



## Project Report

### General Project Information

Project Title: Venture Cape  
 Designed By: BSC  
 Project Date: 10/05  
 Client Name: Payson Tilden Venture Inc.  
 Client Address: 196 Cesar E. Chavez, P O Box 430598  
 Client City: Pontiac, MI 48343-0598  
 Client Phone: 248 209 2767  
 Client Fax: 248 209 2777  
 Company Name: Building Science Corporation  
 Company Representative: Philip Kerrigan Jr  
 Company Address: 70 Main Street  
 Company City: Westford, MA 01886  
 Company Phone: (978) 589-5100  
 Company Fax: (978) 589-5103  
 Company E-Mail Address: aaron@buildingscience.com  
 Company Website: www.buildingscience.com

### Design Data

Reference City: Pontiac, Michigan  
 Daily Temperature Range: Medium  
 Latitude: 42 Degrees  
 Elevation: 981 ft.  
 Altitude Factor: 0.965  
 Elevation Sensible Adj. Factor: 1.000  
 Elevation Total Adj. Factor: 1.000  
 Elevation Heating Adj. Factor: 1.000  
 Elevation Heating Adj. Factor: 1.000

	Outdoor Dry Bulb	Outdoor Wet Bulb	Indoor Rel.Hum	Indoor Dry Bulb	Grains Difference
Winter:	4	0	30	72	31
Summer:	87	72	50	75	31

### Check Figures

Total Building Supply CFM:	521	CFM Per Square ft.:	0.213
Square ft. of Room Area:	2,449	Square ft. Per Ton:	1,890
Volume (ft <sup>3</sup> ) of Cond. Space:	19,339	Air Turnover Rate (per hour):	1.6

### Building Loads

Total Heating Required With Outside Air:	24,996 Btuh	24.996 MBH
Total Sensible Gain:	11,660 Btuh	84 %
Total Latent Gain:	2,239 Btuh	16 %
Total Cooling Required With Outside Air:	13,899 Btuh	1.16 Tons (Based On Sensible + Latent)
		1.30 Tons (Based On 75% Sensible Capacity)

### Notes

Calculations are based on 8th edition of ACCA Manual J.  
 All computed results are estimates as building use and weather may vary.  
 Be sure to select a unit that meets both sensible and latent loads.



## Total Building Summary Loads

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
LoE2 Spectrally Sel: Glazing-Typical High Performance, u-value 0.35	261.5	6,224	0	6,055	6,055
11P: Door-Polyurethane Core	23.2	457	0	155	155
15C0-4sf-8: Wall-Basement, , R-4 board insulation to floor, no interior finish, 8' floor depth	696	3,548	0	0	0
14F-5: Wall-four inches of concrete, R-5 board insulation on 4 inch 140# concrete wall with stucco and interior finish	186.5	1,801	0	273	273
12E-5sw: Wall-Frame, R-19 insulation in 2 x 6 stud cavity, R-5 board insulation, siding finish, wood studs	1346.7	4,762	0	680	680
R-30 + 5-ad: Roof/Ceiling-Below roof joists, Cape House Vaulted Roof, dark asphalt	746.5	1,523	0	426	426
16B-38: Roof/Ceiling-Under attic or knee wall, Vented Attic, No Radiant Barrier, Dark Asphalt Shingles or Dark Metal, Tar and Gravel or Membrane, R-38 insulation	371.5	657	0	455	455
21B-24: Floor-Basement, Concrete slab, any thickness, 2 or more feet below grade, R-3 or higher insulation installed below floor, any floor cover, shortest side of floor slab is 24' wide	816	943	0	0	0
Subtotals for structure:		19,915	0	8,044	8,044
People:	4		800	920	1,720
Equipment:			0	1,800	1,800
Lighting:	0			0	0
Ductwork:		0	0	0	0
Infiltration: Winter CFM: 24, Summer CFM: 24		1,739	491	306	797
Ventilation: Winter CFM: 46, Summer CFM: 46		3,342	948	590	1,538
Total Building Load Totals:		24,996	2,239	11,660	13,899

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### System 1 Room Load Summary

Room No	Room Name	Area SF	Htg Sens Btuh	Htg Nom CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Clg Nom CFM	Air Sys CFM
---Zone 1---										
1	Basement	816	7,597	102	1-7	383	1,961	63	92	92
2	Living	197	2,231	30	1-4	452	838	76	39	39
3	Dining	126	1,632	22	1-5	342	991	462	47	47
4	Kitchen	97	644	9	1-5	472	1,365	28	64	64
5	Back Hall	35	513	7	1-4	94	175	11	8	8
6	Mstr Bath	60	865	12	1-4	242	449	41	21	21
7	Master Bedroom	198	1,875	25	1-6	360	1,500	476	71	71
8	Downstair Hall	103	497	7	1-4	121	225	19	11	11
9	Bedroom 2	324	2,032	27	1-6	373	1,555	34	73	73
10	Bedroom 3	323	2,029	27	1-4	391	724	34	34	34
11	Bath 2	70	822	11	1-4	268	496	33	23	23
12	Stair	100	917	12	1-4	427	791	14	37	37
Ventilation			3,342				590	948		
System 1 total		2,449	24,996	291			11,660	2,239	521	521

System 1 Main Trunk Size: 9x12 in.  
 Velocity: 745 ft./min  
 Loss per 100 ft.: 0.103 in.wg

### Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Net Required:	1.16	84% / 16%	11,660	2,239	13,899
Recommended:	1.30	75% / 25%	11,660	3,887	15,546

### Equipment Data

	Heating System	Cooling System
Type:		
Model:		
Brand:		
Efficiency:		
Sound:		
Capacity:		
Sensible Capacity:	n/a	0 Btuh
Latent Capacity:	n/a	0 Btuh