐ R-25
- ☐ R-30

Interior finish

- ☐ None
- ☒ 1/2" gypsum board
- ☐ 5/8" gypsum board
- ☐ 3/4" wood
- ☐ Metal
- ☐ Split logs

Exterior board insulation

- ☒ None
- ☐ R-1
- ☐ R-2
- ☐ R-3
- ☐ R-4
- ☐ R-5
- ☐ R-6
- ☐ R-7
- ☐ R-8
- ☐ R-9
- ☐ R-10
- ☐ R-12

Framing

- ☒ 2"x4" wood
- ☐ 2"x6" wood
- ☐ 2"x4" metal
- ☐ 2"x6" metal

Stud spacing

- ☒ 16" O.C.
- ☐ 24" O.C.

Interior board insulation

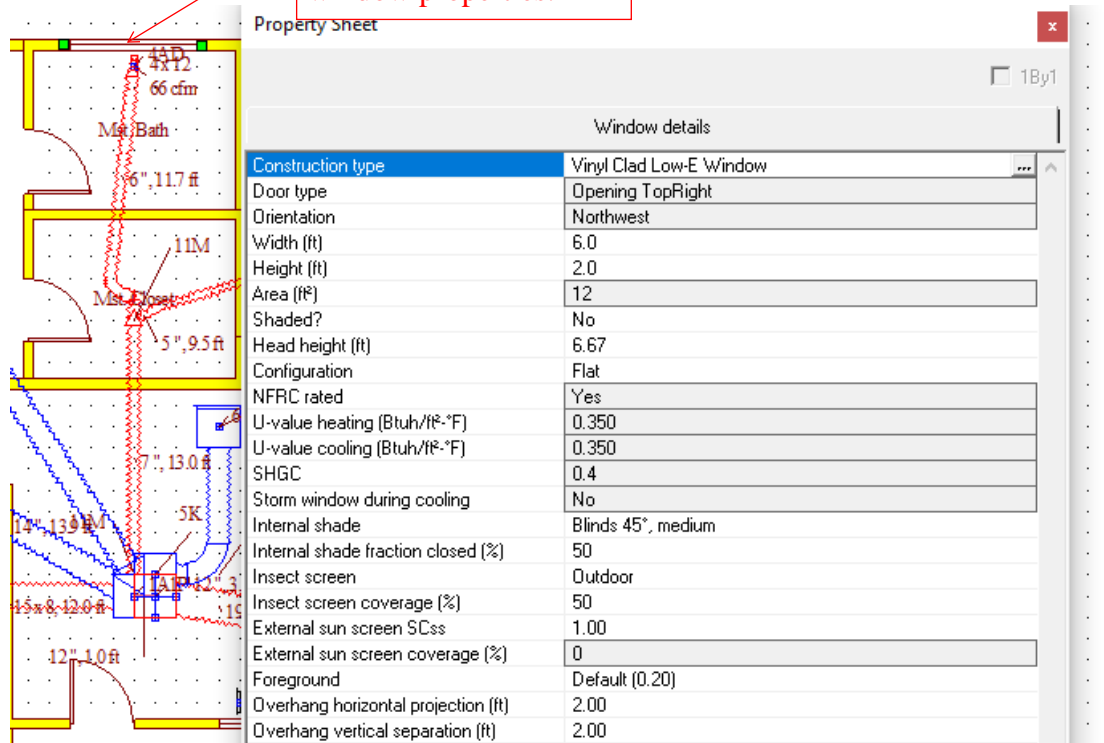
- ☒ None
- ☐ R-1
- ☐ R-2
- ☐ R-3
- ☐ R-4
- ☐ R-5
- ☐ R-6
- ☐ R-7
- ☐ R-8
- ☐ R-9
- ☐ R-10
- ☐ R-12

Results

U-Nom = 0.080 Btu/h/ft²·F
CLTD Group = G1
MJ8 Code = 12D-0bw
MJ8 U-val = 0.086 Btu/h/ft²·F

OK **Cancel** **Help**

Select a window for window properties.



Property Sheet

Window details

Construction type	Vinyl Clad Low-E Window
Door type	Opening TopRight
Orientation	Northwest
Width (ft)	6.0
Height (ft)	2.0
Area (ft²)	12
Shaded?	No
Head height (ft)	6.67
Configuration	Flat
NFRC rated	Yes
U-value heating (Btu/h/ft²·°F)	0.350
U-value cooling (Btu/h/ft²·°F)	0.350
SHGC	0.4
Storm window during cooling	No
Internal shade	Blinds 45°, medium
Internal shade fraction closed (%)	50
Insect screen	Outdoor
Insect screen coverage (%)	50
External sun screen SCss	1.00
External sun screen coverage (%)	0
Foreground	Default (0.20)
Overhang horizontal projection (ft)	2.00
Overhang vertical separation (ft)	2.00

Constructions for MANUAL J For Tech Doc <none>

Select from library (none)

Description Vinyl Clad Low-E Window

Use Custom values

Custom

Select the window design that matches the construction plans.

Glazing type Clear low-e

☒ NFRC rated

Number of glazings (not including storm window) 2

☐ Has storm window

	Without storm window	With storm window	
U-value	0.350	0.350	Btu/h/ft²·°F
SHGC	0.40	0.40	

Frame type Vinyl

Type Operable window

Results

SHGC w/o storm = 0.40
U-val w/o storm = 0.350
MJ8 Code = Vinyl Clad Low-E
MJ8 SHGC w/o storm = 0.40
MJ8 U-val w/o storm = 0.350

Picture Not Available

OK

Cancel

Help



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This icon will open the equipment screen.

The software will have 1,000's of choices. We used a Carrier heat pump for this example.

The software only has AHRI data. The designer must enter the capacities at the design temperatures.

Equipment for Entire House: Base System (Split ASHP)

System Type | Data | Features | Split ASHP | Elec strip | Gas WH | Perf

Type:

Manufacturer:

Trade name:

Condenser model / PN:

Coil model / PN:

AHRI ref.:

Target Capacities (Btuh)

Heating	35582
Cooling sensible	25698
Cooling latent	150

Air Distribution

☐ Heating=Cooling

Estimated AVF (cfm): 1350

Design AVF: cfm

Static pressure: in H2O

Heating: cfm

Cooling: cfm

Detailed Performance

☐ 2 stage

	Stage 1		Stage 2	
Heating (Btuh, COP)				
17°F	21060	2.54	0	0.00
35°F	25704	2.95	0	0.00
47°F	34090	3.70	0	0.00
62°F				
Fan (cfm, W)	1350	416	0	0
Cooling (Btuh, Sens, EER)				
67°F				
82°F	37011	33680	15.0	0.00
95°F	32380	29466	12.0	0.00
Fan (cfm, W)	1350	416	0	0
Cont. fan (cfm, W)	456	125		

Controls

Low temp off/on (°F): /

Backup:

Capacity balance (°F): 24.0

Economic balance: -99.0

Ratings

☒ SEER2 Ratings

HSPF2:

EER2: SEER2:

SHR: Sound:

Select Equip | Generic Equip | OK | Cancel | Apply | Help

Used these values from the manufacturers expanded performance data.

DETAILED COOLING CAPACITIES# (Continued)

EVAPORATOR AIR		CONDENSER ENTERING AIR TEMPERATURES °F (°C)											
		75.0 (23.9)			85.0 (29.4)			95.0 (35.0)			105.0 (40.6)		
CFM	EWB	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.	Capacity MBtuh		Total Sys.
		Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**	Total	Sens‡	KW**
25SCA536A003 Outdoor Section With FJ4DNXB36L* Indoor Section													
1060	72.0 (22.2)	41.65	21.37	2.29	39.73	20.65	2.56	37.70	19.88	2.81	35.53	19.08	3.10
	67.0 (19.4)	37.84	26.35	2.33	36.07	25.61	2.59	34.20	24.83	2.85	32.20	24.01	3.14
	63.0 (17.2)††	35.05	25.33	2.34	33.41	24.59	2.61	31.65	23.80	2.87	29.77	22.97	3.15
	62.0 (16.7)	34.43	31.15	2.34	32.85	30.37	2.61	31.16	29.52	2.87	29.40	28.59	3.15
	57.0 (13.9)	33.21	33.21	2.34	31.95	31.95	2.61	30.59	30.59	2.87	29.12	29.12	3.15
1200	72.0 (22.2)	42.35	22.32	2.33	40.36	21.58	2.59	38.26	20.80	2.84	36.01	19.99	3.13
	67.0 (19.4)	38.52	27.88	2.36	36.73	27.17	2.63	34.73	26.33	2.89	32.65	25.53	3.17
	63.0 (17.2)††	35.69	26.76	2.38	33.97	25.98	2.65	32.15	25.22	2.91	30.21	24.37	3.19
	62.0 (16.7)	35.17	33.16	2.38	33.55	32.30	2.65	31.96	31.04	2.91	30.19	30.19	3.19
	57.0 (13.9)	34.46	34.46	2.38	33.13	33.13	2.65	31.69	31.69	2.91	30.14	30.14	3.19
1350	72.0 (22.2)	42.92	23.27	2.36	40.87	22.52	2.62	38.70	21.74	2.88	36.39	20.92	3.17
	67.0 (19.4)	39.04	29.46	2.41	37.15	28.70	2.67	35.15	27.89	2.93	33.03	27.01	3.22
	63.0 (17.2)††	36.22	28.22	2.42	34.43	27.45	2.69	32.38	26.55	2.95	30.58	25.76	3.23
	62.0 (16.7)	35.86	35.05	2.42	34.24	34.24	2.69	32.73	32.73	2.95	31.07	31.07	3.23
	57.0 (13.9)	35.60	35.60	2.43	34.18	34.18	2.69	32.67	32.67	2.95	31.03	31.03	3.23

HEAT PUMP HEATING PERFORMANCE

INDOOR AIR		OUTDOOR COIL ENTERING AIR TEMPERATURES °F (°C)																	
EDB	CFM	-3.0 (-19.4)			7.0 (-13.9)			17.0 (-8.3)			27.0 (-2.8)			37.0 (2.8)			47.0 (8.3)		
		Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†	Capacity MBtuh		Total Sys. KW†
		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*		Total	Integ*	
25SCA536A003 Outdoor Section With FJ4DNXB36L* Indoor Section																			
65.0 (18.3)	1060	13.57	12.48	2.18	17.01	15.63	2.19	21.01	19.16	2.26	25.84	22.95	2.39	30.04	27.34	2.49	34.58	34.58	2.60
	1200	13.82	12.71	2.20	17.30	15.90	2.20	21.35	19.47	2.27	26.14	23.22	2.38	30.41	27.67	2.48	35.06	35.06	2.58
	1350	14.06	12.93	2.23	17.57	16.14	2.22	21.65	19.74	2.28	26.43	23.48	2.39	30.76	27.99	2.48	35.49	35.49	2.57
70.0 (21.1)	1060	12.97	11.93	2.28	16.42	15.09	2.29	20.40	18.60	2.35	25.37	22.54	2.48	29.53	26.87	2.59	34.00	34.00	2.69
	1200	13.24	12.18	2.31	16.72	15.36	2.31	20.74	18.91	2.37	25.71	22.84	2.48	29.91	27.22	2.58	34.47	34.47	2.68
	1350	13.47	12.39	2.34	16.99	15.61	2.33	21.06	19.20	2.39	26.01	23.10	2.49	30.27	27.55	2.58	34.90	34.90	2.67
75.0 (23.9)	1060	12.31	11.32	2.36	15.76	14.48	2.37	19.74	18.00	2.44	24.24	21.53	2.55	29.02	26.41	2.68	33.42	33.42	2.79
	1200	12.56	11.55	2.39	16.05	14.75	2.39	20.08	18.31	2.45	24.77	22.00	2.56	29.40	26.75	2.67	33.88	33.88	2.78
	1350	12.81	11.78	2.43	16.34	15.01	2.42	20.40	18.60	2.47	25.51	22.66	2.59	29.74	27.06	2.68	34.30	34.30	2.77

This icon will open the blower information screen.

The starting external static pressure will be the designers best educated guess. This can be adjusted as the duct design progresses.

Recommend at least a 0.10 value for a filter.

Additional pressure losses based on installed devices.

Static loss for the coil will be from the manufacturers data. In humid climates the pressure loss for a cooling "Wet" coil will be higher than the heating "Dry" coil. In dry climates designers may have the same pressure losses for both.

Library Help

Static Pressure for Entire House

External static pressure
Pressure losses

	Heating (in H2O)	Cooling (in H2O)
Coil	0.27	0.27
Heat exchanger	0	0
Supply diffusers	0.03	0.03
Return grilles	0.03	0.03
Filter	0.10	0.10
Humidifier	0	0
Balancing damper	0	0
Other device	0	0
Available static pressure	0.27	0.27

Measured length of run-out
Measured length of trunk
Equivalent length of fittings

	Supply (ft)	Return (ft)
Measured length of run-out	11	15
Measured length of trunk	29	0
Equivalent length of fittings	170	50
Total length	210	65
Total effective length		276

Friction Rate

	Heating (in/100ft)	OK	Cooling (in/100ft)	OK
Supply	0.098	OK	0.098	OK
Return	0.098	OK	0.098	OK

Manual T can be used for the pressure loss for registers and grilles. A reasonable value of 0.03 can be used.

This is the available static pressure for the duct design.

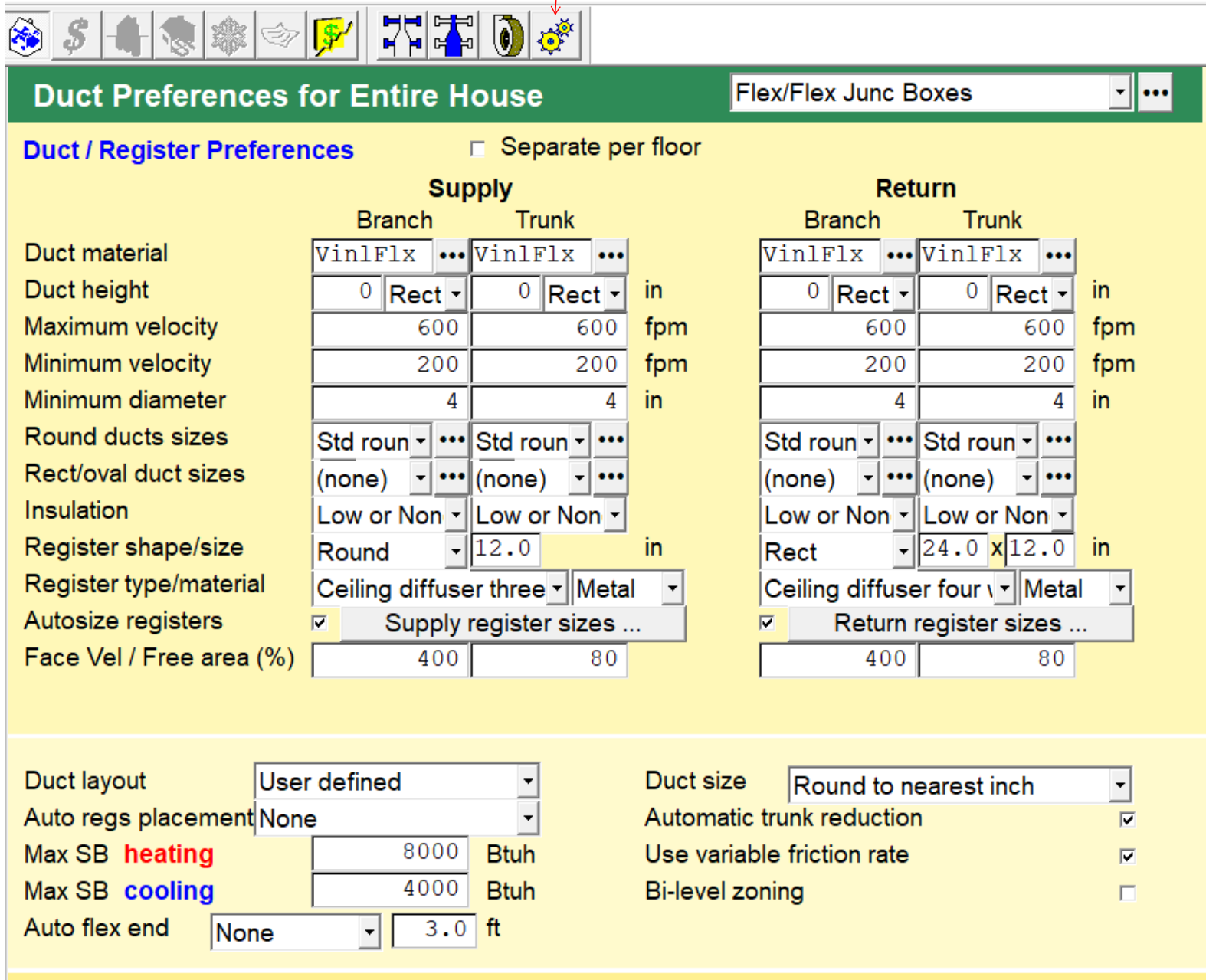
The lengths will be calculated from the duct design.

The friction rate is the relationship between the blower and the ductwork. The design friction rate must be between a 0.06 and 0.18.

Available static pressure * 100 / Total equivalent length = Friction Rate

$$0.27 * 100 / 276 = 0.098$$

This icon will open the duct preferences information screen.



Duct Preferences for Entire House Flex/Flex Junc Boxes

Duct / Register Preferences ☐ Separate per floor

	Supply		Return	
	Branch	Trunk	Branch	Trunk
Duct material	VinlFlx	VinlFlx	VinlFlx	VinlFlx
Duct height	0 Rect	0 Rect	0 Rect	0 Rect
Maximum velocity	600	600	600	600
Minimum velocity	200	200	200	200
Minimum diameter	4	4	4	4
Round ducts sizes	Std roun	Std roun	Std roun	Std roun
Rect/oval duct sizes	(none)	(none)	(none)	(none)
Insulation	Low or Non	Low or Non	Low or Non	Low or Non
Register shape/size	Round	12.0 in	Rect	24.0 x 12.0 in
Register type/material	Ceiling diffuser three	Metal	Ceiling diffuser four	Metal
Autosize registers	<input checked="" type="checkbox"/>	Supply register sizes ...	<input checked="" type="checkbox"/>	Return register sizes ...
Face Vel / Free area (%)	400	80	400	80

Duct layout: User defined
 Auto regs placement: None
 Max SB heating: 8000 Btuh
 Max SB cooling: 4000 Btuh
 Auto flex end: None 3.0 ft

Duct size: Round to nearest inch
 Automatic trunk reduction: ☒
 Use variable friction rate: ☒
 Bi-level zoning: ☐

The designer has many choices for duct design. This has been set up for a flex duct system that will be located in the attic.

