Short Form
Entire House
Don West Cooling & Heating, Inc.

Job:
Date: Nov 25, 2005
By: Don West

5445 Westgate, Shawnee, KS 66216 Phone: 913-631-4526 Fax: 913-631-4538 Email: don@donwestcooling.com Web: www.donwestcooling.com

Project Information

For: Jodie Johnson
Leawood, KS 66209

Design Information

	Htg	Clg
Outside db (°F)	-1	96
Inside db (°F)	70	75
Design TD (°F)	71	21
Daily range	-	M
Inside humidity (%)	-	50
Moisture difference (gr/lb)	-	35

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	2 (Average)

HEATING EQUIPMENT

Make York
Trade Affinity
Model PT9C16N100UP11

Efficiency	92.5 AFUE	
Heating input	100000	Btuh
Heating output	93000	Btuh
Temperature rise	55	°F
Actual air flow	***1600***	cfm
Air flow factor	0.023	cfm/Btuh
Static pressure	0.00	in H2O
Space thermostat		

COOLING EQUIPMENT

Make York
Trade Affinity 3S
Cond CZB04811
Coil G1FA060S21+TXV

Efficiency	13.3 SEER	
Sensible cooling	34300	Btuh
Latent cooling	14700	Btuh
Total cooling	49000	Btuh
Actual air flow	1633	cfm
Air flow factor	0.051	cfm/Btuh
Static pressure	0.00	in H2O
Load sensible heat ratio	0.87	

ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
Basement	2254	32966	7380	764	380
NE Bedroom	232	6021	3229	140	166
Master Bath	144	1741	687	40	35
NW Bedroom	206	4348	2635	101	136
Office	150	2609	2460	60	127
Kitchen	326	3765	2582	87	133
Int. Bath & Hall	180	409	295	9	15
Hearth Room	238	6214	4398	144	226
Utility Room	84	1326	695	31	36
Main Entry	72	1274	486	30	25
Dining Room	225	4078	3108	95	160
Family Room	410	4282	3769	99	194

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Entire House	4520	69031	31723	***1600***	1633
Other equip loads		6781	2006		
Equip. @ 1.01 RSM			34066		
Latent cooling			4975		
TOTALS	4520	75813	39040	***1600***	1633

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Building Analysis
Entire House
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Project Information

For: Jodie Johnson
Leawood, KS 66209

Design Conditions

Location:
Kansas City, MO, US
Elevation: 1024 ft
Latitude: 39°N

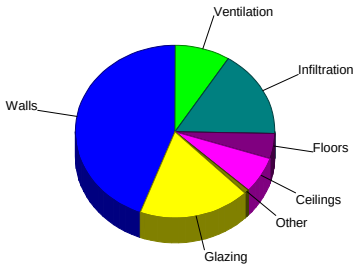
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	-1	96
Daily range (°F)	-	19 (M)
Wet bulb (°F)	-	75
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	71	21
Relative humidity (%)	50	50
Moisture difference (gr/lb)	52.5	35.1

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	2 (Average)

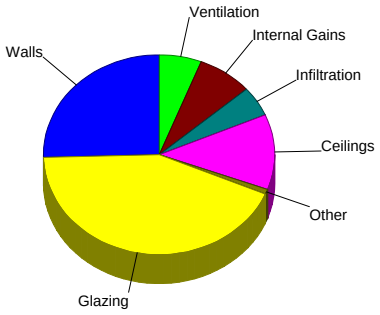
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	9.6	33606	44.3
Glazing	43.1	13704	18.1
Doors	27.7	581	0.8
Ceilings	2.3	5148	6.8
Floors	1.6	3563	4.7
Infiltration	4.6	12428	16.4
Ducts		0	0.0
Piping		0	0.0
Humidification		0	0.0
Ventilation		6781	8.9
Adjustments		0	
Total		**75813**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.4	8575	25.4
Glazing	45.7	14544	43.1
Doors	12.9	270	0.8
Ceilings	1.8	4097	12.1
Floors	0.0	10	0.0
Infiltration	0.6	1647	4.9
Ducts		0	0.0
Ventilation		2006	5.9
Internal gains		2580	7.6
Blower		0	0.0
Adjustments		0	
Total		**33729**	**100.0**



Overall U-value = 0.086 Btuh/ft²-°F

Data entries checked.

Component Constructions
Entire House
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Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	2 (Average)

Construction descriptions	Or	Area (ft²)	U-value (Btuh/ft²-°F)	Insul R (ft²-°F/Btuh)	Htg HTM (Btuh/ft²)	Loss (Btuh)	Clg HTM (Btuh/ft²)	Gain (Btuh)
Walls								
12C-0sw: Wood stud frame, siding or stucco, no board insulation, R-13 cavity insulation	n	683	0.091	13.0	6.46	4413	2.55	1740
	e	322	0.091	13.0	6.46	2077	2.55	819
	s	429	0.091	13.0	6.46	2770	2.55	1092
	sw	16	0.091	13.0	6.46	101	2.55	40
	w	592	0.091	13.0	6.46	3825	2.55	1509
	nw	10	0.091	13.0	6.46	62	2.55	24
	all	2051	0.091	13.0	6.46	13248	2.55	5225
15B-0c-8: Basement - 8" concrete, no framing or interior finish, no board insulation, 8'	n	48	0.117	0.0	8.31	399	0.00	0
	e	512	0.117	0.0	8.31	4253	0.00	0
	s	228	0.117	0.0	8.31	1894	0.00	0
	all	788	0.117	0.0	8.31	6546	0.00	0
15B-0c-2: Basement - 8" concrete, no framing or interior finish, no board insulation, 2'	n	72	0.232	0.0	30.1	2167	7.25	522
	s	72	0.232	0.0	30.1	2167	7.25	522
	w	256	0.232	0.0	30.1	7707	7.25	1855
	all	400	0.232	0.0	30.1	12042	7.25	2899
Partitions								
12C-0sw: Wood stud frame, siding or stucco, no board insulation, R-13 cavity insulation		274	0.091	13.0	6.46	1770	1.65	451
Windows								
1D-c2ov: Operable, clear glass, vinyl frame, 2 pane	n	9	0.570	0.0	40.5	364	22.9	206
1D-c2ov: Operable, clear glass, vinyl frame, 2 pane; 100% blinds closed, medium	e	66	0.570	0.0	40.5	2671	38.3	2525
	s	40	0.570	0.0	40.5	1609	21.9	872
	sw	10	0.570	0.0	40.5	405	33.4	334
	w	144	0.570	0.0	40.5	5824	38.3	5506
	nw	10	0.570	0.0	40.5	422	28.4	296
	all	270	0.570	0.0	40.5	10930	35.3	9534
1D-c2omd: Sliding glass door, metal frame, no break, clear glass, 2 pane; 100% blinds closed, medium	w	39	0.870	0.0	61.8	2409	49.7	1939
Doors								
11D0: Wood door, solid core, no storm	e	21	0.390	0.0	27.7	581	12.9	270

Ceilings							
16B-30ad: Ceiling under vented attic, no radiant barrier, dark shingles, R-30 insulation	2266	0.032	30.0	2.27	5148	1.81	4097
Floors							
20P-19t: Tile floor over open crawl/garage, R-19 blanket insulation	12	0.050	19.0	3.55	43	0.82	10
21A-28t: Tile covered basement floor, No insulation, 28' wide	2254	0.022	0.0	1.56	3521	0.00	0

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Project Information

For: Jodie Johnson
Leawood, KS 66209

Notes:

Design Information

Weather: Kansas City, MO, US

Winter Design Conditions

Outside db	-1	°F
Inside db	70	°F
Design TD	71	°F

Summer Design Conditions

Outside db	96	°F
Inside db	75	°F
Design TD	21	°F
Daily range	M	
Relative humidity	50	%
Moisture difference	35	gr/lb

Heating Summary

Structure	69031	Btuh
Ducts	0	cfm
Central vent (90 cfm)	6781	Btuh
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	75813	Btuh

Sensible Cooling Equipment Load Sizing

Structure	31723	Btuh
Ducts	0	Btuh
Central vent (90 cfm)	2006	Btuh
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	1.01	
Equipment sensible load	34066	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	2 (Average)

	Heating	Cooling
Area (ft²)	4520	4520
Volume (ft³)	29604	29604
Air changes/hour	0.33	0.15
Equiv. AVF (cfm)	165	74

Latent Cooling Equipment Load Sizing

Structure	2902	Btuh
Ducts	0	Btuh
Central vent (90 cfm)	2072	Btuh
Equipment latent load	4975	Btuh
Equipment total load	39040	Btuh
Req. total capacity at 0.70 SHR	4.1	ton

Heating Equipment Summary

Make	York
Trade	Affinity
Model	PT9C16N100UP11

Efficiency	92.5	AFUE
Heating input	100000	Btuh
Heating output	93000	Btuh
Temperature rise	55	°F
Actual air flow	***1600***	cfm
Air flow factor	0.023	cfm/Btuh
Static pressure	0.00	in H2O
Space thermostat		

Cooling Equipment Summary

Make	York
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Cond	CZB04811
Coil	G1FA060S21+TXV

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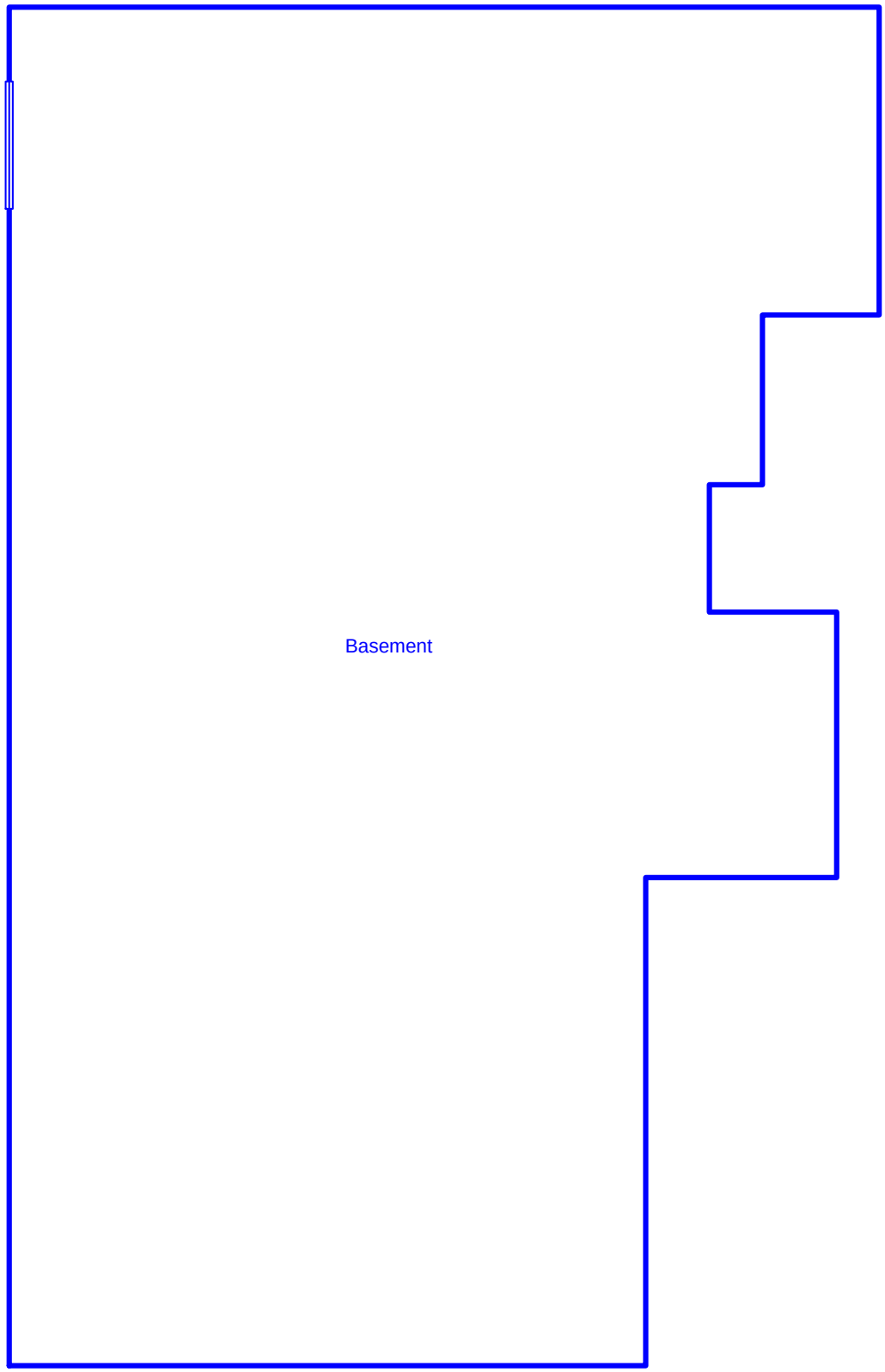
Basement



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Scale: 1 : 93

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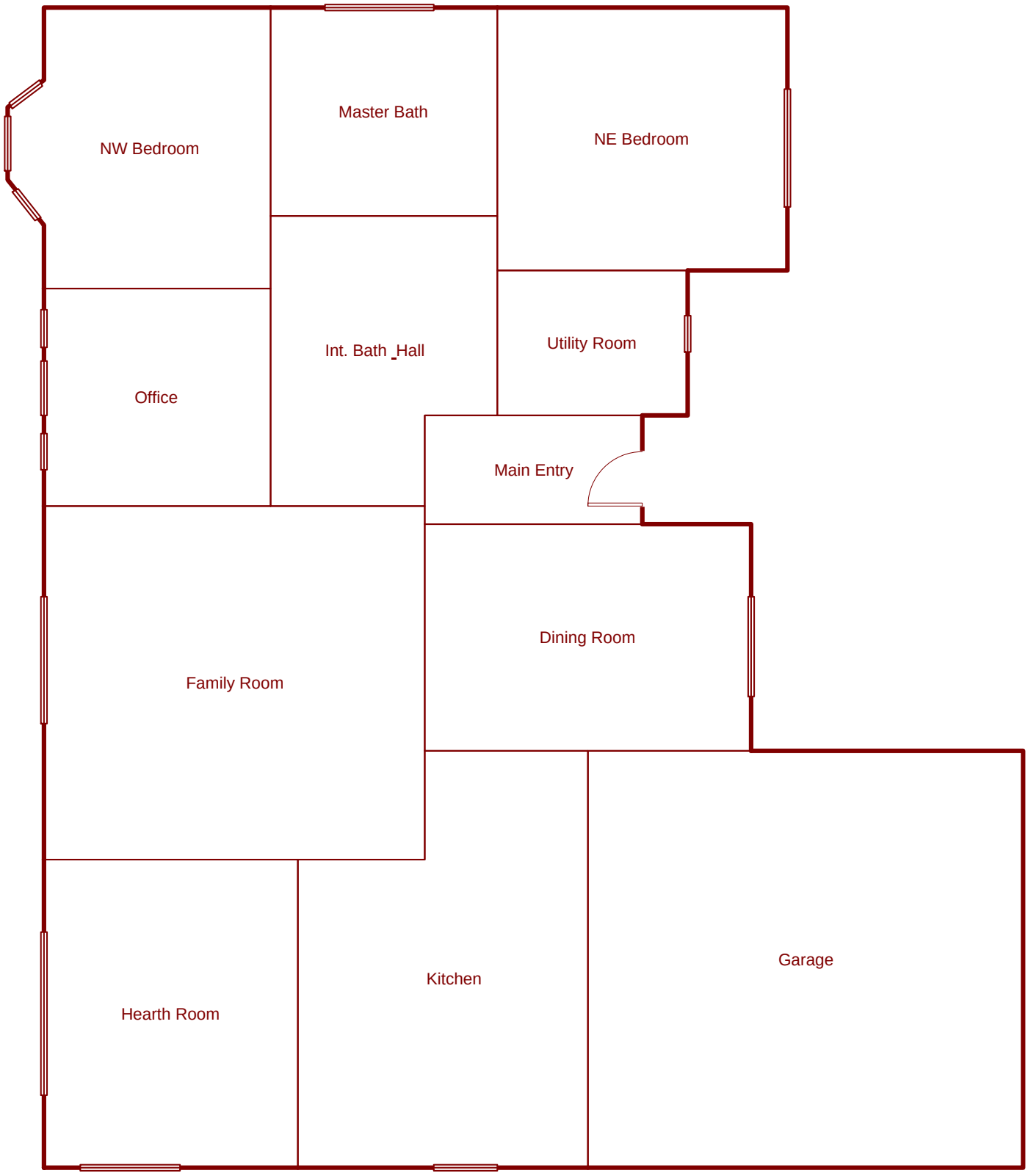
Main Floor



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