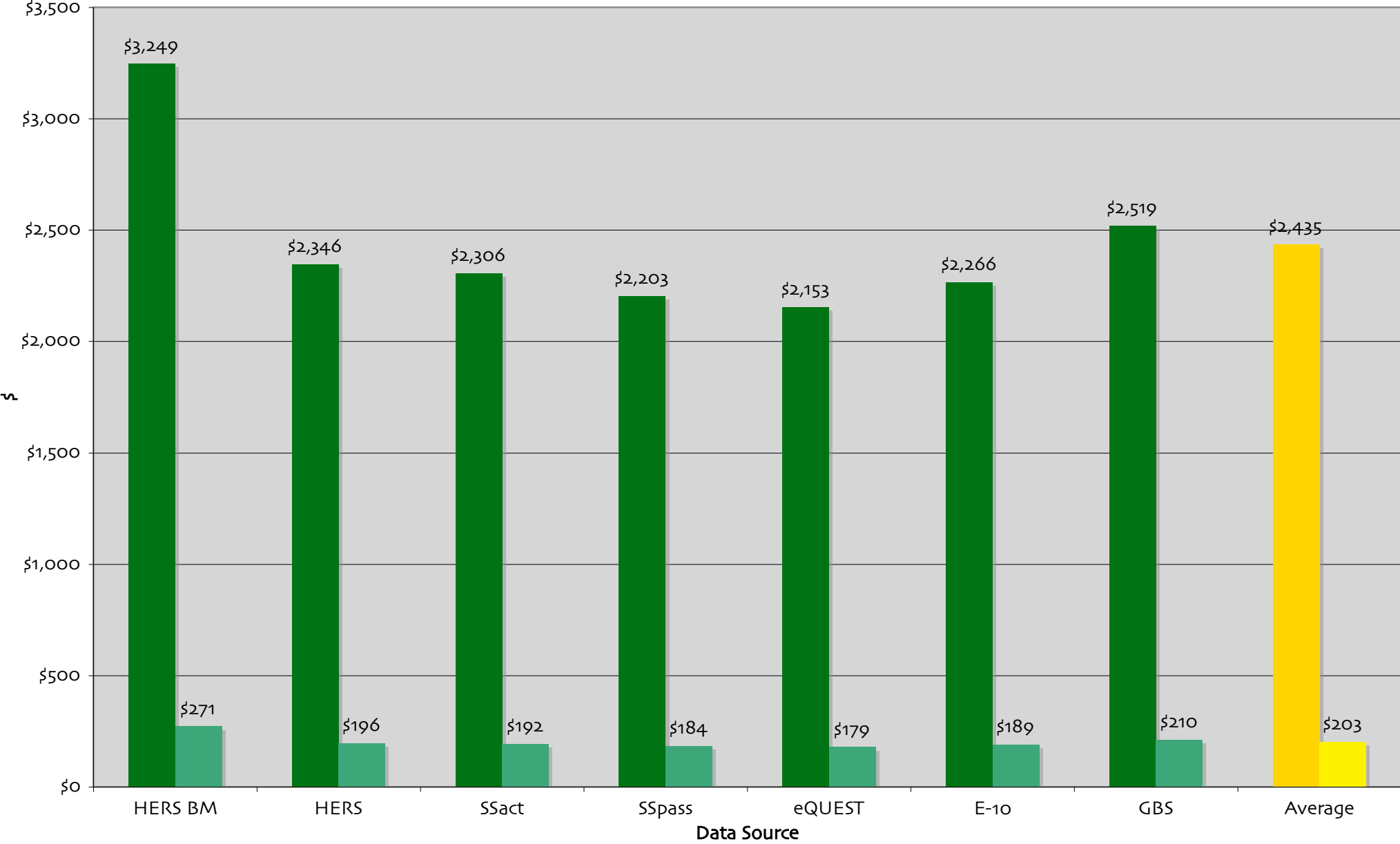
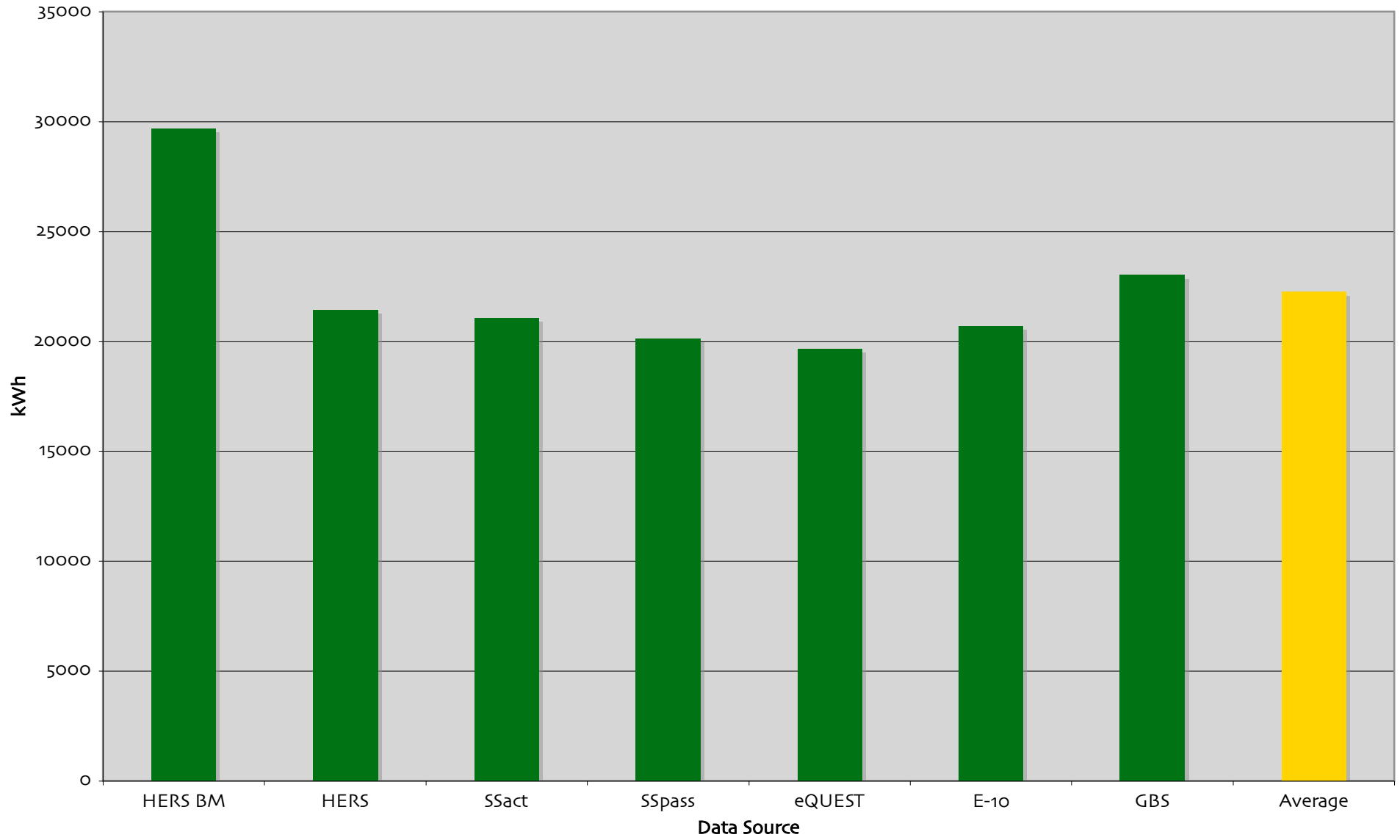


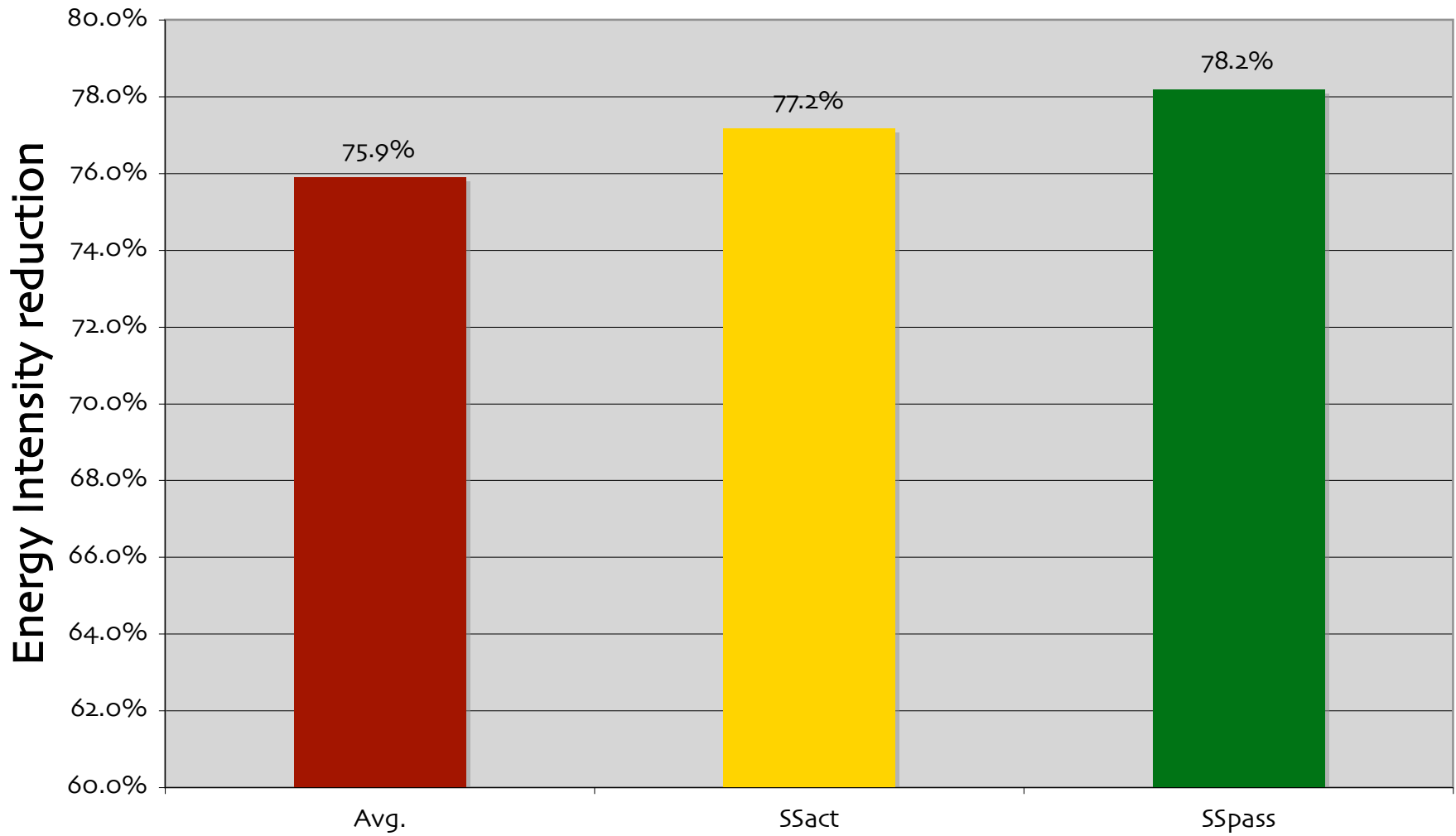
Smith Predicted Annual / Monthly Cost



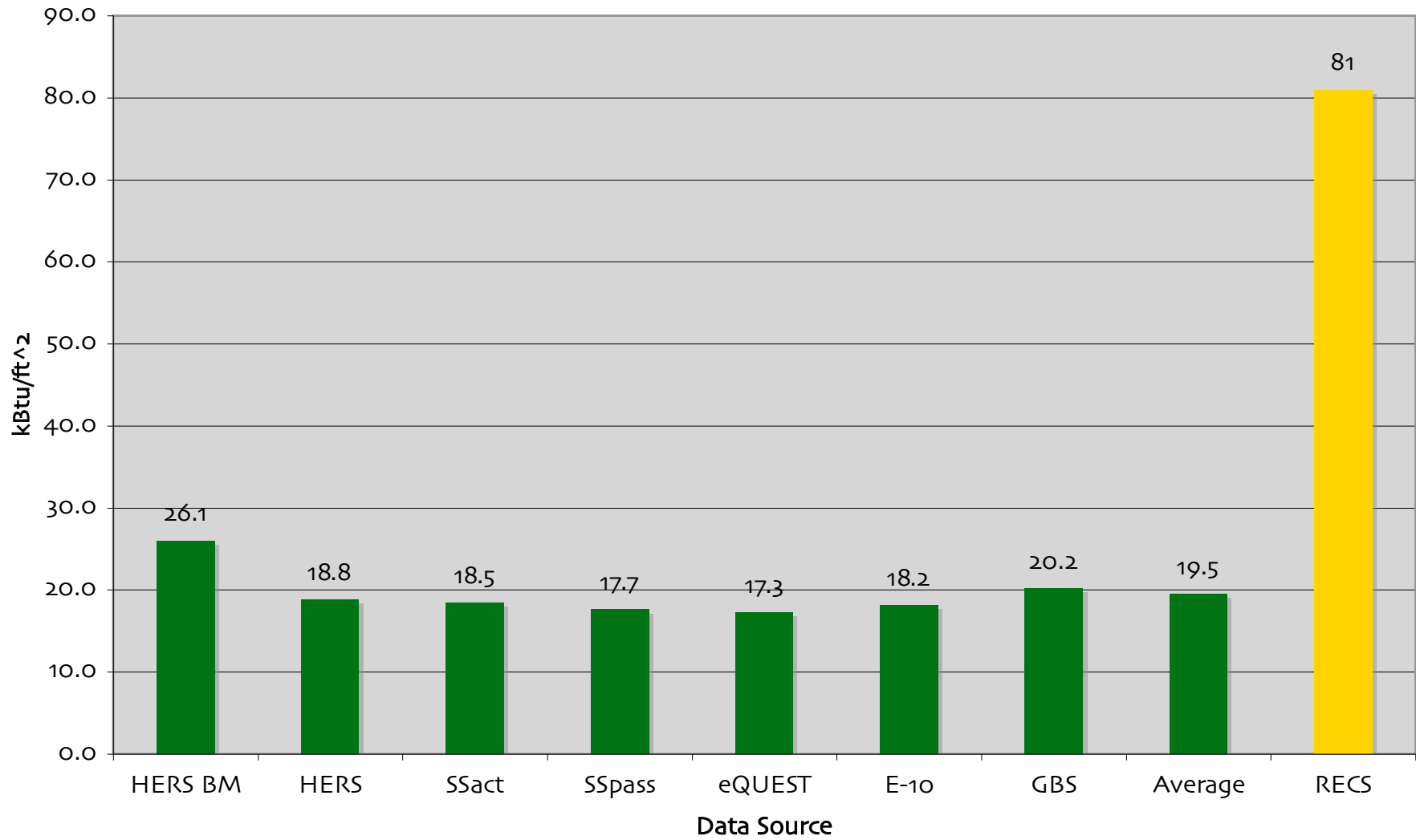
Smith Annual Consumption Estimate



Smith: Conservation, RECS 2001 Base
(goal: 80% by 2050)



Smith Est. Annual Energy Intensity



| ID | Code | Component | Quantity | Unit |
|----|-------|--|----------|--------------------------|
| 1 | D104w | 201 U-value, summer | 0.36 | Btu/h-ft ² -F |
| 1 | D104w | 401 Heat Transfer, summer | 7.989 | Btu/h-F |
| 1 | D104w | 701 door rough opening area | 22.191 | ft ² |
| 1 | D201n | 201 U-value, summer | 0.36 | Btu/h-ft ² -F |
| 1 | D201n | 401 Heat Transfer, summer | 7.989 | Btu/h-F |
| 1 | D201n | 701 door rough opening area | 22.191 | ft ² |
| 1 | D202s | 201 U-value, summer | 0.36 | Btu/h-ft ² -F |
| 1 | D202s | 401 Heat Transfer, summer | 7.989 | Btu/h-F |
| 1 | D202s | 701 door rough opening area | 22.191 | ft ² |
| 1 | D203n | 201 U-value, summer | 0.36 | Btu/h-ft ² -F |
| 1 | D203n | 401 Heat Transfer, summer | 7.989 | Btu/h-F |
| 1 | D203n | 701 door rough opening area | 22.191 | ft ² |
| 6 | D215 | 201 U-value, summer | 2.16 | Btu/h-ft ² -F |
| 6 | D215 | 401 Heat Transfer, summer | 42.394 | Btu/h-F |
| 6 | D215 | 701 door rough opening area | 117.76 | ft ² |
| 2 | F03s | 201 U-value, summer | 0.7 | Btu/h-ft ² -F |
| 2 | F03s | 401 Heat Transfer, summer | 3.763 | Btu/h-F |
| 2 | F03s | 701 window rough opening area | 10.75 | ft ² |
| 7 | F04s | 201 U-value, summer | 2.45 | Btu/h-ft ² -F |
| 7 | F04s | 401 Heat Transfer, summer | 34.611 | Btu/h-F |
| 7 | F04s | 701 window rough opening area | 98.89 | ft ² |
| 2 | F04w | 201 U-value, summer | 0.64 | Btu/h-ft ² -F |
| 2 | F04w | 401 Heat Transfer, summer | 3.992 | Btu/h-F |
| 2 | F04w | 701 window rough opening area | 12.476 | ft ² |
| 2 | F05s | 201 U-value, summer | 0.7 | Btu/h-ft ² -F |
| 2 | F05s | 401 Heat Transfer, summer | 12.444 | Btu/h-F |
| 2 | F05s | 701 window rough opening area | 35.556 | ft ² |
| 2 | F06s | 201 U-value, summer | 0.7 | Btu/h-ft ² -F |
| 2 | F06s | 401 Heat Transfer, summer | 12.444 | Btu/h-F |
| 2 | F06s | 701 window rough opening area | 35.556 | ft ² |
| 3 | F07e | 201 U-value, summer | 0.96 | Btu/h-ft ² -F |
| 3 | F07e | 401 Heat Transfer, summer | 7.68 | Btu/h-F |
| 3 | F07e | 701 window rough opening area | 24 | ft ² |
| 3 | F07s | 201 U-value, summer | 1.05 | Btu/h-ft ² -F |
| 3 | F07s | 401 Heat Transfer, summer | 8.711 | Btu/h-F |
| 3 | F07s | 701 window rough opening area | 24.889 | ft ² |
| 3 | F09n | 201 U-value, summer | 0.96 | Btu/h-ft ² -F |
| 3 | F09n | 401 Heat Transfer, summer | 16.805 | Btu/h-F |
| 3 | F09n | 701 window rough opening area | 52.516 | ft ² |
| 5 | F09s | 201 U-value, summer | 1.75 | Btu/h-ft ² -F |
| 5 | F09s | 401 Heat Transfer, summer | 29.373 | Btu/h-F |
| 5 | F09s | 701 window rough opening area | 83.924 | ft ² |
| 1 | F10n | 201 U-value, summer | 0.32 | Btu/h-ft ² -F |
| 1 | F10n | 401 Heat Transfer, summer | 1.105 | Btu/h-F |
| 1 | F10n | 701 window rough opening area | 3.453 | ft ² |
| 3 | P01 | 10 Insulated Concrete Form, 6 1/4-in. core | 71.19 | h-ft ² -F/Btu |
| 6 | P01 | 42 1/2-in. Gypsum | 2.7 | h-ft ² -F/Btu |

| | | | | | |
|----|------|-----|---|---------|--------------------------|
| 6 | Po1 | 42 | 3/4-in. furr. channel, airspace | 6 | h-ft ² -F/Btu |
| 15 | Po1 | 101 | R-value | 79.89 | h-ft ² -F/Btu |
| 3 | Po1 | 201 | U-value, summer | 0.113 | Btu/h-ft ² -F |
| 3 | Po1 | 401 | Heat Transfer, summer | 9.063 | Btu/h-F |
| 3 | Po1 | 701 | Net Wall Area | 241.346 | ft ² |
| 4 | Wo1e | 10 | Insulated Concrete Form, 6 1/4-in. core | 94.92 | h-ft ² -F/Btu |
| 4 | Wo1e | 42 | 1/2-in. Gypsum | 1.8 | h-ft ² -F/Btu |
| 4 | Wo1e | 42 | 3/4-in. furr. channel, airspace | 4 | h-ft ² -F/Btu |
| 12 | Wo1e | 101 | R-value | 100.72 | h-ft ² -F/Btu |
| 4 | Wo1e | 201 | U-value, summer | 0.159 | Btu/h-ft ² -F |
| 4 | Wo1e | 401 | Heat Transfer, summer | 22.295 | Btu/h-F |
| 4 | Wo1e | 701 | Net Wall Area | 561.39 | ft ² |
| 2 | Wo1n | 10 | Insulated Concrete Form, 6 1/4-in. core | 47.46 | h-ft ² -F/Btu |
| 2 | Wo1n | 42 | 1/2-in. Gypsum | 0.9 | h-ft ² -F/Btu |
| 2 | Wo1n | 42 | 3/4-in. furr. channel, airspace | 2 | h-ft ² -F/Btu |
| 6 | Wo1n | 101 | R-value | 50.36 | h-ft ² -F/Btu |
| 2 | Wo1n | 201 | U-value, summer | 0.079 | Btu/h-ft ² -F |
| 2 | Wo1n | 401 | Heat Transfer, summer | 17.069 | Btu/h-F |
| 2 | Wo1n | 701 | Net Wall Area | 429.797 | ft ² |
| 5 | Wo1s | 10 | Insulated Concrete Form, 6 1/4-in. core | 118.65 | h-ft ² -F/Btu |
| 5 | Wo1s | 42 | 1/2-in. Gypsum | 2.25 | h-ft ² -F/Btu |
| 5 | Wo1s | 42 | 3/4-in. furr. channel, airspace | 5 | h-ft ² -F/Btu |
| 15 | Wo1s | 101 | R-value | 125.9 | h-ft ² -F/Btu |
| 5 | Wo1s | 201 | U-value, summer | 0.199 | Btu/h-ft ² -F |
| 5 | Wo1s | 401 | Heat Transfer, summer | 17.193 | Btu/h-F |
| 5 | Wo1s | 701 | Net Wall Area | 432.913 | ft ² |
| 1 | Wo2e | 10 | 6 1/2-in. Structural Insulated Panel | 23 | h-ft ² -F/Btu |
| 1 | Wo2e | 42 | 1/2-in. Gypsum | 0.45 | h-ft ² -F/Btu |
| 2 | Wo2e | 101 | R-value | 23.45 | h-ft ² -F/Btu |
| 1 | Wo2e | 201 | U-value, summer | 0.043 | Btu/h-ft ² -F |
| 1 | Wo2e | 401 | Heat Transfer, summer | 1.216 | Btu/h-F |
| 1 | Wo2e | 701 | Net Wall Area | 28.504 | ft ² |
| 2 | Wo2n | 10 | 6 1/2-in. Structural Insulated Panel | 46 | h-ft ² -F/Btu |
| 2 | Wo2n | 42 | 1/2-in. Gypsum | 0.9 | h-ft ² -F/Btu |
| 4 | Wo2n | 101 | R-value | 46.9 | h-ft ² -F/Btu |
| 2 | Wo2n | 201 | U-value, summer | 0.085 | Btu/h-ft ² -F |
| 2 | Wo2n | 401 | Heat Transfer, summer | 2.661 | Btu/h-F |
| 2 | Wo2n | 701 | Net Wall Area | 62.392 | ft ² |
| 6 | Wo2s | 10 | 6 1/2-in. Structural Insulated Panel | 138 | h-ft ² -F/Btu |
| 6 | Wo2s | 42 | 1/2-in. Gypsum | 2.7 | h-ft ² -F/Btu |
| 12 | Wo2s | 101 | R-value | 140.7 | h-ft ² -F/Btu |
| 6 | Wo2s | 201 | U-value, summer | 0.256 | Btu/h-ft ² -F |
| 6 | Wo2s | 401 | Heat Transfer, summer | 11.144 | Btu/h-F |
| 6 | Wo2s | 701 | Net Wall Area | 261.321 | ft ² |
| 4 | Wo2w | 10 | 6 1/2-in. Structural Insulated Panel | 92 | h-ft ² -F/Btu |
| 4 | Wo2w | 42 | 1/2-in. Gypsum | 1.8 | h-ft ² -F/Btu |
| 8 | Wo2w | 101 | R-value | 93.8 | h-ft ² -F/Btu |
| 4 | Wo2w | 201 | U-value, summer | 0.171 | Btu/h-ft ² -F |
| 4 | Wo2w | 401 | Heat Transfer, summer | 7.825 | Btu/h-F |

| | | | | | |
|---|-------|-----|--------------------------------------|---------|--------------------------|
| 4 | W02w | 701 | Net Wall Area | 183.492 | ft ² |
| 2 | WF01e | 10 | stone veneer | 8 | h-ft ² -F/Btu |
| 2 | WF01e | 101 | R-value | 8 | h-ft ² -F/Btu |
| 2 | WF01e | 201 | U-value, summer | 0.5 | Btu/h-ft ² -F |
| 2 | WF01e | 401 | Heat Transfer, summer | 14.586 | Btu/h-F |
| 2 | WF01e | 701 | Net Wall Area | 58.343 | ft ² |
| 1 | WF01n | 10 | stone veneer | 4 | h-ft ² -F/Btu |
| 1 | WF01n | 101 | R-value | 4 | h-ft ² -F/Btu |
| 1 | WF01n | 201 | U-value, summer | 0.25 | Btu/h-ft ² -F |
| 1 | WF01n | 401 | Heat Transfer, summer | 5.179 | Btu/h-F |
| 1 | WF01n | 701 | Net Wall Area | 20.717 | ft ² |
| 4 | WF01s | 10 | stone veneer | 16 | h-ft ² -F/Btu |
| 4 | WF01s | 101 | R-value | 16 | h-ft ² -F/Btu |
| 4 | WF01s | 201 | U-value, summer | 1 | Btu/h-ft ² -F |
| 4 | WF01s | 401 | Heat Transfer, summer | 13.899 | Btu/h-F |
| 4 | WF01s | 701 | Net Wall Area | 55.595 | ft ² |
| 1 | WF02w | 10 | 6 1/2-in. Structural Insulated Panel | 23 | h-ft ² -F/Btu |
| 1 | WF02w | 42 | 1/2-in. Gypsum | 0.45 | h-ft ² -F/Btu |
| 2 | WF02w | 101 | R-value | 23.45 | h-ft ² -F/Btu |
| 1 | WF02w | 201 | U-value, summer | 0.043 | Btu/h-ft ² -F |
| 1 | WF02w | 401 | Heat Transfer, summer | 0.853 | Btu/h-F |
| 1 | WF02w | 701 | Net Wall Area | 20 | ft ² |

2/19/09

Swain Residence

6605401s5energy.xls

| Cooling Load | | | | | |
|---------------------|-------|------|---------|---------|------|
| | dt= | | M | | |
| Frame Walls | UA | DEDT | UA*DEDT | | A |
| S | 11.1 | 16.0 | 178.3 | Btu/h | 261 |
| SE | | 21.0 | 0.0 | Btu/h | 0 |
| E | 1.2 | 23.0 | 28.0 | Btu/h | 29 |
| NE | | 19.0 | 0.0 | Btu/h | 0 |
| N | 2.7 | 13.0 | 34.6 | Btu/h | 62 |
| NW | | 19.0 | 0.0 | Btu/h | 0 |
| W | 7.9 | 23.0 | 181.3 | Btu/h | 183 |
| SW | | 21.0 | 0.0 | Btu/h | 0 |
| | 22.9 | | 422.2 | Btu/h | 536 |
| Mass Walls | UA | DEDT | UA*DEDT | | A |
| S | 17.4 | 16.3 | 284.3 | Btu/h | 433 |
| SE | | 16.3 | 0.0 | Btu/h | 0 |
| E | 22.5 | 16.3 | 367.5 | Btu/h | 561 |
| NE | | 16.3 | 0.0 | Btu/h | 0 |
| N | 17.3 | 16.3 | 282.3 | Btu/h | 430 |
| NW | | 16.3 | 0.0 | Btu/h | 0 |
| W | 0.0 | 16.3 | 0.7 | Btu/h | 0 |
| SW | | 16.3 | 0.0 | Btu/h | 0 |
| | 57.3 | | 934.8 | Btu/h | 1424 |
| Exterior Partitions | UA | DEDT | UA*DEDT | | A |
| Garage part. | 9.1 | 15.0 | 135.9 | Btu/h | 241 |
| | 9.1 | | 135.9 | Btu/h | 241 |
| Opaque Doors | UA | DEDT | UA*DEDT | | A |
| E | | 23.0 | | Btu/h | |
| Windows | UA | DCLF | UA*DCLF | | A |
| S | 109.3 | 16.0 | 1749.4 | Btu/h | 430 |
| SE | | | 0.0 | Btu/h | |
| E | 7.7 | 17.0 | 130.6 | Btu/h | 24 |
| NE | | | 0.0 | Btu/h | |
| N | 33.9 | 15.0 | 508.3 | Btu/h | 100 |
| NW | | | 0.0 | Btu/h | |
| W | 12.0 | 17.0 | 203.7 | Btu/h | 35 |
| SW | | | 0.0 | Btu/h | |
| | 162.9 | 65.0 | 2591.9 | Btu/h | 589 |
| Roof | UA | DEDT | UA*DEDT | option2 | A |
| | 45.6 | 36.0 | 1641.6 | Btu/h | 1793 |

| Building Data | | |
|---------------------------|--------------|------------|
| fenestration / wall ratio | 23.1% | |
| Room Name | Volume(ft^3) | Area(ft^2) |
| zone height, typ.= | 10.3 | |
| Entertainment Room | 3230.49 | 313.64 |
| Stair / Library | 1520.07 | 147.58 |
| Exercise | 4022.97 | 390.58 |
| Bedroom 3 | 1758.83 | 170.76 |
| Bath 3 | 883.84 | 85.81 |
| Safe Rm. | 907.53 | 88.11 |
| Mech | 547.75 | 53.18 |
| Basement Level Net Area | 12654.168 | 1,228.56 |
| Basement Level Gross Area | 17524.111 | 1,701.37 |
| Kitchen | 1481.86 | 143.87 |
| Living Room | 1689.20 | 164 |
| Office 1 | 699.47 | 67.91 |
| Office 2 | 948.63 | 92.1 |
| Dining | 1123.83 | 109.11 |
| Bath | 604.30 | 58.67 |
| Bedroom 2 | 1662.11 | 161.37 |
| Master Bath | 1135.58 | 110.25 |
| Master Bedroom | 2784.40 | 270.33 |
| Mud / Util. | 1232.29 | 119.64 |
| Foyer | 879.00 | 85.34 |
| Main Level Net Area | 14234.188 | 1,381.96 |
| Main Level Gross Area | 21034.866 | 2,042.22 |
| Tower Lounge | 672.90 | 65.33 |
| Roof Level Net Area | 672.899 | 65.33 |
| Roof Level Gross Area | 1498.238 | 145.46 |
| Conditioned Space | 27561.255 | 2675.85 |
| Gross Space | 40057.215 | 3889.05 |

| | |
|----------------------------|----------------------------|
| Infiltration | q |
| infiltration est. (.34ACH) | 168.67 CFM 3388.3 Btu/h |
| People | q 690.0 Btu/h |
| Lights | q 1637.8 Btu/h |
| Equipment | q 1400.0 Btu/h |

Swain Residence

| | | |
|-----------------------|-------|-------|
| TOTAL SENSIBLE | 12843 | Btu/h |
| LATENT (23% sensible) | 2954 | Btu/h |
| TOTAL COOLING LOAD | 12843 | Btu/h |
| TOTAL COOLING LOAD | 3.8 | kW |
| AC size | 1.1 | ton |
| oversize factor | 50% | |
| AC size | 1.6 | ton |

| Heat Loss | | | | |
|---------------------------------------|------|---------|-------|------|
| Frame Walls | | | | |
| | UA | | U | A |
| S | 10.7 | Btu/h-F | 0.041 | 261 |
| SE | 0.0 | Btu/h-F | | 0 |
| E | 1.2 | Btu/h-F | 0.041 | 29 |
| NE | 0.0 | Btu/h-F | | 0 |
| N | 4.3 | Btu/h-F | 0.041 | 106 |
| NW | 0.0 | Btu/h-F | | 0 |
| W | 12.5 | Btu/h-F | 0.041 | 303 |
| SW | 0.0 | Btu/h-F | | 0 |
| | 29 | Btu/h-F | 0.041 | 699 |
| Exterior Partitions | | | | |
| | UA | | U | A |
| | 9.1 | Btu/h-F | 0.038 | 241 |
| | 9 | Btu/h-F | | 241 |
| Mass Walls | | | | |
| | UA | | U | A |
| S | 19.9 | Btu/h-F | 0.040 | 496 |
| SE | 0.0 | Btu/h-F | | 0 |
| E | 27.0 | Btu/h-F | 0.040 | 674 |
| NE | 0.0 | Btu/h-F | | 0 |
| N | 19.4 | Btu/h-F | 0.040 | 483 |
| NW | 0.0 | Btu/h-F | | 0 |
| W | 0.3 | Btu/h-F | 0.001 | 303 |
| SW | 0.0 | Btu/h-F | | 0 |
| | 100 | Btu/h-F | 0.030 | 1956 |
| Doors (see windows) | | | | |
| | 0.0 | Btu/h-F | | 0 |
| Windows | | | | |
| | UA | | U | A |
| S | 36.0 | Btu/h-F | 0.352 | 102 |
| SE | 0.0 | Btu/h-F | | 0 |
| E | 2.3 | Btu/h-F | 0.320 | 7 |
| NE | 0.0 | Btu/h-F | | 0 |
| N | 36.5 | Btu/h-F | 0.345 | 106 |
| NW | 0.0 | Btu/h-F | | 0 |
| W | 2.0 | Btu/h-F | 0.320 | 6 |
| SW | 0.0 | Btu/h-F | | 0 |
| | 77 | Btu/h-F | 0.334 | 222 |
| Roof | | | | |
| | UA | | U | A |
| | 46 | Btu/h-F | 0.025 | 1793 |
| Infiltration | | | | |
| infiltration est. (.34ACH) 245.15 CFM | | | | |
| | 265 | Btu/h-F | | |
| Slab Perimeter | | | | |
| | F2P | | F2 | P |
| | 74 | Btu/h-F | 0.490 | 152 |

| Building Data | | |
|---------------------------|--------------|------------|
| fenestration / wall ratio | 8.3% | |
| Room Name | Volume(ft^3) | Area(ft^2) |
| zone height, typ.= | 10.3 | |
| Entertainment Room | 3230.492 | 313.64 |
| Stair / Library | 1520.074 | 147.58 |
| Exercise | 4022.974 | 390.58 |
| Bedroom 3 | 1758.828 | 170.76 |
| Bath 3 | 883.843 | 85.81 |
| Safe Rm. | 907.533 | 88.11 |
| Mech | 547.754 | 53.18 |
| Basement Level Net Area | 12,654.17 | 1,228.56 |
| Basement Level Gross Area | 17,524.11 | 1,701.37 |
| Kitchen | 1481.861 | 143.87 |
| Living Room | 1689.2 | 164 |
| Office 1 | 699.473 | 67.91 |
| Office 2 | 948.63 | 92.1 |
| Dining | 1123.833 | 109.11 |
| Bath | 604.301 | 58.67 |
| Bedroom 2 | 1662.111 | 161.37 |
| Master Bath | 1135.575 | 110.25 |
| Master Bedroom | 2784.399 | 270.33 |
| Mud / Util. | 1232.292 | 119.64 |
| Foyer | 879.002 | 85.34 |
| Main Level Net Area | 14,234.19 | 1,381.96 |
| Main Level Gross Area | 21,034.87 | 2,042.22 |
| Tower Lounge | 672.899 | 65.33 |
| Roof Level Net Area | 672.90 | 65.33 |
| Roof Level Gross Area | 1,498.24 | 145.46 |
| Conditioned Space | 27561.255 | 2675.85 |
| Gross Space | 40057.215 | 3889.05 |

| Heat Loss Analysis Results | | |
|----------------------------|-------|-------------|
| Total UA | 599 | Btu/h-F |
| Total Heat Loss, active | 3.7 | Btu/DD-ft^2 |
| Total Heat Loss, passive | 3.5 | Btu/DD-ft^2 |
| HL guideline, active | 6.0 | Btu/DD-ft^2 |
| HL guideline, passive | 4.6 | Btu/DD-ft^2 |
| balance point T, active | 48 | F |
| Annual Heat est., active | 360 | therms |
| Annual Heat est., active | 10538 | kWh |

| LCR Passive Heating Analysis | | |
|------------------------------|---------|----------------|
| int. thermal mass area | 5845 | ft^2 |
| Ap DGA3 | 102 | ft^2 |
| Mass:Ap ratio | 57 | |
| BLC | 13518 | Btu/DD |
| HL rate | 3.5 | Btu/DD-ft^2 |
| LCR | 132.2 | Btu/DD-ft.2 |
| SSF DGA3 | 14% | |
| Auxiliary Heat DGA3 | 421.9 | Therms |
| Auxiliary Heat DGA3 | 12366 | kWh |
| Ref. Auxiliary Heat DGA3 | 492.3 | Therms |
| Ref. Auxiliary Heat DGA3 | 14429 | kWh |
| int. thermal mass area | 8052 | ft^2 |
| Ap SSA8 | 225 | ft^2 |
| Ap SSA8+DGA3 | 327 | ft^2 |
| Mass:Ap ratio | 25 | |
| BLC | 12782.6 | Btu/DD |
| HL rate | 3.3 | Btu/DD-ft^2 |
| LCR | 39 | Btu/h-F-ft.2-F |
| SSF SSA5 | 32% | |
| SSF combined | 26% | |
| Auxiliary Heat DGA3+SSA5 | 343.5 | Therms |
| Auxiliary Heat DGA3+SSA5 | 10067 | kWh |
| Ref. Aux. Heat DGA3+SSA5 | 465.5 | Therms |
| Ref. Aux. Heat DGA3+SSA5 | 13644 | kWh |

| | |
|------|-----|
| SS d | 10 |
| SS w | 25 |
| SS h | 9 |
| | Ap% |
| DGA3 | 31% |
| SSA5 | 69% |

| IECC2006 T.402.1.1, Insul. & Fenest. Req'ts. by Component* | | | |
|--|----------|----------|-----------|
| component | proposed | required | |
| Fenestration U | 0.334 | 0.40 | compliant |
| Skylight. U | NA | 0.60 | NA |
| Fenestration SHGC | 0.280 | NR | NA |
| Ceiling R | 39.3 | 38 | compliant |
| Frame Wall R | 24.4 | 13 | compliant |
| Mass Wall R | 33.0 | 5 | compliant |
| Floor R | NA | 19 | compliant |
| Basement Wall R* | 25.2 | 10 | compliant |
| Slab R | 10.0 | 10 | compliant |
| Slab insul. Depth | 2.0 | 2 | compliant |

| IECC2006 T.402.1.3, Equivalent U-factors | | | |
|--|-------------|-----------|-----------|
| component | proposed UA | req'd. U | req'd. UA |
| Fenestration U | 76.864 | 0.400 | 88.640 |
| Skylight. U | | 0.600 | |
| Ceiling U | 45.600 | 0.030 | 53.790 |
| Frame Wall U | 28.629 | 0.082 | 57.316 |
| Mass Wall U | 99.957 | 0.141 | 275.830 |
| Floor U | NA | 0.047 | |
| Basement Wall U | 33.319 | 0.059 | |
| Crawlspace wall U | NA | 0.065 | |
| | 284.4 | compliant | 475.6 |

| Preliminary Cost Estimate (shell only) | | alt: sunspace |
|--|-----------------|------------------|
| roofs | \$6,679 | |
| frame walls | \$9,401 | |
| masonry walls | \$5,836 | |
| fenestration | \$10,380 | |
| slab with insulation | \$5,733 | |
| BUILDING SHELL | \$38,029 | \$8,302 |
| TOTAL ESTIMATE (2.5X) | \$95,074 | \$105,451 |

| ID | Code | Component | Quantity | Unit |
|----|-------|--|----------|--------------------------|
| 1 | D201n | 301 U-value, winter | 0.360 | Btu/h-ft ² -F |
| 1 | D201n | 501 Heat Transfer, winter | 7.989 | Btu/h-F |
| 1 | D201n | 701 door rough opening area | 22.191 | ft ² |
| 1 | D202s | 301 U-value, winter | 0.360 | Btu/h-ft ² -F |
| 1 | D202s | 501 Heat Transfer, winter | 7.989 | Btu/h-F |
| 1 | D202s | 701 door rough opening area | 22.191 | ft ² |
| 1 | D203n | 301 U-value, winter | 0.360 | Btu/h-ft ² -F |
| 1 | D203n | 501 Heat Transfer, winter | 7.989 | Btu/h-F |
| 1 | D203n | 701 door rough opening area | 22.191 | ft ² |
| 1 | D301n | 301 U-value, winter | 0.360 | Btu/h-ft ² -F |
| 1 | D301n | 501 Heat Transfer, winter | 7.989 | Btu/h-F |
| 1 | D301n | 701 door rough opening area | 22.191 | ft ² |
| 2 | F03s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 2 | F03s | 501 Heat Transfer, winter | 1.882 | Btu/h-F |
| 2 | F03s | 701 window rough opening area | 5.375 | ft ² |
| 7 | F04s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 7 | F04s | 501 Heat Transfer, winter | 4.944 | Btu/h-F |
| 7 | F04s | 701 window rough opening area | 14.127 | ft ² |
| 2 | F04w | 301 U-value, winter | 0.320 | Btu/h-ft ² -F |
| 2 | F04w | 501 Heat Transfer, winter | 1.996 | Btu/h-F |
| 2 | F04w | 701 window rough opening area | 6.238 | ft ² |
| 2 | F05s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 2 | F05s | 501 Heat Transfer, winter | 6.222 | Btu/h-F |
| 2 | F05s | 701 window rough opening area | 17.778 | ft ² |
| 1 | F06n | 301 U-value, winter | 0.320 | Btu/h-ft ² -F |
| 1 | F06n | 501 Heat Transfer, winter | 5.860 | Btu/h-F |
| 1 | F06n | 701 window rough opening area | 18.313 | ft ² |
| 2 | F06s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 2 | F06s | 501 Heat Transfer, winter | 6.222 | Btu/h-F |
| 2 | F06s | 701 window rough opening area | 17.778 | ft ² |
| 5 | F07e | 301 U-value, winter | 0.320 | Btu/h-ft ² -F |
| 5 | F07e | 501 Heat Transfer, winter | 2.323 | Btu/h-F |
| 5 | F07e | 701 window rough opening area | 7.261 | ft ² |
| 8 | F07s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 8 | F07s | 501 Heat Transfer, winter | 2.878 | Btu/h-F |
| 8 | F07s | 701 window rough opening area | 8.222 | ft ² |
| 3 | F09n | 301 U-value, winter | 0.320 | Btu/h-ft ² -F |
| 3 | F09n | 501 Heat Transfer, winter | 5.602 | Btu/h-F |
| 3 | F09n | 701 window rough opening area | 17.505 | ft ² |
| 5 | F09s | 301 U-value, winter | 0.350 | Btu/h-ft ² -F |
| 5 | F09s | 501 Heat Transfer, winter | 5.875 | Btu/h-F |
| 5 | F09s | 701 window rough opening area | 16.785 | ft ² |
| 1 | F10n | 301 U-value, winter | 0.320 | Btu/h-ft ² -F |
| 1 | F10n | 501 Heat Transfer, winter | 1.105 | Btu/h-F |
| 1 | F10n | 701 window rough opening area | 3.453 | ft ² |
| 3 | P01 | 10 Insulated Concrete Form, 6 1/4-in. core | 23.730 | h-ft ² -F/Btu |
| 6 | P01 | 42 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 6 | P01 | 42 3/4-in. furr. channel, airspace | 1.000 | h-ft ² -F/Btu |
| 15 | P01 | 101 R-value | 26.630 | h-ft ² -F/Btu |
| 3 | P01 | 301 U-value, winter | 0.038 | Btu/h-ft ² -F |
| 3 | P01 | 501 Heat Transfer, winter | 9.063 | Btu/h-F |
| 3 | P01 | 701 Net Wall Area | 241.346 | ft ² |
| 9 | R01 | 10 1/4-in. Structural Insulated Panel | 39.000 | h-ft ² -F/Btu |
| 9 | R01 | 42 1/2-in. Gypsum | 0.320 | h-ft ² -F/Btu |
| 18 | R01 | 101 R-value | 39.320 | h-ft ² -F/Btu |
| 9 | R01 | 301 U-value, winter | 0.025 | Btu/h-ft ² -F |

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|----|-------|-----|---|----------|--------------------------|
| 9 | Ro1 | 501 | Heat Transfer, winter | 33.439 | Btu/h-F |
| 9 | Ro1 | 701 | Net Roof Area | 1314.804 | ft ² |
| 1 | Ro2 | 10 | 10 1/4-in. Structural Insulated Panel | 39.000 | h-ft ² -F/Btu |
| 1 | Ro2 | 42 | 1/2-in. Gypsum | 0.320 | h-ft ² -F/Btu |
| 2 | Ro2 | 101 | R-value | 39.320 | h-ft ² -F/Btu |
| 1 | Ro2 | 301 | U-value, winter | 0.025 | Btu/h-ft ² -F |
| 1 | Ro2 | 501 | Heat Transfer, winter | 12.162 | Btu/h-F |
| 1 | Ro2 | 701 | Net Roof Area | 478.192 | ft ² |
| 6 | Wo1e | 10 | Insulated Concrete Form, 6 1/4-in. core | 23.730 | h-ft ² -F/Btu |
| 6 | Wo1e | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 6 | Wo1e | 42 | 3/4-in. furr. channel, airspace | 1.000 | h-ft ² -F/Btu |
| 18 | Wo1e | 101 | R-value | 25.180 | h-ft ² -F/Btu |
| 6 | Wo1e | 301 | U-value, winter | 0.040 | Btu/h-ft ² -F |
| 6 | Wo1e | 501 | Heat Transfer, winter | 26.777 | Btu/h-F |
| 6 | Wo1e | 701 | Net Wall Area | 674.253 | ft ² |
| 3 | Wo1n | 10 | Insulated Concrete Form, 6 1/4-in. core | 23.730 | h-ft ² -F/Btu |
| 3 | Wo1n | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 3 | Wo1n | 42 | 3/4-in. furr. channel, airspace | 1.000 | h-ft ² -F/Btu |
| 9 | Wo1n | 101 | R-value | 25.180 | h-ft ² -F/Btu |
| 3 | Wo1n | 301 | U-value, winter | 0.040 | Btu/h-ft ² -F |
| 3 | Wo1n | 501 | Heat Transfer, winter | 19.165 | Btu/h-F |
| 3 | Wo1n | 701 | Net Wall Area | 482.576 | ft ² |
| 7 | Wo1s | 10 | Insulated Concrete Form, 6 1/4-in. core | 23.730 | h-ft ² -F/Btu |
| 7 | Wo1s | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 7 | Wo1s | 42 | 3/4-in. furr. channel, airspace | 1.000 | h-ft ² -F/Btu |
| 21 | Wo1s | 101 | R-value | 25.180 | h-ft ² -F/Btu |
| 7 | Wo1s | 301 | U-value, winter | 0.040 | Btu/h-ft ² -F |
| 7 | Wo1s | 501 | Heat Transfer, winter | 19.696 | Btu/h-F |
| 7 | Wo1s | 701 | Net Wall Area | 495.941 | ft ² |
| 1 | Wo2e | 10 | 6 1/2-in. Structural Insulated Panel | 24.000 | h-ft ² -F/Btu |
| 1 | Wo2e | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 2 | Wo2e | 101 | R-value | 24.450 | h-ft ² -F/Btu |
| 1 | Wo2e | 301 | U-value, winter | 0.041 | Btu/h-ft ² -F |
| 1 | Wo2e | 501 | Heat Transfer, winter | 1.166 | Btu/h-F |
| 1 | Wo2e | 701 | Net Wall Area | 28.504 | ft ² |
| 4 | Wo2n | 10 | 6 1/2-in. Structural Insulated Panel | 24.000 | h-ft ² -F/Btu |
| 4 | Wo2n | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 8 | Wo2n | 101 | R-value | 24.450 | h-ft ² -F/Btu |
| 4 | Wo2n | 301 | U-value, winter | 0.041 | Btu/h-ft ² -F |
| 4 | Wo2n | 501 | Heat Transfer, winter | 4.322 | Btu/h-F |
| 4 | Wo2n | 701 | Net Wall Area | 105.679 | ft ² |
| 6 | Wo2s | 10 | 6 1/2-in. Structural Insulated Panel | 24.000 | h-ft ² -F/Btu |
| 6 | Wo2s | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 12 | Wo2s | 101 | R-value | 24.450 | h-ft ² -F/Btu |
| 6 | Wo2s | 301 | U-value, winter | 0.041 | Btu/h-ft ² -F |
| 6 | Wo2s | 501 | Heat Transfer, winter | 10.688 | Btu/h-F |
| 6 | Wo2s | 701 | Net Wall Area | 261.321 | ft ² |
| 6 | Wo2w | 10 | 6 1/2-in. Structural Insulated Panel | 24.000 | h-ft ² -F/Btu |
| 6 | Wo2w | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 12 | Wo2w | 101 | R-value | 24.450 | h-ft ² -F/Btu |
| 6 | Wo2w | 301 | U-value, winter | 0.041 | Btu/h-ft ² -F |
| 6 | Wo2w | 501 | Heat Transfer, winter | 12.412 | Btu/h-F |
| 6 | Wo2w | 701 | Net Wall Area | 303.473 | ft ² |
| 2 | WFO1e | 10 | stone veneer | 4.000 | h-ft ² -F/Btu |
| 2 | WFO1e | 101 | R-value | 4.000 | h-ft ² -F/Btu |
| 2 | WFO1e | 301 | U-value, winter | 0.250 | Btu/h-ft ² -F |
| 2 | WFO1e | 501 | Heat Transfer, winter | 14.586 | Btu/h-F |
| 2 | WFO1e | 701 | Net Wall Area | 58.343 | ft ² |

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|---|-------|-----|--------------------------------------|---------|--------------------------|
| 6 | WFO1n | 10 | stone veneer | 4.000 | h-ft ² -F/Btu |
| 6 | WFO1n | 101 | R-value | 4.000 | h-ft ² -F/Btu |
| 6 | WFO1n | 301 | U-value, winter | 0.250 | Btu/h-ft ² -F |
| 6 | WFO1n | 501 | Heat Transfer, winter | 16.022 | Btu/h-F |
| 6 | WFO1n | 701 | Net Wall Area | 64.088 | ft ² |
| 6 | WFO1s | 10 | stone veneer | 4.000 | h-ft ² -F/Btu |
| 6 | WFO1s | 101 | R-value | 4.000 | h-ft ² -F/Btu |
| 6 | WFO1s | 301 | U-value, winter | 0.250 | Btu/h-ft ² -F |
| 6 | WFO1s | 501 | Heat Transfer, winter | 21.225 | Btu/h-F |
| 6 | WFO1s | 701 | Net Wall Area | 84.899 | ft ² |
| 2 | WFO1w | 10 | stone veneer | 4.000 | h-ft ² -F/Btu |
| 2 | WFO1w | 101 | R-value | 4.000 | h-ft ² -F/Btu |
| 2 | WFO1w | 301 | U-value, winter | 0.250 | Btu/h-ft ² -F |
| 2 | WFO1w | 501 | Heat Transfer, winter | 9.241 | Btu/h-F |
| 2 | WFO1w | 701 | Net Wall Area | 36.962 | ft ² |
| 1 | WFO2w | 10 | 6 1/2-in. Structural Insulated Panel | 24.000 | h-ft ² -F/Btu |
| 1 | WFO2w | 42 | 1/2-in. Gypsum | 0.450 | h-ft ² -F/Btu |
| 2 | WFO2w | 101 | R-value | 24.450 | h-ft ² -F/Btu |
| 1 | WFO2w | 301 | U-value, winter | 0.041 | Btu/h-ft ² -F |
| 1 | WFO2w | 501 | Heat Transfer, winter | 0.818 | Btu/h-F |
| 1 | WFO2w | 701 | Net Wall Area | 20.000 | ft ² |
| 1 | SO1 | 301 | F1-value, winter | 0.490 | Btu/h-ft ² -F |
| 1 | SO1 | 501 | Heat Transfer, winter | 74.378 | Btu/h-F |
| 1 | SO1 | 701 | Slab Perimeter | 151.792 | ft |