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TECHNICAL DOCUMENTATION FOR A RESIDENTIAL ENERGY USE DATA BASE DEVELOPED IN SUPPORT OF ASHRAE SPECIAL PROJECT 53

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SUMMARY

Starting in 1986, Pacific Northwest Laboratory (PNL) has been working with ASHRAE Special Project 53 to conduct research in support of a residential energy conservation standard. The Energy Analysis Program at Lawrence Berkeley Laboratory (LBL) has been contracted by PNL to develop a new residential energy use data base in support of this effort. The simulation methodology improves upon that used earlier by LBL in producing the voluntary energy guidelines data base. Significant enhancements were made in the modeling of underground heat flow, window operations and glazing types, and cooling loads. Since the proposed standards will be in a computerized format, the final data base was tailored to utilize the capabilities of a micro-computer program.

The residential energy use data base was developed using the DOE-2.1C building energy simulation program and covers three building prototypes (one-story, townhouse, and apartment), three foundation conditions (slab-on-grade, basement, and vented crawl space) in 45 U.S. locations. For each building prototype and location, a range of insulation, infiltration, and window conditions were considered. The calculated annual heating and cooling loads were analyzed and reduced to regression coefficients giving the contribution to building load of each component, i.e., ceiling, walls, infiltration, as a function of its thermal and physical characteristics.

The primary format of the data base is a computer file of regression coefficients coded by prototype, location, building component, and separated by heating or cooling. The same information is also available in printed form on tables that also show the incremental changes in heating and cooling loads for typical conservation measures. The data base serves as the building loads calculation portion of the computer program being developed by PNL as a residential conservation standard.

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INTRODUCTION

Over the past decade, the Energy Analysis Program at Lawrence Berkeley Laboratory has conducted extensive computer analysis of the impact of various conservation measures on energy use in residential buildings in different U. S. locations. From 1982 to 1986, LBL was involved in the voluntary residential standards project funded by Department of Energy, and compiled a large data base of residential energy use from parametric simulations using the DOE-2.1A and DOE-2.1B energy simulation programs. The methodology used to build that data base have been extensively reviewed and documented in a technical support document (Huang et al. 1987). The final version of the data base is an interactive computer program called PEAR (**P**rogram for **E**nergy **A**nalysis of **R**esidences; Energy Analysis Program 1987). The same data base is also used in the proposed energy conservation standards for new federal residential buildings, and the 1987 draft of ASHRAE-90.2 Standard.

The data base effort described in this report was done by LBL on contract to Pacific Northwest Laboratory for the ASHRAE Special Project 53, "Research in Support of a Residential Energy Conservation Standard". After reviewing the earlier voluntary energy guidelines work, the SP53 committee recommended that the data base be expanded to include additional conservation measures and upgraded with improved analysis of foundation and cooling loads. After discussions between the committee, PNL, and LBL, the decision was reached to create a new data base. This decision would insure compatibility throughout the data base, and utilize improved simulation techniques, more realistic operating assumptions, and better weather data developed over the past six years. Although repeating the DOE-2 simulations required a substantial amount of computer time, the staff effort was reduced since the methodology and analysis techniques had been developed already in the course of the voluntary energy guidelines work.

Whenever this data base work utilizes the same assumptions and analysis techniques as the earlier work, these will be briefly summarized in this report, and references made to the technical documentation for the earlier work for further details. This applies to the prototype building descriptions, the selection of base cities, internal loads, and construction details. This report will focus more on those areas where substantial improvements have been made in simulation techniques or in the analysis of results. The major areas include (1) use of a two-dimensional finite-difference program to calculate heat fluxes through the building-ground interface, (2) use of non-linear multi-variant regression analysis to correlate window loads, and (3) reduction of building loads data into regression coefficients.

BUILDING ENERGY ANALYSIS

Basic Simulation Method

The data base simulations were done using a developmental version of the DOE-2.1C program (for a description of DOE-2, refer to Lawrence Berkeley Laboratory 1980). In addition, two smaller programs were used to generate inputs to DOE-2.1C for response factors and underground heat fluxes.

Compared to earlier versions of DOE-2, DOE-2.1C has improved modeling of solar gain, internal walls, residential infiltration, better custom weighting factor calculations, and new system performance curves that more accurately model part load effects in residential air-conditioners. DOE-2.1C also has the flexibility of permitting user-input functional values in the LOADS portion of the simulations. This feature was used in the data base work to define the summer window shading schedule based on cooling degree days, and to input heat fluxes calculated by a two-dimensional finite difference model in place of the standard DOE-2 calculations for underground surfaces.

The developmental 2.1C version used to generate the data base has the following enhancements to the Residential SYSTEMS portion of the program: (1) the natural ventilation rate is calculated as a function of exterior wind speed and temperature rather than a fixed input value, and (2) the natural ventilation controls are held fixed between midnight and 7 a.m., i.e., it is assumed that occupants will not operate the windows after going to bed. These modifications give more realistic modeling of typical window operations in residences and will be included in future public releases of DOE-2.1.

Two additional programs, WALFERF and a finite-difference program for underground heat flow developed by the Underground Space Center at the University of Minnesota (here referred to as the USCUG model), were used to improve the modeling capabilities of DOE-2.1C.

Response Factors

WALFERF is a finite-element program developed at LBL to calculate wall response factors for two-dimensional heat conduction. The program is based on a DOE-2 subroutine originally written to model earth contact surfaces (Bull et al. 1981) and uses a technique developed by Ceylan and Myers (Ceylan et al. 1979). In addition to the standard input for thermal properties, thicknesses, and sequence of materials

making up each block, WALFERF also requires the number of blocks and their widths. Figure 1.1 shows a sample input file and schematic representation of a R-11 wood-frame wall modeled as two blocks, a stud portion 0.75 inch wide and a non-stud portion 2.25 inches wide. Figures 1.2 through 1.5 show similar input files for typical log wall, concrete wall, ceiling, and floor assemblies. The output from WALFERF are two-dimensional response factors that can be written into the standard DOE-2 response factor library format. For a wall composed of a single block, WALFERF produces the same response factors as the DOE-2 BDL program. Future release versions of DOE-2 program will include WALFERF as a utility program. For the residential data base, WALFERF was used to generate the response factor library for the delayed walls. This method accounts for two-dimensional heat flow in mixed walls and obviates the need to model separately the stud and non-stud portions of walls.

Below-grade Modeling

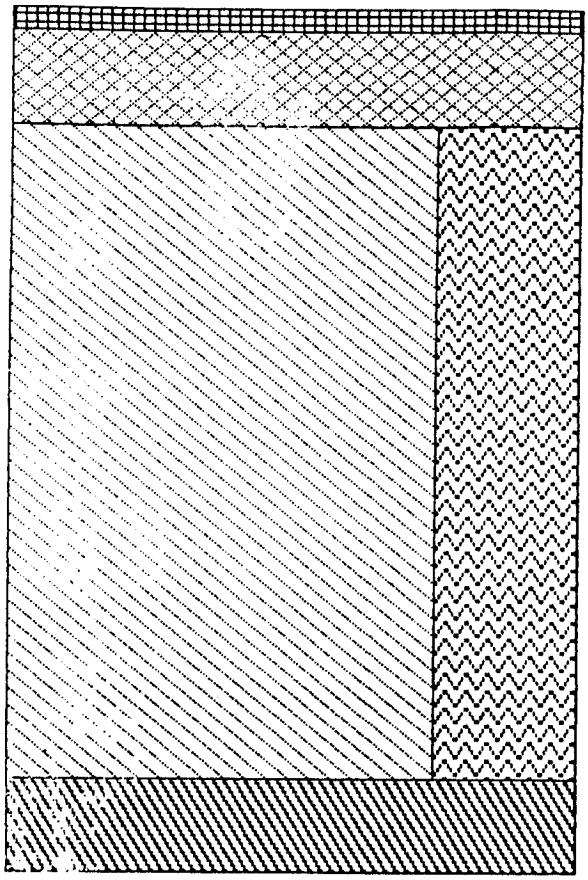
Since the existing DOE-2 program does not adequately model the building-to-ground interface, LBL has worked with the Underground Space Center (USC) at the University of Minnesota to incorporate into DOE-2.1C results from a below-grade heat transfer simulation program developed at the USC. The USCUG model is a two-dimensional fully-implicit integrated finite difference heat conduction program (Underground Space Center 1983). It was used to simulate on a daily time step the dynamic behavior of a representative one-foot vertical cross-section of the foundation and surrounding soil extending 50 feet down and 30 feet out from the building (Figure 1.6). The boundary conditions, i.e., the assumed indoor, outdoor and deep ground temperatures, were kept identical as those used for the DOE-2 simulations. Deep ground temperatures were based on existing data on well temperatures (Labs 1981), indoor temperatures set to the zone temperature in the DOE-2.1C LOADS calculation, and the average outdoor daily air temperatures calculated from the DOE-2 weather tapes. A three-year initialization period was necessary for the representative section to stabilize.

The USCUG simulations yield daily fluxes at each node of the finite difference grid for the representative section. These fluxes were then integrated over the "footprint" of the prototype foundation to produce a file of average hourly fluxes through the underground surfaces of the prototype buildings for each day of the year (Figure 1.7). During the DOE-2.1C simulation, these fluxes are read as a function in LOADS, supplanting the standard DOE-2 underground flux calculation. Although the DOE-2 program was not used for calculating underground heat conduction, it was still necessary to model the underground layers as delayed walls to calculate response factors. These

Figure 1.1 WALFERF Input for R-11 Wood-frame Wall

```
r11rwall 0 0 1                                   (file name)
  17                                             (number of material descriptions)
  0.0925    0.26     50.0      3.    drywall     (conductance, specific heat,
  0.0263    0.20      1.15     4.    insulation  and density of materials)
  0.0342    0.31     22.0      6.    int. dens. sheathing
  0.0168    0.29      1.0      9.    aluminum siding
  0.9217    0.24      .075    16.    airlayh
  0.9901    0.24      .075    17.    airlayv

  4         3.0      No. of layers   (no. of layers and total width)
  1         0.12     L-1             (no. of blocks and thickness for L-1)
  9         3.0                      (material and width)
  1         0.5      L-2             (no. of blocks and thickness for L-2)
  6         3.0                      (material and width)
  2         3.5      L-3             (no. of blocks and thickness for L-3)
  4         2.25                     (material and width)
  2         0.75                     (material and width)
  1         0.5      L-4             (no. of blocks and thickness for L-4)
  3         3.0                      (material and width)
            0.680                    (inside film resistance)
```



```
Layer 1  0.12"
 Blk 1 R 0.5952 aluminum sidin
Layer 2  0.50"
 Blk 1 R 1.2183 int. dens. she
Layer 3  3.50"
 Blk 1 R11.0900 insulation
 Blk 2 R 4.3597 wood
Layer 4  0.50"
 Blk 1 R 0.4505 drywall
I F R = 0.6800
```

```
wood
 0.0669  0.290   34.00
```

```
insulation
 0.0263  0.200    1.15
```

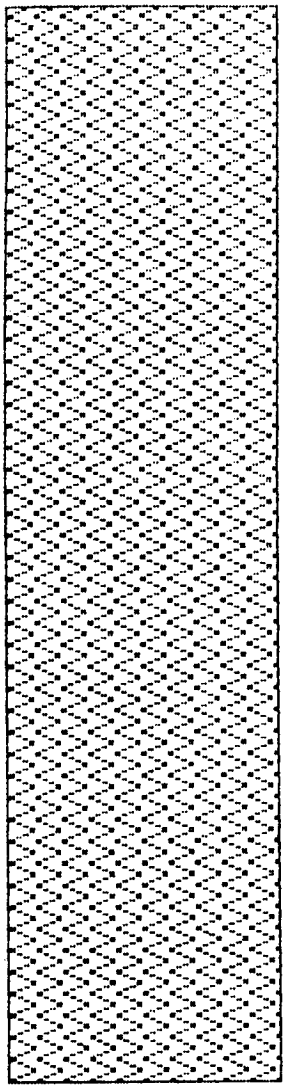
```
aluminum siding
 0.0168  0.290    1.00
```

```
drywall
 0.0925  0.260   50.00
```

```
int. dens. sheathing
 0.0342  0.310   22.00
```

Figure 1.2 WALFERF Input for 8 inch Log Wall

8log 0 0 1					(file name)
12					(number of material descriptions)
.5	.22	70.0	1.	mason1	(conductance, specific heat,
.5	.22	140.0	2.	mason2	and density of materials)
.0669	.29	34.0	3.	wood	
.0925	.26	50.0	4.	drywall	
.0263	.20	1.15	5.	insulation	
.4167	.22	116.0	6.	stucco	
1	2.00	No. of layers			(no. of layers and total width)
1	8.00	L-1			(no. of blocks and thickness for L-1)
3	2.00				(material and width)
	.680				(inside film resistance)

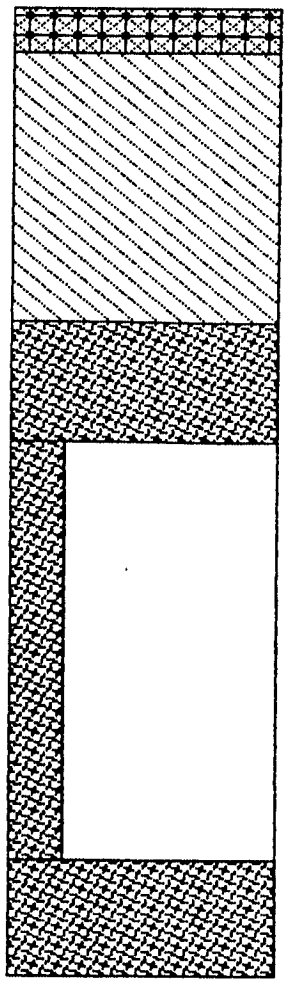


```
Layer 1   8.00"
 Blk 1 R 9.9651 wood
I F R = 0.6800
```

```
wood
 0.0669   0.290    34.00
```

Figure 1.3 WALFERF Input for R-10 Concrete-block Wall

r10cb95 0 0 1					(file name)
12					(number of material descriptions)
.5	.22	70.0	1.	mason1	(conductance, specific heat,
.5	.22	140.0	2.	mason2	and density of materials)
.0925	.26	50.0	4.	drywall	
.0263	.20	1.15	5.	insulation	
.4167	.22	116.0	6.	stucco	
.5	.22	70.0	7.	concblock1	
.5	.22	140.0	8.	concblock2	
.2	.30	5.0	9.	perlite1	
.5	.30	5.0	10.	perlite2	
.4026	.24	.0750	12.	4.88" block gap	
5	3.06	No. of layers			(no. of layers and total width)
1	0.50	L-1			(no. of blocks and thickness for L-1)
6	3.06				(material and width)
1	3.16	L-2			(no. of blocks and thickness for L-2)
5	3.06				(material and width)
1	1.38	L-3			(no. of blocks and thickness for L-3)
7	3.06				(material and width)
2	4.88	L-4			(no. of blocks and thickness for L-4)
7	0.63				(material and width)
12	2.43				(material and width)
1	1.38	L-5			(no. of blocks and thickness for L-5)
7	3.06				(material and width)
	.680				(inside film resistance)



```
Layer 1  0.50"
 Blk 1 R 0.1000 stucco
Layer 2  3.16"
 Blk 1 R10.0127 insulation
Layer 3  1.38"
 Blk 1 R 0.2300 concblock3
Layer 4  4.88"
 Blk 1 R 0.8133 concblock3
 Blk 2 R 1.0101 4.88" block gap
Layer 5  1.38"
 Blk 1 R 0.2300 concblock3
I F R = 0.6800
```

```
stucco
 0.4167  0.220  116.00
```

```
4.88" block gap
 0.4026  0.240    0.07
```

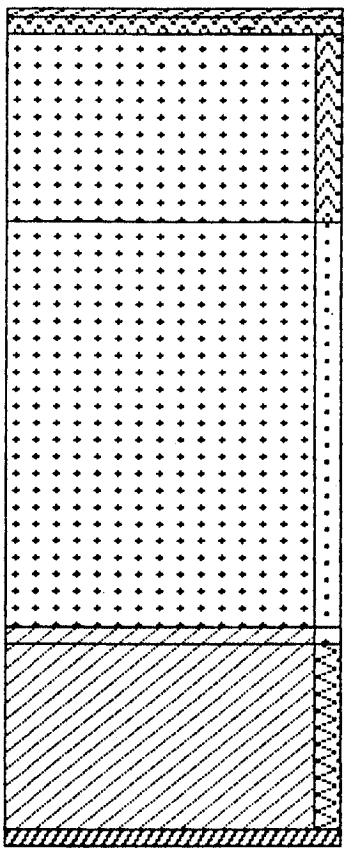
```
insulation
 0.0263  0.200    1.15
```

```
concblock3
 0.5000  0.220   95.00
```

Figure 1.4 WALFERF Input for R-19 Ceiling Assembly

```
r19roof 0 0 1                                          (file name)
  18                                                   (number of material descriptions)
   .0669      .29      34.0      2.    wood           (conductance, specific heat,
   .0472      .30       1.0      8.    shingle        and density of materials)
   .6873      .24       .075    11.    attic
   .0249      .1897    1.15     13.    insuls
   .08775     .275    50.0      14.    drywalls
   .0633      .275    27.0      15.    woods
   .42245     .24       .075    16.    airlayh 5.50"
   .0384      .24       .075    17.    airlayh  .50"
  1.0023      .24       .075    18.    roofgap

   7          9.75     No. of layers                  (no. of layers and total width)
   1           .25     L-1                            (no. of blocks and thickness for L-1)
   8          9.75                                    (material and width)
   1           .50     L-2                            (no. of blocks and thickness for L-2)
   2          9.75                                    (material and width)
   2          5.50     L-3                            (no. of blocks and thickness for L-3)
  18          9.00                                    (material and width)
   2           .75                                    (material and width)
   2         12.00     L-4                            (no. of blocks and thickness for L-4)
  18          9.00                                    (material and width)
  11           .75                                    (material and width)
   2           .50     L-5                            (no. of blocks and thickness for L-5)
  13          9.00                                    (material and width)
  18           .75                                    (material and width)
   2          5.50     L-6                            (no. of blocks and thickness for L-6)
  13          9.00                                    (material and width)
  15           .75                                    (material and width)
   1           .50     L-7                            (no. of blocks and thickness for L-7)
  14          9.75                                    (material and width)
               .765                                   (inside film resistance)
```



```
Layer 1  0.25"
 Blk 1 R 0.4414 shingle
Layer 2  0.50"
 Blk 1 R 0.6228 wood
Layer 3  5.50"
 Blk 1 R 0.4573 roofgap
 Blk 2 R 6.8510 wood
Layer 4 12.00"
 Blk 1 R 0.9977 roofgap
 Blk 2 R 1.4550 attic
Layer 5  0.50"
 Blk 1 R 1.6734 insuls
 Blk 2 R 0.0416 roofgap
Layer 6  5.50"
 Blk 1 R18.4070 insuls
 Blk 2 R 7.2407 woods
Layer 7  0.50"
 Blk 1 R 0.4748 drywalls
I F R = 0.7650
```

```
wood
 0.0669   0.290   34.00
```

```
attic
 0.6873   0.240    0.07
```

```
drywalls
 0.0877   0.275   50.00
```

```
roofgap
 1.0023   0.240    0.07
```

```
shingle
 0.0472   0.300    1.00
```

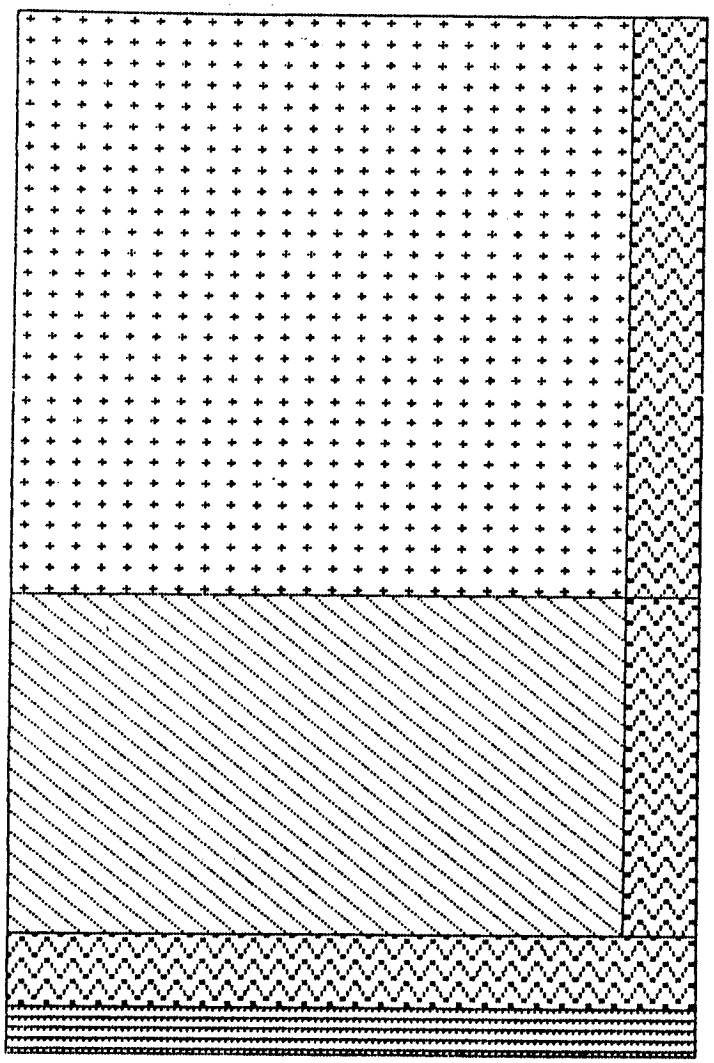
```
insuls
 0.0249   0.190    1.15
```

```
woods
 0.0633   0.275   27.00
```

Figure 1.5 WALFERF Input for R-11 Floor Assembly

```
r11flr  0 0 1                                          (file name)
  18                                                   (number of material descriptions)
    .0669      .29      34.0       2.    wood         (conductance, specific heat,
    .0263      .20       1.15      4.    insulation    and density of materials)
   5.          .24        .075    16.    airlayh 6.00"
     .02       .34       2.0      18.    rugnpad

   4          7.00      No. of layers                 (no. of layers and total width)
   2          6.00      L-1                           (no. of blocks and thickness for L-1)
  16          6.25                                    (material and width)
   2           .75                                    (material and width)
   2          3.50      L-2                           (no. of blocks and thickness for L-2)
   4          6.25                                    (material and width)
   2           .75                                    (material and width)
   1           .75      L-3                           (no. of blocks and thickness for L-3)
   2          7.00                                    (material and width)
   1           .50      L-4                           (no. of blocks and thickness for L-4)
  18          7.00                                    (material and width)
              .760                                    (inside film resistance)
```



```
Layer 1  6.00"
 Blk 1 R 0.1000 airlayh  6.00"
 Blk 2 R 7.4738 wood
Layer 2  3.50"
 Blk 1 R11.0900 insulation
 Blk 2 R 4.3597 wood
Layer 3  0.75"
 Blk 1 R 0.9342 wood
Layer 4  0.50"
 Blk 1 R 2.0833 rugnpad
I F R = 0.7600
```

```
insulation
 0.0263   0.200     1.15
```

```
rugnpad
 0.0200   0.340     2.00
```

```
wood
 0.0669   0.290    34.00
```

```
airlayh  6.00"
 5.0000   0.240     0.07
```

Figure 1.6 Foundation Cross–Section Modeled in the USCUG Finite Difference Program

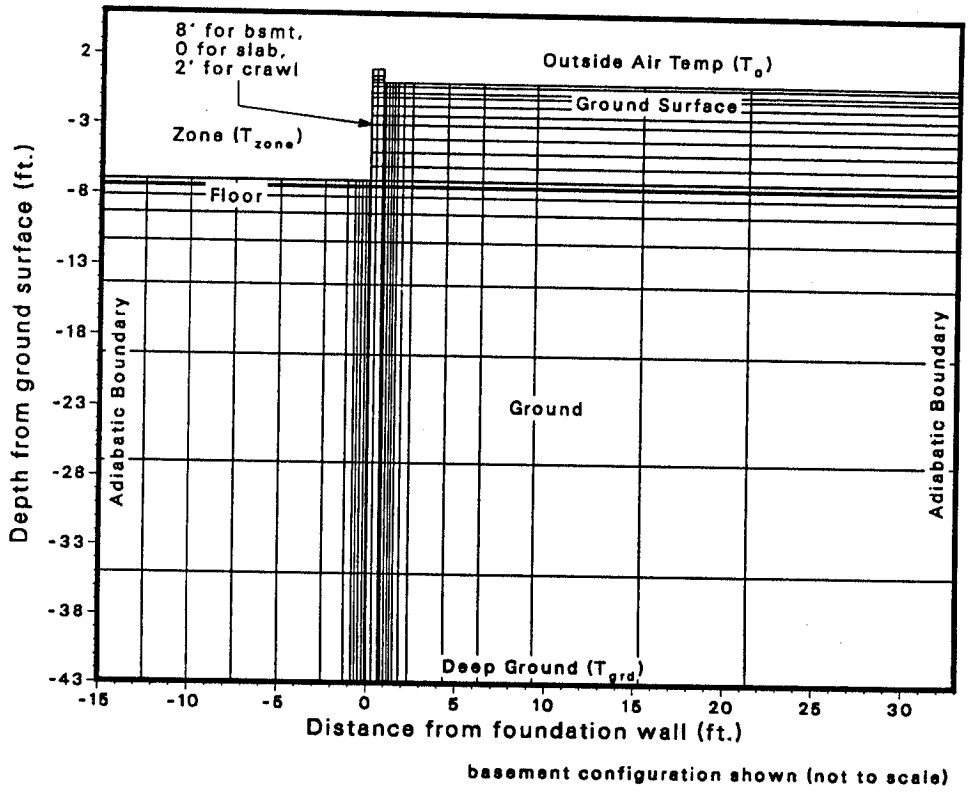
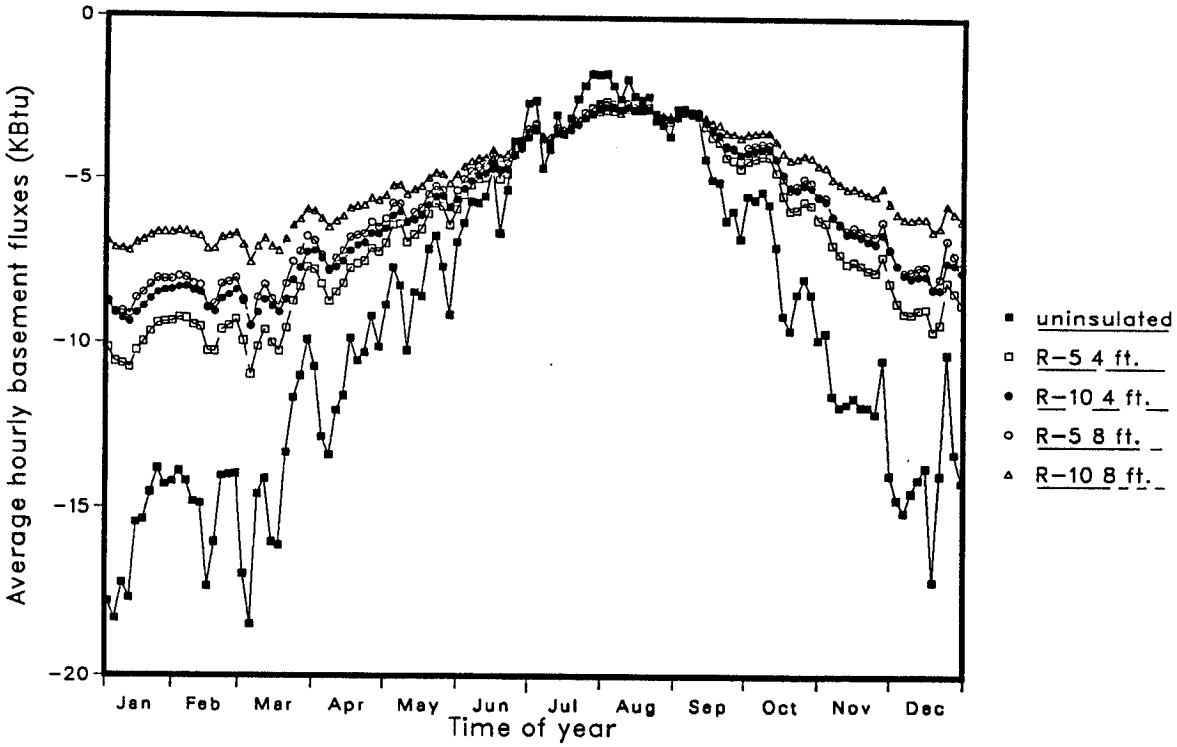


Figure 1.7 Average Hourly Fluxes for Basement Foundations in Denver CO Calculated by the USCUG Program



are used in DOE-2 to generate correct zone weighting factors for either the living space (in the case of the slab-on-grade), basement, or crawl-space. For the data base work, we have modeled the underground layers with the maximum amount of thermal mass allowable in DOE-2 to produce suitably "heavy" weighting factors for the zones.

Since the USCUG fluxes are calculated at an assumed constant indoor temperature corresponding to the DOE-2 LOADS temperature, it was also necessary to calculate "U-effectives" for the underground surfaces which would be used in DOE-2 SYSTEMS simulation to correct the underground fluxes for variations in the indoor temperature. This flux correction is significant for unconditioned basements and crawlspaces where the seasonal fluctuation in zone temperatures may be large. The "U-effectives" used in the modeling have been computed by regression analysis correlating the underground flux to the temperature differential between indoor and outdoor temperatures (Figure 1.8). This "U-effective" can be regarded as the steady-state U-value for an underground surface approximated as one-dimensional heat transfer from the space to the outside air. *

Building Prototypes

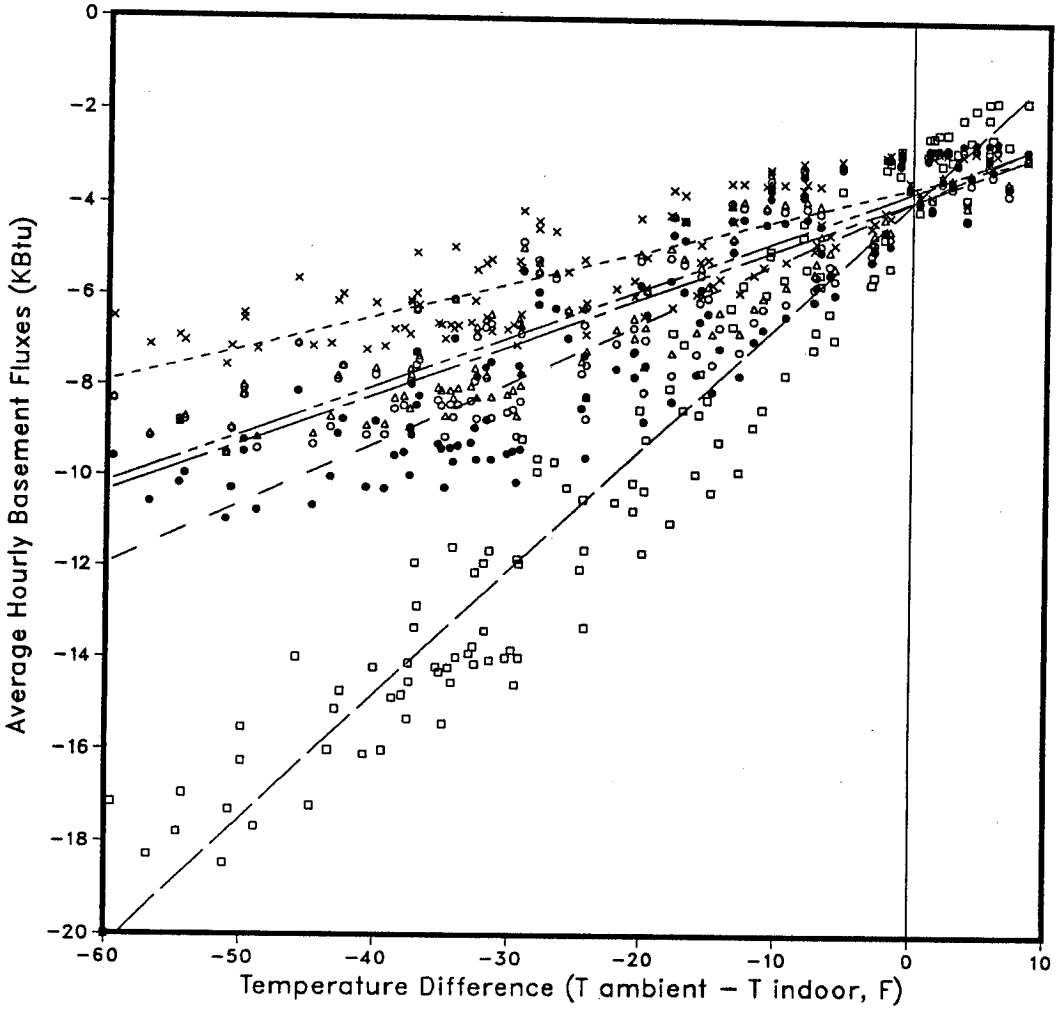
There are three building prototypes covered in the data base: detached one-story, attached two-story townhouse unit, and a low-rise two-story apartment module with an upper and lower unit. Table 1.1 gives the basic building dimensions. These are based on previous LBL prototypes (Huang et al. 1987, Turiel et al. 1986), except that the window area has been increased from 10% to 12% of floor area.

These prototype descriptions were chosen to represent typical current construction practices. Since the final data base is expressed as *component loads* normalized by U-value, floor area, or perimeter length, the dimensions in Table 1.1 should not critically affect the data, unless the surface-to-volume ratios for the prototype buildings are highly atypical. Previous sensitivity analysis of the voluntary energy guidelines data base have already indicated that, in residential buildings, component loads vary linearly with its physical dimension (Huang et al. 1985). †

* The Underground Space Center and LBL have expanded on this approach in later research done for a Foundation Design Handbook. An improved procedure was developed to accounted for heat flux to the deep ground, as well as long-term seasonal fluctuations in the "U-effective" term. This was done by iterative simulations using the USCUG and DOE-2 programs (Shen et al. 1987).

† *Component load* is defined as the net annual contribution of each building component to the heating or cooling loads of the building. See Section 2 of this report for more discussion of this concept.

Figure 1.8 Regression Analysis of Steady-State U-values for Basement Foundations in One-Story Prototype for Denver CO



	Foundation measure	U-effective	Intercept
□	FM0 (uninsulated)	1.647	-3.87
•	FM1 (R-5 4 ft.)	.814	-3.86
○	FM2 (R-10 4 ft.)	.654	-3.84
△	FM3 (R-5 8 ft.)	.652	-3.66
×	FM4 (R-10 8 ft.)	.438	-3.56

Table 1.1 Prototype Building Dimensions

Building Component	House Prototype Detached One-story	Attached Townhouse	Apartment module (2 units)
Building floor area (ft^2)	1540.0	1200.0	2400.0
Building volume (ft^3)	12320.0	9600.0	19200.0
Roof area (ft^2)	1623.3	632.4	1264.9
Ceiling area (ft^2)	1540.0	600.0	1200.0
Gross wall area (ft^2)	1328.0	640.0	960.0
Net wall area	1123.7	476.5	634.0
Window area	184.8	144.0	288.0
Door area	19.5	19.5	39.0
Foundation floor area (ft^2)	1540.0	600.0	1200.0
Perimeter length (ft)	166.0	40.0	60.0

Although the surface areas and volumes of the three prototypes are based on the typical house designs shown in Section 3.1 of the voluntary energy guidelines technical report (Huang et al. 1987) and the LBL multi-family prototype report (Turiel et al. 1985), an average orientation was achieved for modeling purposes by apportioning the amounts of wall, roof, windows, and door equally in four cardinal directions. Similarly, average shading from two adjacent houses was approximated by modeling building shades with a 0.50 transmittance located 20 feet away on all four sides of the prototype houses. The intent of the simulation is to model a prototypical building under *average*, rather than *typical*, conditions. The non-directional orientation used here, while hardly typical, gives results that are averages of thousands of typical houses with various orientations.

Building Envelope

Insulation

All three prototype buildings were simulated with typical light-weight wood-frame construction, with sensitivity analyses done for heavy mass log and concrete block walls. The assumed ceiling, wall, and foundation construction assemblies are based on Section 3.3.1 of the voluntary energy guidelines technical support document, to which the reader should refer for more details.

Previous analysis of the voluntary energy guidelines data base showed that the relationship between the change in loads and in the steady-state U-value of ceilings and walls to be a smooth and nearly linear function (Huang et al. 1985). The approach taken in the current data base effort has been to simulate not all typical ceiling and wall assemblies, but only enough variations in assembly U-value to determine the function relating component loads to U-values. These regression functions were then used to calculate ceiling and wall component loads based on their U-values.

The WALFERF program was used to calculate response factors and steady-state U-values for typical ceiling and wall assemblies. These are listed in Table 1.2. DOE-2.1C simulations were done for four ceiling (R-0, 19, 38, and 49) and four light-frame wall assemblies (R-0, 11, 19, and 34). For ventilated crawl-space foundations, simulations were done for three floor assemblies (R-0, 11, and 30). Component loads for the intermediate assemblies were interpolated using the regression equations and U-values shown in Table 1.2. For the log and concrete block walls, DOE-2.1C simulations were done for all 15 wall assemblies listed in Table 1.2.

Three foundation types were modeled for every base city: slab-on-grade, heated and unheated basements, and ventilated crawl-space. Heated basement refers to unconditioned basement with insulated basement walls, while unheated basements refers to basements with insulation under the floor of the living space. Fully conditioned basements were not considered. For non-foundation energy conservation options, simulations were done assuming the most prevalent foundation type for each location. These are listed on column 4 of Table 1.7 later in this report.

The assumed foundation configurations are described in Section 3.3.1 of the voluntary energy guidelines technical support document (Huang et al. 1987), to which the reader should refer for details. Five levels of insulation were considered for the slab-on-grade and heated basement foundations, and three for the unheated basement and crawl-space foundations. These are listed in Table 1.3.

The heat fluxes through foundation underground surfaces were simulated using the USCUG two-dimensional finite-difference model and stored onto a large file. The USCUG flux file was then read into the DOE-2 input as a function call in the LOADS portion of that program (see sample DOE-2.1C input file in Appendix A).

The above-grade portion of the basement wall and the slab edge of the slab-on-grade have been included in the USCUG model to account for two-dimensional heat flows within the concrete and subsoil. Crawl-space walls, however, have been simulated as exterior walls using DOE-2.1C. To model the effects of ventilation, the crawl-space has been treated as a separate unconditioned zone with 1 ft^2 of vents per 30 ft.

Table 1.2 Steady-state U-values for Building Components calculated using the WALFERF program

Building Component	File name	U-values (Btu/hr·F·ft²) w/ film resistance*	U-values (Btu/hr·F·ft²) w/o film resistance	Film resistances Interior	Film resistances Exterior
Ceilings					
R-0	r0roof	**.247034**	.321041	.76	.17
R-7	r7roof	**.092780**	.101803	.76	.17
R-11	r11roof	**.068155**	.072925	.76	.17
R-19	r19roof	**.046033**	.048181	.76	.17
R-22	r22roof	**.038894**	.040401	.76	.17
R-30	r30roof	**.029325**	.030173	.76	.17
R-38	r38roof	**.023549**	.024092	.76	.17
R-49	r49roof	**.018460**	.018792	.76	.17
R-60	r60roof	**.015177**	.015401	.76	.17
Walls					
R-0 wood-frame	r0rwall	**.224129**	.277502	.68	.17
R-7 " "	r7rwall	**.105057**	.115688	.68	.17
R-11 " "	r11rwall	**.088104**	.095496	.68	.17
R-13 " "	r13rwall	**.069298**	.073808	.68	.17
R-19 " "	r19rwall	**.059977**	.063331	.68	.17
R-27 " "	r27rwall	**.042740**	.044414	.68	.17
R-34 " "	r34rwall	**.032154**	.033093	.68	.17
4in. log wall	4log	**.171422**	.200619	.68	.17
6in. " "	6log	**.120122**	.133764	.68	.17
8in. " "	8log	**.092455**	.100330	.68	.17
10in. " "	10log	**.075146**	.080267	.68	.17
12in. " "	12log	**.063296**	.066891	.68	.17
R-0 95 lb. concrete block	r0cb95	**.295528**	.394517	.68	.17
R-5 " " " "	r5cb95	**.135494**	.153107	.68	.17
R-10 " " " "	r10cb95	**.080731**	.086672	.68	.17
R-15 " " " "	r15cb95	**.057599**	.060561	.68	.17
R-30 " " " "	r30cb95	**.030883**	.031714	.68	.17
R-0 120 lb. concrete block	r0cb120	**.295527**	.394516	.68	.17
R-5 " " " "	r5cb120	**.135493**	.153107	.68	.17
R-10 " " " "	r10cb120	**.080731**	.086672	.68	.17
R-15 " " " "	r15cb120	**.057599**	.060561	.68	.17
R-30 " " " "	r30cb120	**.030883**	.031714	.68	.17
Floors					
R-0	r0flr	**.213667**	.316359	.76	.76
R-11	r11flr	**.069285**	.077474	.76	.76
R-19	r19flr	**.047067**	.050711	.76	.76
R-30	r30flr	**.032783**	.034511	.76	.76
R-38	r38flr	**.029522**	.030917	.76	.76
R-49	r49flr	**.020114**	.020752	.76	.76

* U-value used for matrix interpolations and regressions

Table 1.3. Foundation Insulation Levels

Floor measure code	Level of Insulation		
	Slab-on grade	Ventilated Crawl-space	Heated and unheated Basements
FM0	Uninsulated	Uninsulated	Uninsulated
FM1	R-5 2ft.	R-11 floor	R-5 4ft. basement wall (heated)
FM2	R-10 2ft.	R-19 floor *	R-10 4ft. basement wall (heated)
FM3	R-5 4ft.	R-30 floor	R-5 8 ft. basement wall (heated)
FM4	R-10 4ft.	R-49 floor *	R-10 8ft. basement wall (heated)
FM5			Uninsulated basement wall, R-11 floor (unheated)
FM6			Uninsulated basement wall, R-30 floor (unheated)

* not used in generating data base

of perimeter. The ventilation air change rate was then modeled using the Sherman-Grimsrud model (Sherman et al. 1980).

Infiltration

The effects of infiltration on building heating and cooling loads have been simulated using the Sherman-Grimsrud model. This is a simplified physical model for air infiltration in residential buildings developed at LBL. "The only information necessary for the model is the geometry and leakage of the structure. The leakage quantities, expressed in terms of *effective areas*, are total leakage area and the leakage areas of the floor and ceiling. Weather parameters are mean wind speed, terrain class, and average temperature difference. The model separates the infiltration problem into two distinct parts: stack and wind-regimes. Each regime is treated separately; the transition between them is sharp. The model has been tested with data from several sites, differing in climate and construction methods." (Sherman et al. 1980).

Parametric simulations were made for each prototype building at three infiltration levels with fractional effective-leakage-areas of 0.0007, 0.0005, and 0.0003, (expressed as a fraction of the total floor area). These conditions can be regarded roughly as tight, average, and loose constructions. For all simulations, the buildings are assumed to be located in areas of low buildings and trees within 30 feet of the house in most directions. The corresponding inputs for the Sherman-Grimsrud model

are: *Shielding-coefficient* = 0.19, *Terrain-parameter 1* = 0.85, and *Terrain-parameter 2* = 0.20. Since the Sherman-Grimsrud model adjusts wind speeds for the height differential between the weather station and the local site, care has been taken to input the tower heights at which the wind speeds were taken. These may vary by month since the WYEC weather tapes used for the simulations are composed of monthly data taken from different years.

Window Characteristics

One of the primary objectives for the current data base effort was to develop more comprehensive coverage of various new glazing products and window designs. With the proliferation of new glazing products, notably low-emissivity coatings, the previous method of simulating typical single-, double-, and triple-pane windows has proven to be too restrictive and ambiguous.

As in the analysis of insulation measures, the approach used for the current data base is not to simulate all possible window conditions, but a wide range of glazing characteristics from which equations can be developed through multiple regression analysis that would relate window component loads to their physical properties, namely *U-values* and *shading coefficients*. Previous LBL research have demonstrated the versatility of this technique for analyzing the energy performance of windows in buildings (Johnson et al. 1983; Sullivan et al. 1985).

The use of shading coefficient to describe window solar gain is approximate, but the errors thereby introduced are tolerable, and more than offset by common understanding of this term, and the availability of such data from window manufacturers or research institutions. For example, the WINDOW 2.0 microcomputer program can be used to calculate shading coefficients for any glazing product given its glass optical properties and construction (Windows and Daylighting Group 1986).

For the data base, DOE-2 simulations were done for three levels of window U-value while keeping shading coefficient fixed at 1.00, equivalent to clear single-pane windows (Table 1.4). These first U-values correspond to the ASHRAE value for single-pane windows, the second to that for double-pane windows with ½ inch air gap, and the third to a super window more efficient than any currently available product. The three data points thus span the range of possible U-values to be found in window products in the foreseeable future.

To analyze the effect of solar gain through windows, four shading coefficients were considered: 1.00, 0.666, 0.333, and 0.000. The first two cover the range of

Table 1.4. Window U-values

Number of Panes	File name	U-values (Btu/hr·F·ft^2) w/outside film resistances *	U-values (Btu/hr·F·ft^2) w/o outside film resistances	Outside film resistance
Single-pane	1-pane	**1.100**	1.353	.17
Double-pane	2-pane	**0.490**	0.535	.17
Multiple-pane	M-pane	**0.098**	0.100	.17

* corresponds to ASHRAE U-values used for interpolations and regressions.

shading coefficients found in clear glass windows, and the second and third that found in some reflective glazings. The last shading coefficient corresponds to a totally opaque window, which is useful for diagnostic purposes. In the shading coefficient sensitivities, the glass U-value was held constant at 0.49, equivalent to double-pane windows.

Table 1.5 is shown for reference. It gives shading coefficients for common glazing products calculated using the WINDOW 2.0 program. These shading coefficients can be used with the multiple regression results to interpolate window solar component loads.

Table 1.5. Shading Coefficients for Typical Glazing Products calculated using the WINDOW 2.0 program

Glass Type	Number of panes	DOE-2 Glass Type Code	Shading Coefficient WINDOW 2.0	Shading Coefficient Adjusted *
Regular	1	1	1.038	1.000
	2	1	.944	.909
	3	1	.865	.833
Reflective	1	10	.370	.356
	2	10	.287	.276
	3	10	.262	.252
Heat Absorbing	1	6	.727	.700
	2	6	.609	.587
	3	6	.542	.522

* Shading coefficient is defined as the solar heat gain ratio relative to that for a reference glazing material, generally double-strength clear sheet glass at normal incidence (ASHRAE 1985). Due to slight differences in the assumed optical properties of clear glass compared to DOE-2.1, the WINDOW 2.0 program calculated a shading coefficient slightly higher than 1.00 for the base case single-pane glazing. In Column 4, these values have been adjusted to yield 1.00 for the base case.

Building Operating Conditions

The assumed building operating conditions are taken from Section 4.0 of the voluntary energy guidelines technical document, to which the reader is referred for more details. The following describes only those operating conditions that have been modified from the earlier voluntary energy guidelines data base.

1. The heating thermostat setting has been changed to 70° F all day, with no night setback.

2. The internal loads profile has been changed from that shown in Table 4.4b of the voluntary energy guidelines technical document to that developed by the California Energy Commission for their Title 24 Residential Energy Standards (Figure 1.9 and Table 1.6).

Table 1.6. Internal Loads Schedule

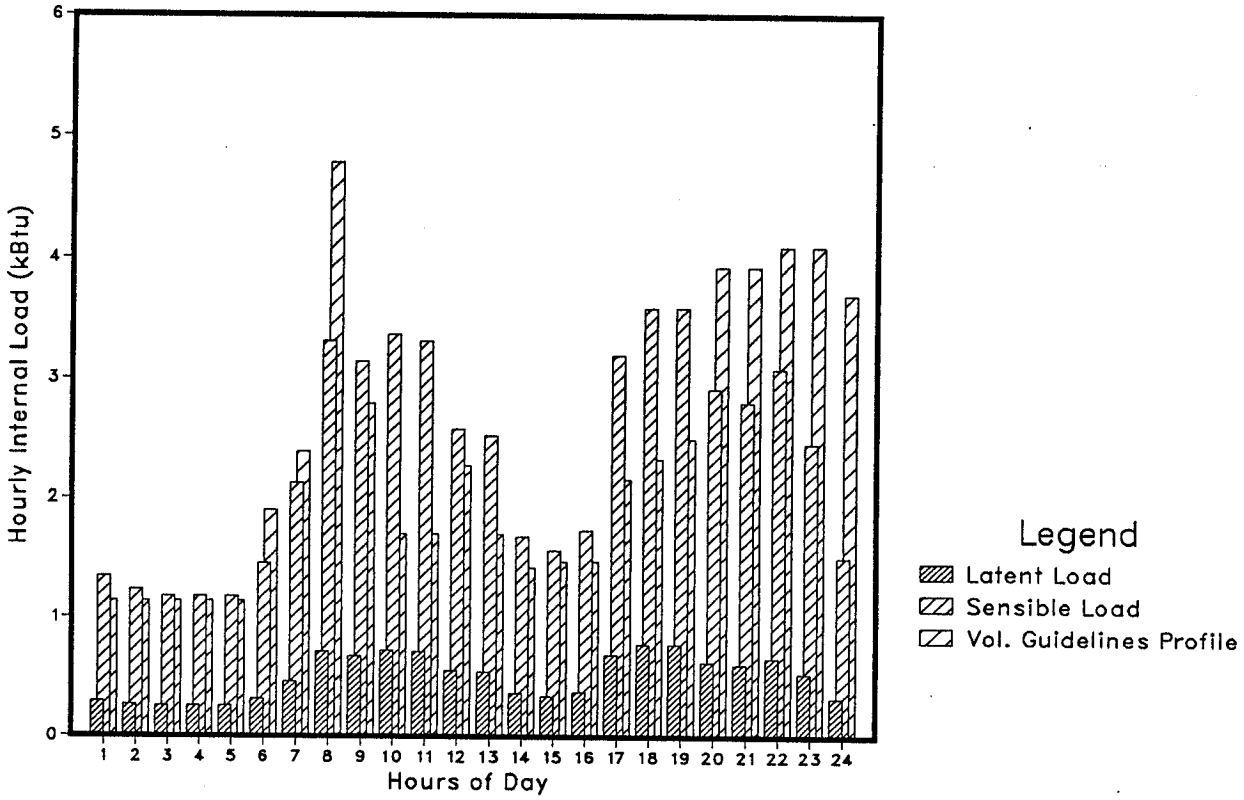
Hour of day	Internal load (Btu)	Hour of day	Internal load (Btu)
1	1346	13	2525
2	1234	14	1683
3	1178	15	1571
4	1178	16	1739
5	1178	17	3198
6	1459	18	3591
7	2132	19	3591
8	3310	20	2917
9	3142	21	2805
10	3366	22	3086
11	3310	23	2469
12	2581	24	1215

The new profile shows an internal loads peak in the evening due to cooking loads, plus a smaller peak at breakfast time. Although the new internal loads profile has not been validated, we believe it is more typical than the previous profile used by LBL, which showed the highest peak at 8 a.m., and a secondary peak at 11 p.m.

3. A time of day schedule has been added to the building ventilation that assumes occupants will not open windows for natural ventilation between 11 p.m. and 7 a.m. even if it is desirable to do so. If the windows are open at 11 p.m., they are

assumed open through the night unless indoor temperatures drop below 70° F. Windows are assumed closed below that temperature to avoid picking up spurious heating loads. The venting algorithm has also been changed from a fixed air change rate to a variable rate calculated using the Sherman-Grimsrud residential infiltration model. It is assumed that opened windows have an "effective-leakage-area" only 30% of the total glazing area, due to obstructions and physical constraints that limit maximum openable area to half of the window area. *

Figure 1.9 Internal loads profile for a 1540 ft^2 1-Story prototype house



* The natural ventilation algorithm is an enhancement to the DOE-2.1C program not available on the current public release version of DOE-2.1C. However, it will be included in future release versions.

Building Locations

The base cities included in the data base are the 45 cities used for the voluntary energy guidelines data base. For this current work, however, simulations were done using WYEC (Weather Year for Energy Calculations) weather tapes (Crow 1981). These weather data are judged to be more reliable for estimating average annual energy consumptions than the TRY weather tapes used for the voluntary energy guidelines data base. For the twelve locations for which WYEC weather tapes were unavailable, TMY weather tapes were used (Table 1.7).

Table 1.7 Building locations for residential data base

Building location	Weather tape WYEC	Weather tape TMY	Prevalent foundation type
Albuquerque NM	X		Slab
Atlanta GA	X		Slab
Birmingham AL	X		Slab
Bismarck ND	X		Basement
Boise ID	X		Basement
Boston MA	X		Basement
Brownsville TX	X		Slab
Buffalo NY		X	Basement
Burlington VT		X	Basement
Charleston SC	X		Crawl-space
Cheyenne WY	X		Basement
Chicago IL	X		Basement
Cincinnati OH		X	Basement
Denver CO	X		Basement
El Paso TX	X		Slab
Fort Worth TX	X		Slab
Fresno CA		X	Slab
Great Falls MO	X		Basement
Honolulu HA		X	Slab
Jacksonville FL		X	Slab
Juneau AK		X	Basement
Kansas City MO	X		Basement
Lake Charles LA	X		Slab
Las Vegas NV	X		Slab
Los Angeles CA	X		Slab
Medford OR	X		Crawl-space
Memphis TN		X	Crawl-space
Miami FL	X		Slab
Minneapolis MN	X		Basement
Nashville TN	X		Slab
New York NY	X		Basement
Oklahoma City OK	X		Slab
Omaha NB	X		Basement
Philadelphia PA		X	Basement
Phoenix AZ	X		Slab
Pittsburgh PA	X		Basement
Portland ME	X		Basement
Portland OR	X		Crawl-space
Reno NV		X	Slab
Salt Lake City UT	X		Basement
San Antonio TX	X		Slab
San Diego CA		X	Slab
San Francisco CA		X	Slab
Seattle CA	X		Basement
Washington DC	X		Basement

ANALYSIS OF BUILDING HEATING AND COOLING LOADS

Component Loads

The new residential data base utilizes the concept of component loads developed through previous analysis of the voluntary energy guidelines data base. *Component loads* are defined as the net annual contribution of each building component to the heating or cooling loads of the building (Huang et al. 1985). They are calculated in a two-step process. First, Δ loads are calculated for different conservation levels in each component (ceiling, wall, window, etc.) relative to an arbitrarily chosen base case. Regression analysis is then done correlating these Δ loads to key physical parameters associated with each building component. For insulation, the parameter used is the steady-state conductance of the ceiling, wall, foundation, or window; for infiltration, the parameter is the effective-leakage-area; and for window solar gain, the solar aperture (shading coefficient * window area).

At the y-intercept of the regression curve, the component load is assumed to be zero. This corresponds to zero conductance for insulation, zero leakage-area for infiltration, and zero solar aperture for the solar gain measures. The component loads for the simulated cases are thus only a function of the regression curve:

$$\text{Component Load}_{\text{ceilings,walls,floors}} = f(\text{conductance}) \quad [1]$$

$$\text{Component Load}_{\text{infiltration}} = f(\text{effective–leakage–area}) \quad [2]$$

$$\text{Component Load}_{\text{solar gain}} = f(\text{solar aperture}) \quad [3]$$

The component loads thus calculated can be used to estimate the total loads for variations of the prototype house:

$$\begin{aligned}\text{Total Load} = [&(\text{Component Load}_{\text{ceiling}} * \text{UA}_{\text{ceiling}}) \\ &+ \text{Component Load}_{\text{wall}} * \text{UA}_{\text{wall}}) \\ &+ (\text{Component Load}_{\text{window}} * \text{UA}_{\text{window}}) \\ &+ (\text{Component Load}_{\text{solar gain}} * \text{Window solar aperture}) \\ &+ (\text{Component Load}_{\text{foundation}} * \text{UA}_{\text{foundation}}) \\ &+ (\text{Component Load}_{\text{infilt}} * \text{Effective–leakage–area}) \\ &+ \text{Residual Load}\end{aligned} \quad [4]$$

The *residual load* is the difference between the total loads computed by this method and those from a DOE-2 simulation. They represent the net effect of internal loads and interactions not included in the component regression analyses.

To calculate Δ loads for insulation measures, 30 DOE-2 simulations were done for each prototype building in the 45 locations. Table 2.1 describes the thermal characteristics of the house for each parametric simulation. The arrows on the table indicate which simulations were used to derive Δ loads for successive insulation levels. These simulations are identical except for the change in insulation level in a single component. Cumulative Δ loads are derived by summing successive Δ loads, and are actually composite values that assume all building components are thermally tightened in unison. For example, the Δ load from R-0 to R-38 ceiling is the sum of the Δ load from R-0 to R-19 ceiling on a loose uninsulated house, plus the Δ load from R-19 to R-38 ceiling on a moderately insulated house. This procedure produces Δ loads that are most representative of typical construction practices.

Ceiling and Wall Measures

The data base includes Δ loads for the following ceiling and wall insulation measures: R-0, R-19, R-38, and R-60 ceilings, and R-0, R-11, R-19, and R-34 light-frame walls. A quadratic curve fit was developed through regression analysis, using the U-value of the ceiling or wall as the independent variable, and its area as a scalar:

$$\text{Component Load} = A * (U * \text{Coef}_{\text{linear}} + U^2 * \text{Coef}_{\text{quadratic}}) \qquad [5]$$

Sample regression plots for four cities are shown in Figures 2.1 through 2.4.

The computed and interpolated total Δ loads, and component loads per ft^2, are shown on the tables in Section 3.A. The regression coefficients used for the interpolated values are listed on the tables directly below the Δ and component loads. "Slope" is the linear coefficient and in units of degree-days. "Curve" is the quadratic coefficient and in units of $(\text{degree day})^2 \cdot ft^2/\text{Btu}$. The total component load of the ceiling or wall can be calculated as follows:

$$\text{Component Load (Btu)} = A * (U * \text{Slope} * 24 + U^2 * \text{Curve} * 576) \qquad [6]$$

For example, for ceiling heating loads in Albuquerque the table in Section 3.A gives a "slope" of 4468.29 degree-days, and a "curve" of -111.14 $\text{degree day}^2 \cdot ft^2/\text{Btu}$. Since the U-value of a R-0 ceiling is .24703, the component heating load for an

Table 2.1 List of DOE-2.1C Runs for Parametric Analysis of Insulation Measures

(↓'s indicate runs used to derive Δ loads for incremental measures)

Option code	No. of runs	Ceiling R-value	Wall R-value	Foundation measures Slab	Basement	Crawl	Effect. Leak. frac.	Window U-value
A00	1	**R-0↓**	R-0	FM0 prevalent found.†			.0007	1.35
C00	1	**R-19**	**R-0 ↓**	FM0 prevalent found.			.0007	1.35
D00	1	R-19	**R-11**	FM0 prevalent found.			**.0007↓**	1.35
D01	3	R-19	R-11	**FM0↓**	**FM0↓**	**FM0↓**	**.0005**	1.35
E01	3	R-19	R-11	**FM1**	**FM1**	**FM1**	.0005	**1.35↓**
F02	1	**R-19↓**	R-11	FM1 prevalent found.			.0005	**.535**
H09	1	**R-38**	**R-11↓**	FM1 prevalent found.			.0005	.535
I06	3	R-38	**R-19**	**FM1↓**	**FM1↓**	**FM1↓**	.0005	.535
J01	3	R-38	R-19	**FM2**	**FM2↓**	**FM2**	**.0005↓**	.535
M02	1	R-38	R-19		**FM5↓**		.0005	.535
N09	1	R-38	R-19		**FM6↓**		.0005	.535
J51	1	**R-38↓**	R-19	FM2 prevalent found.			**.0003**	.535
L60	1	**R-60**	**R-19↓**	FM2 prevalent found.			.0003	.535
N55	3	R-60	**R-34**	**FM2↓**	**FM2↓**	**FM2↓**	.0003	.535
O54	2	R-60	R-34	**FM3↓**	**FM3↓**	**FM3↓**	.0003	.535
P53	3	R-60	R-34	**FM4**	**FM4**	**FM4**	.0003	**.535↓**
Q52	1	R-60	R-34	FM4 prevalent found.			.0003	**.100**

Total = 30 runs

† prevalent foundation based on NAHB survey of foundation types in each city and listed in Table 1.6; See Table 1.3 for explanation of foundation code.

Figure 2.1 Correlations of Δ Ceiling Heating Loads to U-values

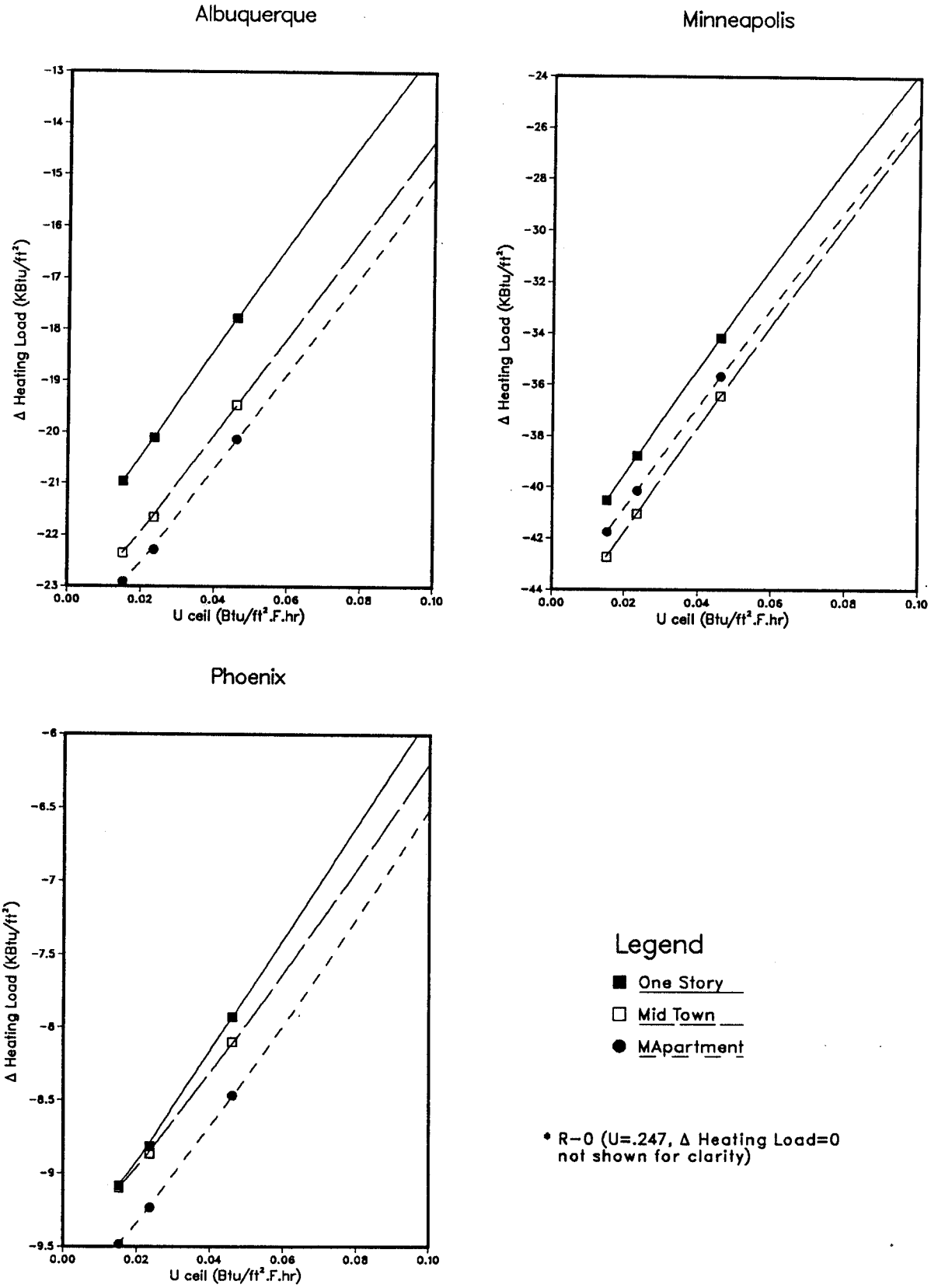


Figure 2.2 Correlations of Δ Ceiling Cooling Loads to U-values

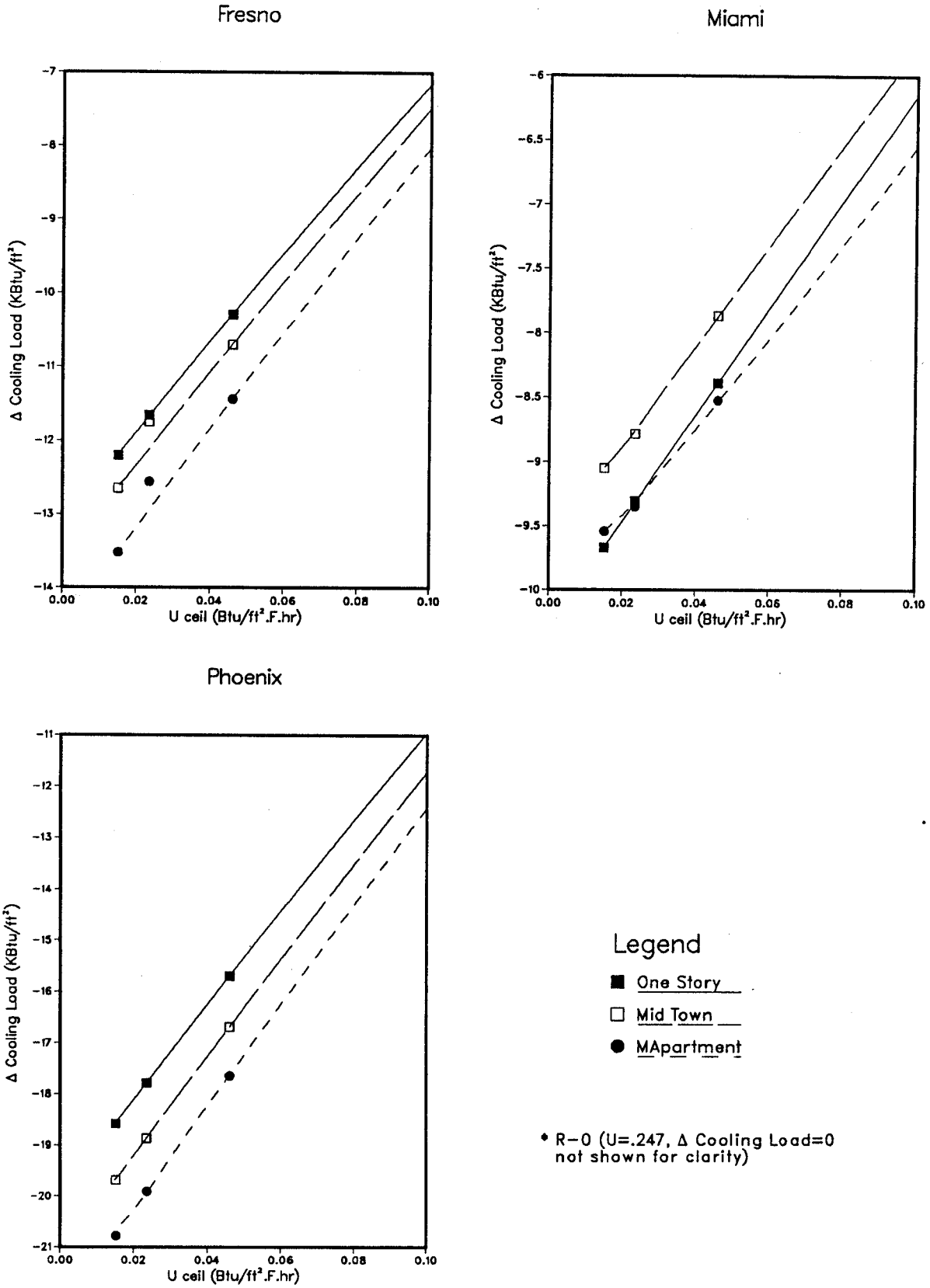


Figure 2.3 Correlations of Δ Wall Heating Loads to U-values

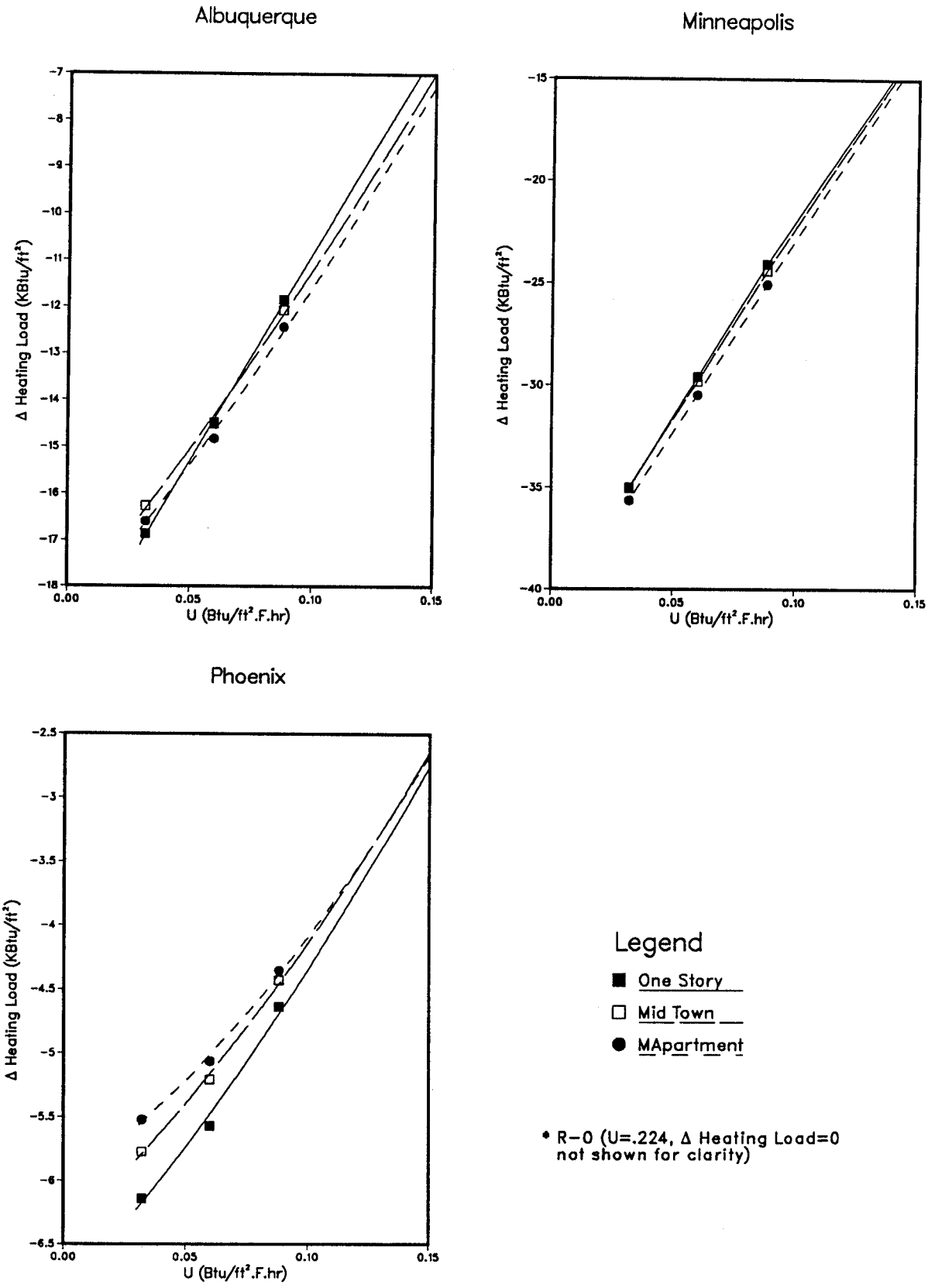
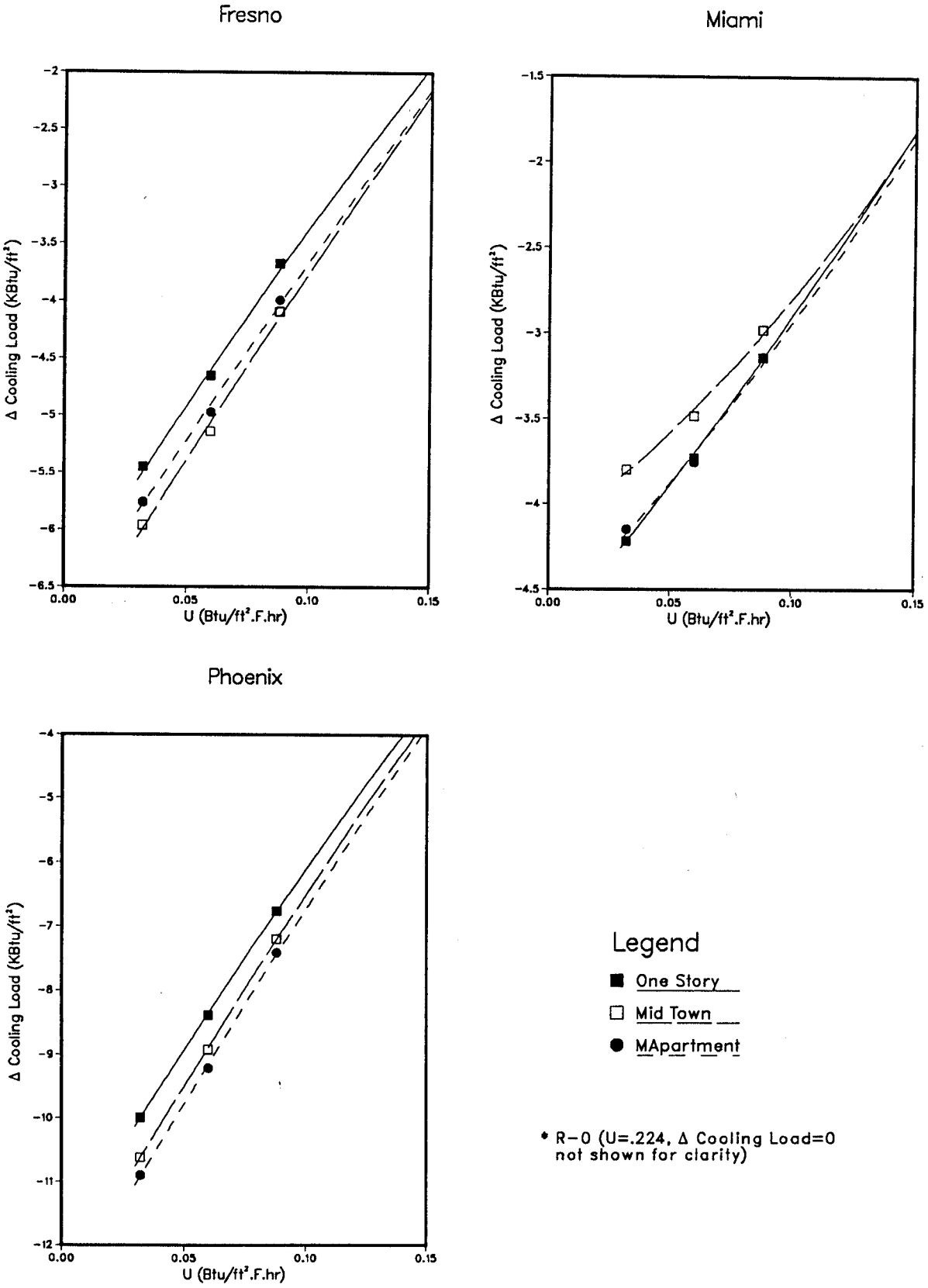


Figure 2.4 Correlations of Δ Wall Cooling Loads to U-values



uninsulated ceiling in a 1540 ft^2 house would be:

$$1540 * (.24703 * 4468.29 * 24 - .06102 * 111.14 * 576)\ Btu \qquad [7]$$

or $$40.797 - 6.016\ MBtu = 34.781\ MBtu$$

To analyze the effect of mass walls on energy use, simulations were done in the one-story prototype for five thicknesses of log walls (4, 6, 8, 10, and 12 inches), and five levels of interior insulation (R-0, R-5, R-10, R-15, R-30) in both 95 lb. and 120 lb. concrete block walls. For log and concrete block walls with less than R-10 insulation, the house was simulated with R-19 ceiling, R-11 wall, uninsulated foundation, single-pane windows, and 0.0005 effective-leakage-fraction. For concrete block walls above R-10, the house was simulated with R-38 ceiling, R-19 wall, and R-10 foundation insulation, double-pane windows, and 0.0005 effective-leakage-fraction. Mass walls with exterior insulation were not simulated.

A quadratic curve fit was derived through regression analysis, using the steady-state U-value of the mass wall as the independent variable, and the wall area as a scalar. In addition to the two regression coefficients, an intercept was also calculated for the Δ load in $kBtu/ft^2$ from a light-frame wall to the uninsulated mass wall. The following equation defines the component load for a mass wall:

$$\text{Component Load (Btu)} = \text{Area} * (U * \text{Slope} * 24 + U^2 * \text{Curve} * 576) \qquad [8]$$
$$+ \text{Area} * \text{Intercept} * 10^3$$

Two typical regression plots are shown in Figures 2.5 through 2.8. These indicate the Δ loads between light-frame and mass walls of the same steady-state U-value, as well as the nonlinearity in cooling Δ loads compared to U-values for mass walls in cities with large daily temperature swings such as Fresno.

The Δ and component loads and regression coefficients for the three mass wall types are presented in Section 3.B. The format of the tables are identical to those in Section 3.A and explained earlier in this section.

Foundation Insulation Measures

The data base includes simulation results for five insulation levels in the slab-on-grade (uninsulated, R-5 extending down 2 ft. and 4 ft., and R-10 extending down 2 ft. and 4 ft.), and the heated basement (uninsulated, R-5 extending down 4 ft. and 8 ft., and R-10 extending down 4 ft. and 8 ft.), three in the unheated basement (uninsulated,

Figure 2.5 Correlation of Δ Heating Loads to U-values for Mass Walls for Fresno CA

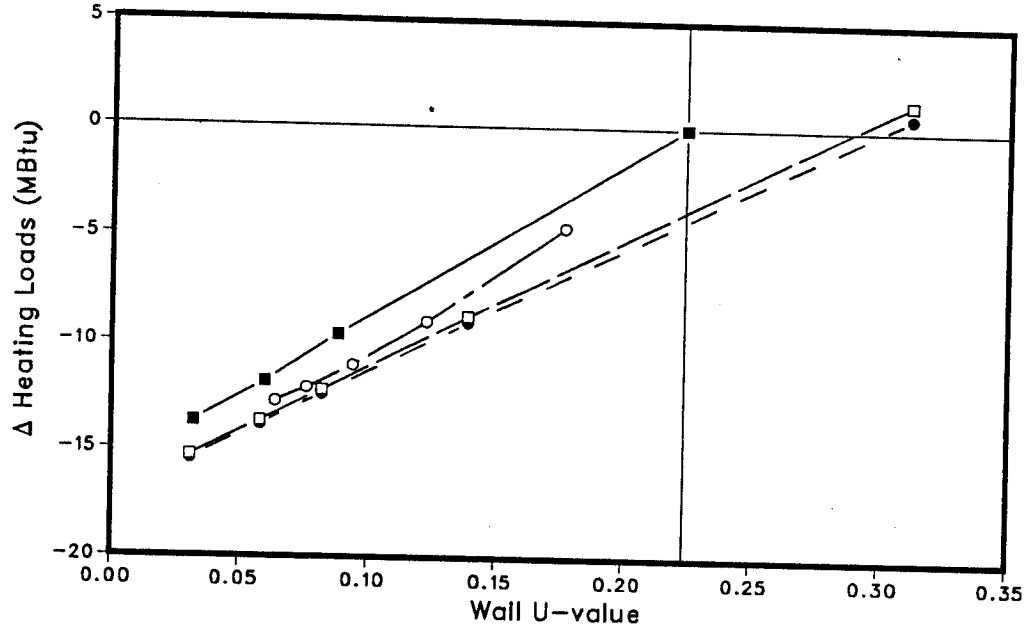
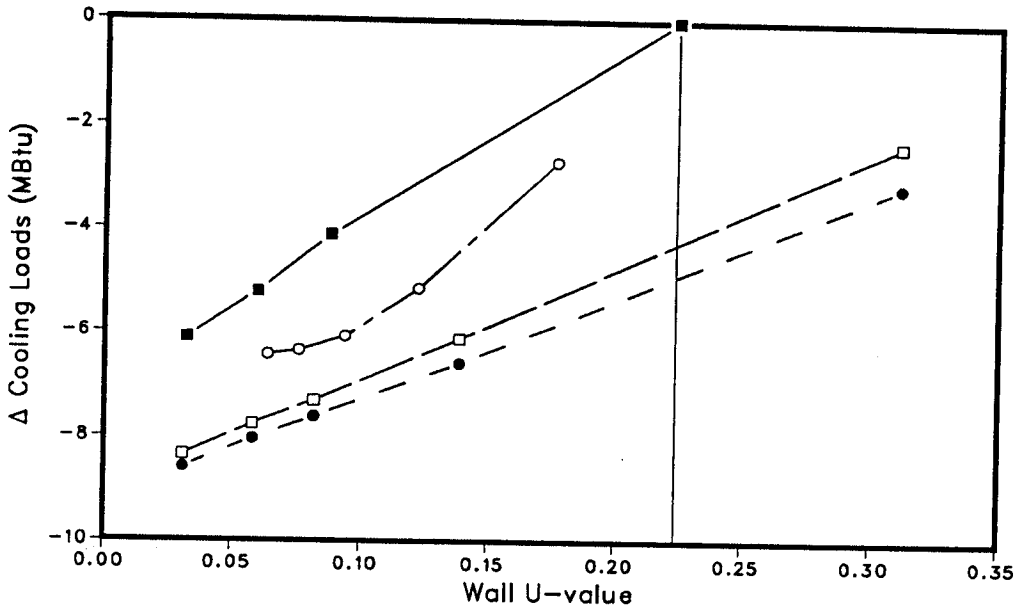


Figure 2.6 Correlation of Δ Cooling Loads to U-values for Mass Walls for Fresno CA



Legend

- ■ Wood-frame R-34,19,11,0
- □ 95lb ConcBlock R-30,15,10,5,0
- ● 120lb ConcBlock R-30,15,10,5,0
- ○ Log 12,10,8,6,4 in

Figure 2.7 Correlation of Δ Heating Loads to U-values for Mass Walls for Buffalo NY

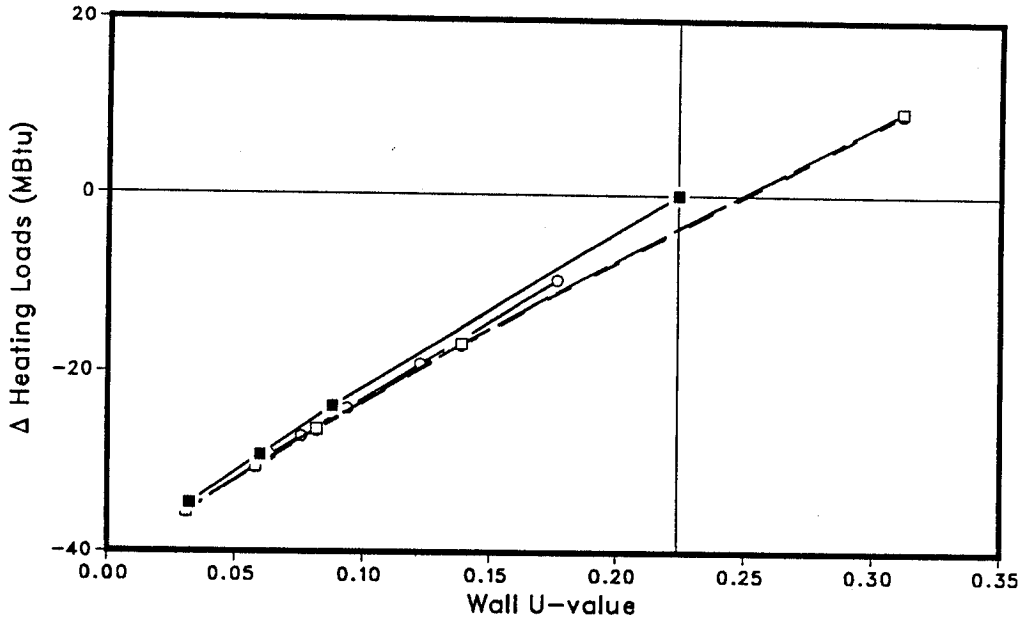
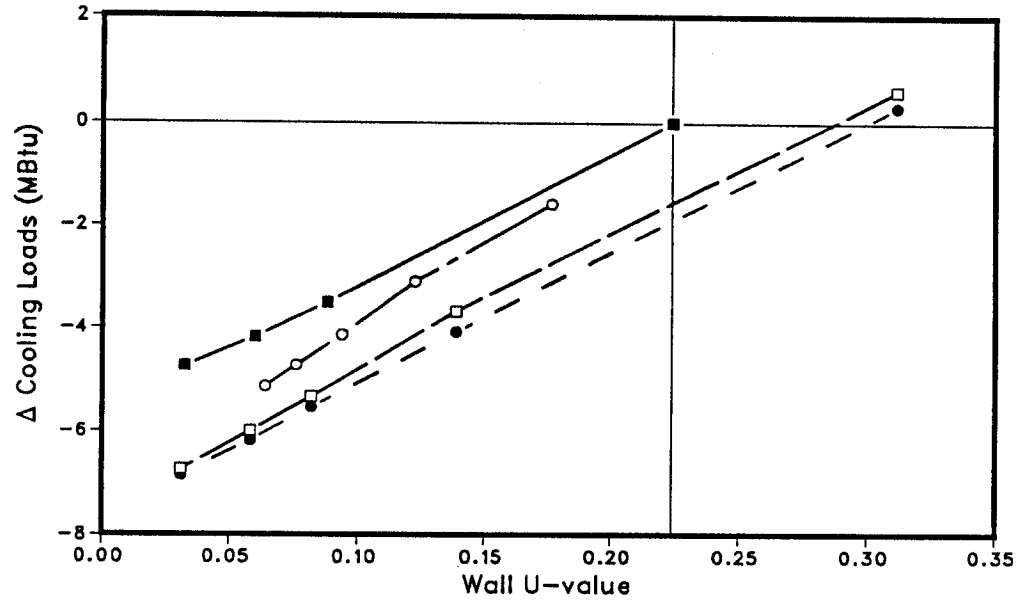


Figure 2.8 Correlation of Δ Cooling Loads to U-values for Miami FL



Legend

- ■ Wood-frame R-34,19,11,0
- □ 95lb ConcBlock R-30,15,10,5,0
- ● 120lb ConcBlock R-30,15,10,5,0
- ○ Log 12,10,8,6,4 in

R-11, and R-30 under the floor), and four in the vented crawl-space foundation (uninsulated, R-11, R-19, and R-38 under the floor).

For the slab and heated basement conservation measures, quadratic curve fits were derived through regression analyses, using steady-state "U-effectives" from the USCUG model as the independent variable and the perimeter length as a scalar. These correlations are approximate due to the complex heat flow paths and thermal storage effects of the foundation and subsoil (Figures 2.9 through 2.12). As a result, we did not use the quadratic coefficients in the data base, but stored instead the component loads for each individual measure, normalized by the *perimeter length* of the prototype buildings. These appear on the tables in Section 3.A in units of kBtu's per perimeter foot. The regressions, however, were needed to determine the y-intercept when the "U-effective" is 0. At this condition, the foundation component load was assumed to be zero.

For under-floor insulation measures in the unheated basement and crawl space foundations, quadratic curve fits were derived through regression analyses, using the floor U-value as the independent variable and the floor area as a scalar (Figures 2.13 to 2.16). Although the Δ loads are nonlinear due to interactions between the conditioned space and the basement or crawl space, they vary monotonically with floor U-value and can be reduced to regression coefficients. Equation 6 is used to estimate component loads for these foundation measures from the coefficients. The Δ and component loads and regression coefficients are given in Section 3.A in the same format as for ceilings and walls.

The differences in energy use between building foundation type is indicated by the "intercepts" in Section 3.A. These are given relative to the prevailing foundation type in each location (Table 1.7) and in units of kBtu's per perimeter feet for the slab and heated basement and per ft^2 of floor area for the unheated basement and crawl space foundations. These can be regarded as Δ loads not accounted for by the calculated building k-value.

Infiltration

The data base includes simulation results for the following three levels of infiltration: 0.0007, 0.0005, and 0.0003 effective-leakage-fractions (ELF). A quadratic curve fit was computed through regression analysis, using *.001 ELF* of the house as the independent variable, and the floor area as a scalar:

$$\text{Comp. Load (kBtu)} = \text{Area} * (\text{ELF} * 10^3 * \text{Slope} + \text{ELF}^2 * 10^6 * \text{Curve}) \qquad [9]$$

Figure 2.9 Correlation of Δ Slab Foundation Heating Loads to Effective U-values

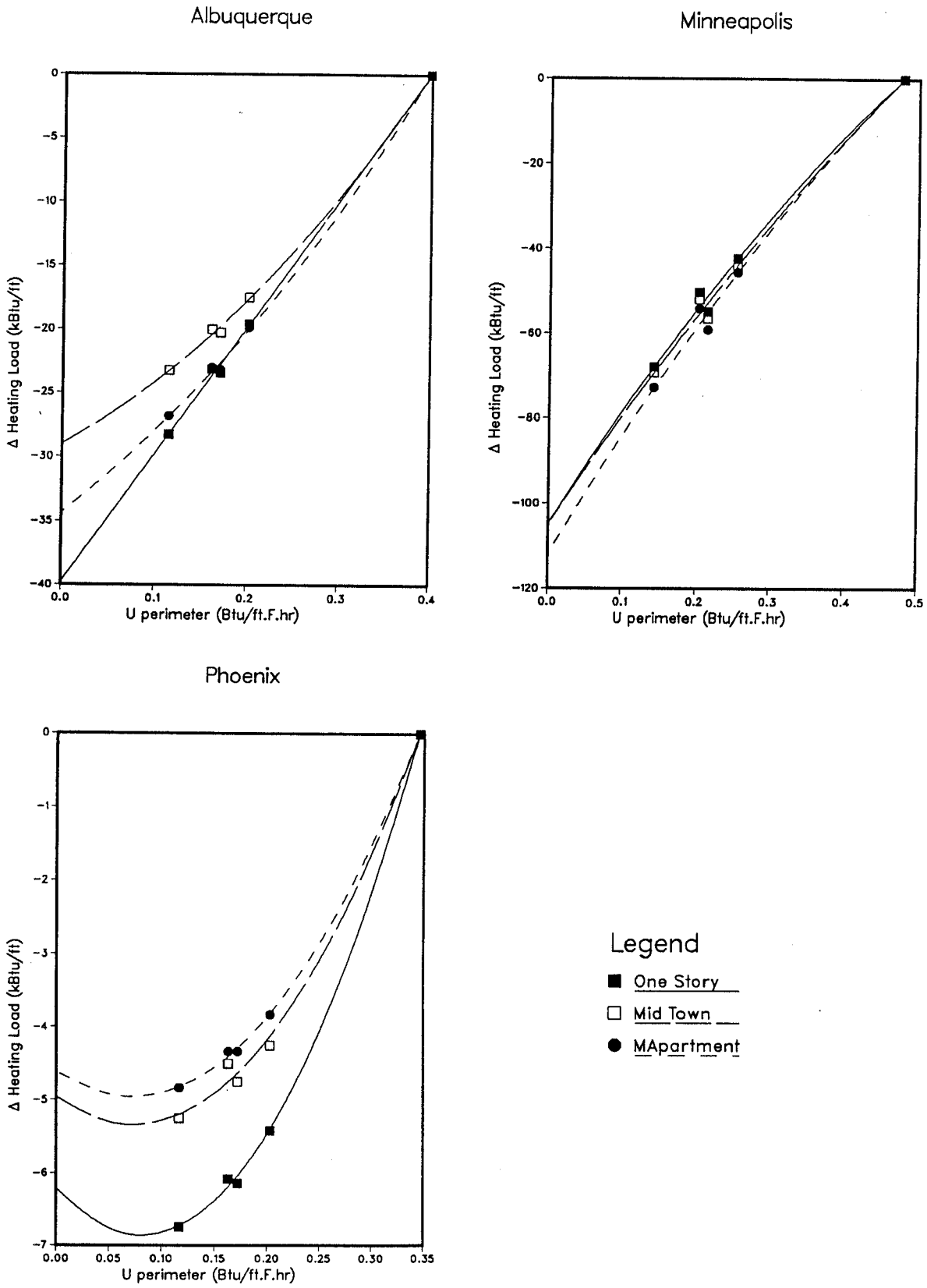


Figure 2.10 Correlation of Δ Slab Foundation Cooling Loads to Effective U-values

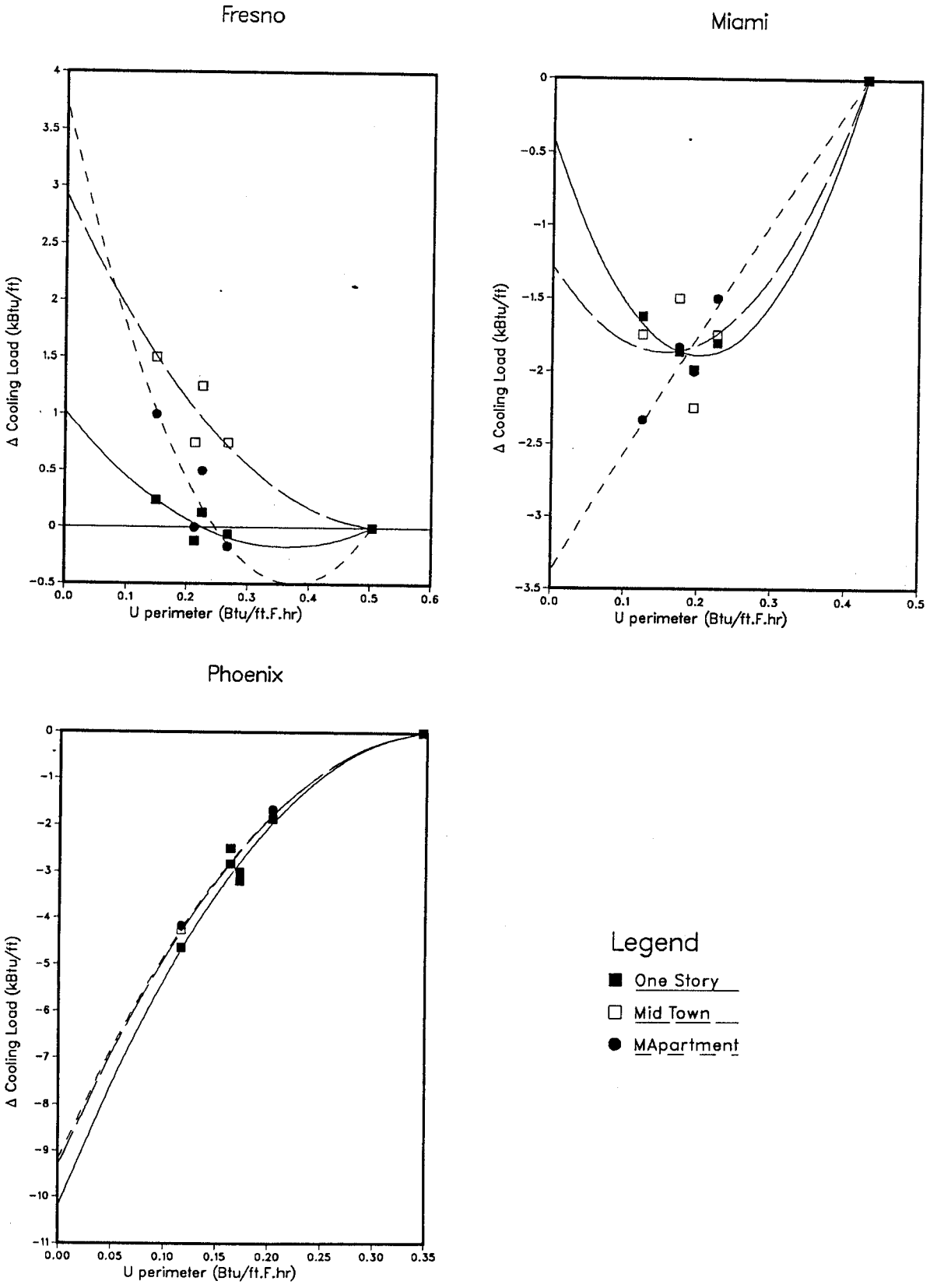


Figure 2.11 Correlation of Δ Heated Basement Heating Loads to Effective U-values

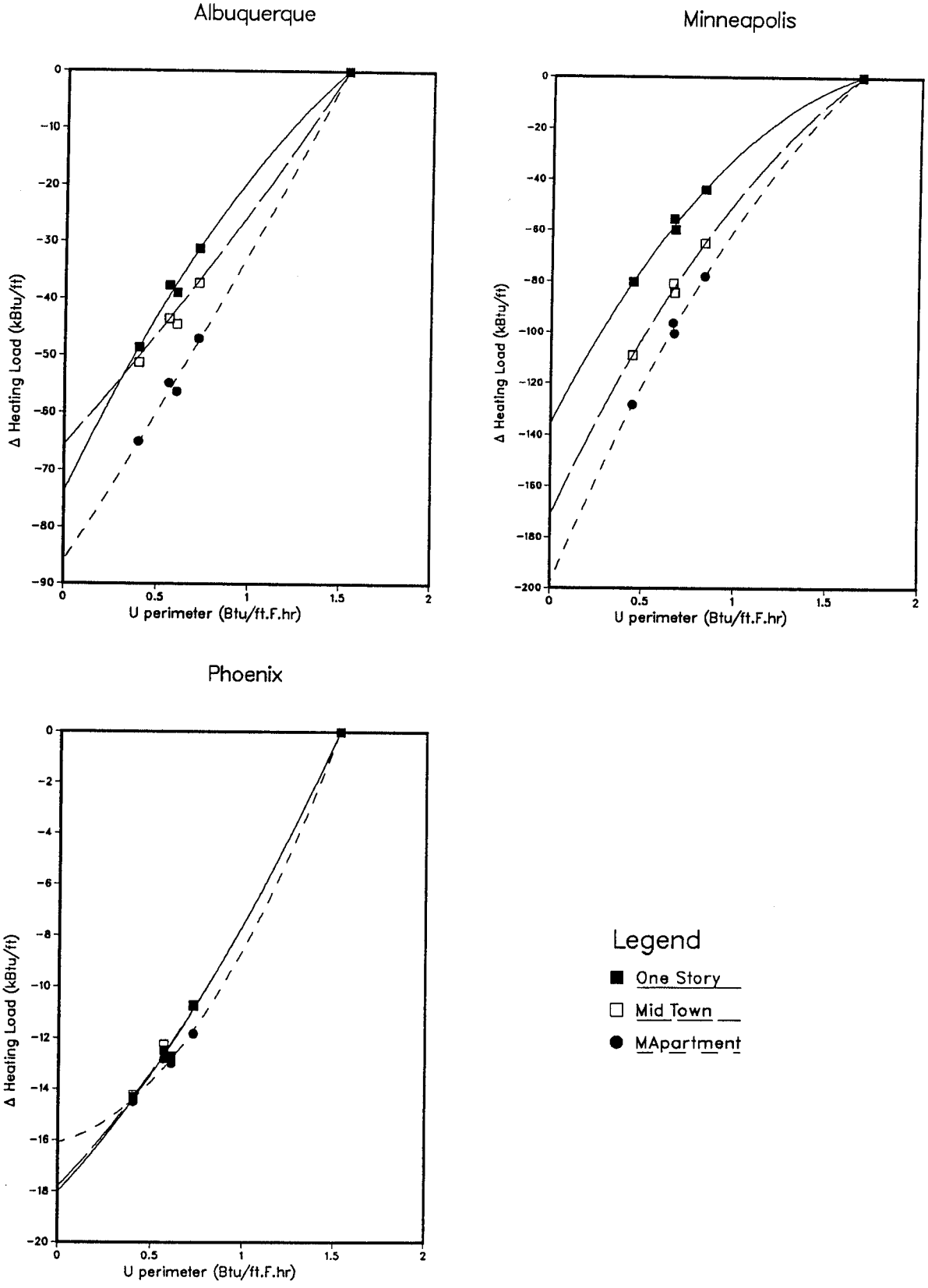


Figure 2.12 Correlation of Δ Heated Basement Cooling Loads to Effective U-values

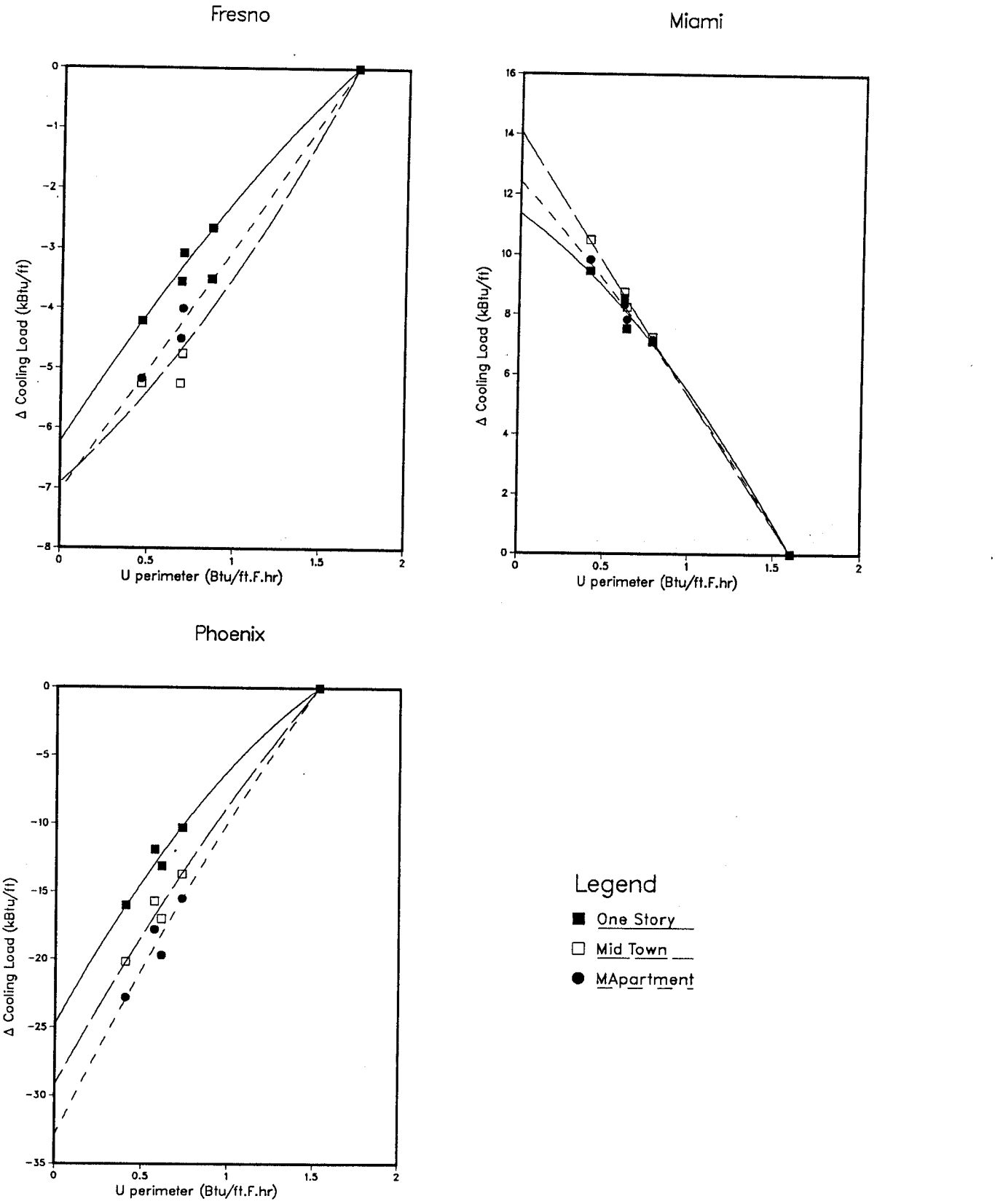


Figure 2.13 Correlation of Δ Unheated Basement Heating Loads to Effective U-values

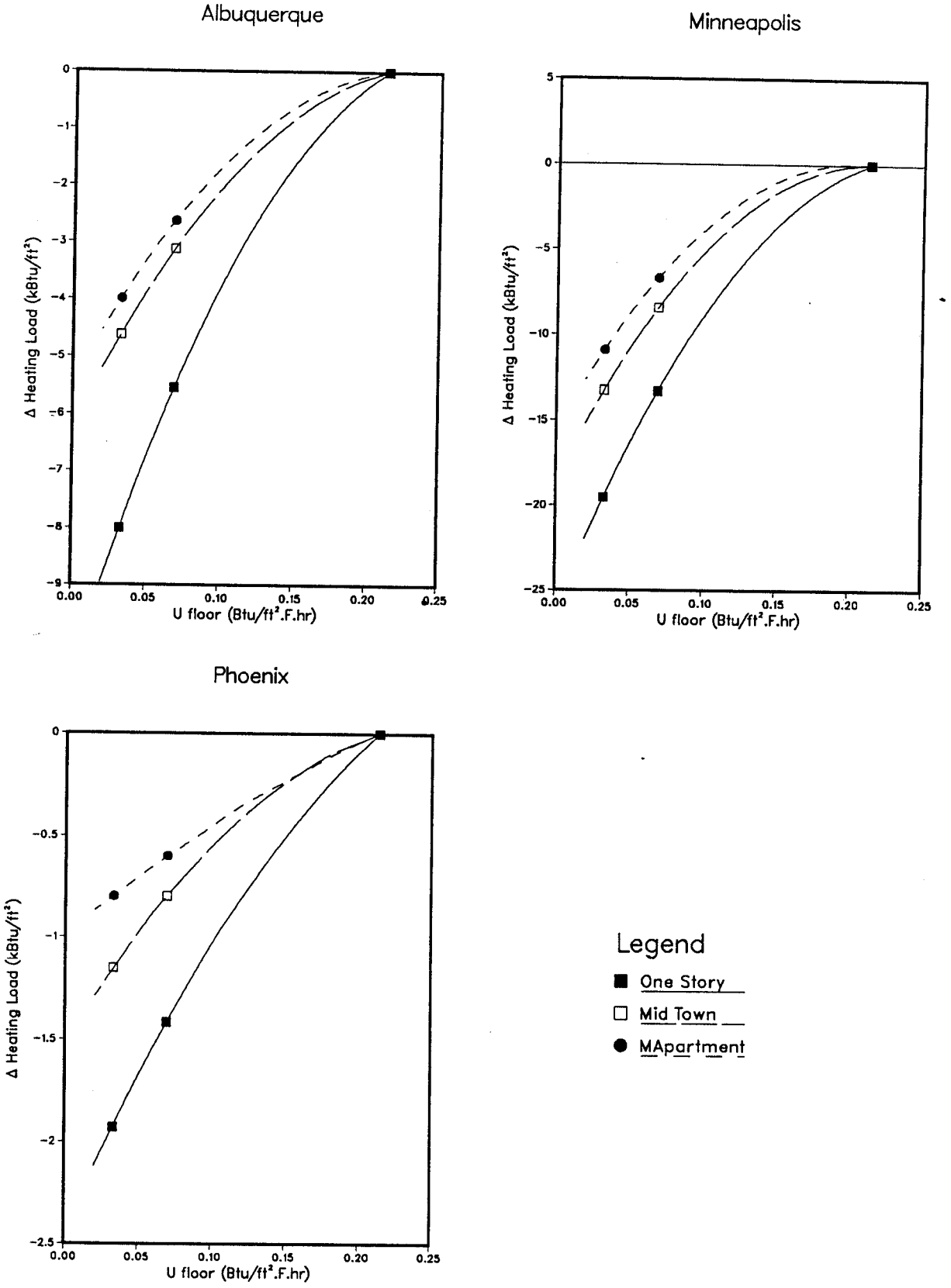


Figure 2.14 Correlation of Δ Unheated Basement Cooling Loads to Effective U-values

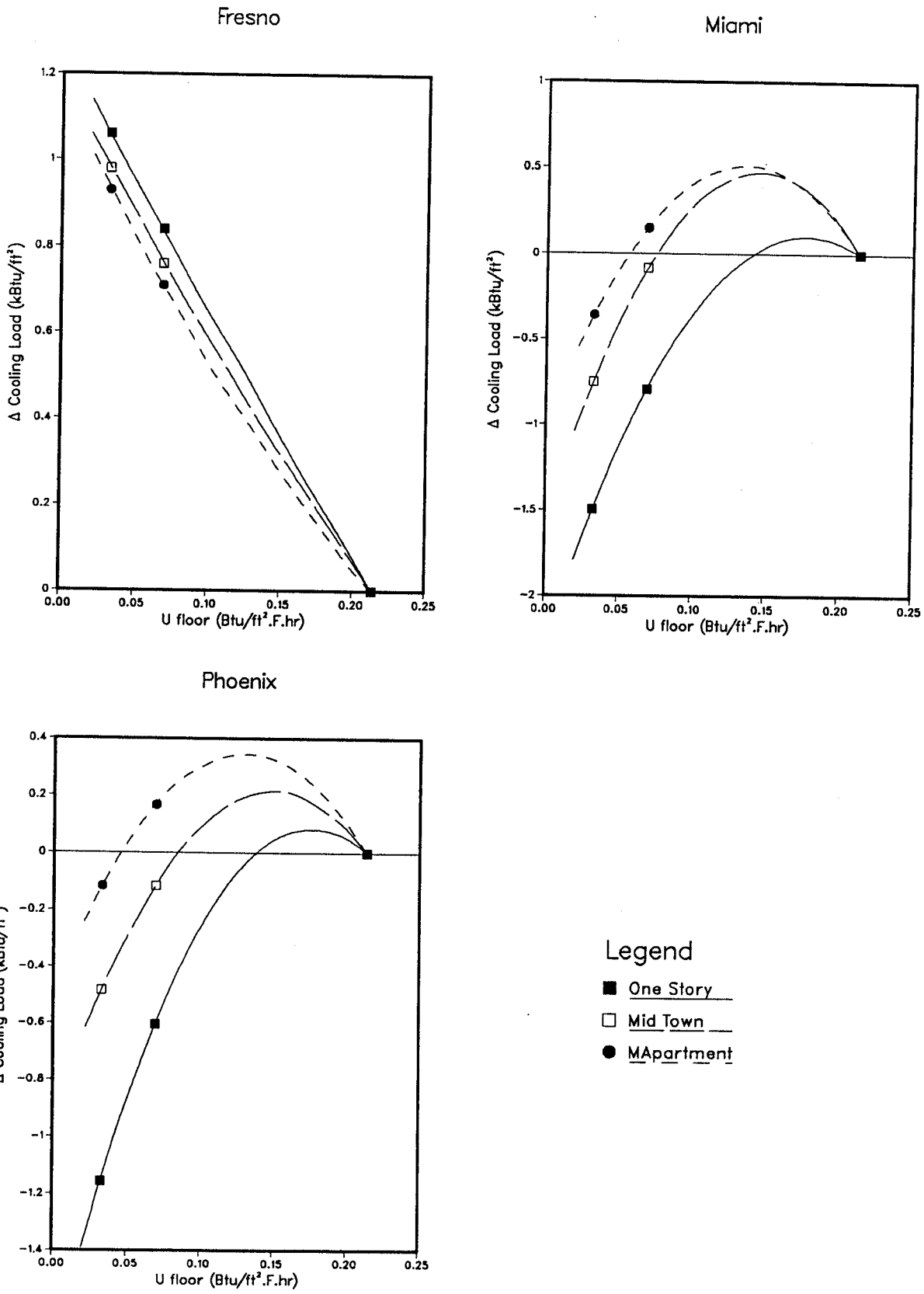


Figure 2.15 Correlation of Δ Crawl Foundation Heating Loads to Floor U-values

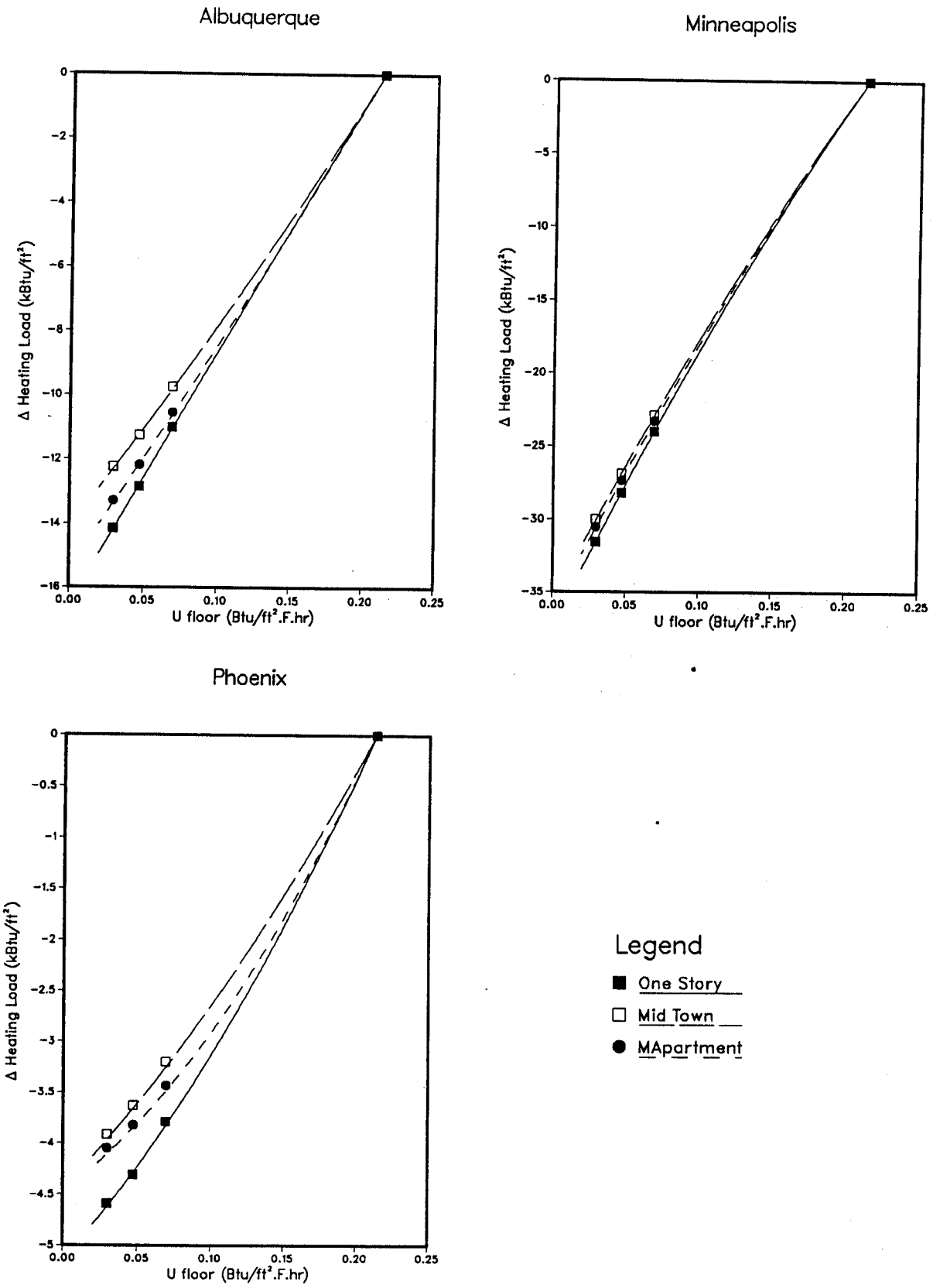
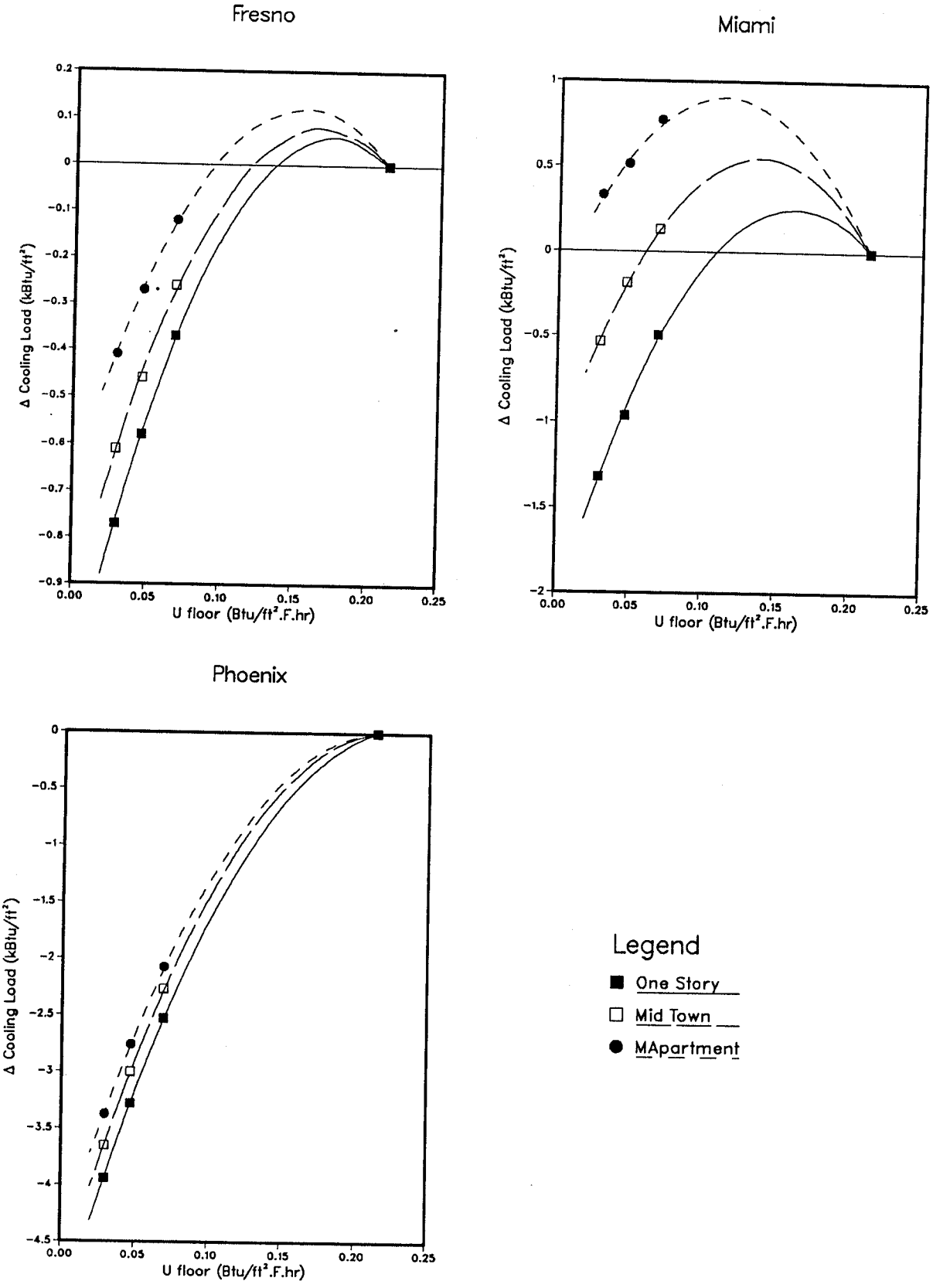


Figure 2.16 Correlation of Δ Crawl Foundation Cooling Loads to Floor U-values



Sample plots of these regressions for four cities are shown in Figures 2.17 through 2.18. A function has also been added to the DOE-2.1C input to calculate the average infiltration air change rate for the three effective-leakage-fractions for each location and prototype.

The tables in Section 3 give the total Δ loads and component loads per ft^2 of floor due to infiltration, and the coefficients from the regression analyses. "Slope" is the linear regression coefficient in units of kBtu per .001 ELF, "Curve" is the quadratic coefficient in units of kBtu per $(.001\ ELF)^2$.

The numbers in parenthesis next to the effective-leakage-fractions are the corresponding average yearly infiltration rates in *ach* (air changes/hour). As shown in Figure 2.19, these are location-specific, but linearly dependent on effective-leakage-fraction within a particular location.

Windows

To analyze the impact on building loads due to changes in window U-value, three simulations were done for each prototype house and base city for 12% equally distributed windows with a constant shading coefficient of 1.00, and window U-values of 1.10, 0.49, and 0.10 (see Table 1.4). The assumed thermal integrity for the rest of the building is indicated in Table 2.1. Quadratic regressions were done, using the U-value of the window as the independent variable, and its area as a scalar:

$$\text{Comp. Load (Btu)} = \text{Area}^*(U_{wind} * \text{Slope} * 24 + U_{wind}^2 * \text{Curve} * 576) \qquad [10]$$

Sample regression plots for four cities are shown in Figures 2.20 and 2.21. The Δ and component loads for window conduction per ft^2 are shown under "Window U-value" on the tables in Section 3.A. The loads for triple-pane windows are interpolated between double-pane and the R-10 multiple-pane windows. These loads are only for conductive losses and do not include the effects of solar gain through windows.

To analyze the impact on building loads due to variations in window solar gain, a set of 52 parametric simulations were designed for the one-story prototype in each base city (Table 2.2). Twelve of these simulations cover shading coefficients of 1.00, 0.67, 0.33, and 0.00 for 8%, 12%, and 20% window areas (of floor area) equally distributed in four cardinal orientations. Forty simulations cover various window configurations ranging from 1% to 14% glazing area in one orientation, and from 8% to 20% total glazing area.

Figure 2.17 Correlation of Δ Infiltration Heating Loads to Effective-leakage-fractions

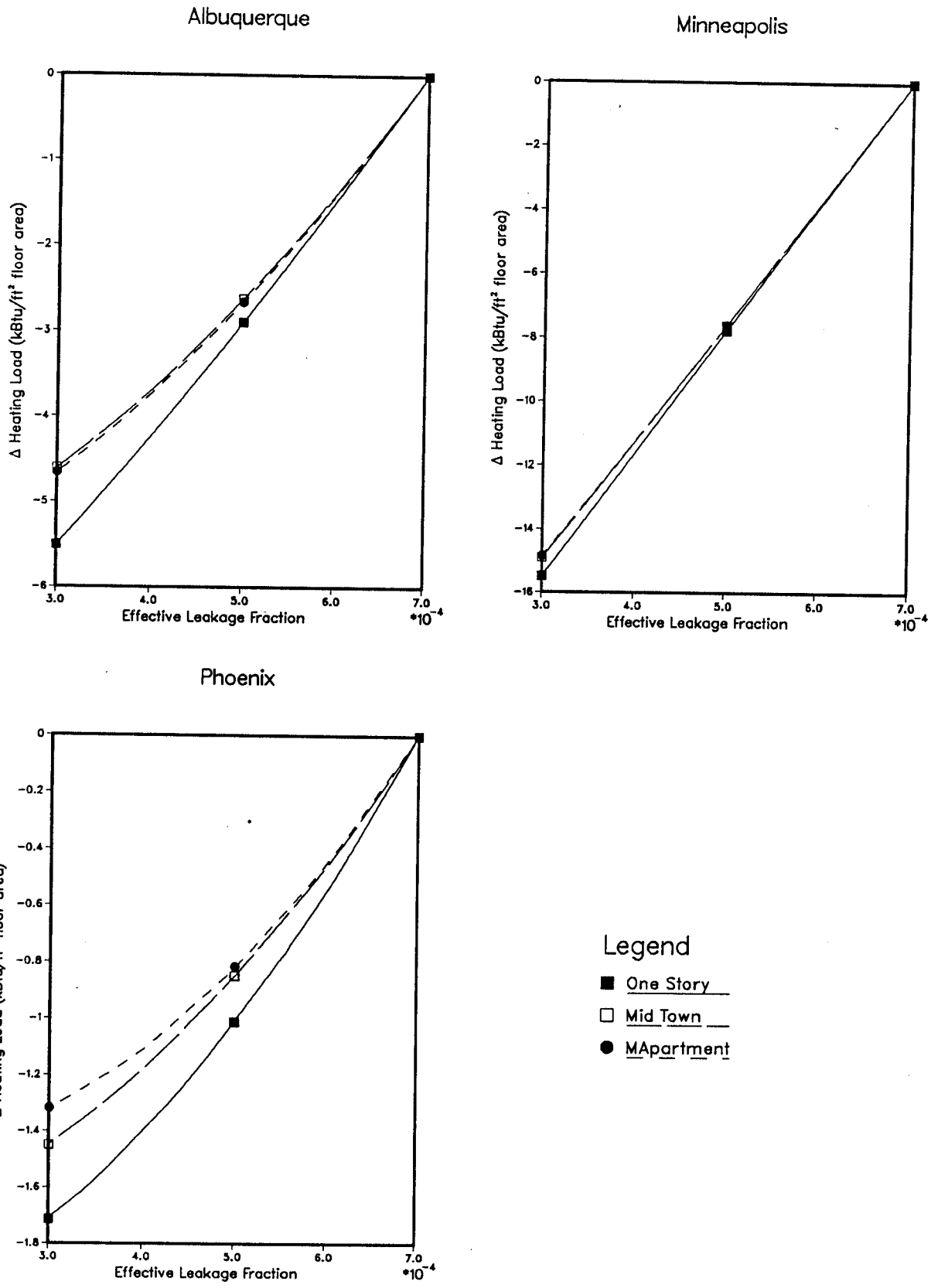


Figure 2.18 Correlation of Δ Infiltration Cooling Loads to Effective-leakage-fractions

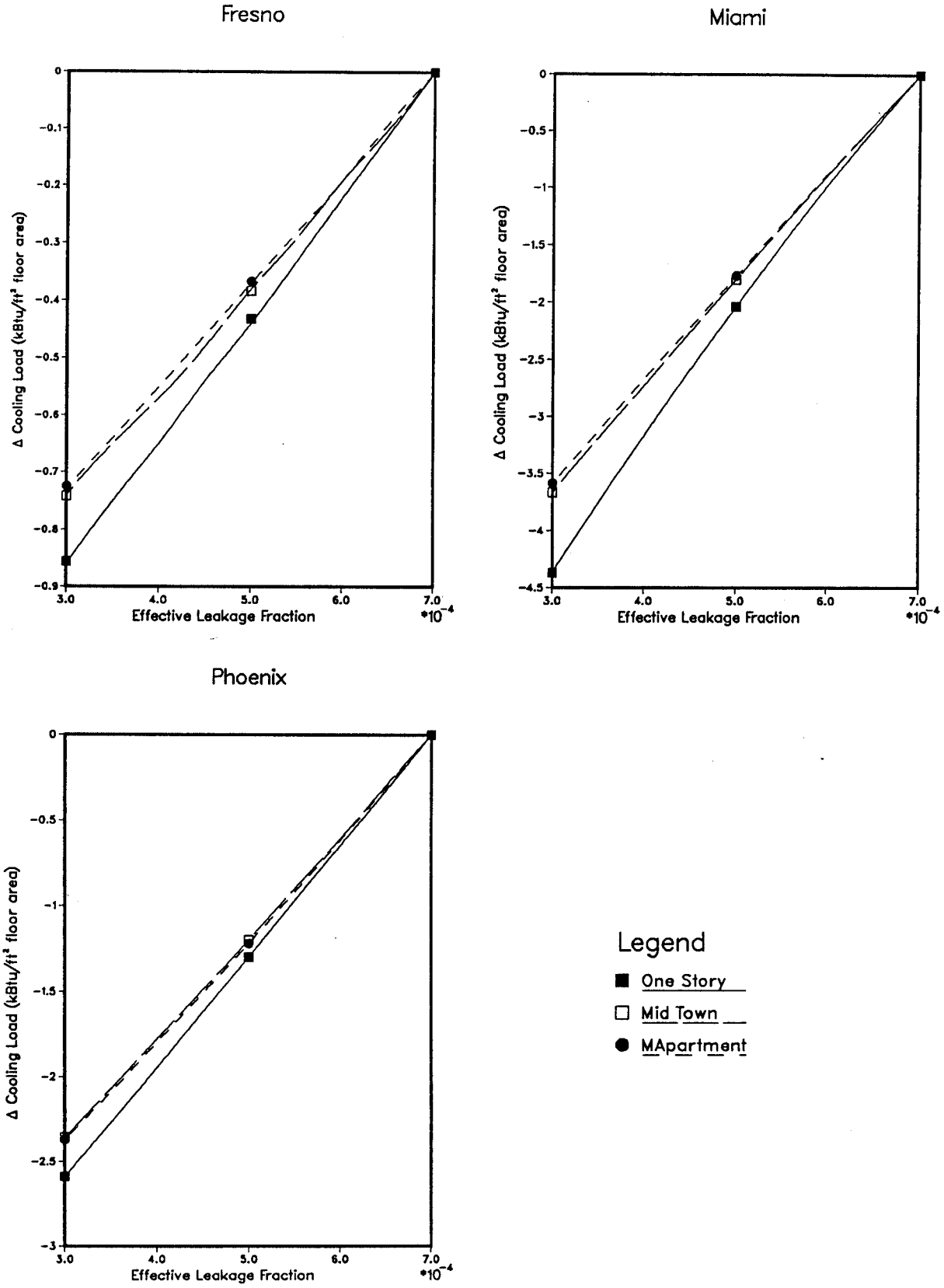


Figure 2.19 Correlation of Average Winter Air-change Rates to Effective Leakage-Fractions

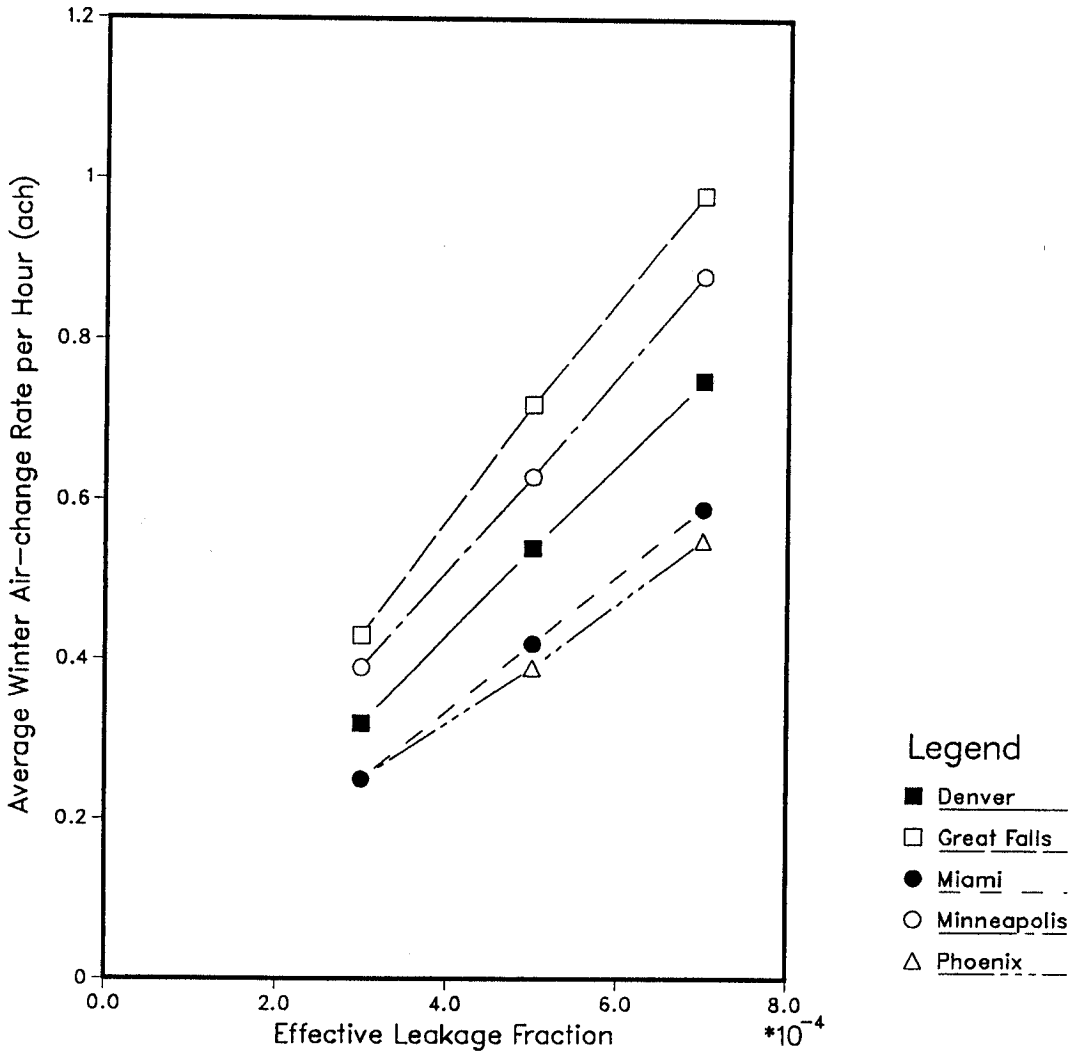


Figure 2.20 Correlation of Δ Window Conduction Heating Loads to Window U-values

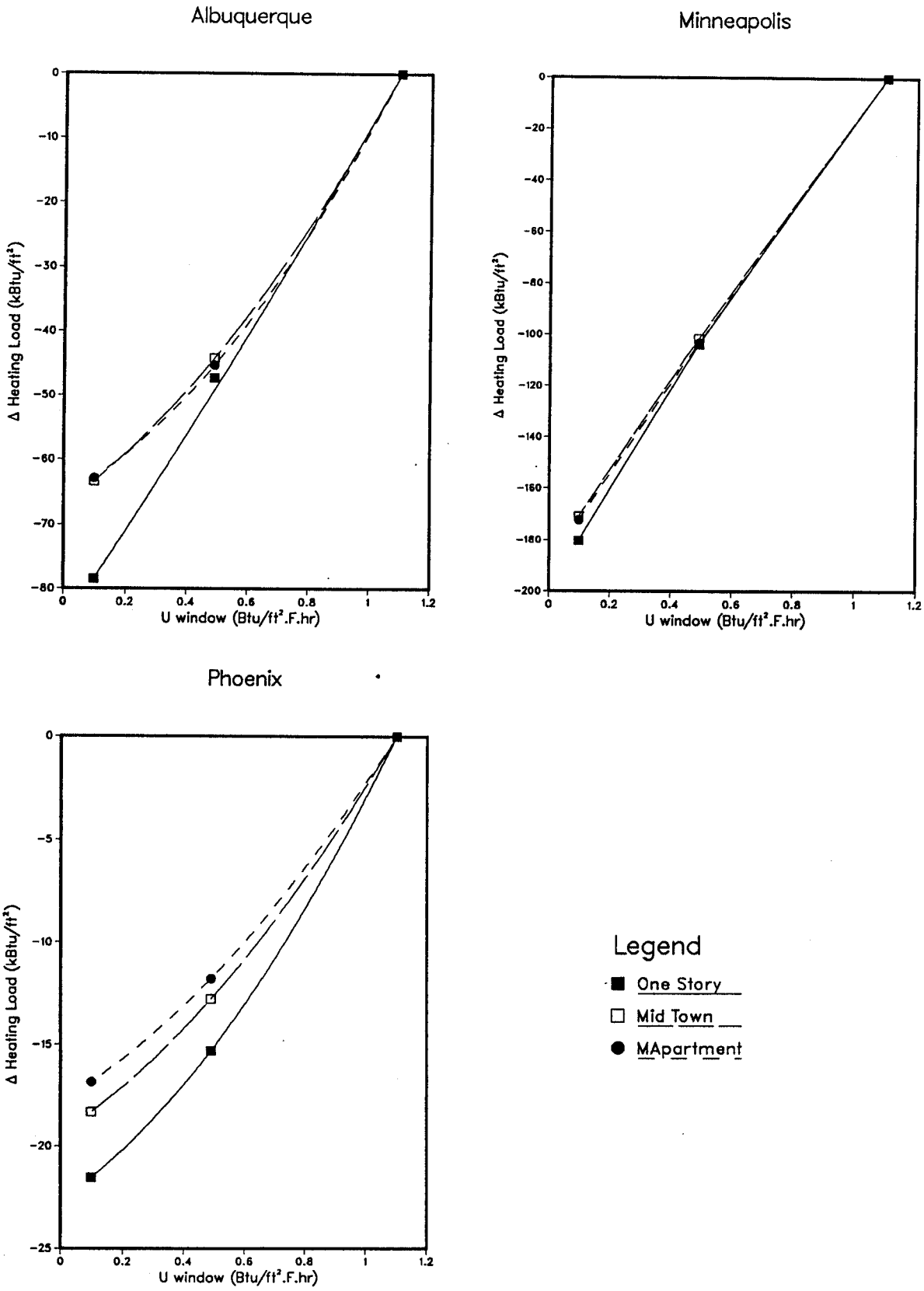


Figure 2.21 Correlation of Δ Window Conduction Cooling Loads to Window U-values

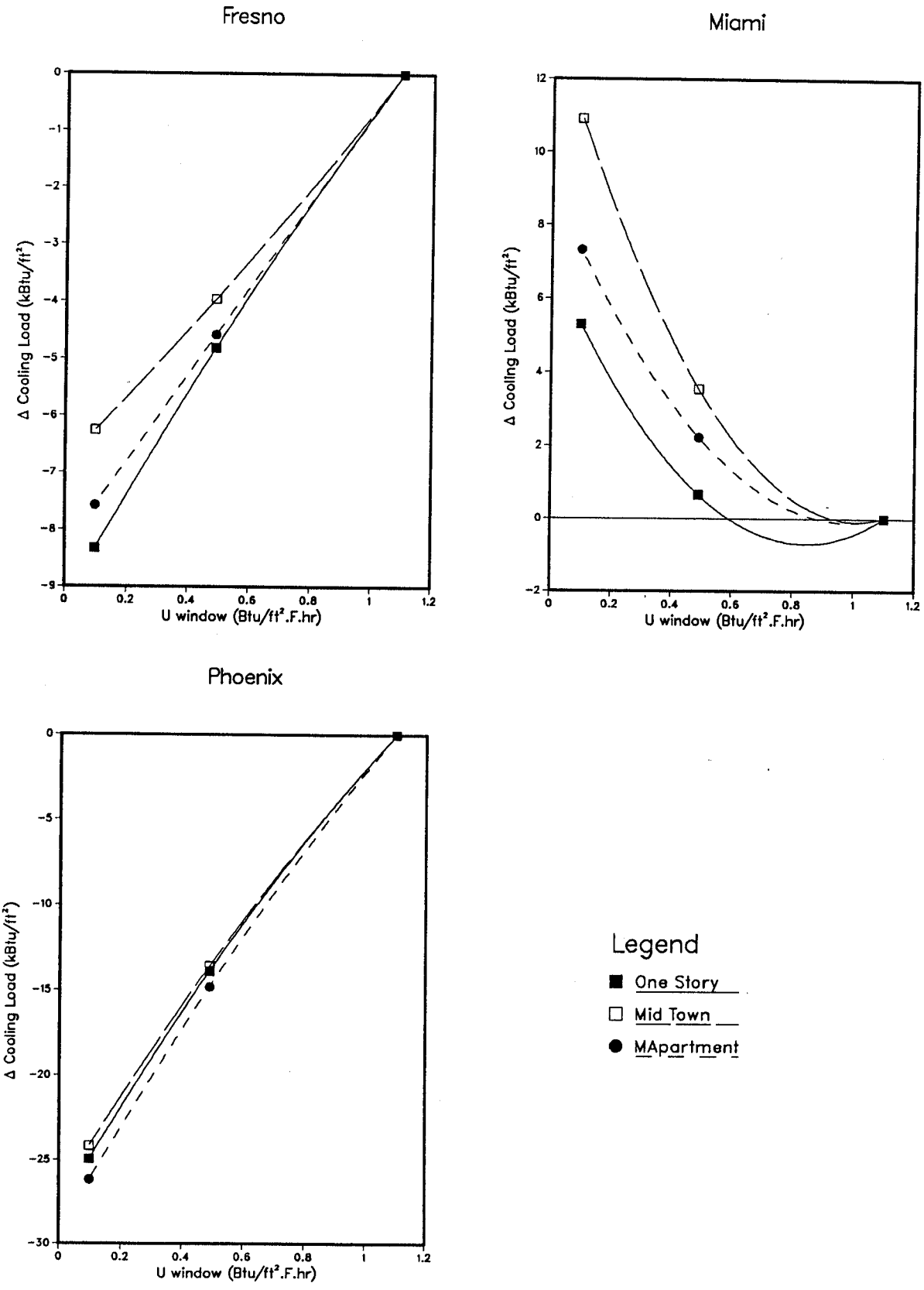


Table 2.2 Parametric Analysis of Window Solar Gain Conditions
(* = short parametric set done for 34 cities)

Run code	Shading Coefficient	Window/Floor Ratio (%) North	East	South	West	Total
Shading coefficient simulations						
1 A north	1.000	2.00	2.00	2.00	2.00	8.00 *
2 A north	1.000	3.00	3.00	3.00	3.00	12.00 *
3 A north	1.000	5.00	5.00	5.00	5.00	20.00 *
1 B north	0.666	2.00	2.00	2.00	2.00	8.00 *
2 B north	0.666	3.00	3.00	3.00	3.00	12.00 *
3 B north	0.666	5.00	5.00	5.00	5.00	20.00
1 C north	0.333	2.00	2.00	2.00	2.00	8.00
2 C north	0.333	3.00	3.00	3.00	3.00	12.00 *
3 C north	0.333	5.00	5.00	5.00	5.00	20.00
1 D north	0.000	2.00	2.00	2.00	2.00	8.00 *
2 D north	0.000	3.00	3.00	3.00	3.00	12.00
3 D north	0.000	5.00	5.00	5.00	5.00	20.00 *
Window orientation simulations						
4 A north	1.000	0.00	2.67	2.67	2.67	8.00
5 A north	1.000	4.00	1.33	1.33	1.33	8.00 *
6 A north	1.000	4.00	0.00	4.00	0.00	8.00
7 A north	1.000	0.00	4.00	4.00	4.00	12.00 *
8 A north	1.000	6.00	2.00	2.00	2.00	12.00 *
9 A north	1.000	6.00	0.00	6.00	0.00	12.00
10 A north	1.000	1.00	6.33	6.33	6.33	20.00
11 A north	1.000	9.00	3.67	3.67	3.67	20.00
12 A north	1.000	9.00	1.00	9.00	1.00	20.00 *
13 A north	1.000	14.00	2.00	2.00	2.00	20.00 *
4 A east	1.000	2.67	2.67	2.67	0.00	8.00
5 A east	1.000	1.33	1.33	1.33	4.00	8.00 *
6 A east	1.000	0.00	4.00	0.00	4.00	8.00
7 A east	1.000	4.00	4.00	4.00	0.00	12.00 *
8 A east	1.000	2.00	2.00	2.00	6.00	12.00 *
9 A east	1.000	0.00	6.00	0.00	6.00	12.00
10 A east	1.000	6.33	6.33	6.33	1.00	20.00
11 A east	1.000	3.67	3.67	3.67	9.00	20.00
12 A east	1.000	1.00	9.00	1.00	9.00	20.00 *
13 A east	1.000	2.00	2.00	2.00	14.00	20.00 *
4 A south	1.000	2.67	2.67	0.00	2.67	8.00
5 A south	1.000	1.33	1.33	4.00	1.33	8.00 *
6 A south	1.000	4.00	0.00	4.00	0.00	8.00
7 A south	1.000	4.00	4.00	0.00	4.00	12.00 *
8 A south	1.000	2.00	2.00	6.00	2.00	12.00 *
9 A south	1.000	6.00	0.00	6.00	0.00	12.00
10 A south	1.000	6.33	6.33	1.00	6.33	20.00
11 A south	1.000	3.67	3.67	9.00	3.67	20.00
12 A south	1.000	9.00	1.00	9.00	1.00	20.00
13 A south	1.000	2.00	2.00	14.00	2.00	20.00 *
4 A west	1.000	2.67	0.00	2.67	2.67	8.00
5 A west	1.000	1.33	4.00	1.33	1.33	8.00 *
6 A west	1.000	0.00	4.00	0.00	4.00	8.00
7 A west	1.000	4.00	0.00	4.00	4.00	12.00 *
8 A west	1.000	2.00	6.00	2.00	2.00	12.00 *
9 A west	1.000	0.00	6.00	0.00	6.00	12.00
10 A west	1.000	6.33	1.00	6.33	6.33	20.00
11 A west	1.000	3.67	9.00	3.67	3.67	20.00
12 A west	1.000	1.00	9.00	1.00	9.00	20.00
13 A west	1.000	2.00	14.00	2.00	2.00	20.00 *

Analysis of the sensitivity results indicated that a quadratic multi-variant regression equation using five independent parameters produced reliable correlations with R^2's typically above .999 for heating, and .997 for cooling loads, except for locations with insignificant loads. Tables 2.3 and 2.4 show sample regression results for heating loads in Albuquerque and cooling loads in Phoenix. Because of the high reliability of this regression technique, the full set of 52 simulations were done for only 11 cities, and an abbreviated set of 25 done for the remaining 34 cities. *

The regression methodology reduces the DOE-2 test results to five coefficients, four related to the window solar aperture (shading coefficient * area) in each orientation, and one to the total solar gain into the house.

$$A = \sum_{1}^{4} \alpha_i * (\text{area}_i * \text{shading coefficient}_i) \qquad [11]$$

$$\text{Load}_{\text{window solar}} = A*(\beta*A + 1) + \text{Load}_{\text{0 solar aperture}}$$

The first term (A) is the total solar gain into the house. The second term (β*A + 1) is the "solar usability" expressed as a linear function of the total solar gain (A) and relative to 1 for a house with zero solar aperture. The linear relationship between usability and solar gain is based on analysis of test simulations that indicate *dload/dsolar aperture* of houses with equally distributed windows is roughly linear to the total solar aperture (Figure 2.22).

The "solar usability" term is not needed for estimating cooling loads, since a simple multi-linear regression produces good correlations to the DOE-2 Δ loads for changes in window orientation and shading coefficient (compare Figure 2.23 to Figure 2.24). For heating, however, Δ loads due to increased solar gain varies with the total amount of solar gain entering the house. As the solar gain increases, its usability decreases since increasing amounts are vented or occur on days when the house has no heating load. As a result, a simple multi-linear correlation similar to the one in Figure 2.23 produces significant scatter with a standard error of 0.7MBtu in Albuquerque (Figure 2.25). Adding the "solar usability" term estimated as a linear function of total solar gain improves the regression and reduces the standard error to 0.12MBtu (Figure 2.26).

The window solar gain coefficients are listed in the tables in Section 3.B below the mass wall regression results. The units for the four α are kBtu/ft^2, while the β

* The 11 cities correspond to the Window Sensitivity Base Cities selected out the 45 for the voluntary guidelines data base (see Section 5.5 of Huang et al. 1987). The cities are: Albuquerque, Atlanta, Chicago, Denver, Lake Charles, Miami, Minneapolis, New York, Phoenix, San Francisco, and Seattle.

Table 2.3 Window Regression Analysis for Denver Heating Loads

Denver CO — Heating

Total	Shad Coef	Window area (sq.ft.) North	East	South	West	Del Load (MBtu)	Predicted (MBtu)
8.00%	1.000	30.8	30.8	30.8	30.8	-12.697	-12.574
12.00%	1.000	46.2	46.2	46.2	46.2	-17.690	-17.605
20.00%	1.000	77.0	77.0	77.0	77.0	-25.547	-25.259
8.00%	.666	30.8	30.8	30.8	30.8	-8.837	-8.766
12.00%	.666	46.2	46.2	46.2	46.2	-12.620	-12.563
20.00%	.666	77.0	77.0	77.0	77.0	-19.277	-19.089
8.00%	.333	30.8	30.8	30.8	30.8	-4.587	-4.613
12.00%	.333	46.2	46.2	46.2	46.2	-6.700	-6.734
20.00%	.333	77.0	77.0	77.0	77.0	-10.667	-10.709
8.00%	.000	30.8	30.8	30.8	30.8	-.037	-.105
12.00%	.000	46.2	46.2	46.2	46.2	.000	-.105
20.00%	.000	77.0	77.0	77.0	77.0	-.037	-.105
8.00%	1.000	.0	41.1	41.1	41.1	-14.697	-14.554
8.00%	1.000	61.6	20.5	20.5	20.5	-10.557	-10.481
8.00%	1.000	61.6	.0	61.6	.0	-13.077	-13.375
12.00%	1.000	.0	61.6	61.6	61.6	-20.150	-20.082
12.00%	1.000	92.4	30.8	30.8	30.8	-14.920	-14.875
12.00%	1.000	92.4	.0	92.4	.0	-18.280	-18.620
20.00%	1.000	15.4	97.5	97.5	97.5	-27.657	-27.301
20.00%	1.000	138.6	56.5	56.5	56.5	-22.937	-22.766
20.00%	1.000	138.6	15.4	138.6	15.4	-26.137	-26.125
20.00%	1.000	215.6	30.8	30.8	30.8	-18.987	-19.015
8.00%	1.000	41.1	41.1	.0	41.1	-10.187	-9.908
8.00%	1.000	20.5	20.5	61.6	20.5	-15.007	-15.060
12.00%	1.000	61.6	61.6	.0	61.6	-14.180	-14.108
12.00%	1.000	30.8	30.8	92.4	30.8	-20.630	-20.695
20.00%	1.000	97.5	97.5	15.4	97.5	-21.857	-22.029
20.00%	1.000	56.5	56.5	138.6	56.5	-28.027	-27.766
20.00%	1.000	30.8	30.8	215.6	30.8	-29.707	-29.885
8.00%	1.000	41.1	.0	41.1	41.1	-12.527	-12.625
8.00%	1.000	20.5	61.6	20.5	20.5	-12.667	-12.523
8.00%	1.000	.0	61.6	.0	61.6	-12.027	-11.755
12.00%	1.000	61.6	.0	61.6	61.6	-17.460	-17.670
12.00%	1.000	30.8	92.4	30.8	30.8	-17.500	-17.540
12.00%	1.000	.0	92.4	.0	92.4	-16.430	-16.550
20.00%	1.000	97.5	15.4	97.5	97.5	-25.337	-25.315
20.00%	1.000	56.5	138.6	56.5	56.5	-25.207	-25.202
20.00%	1.000	15.4	138.6	15.4	138.6	-24.017	-24.321
20.00%	1.000	30.8	215.6	30.8	30.8	-24.587	-25.130
8.00%	1.000	41.1	41.1	41.1	.0	-13.057	-13.060
8.00%	1.000	20.5	20.5	20.5	61.6	-12.217	-12.082
12.00%	1.000	61.6	61.6	61.6	.0	-18.190	-18.223
12.00%	1.000	30.8	30.8	30.8	92.4	-16.930	-16.973
20.00%	1.000	97.5	97.5	97.5	15.4	-26.047	-25.790
20.00%	1.000	56.5	56.5	56.5	138.6	-24.767	-24.701
20.00%	1.000	30.8	30.8	30.8	215.6	-23.657	-23.968
Alphas(KBtu/sf)		-50.000	-112.636	-195.523	-98.823	Beta= .00810	Inter= -.10450

Fsumsq= 1.5273 Ifail= 0 Flag=

Rsq = .999406 RMsq = .999332 Standard Error (MBtu) = .182212

Table 2.4 Window Regression Analysis for Phoenix Cooling Loads

Phoenix AZ — Cooling

Total	Shad Coef	Window area (sq.ft.) North	East	South	West	Del Load (MBtu)	Predicted (MBtu)
4.00%	1.000	30.8	30.8	30.8	30.8	8.253	8.190
12.00%	1.000	46.2	46.2	46.2	46.2	12.340	12.410
20.00%	1.000	77.0	77.0	77.0	77.0	20.753	21.059
8.00%	.666	30.8	30.8	30.8	30.8	5.393	5.409
12.00%	.666	46.2	46.2	46.2	46.2	8.120	8.181
20.00%	.666	77.0	77.0	77.0	77.0	13.403	13.818
8.00%	.333	30.8	30.8	30.8	30.8	2.683	2.667
12.00%	.333	46.2	46.2	46.2	46.2	3.990	4.034
20.00%	.333	77.0	77.0	77.0	77.0	6.513	6.791
8.00%	.000	30.8	30.8	30.8	30.8	.003	-.044
12.00%	.000	46.2	46.2	46.2	46.2	.000	-.044
20.00%	.000	77.0	77.0	77.0	77.0	.003	-.044
8.00%	1.000	.0	41.1	41.1	41.1	9.403	9.532
8.00%	1.000	61.6	20.5	20.5	20.5	7.083	6.855
8.00%	1.000	61.6	.0	61.6	.0	6.113	6.305
12.00%	1.000	.0	61.6	61.6	61.6	14.130	14.459
12.00%	1.000	92.4	30.8	30.8	30.8	10.670	10.378
12.00%	1.000	92.4	.0	92.4	.0	9.290	9.542
20.00%	1.000	15.4	97.5	97.5	97.5	23.383	23.882
20.00%	1.000	138.6	56.5	56.5	56.5	18.233	18.264
20.00%	1.000	138.6	15.4	138.6	15.4	17.053	17.117
20.00%	1.000	215.6	30.8	30.8	30.8	15.363	14.810
8.00%	1.000	41.1	41.1	.0	41.1	8.523	8.112
8.00%	1.000	20.5	20.5	61.6	20.5	8.003	8.267
8.00%	1.000	61.6	.0	61.6	.0	6.113	6.305
12.00%	1.000	61.6	61.6	.0	61.6	12.710	12.292
12.00%	1.000	30.8	30.8	92.4	30.8	12.070	12.528
12.00%	1.000	92.4	.0	92.4	.0	9.290	9.542
20.00%	1.000	97.5	97.5	15.4	97.5	20.903	20.896
20.00%	1.000	56.5	56.5	138.6	56.5	20.873	21.221
20.00%	1.000	138.6	15.4	138.6	15.4	17.053	17.117
20.00%	1.000	30.8	30.8	215.6	30.8	23.033	21.424
8.00%	1.000	41.1	41.1	41.1	.0	7.443	7.438
8.00%	1.000	20.5	20.5	20.5	61.6	9.023	8.944
8.00%	1.000	.0	61.6	.0	61.6	10.363	10.088
12.00%	1.000	61.6	61.6	61.6	.0	11.190	11.265
12.00%	1.000	30.8	30.8	30.8	92.4	13.570	13.561
12.00%	1.000	.0	92.4	.0	92.4	15.500	15.310
20.00%	1.000	97.5	97.5	97.5	15.4	19.193	19.483
20.00%	1.000	56.5	56.5	56.5	138.6	22.353	22.643
20.00%	1.000	15.4	138.6	15.4	138.6	24.703	25.057
20.00%	1.000	30.8	30.8	30.8	215.6	25.283	24.636
8.00%	1.000	41.1	.0	41.1	41.1	7.623	7.682
8.00%	1.000	20.5	61.6	20.5	20.5	8.873	8.698
8.00%	1.000	.0	61.6	.0	61.6	10.363	10.088
12.00%	1.000	61.6	.0	61.6	61.6	11.490	11.637
12.00%	1.000	30.8	92.4	30.8	30.8	13.300	13.186
12.00%	1.000	.0	92.4	.0	92.4	15.500	15.310
20.00%	1.000	97.5	15.4	97.5	97.5	19.833	19.994
20.00%	1.000	56.5	138.6	56.5	56.5	21.773	22.127
20.00%	1.000	15.4	138.6	15.4	138.6	24.703	25.057
20.00%	1.000	30.8	215.6	30.8	30.8	24.113	23.469
Alphas(KBtu/sf)		34.200	77.679	67.536	83.439	Beta= .00211	Inter= -.04413

Fsumsq= 6.4316 Ifail= 5 Flag=<****

Rsq = .997369 RMsq = .997083 Standard Error (MBtu) = .351688

Figure 2.22 d(Load)/d(Solar Aperture) as a Function of Total Solar Aperture in Albuquerque NM

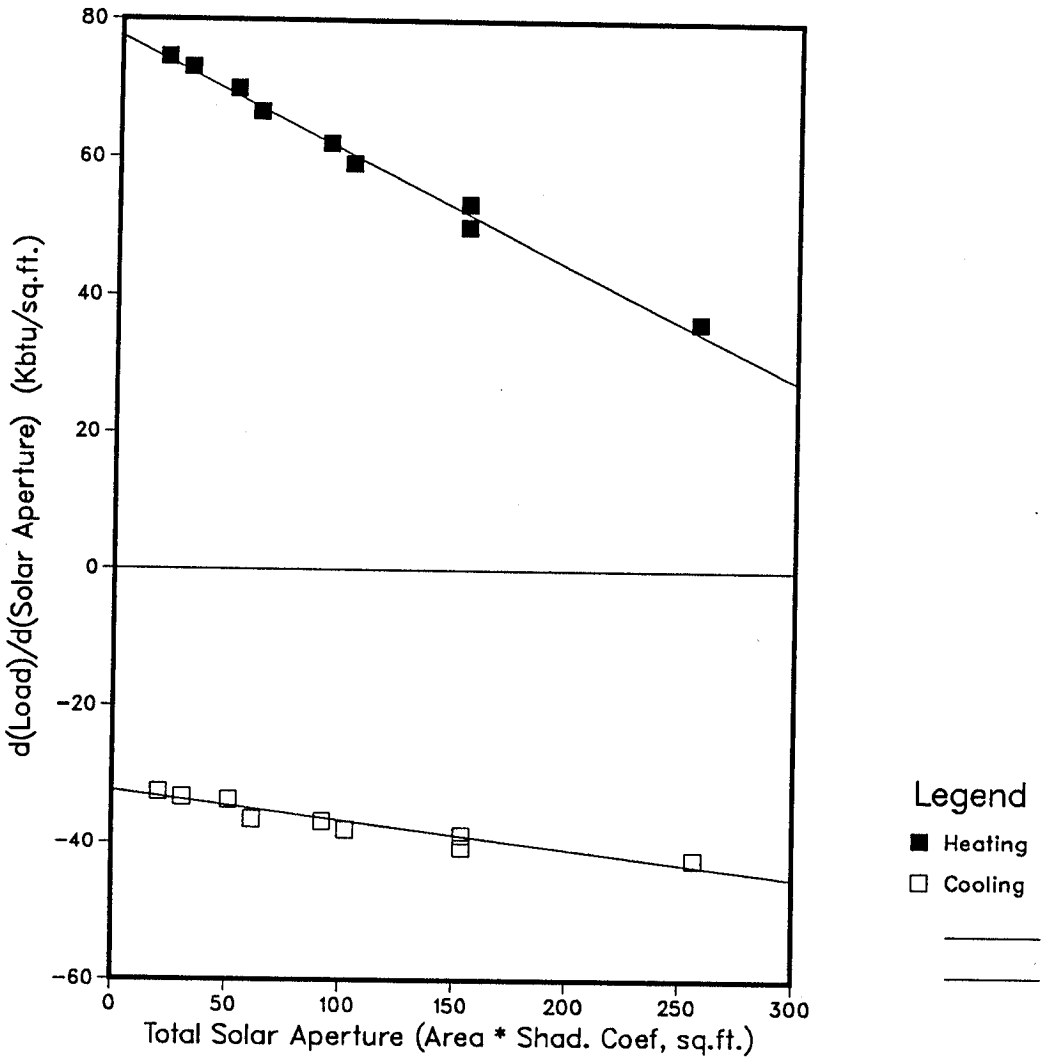


Figure 2.23 Multi-linear Correlation of Δ Cooling Loads to Solar Aperture in Phoenix

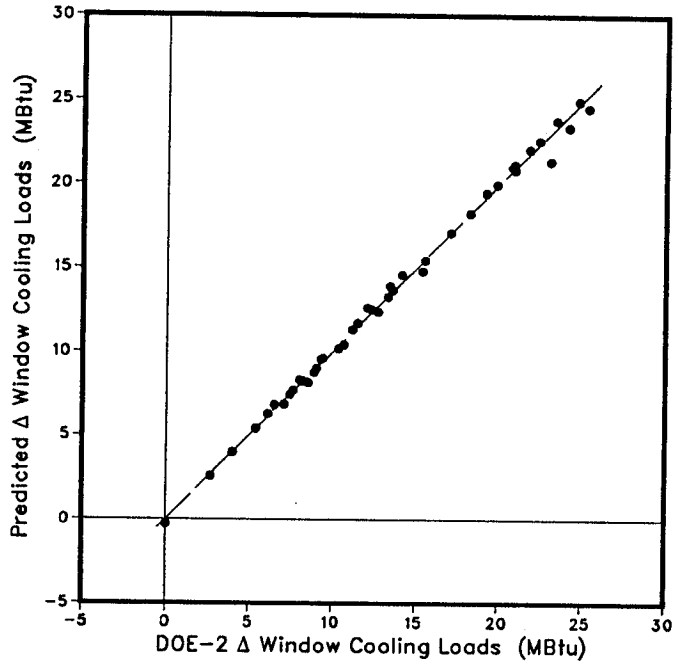


Figure 2.24 Correlation of Δ Cooling Loads to Solar Aperture * Solar Usability in Phoenix

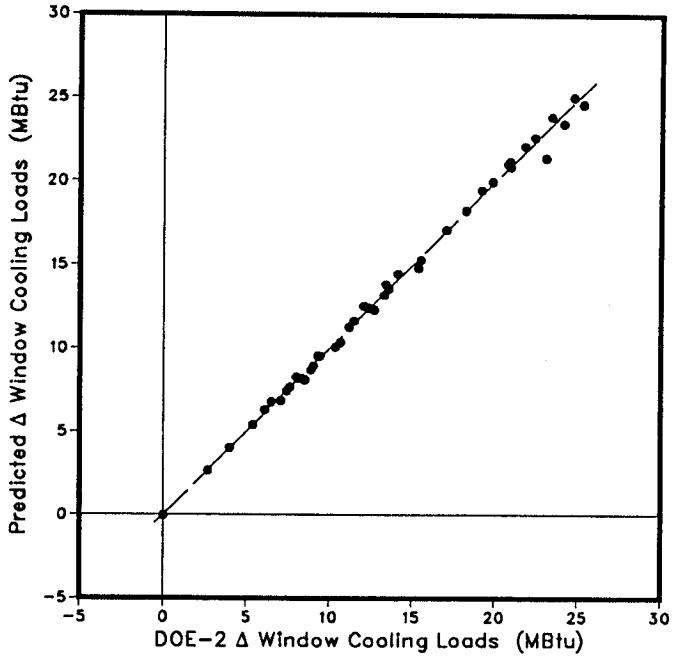


Figure 2.25 Multi-linear Correlation of Δ Heating Loads to Solar Aperture in Albuquerque

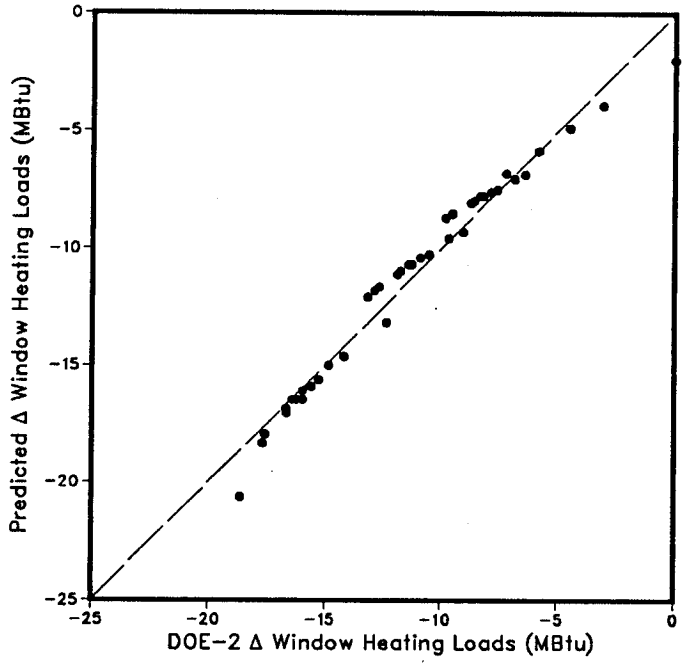
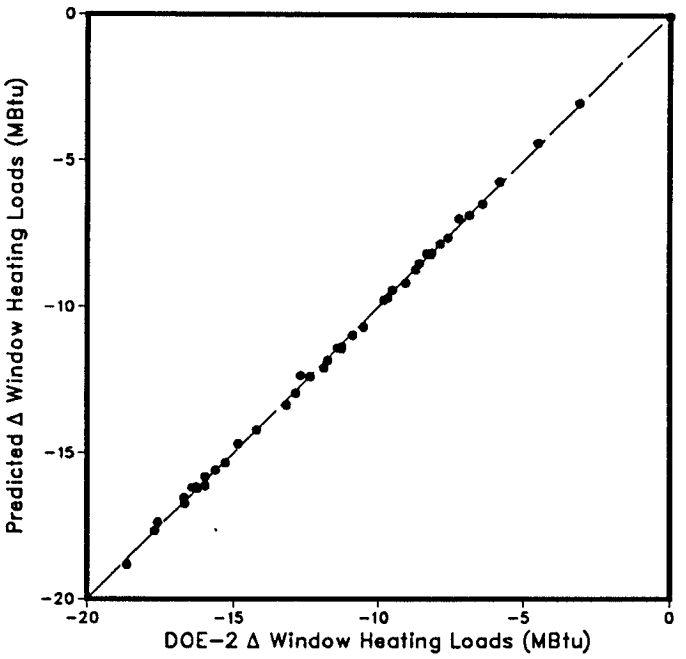


Figure 2.26 Correlation of Δ Heating Loads to Solar Aperture * Solar Usability in Albuquerque



relative "solar usability" term is dimensionless. An intercept from the regression is also shown, but was not used in the data base. The coefficients can be used with Equation 11 to calculate the solar gain component load for different window configurations.

RESULTS

Tables for Insulation and Infiltration Measures

Section 3.A contain tables of insulation and infiltration measures for the three prototype buildings in 45 base locations. For each conservation measure, the tables show the total Δ load for the prototype house in MBtu, and the component load in kBtu normalized by ft^2 for ceiling, wall, window, and floor insulation measures, by perimeter ft. for foundation perimeter insulation measures, and by ft^2 of floor area for infiltration measures. For the foundation measures, the Δ loads are relative to the foundation type with the highest load, generally the crawl space, while the component loads are relative to the regression intercept for the most prevalent foundation type in each location as listed in Table 1.7.

Following the Δ and component loads, the tables give the two regression coefficients. The linear coefficients are listed as "Slope", and the quadratic coefficients as "Curve". As described in Section 2.A, the component loads are assumed to be zero at zero U-value for insulation measures and zero leakage area for infiltration measures. Therefore, the intercepts are always zero except for the foundation measures. For foundations, the intercepts indicate Δ loads between foundation types unrelated to building conductance. These are given relative to the prevalent foundation type and in units of kBtu/ft for slabs and heated basements, and kBtu/ft^2 for unheated basements and crawl-spaces.

At the bottom are listed the *Base, Typical, and Residual Loads.* The *Base Load* is the total building load for a worst case building with no insulation, 0.007 effective-leakage-fraction, and the foundation type with the highest load, generally crawl space. It is the reference condition from which the Δ loads are calculated. To estimate the total loads for a prototype house in other configurations, subtract the Δ loads for the appropriate conservation levels from the base load. In addition to the Δ loads in this section, the Δ loads for various mass walls and window solar effects in Section 3.B must also be included. For the *Base Load,* the windows are assumed to be single-pane of average orientation with a shading coefficient of 1.00.

The *Typical Load* is the total building load for an house of average thermal integrity in each location. This figure is not used in the data base and included only for reference.

The *Residual Load* is explained in Section 2.A, and corresponds to the difference from the DOE-2 data and the sum of the component loads calculated through the

regression analyses. To estimate the total loads for a particular house configuration using the component loads approach, multiply the component loads by the normalization (i.e., square feet of ceiling, perimeter feet of slab edge, etc.), and then sum the results, including the residual load. Alternatively, the regression coefficients can be used as explained in Section 2.A.

Albuquerque NM WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	22.58
R-7	-21.01	8.94
R-11	-24.37	6.76
R-19	-27.38	4.81
R-22	-28.52	4.07
R-30	-30.05	3.07
R-38	-30.97	2.47
R-49	-31.77	1.96
R-60	-32.28	1.62
Slope(DD)	4468.29	
Curve(DDS)	-111.142	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	19.81
R-7	-11.65	9.44
R-11	-13.31	7.96
R-13	-15.32	6.18
R-19	-16.31	5.29
R-27	-17.95	3.84
R-34	-18.95	2.95
Slope(DD)	3773.11	
Curve(DDS)	-16.709	

Slab		(KBtu/ft)
R-0	-16.12	39.78
R-5 2ft	-19.37	20.20
R-5 4ft	-19.96	16.64
R-10 2ft	-20.01	16.34
R-10 4ft	-20.81	11.52
Intercept	.000	
Slope(DD)	4155.71	
Curve(DDS)	-.186	

Heated Basement		(KBtu/ft)
R-0	-8.95	82.97
R-5 4ft	-14.13	51.76
R-5 8ft	-15.20	45.32
R-10 4ft	-15.42	43.99
R-10 8ft	-17.02	34.35
Intercept	9.144	
Slope(DD)	2834.65	
Curve(DDS)	-22.466	

Unheated Basement		(KBtu/sf)
R-0	-8.95	8.94
R-11 flr	-17.49	3.40
R-19 flr	-19.79	1.90
R-30 flr	-21.27	.94
Intercept	-1.623	
Slope(DD)	3479.79	
Curve(DDS)	-276.762	

Crawl		(KBtu/sf)
R-0	.00	14.76
R-11 flr	-16.95	3.75
R-19 flr	-19.79	1.90
R-30 flr	-21.41	.85
R-38 flr	-21.78	.61
R-49 flr	-22.85	-.08
Intercept	-1.775	
Slope(DD)	3339.94	
Curve(DDS)	-22.660	

Infiltration ELF Ach		(KBtu/sf flr)
.0007(.71)	.00	8.89
.0005(.50)	-4.46	5.99
.0003(.30)	-8.48	3.38
Slope/.001ELF	10.194	
Curve/.001ELF	3.572	

Window U-value		(KBtu/sf)
1-Pane	.00	85.45
2-Pane	-9.11	36.15
3-Pane	-11.59	22.75
R-10	-14.50	6.98
Slope(DD)	2943.49	
Curve(DDS)	11.105	

Base Load = 100.60 MBtu
Typical Load = 36.08 MBtu
Residual Load = 2.71 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	10.22
R-7	-9.44	4.09
R-11	-10.95	3.11
R-19	-12.30	2.23
R-22	-12.82	1.89
R-30	-13.53	1.44
R-38	-13.95	1.16
R-49	-14.33	.91
R-60	-14.58	.75
Slope(DD)	2089.63	
Curve(DDS)	-61.701	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.18
R-7	-2.28	2.14
R-11	-2.61	1.85
R-13	-3.09	1.43
R-19	-3.33	1.21
R-27	-3.68	.90
R-34	-3.89	.71
Slope(DD)	916.75	
Curve(DDS)	-26.036	

Slab		(KBtu/ft)
R-0	-4.66	-2.52
R-5 2ft	-4.53	-1.74
R-5 4ft	-4.46	-1.32
R-10 2ft	-4.51	-1.62
R-10 4ft	-4.42	-1.08
Intercept	.000	
Slope(DD)	-446.08	
Curve(DDS)	19.089	

Heated Basement		(KBtu/ft)
R-0	-2.63	9.71
R-5 4ft	-2.91	8.02
R-5 8ft	-2.93	7.90
R-10 4ft	-3.01	7.42
R-10 8ft	-3.06	7.12
Intercept	5.693	
Slope(DD)	158.13	
Curve(DDS)	-1.330	

Unheated Basement		(KBtu/sf)
R-0	-2.63	1.05
R-11 flr	-1.14	2.01
R-19 flr	-.81	2.23
R-30 flr	-.59	2.37
Intercept	2.731	
Slope(DD)	-480.16	
Curve(DDS)	29.591	

Crawl		(KBtu/sf)
R-0	.00	2.75
R-11 flr	.35	2.98
R-19 flr	.25	2.92
R-30 flr	.20	2.88
R-38 flr	.19	2.88
R-49 flr	.16	2.86
Intercept	2.749	
Slope(DD)	201.58	
Curve(DDS)	-39.111	

Infiltration ELF Ach		(KBtu/sf flr)
.0007(.53)	.00	.49
.0005(.38)	-.24	.33
.0003(.23)	-.46	.19
Slope/.001ELF	.584	
Curve/.001ELF	.162	

Window U-value		(KBtu/sf)
1-Pane	.00	3.31
2-Pane	-.41	1.09
3-Pane	-.49	.67
R-10	-.58	.17
Slope(DD)	66.23	
Curve(DDS)	2.236	

Base Load = 31.91 MBtu
Typical Load = 12.23 MBtu
Residual Load = -1.02 MBtu

Albuquerque NM WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	23.80
R-7	-8.96	8.87
R-11	-10.39	6.48
R-19	-11.68	4.34
R-22	-12.10	3.64
R-30	-12.65	2.72
R-38	-12.99	2.15
R-49	-13.25	1.73
R-60	-13.41	1.45
Slope(DD)		3889.57
Curve(DDS)		21.183

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	18.51
R-7	-5.03	7.95
R-11	-5.75	6.44
R-13	-6.52	4.83
R-19	-6.90	4.03
R-27	-7.43	2.92
R-34	-7.75	2.25
Slope(DD)		2715.90
Curve(DDS)		134.966

Slab		(/ft)
R-0	-6.89	29.00
R-5 2ft	-7.59	11.50
R-5 4ft	-7.69	9.00
R-10 2ft	-7.70	8.75
R-10 4ft	-7.82	5.75
Intercept		.000
Slope(DD)		1680.64
Curve(DDS)		140.817

Heated Basement		(/ft)
R-0	-4.74	82.75
R-5 4ft	-6.23	45.50
R-5 8ft	-6.48	39.25
R-10 4ft	-6.52	38.25
R-10 8ft	-6.79	31.50
Intercept		15.486
Slope(DD)		1573.11
Curve(DDS)		7.027

Unheated Basement		(/sf)
R-0	-4.74	5.52
R-11 flr	-6.61	2.40
R-19 flr	-7.16	1.49
R-30 flr	-7.51	.90
Intercept		-.692
Slope(DD)		2170.87
Curve(DDS)		-187.229

Crawl		(/sf)
R-0	.00	13.42
R-11 flr	-5.85	3.67
R-19 flr	-6.75	2.17
R-30 flr	-7.23	1.37
R-38 flr	-7.34	1.18
R-49 flr	-7.66	.66
Intercept		-.635
Slope(DD)		2482.80
Curve(DDS)		50.227

Infiltration ELF	Ach	(/sf flr)
.0007(.69)	.00	6.38
.0005(.50)	-3.15	3.76
.0003(.29)	-5.53	1.77
Slope/.001ELF		3.500
Curve/.001ELF		8.021

Window U-value		(/sf)
1-Pane	.00	67.06
2-Pane	-6.37	22.83
3-Pane	-7.64	14.02
R-10	-9.13	3.66
Slope(DD)		1459.66
Curve(DDS)		40.931

Base Load = 45.68 MBtu
Typical Load = 17.51 MBtu
Residual Load = 6.49 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	10.66
R-7	-3.88	4.19
R-11	-4.50	3.15
R-19	-5.06	2.23
R-22	-5.26	1.89
R-30	-5.54	1.43
R-38	-5.70	1.16
R-49	-5.85	.91
R-60	-5.95	.74
Slope(DD)		2066.42
Curve(DDS)		-45.295

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.73
R-7	-1.10	2.41
R-11	-1.26	2.08
R-13	-1.49	1.59
R-19	-1.61	1.35
R-27	-1.77	1.01
R-34	-1.87	.80
Slope(DD)		1020.93
Curve(DDS)		-26.401

Slab		(/ft)
R-0	-1.81	-3.78
R-5 2ft	-1.77	-2.78
R-5 4ft	-1.75	-2.28
R-10 2ft	-1.76	-2.53
R-10 4ft	-1.73	-1.78
Intercept		.000
Slope(DD)		-751.14
Curve(DDS)		37.261

Heated Basement		(/ft)
R-0	-.89	19.22
R-5 4ft	-.94	17.97
R-5 8ft	-.93	18.22
R-10 4ft	-.95	17.72
R-10 8ft	-.94	17.97
Intercept		18.199
Slope(DD)		-44.78
Curve(DDS)		1.977

Unheated Basement		(/sf)
R-0	-.89	1.28
R-11 flr	-.40	2.10
R-19 flr	-.29	2.28
R-30 flr	-.22	2.40
Intercept		2.700
Slope(DD)		-402.69
Curve(DDS)		24.593

Crawl		(/sf)
R-0	.00	2.76
R-11 flr	.22	3.13
R-19 flr	.19	3.08
R-30 flr	.19	3.08
R-38 flr	.19	3.08
R-49 flr	.19	3.08
Intercept		2.993
Slope(DD)		135.56
Curve(DDS)		-35.102

Infiltration ELF	Ach	(/sf flr)
.0007(.53)	.00	.19
.0005(.38)	-.14	.07
.0003(.23)	-.22	.01
Slope/.001ELF		-.167
Curve/.001ELF		.625

Window U-value		(/sf)
1-Pane	.00	.42
2-Pane	-.14	-.55
3-Pane	-.12	-.39
R-10	-.09	-.21
Slope(DD)		-97.54
Curve(DDS)		4.296

Base Load = 20.12 MBtu
Typical Load = 11.89 MBtu
Residual Load = 4.25 MBtu

Albuquerque NM WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	24.32
R-7	-9.27	8.87
R-11	-10.75	6.41
R-19	-12.08	4.19
R-22	-12.49	3.51
R-30	-13.04	2.59
R-38	-13.37	2.04
R-49	-13.60	1.65
R-60	-13.75	1.41
Slope(DD)	3696.75	
Curve(DDS)	68.441	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	18.72
R-7	-3.45	7.83
R-11	-3.94	6.28
R-13	-4.45	4.69
R-19	-4.70	3.90
R-27	-5.04	2.81
R-34	-5.26	2.15
Slope(DD)	2568.19	
Curve(DDS)	169.861	

Slab	Delta Component (MBtu)	(/ft)
R-0	-7.59	34.34
R-5 2ft	-8.19	14.50
R-5 4ft	-8.28	11.34
R-10 2ft	-8.29	11.17
R-10 4ft	-8.40	7.50
Intercept	.000	
Slope(DD)	2328.29	
Curve(DDS)	131.368	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-5.89	91.17
R-5 4ft	-7.30	44.17
R-5 8ft	-7.53	36.34
R-10 4ft	-7.58	34.84
R-10 8ft	-7.84	26.17
Intercept	5.186	
Slope(DD)	2083.38	
Curve(DDS)	7.005	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-5.89	4.56
R-11 flr	-7.46	1.93
R-19 flr	-7.96	1.11
R-30 flr	-8.28	.58
Intercept	-.884	
Slope(DD)	1997.97	
Curve(DDS)	-182.663	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	14.38
R-11 flr	-6.33	3.83
R-19 flr	-7.31	2.19
R-30 flr	-7.85	1.29
R-38 flr	-7.97	1.08
R-49 flr	-8.33	.49
Intercept	-.934	
Slope(DD)	2775.39	
Curve(DDS)	41.007	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.69)	.00	6.42
.0005(.50)	-3.19	3.77
.0003(.29)	-5.59	1.77
Slope/.001ELF	3.416	
Curve/.001ELF	8.230	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	65.91
2-Pane	-6.52	20.60
3-Pane	-7.69	12.51
R-10	-9.06	2.99
Slope(DD)	1152.98	
Curve(DDS)	50.894	

Base Load = 43.65 MBtu
Typical Load = 16.25 MBtu
Residual Load = 6.57 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	11.23
R-7	-4.08	4.43
R-11	-4.73	3.34
R-19	-5.32	2.37
R-22	-5.54	2.00
R-30	-5.84	1.50
R-38	-6.02	1.20
R-49	-6.16	.96
R-60	-6.26	.81
Slope(DD)	2189.94	
Curve(DDS)	-49.826	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.09
R-7	-.67	1.99
R-11	-.76	1.70
R-13	-.89	1.28
R-19	-.95	1.08
R-27	-1.04	.81
R-34	-1.09	.64
Slope(DD)	801.10	
Curve(DDS)	-7.420	

Slab	Delta Component (MBtu)	(/ft)
R-0	-1.26	-4.27
R-5 2ft	-1.24	-3.43
R-5 4ft	-1.22	-2.93
R-10 2ft	-1.23	-3.27
R-10 4ft	-1.20	-2.27
Intercept	.000	
Slope(DD)	-996.23	
Curve(DDS)	57.554	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.75	12.90
R-5 4ft	-.80	11.23
R-5 8ft	-.79	11.40
R-10 4ft	-.81	10.73
R-10 8ft	-.82	10.57
Intercept	9.502	
Slope(DD)	116.84	
Curve(DDS)	-.664	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.75	.65
R-11 flr	-.31	1.37
R-19 flr	-.21	1.54
R-30 flr	-.14	1.65
Intercept	1.942	
Slope(DD)	-387.86	
Curve(DDS)	26.304	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	1.89
R-11 flr	.24	2.29
R-19 flr	.23	2.28
R-30 flr	.22	2.25
R-38 flr	.21	2.25
R-49 flr	.20	2.23
Intercept	2.174	
Slope(DD)	129.43	
Curve(DDS)	-36.159	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.53)	.00	.23
.0005(.38)	-.15	.10
.0003(.23)	-.25	.02
Slope/.001ELF	-.104	
Curve/.001ELF	.625	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	2.06
2-Pane	-.21	.60
3-Pane	-.24	.36
R-10	-.28	.08
Slope(DD)	29.39	
Curve(DDS)	1.840	

Base Load = 17.96 MBtu
Typical Load = 10.49 MBtu
Residual Load = 2.94 MBtu

Atlanta GA WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	19.18
R-7	-17.87	7.58
R-11	-20.72	5.73
R-19	-23.28	4.06
R-22	-24.24	3.44
R-30	-25.53	2.60
R-38	-26.31	2.10
R-49	-26.99	1.66
R-60	-27.43	1.37
Slope(DD)	3778.18	
Curve(DDS)	-91.553	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	17.13
R-7	-10.04	8.20
R-11	-11.47	6.92
R-13	-13.19	5.40
R-19	-14.04	4.64
R-27	-15.48	3.35
R-34	-16.37	2.56
Slope(DD)	3300.40	
Curve(DDS)	-21.403	

Slab		(/ft)
R-0	-10.57	39.94
R-5 2ft	-13.63	21.50
R-5 4ft	-14.57	15.84
R-10 2ft	-14.12	18.55
R-10 4ft	-15.33	11.26
Intercept	-2.355	
Slope(DD)	3636.71	
Curve(DDS)	-16.729	

Heated Basement		(/ft)
R-0	-7.18	60.36
R-5 4ft	-10.70	39.15
R-5 8ft	-11.96	31.56
R-10 4ft	-11.59	33.79
R-10 8ft	-13.38	23.01
Intercept	.000	
Slope(DD)	2227.25	
Curve(DDS)	-18.673	

Unheated Basement		(/sf)
R-0	-7.18	6.51
R-11 flr	-14.59	1.69
R-19 flr	-16.46	.48
R-30 flr	-17.67	-.31
Intercept	-2.371	
Slope(DD)	2787.61	
Curve(DDS)	-206.014	

Crawl		(/sf)
R-0	.00	11.17
R-11 flr	-14.44	1.79
R-19 flr	-16.72	.31
R-30 flr	-18.02	-.53
R-38 flr	-18.32	-.73
R-49 flr	-19.18	-1.28
Intercept	-2.602	
Slope(DD)	2600.69	
Curve(DDS)	16.525	

Infiltration ELF Ach		(/sf flr)
.0007(.74)	.00	8.30
.0005(.54)	-4.00	5.70
.0003(.32)	-7.72	3.28
Slope/.001ELF	10.260	
Curve/.001ELF	2.273	

Window U-value		(/sf)
1-Pane	.00	76.60
2-Pane	-8.02	33.20
3-Pane	-10.29	20.94
R-10	-12.95	6.52
Slope(DD)	2760.08	
Curve(DDS)	5.353	

Base Load = 85.11 MBtu
Typical Load = 22.04 MBtu
Residual Load = .03 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	8.24
R-7	-7.63	3.28
R-11	-8.85	2.49
R-19	-9.94	1.78
R-22	-10.36	1.51
R-30	-10.92	1.15
R-38	-11.26	.93
R-49	-11.56	.73
R-60	-11.76	.60
Slope(DD)	1664.39	
Curve(DDS)	-46.398	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.62
R-7	-1.97	1.87
R-11	-2.25	1.62
R-13	-2.63	1.28
R-19	-2.82	1.11
R-27	-3.16	.81
R-34	-3.37	.62
Slope(DD)	819.03	
Curve(DDS)	-27.136	

Slab		(/ft)
R-0	-5.48	-15.17
R-5 2ft	-5.37	-14.51
R-5 4ft	-5.25	-13.78
R-10 2ft	-5.35	-14.38
R-10 4ft	-5.19	-13.42
Intercept	-11.119	
Slope(DD)	-712.21	
Curve(DDS)	31.110	

Heated Basement		(/ft)
R-0	-2.42	3.27
R-5 4ft	-2.76	1.22
R-5 8ft	-2.77	1.16
R-10 4ft	-2.85	.68
R-10 8ft	-2.88	.49
Intercept	.000	
Slope(DD)	34.24	
Curve(DDS)	1.060	

Unheated Basement		(/sf)
R-0	-2.42	.35
R-11 flr	-.25	1.76
R-19 flr	.42	2.20
R-30 flr	.85	2.48
Intercept	3.240	
Slope(DD)	-1045.97	
Curve(DDS)	94.145	

Crawl		(/sf)
R-0	.00	1.92
R-11 flr	1.20	2.70
R-19 flr	1.40	2.83
R-30 flr	1.66	3.00
R-38 flr	1.72	3.04
R-49 flr	1.89	3.15
Intercept	3.310	
Slope(DD)	-426.02	
Curve(DDS)	30.387	

Infiltration ELF Ach		(/sf flr)
.0007(.49)	.00	1.92
.0005(.35)	-.72	1.45
.0003(.21)	-1.54	.92
Slope/.001ELF	3.312	
Curve/.001ELF	-.812	

Window U-value		(/sf)
1-Pane	.00	-2.60
2-Pane	.06	-2.28
3-Pane	.20	-1.51
R-10	.37	-.60
Slope(DD)	-269.92	
Curve(DDS)	6.492	

Base Load = 31.51 MBtu
Typical Load = 14.01 MBtu
Residual Load = 1.27 MBtu

Atlanta GA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	19.31
R-7	-7.24	7.24
R-11	-8.40	5.31
R-19	-9.44	3.58
R-22	-9.78	3.01
R-30	-10.24	2.25
R-38	-10.51	1.80
R-49	-10.73	1.43
R-60	-10.87	1.20
Slope(DD)		3226.31
Curve(DDS)		5.259

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	15.75
R-7	-4.18	6.97
R-11	-4.78	5.72
R-13	-5.42	4.37
R-19	-5.74	3.71
R-27	-6.24	2.67
R-34	-6.54	2.03
Slope(DD)		2522.10
Curve(DDS)		75.596

Slab		(/ft)
R-0	-5.03	29.83
R-5 2ft	-5.70	13.08
R-5 4ft	-5.87	8.83
R-10 2ft	-5.79	10.83
R-10 4ft	-6.00	5.58
Intercept		-2.679
Slope(DD)		1960.11
Curve(DDS)		54.873

Heated Basement		(/ft)
R-0	-3.91	57.83
R-5 4ft	-4.97	31.33
R-5 8ft	-5.26	24.08
R-10 4ft	-5.18	26.08
R-10 8ft	-5.54	17.08
Intercept		.000
Slope(DD)		1525.81
Curve(DDS)		-3.280

Unheated Basement		(/sf)
R-0	-3.91	3.86
R-11 flr	-5.52	1.17
R-19 flr	-6.01	.36
R-30 flr	-6.32	-.16
Intercept		-1.584
Slope(DD)		1943.81
Curve(DDS)		-172.207

Crawl		(/sf)
R-0	.00	10.37
R-11 flr	-5.04	1.97
R-19 flr	-5.81	.69
R-30 flr	-6.23	-.02
R-38 flr	-6.33	-.18
R-49 flr	-6.61	-.64
Intercept		-1.751
Slope(DD)		2156.78
Curve(DDS)		40.449

Infiltration ELF Ach		(/sf flr)
.0007(.75)	.00	6.75
.0005(.55)	-2.89	4.34
.0003(.34)	-5.32	2.32
Slope/.001ELF		6.292
Curve/.001ELF		4.792

Window U-value		(/sf)
1-Pane	.00	61.28
2-Pane	-5.60	22.39
3-Pane	-6.83	13.87
R-10	-8.27	3.85
Slope(DD)		1568.58
Curve(DDS)		28.505

Base Load = 38.46 MBtu
Typical Load = 8.75 MBtu
Residual Load = 2.61 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.50
R-7	-2.93	2.62
R-11	-3.40	1.84
R-19	-3.82	1.13
R-22	-3.95	.92
R-30	-4.12	.63
R-38	-4.23	.45
R-49	-4.24	.43
R-60	-4.25	.42
Slope(DD)		939.79
Curve(DDS)		54.904

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.93
R-7	-.76	.34
R-11	-.87	.11
R-13	-.90	.04
R-19	-.92	.00
R-27	-.94	-.04
R-34	-.95	-.06
Slope(DD)		-142.35
Curve(DDS)		93.265

Slab		(/ft)
R-0	-1.98	-32.89
R-5 2ft	-1.93	-31.64
R-5 4ft	-1.88	-30.39
R-10 2ft	-1.91	-31.14
R-10 4ft	-1.85	-29.64
Intercept		-25.694
Slope(DD)		-1214.10
Curve(DDS)		51.066

Heated Basement		(/ft)
R-0	-.75	-2.14
R-5 4ft	-.81	-3.64
R-5 8ft	-.79	-3.14
R-10 4ft	-.81	-3.64
R-10 8ft	-.77	-2.64
Intercept		.000
Slope(DD)		-299.05
Curve(DDS)		5.947

Unheated Basement		(/sf)
R-0	-.75	-.14
R-11 flr	.36	1.71
R-19 flr	.63	2.15
R-30 flr	.80	2.44
Intercept		3.191
Slope(DD)		-1008.19
Curve(DDS)		69.844

Crawl		(/sf)
R-0	.00	1.11
R-11 flr	.68	2.24
R-19 flr	.82	2.47
R-30 flr	.94	2.68
R-38 flr	.97	2.72
R-49 flr	1.05	2.86
Intercept		3.122
Slope(DD)		-604.31
Curve(DDS)		41.232

Infiltration ELF Ach		(/sf flr)
.0007(.49)	.00	1.40
.0005(.35)	-.48	1.00
.0003(.21)	-.96	.60
Slope/.001ELF		2.000
Curve/.001ELF		.000

Window U-value		(/sf)
1-Pane	.00	-14.31
2-Pane	.36	-11.81
3-Pane	.94	-7.79
R-10	1.62	-3.06
Slope(DD)		-1375.63
Curve(DDS)		31.574

Base Load = 20.78 MBtu
Typical Load = 14.70 MBtu
Residual Load = 8.79 MBtu

Atlanta GA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	18.65
R-7	-7.07	6.86
R-11	-8.20	4.98
R-19	-9.22	3.29
R-22	-9.53	2.76
R-30	-9.96	2.05
R-38	-10.22	1.63
R-49	-10.41	1.31
R-60	-10.53	1.10
Slope(DD)		2927.88
Curve(DDS)		36.747

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	15.44
R-7	-2.81	6.59
R-11	-3.21	5.33
R-13	-3.62	4.03
R-19	-3.83	3.38
R-27	-4.13	2.43
R-34	-4.31	1.85
Slope(DD)		2249.34
Curve(DDS)		115.689

Slab			(/ft)
R-0		-5.62	37.69
R-5	2ft	-6.18	19.02
R-5	4ft	-6.31	14.52
R-10	2ft	-6.25	16.52
R-10	4ft	-6.42	11.02
Intercept			2.721
Slope(DD)			1891.96
Curve(DDS)			76.556

Heated Basement			(/ft)
R-0		-4.77	66.02
R-5	4ft	-5.77	32.69
R-5	8ft	-6.00	24.85
R-10	4ft	-5.95	26.52
R-10	8ft	-6.24	17.02
Intercept			.000
Slope(DD)			1447.29
Curve(DDS)			3.330

Unheated Basement			(/sf)
R-0		-4.77	3.30
R-11	flr	-6.10	1.08
R-19	flr	-6.48	.44
R-30	flr	-6.73	.03
Intercept			-1.085
Slope(DD)			1512.54
Curve(DDS)			-128.177

Crawl			(/sf)
R-0		.00	11.24
R-11	flr	-5.34	2.34
R-19	flr	-6.11	1.06
R-30	flr	-6.54	.34
R-38	flr	-6.64	.18
R-49	flr	-6.92	-.30
Intercept			-1.371
Slope(DD)			2107.09
Curve(DDS)			68.784

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.75)	.00	6.47
.0005	(.55)	-2.88	4.07
.0003	(.34)	-5.23	2.11
Slope/.001ELF			5.375
Curve/.001ELF			5.521

Window U-value			(/sf)
1-Pane		.00	59.12
2-Pane		-5.59	20.30
3-Pane		-6.72	12.48
R-10		-8.04	3.28
Slope(DD)			1313.67
Curve(DDS)			35.061

Base Load = 35.89 MBtu
Typical Load = 7.62 MBtu
Residual Load = 3.18 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	6.51
R-7	-2.80	1.84
R-11	-3.25	1.09
R-19	-3.65	.42
R-22	-3.70	.34
R-30	-3.76	.24
R-38	-3.80	.17
R-49	-3.83	.13
R-60	-3.85	.10
Slope(DD)		220.60
Curve(DDS)		147.911

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	2.32
R-7	-.48	.82
R-11	-.55	.60
R-13	-.61	.41
R-19	-.64	.32
R-27	-.66	.23
R-34	-.68	.18
Slope(DD)		175.48
Curve(DDS)		47.682

Slab			(/ft)
R-0		-1.49	-27.80
R-5	2ft	-1.45	-26.47
R-5	4ft	-1.41	-24.97
R-10	2ft	-1.45	-26.30
R-10	4ft	-1.39	-24.30
Intercept			-19.625
Slope(DD)			-1444.60
Curve(DDS)			63.345

Heated Basement			(/ft)
R-0		-.56	3.20
R-5	4ft	-.61	1.70
R-5	8ft	-.61	1.53
R-10	4ft	-.63	1.03
R-10	8ft	-.63	.87
Intercept			.000
Slope(DD)			76.11
Curve(DDS)			.019

Unheated Basement			(/sf)
R-0		-.56	.16
R-11	flr	.45	1.84
R-19	flr	.78	2.40
R-30	flr	1.00	2.76
Intercept			3.752
Slope(DD)			-1362.68
Curve(DDS)			129.129

Crawl			(/sf)
R-0		.00	1.09
R-11	flr	.81	2.45
R-19	flr	1.00	2.76
R-30	flr	1.17	3.04
R-38	flr	1.21	3.11
R-49	flr	1.32	3.30
Intercept			3.665
Slope(DD)			-852.21
Curve(DDS)			68.422

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.49)	.00	1.16
.0005	(.35)	-.47	.77
.0003	(.21)	-.88	.43
Slope/.001ELF			1.250
Curve/.001ELF			.573

Window U-value			(/sf)
1-Pane		.00	-15.64
2-Pane		.33	-13.35
3-Pane		.98	-8.82
R-10		1.75	-3.49
Slope(DD)			-1571.39
Curve(DDS)			37.077

Base Load = 18.91 MBtu
Typical Load = 13.73 MBtu
Residual Load = 8.19 MBtu

Birmingham AL WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	16.00
R-7	-14.83	6.37
R-11	-17.19	4.83
R-19	-19.32	3.45
R-22	-20.14	2.92
R-30	-21.23	2.21
R-38	-21.89	1.78
R-49	-22.47	1.41
R-60	-22.84	1.17
Slope(DD)		3220.21
Curve(DDS)		-88.017

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	14.15
R-7	-8.12	6.92
R-11	-9.28	5.89
R-13	-10.73	4.60
R-19	-11.45	3.96
R-27	-12.67	2.87
R-34	-13.42	2.21
Slope(DD)		2856.59
Curve(DDS)		-41.958

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0		-9.28	38.85
R-5 2ft		-12.08	21.98
R-5 4ft		-12.94	16.80
R-10 2ft		-12.54	19.21
R-10 4ft		-13.65	12.52
Intercept		.000	
Slope(DD)		3307.60	
Curve(DDS)		-15.395	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0		-6.27	56.98
R-5 4ft		-9.52	37.40
R-5 8ft		-10.69	30.35
R-10 4ft		-10.34	32.46
R-10 8ft		-11.98	22.58
Intercept		1.505	
Slope(DD)		2039.55	
Curve(DDS)		-16.907	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0		-6.27	6.14
R-11 flr		-13.11	1.70
R-19 flr		-14.82	.59
R-30 flr		-15.92	-.12
Intercept		-2.004	
Slope(DD)		2534.88	
Curve(DDS)		-184.528	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0		.00	10.21
R-11 flr		-13.00	1.77
R-19 flr		-15.04	.45
R-30 flr		-16.18	-.29
R-38 flr		-16.44	-.46
R-49 flr		-17.19	-.95
Intercept		-2.117	
Slope(DD)		2285.33	
Curve(DDS)		23.262	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.69)	.00		7.94
.0005(.48)	-3.77		5.50
.0003(.30)	-7.32		3.19
Slope/.001ELF		10.097	
Curve/.001ELF		1.786	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		60.24
2-Pane	-6.14		27.02
3-Pane	-7.97		17.10
R-10	-10.13		5.43
Slope(DD)		2309.91	
Curve(DDS)		-1.060	

Base Load = 72.55 MBtu
Typical Load = 28.10 MBtu
Residual Load = .53 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		8.13
R-7	-7.53		3.24
R-11	-8.73		2.46
R-19	-9.81		1.76
R-22	-10.22		1.49
R-30	-10.78		1.13
R-38	-11.11		.92
R-49	-11.41		.72
R-60	-11.61		.59
Slope(DD)		1645.37	
Curve(DDS)		-46.202	

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		4.53
R-7	-2.53		2.28
R-11	-2.89		1.96
R-13	-3.40		1.50
R-19	-3.65		1.28
R-27	-4.02		.95
R-34	-4.25		.75
Slope(DD)		955.69	
Curve(DDS)		-21.088	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0		-7.26	-2.15
R-5 2ft		-7.31	-2.45
R-5 4ft		-7.22	-1.90
R-10 2ft		-7.30	-2.39
R-10 4ft		-7.20	-1.78
Intercept		.000	
Slope(DD)		-570.90	
Curve(DDS)		31.949	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0		-3.38	21.23
R-5 4ft		-3.93	17.91
R-5 8ft		-4.03	17.31
R-10 4ft		-4.10	16.89
R-10 8ft		-4.24	16.05
Intercept		13.883	
Slope(DD)		196.88	
Curve(DDS)		-.473	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0		-3.38	2.29
R-11 flr		-1.19	3.71
R-19 flr		-.71	4.02
R-30 flr		-.40	4.22
Intercept		4.737	
Slope(DD)		-684.41	
Curve(DDS)		40.351	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0		.00	4.48
R-11 flr		.67	4.92
R-19 flr		.60	4.87
R-30 flr		.58	4.86
R-38 flr		.58	4.86
R-49 flr		.57	4.85
Intercept		4.760	
Slope(DD)		160.19	
Curve(DDS)		-41.751	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.41)	.00		2.48
.0005(.29)	-1.09		1.77
.0003(.18)	-2.18		1.06
Slope/.001ELF		3.539	
Curve/.001ELF		.000	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		1.47
2-Pane	-.28		-.04
3-Pane	-.28		-.07
R-10	-.29		-.10
Slope(DD)		-51.61	
Curve(DDS)		4.064	

Base Load = 39.43 MBtu
Typical Load = 18.33 MBtu
Residual Load = 1.40 MBtu

Birmingham AL WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	16.99
R-7	-6.38	6.36
R-11	-7.40	4.67
R-19	-8.31	3.14
R-22	-8.61	2.64
R-30	-9.02	1.97
R-38	-9.26	1.56
R-49	-9.44	1.25
R-60	-9.56	1.06
Slope(DD)		2825.01
Curve(DDS)		6.912

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	13.33
R-7	-3.59	5.80
R-11	-4.10	4.72
R-13	-4.65	3.56
R-19	-4.93	2.98
R-27	-5.32	2.16
R-34	-5.56	1.66
Slope(DD)		2024.77
Curve(DDS)		84.304

Slab		(/ft)
R-0	-4.46	25.70
R-5 2ft	-5.06	10.70
R-5 4ft	-5.20	7.20
R-10 2ft	-5.14	8.70
R-10 4ft	-5.29	4.95
Intercept		.000
Slope(DD)		918.22
Curve(DDS)		91.674

Heated Basement		(/ft)
R-0	-3.51	49.45
R-5 4ft	-4.47	25.45
R-5 8ft	-4.70	19.70
R-10 4ft	-4.65	20.95
R-10 8ft	-4.92	14.20
Intercept		2.070
Slope(DD)		1025.00
Curve(DDS)		2.868

Unheated Basement		(/sf)
R-0	-3.51	3.30
R-11 flr	-4.93	.93
R-19 flr	-5.34	.25
R-30 flr	-5.60	-.19
Intercept		-1.368
Slope(DD)		1608.53
Curve(DDS)		-136.293

Crawl		(/sf)
R-0	.00	9.15
R-11 flr	-4.52	1.61
R-19 flr	-5.16	.55
R-30 flr	-5.46	.04
R-38 flr	-5.53	-.07
R-49 flr	-5.73	-.40
Intercept		-1.243
Slope(DD)		1537.74
Curve(DDS)		95.247

Infiltration ELF Ach		(/sf flr)
.0007(.68)	.00	5.65
.0005(.49)	-2.70	3.40
.0003(.28)	-4.79	1.66
Slope/.001ELF		3.625
Curve/.001ELF		6.354

Window U-value		(/sf)
1-Pane	.00	45.46
2-Pane	-4.32	15.46
3-Pane	-5.18	9.50
R-10	-6.19	2.48
Slope(DD)		987.83
Curve(DDS)		27.813

Base Load = 33.01 MBtu
Typical Load = 12.84 MBtu
Residual Load = 3.87 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.77
R-7	-2.89	2.96
R-11	-3.35	2.19
R-19	-3.76	1.50
R-22	-3.90	1.27
R-30	-4.09	.95
R-38	-4.20	.77
R-49	-4.30	.60
R-60	-4.36	.50
Slope(DD)		1366.30
Curve(DDS)		-9.528

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.04
R-7	-1.02	1.89
R-11	-1.17	1.59
R-13	-1.33	1.25
R-19	-1.41	1.08
R-27	-1.56	.77
R-34	-1.65	.58
Slope(DD)		749.57
Curve(DDS)		.293

Slab		(/ft)
R-0	-2.79	-5.99
R-5 2ft	-2.80	-6.24
R-5 4ft	-2.77	-5.49
R-10 2ft	-2.80	-6.24
R-10 4ft	-2.73	-4.49
Intercept		.000
Slope(DD)		-1485.10
Curve(DDS)		80.605

Heated Basement		(/ft)
R-0	-1.22	33.26
R-5 4ft	-1.35	30.01
R-5 8ft	-1.37	29.51
R-10 4ft	-1.40	28.76
R-10 8ft	-1.42	28.26
Intercept		26.423
Slope(DD)		159.61
Curve(DDS)		.133

Unheated Basement		(/sf)
R-0	-1.22	2.22
R-11 flr	-.40	3.58
R-19 flr	-.21	3.91
R-30 flr	-.08	4.12
Intercept		4.661
Slope(DD)		-729.77
Curve(DDS)		49.386

Crawl		(/sf)
R-0	.00	4.25
R-11 flr	.44	4.98
R-19 flr	.44	4.98
R-30 flr	.46	5.02
R-38 flr	.47	5.03
R-49 flr	.49	5.06
Intercept		5.018
Slope(DD)		30.99
Curve(DDS)		-35.198

Infiltration ELF Ach		(/sf flr)
.0007(.41)	.00	2.03
.0005(.29)	-.72	1.43
.0003(.18)	-1.42	.84
Slope/.001ELF		2.750
Curve/.001ELF		.208

Window U-value		(/sf)
1-Pane	.00	-6.32
2-Pane	.08	-5.77
3-Pane	.36	-3.82
R-10	.69	-1.53
Slope(DD)		-692.23
Curve(DDS)		17.146

Base Load = 26.40 MBtu
Typical Load = 17.95 MBtu
Residual Load = 8.39 MBtu

Birmingham AL WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	17.20
R-7	-6.58	6.23
R-11	-7.64	4.48
R-19	-8.58	2.90
R-22	-8.87	2.42
R-30	-9.25	1.78
R-38	-9.49	1.40
R-49	-9.64	1.14
R-60	-9.74	.98
Slope(DD)		2544.62
Curve(DDS)		60.234

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	13.18
R-7	-2.43	5.50
R-11	-2.78	4.41
R-13	-3.14	3.28
R-19	-3.32	2.72
R-27	-3.55	1.97
R-34	-3.70	1.51
Slope(DD)		1794.88
Curve(DDS)		121.914

Slab		(/ft)
R-0	-4.98	30.12
R-5 2ft	-5.48	13.46
R-5 4ft	-5.59	9.62
R-10 2ft	-5.54	11.29
R-10 4ft	-5.68	6.62
Intercept		.000
Slope(DD)		1415.64
Curve(DDS)		80.199

Heated Basement		(/ft)
R-0	-4.26	54.12
R-5 4ft	-5.16	23.96
R-5 8ft	-5.38	16.96
R-10 4ft	-5.34	18.12
R-10 8ft	-5.57	10.46
Intercept		-3.355
Slope(DD)		1128.12
Curve(DDS)		6.268

Unheated Basement		(/sf)
R-0	-4.26	2.71
R-11 flr	-5.43	.76
R-19 flr	-5.78	.17
R-30 flr	-6.01	-.21
Intercept		-1.242
Slope(DD)		1408.53
Curve(DDS)		-124.548

Crawl		(/sf)
R-0	.00	9.81
R-11 flr	-4.82	1.77
R-19 flr	-5.50	.64
R-30 flr	-5.83	.09
R-38 flr	-5.90	-.04
R-49 flr	-6.12	-.40
Intercept		-1.296
Slope(DD)		1661.81
Curve(DDS)		98.167

Infiltration ELF Ach		(/sf flr)
.0007(.68)	.00	5.32
.0005(.47)	-2.68	3.09
.0003(.28)	-4.67	1.43
Slope/.001ELF		2.645
Curve/.001ELF		7.084

Window U-value		(/sf)
1-Pane	.00	44.71
2-Pane	-4.43	13.98
3-Pane	-5.22	8.49
R-10	-6.15	2.03
Slope(DD)		782.91
Curve(DDS)		34.488

Base Load = 31.25 MBtu
Typical Load = 11.74 MBtu
Residual Load = 4.26 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	7.78
R-7	-2.92	2.91
R-11	-3.39	2.13
R-19	-3.81	1.43
R-22	-3.94	1.20
R-30	-4.13	.90
R-38	-4.24	.71
R-49	-4.32	.57
R-60	-4.38	.48
Slope(DD)		1287.99
Curve(DDS)		3.968

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	3.80
R-7	-.68	1.65
R-11	-.78	1.34
R-13	-.89	.99
R-19	-.94	.82
R-27	-1.01	.60
R-34	-1.05	.47
Slope(DD)		562.96
Curve(DDS)		26.687

Slab		(/ft)
R-0	-2.22	-6.02
R-5 2ft	-2.24	-6.68
R-5 4ft	-2.20	-5.18
R-10 2ft	-2.24	-6.52
R-10 4ft	-2.19	-4.85
Intercept		.000
Slope(DD)		-1545.17
Curve(DDS)		85.123

Heated Basement		(/ft)
R-0	-1.03	33.65
R-5 4ft	-1.15	29.82
R-5 8ft	-1.14	29.98
R-10 4ft	-1.17	29.15
R-10 8ft	-1.20	28.15
Intercept		26.371
Slope(DD)		172.67
Curve(DDS)		.062

Unheated Basement		(/sf)
R-0	-1.03	1.68
R-11 flr	-.31	2.88
R-19 flr	-.12	3.20
R-30 flr	.00	3.41
Intercept		3.955
Slope(DD)		-742.03
Curve(DDS)		58.274

Crawl		(/sf)
R-0	.00	3.40
R-11 flr	.54	4.30
R-19 flr	.55	4.31
R-30 flr	.56	4.33
R-38 flr	.57	4.34
R-49 flr	.58	4.36
Intercept		4.306
Slope(DD)		70.80
Curve(DDS)		-48.292

Infiltration ELF Ach		(/sf flr)
.0007(.41)	.00	2.01
.0005(.29)	-.69	1.44
.0003(.18)	-1.38	.86
Slope/.001ELF		2.875
Curve/.001ELF		.000

Window U-value		(/sf)
1-Pane	.00	-5.02
2-Pane	.02	-4.85
3-Pane	.26	-3.22
R-10	.54	-1.30
Slope(DD)		-590.41
Curve(DDS)		15.161

Base Load = 24.49 MBtu
Typical Load = 16.98 MBtu
Residual Load = 7.54 MBtu

Bismarck ND WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	49.78
R-7	-45.95	19.94
R-11	-53.29	15.17
R-19	-59.88	10.89
R-22	-62.44	9.23
R-30	-65.86	7.01
R-38	-67.93	5.67
R-49	-69.80	4.45
R-60	-71.00	3.67
Slope(DD)	10196.38	
Curve(DDS)	-303.700	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	46.98
R-7	-26.65	23.26
R-11	-30.45	19.88
R-13	-35.15	15.70
R-19	-37.48	13.63
R-27	-41.76	9.82
R-34	-44.39	7.48
Slope(DD)	9802.28	
Curve(DDS)	-198.542	

Slab			(/ft)
R-0		-30.45	69.56
R-5	2ft	-38.03	23.90
R-5	4ft	-40.32	10.10
R-10	2ft	-39.47	15.22
R-10	4ft	-42.71	-4.30
Intercept		-45.887	
Slope(DD)		13282.32	
Curve(DDS)		-257.153	

Heated Basement			(/ft)
R-0		-16.90	151.19
R-5	4ft	-25.13	101.61
R-5	8ft	-28.05	84.02
R-10	4ft	-27.27	88.72
R-10	8ft	-31.82	61.31
Intercept		.000	
Slope(DD)		6573.48	
Curve(DDS)		-69.160	

Unheated Basement			(/sf)
R-0		-16.90	16.30
R-11	flr	-40.22	1.15
R-19	flr	-46.89	-3.18
R-30	flr	-51.18	-5.96
Intercept		-13.486	
Slope(DD)		10241.98	
Curve(DDS)		-864.685	

Crawl			(/sf)
R-0		.00	27.27
R-11	flr	-41.93	.04
R-19	flr	-49.20	-4.68
R-30	flr	-53.90	-7.73
R-38	flr	-54.97	-8.42
R-49	flr	-58.06	-10.43
Intercept		-14.994	
Slope(DD)		9415.22	
Curve(DDS)		-228.785	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.89)	.00	31.80
.0005	(.64)	-14.13	22.63
.0003	(.38)	-28.15	13.52
Slope/.001ELF		44.805	
Curve/.001ELF		.893	

Window U-value			(/sf)
1-Pane		.00	226.21
2-Pane		-21.54	109.65
3-Pane		-28.89	69.87
R-10		-37.54	23.07
Slope(DD)		9931.18	
Curve(DDS)		-51.613	

Base Load = 260.49 MBtu
Typical Load = 94.28 MBtu
Residual Load = 14.27 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	4.35
R-7	-4.01	1.75
R-11	-4.65	1.33
R-19	-5.23	.96
R-22	-5.45	.81
R-30	-5.75	.62
R-38	-5.93	.50
R-49	-6.10	.39
R-60	-6.21	.32
Slope(DD)	897.75	
Curve(DDS)	-27.581	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	2.16
R-7	-1.16	1.12
R-11	-1.33	.98
R-13	-1.59	.74
R-19	-1.72	.63
R-27	-1.89	.47
R-34	-2.00	.38
Slope(DD)	483.36	
Curve(DDS)	-15.200	

Slab			(/ft)
R-0		-4.13	-3.40
R-5	2ft	-3.97	-2.43
R-5	4ft	-3.88	-1.89
R-10	2ft	-3.94	-2.25
R-10	4ft	-3.80	-1.41
Intercept		.514	
Slope(DD)		-669.17	
Curve(DDS)		28.515	

Heated Basement			(/ft)
R-0		-3.00	3.41
R-5	4ft	-3.39	1.06
R-5	8ft	-3.40	1.00
R-10	4ft	-3.49	.46
R-10	8ft	-3.50	.40
Intercept		.000	
Slope(DD)		19.50	
Curve(DDS)		1.742	

Unheated Basement			(/sf)
R-0		-3.00	.37
R-11	flr	-1.28	1.48
R-19	flr	-.73	1.84
R-30	flr	-.38	2.07
Intercept		2.698	
Slope(DD)		-861.66	
Curve(DDS)		79.423	

Crawl			(/sf)
R-0		.00	2.32
R-11	flr	.57	2.69
R-19	flr	.63	2.72
R-30	flr	.70	2.77
R-38	flr	.72	2.78
R-49	flr	.77	2.81
Intercept		2.849	
Slope(DD)		-100.41	
Curve(DDS)		-.712	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.68)	.00	.43
.0005	(.49)	-.25	.26
.0003	(.29)	-.45	.13
Slope/.001ELF		.325	
Curve/.001ELF		.406	

Window U-value			(/sf)
1-Pane		.00	2.31
2-Pane		-.21	1.17
3-Pane		-.29	.75
R-10		-.38	.25
Slope(DD)		109.61	
Curve(DDS)		-.838	

Base Load = 14.48 MBtu
Typical Load = 2.98 MBtu
Residual Load = -2.91 MBtu

Bismarck ND WYEC Mid Town Prototype Siding Series Two

Heating Load

Component	Delta (MBtu)	(KBtu/sf)
Ceiling		
R-0	.00	52.17
R-7	-19.04	20.44
R-11	-22.08	15.37
R-19	-24.81	10.82
R-22	-25.81	9.15
R-30	-27.15	6.92
R-38	-27.96	5.57
R-49	-28.67	4.40
R-60	-29.12	3.64
Slope(DD)	10013.88	
Curve(DDS)	-204.826	
Slab		(/ft)
R-0	-14.87	74.13
R-5 2ft	-16.77	26.63
R-5 4ft	-17.32	12.88
R-10 2ft	-17.12	17.88
R-10 4ft	-17.87	-.87
Intercept	-39.816	
Slope(DD)	12186.66	
Curve(DDS)	-170.286	
Unheated Basement		(/sf)
R-0	-10.31	12.54
R-11 flr	-15.95	3.14
R-19 flr	-17.93	-.15
R-30 flr	-19.20	-2.27
Intercept	-8.185	
Slope(DD)	8141.35	
Curve(DDS)	-799.405	
Infiltration		(/sf flr)
ELF Ach		
.0007(.89)	.00	30.06
.0005(.65)	-10.78	21.07
.0003(.40)	-21.18	12.41
Slope/.001ELF	40.167	
Curve/.001ELF	3.958	

Component	Delta (MBtu)	(KBtu/sf)
Wall		
R-0	.00	46.60
R-7	-11.48	22.50
R-11	-13.12	19.07
R-13	-15.08	14.96
R-19	-16.05	12.92
R-27	-17.77	9.30
R-34	-18.83	7.08
Slope(DD)	9194.23	
Curve(DDS)	-98.550	
Heated Basement		(/ft)
R-0	-10.31	188.13
R-5 4ft	-13.16	116.88
R-5 8ft	-14.02	95.38
R-10 4ft	-13.84	99.88
R-10 8ft	-15.09	68.63
Intercept	.000	
Slope(DD)	7159.45	
Curve(DDS)	-59.881	
Crawl		(/sf)
R-0	.00	29.73
R-11 flr	-15.54	3.83
R-19 flr	-18.24	-.67
R-30 flr	-19.94	-3.51
R-38 flr	-20.33	-4.16
R-49 flr	-21.45	-6.03
Intercept	-10.348	
Slope(DD)	8838.60	
Curve(DDS)	-199.638	
Window U-value		(/sf)
1-Pane	.00	213.11
2-Pane	-16.58	97.97
3-Pane	-21.74	62.13
R-10	-27.81	19.99
Slope(DD)	8538.58	
Curve(DDS)	-17.660	

Base Load = 128.76 MBtu
Typical Load = 44.23 MBtu
Residual Load = 3.51 MBtu

Cooling Load

Component	Delta (MBtu)	(KBtu/sf)
Ceiling		
R-0	.00	4.37
R-7	-1.57	1.75
R-11	-1.82	1.33
R-19	-2.05	.95
R-22	-2.14	.81
R-30	-2.25	.62
R-38	-2.32	.50
R-49	-2.39	.39
R-60	-2.43	.32
Slope(DD)	890.41	
Curve(DDS)	-25.945	
Slab		(/ft)
R-0	-1.59	-11.18
R-5 2ft	-1.51	-9.18
R-5 4ft	-1.47	-8.18
R-10 2ft	-1.49	-8.68
R-10 4ft	-1.43	-7.18
Intercept	-3.572	
Slope(DD)	-1243.39	
Curve(DDS)	50.216	
Unheated Basement		(/sf)
R-0	-1.07	.12
R-11 flr	-.44	1.17
R-19 flr	-.25	1.50
R-30 flr	-.12	1.70
Intercept	2.276	
Slope(DD)	-781.34	
Curve(DDS)	70.437	
Infiltration		(/sf flr)
ELF Ach		
.0007(.68)	.00	.51
.0005(.49)	-.15	.39
.0003(.29)	-.32	.24
Slope/.001ELF	.875	
Curve/.001ELF	-.208	

Component	Delta (MBtu)	(KBtu/sf)
Wall		
R-0	.00	2.35
R-7	-.50	1.30
R-11	-.57	1.15
R-13	-.69	.90
R-19	-.75	.77
R-27	-.84	.58
R-34	-.90	.46
Slope(DD)	599.93	
Curve(DDS)	-30.424	
Heated Basement		(/ft)
R-0	-1.07	1.82
R-5 4ft	-1.14	.07
R-5 8ft	-1.13	.32
R-10 4ft	-1.16	-.43
R-10 8ft	-1.15	-.18
Intercept	.000	
Slope(DD)	-38.59	
Curve(DDS)	2.186	
Crawl		(/sf)
R-0	.00	1.90
R-11 flr	.30	2.40
R-19 flr	.33	2.45
R-30 flr	.37	2.52
R-38 flr	.38	2.54
R-49 flr	.41	2.58
Intercept	2.628	
Slope(DD)	-138.67	
Curve(DDS)	-.464	
Window U-value		(/sf)
1-Pane	.00	.58
2-Pane	-.09	-.05
3-Pane	-.09	-.05
R-10	-.09	-.05
Slope(DD)	-25.05	
Curve(DDS)	1.775	

Base Load = 9.87 MBtu
Typical Load = 5.42 MBtu
Residual Load = 1.68 MBtu

Bismarck ND WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	50.86
R-7	-18.63	19.81
R-11	-21.60	14.85
R-19	-24.28	10.40
R-22	-25.24	8.79
R-30	-26.54	6.63
R-38	-27.32	5.32
R-49	-27.99	4.22
R-60	-28.42	3.50
Slope(DD)	9590.92	
Curve(DDS)	-170.816	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	46.97
R-7	-7.83	22.26
R-11	-8.95	18.74
R-13	-10.25	14.65
R-19	-10.89	12.62
R-27	-12.01	9.07
R-34	-12.70	6.89
Slope(DD)	8891.27	
Curve(DDS)	-29.383	

Slab	Delta Component (MBtu)	(/ft)
R-0	-16.10	96.21
R-5 2ft	-17.61	45.87
R-5 4ft	-18.06	31.04
R-10 2ft	-17.89	36.71
R-10 4ft	-18.51	16.04
Intercept	-27.017	
Slope(DD)	13593.62	
Curve(DDS)	-221.731	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-12.41	219.37
R-5 4ft	-14.98	133.54
R-5 8ft	-15.72	108.87
R-10 4ft	-15.58	113.71
R-10 8ft	-16.65	77.87
Intercept	.000	
Slope(DD)	8071.34	
Curve(DDS)	-62.726	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-12.41	10.97
R-11 flr	-16.91	3.47
R-19 flr	-18.64	.57
R-30 flr	-19.76	-1.29
Intercept	-6.548	
Slope(DD)	7275.23	
Curve(DDS)	-752.608	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	31.64
R-11 flr	-15.80	5.32
R-19 flr	-18.53	.77
R-30 flr	-20.26	-2.12
R-38 flr	-20.66	-2.78
R-49 flr	-21.80	-4.68
Intercept	-9.054	
Slope(DD)	8961.55	
Curve(DDS)	-199.906	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.89)	.00	29.73
.0005(.65)	-10.78	20.74
.0003(.40)	-21.09	12.15
Slope/.001ELF	39.041	
Curve/.001ELF	4.896	

WindowwU-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	214.12
2-Pane	-16.82	97.32
3-Pane	-21.96	61.65
R-10	-27.99	19.71
Slope(DD)	8407.35	
Curve(DDS)	-11.238	

Base Load = 121.82 MBtu
Typical Load = 41.03 MBtu
Residual Load = 3.77 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	4.33
R-7	-1.57	1.72
R-11	-1.82	1.30
R-19	-2.05	.93
R-22	-2.13	.79
R-30	-2.24	.60
R-38	-2.31	.48
R-49	-2.37	.38
R-60	-2.42	.31
Slope(DD)	863.84	
Curve(DDS)	-22.395	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	2.14
R-7	-.32	1.13
R-11	-.37	.98
R-13	-.44	.75
R-19	-.47	.64
R-27	-.52	.48
R-34	-.55	.39
Slope(DD)	493.41	
Curve(DDS)	-17.864	

Slab	Delta Component (MBtu)	(/ft)
R-0	-1.14	-6.63
R-5 2ft	-1.09	-4.97
R-5 4ft	-1.06	-3.80
R-10 2ft	-1.08	-4.47
R-10 4ft	-1.04	-3.13
Intercept	.195	
Slope(DD)	-1129.15	
Curve(DDS)	46.225	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.92	.87
R-5 4ft	-.97	-.63
R-5 8ft	-.97	-.63
R-10 4ft	-.98	-.97
R-10 8ft	-.97	-.63
Intercept	.000	
Slope(DD)	-94.77	
Curve(DDS)	3.003	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.92	.04
R-11 flr	-.45	.82
R-19 flr	-.30	1.08
R-30 flr	-.20	1.25
Intercept	1.723	
Slope(DD)	-647.56	
Curve(DDS)	62.424	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	1.58
R-11 flr	.28	2.04
R-19 flr	.29	2.06
R-30 flr	.32	2.11
R-38 flr	.33	2.13
R-49 flr	.35	2.16
Intercept	2.177	
Slope(DD)	-78.23	
Curve(DDS)	-7.546	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.68)	.00	.44
.0005(.49)	-.16	.31
.0003(.29)	-.32	.18
Slope/.001ELF	.562	
Curve/.001ELF	.104	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	.08
2-Pane	-.09	-.58
3-Pane	-.07	-.40
R-10	-.04	-.19
Slope(DD)	-90.87	
Curve(DDS)	3.562	

Base Load = 8.43 MBtu
Typical Load = 4.42 MBtu
Residual Load = 1.05 MBtu

Boise ID WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	32.86
R-7	-30.37	13.13
R-11	-35.22	9.98
R-19	-39.58	7.15
R-22	-41.26	6.06
R-30	-43.52	4.60
R-38	-44.88	3.71
R-49	-46.10	2.92
R-60	-46.88	2.41
Slope(DD)	6687.88	
Curve(DDS)	-193.322	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	30.91
R-7	-17.69	15.16
R-11	-20.21	12.92
R-13	-23.31	10.16
R-19	-24.85	8.79
R-27	-27.60	6.34
R-34	-29.29	4.84
Slope(DD)	6311.30	
Curve(DDS)	-105.096	

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-18.18	54.75
R-5 2ft	-23.39	23.36
R-5 4ft	-24.90	14.27
R-10 2ft	-24.36	17.52
R-10 4ft	-26.43	5.05
Intercept	-20.883	
Slope(DD)	8533.45	
Curve(DDS)	-155.085	

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-10.22	102.70
R-5 4ft	-15.92	68.36
R-5 8ft	-17.94	56.20
R-10 4ft	-17.42	59.33
R-10 8ft	-20.48	40.89
Intercept	.000	
Slope(DD)	4403.26	
Curve(DDS)	-45.670	

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-10.22	11.07
R-11 flr	-25.20	1.34
R-19 flr	-29.33	-1.34
R-30 flr	-31.99	-3.07
Intercept	-7.697	
Slope(DD)	6288.91	
Curve(DDS)	-512.712	

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	17.71
R-11 flr	-26.42	.55
R-19 flr	-30.91	-2.36
R-30 flr	-33.69	-4.17
R-38 flr	-34.32	-4.58
R-49 flr	-36.15	-5.77
Intercept	-8.522	
Slope(DD)	5599.02	
Curve(DDS)	-94.387	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu) (/sf flr)
.0007(.77)	.00	16.21
.0005(.55)	-7.32	11.46
.0003(.33)	-14.49	6.80
Slope/.001ELF	22.304	
Curve/.001ELF	1.218	

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	142.70
2-Pane	-13.89	67.53
3-Pane	-18.43	42.94
R-10	-23.78	14.02
Slope(DD)	6013.87	
Curve(DDS)	-23.056	

Base Load = 156.15 MBtu
Typical Load = 49.29 MBtu
Residual Load = 6.68 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	6.65
R-7	-6.12	2.67
R-11	-7.10	2.04
R-19	-7.98	1.47
R-22	-8.32	1.25
R-30	-8.78	.95
R-38	-9.06	.77
R-49	-9.32	.60
R-60	-9.48	.49
Slope(DD)	1377.36	
Curve(DDS)	-43.127	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.17
R-7	-1.68	1.67
R-11	-1.92	1.46
R-13	-2.29	1.13
R-19	-2.47	.97
R-27	-2.75	.72
R-34	-2.92	.57
Slope(DD)	738.23	
Curve(DDS)	-27.742	

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-4.33	-5.42
R-5 2ft	-4.17	-4.45
R-5 4ft	-4.08	-3.91
R-10 2ft	-4.14	-4.27
R-10 4ft	-4.02	-3.55
Intercept	-1.975	
Slope(DD)	-554.83	
Curve(DDS)	22.036	

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-2.82	3.68
R-5 4ft	-3.22	1.27
R-5 8ft	-3.23	1.21
R-10 4ft	-3.32	.67
R-10 8ft	-3.34	.55
Intercept	.000	
Slope(DD)	38.16	
Curve(DDS)	1.389	

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-2.82	.40
R-11 flr	-1.33	1.36
R-19 flr	-.89	1.65
R-30 flr	-.60	1.84
Intercept	2.343	
Slope(DD)	-688.86	
Curve(DDS)	60.322	

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.23
R-11 flr	.36	2.46
R-19 flr	.34	2.45
R-30 flr	.32	2.44
R-38 flr	.32	2.44
R-49 flr	.31	2.43
Intercept	2.390	
Slope(DD)	77.84	
Curve(DDS)	-21.348	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu) (/sf flr)
.0007(.56)	.00	.48
.0005(.40)	-.20	.35
.0003(.24)	-.41	.22
Slope/.001ELF	.747	
Curve/.001ELF	-.081	

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	4.54
2-Pane	-.39	2.43
3-Pane	-.55	1.56
R-10	-.74	.54
Slope(DD)	234.85	
Curve(DDS)	-2.377	

Base Load = 20.80 MBtu
Typical Load = 5.46 MBtu
Residual Load = -3.16 MBtu

Boise ID WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	34.15
R-7	-12.59	13.16
R-11	-14.60	9.81
R-19	-16.41	6.80
R-22	-17.05	5.74
R-30	-17.90	4.32
R-38	-18.41	3.47
R-49	-18.84	2.75
R-60	-19.12	2.28
Slope(DD)	6233.86	
Curve(DDS)	-79.941	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	29.62
R-7	-7.53	13.82
R-11	-8.60	11.57
R-13	-9.84	8.96
R-19	-10.46	7.67
R-27	-11.48	5.54
R-34	-12.10	4.23
Slope(DD)	5389.99	
Curve(DDS)	21.901	

Slab	Delta Component (MBtu)	(/ft)
R-0	-8.85	50.75
R-5 2ft	-10.10	19.50
R-5 4ft	-10.42	11.50
R-10 2ft	-10.31	14.25
R-10 4ft	-10.74	3.50
Intercept	-17.474	
Slope(DD)	6646.82	
Curve(DDS)	-45.316	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-6.19	117.25
R-5 4ft	-8.10	69.50
R-5 8ft	-8.63	56.25
R-10 4ft	-8.53	58.75
R-10 8ft	-9.28	40.00
Intercept	.000	
Slope(DD)	4145.31	
Curve(DDS)	-29.830	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-6.19	7.82
R-11 flr	-9.71	1.95
R-19 flr	-10.88	-.01
R-30 flr	-11.64	-1.27
Intercept	-4.752	
Slope(DD)	4788.31	
Curve(DDS)	-455.800	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	18.13
R-11 flr	-9.50	2.30
R-19 flr	-11.10	-.37
R-30 flr	-12.04	-1.94
R-38 flr	-12.26	-2.30
R-49 flr	-12.88	-3.34
Intercept	-5.815	
Slope(DD)	4948.51	
Curve(DDS)	-54.235	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.78)	.00	13.90
.0005(.58)	-5.49	9.32
.0003(.35)	-10.40	5.23
Slope/.001ELF	15.624	
Curve/.001ELF	6.042	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	123.05
2-Pane	-10.13	52.70
3-Pane	-12.94	33.20
R-10	-16.24	10.27
Slope(DD)	4336.90	
Curve(DDS)	12.270	

Base Load = 72.83 MBtu
Typical Load = 20.24 MBtu
Residual Load = 4.71 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	6.75
R-7	-2.40	2.75
R-11	-2.79	2.11
R-19	-3.13	1.54
R-22	-3.27	1.30
R-30	-3.46	.99
R-38	-3.57	.80
R-49	-3.67	.63
R-60	-3.74	.52
Slope(DD)	1449.07	
Curve(DDS)	-52.284	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	3.49
R-7	-.78	1.86
R-11	-.89	1.62
R-13	-1.07	1.24
R-19	-1.16	1.06
R-27	-1.28	.80
R-34	-1.36	.64
Slope(DD)	817.95	
Curve(DDS)	-31.359	

Slab	Delta Component (MBtu)	(/ft)
R-0	-1.64	-13.85
R-5 2ft	-1.58	-12.35
R-5 4ft	-1.55	-11.60
R-10 2ft	-1.57	-12.10
R-10 4ft	-1.52	-10.85
Intercept	-8.145	
Slope(DD)	-975.75	
Curve(DDS)	41.617	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-1.00	2.15
R-5 4ft	-1.09	-.10
R-5 8ft	-1.09	-.10
R-10 4ft	-1.11	-.60
R-10 8ft	-1.10	-.35
Intercept	.000	
Slope(DD)	-68.57	
Curve(DDS)	3.112	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-1.00	.14
R-11 flr	-.46	1.04
R-19 flr	-.28	1.34
R-30 flr	-.17	1.53
Intercept	2.049	
Slope(DD)	-716.49	
Curve(DDS)	67.261	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	1.81
R-11 flr	.21	2.16
R-19 flr	.20	2.14
R-30 flr	.20	2.14
R-38 flr	.20	2.14
R-49 flr	.20	2.14
Intercept	2.095	
Slope(DD)	80.27	
Curve(DDS)	-26.498	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.56)	.00	.30
.0005(.40)	-.14	.18
.0003(.24)	-.25	.09
Slope/.001ELF	.208	
Curve/.001ELF	.313	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	2.45
2-Pane	-.19	1.14
3-Pane	-.25	.72
R-10	-.32	.23
Slope(DD)	99.38	
Curve(DDS)	-.243	

Base Load = 13.28 MBtu
Typical Load = 7.13 MBtu
Residual Load = 1.90 MBtu

Boise ID WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	33.12
R-7	-12.31	12.60
R-11	-14.27	9.33
R-19	-16.04	6.38
R-22	-16.64	5.38
R-30	-17.46	4.02
R-38	-17.95	3.21
R-49	-18.33	2.57
R-60	-18.58	2.15
Slope(DD)	5802.16	
Curve(DDS)	-36.494	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	29.72
R-7	-5.12	13.58
R-11	-5.85	11.28
R-13	-6.66	8.71
R-19	-7.06	7.44
R-27	-7.72	5.35
R-34	-8.13	4.07
Slope(DD)	5154.17	
Curve(DDS)	68.930	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-9.85	70.86
R-5 2ft	-10.87	37.03
R-5 4ft	-11.14	28.03
R-10 2ft	-11.05	31.20
R-10 4ft	-11.41	18.86
Intercept	-5.720	
Slope(DD)	7922.12	
Curve(DDS)	-92.347	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-7.75	141.03
R-5 4ft	-9.51	82.20
R-5 8ft	-9.98	66.53
R-10 4ft	-9.90	69.20
R-10 8ft	-10.57	47.03
Intercept	.000	
Slope(DD)	4847.16	
Curve(DDS)	-32.365	

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-7.75	7.05
R-11 flr	-10.61	2.28
R-19 flr	-11.66	.54
R-30 flr	-12.32	-.57
Intercept	-3.698	
Slope(DD)	4311.44	
Curve(DDS)	-431.970	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	19.97
R-11 flr	-9.89	3.48
R-19 flr	-11.53	.74
R-30 flr	-12.50	-.87
R-38 flr	-12.72	-1.24
R-49 flr	-13.36	-2.30
Intercept	-4.823	
Slope(DD)	5034.51	
Curve(DDS)	-38.951	

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.77)	.00	13.60
.0005(.58)	-5.50	9.02
.0003(.35)	-10.33	4.99
Slope/.001ELF	14.542	
Curve/.001ELF	6.979	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	121.99
2-Pane	-10.27	50.67
3-Pane	-12.98	31.82
R-10	-16.18	9.66
Slope(DD)	4057.82	
Curve(DDS)	21.324	

Base Load = 68.43 MBtu
Typical Load = 18.14 MBtu
Residual Load = 5.04 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	6.77
R-7	-2.41	2.76
R-11	-2.79	2.12
R-19	-3.14	1.54
R-22	-3.28	1.31
R-30	-3.47	.99
R-38	-3.59	.80
R-49	-3.69	.63
R-60	-3.75	.52
Slope(DD)	1451.64	
Curve(DDS)	-52.111	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.26
R-7	-.48	1.74
R-11	-.55	1.53
R-13	-.65	1.20
R-19	-.70	1.04
R-27	-.79	.77
R-34	-.85	.60
Slope(DD)	786.42	
Curve(DDS)	-33.407	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.22	-8.44
R-5 2ft	-1.18	-7.11
R-5 4ft	-1.16	-6.28
R-10 2ft	-1.17	-6.78
R-10 4ft	-1.14	-5.61
Intercept	-2.895	
Slope(DD)	-973.60	
Curve(DDS)	42.676	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-.91	2.06
R-5 4ft	-.95	.39
R-5 8ft	-.95	.56
R-10 4ft	-.97	-.11
R-10 8ft	-.96	.06
Intercept	.000	
Slope(DD)	-10.65	
Curve(DDS)	1.586	

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-.91	.10
R-11 flr	-.47	.83
R-19 flr	-.33	1.07
R-30 flr	-.23	1.22
Intercept	1.643	
Slope(DD)	-581.30	
Curve(DDS)	54.791	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.61
R-11 flr	.19	1.93
R-19 flr	.18	1.91
R-30 flr	.16	1.88
R-38 flr	.15	1.87
R-49 flr	.14	1.85
Intercept	1.788	
Slope(DD)	143.43	
Curve(DDS)	-34.699	

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.56)	.00	.40
.0005(.40)	-.16	.27
.0003(.24)	-.30	.15
Slope/.001ELF	.458	
Curve/.001ELF	.156	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	3.17
2-Pane	-.23	1.54
3-Pane	-.32	.98
R-10	-.41	.32
Slope(DD)	139.56	
Curve(DDS)	-.736	

Base Load = 11.51 MBtu
Typical Load = 5.88 MBtu
Residual Load = .65 MBtu

Boston MA WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	33.45
R-7	-30.95	13.35
R-11	-35.89	10.14
R-19	-40.33	7.26
R-22	-42.04	6.15
R-30	-44.32	4.67
R-38	-45.70	3.77
R-49	-46.94	2.96
R-60	-47.74	2.45
Slope(DD)		6780.42
Curve(DDS)		-192.163

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	32.05
R-7	-18.38	15.69
R-11	-21.00	13.36
R-13	-24.17	10.54
R-19	-25.74	9.14
R-27	-28.63	6.57
R-34	-30.40	5.00
Slope(DD)		6532.83
Curve(DDS)		-106.827

Slab		(/ft)
R-0	-21.09	52.69
R-5 2ft	-26.30	21.30
R-5 4ft	-27.86	11.90
R-10 2ft	-27.28	15.40
R-10 4ft	-29.46	2.27
Intercept		-25.216
Slope(DD)		8397.27
Curve(DDS)		-148.008

Heated Basement		(/ft)
R-0	-13.23	100.04
R-5 4ft	-18.45	68.59
R-5 8ft	-20.44	56.60
R-10 4ft	-19.87	60.04
R-10 8ft	-22.94	41.54
Intercept		.000
Slope(DD)		4292.73
Curve(DDS)		-45.071

Unheated Basement		(/sf)
R-0	-13.23	10.78
R-11 flr	-29.16	.44
R-19 flr	-33.62	-2.45
R-30 flr	-36.48	-4.31
Intercept		-9.319
Slope(DD)		6802.93
Curve(DDS)		-562.190

Crawl		(/sf)
R-0	.00	19.37
R-11 flr	-30.07	-.15
R-19 flr	-35.07	-3.40
R-30 flr	-38.17	-5.41
R-38 flr	-38.88	-5.87
R-49 flr	-40.92	-7.20
Intercept		-10.237
Slope(DD)		6183.54
Curve(DDS)		-79.772

Infiltration ELF Ach		(/sf flr)
.0007(.91)	.00	22.31
.0005(.67)	-9.93	15.86
.0003(.40)	-19.77	9.47
Slope/.001ELF		31.363
Curve/.001ELF		.731

Window U-value		(/sf)
1-Pane	.00	158.75
2-Pane	-15.68	73.90
3-Pane	-20.67	46.92
R-10	-26.53	15.19
Slope(DD)		6501.80
Curve(DDS)		-18.505

Base Load = 175.80 MBtu
Typical Load = 60.30 MBtu
Residual Load = 7.14 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.16
R-7	-2.77	1.36
R-11	-3.21	1.07
R-19	-3.61	.81
R-22	-3.80	.69
R-30	-4.06	.53
R-38	-4.21	.43
R-49	-4.34	.34
R-60	-4.43	.28
Slope(DD)		783.17
Curve(DDS)		-42.224

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.66
R-7	-.85	.90
R-11	-.97	.79
R-13	-1.16	.63
R-19	-1.25	.54
R-27	-1.41	.40
R-34	-1.51	.31
Slope(DD)		412.87
Curve(DDS)		-19.532

Slab		(/ft)
R-0	-3.62	-2.63
R-5 2ft	-3.47	-1.73
R-5 4ft	-3.38	-1.19
R-10 2ft	-3.44	-1.55
R-10 4ft	-3.31	-.77
Intercept		1.005
Slope(DD)		-587.52
Curve(DDS)		23.623

Heated Basement		(/ft)
R-0	-2.49	4.17
R-5 4ft	-2.85	2.00
R-5 8ft	-2.89	1.76
R-10 4ft	-2.96	1.34
R-10 8ft	-3.01	1.04
Intercept		.000
Slope(DD)		91.26
Curve(DDS)		.280

Unheated Basement		(/sf)
R-0	-2.49	.45
R-11 flr	-.64	1.65
R-19 flr	-.15	1.97
R-30 flr	.16	2.17
Intercept		2.711
Slope(DD)		-731.97
Curve(DDS)		56.737

Crawl		(/sf)
R-0	.00	2.07
R-11 flr	.70	2.52
R-19 flr	.77	2.57
R-30 flr	.80	2.59
R-38 flr	.81	2.59
R-49 flr	.83	2.61
Intercept		2.631
Slope(DD)		-44.47
Curve(DDS)		-12.808

Infiltration ELF Ach		(/sf flr)
.0007(.73)	.00	.70
.0005(.52)	-.31	.50
.0003(.31)	-.62	.30
Slope/.001ELF		1.006
Curve/.001ELF		.000

Window U-value		(/sf)
1-Pane	.00	1.44
2-Pane	-.11	.84
3-Pane	-.17	.55
R-10	-.23	.19
Slope(DD)		85.67
Curve(DDS)		-1.179

Base Load = 12.82 MBtu
Typical Load = 4.09 MBtu
Residual Load = -2.66 MBtu

Boston MA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	34.92
R-7	-12.82	13.56
R-11	-14.86	10.15
R-19	-16.70	7.08
R-22	-17.36	5.98
R-30	-18.25	4.51
R-38	-18.78	3.62
R-49	-19.23	2.87
R-60	-19.52	2.38
Slope(DD)	6521.44	
Curve(DDS)	-106.568	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	31.27
R-7	-7.85	14.79
R-11	-8.97	12.44
R-13	-10.26	9.73
R-19	-10.90	8.39
R-27	-12.03	6.02
R-34	-12.72	4.57
Slope(DD)	5898.01	
Curve(DDS)	-15.849	

Slab		(/ft)
R-0	-10.26	54.33
R-5 2ft	-11.56	21.83
R-5 4ft	-11.92	12.83
R-10 2ft	-11.79	16.08
R-10 4ft	-12.29	3.58
Intercept	-21.615	
Slope(DD)	7543.72	
Curve(DDS)	-89.299	

Heated Basement		(/ft)
R-0	-7.54	122.33
R-5 4ft	-9.43	75.08
R-5 8ft	-9.98	61.33
R-10 4ft	-9.87	64.08
R-10 8ft	-10.68	43.83
Intercept	.000	
Slope(DD)	4374.96	
Curve(DDS)	-33.606	

Unheated Basement		(/sf)
R-0	-7.54	8.16
R-11 flr	-11.42	1.69
R-19 flr	-12.72	-.48
R-30 flr	-13.56	-1.88
Intercept	-5.746	
Slope(DD)	5315.57	
Curve(DDS)	-507.945	

Crawl		(/sf)
R-0	.00	20.72
R-11 flr	-11.12	2.19
R-19 flr	-12.94	-.84
R-30 flr	-14.05	-2.69
R-38 flr	-14.30	-3.11
R-49 flr	-15.03	-4.33
Intercept	-7.126	
Slope(DD)	5659.00	
Curve(DDS)	-44.511	

Infiltration ELF Ach		(/sf flr)
.0007(.93)	.00	20.41
.0005(.68)	-7.56	14.11
.0003(.42)	-14.67	8.18
Slope/.001ELF	25.875	
Curve/.001ELF	4.688	

Window U-value		(/sf)
1-Pane	.00	145.04
2-Pane	-11.84	62.82
3-Pane	-15.18	39.62
R-10	-19.11	12.33
Slope(DD)	5219.61	
Curve(DDS)	10.395	

Base Load = 85.28 MBtu
Typical Load = 26.77 MBtu
Residual Load = 1.58 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.02
R-7	-1.08	1.22
R-11	-1.25	.93
R-19	-1.41	.67
R-22	-1.47	.57
R-30	-1.55	.44
R-38	-1.60	.36
R-49	-1.65	.28
R-60	-1.68	.22
Slope(DD)	635.74	
Curve(DDS)	-21.177	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	1.36
R-7	-.32	.68
R-11	-.37	.58
R-13	-.44	.42
R-19	-.48	.35
R-27	-.52	.27
R-34	-.54	.22
Slope(DD)	271.65	
Curve(DDS)	-3.607	

Slab		(/ft)
R-0	-1.36	-8.45
R-5 2ft	-1.31	-7.20
R-5 4ft	-1.27	-6.20
R-10 2ft	-1.30	-6.95
R-10 4ft	-1.24	-5.45
Intercept	-2.009	
Slope(DD)	-1165.13	
Curve(DDS)	52.518	

Heated Basement		(/ft)
R-0	-.92	2.55
R-5 4ft	-.99	.80
R-5 8ft	-.99	.80
R-10 4ft	-1.01	.30
R-10 8ft	-1.01	.30
Intercept	.000	
Slope(DD)	14.35	
Curve(DDS)	1.189	

Unheated Basement		(/sf)
R-0	-.92	.17
R-11 flr	-.18	1.40
R-19 flr	.02	1.74
R-30 flr	.15	1.95
Intercept	2.529	
Slope(DD)	-781.24	
Curve(DDS)	62.631	

Crawl		(/sf)
R-0	.00	1.70
R-11 flr	.38	2.34
R-19 flr	.50	2.54
R-30 flr	.55	2.62
R-38 flr	.56	2.64
R-49 flr	.59	2.69
Intercept	2.906	
Slope(DD)	-382.72	
Curve(DDS)	28.870	

Infiltration ELF Ach		(/sf flr)
.0007(.73)	.00	.50
.0005(.52)	-.17	.35
.0003(.31)	-.34	.21
Slope/.001ELF	.708	
Curve/.001ELF	.000	

Window U-value		(/sf)
1-Pane	.00	-1.68
2-Pane	.01	-1.61
3-Pane	.09	-1.07
R-10	.18	-.43
Slope(DD)	-196.34	
Curve(DDS)	5.021	

Base Load = 9.12 MBtu
Typical Load = 5.89 MBtu
Residual Load = 2.11 MBtu

Boston MA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	34.11
R-7	-12.60	13.10
R-11	-14.62	9.75
R-19	-16.42	6.73
R-22	-17.06	5.68
R-30	-17.90	4.28
R-38	-18.41	3.43
R-49	-18.84	2.72
R-60	-19.11	2.26
Slope(DD)		6163.12
Curve(DDS)		-69.124

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	31.47
R-7	-5.34	14.63
R-11	-6.10	12.23
R-13	-6.96	9.52
R-19	-7.38	8.17
R-27	-8.12	5.87
R-34	-8.56	4.45
Slope(DD)		5697.56
Curve(DDS)		28.509

Slab		(/ft)
R-0	-11.31	71.13
R-5 2ft	-12.33	36.96
R-5 4ft	-12.63	27.30
R-10 2ft	-12.51	30.96
R-10 4ft	-12.91	17.63
Intercept		-9.237
Slope(DD)		8056.15
Curve(DDS)		-100.775

Heated Basement		(/ft)
R-0	-9.07	145.63
R-5 4ft	-10.80	88.13
R-5 8ft	-11.31	71.30
R-10 4ft	-11.20	74.80
R-10 8ft	-11.91	51.13
Intercept		.000
Slope(DD)		5061.53
Curve(DDS)		-36.393

Unheated Basement		(/sf)
R-0	-9.07	7.28
R-11 flr	-12.22	2.04
R-19 flr	-13.38	.11
R-30 flr	-14.12	-1.13
Intercept		-4.604
Slope(DD)		4800.78
Curve(DDS)		-484.196

Crawl		(/sf)
R-0	.00	22.41
R-11 flr	-11.43	3.35
R-19 flr	-13.28	.27
R-30 flr	-14.41	-1.61
R-38 flr	-14.66	-2.04
R-49 flr	-15.41	-3.27
Intercept		-6.092
Slope(DD)		5712.39
Curve(DDS)		-30.183

Infiltration ELF	Ach	(/sf flr)
.0007	(.93) .00	20.24
.0005	(.68) -7.57	13.93
.0003	(.42) -14.63	8.04
Slope/.001ELF		25.229
Curve/.001ELF		5.261

Window U-value		(/sf)
1-Pane	.00	143.54
2-Pane	-12.00	60.21
3-Pane	-15.22	37.85
R-10	-19.01	11.56
Slope(DD)		4864.67
Curve(DDS)		21.685

Base Load = 80.84 MBtu
Typical Load = 24.68 MBtu
Residual Load = 1.96 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	2.82
R-7	-1.06	1.05
R-11	-1.23	.77
R-19	-1.39	.51
R-22	-1.43	.43
R-30	-1.50	.32
R-38	-1.54	.26
R-49	-1.57	.20
R-60	-1.59	.17
Slope(DD)		460.65
Curve(DDS)		2.590

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	1.41
R-7	-.20	.79
R-11	-.22	.70
R-13	-.27	.58
R-19	-.28	.51
R-27	-.33	.37
R-34	-.36	.28
Slope(DD)		382.81
Curve(DDS)		-22.322

Slab		(/ft)
R-0	-1.04	-6.72
R-5 2ft	-.99	-5.05
R-5 4ft	-.98	-4.72
R-10 2ft	-.99	-4.88
R-10 4ft	-.95	-3.88
Intercept		-1.927
Slope(DD)		-652.68
Curve(DDS)		20.822

Heated Basement		(/ft)
R-0	-.82	.78
R-5 4ft	-.87	-1.05
R-5 8ft	-.84	-.05
R-10 4ft	-.88	-1.38
R-10 8ft	-.87	-.88
Intercept		.000
Slope(DD)		-102.27
Curve(DDS)		2.981

Unheated Basement		(/sf)
R-0	-.82	.04
R-11 flr	-.27	.95
R-19 flr	-.10	1.23
R-30 flr	.00	1.41
Intercept		1.896
Slope(DD)		-670.49
Curve(DDS)		60.133

Crawl		(/sf)
R-0	.00	1.40
R-11 flr	.35	1.99
R-19 flr	.39	2.05
R-30 flr	.43	2.11
R-38 flr	.43	2.12
R-49 flr	.46	2.16
Intercept		2.208
Slope(DD)		-124.08
Curve(DDS)		-6.612

Infiltration ELF	Ach	(/sf flr)
.0007	(.73) .00	.40
.0005	(.52) -.15	.28
.0003	(.31) -.29	.16
Slope/.001ELF		.500
Curve/.001ELF		.104

Window U-value		(/sf)
1-Pane	.00	-2.52
2-Pane	-.01	-2.63
3-Pane	.11	-1.75
R-10	.26	-.72
Slope(DD)		-326.28
Curve(DDS)		8.737

Base Load = 8.07 MBtu
Typical Load = 5.20 MBtu
Residual Load = 1.79 MBtu

Brownsville TX WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.97
R-7	-4.87	1.81
R-11	-5.64	1.31
R-19	-6.34	.86
R-22	-6.55	.72
R-30	-6.84	.53
R-38	-7.01	.42
R-49	-7.14	.34
R-60	-7.22	.29
Slope(DD)		757.24
Curve(DDS)		13.772

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.68
R-7	-2.45	1.50
R-11	-2.80	1.19
R-13	-3.15	.88
R-19	-3.32	.73
R-27	-3.55	.53
R-34	-3.69	.40
Slope(DD)		471.10
Curve(DDS)		39.783

Slab	Delta (MBtu)	(/ft)
R-0	-3.85	2.58
R-5 2ft	-4.18	.59
R-5 4ft	-4.23	.29
R-10 2ft	-4.22	.35
R-10 4ft	-4.26	.11
Intercept		.000
Slope(DD)		-58.37
Curve(DDS)		31.250

Heated Basement	Delta (MBtu)	(/ft)
R-0	-3.15	6.80
R-5 4ft	-3.93	2.10
R-5 8ft	-4.06	1.32
R-10 4ft	-4.05	1.38
R-10 8ft	-4.18	.59
Intercept		-.669
Slope(DD)		99.16
Curve(DDS)		2.597

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-3.15	.73
R-11 flr	-3.98	.19
R-19 flr	-4.13	.10
R-30 flr	-4.23	.03
Intercept		-.123
Slope(DD)		202.10
Curve(DDS)		-6.857

Crawl	Delta (MBtu)	(/sf)
R-0	.00	2.78
R-11 flr	-3.25	.67
R-19 flr	-3.65	.41
R-30 flr	-3.85	.28
R-38 flr	-3.90	.25
R-49 flr	-4.03	.16
Intercept		-.028
Slope(DD)		351.90
Curve(DDS)		38.091

Infiltration ELF (Ach)	Delta (MBtu)	(/sf flr)
.0007(.73)	.00	1.47
.0005(.52)	-.97	.84
.0003(.31)	-1.68	.37
Slope/.001ELF		.617
Curve/.001ELF		2.110

Window U-value	Delta (MBtu)	(/sf)
1-Pane	.00	13.25
2-Pane	-1.66	4.27
3-Pane	-1.97	2.60
R-10	-2.33	.64
Slope(DD)		251.45
Curve(DDS)		9.489

Base Load = 19.74 MBtu
Typical Load = 5.45 MBtu
Residual Load = .19 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	9.92
R-7	-9.39	3.83
R-11	-10.88	2.86
R-19	-12.23	1.98
R-22	-12.70	1.68
R-30	-13.32	1.27
R-38	-13.70	1.03
R-49	-14.05	.80
R-60	-14.27	.66
Slope(DD)		1823.09
Curve(DDS)		-25.187

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.68
R-7	-3.53	2.54
R-11	-4.03	2.10
R-13	-4.54	1.64
R-19	-4.79	1.42
R-27	-5.26	1.00
R-34	-5.55	.74
Slope(DD)		952.87
Curve(DDS)		19.233

Slab	Delta (MBtu)	(/ft)
R-0	-10.29	5.74
R-5 2ft	-10.88	2.18
R-5 4ft	-11.01	1.40
R-10 2ft	-11.01	1.40
R-10 4ft	-11.09	.92
Intercept		.000
Slope(DD)		173.02
Curve(DDS)		39.432

Heated Basement	Delta (MBtu)	(/ft)
R-0	-4.37	41.40
R-5 4ft	-4.97	37.78
R-5 8ft	-5.12	36.88
R-10 4ft	-5.16	36.64
R-10 8ft	-5.39	35.25
Intercept		31.627
Slope(DD)		402.70
Curve(DDS)		-3.817

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-4.37	4.46
R-11 flr	-3.60	4.96
R-19 flr	-3.67	4.92
R-30 flr	-3.72	4.88
Intercept		4.744
Slope(DD)		220.56
Curve(DDS)		-53.728

Crawl	Delta (MBtu)	(/sf)
R-0	.00	7.30
R-11 flr	-1.58	6.27
R-19 flr	-2.22	5.86
R-30 flr	-2.72	5.54
R-38 flr	-2.83	5.46
R-49 flr	-3.16	5.25
Intercept		4.715
Slope(DD)		1148.62
Curve(DDS)		-125.685

Infiltration ELF (Ach)	Delta (MBtu)	(/sf flr)
.0007(.68)	.00	9.82
.0005(.48)	-4.01	7.22
.0003(.30)	-8.27	4.45
Slope/.001ELF		15.455
Curve/.001ELF		-2.029

Window U-value	Delta (MBtu)	(/sf)
1-Pane	.00	7.66
2-Pane	-1.09	1.76
3-Pane	-1.23	1.02
R-10	-1.39	.14
Slope(DD)		37.39
Curve(DDS)		9.578

Base Load = 76.72 MBtu
Typical Load = 45.57 MBtu
Residual Load = 11.31 MBtu

Brownsville TX WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.86
R-7	-1.90	1.70
R-11	-2.20	1.20
R-19	-2.47	.74
R-22	-2.54	.62
R-30	-2.64	.46
R-38	-2.70	.36
R-49	-2.74	.29
R-60	-2.77	.24
Slope(DD)		634.68
Curve(DDS)		31.181

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.34
R-7	-.96	1.31
R-11	-1.10	1.03
R-13	-1.23	.76
R-19	-1.29	.63
R-27	-1.38	.45
R-34	-1.43	.33
Slope(DD)		389.11
Curve(DDS)		42.970

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-1.43	2.22
R-5 2ft	-1.48	.97
R-5 4ft	-1.49	.72
R-10 2ft	-1.49	.72
R-10 4ft	-1.50	.47
Intercept		.000
Slope(DD)		131.62
Curve(DDS)		8.872

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-1.25	6.72
R-5 4ft	-1.43	2.22
R-5 8ft	-1.45	1.72
R-10 4ft	-1.45	1.72
R-10 8ft	-1.48	.97
Intercept		.062
Slope(DD)		66.00
Curve(DDS)		2.908

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-1.25	.45
R-11 flr	-1.41	.18
R-19 flr	-1.45	.12
R-30 flr	-1.47	.08
Intercept		-.019
Slope(DD)		135.12
Curve(DDS)		-8.565

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	2.53
R-11 flr	-1.07	.75
R-19 flr	-1.20	.53
R-30 flr	-1.27	.42
R-38 flr	-1.28	.40
R-49 flr	-1.32	.33
Intercept		.174
Slope(DD)		286.61
Curve(DDS)		33.781

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.73)	.00	1.13
.0005(.52)	-.65	.59
.0003(.31)	-1.09	.22
Slope/.001ELF		.083
Curve/.001ELF		2.188

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	10.91
2-Pane	-1.11	3.21
3-Pane	-1.29	1.93
R-10	-1.51	.43
Slope(DD)		159.54
Curve(DDS)		9.617

Base Load = 8.49 MBtu
Typical Load = 2.79 MBtu
Residual Load = .54 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	9.10
R-7	-3.48	3.31
R-11	-4.03	2.39
R-19	-4.53	1.55
R-22	-4.67	1.32
R-30	-4.86	1.01
R-38	-4.97	.82
R-49	-5.09	.62
R-60	-5.17	.49
Slope(DD)		1387.94
Curve(DDS)		24.923

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	5.12
R-7	-1.33	2.33
R-11	-1.52	1.93
R-13	-1.73	1.50
R-19	-1.83	1.28
R-27	-2.00	.92
R-34	-2.11	.70
Slope(DD)		882.80
Curve(DDS)		12.967

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-3.91	2.21
R-5 2ft	-4.03	-.79
R-5 4ft	-4.03	-.79
R-10 2ft	-4.05	-1.29
R-10 4ft	-4.04	-1.04
Intercept		.000
Slope(DD)		-582.45
Curve(DDS)		79.563

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-1.59	60.21
R-5 4ft	-1.77	55.71
R-5 8ft	-1.80	54.96
R-10 4ft	-1.82	54.46
R-10 8ft	-1.84	53.96
Intercept		52.238
Slope(DD)		149.11
Curve(DDS)		1.629

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-1.59	4.01
R-11 flr	-1.08	4.86
R-19 flr	-1.07	4.88
R-30 flr	-1.06	4.90
Intercept		4.864
Slope(DD)		78.90
Curve(DDS)		-47.740

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	6.66
R-11 flr	-.18	6.36
R-19 flr	-.40	6.00
R-30 flr	-.50	5.83
R-38 flr	-.52	5.80
R-49 flr	-.58	5.69
Intercept		5.218
Slope(DD)		861.61
Curve(DDS)		-113.015

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.68)	.00	9.56
.0005(.49)	-2.94	7.11
.0003(.30)	-6.15	4.43
Slope/.001ELF		15.625
Curve/.001ELF		-2.812

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	-5.57
2-Pane	-.38	-8.21
3-Pane	.01	-5.53
R-10	.46	-2.38
Slope(DD)		-1089.67
Curve(DDS)		33.279

Base Load = 52.15 MBtu
Typical Load = 39.13 MBtu
Residual Load = 17.07 MBtu

Brownsville TX WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	4.97
R-7	-1.95	1.71
R-11	-2.26	1.19
R-19	-2.55	.73
R-22	-2.62	.61
R-30	-2.71	.45
R-38	-2.77	.35
R-49	-2.81	.28
R-60	-2.84	.23
Slope(DD)		612.34
Curve(DDS)		38.024

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	3.13
R-7	-.62	1.17
R-11	-.71	.89
R-13	-.79	.65
R-19	-.83	.53
R-27	-.87	.37
R-34	-.91	.28
Slope(DD)		308.68
Curve(DDS)		50.882

Slab		(/ft)
R-0	-1.48	1.67
R-5 2ft	-1.51	.50
R-5 4ft	-1.52	.34
R-10 2ft	-1.52	.34
R-10 4ft	-1.52	.17
Intercept		.000
Slope(DD)		12.31
Curve(DDS)		15.251

Heated Basement		(/ft)
R-0	-1.38	5.00
R-5 4ft	-1.52	.34
R-5 8ft	-1.54	-.33
R-10 4ft	-1.54	-.33
R-10 8ft	-1.56	-1.00
Intercept		-1.948
Slope(DD)		62.83
Curve(DDS)		3.197

Unheated Basement		(/sf)
R-0	-1.38	.25
R-11 flr	-1.49	.07
R-19 flr	-1.51	.02
R-30 flr	-1.53	-.01
Intercept		-.085
Slope(DD)		104.06
Curve(DDS)		-7.533

Crawl		(/sf)
R-0	.00	2.54
R-11 flr	-1.14	.64
R-19 flr	-1.26	.44
R-30 flr	-1.33	.33
R-38 flr	-1.35	.30
R-49 flr	-1.39	.22
Intercept		.097
Slope(DD)		255.93
Curve(DDS)		43.048

Infiltration ELF Ach		(/sf flr)
.0007(.73)	.00	1.07
.0005(.52)	-.63	.55
.0003(.31)	-1.05	.20
Slope/.001ELF		-.000
Curve/.001ELF		2.188

Window U-value		(/sf)
1-Pane	.00	10.29
2-Pane	-1.05	3.00
3-Pane	-1.22	1.80
R-10	-1.43	.40
Slope(DD)		146.96
Curve(DDS)		9.201

Base Load = 7.90 MBtu
Typical Load = 2.51 MBtu
Residual Load = .64 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	9.53
R-7	-3.61	3.51
R-11	-4.19	2.55
R-19	-4.71	1.69
R-22	-4.87	1.41
R-30	-5.09	1.04
R-38	-5.22	.82
R-49	-5.32	.67
R-60	-5.38	.57
Slope(DD)		1498.21
Curve(DDS)		18.393

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	5.45
R-7	-.92	2.55
R-11	-1.05	2.14
R-13	-1.20	1.67
R-19	-1.27	1.44
R-27	-1.40	1.03
R-34	-1.48	.78
Slope(DD)		1004.92
Curve(DDS)		1.488

Slab		(/ft)
R-0	-3.16	5.39
R-5 2ft	-3.28	1.22
R-5 4ft	-3.30	.72
R-10 2ft	-3.30	.72
R-10 4ft	-3.31	.22
Intercept		.000
Slope(DD)		-113.86
Curve(DDS)		64.419

Heated Basement		(/ft)
R-0	-1.42	63.39
R-5 4ft	-1.56	58.72
R-5 8ft	-1.58	58.06
R-10 4ft	-1.61	56.89
R-10 8ft	-1.63	56.22
Intercept		53.111
Slope(DD)		318.65
Curve(DDS)		-1.238

Unheated Basement		(/sf)
R-0	-1.42	3.17
R-11 flr	-.81	4.19
R-19 flr	-.79	4.22
R-30 flr	-.77	4.24
Intercept		4.228
Slope(DD)		61.39
Curve(DDS)		-52.245

Crawl		(/sf)
R-0	.00	5.54
R-11 flr	.06	5.63
R-19 flr	-.17	5.25
R-30 flr	-.31	5.02
R-38 flr	-.35	4.96
R-49 flr	-.44	4.80
Intercept		4.261
Slope(DD)		1085.37
Curve(DDS)		-163.147

Infiltration ELF Ach		(/sf flr)
.0007(.68)	.00	9.54
.0005(.49)	-2.86	7.16
.0003(.30)	-6.05	4.50
Slope/.001ELF		16.042
Curve/.001ELF		-3.438

Window U-value		(/sf)
1-Pane	.00	-3.12
2-Pane	-.47	-6.35
3-Pane	-.17	-4.31
R-10	.17	-1.91
Slope(DD)		-879.07
Curve(DDS)		28.817

Base Load = 49.59 MBtu
Typical Load = 37.69 MBtu
Residual Load = 15.31 MBtu

Buffalo NY TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	38.25
R-7	-35.36	15.29
R-11	-41.01	11.62
R-19	-46.08	8.33
R-22	-48.04	7.06
R-30	-50.66	5.35
R-38	-52.24	4.33
R-49	-53.66	3.40
R-60	-54.58	2.81
Slope(DD)		7784.54
Curve(DDS)		-224.877

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	36.62
R-7	-20.90	18.02
R-11	-23.87	15.38
R-13	-27.51	12.14
R-19	-29.31	10.53
R-27	-32.63	7.58
R-34	-34.67	5.76
Slope(DD)		7549.53
Curve(DDS)		-137.921

Slab		(/ft)
R-0	-24.55	57.04
R-5 2ft	-30.49	21.25
R-5 4ft	-32.27	10.53
R-10 2ft	-31.59	14.63
R-10 4ft	-34.11	-.56
Intercept	-32.776	
Slope(DD)	10224.06	
Curve(DDS)	-200.767	

Heated Basement		(/ft)
R-0	-14.70	116.37
R-5 4ft	-20.76	79.87
R-5 8ft	-23.05	66.07
R-10 4ft	-22.39	70.05
R-10 8ft	-25.96	48.54
Intercept	.000	
Slope(DD)	5152.42	
Curve(DDS)	-56.054	

Unheated Basement		(/sf)
R-0	-14.70	12.54
R-11 flr	-32.96	.69
R-19 flr	-38.07	-2.63
R-30 flr	-41.36	-4.77
Intercept	-10.512	
Slope(DD)	7808.84	
Curve(DDS)	-646.020	

Crawl		(/sf)
R-0	.00	22.09
R-11 flr	-34.04	-.01
R-19 flr	-39.75	-3.72
R-30 flr	-43.36	-6.06
R-38 flr	-44.18	-6.60
R-49 flr	-46.56	-8.14
Intercept	-11.643	
Slope(DD)	7175.68	
Curve(DDS)	-116.515	

Infiltration ELF	Ach	(/sf flr)
.0007(.96)	.00	26.14
.0005(.69)	-11.64	18.58
.0003(.43)	-23.17	11.10
Slope/.001ELF		36.721
Curve/.001ELF		.893

Window U-value		(/sf)
1-Pane	.00	180.92
2-Pane	-17.58	85.79
3-Pane	-23.35	54.56
R-10	-30.14	17.83
Slope(DD)		7650.43
Curve(DDS)		-30.202

Base Load = 205.37 MBtu
Typical Load = 73.84 MBtu
Residual Load = 8.90 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.69
R-7	-2.45	1.10
R-11	-2.84	.85
R-19	-3.19	.62
R-22	-3.33	.53
R-30	-3.51	.41
R-38	-3.62	.34
R-49	-3.75	.26
R-60	-3.83	.20
Slope(DD)		587.12
Curve(DDS)		-22.544

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.23
R-7	-.61	.68
R-11	-.70	.61
R-13	-.85	.47
R-19	-.93	.40
R-27	-1.04	.30
R-34	-1.11	.24
Slope(DD)		316.22
Curve(DDS)		-16.249

Slab		(/ft)
R-0	-2.91	-2.27
R-5 2ft	-2.76	-1.37
R-5 4ft	-2.66	-.77
R-10 2ft	-2.72	-1.13
R-10 4ft	-2.58	-.29
Intercept	1.764	
Slope(DD)	-706.77	
Curve(DDS)	30.918	

Heated Basement		(/ft)
R-0	-2.04	2.97
R-5 4ft	-2.37	.98
R-5 8ft	-2.40	.80
R-10 4ft	-2.48	.32
R-10 8ft	-2.47	.38
Intercept	.000	
Slope(DD)	15.59	
Curve(DDS)	1.474	

Unheated Basement		(/sf)
R-0	-2.04	.32
R-11 flr	-.46	1.35
R-19 flr	.03	1.66
R-30 flr	.34	1.87
Intercept	2.421	
Slope(DD)	-760.52	
Curve(DDS)	68.392	

Crawl		(/sf)
R-0	.00	1.64
R-11 flr	.94	2.25
R-19 flr	1.10	2.36
R-30 flr	1.30	2.49
R-38 flr	1.35	2.52
R-49 flr	1.48	2.61
Intercept	2.734	
Slope(DD)	-336.42	
Curve(DDS)	24.184	

Infiltration ELF	Ach	(/sf flr)
.0007(.70)	.00	.24
.0005(.50)	-.13	.15
.0003(.30)	-.24	.08
Slope/.001ELF		.227
Curve/.001ELF		.162

Window U-value		(/sf)
1-Pane	.00	.64
2-Pane	-.04	.43
3-Pane	-.07	.28
R-10	-.10	.10
Slope(DD)		46.09
Curve(DDS)		-.820

Base Load = 9.23 MBtu
Typical Load = 2.14 MBtu
Residual Load = -1.92 MBtu

Buffalo NY TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	40.17
R-7	-14.72	15.63
R-11	-17.07	11.72
R-19	-19.18	8.20
R-22	-19.94	6.93
R-30	-20.96	5.24
R-38	-21.57	4.22
R-49	-22.10	3.32
R-60	-22.45	2.75
Slope(DD)		7564.10
Curve(DDS)		-133.141

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	36.20
R-7	-9.03	17.26
R-11	-10.31	14.57
R-13	-11.81	11.42
R-19	-12.55	9.86
R-27	-13.88	7.08
R-34	-14.69	5.37
Slope(DD)		6960.26
Curve(DDS)		-42.685

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-11.96	62.17	
R-5 2ft	-13.45	24.92	
R-5 4ft	-13.87	14.42	
R-10 2ft	-13.71	18.42	
R-10 4ft	-14.30	3.67	
Intercept		-26.623	
Slope(DD)		9453.89	
Curve(DDS)		-140.507	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-8.62	145.67	
R-5 4ft	-10.78	91.67	
R-5 8ft	-11.45	74.92	
R-10 4ft	-11.30	78.67	
R-10 8ft	-12.28	54.17	
Intercept		.000	
Slope(DD)		5591.85	
Curve(DDS)		-48.673	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-8.62	9.71	
R-11 flr	-13.04	2.34	
R-19 flr	-14.55	-.17	
R-30 flr	-15.52	-1.79	
Intercept		-6.282	
Slope(DD)		6180.86	
Curve(DDS)		-597.118	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	24.08	
R-11 flr	-12.67	2.96	
R-19 flr	-14.77	-.54	
R-30 flr	-16.10	-2.75	
R-38 flr	-16.40	-3.26	
R-49 flr	-17.27	-4.71	
Intercept		-7.997	
Slope(DD)		6736.84	
Curve(DDS)		-93.956	

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(***)		.00	24.62	
.0005(.72)	-8.89		17.21	
.0003(.43)	-17.42		10.10	
Slope/.001ELF			32.541	
Curve/.001ELF			3.750	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	169.67
2-Pane	-13.41	76.54
3-Pane	-17.45	48.46
R-10	-22.21	15.43
Slope(DD)		6574.70
Curve(DDS)		-5.600

Base Load = 101.66 MBtu
Typical Load = 34.46 MBtu
Residual Load = .98 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.52
R-7	-.92	.99
R-11	-1.07	.74
R-19	-1.20	.52
R-22	-1.25	.44
R-30	-1.31	.34
R-38	-1.35	.27
R-49	-1.39	.21
R-60	-1.41	.17
Slope(DD)		486.30
Curve(DDS)		-10.217

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.05
R-7	-.22	.60
R-11	-.25	.53
R-13	-.32	.39
R-19	-.35	.32
R-27	-.38	.26
R-34	-.40	.22
Slope(DD)		268.16
Curve(DDS)		-13.359

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-1.13	-8.32	
R-5 2ft	-1.07	-6.82	
R-5 4ft	-1.03	-5.82	
R-10 2ft	-1.05	-6.32	
R-10 4ft	-1.03	-5.82	
Intercept		-4.469	
Slope(DD)		-373.61	
Curve(DDS)		2.732	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.78	.43	
R-5 4ft	-.84	-1.07	
R-5 8ft	-.79	.18	
R-10 4ft	-.85	-1.32	
R-10 8ft	-.83	-.82	
Intercept		.000	
Slope(DD)		-89.09	
Curve(DDS)		2.489	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-.78	.03	
R-11 flr	-.10	1.16	
R-19 flr	.15	1.58	
R-30 flr	.31	1.85	
Intercept		2.595	
Slope(DD)		-1035.61	
Curve(DDS)		104.338	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	1.33	
R-11 flr	.47	2.11	
R-19 flr	.56	2.26	
R-30 flr	.66	2.42	
R-38 flr	.68	2.46	
R-49 flr	.74	2.57	
Intercept		2.747	
Slope(DD)		-444.45	
Curve(DDS)		32.724	

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.70)		.00	.20	
.0005(.50)	-.07		.15	
.0003(.30)	-.14		.09	
Slope/.001ELF			.292	
Curve/.001ELF			.000	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-2.04
2-Pane	.08	-1.48
3-Pane	.15	-.97
R-10	.24	-.37
Slope(DD)		-165.14
Curve(DDS)		3.333

Base Load = 6.77 MBtu
Typical Load = 4.24 MBtu
Residual Load = 2.14 MBtu

Buffalo NY TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	39.22
R-7	-14.43	15.17
R-11	-16.73	11.34
R-19	-18.80	7.89
R-22	-19.53	6.66
R-30	-20.52	5.03
R-38	-21.11	4.04
R-49	-21.62	3.19
R-60	-21.94	2.65
Slope(DD)	7249.66	
Curve(DDS)	-107.013	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	36.54
R-7	-6.12	17.22
R-11	-6.99	14.47
R-13	-7.99	11.32
R-19	-8.49	9.75
R-27	-9.36	7.00
R-34	-9.90	5.31
Slope(DD)	6840.95	
Curve(DDS)	-8.977	

Slab		(/ft)
R-0	-13.03	77.30
R-5 2ft	-14.20	38.47
R-5 4ft	-14.55	26.97
R-10 2ft	-14.41	31.47
R-10 4ft	-14.89	15.64
Intercept	-17.417	
Slope(DD)	10370.65	
Curve(DDS)	-175.171	

Heated Basement		(/ft)
R-0	-10.29	168.80
R-5 4ft	-12.25	103.30
R-5 8ft	-12.83	84.14
R-10 4ft	-12.71	88.14
R-10 8ft	-13.54	60.47
Intercept	.000	
Slope(DD)	6183.67	
Curve(DDS)	-48.985	

Unheated Basement		(/sf)
R-0	-10.29	8.44
R-11 flr	-13.84	2.52
R-19 flr	-15.16	.32
R-30 flr	-16.00	-1.08
Intercept	-5.041	
Slope(DD)	5463.17	
Curve(DDS)	-552.698	

Crawl		(/sf)
R-0	.00	25.59
R-11 flr	-12.91	4.07
R-19 flr	-15.03	.54
R-30 flr	-16.37	-1.69
R-38 flr	-16.67	-2.19
R-49 flr	-17.55	-3.66
Intercept	-6.956	
Slope(DD)	6755.34	
Curve(DDS)	-79.649	

Infiltration ELF	Ach	(/sf flr)
.0007	(***) .00	24.57
.0005	(.72) -8.88	17.17
.0003	(.43) -17.40	10.07
Slope/.001ELF	32.437	
Curve/.001ELF	3.802	

Window U-value		(/sf)
1-Pane	.00	169.02
2-Pane	-13.54	75.00
3-Pane	-17.51	47.41
R-10	-22.19	14.96
Slope(DD)	6356.96	
Curve(DDS)	1.722	

Base Load = 96.20 MBtu
Typical Load = 31.93 MBtu
Residual Load = 1.00 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.34
R-7	-.87	.89
R-11	-1.01	.66
R-19	-1.14	.45
R-22	-1.17	.39
R-30	-1.23	.30
R-38	-1.26	.24
R-49	-1.30	.18
R-60	-1.32	.14
Slope(DD)	416.08	
Curve(DDS)	-3.494	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	.92
R-7	-.15	.45
R-11	-.17	.38
R-13	-.20	.29
R-19	-.22	.24
R-27	-.23	.18
R-34	-.25	.14
Slope(DD)	178.54	
Curve(DDS)	-1.502	

Slab		(/ft)
R-0	-.79	-4.40
R-5 2ft	-.74	-2.90
R-5 4ft	-.72	-2.07
R-10 2ft	-.74	-2.57
R-10 4ft	-.69	-1.07
Intercept	2.477	
Slope(DD)	-1246.66	
Curve(DDS)	56.469	

Heated Basement		(/ft)
R-0	-.63	.93
R-5 4ft	-.67	-.57
R-5 8ft	-.67	-.40
R-10 4ft	-.68	-.90
R-10 8ft	-.67	-.57
Intercept	.000	
Slope(DD)	-82.18	
Curve(DDS)	2.643	

Unheated Basement		(/sf)
R-0	-.63	.05
R-11 flr	-.17	.80
R-19 flr	-.01	1.08
R-30 flr	.10	1.26
Intercept	1.767	
Slope(DD)	-694.92	
Curve(DDS)	70.105	

Crawl		(/sf)
R-0	.00	1.10
R-11 flr	.34	1.65
R-19 flr	.41	1.77
R-30 flr	.47	1.88
R-38 flr	.49	1.90
R-49 flr	.53	1.98
Intercept	2.112	
Slope(DD)	-317.10	
Curve(DDS)	23.231	

Infiltration ELF	Ach	(/sf flr)
.0007	(.70) .00	.02
.0005	(.50) -.05	-.02
.0003	(.30) -.06	-.04
Slope/.001ELF	-.229	
Curve/.001ELF	.365	

Window U-value		(/sf)
1-Pane	.00	-2.77
2-Pane	.07	-2.25
3-Pane	.19	-1.48
R-10	.32	-.58
Slope(DD)	-260.24	
Curve(DDS)	5.887	

Base Load = 5.82 MBtu
Typical Load = 3.70 MBtu
Residual Load = 1.98 MBtu

Burlington VT TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	42.17
R-7	-38.85	16.94
R-11	-45.06	12.91
R-19	-50.63	9.29
R-22	-52.81	7.88
R-30	-55.73	5.98
R-38	-57.49	4.84
R-49	-59.08	3.80
R-60	-60.11	3.14
Slope(DD)		8707.19
Curve(DDS)		-269.002

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	40.42
R-7	-22.98	19.97
R-11	-26.25	17.06
R-13	-30.28	13.47
R-19	-32.28	11.70
R-27	-35.96	8.42
R-34	-38.22	6.41
Slope(DD)		8401.19
Curve(DDS)		-164.760

Slab	Delta Component (MBtu)	(/ft)
R-0	-24.45	67.28
R-5 2ft	-31.36	25.65
R-5 4ft	-33.42	13.24
R-10 2ft	-32.65	17.88
R-10 4ft	-35.54	.47
Intercept		-35.793
Slope(DD)		11229.48
Curve(DDS)		-197.484

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-13.68	132.16
R-5 4ft	-20.69	89.93
R-5 8ft	-23.26	74.45
R-10 4ft	-22.56	78.66
R-10 8ft	-26.59	54.39
Intercept		.000
Slope(DD)		5641.92
Curve(DDS)		-58.748

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-13.68	14.25
R-11 flr	-34.15	.95
R-19 flr	-39.90	-2.78
R-30 flr	-43.60	-5.18
Intercept		-11.649
Slope(DD)		8792.64
Curve(DDS)		-729.907

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	23.13
R-11 flr	-35.62	-.00
R-19 flr	-41.83	-4.03
R-30 flr	-45.82	-6.62
R-38 flr	-46.73	-7.22
R-49 flr	-49.36	-8.92
Intercept		-12.822
Slope(DD)		8031.50
Curve(DDS)		-199.070

Infiltration ELF	Ach	(/sf flr)
.0007	(.81) .00	24.90
.0005	(.58) -11.13	17.67
.0003	(.35) -22.12	10.53
Slope/.001ELF		34.773
Curve/.001ELF		1.136

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	192.28
2-Pane	-18.16	94.01
3-Pane	-24.46	59.94
R-10	-31.86	19.88
Slope(DD)		8565.09
Curve(DDS)		-48.552

Base Load = 216.81 MBtu
Typical Load = 77.06 MBtu
Residual Load = 11.20 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.25
R-7	-2.96	1.33
R-11	-3.44	1.02
R-19	-3.86	.75
R-22	-4.04	.63
R-30	-4.28	.47
R-38	-4.43	.38
R-49	-4.54	.31
R-60	-4.61	.26
Slope(DD)		701.65
Curve(DDS)		-25.782

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.39
R-7	-.70	.77
R-11	-.80	.68
R-13	-.97	.53
R-19	-1.06	.45
R-27	-1.18	.34
R-34	-1.26	.27
Slope(DD)		352.00
Curve(DDS)		-17.304

Slab	Delta Component (MBtu)	(/ft)
R-0	-2.56	-2.97
R-5 2ft	-2.38	-1.89
R-5 4ft	-2.28	-1.28
R-10 2ft	-2.34	-1.65
R-10 4ft	-2.23	-.98
Intercept		.512
Slope(DD)		-477.19
Curve(DDS)		15.144

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-1.79	1.67
R-5 4ft	-2.04	.16
R-5 8ft	-2.02	.28
R-10 4ft	-2.09	-.14
R-10 8ft	-2.08	-.08
Intercept		.000
Slope(DD)		-22.60
Curve(DDS)		1.574

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-1.79	.18
R-11 flr	-.21	1.21
R-19 flr	.23	1.49
R-30 flr	.51	1.67
Intercept		2.165
Slope(DD)		-667.76
Curve(DDS)		54.732

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	1.34
R-11 flr	.94	1.95
R-19 flr	1.06	2.03
R-30 flr	1.19	2.12
R-38 flr	1.22	2.13
R-49 flr	1.31	2.19
Intercept		2.266
Slope(DD)		-199.55
Curve(DDS)		3.782

Infiltration ELF	Ach	(/sf flr)
.0007	(.56) .00	.19
.0005	(.40) -.07	.14
.0003	(.24) -.15	.09
Slope/.001ELF		.325
Curve/.001ELF		-.081

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-.03
2-Pane	.05	.24
3-Pane	.04	.17
R-10	.02	.08
Slope(DD)		38.23
Curve(DDS)		-1.486

Base Load = 9.09 MBtu
Typical Load = 1.54 MBtu
Residual Load = -2.09 MBtu

Burlington VT TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	44.30
R-7	-16.18	17.33
R-11	-18.76	13.03
R-19	-21.08	9.16
R-22	-21.93	7.75
R-30	-23.06	5.86
R-38	-23.75	4.71
R-49	-24.35	3.72
R-60	-24.73	3.08
Slope(DD)	8475.64	
Curve(DDS)	-169.359	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	39.80
R-7	-9.86	19.11
R-11	-11.26	16.17
R-13	-12.92	12.67
R-19	-13.75	10.94
R-27	-15.21	7.87
R-34	-16.11	5.99
Slope(DD)	7763.74	
Curve(DDS)	-67.729	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-12.17	71.57
R-5 2ft	-13.89	28.57
R-5 4ft	-14.37	16.57
R-10 2ft	-14.20	20.82
R-10 4ft	-14.85	4.57
Intercept	-28.240	
Slope(DD)	9904.23	
Curve(DDS)	-106.941	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-8.49	163.57
R-5 4ft	-10.98	101.32
R-5 8ft	-11.73	82.57
R-10 4ft	-11.58	86.32
R-10 8ft	-12.66	59.32
Intercept	.000	
Slope(DD)	5954.78	
Curve(DDS)	-47.318	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-8.49	10.90
R-11 flr	-13.45	2.64
R-19 flr	-15.14	-.18
R-30 flr	-16.23	-2.00
Intercept	-7.032	
Slope(DD)	6927.09	
Curve(DDS)	-668.759	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	25.05
R-11 flr	-13.14	3.15
R-19 flr	-15.41	-.63
R-30 flr	-16.84	-3.02
R-38 flr	-17.17	-3.56
R-49 flr	-18.11	-5.14
Intercept	-8.761	
Slope(DD)	7419.60	
Curve(DDS)	-160.929	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.83)	.00	23.19
.0005(.59)	-8.45	16.15
.0003(.36)	-16.50	9.44
Slope/.001ELF	30.208	
Curve/.001ELF	4.167	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	177.02
2-Pane	-13.77	81.40
3-Pane	-18.06	51.62
R-10	-23.10	16.61
Slope(DD)	7095.28	
Curve(DDS)	-14.767	

Base Load = 105.13 MBtu
Typical Load = 34.43 MBtu
Residual Load = 2.67 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.02
R-7	-1.11	1.17
R-11	-1.28	.88
R-19	-1.44	.62
R-22	-1.51	.50
R-30	-1.60	.36
R-38	-1.65	.27
R-49	-1.66	.24
R-60	-1.67	.23
Slope(DD)	552.88	
Curve(DDS)	-7.467	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.32
R-7	-.27	.75
R-11	-.31	.67
R-13	-.38	.52
R-19	-.41	.46
R-27	-.47	.34
R-34	-.50	.27
Slope(DD)	354.11	
Curve(DDS)	-20.345	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-1.01	-8.72
R-5 2ft	-.93	-6.72
R-5 4ft	-.91	-6.22
R-10 2ft	-.93	-6.72
R-10 4ft	-.87	-5.22
Intercept	-2.508	
Slope(DD)	-932.79	
Curve(DDS)	34.214	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-.70	-.97
R-5 4ft	-.73	-1.72
R-5 8ft	-.71	-1.22
R-10 4ft	-.73	-1.72
R-10 8ft	-.71	-1.22
Intercept	.000	
Slope(DD)	-139.88	
Curve(DDS)	2.858	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.70	-.06
R-11 flr	.00	1.10
R-19 flr	.19	1.42
R-30 flr	.31	1.62
Intercept	2.159	
Slope(DD)	-732.58	
Curve(DDS)	58.298	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	1.10
R-11 flr	.38	1.74
R-19 flr	.41	1.79
R-30 flr	.46	1.87
R-38 flr	.47	1.89
R-49 flr	.50	1.94
Intercept	1.979	
Slope(DD)	-145.46	
Curve(DDS)	-4.979	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.56)	.00	.12
.0005(.40)	-.04	.08
.0003(.24)	-.08	.05
Slope/.001ELF	.167	
Curve/.001ELF	.000	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-3.02
2-Pane	.13	-2.12
3-Pane	.24	-1.39
R-10	.36	-.52
Slope(DD)	-233.21	
Curve(DDS)	4.495	

Base Load = 6.31 MBtu
Typical Load = 3.61 MBtu
Residual Load = 1.92 MBtu

Burlington VT TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	43.13
R-7	-15.81	16.77
R-11	-18.34	12.57
R-19	-20.60	8.79
R-22	-21.42	7.42
R-30	-22.52	5.59
R-38	-23.18	4.49
R-49	-23.74	3.56
R-60	-24.10	2.96
Slope(DD)		8092.48
Curve(DDS)		-138.017

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	40.14
R-7	-6.72	18.94
R-11	-7.68	15.93
R-13	-8.78	12.43
R-19	-9.33	10.70
R-27	-10.28	7.70
R-34	-10.87	5.85
Slope(DD)		7527.35
Curve(DDS)		-12.101

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-13.37	91.14
R-5 2ft	-14.73	45.97
R-5 4ft	-15.13	32.64
R-10 2ft	-14.97	37.81
R-10 4ft	-15.53	19.31
Intercept		-18.629
Slope(DD)		11666.81
Curve(DDS)		-184.889

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-10.36	191.47
R-5 4ft	-12.62	116.31
R-5 8ft	-13.27	94.64
R-10 4ft	-13.14	98.81
R-10 8ft	-14.08	67.64
Intercept		.000
Slope(DD)		6748.76
Curve(DDS)		-49.912

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-10.36	9.57
R-11 flr	-14.34	2.95
R-19 flr	-15.82	.48
R-30 flr	-16.77	-1.11
Intercept		-5.574
Slope(DD)		6167.77
Curve(DDS)		-626.709

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	26.84
R-11 flr	-13.40	4.51
R-19 flr	-15.69	.68
R-30 flr	-17.15	-1.75
R-38 flr	-17.48	-2.30
R-49 flr	-18.44	-3.90
Intercept		-7.557
Slope(DD)		7500.72
Curve(DDS)		-154.621

Infiltration ELF	Ach	Component (KBtu/sf flr)
.0007(.81)	.00	22.99
.0005(.59)	-8.45	15.95
.0003(.36)	-16.44	9.28
Slope/.001ELF		29.520
Curve/.001ELF		4.740

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	177.02
2-Pane	-13.97	80.00
3-Pane	-18.20	50.66
R-10	-23.16	16.15
Slope(DD)		6881.48
Curve(DDS)		-6.679

Base Load = 99.28 MBtu
Typical Load = 31.73 MBtu
Residual Load = 2.94 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.20
R-7	-1.13	1.31
R-11	-1.31	1.01
R-19	-1.47	.74
R-22	-1.54	.63
R-30	-1.64	.47
R-38	-1.69	.37
R-49	-1.74	.30
R-60	-1.77	.26
Slope(DD)		697.72
Curve(DDS)		-26.648

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	1.03
R-7	-.15	.56
R-11	-.17	.50
R-13	-.21	.38
R-19	-.22	.32
R-27	-.25	.25
R-34	-.26	.20
Slope(DD)		254.02
Curve(DDS)		-11.500

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-.66	-3.70
R-5 2ft	-.62	-2.03
R-5 4ft	-.57	-.53
R-10 2ft	-.60	-1.53
R-10 4ft	-.53	.80
Intercept		6.486
Slope(DD)		-1972.86
Curve(DDS)		94.518

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.54	.63
R-5 4ft	-.57	-.37
R-5 8ft	-.56	-.20
R-10 4ft	-.57	-.53
R-10 8ft	-.56	-.37
Intercept		.000
Slope(DD)		-49.75
Curve(DDS)		1.614

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.54	.03
R-11 flr	-.10	.77
R-19 flr	.06	1.02
R-30 flr	.16	1.19
Intercept		1.654
Slope(DD)		-639.46
Curve(DDS)		63.002

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.92
R-11 flr	.38	1.56
R-19 flr	.45	1.67
R-30 flr	.57	1.88
R-38 flr	.60	1.92
R-49 flr	.68	2.06
Intercept		2.226
Slope(DD)		-496.78
Curve(DDS)		47.386

Infiltration ELF	Ach	Component (KBtu/sf flr)
.0007(.56)	.00	-.09
.0005(.40)	-.05	-.13
.0003(.24)	-.04	-.12
Slope/.001ELF		-.604
Curve/.001ELF		.677

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-3.61
2-Pane	.14	-2.64
3-Pane	.27	-1.73
R-10	.42	-.66
Slope(DD)		-294.85
Curve(DDS)		5.986

Base Load = 5.39 MBtu
Typical Load = 2.99 MBtu
Residual Load = 1.63 MBtu

Charleston SC WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	14.45
R-7	-13.49	5.69
R-11	-15.65	4.29
R-19	-17.58	3.04
R-22	-18.31	2.56
R-30	-19.30	1.92
R-38	-19.89	1.54
R-49	-20.36	1.23
R-60	-20.66	1.04
Slope(DD)		2809.71
Curve(DDS)		-62.746

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	12.25
R-7	-7.35	5.71
R-11	-8.40	4.78
R-13	-9.67	3.64
R-19	-10.30	3.08
R-27	-11.23	2.26
R-34	-11.80	1.75
Slope(DD)		2195.23
Curve(DDS)		15.391

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-10.16	34.26	
R-5 2ft	-12.17	22.16	
R-5 4ft	-12.64	19.32	
R-10 2ft	-12.50	20.17	
R-10 4ft	-13.09	16.61	
Intercept		10.145	
Slope(DD)		1891.66	
Curve(DDS)		31.067	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-7.08	52.82	
R-5 4ft	-10.00	35.23	
R-5 8ft	-10.81	30.35	
R-10 4ft	-10.70	31.01	
R-10 8ft	-11.73	24.81	
Intercept		10.943	
Slope(DD)		1414.18	
Curve(DDS)		-8.795	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-7.08	5.69	
R-11 flr	-11.88	2.58	
R-19 flr	-13.08	1.80	
R-30 flr	-13.85	1.30	
Intercept		-.020	
Slope(DD)		1776.59	
Curve(DDS)		-129.158	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	10.29	
R-11 flr	-11.08	3.10	
R-19 flr	-12.77	2.00	
R-30 flr	-13.64	1.43	
R-38 flr	-13.84	1.30	
R-49 flr	-14.41	.93	
Intercept		.000	
Slope(DD)		1766.58	
Curve(DDS)		46.877	

Infiltration ELF	Ach	(/sf flr)
.0007(.71)	.00	5.79
.0005(.53)	-3.26	3.67
.0003(.32)	-5.95	1.93
Slope/.001ELF		5.032
Curve/.001ELF		4.627

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	45.91	
2-Pane	-5.53	15.99	
3-Pane	-6.67	9.85	
R-10	-8.00	2.62	
Slope(DD)		1054.92	
Curve(DDS)		25.920	

Base Load = 63.26 MBtu
Typical Load = 22.94 MBtu
Residual Load = -.18 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		8.49
R-7	-8.37		3.05
R-11	-9.71		2.18
R-19	-10.91		1.40
R-22	-11.27		1.17
R-30	-11.75		.86
R-38	-12.04		.67
R-49	-12.22		.55
R-60	-12.34		.47
Slope(DD)			1219.54
Curve(DDS)			35.707

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		3.90
R-7	-2.71		1.49
R-11	-3.10		1.14
R-13	-3.51		.78
R-19	-3.71		.60
R-27	-3.87		.46
R-34	-3.97		.37
Slope(DD)			381.44
Curve(DDS)			63.990

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-6.16	-42.54	
R-5 2ft	-6.10	-42.18	
R-5 4ft	-5.99	-41.51	
R-10 2ft	-6.08	-42.06	
R-10 4ft	-5.94	-41.21	
Intercept		-39.154	
Slope(DD)		-756.41	
Curve(DDS)		40.971	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.70	-21.69	
R-5 4ft	-2.89	-22.84	
R-5 8ft	-2.85	-22.60	
R-10 4ft	-2.94	-23.14	
R-10 8ft	-2.90	-22.90	
Intercept		-22.612	
Slope(DD)		-44.29	
Curve(DDS)		1.730	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-2.70	-2.34	
R-11 flr	-.77	-1.09	
R-19 flr	-.33	-.80	
R-30 flr	-.04	-.61	
Intercept		-.131	
Slope(DD)		-642.35	
Curve(DDS)		41.332	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		-.59
R-11 flr	.92		.01
R-19 flr	.92		.01
R-30 flr	.94		.03
R-38 flr	.95		.03
R-49 flr	.97		.04
Intercept			.000
Slope(DD)			60.08
Curve(DDS)			-33.961

Infiltration ELF	Ach	(/sf flr)
.0007(.53)	.00	3.64
.0005(.39)	-1.55	2.63
.0003(.23)	-3.14	1.60
Slope/.001ELF		5.422
Curve/.001ELF		-.325

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		-7.28
2-Pane	.15		-6.47
3-Pane	.55		-4.28
R-10	1.03		-1.71
Slope(DD)			-770.65
Curve(DDS)			18.742

Base Load = 42.15 MBtu
Typical Load = 27.51 MBtu
Residual Load = 9.38 MBtu

Charleston SC WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	14.96
R-7	-5.67	5.50
R-11	-6.58	3.99
R-19	-7.39	2.64
R-22	-7.65	2.21
R-30	-7.99	1.64
R-38	-8.20	1.29
R-49	-8.35	1.05
R-60	-8.44	.89
Slope(DD)		2342.91
Curve(DDS)		30.303

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	11.48
R-7	-3.18	4.81
R-11	-3.63	3.86
R-13	-4.10	2.88
R-19	-4.33	2.39
R-27	-4.65	1.73
R-34	-4.84	1.32
Slope(DD)		1582.34
Curve(DDS)		102.731

Slab		(/ft)
R-0	-4.38	22.65
R-5 2ft	-4.79	12.40
R-5 4ft	-4.87	10.40
R-10 2ft	-4.84	11.15
R-10 4ft	-4.93	8.90
Intercept		6.010
Slope(DD)		606.02
Curve(DDS)		85.990

Heated Basement		(/ft)
R-0	-3.49	44.90
R-5 4ft	-4.30	24.65
R-5 8ft	-4.46	20.65
R-10 4ft	-4.45	20.90
R-10 8ft	-4.62	16.65
Intercept		8.485
Slope(DD)		715.65
Curve(DDS)		5.485

Unheated Basement		(/sf)
R-0	-3.49	2.99
R-11 flr	-4.49	1.33
R-19 flr	-4.75	.89
R-30 flr	-4.92	.61
Intercept		-.135
Slope(DD)		1008.29
Curve(DDS)		-77.650

Crawl		(/sf)
R-0	.00	8.81
R-11 flr	-3.83	2.43
R-19 flr	-4.36	1.54
R-30 flr	-4.63	1.10
R-38 flr	-4.69	.99
R-49 flr	-4.87	.70
Intercept		.000
Slope(DD)		1315.64
Curve(DDS)		78.491

Infiltration ELF (Ach)		(/sf flr)
.0007(.74)	.00	4.35
.0005(.53)	-2.39	2.35
.0003(.32)	-4.06	.96
Slope/.001ELF		.958
Curve/.001ELF		7.500

Window U-value		(/sf)
1-Pane	.00	39.85
2-Pane	-3.83	13.25
3-Pane	-4.57	8.12
R-10	-5.44	2.07
Slope(DD)		819.69
Curve(DDS)		26.128

Base Load = 28.75 MBtu
Typical Load = 11.51 MBtu
Residual Load = 2.89 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	7.80
R-7	-3.09	2.64
R-11	-3.59	1.82
R-19	-4.03	1.08
R-22	-4.13	.92
R-30	-4.25	.71
R-38	-4.33	.58
R-49	-4.43	.42
R-60	-4.49	.31
Slope(DD)		913.36
Curve(DDS)		67.726

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.03
R-7	-.93	1.08
R-11	-1.06	.80
R-13	-1.17	.58
R-19	-1.22	.47
R-27	-1.29	.33
R-34	-1.33	.24
Slope(DD)		254.05
Curve(DDS)		57.458

Slab		(/ft)
R-0	-2.22	-75.26
R-5 2ft	-2.19	-74.51
R-5 4ft	-2.13	-73.01
R-10 2ft	-2.18	-74.26
R-10 4ft	-2.12	-72.76
Intercept		-69.110
Slope(DD)		-1304.48
Curve(DDS)		67.956

Heated Basement		(/ft)
R-0	-.78	-39.26
R-5 4ft	-.79	-39.51
R-5 8ft	-.78	-39.26
R-10 4ft	-.81	-40.01
R-10 8ft	-.76	-38.76
Intercept		-36.999
Slope(DD)		-224.43
Curve(DDS)		4.268

Unheated Basement		(/sf)
R-0	-.78	-2.62
R-11 flr	-.02	-1.35
R-19 flr	.21	-.98
R-30 flr	.35	-.73
Intercept		-.078
Slope(DD)		-894.86
Curve(DDS)		77.946

Crawl		(/sf)
R-0	.00	-1.32
R-11 flr	.62	-.28
R-19 flr	.67	-.20
R-30 flr	.72	-.12
R-38 flr	.73	-.10
R-49 flr	.76	-.05
Intercept		.000
Slope(DD)		-136.58
Curve(DDS)		-23.441

Infiltration ELF (Ach)		(/sf flr)
.0007(.53)	.00	2.94
.0005(.39)	-1.02	2.09
.0003(.24)	-2.03	1.25
Slope/.001ELF		4.125
Curve/.001ELF		.104

Window U-value		(/sf)
1-Pane	.00	-14.41
2-Pane	.36	-11.91
3-Pane	.94	-7.85
R-10	1.63	-3.09
Slope(DD)		-1387.35
Curve(DDS)		31.881

Base Load = 28.06 MBtu
Typical Load = 22.57 MBtu
Residual Load = 11.94 MBtu

Charleston SC WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	14.70
R-7	-5.66	5.27
R-11	-6.56	3.76
R-19	-7.38	2.41
R-22	-7.61	2.01
R-30	-7.93	1.49
R-38	-8.12	1.17
R-49	-8.25	.94
R-60	-8.34	.80
Slope(DD)		2098.79
Curve(DDS)		64.225

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	11.26
R-7	-2.13	4.55
R-11	-2.43	3.60
R-13	-2.73	2.65
R-19	-2.88	2.18
R-27	-3.07	1.57
R-34	-3.19	1.20
Slope(DD)		1399.24
Curve(DDS)		129.276

Slab		(/ft)
R-0	-4.81	24.07
R-5 2ft	-5.15	12.74
R-5 4ft	-5.20	10.91
R-10 2ft	-5.18	11.57
R-10 4ft	-5.25	9.41
Intercept		7.347
Slope(DD)		253.31
Curve(DDS)		119.272

Heated Basement		(/ft)
R-0	-4.16	45.74
R-5 4ft	-4.89	21.41
R-5 8ft	-5.00	17.57
R-10 4ft	-4.99	17.91
R-10 8ft	-5.14	12.91
Intercept		4.949
Slope(DD)		670.13
Curve(DDS)		9.492

Unheated Basement		(/sf)
R-0	-4.16	2.29
R-11 flr	-4.94	.97
R-19 flr	-5.15	.62
R-30 flr	-5.29	.40
Intercept		-.204
Slope(DD)		812.27
Curve(DDS)		-63.658

Crawl		(/sf)
R-0	.00	9.21
R-11 flr	-4.13	2.34
R-19 flr	-4.68	1.41
R-30 flr	-4.91	1.03
R-38 flr	-4.97	.94
R-49 flr	-5.12	.68
Intercept		.000
Slope(DD)		1182.85
Curve(DDS)		119.695

Infiltration ELF	Ach	(/sf flr)
.0007	(.74) .00	4.19
.0005	(.53) -2.38	2.21
.0003	(.32) -4.00	.85
Slope/.001ELF		.479
Curve/.001ELF		7.865

Window U-value		(/sf)
1-Pane	.00	39.09
2-Pane	-3.88	12.18
3-Pane	-4.56	7.39
R-10	-5.38	1.76
Slope(DD)		678.32
Curve(DDS)		30.392

Base Load = 26.98 MBtu
Typical Load = 10.66 MBtu
Residual Load = 3.22 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.10
R-7	-2.79	2.45
R-11	-3.23	1.71
R-19	-3.64	1.04
R-22	-3.74	.87
R-30	-3.87	.65
R-38	-3.95	.51
R-49	-4.02	.40
R-60	-4.06	.33
Slope(DD)		882.25
Curve(DDS)		53.184

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.48
R-7	-.61	.56
R-11	-.69	.29
R-13	-.74	.14
R-19	-.76	.07
R-27	-.78	.03
R-34	-.78	.00
Slope(DD)		-83.82
Curve(DDS)		101.357

Slab		(/ft)
R-0	-1.61	-80.04
R-5 2ft	-1.58	-79.04
R-5 4ft	-1.58	-78.88
R-10 2ft	-1.60	-79.71
R-10 4ft	-1.55	-78.04
Intercept		-75.592
Slope(DD)		-970.47
Curve(DDS)		51.829

Heated Basement		(/ft)
R-0	-.60	-46.54
R-5 4ft	-.59	-46.04
R-5 8ft	-.59	-46.04
R-10 4ft	-.60	-46.54
R-10 8ft	-.59	-46.21
Intercept		-46.593
Slope(DD)		41.13
Curve(DDS)		-1.014

Unheated Basement		(/sf)
R-0	-.60	-2.33
R-11 flr	.13	-1.11
R-19 flr	.28	-.85
R-30 flr	.38	-.69
Intercept		-.263
Slope(DD)		-560.76
Curve(DDS)		30.871

Crawl		(/sf)
R-0	.00	-1.32
R-11 flr	.76	-.05
R-19 flr	.79	-.00
R-30 flr	.80	.02
R-38 flr	.80	.02
R-49 flr	.81	.04
Intercept		.000
Slope(DD)		75.03
Curve(DDS)		-64.782

Infiltration ELF	Ach	(/sf flr)
.0007	(.53) .00	2.72
.0005	(.39) -1.01	1.88
.0003	(.23) -1.97	1.09
Slope/.001ELF		3.417
Curve/.001ELF		.677

Window U-value		(/sf)
1-Pane	.00	-13.87
2-Pane	.35	-11.44
3-Pane	.91	-7.54
R-10	1.57	-2.96
Slope(DD)		-1331.57
Curve(DDS)		30.544

Base Load = 25.65 MBtu
Typical Load = 21.06 MBtu
Residual Load = 10.78 MBtu

Cheyenne WY WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	41.67
R-7	-38.46	16.69
R-11	-44.60	12.70
R-19	-50.12	9.12
R-22	-52.26	7.73
R-30	-55.13	5.87
R-38	-56.86	4.74
R-49	-58.42	3.73
R-60	-59.43	3.08
Slope(DD)	8537.23	
Curve(DDS)	-254.593	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	39.93
R-7	-22.90	19.55
R-11	-26.16	16.65
R-13	-30.14	13.11
R-19	-32.11	11.35
R-27	-35.68	8.18
R-34	-37.87	6.23
Slope(DD)	8129.91	
Curve(DDS)	-131.322	

Slab		(/ft)
R-0	-23.31	67.11
R-5 2ft	-29.78	28.14
R-5 4ft	-31.72	16.45
R-10 2ft	-31.00	20.79
R-10 4ft	-33.68	4.64
Intercept	-29.669	
Slope(DD)	11734.06	
Curve(DDS)	-242.249	

Heated Basement		(/ft)
R-0	-13.57	125.79
R-5 4ft	-20.01	86.99
R-5 8ft	-22.56	71.63
R-10 4ft	-21.80	76.21
R-10 8ft	-25.68	52.84
Intercept	.000	
Slope(DD)	5926.99	
Curve(DDS)	-69.101	

Unheated Basement		(/sf)
R-0	-13.57	13.56
R-11 flr	-32.98	.96
R-19 flr	-38.47	-2.61
R-30 flr	-42.00	-4.90
Intercept	-11.081	
Slope(DD)	8406.20	
Curve(DDS)	-702.252	

Crawl		(/sf)
R-0	.00	22.37
R-11 flr	-35.06	-.40
R-19 flr	-40.97	-4.23
R-30 flr	-44.60	-6.59
R-38 flr	-45.43	-7.13
R-49 flr	-47.82	-8.68
Intercept	-12.289	
Slope(DD)	7311.10	
Curve(DDS)	-107.654	

Infiltration ELF	Ach	(/sf flr)
.0007	(.96) .00	23.07
.0005	(.70) -10.29	16.39
.0003	(.43) -20.47	9.78
Slope/.001ELF	32.338	
Curve/.001ELF	.893	

Window U-value		(/sf)
1-Pane	.00	196.99
2-Pane	-19.64	90.71
3-Pane	-25.77	57.54
R-10	-32.98	18.52
Slope(DD)	7915.54	
Curve(DDS)	-17.196	

Base Load = 205.76 MBtu
Typical Load = 66.85 MBtu
Residual Load = 10.64 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.43
R-7	-3.26	1.31
R-11	-3.78	.97
R-19	-4.25	.67
R-22	-4.41	.56
R-30	-4.63	.42
R-38	-4.76	.34
R-49	-4.86	.27
R-60	-4.93	.22
Slope(DD)	606.82	
Curve(DDS)	-4.882	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.29
R-7	-.74	.64
R-11	-.84	.55
R-13	-.99	.41
R-19	-1.07	.34
R-27	-1.16	.26
R-34	-1.22	.21
Slope(DD)	258.34	
Curve(DDS)	-3.303	

Slab		(/ft)
R-0	-2.35	-3.29
R-5 2ft	-2.18	-2.26
R-5 4ft	-2.11	-1.84
R-10 2ft	-2.15	-2.08
R-10 4ft	-2.05	-1.48
Intercept	-.176	
Slope(DD)	-466.50	
Curve(DDS)	16.268	

Heated Basement		(/ft)
R-0	-1.75	.33
R-5 4ft	-1.88	-.45
R-5 8ft	-1.86	-.33
R-10 4ft	-1.91	-.64
R-10 8ft	-1.87	-.39
Intercept	.000	
Slope(DD)	-57.04	
Curve(DDS)	1.702	

Unheated Basement		(/sf)
R-0	-1.75	.04
R-11 flr	-.72	.70
R-19 flr	-.42	.90
R-30 flr	-.23	1.02
Intercept	1.359	
Slope(DD)	-459.24	
Curve(DDS)	39.203	

Crawl		(/sf)
R-0	.00	1.17
R-11 flr	.42	1.44
R-19 flr	.45	1.46
R-30 flr	.47	1.47
R-38 flr	.47	1.48
R-49 flr	.48	1.48
Intercept	1.489	
Slope(DD)	-10.10	
Curve(DDS)	-10.090	

Infiltration ELF	Ach	(/sf flr)
.0007	(.59) .00	.15
.0005	(.42) -.08	.10
.0003	(.25) -.15	.06
Slope/.001ELF	.162	
Curve/.001ELF	.081	

Window U-value		(/sf)
1-Pane	.00	1.37
2-Pane	-.11	.77
3-Pane	-.16	.50
R-10	-.22	.17
Slope(DD)	76.54	
Curve(DDS)	-.940	

Base Load = 9.30 MBtu
Typical Load = 1.40 MBtu
Residual Load = -1.81 MBtu

Cheyenne WY WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	Delta Component (KBtu)	(/sf)
R-0	.00		43.46
R-7	-15.99		16.81
R-11	-18.55		12.55
R-19	-20.84		8.73
R-22	-21.65		7.37
R-30	-22.74		5.56
R-38	-23.40		4.46
R-49	-23.96		3.53
R-60	-24.32		2.93
Slope(DD)			8021.12
Curve(DDS)			-116.428

Wall	Delta Component (MBtu)	Delta Component (KBtu)	(/sf)
R-0	.00		38.18
R-7	-9.69		17.85
R-11	-11.07		14.95
R-13	-12.67		11.60
R-19	-13.46		9.94
R-27	-14.78		7.17
R-34	-15.59		5.47
Slope(DD)			6980.25
Curve(DDS)			22.190

Slab			(/ft)
R-0	-11.57		60.96
R-5 2ft	-13.12		22.21
R-5 4ft	-13.53		11.96
R-10 2ft	-13.38		15.71
R-10 4ft	-13.91		2.46
Intercept	-23.512		
Slope(DD)	8410.09		
Curve(DDS)	-37.671		

Heated Basement			(/ft)
R-0	-8.32		142.21
R-5 4ft	-10.60		85.21
R-5 8ft	-11.26		68.71
R-10 4ft	-11.12		72.21
R-10 8ft	-12.03		49.46
Intercept	.000		
Slope(DD)	5300.72		
Curve(DDS)	-41.771		

Unheated Basement			(/sf)
R-0	-8.32		9.48
R-11 flr	-12.85		1.93
R-19 flr	-14.38		-.63
R-30 flr	-15.37		-2.27
Intercept	-6.829		
Slope(DD)	6270.04		
Curve(DDS)	-602.460		

Crawl			(/sf)
R-0	.00		23.35
R-11 flr	-12.71		2.16
R-19 flr	-14.80		-1.32
R-30 flr	-16.01		-3.34
R-38 flr	-16.29		-3.80
R-49 flr	-17.09		-5.13
Intercept	-8.317		
Slope(DD)	6317.77		
Curve(DDS)	-27.814		

Infiltration ELF	Ach		(/sf flr)
.0007	(***)	.00	20.07
.0005	(.71)	-7.78	13.58
.0003	(.44)	-14.84	7.70
Slope/.001ELF			23.416
Curve/.001ELF			7.501

Window U-value			(/sf)
1-Pane	.00		168.95
2-Pane	-14.46		68.54
3-Pane	-18.15		42.94
R-10	-22.48		12.84
Slope(DD)			5368.81
Curve(DDS)			39.053

Base Load = 97.55 MBtu
Typical Load = 27.85 MBtu
Residual Load = 7.27 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	Delta Component (KBtu)	(/sf)
R-0	.00		3.73
R-7	-1.34		1.51
R-11	-1.55		1.15
R-19	-1.74		.83
R-22	-1.82		.70
R-30	-1.92		.53
R-38	-1.98		.43
R-49	-2.03		.34
R-60	-2.07		.28
Slope(DD)			780.91
Curve(DDS)			-25.545

Wall	Delta Component (MBtu)	Delta Component (KBtu)	(/sf)
R-0	.00		1.47
R-7	-.32		.79
R-11	-.37		.69
R-13	-.45		.53
R-19	-.49		.44
R-27	-.54		.34
R-34	-.57		.27
Slope(DD)			349.19
Curve(DDS)			-14.056

Slab			(/ft)
R-0	-.95		-9.15
R-5 2ft	-.88		-7.40
R-5 4ft	-.84		-6.40
R-10 2ft	-.86		-6.90
R-10 4ft	-.80		-5.40
Intercept	-1.714		
Slope(DD)	-1377.10		
Curve(DDS)	63.689		

Heated Basement			(/ft)
R-0	-.63		-1.15
R-5 4ft	-.65		-1.65
R-5 8ft	-.64		-1.40
R-10 4ft	-.65		-1.65
R-10 8ft	-.63		-1.15
Intercept	.000		
Slope(DD)	-145.21		
Curve(DDS)	2.994		

Unheated Basement			(/sf)
R-0	-.63		-.08
R-11 flr	-.23		.59
R-19 flr	-.11		.79
R-30 flr	-.03		.92
Intercept	1.279		
Slope(DD)	-486.64		
Curve(DDS)	43.330		

Crawl			(/sf)
R-0	.00		.97
R-11 flr	.26		1.41
R-19 flr	.28		1.44
R-30 flr	.30		1.47
R-38 flr	.30		1.47
R-49 flr	.31		1.49
Intercept	1.506		
Slope(DD)	-40.62		
Curve(DDS)	-12.334		

Infiltration ELF	Ach		(/sf flr)
.0007	(.59)	.00	.12
.0005	(.42)	-.04	.08
.0003	(.25)	-.08	.05
Slope/.001ELF			.167
Curve/.001ELF			.000

Window U-value			(/sf)
1-Pane	.00		.35
2-Pane	-.01		.28
3-Pane	-.02		.18
R-10	-.04		.07
Slope(DD)			32.36
Curve(DDS)			-.724

Base Load = 6.38 MBtu
Typical Load = 3.21 MBtu
Residual Load = 1.26 MBtu

Cheyenne WY WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	42.00
R-7	-15.61	15.98
R-11	-18.10	11.83
R-19	-20.34	8.10
R-22	-21.11	6.82
R-30	-22.13	5.11
R-38	-22.75	4.08
R-49	-23.25	3.25
R-60	-23.57	2.72
Slope(DD)		7363.18
Curve(DDS)		-47.151

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	38.33
R-7	-6.59	17.55
R-11	-7.53	14.59
R-13	-8.57	11.29
R-19	-9.09	9.66
R-27	-9.95	6.94
R-34	-10.48	5.27
Slope(DD)		6689.41
Curve(DDS)		81.306

Slab		(/ft)
R-0	-12.80	88.83
R-5 2ft	-14.06	46.67
R-5 4ft	-14.43	34.50
R-10 2ft	-14.28	39.17
R-10 4ft	-14.78	22.83
Intercept		-10.766
Slope(DD)		11278.88
Curve(DDS)		-173.714

Heated Basement		(/ft)
R-0	-10.19	175.67
R-5 4ft	-12.30	105.33
R-5 8ft	-12.91	85.17
R-10 4ft	-12.79	89.17
R-10 8ft	-13.63	61.17
Intercept		.000
Slope(DD)		6558.96
Curve(DDS)		-51.893

Unheated Basement		(/sf)
R-0	-10.19	8.78
R-11 flr	-13.90	2.60
R-19 flr	-15.28	.31
R-30 flr	-16.16	-1.17
Intercept		-5.307
Slope(DD)		5718.72
Curve(DDS)		-579.352

Crawl		(/sf)
R-0	.00	25.77
R-11 flr	-13.19	3.78
R-19 flr	-15.35	.18
R-30 flr	-16.62	-1.94
R-38 flr	-16.92	-2.42
R-49 flr	-17.75	-3.82
Intercept		-7.120
Slope(DD)		6584.06
Curve(DDS)		-33.283

Infiltration ELF Ach		(/sf flr)
.0007(.97)	.00	19.80
.0005(.71)	-7.77	13.33
.0003(.44)	-14.76	7.50
Slope/.001ELF		22.562
Curve/.001ELF		8.177

Window U-value		(/sf)
1-Pane	.00	169.49
2-Pane	-14.70	67.41
3-Pane	-18.34	42.15
R-10	-22.61	12.44
Slope(DD)		5179.01
Curve(DDS)		47.010

Base Load = 92.10 MBtu
Typical Load = 25.49 MBtu
Residual Load = 7.54 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.82
R-7	-1.36	1.56
R-11	-1.58	1.19
R-19	-1.77	.87
R-22	-1.85	.74
R-30	-1.95	.57
R-38	-2.01	.47
R-49	-2.08	.36
R-60	-2.12	.29
Slope(DD)		825.13
Curve(DDS)		-30.492

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.35
R-7	-.20	.71
R-11	-.23	.62
R-13	-.28	.47
R-19	-.30	.40
R-27	-.33	.30
R-34	-.35	.24
Slope(DD)		311.59
Curve(DDS)		-11.316

Slab		(/ft)
R-0	-.57	-5.36
R-5 2ft	-.53	-4.02
R-5 4ft	-.51	-3.19
R-10 2ft	-.52	-3.69
R-10 4ft	-.49	-2.69
Intercept		-.322
Slope(DD)		-859.03
Curve(DDS)		36.148

Heated Basement		(/ft)
R-0	-.45	-1.36
R-5 4ft	-.46	-1.52
R-5 8ft	-.45	-1.19
R-10 4ft	-.46	-1.52
R-10 8ft	-.44	-1.02
Intercept		.000
Slope(DD)		-124.75
Curve(DDS)		2.324

Unheated Basement		(/sf)
R-0	-.45	-.07
R-11 flr	-.18	.38
R-19 flr	-.09	.53
R-30 flr	-.04	.63
Intercept		.904
Slope(DD)		-373.12
Curve(DDS)		35.821

Crawl		(/sf)
R-0	.00	.69
R-11 flr	.20	1.02
R-19 flr	.21	1.04
R-30 flr	.21	1.05
R-38 flr	.21	1.05
R-49 flr	.22	1.05
Intercept		1.048
Slope(DD)		11.32
Curve(DDS)		-15.820

Infiltration ELF Ach		(/sf flr)
.0007(.59)	.00	.17
.0005(.42)	-.05	.13
.0003(.25)	-.10	.08
Slope/.001ELF		.313
Curve/.001ELF		-.104

Window U-value		(/sf)
1-Pane	.00	.78
2-Pane	-.05	.40
3-Pane	-.08	.26
R-10	-.10	.09
Slope(DD)		37.40
Curve(DDS)		-.296

Base Load = 5.31 MBtu
Typical Load = 2.44 MBtu
Residual Load = .46 MBtu

Chicago IL WYEC One Story Prototype Siding Series Two

Heating Load

	Delta (MBtu)	Component (KBtu)
Ceiling		(/sf)
R-0	.00	34.40
R-7	-31.83	13.73
R-11	-36.91	10.43
R-19	-41.47	7.47
R-22	-43.23	6.33
R-30	-45.59	4.80
R-38	-47.01	3.87
R-49	-48.27	3.05
R-60	-49.09	2.52
Slope(DD)	6977.53	
Curve(DDS)	-198.305	

	Delta (MBtu)	Component (KBtu)
Wall		(/sf)
R-0	.00	32.85
R-7	-18.92	16.01
R-11	-21.61	13.62
R-13	-24.87	10.72
R-19	-26.48	9.28
R-27	-29.40	6.68
R-34	-31.20	5.08
Slope(DD)	6627.85	
Curve(DDS)	-96.872	

Slab			(/ft)
R-0		-24.97	65.02
R-5	2ft	-30.52	31.58
R-5	4ft	-32.11	22.01
R-10	2ft	-31.55	25.38
R-10	4ft	-33.76	12.07
Intercept		-15.715	
Slope(DD)		8407.39	
Curve(DDS)		-121.212	

Heated Basement			(/ft)
R-0		-16.35	116.95
R-5	4ft	-23.03	76.71
R-5	8ft	-25.20	63.63
R-10	4ft	-24.79	66.10
R-10	8ft	-28.14	45.92
Intercept		.000	
Slope(DD)		4723.43	
Curve(DDS)		-45.205	

Unheated Basement			(/sf)
R-0		-16.35	12.61
R-11	flr	-30.76	3.25
R-19	flr	-34.83	.60
R-30	flr	-37.45	-1.10
Intercept		-5.678	
Slope(DD)		6233.26	
Curve(DDS)		-520.246	

Crawl			(/sf)
R-0		.00	23.22
R-11	flr	-29.71	3.93
R-19	flr	-34.79	.63
R-30	flr	-38.01	-1.46
R-38	flr	-38.74	-1.93
R-49	flr	-40.86	-3.31
Intercept		-6.456	
Slope(DD)		6450.79	
Curve(DDS)		-129.310	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.89)	.00	21.74
.0005	(.64)	-9.79	15.38
.0003	(.39)	-19.40	9.14
Slope/.001ELF		30.032	
Curve/.001ELF		1.461	

Window U-value			(/sf)
1-Pane		.00	158.16
2-Pane		-15.65	73.47
3-Pane		-20.61	46.64
R-10		-26.44	15.08
Slope(DD)		6453.57	
Curve(DDS)		-17.531	

Base Load = 178.08 MBtu
Typical Load = 56.12 MBtu
Residual Load = 2.79 MBtu

Cooling Load

	Delta (MBtu)	Component (KBtu)
Ceiling		(/sf)
R-0	.00	5.42
R-7	-5.00	2.17
R-11	-5.80	1.65
R-19	-6.52	1.18
R-22	-6.79	1.01
R-30	-7.15	.77
R-38	-7.37	.63
R-49	-7.59	.49
R-60	-7.74	.39
Slope(DD)	1111.40	
Curve(DDS)	-33.356	

	Delta (MBtu)	Component (KBtu)
Wall		(/sf)
R-0	.00	2.61
R-7	-1.45	1.32
R-11	-1.66	1.14
R-13	-1.95	.88
R-19	-2.09	.75
R-27	-2.31	.56
R-34	-2.45	.43
Slope(DD)	560.40	
Curve(DDS)	-13.795	

Slab			(/ft)
R-0		-4.58	-7.72
R-5	2ft	-4.37	-6.46
R-5	4ft	-4.21	-5.49
R-10	2ft	-4.31	-6.10
R-10	4ft	-4.11	-4.89
Intercept		-1.928	
Slope(DD)		-984.39	
Curve(DDS)		41.750	

Heated Basement			(/ft)
R-0		-2.89	2.46
R-5	4ft	-3.17	.77
R-5	8ft	-3.16	.83
R-10	4ft	-3.26	.23
R-10	8ft	-3.25	.29
Intercept		.000	
Slope(DD)		14.13	
Curve(DDS)		1.163	

Unheated Basement			(/sf)
R-0		-2.89	.26
R-11	flr	-.85	1.59
R-19	flr	-.31	1.94
R-30	flr	.03	2.16
Intercept		2.756	
Slope(DD)		-804.63	
Curve(DDS)		62.194	

Crawl			(/sf)
R-0		.00	2.14
R-11	flr	.88	2.71
R-19	flr	.94	2.75
R-30	flr	1.02	2.80
R-38	flr	1.04	2.82
R-49	flr	1.09	2.85
Intercept		2.872	
Slope(DD)		-80.06	
Curve(DDS)		-12.173	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.58)	.00	.98
.0005	(.42)	-.47	.68
.0003	(.25)	-.91	.39
Slope/.001ELF		1.234	
Curve/.001ELF		.244	

Window U-value			(/sf)
1-Pane		.00	2.43
2-Pane		-.25	1.08
3-Pane		-.32	.68
R-10		-.41	.22
Slope(DD)		91.81	
Curve(DDS)		.016	

Base Load = 20.33 MBtu
Typical Load = 6.98 MBtu
Residual Load = -1.96 MBtu

Chicago IL WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	35.96
R-7	-13.22	13.92
R-11	-15.33	10.41
R-19	-17.23	7.25
R-22	-17.90	6.12
R-30	-18.81	4.62
R-38	-19.35	3.71
R-49	-19.82	2.93
R-60	-20.12	2.43
Slope(DD)		6664.27
Curve(DDS)		-100.948

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	32.12
R-7	-8.07	15.18
R-11	-9.22	12.77
R-13	-10.55	9.98
R-19	-11.21	8.60
R-27	-12.36	6.18
R-34	-13.07	4.69
Slope(DD)		6047.31
Curve(DDS)		-13.993

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-11.57	68.93
R-5 2ft	-12.95	34.43
R-5 4ft	-13.33	24.93
R-10 2ft	-13.20	28.18
R-10 4ft	-13.71	15.43
Intercept		-10.539
Slope(DD)		7693.53
Curve(DDS)		-68.750

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-8.76	139.18
R-5 4ft	-11.00	83.18
R-5 8ft	-11.62	67.68
R-10 4ft	-11.52	70.18
R-10 8ft	-12.40	48.18
Intercept		.000
Slope(DD)		4788.34
Curve(DDS)		-33.120

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-8.76	9.28
R-11 flr	-12.26	3.45
R-19 flr	-13.43	1.49
R-30 flr	-14.19	.23
Intercept		-3.260
Slope(DD)		4793.73
Curve(DDS)		-458.014

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	23.88
R-11 flr	-11.10	5.38
R-19 flr	-12.95	2.30
R-30 flr	-14.08	.41
R-38 flr	-14.34	-.02
R-49 flr	-15.09	-1.26
Intercept		-4.141
Slope(DD)		5825.21
Curve(DDS)		-70.405

Infiltration ELF	Ach	(/sf flr)
.0007	(.90) .00	19.79
.0005	(.66) -7.46	13.57
.0003	(.40) -14.38	7.81
Slope/.001ELF		24.333
Curve/.001ELF		5.625

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	143.23
2-Pane	-11.81	61.22
3-Pane	-15.07	38.56
R-10	-18.91	11.91
Slope(DD)		5028.87
Curve(DDS)		15.020

Base Load = 86.28 MBtu
Typical Load = 25.45 MBtu
Residual Load = 1.18 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.34
R-7	-1.93	2.13
R-11	-2.23	1.61
R-19	-2.51	1.15
R-22	-2.61	.98
R-30	-2.76	.74
R-38	-2.84	.60
R-49	-2.92	.47
R-60	-2.97	.39
Slope(DD)		1077.39
Curve(DDS)		-29.916

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.54
R-7	-.57	1.34
R-11	-.65	1.17
R-13	-.78	.89
R-19	-.85	.75
R-27	-.94	.57
R-34	-.99	.46
Slope(DD)		587.23
Curve(DDS)		-21.401

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-1.75	-18.29
R-5 2ft	-1.65	-15.79
R-5 4ft	-1.57	-13.79
R-10 2ft	-1.62	-15.04
R-10 4ft	-1.53	-12.79
Intercept		-7.202
Slope(DD)		-1832.85
Curve(DDS)		75.485

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-1.00	.46
R-5 4ft	-1.03	-.29
R-5 8ft	-1.02	-.04
R-10 4ft	-1.04	-.54
R-10 8ft	-1.03	-.29
Intercept		.000
Slope(DD)		-38.58
Curve(DDS)		1.242

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-1.00	.03
R-11 flr	-.24	1.30
R-19 flr	.02	1.73
R-30 flr	.19	2.01
Intercept		2.794
Slope(DD)		-1073.42
Curve(DDS)		104.240

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.70
R-11 flr	.39	2.35
R-19 flr	.44	2.43
R-30 flr	.48	2.50
R-38 flr	.49	2.51
R-49 flr	.52	2.56
Intercept		2.631
Slope(DD)		-168.30
Curve(DDS)		-2.686

Infiltration ELF	Ach	(/sf flr)
.0007	(.58) .00	.86
.0005	(.42) -.27	.64
.0003	(.25) -.56	.39
Slope/.001ELF		1.375
Curve/.001ELF		-.208

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	-2.79
2-Pane	-.01	-2.86
3-Pane	.13	-1.91
R-10	.29	-.78
Slope(DD)		-354.17
Curve(DDS)		9.406

Base Load = 13.70 MBtu
Typical Load = 8.70 MBtu
Residual Load = 3.26 MBtu

Chicago IL WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	35.26
R-7	-12.98	13.62
R-11	-15.06	10.16
R-19	-16.92	7.06
R-22	-17.58	5.96
R-30	-18.47	4.48
R-38	-19.00	3.59
R-49	-19.44	2.85
R-60	-19.73	2.38
Slope(DD)		6477.18
Curve(DDS)		-89.410

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	32.45
R-7	-5.50	15.10
R-11	-6.28	12.63
R-13	-7.17	9.83
R-19	-7.61	8.45
R-27	-8.37	6.06
R-34	-8.83	4.60
Slope(DD)		5891.16
Curve(DDS)		26.534

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-12.63	85.83
R-5 2ft	-13.71	49.66
R-5 4ft	-14.02	39.33
R-10 2ft	-13.91	43.00
R-10 4ft	-14.33	29.16
Intercept		.603
Slope(DD)		8534.83
Curve(DDS)		-98.337

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-10.35	161.66
R-5 4ft	-12.38	94.33
R-5 8ft	-12.91	76.66
R-10 4ft	-12.83	79.16
R-10 8ft	-13.58	54.16
Intercept		.000
Slope(DD)		5337.97
Curve(DDS)		-32.913

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-10.35	8.08
R-11 flr	-13.10	3.50
R-19 flr	-14.12	1.81
R-30 flr	-14.77	.72
Intercept		-2.342
Slope(DD)		4223.62
Curve(DDS)		-427.184

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	25.34
R-11 flr	-11.39	6.36
R-19 flr	-13.28	3.20
R-30 flr	-14.47	1.23
R-38 flr	-14.74	.77
R-49 flr	-15.52	-.53
Intercept		-3.487
Slope(DD)		6046.94
Curve(DDS)		-82.879

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007	(.89)	.00	19.78
.0005	(.66)	-7.47	13.55
.0003	(.40)	-14.39	7.78
Slope/.001ELF			24.207
Curve/.001ELF			5.782

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	144.40
2-Pane	-12.03	60.86
3-Pane	-15.28	38.28
R-10	-19.10	11.73
Slope(DD)		4938.34
Curve(DDS)		20.127

Base Load = 81.94 MBtu
Typical Load = 23.45 MBtu
Residual Load = 1.25 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	4.96
R-7	-1.85	1.88
R-11	-2.14	1.39
R-19	-2.41	.94
R-22	-2.50	.79
R-30	-2.62	.59
R-38	-2.70	.47
R-49	-2.75	.38
R-60	-2.79	.32
Slope(DD)		855.31
Curve(DDS)		-3.111

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	2.24
R-7	-.35	1.12
R-11	-.40	.96
R-13	-.46	.78
R-19	-.49	.69
R-27	-.56	.49
R-34	-.59	.36
Slope(DD)		486.69
Curve(DDS)		-13.186

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.26	-13.22
R-5 2ft	-1.20	-11.39
R-5 4ft	-1.15	-9.55
R-10 2ft	-1.18	-10.55
R-10 4ft	-1.12	-8.72
Intercept		-3.700
Slope(DD)		-1652.06
Curve(DDS)		71.556

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-.84	.78
R-5 4ft	-.87	-.39
R-5 8ft	-.86	-.05
R-10 4ft	-.87	-.55
R-10 8ft	-.87	-.39
Intercept		.000
Slope(DD)		-50.24
Curve(DDS)		1.724

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-.84	.04
R-11 flr	-.25	1.02
R-19 flr	-.04	1.36
R-30 flr	.08	1.57
Intercept		2.170
Slope(DD)		-821.95
Curve(DDS)		79.250

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.43
R-11 flr	.44	2.17
R-19 flr	.50	2.27
R-30 flr	.59	2.41
R-38 flr	.60	2.44
R-49 flr	.66	2.53
Intercept		2.640
Slope(DD)		-317.14
Curve(DDS)		15.854

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007	(.58)	.00	.67
.0005	(.42)	-.28	.45
.0003	(.25)	-.52	.25
Slope/.001ELF			.708
Curve/.001ELF			.365

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	-1.65
2-Pane	-.04	-1.93
3-Pane	.05	-1.29
R-10	.16	-.54
Slope(DD)		-245.39
Curve(DDS)		6.928

Base Load = 12.06 MBtu
Typical Load = 7.68 MBtu
Residual Load = 2.56 MBtu

Cincinnati OH TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	29.84
R-7	-27.64	11.90
R-11	-32.05	9.03
R-19	-36.01	6.46
R-22	-37.53	5.47
R-30	-39.57	4.15
R-38	-40.80	3.35
R-49	-41.89	2.64
R-60	-42.60	2.18
Slope(DD)		6028.74
Curve(DDS)		-167.920

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	27.85
R-7	-15.98	13.62
R-11	-18.26	11.60
R-13	-21.03	9.13
R-19	-22.40	7.91
R-27	-24.89	5.70
R-34	-26.42	4.34
Slope(DD)		5661.34
Curve(DDS)		-89.979

Slab	Delta (MBtu)	(/ft)
R-0	-18.35	52.52
R-5 2ft	-22.98	24.62
R-5 4ft	-24.31	16.61
R-10 2ft	-23.84	19.44
R-10 4ft	-25.69	8.30
Intercept		-14.907
Slope(DD)		7086.38
Curve(DDS)		-101.690

Heated Basement	Delta (MBtu)	(/ft)
R-0	-10.83	97.82
R-5 4ft	-16.40	64.26
R-5 8ft	-18.25	53.12
R-10 4ft	-17.86	55.47
R-10 8ft	-20.68	38.48
Intercept		.000
Slope(DD)		3967.12
Curve(DDS)		-38.115

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-10.83	10.54
R-11 flr	-23.36	2.41
R-19 flr	-26.79	.18
R-30 flr	-29.00	-1.25
Intercept		-5.096
Slope(DD)		5214.56
Curve(DDS)		-422.115

Crawl	Delta (MBtu)	(/sf)
R-0	.00	17.58
R-11 flr	-23.31	2.44
R-19 flr	-27.35	-.18
R-30 flr	-29.91	-1.85
R-38 flr	-30.50	-2.23
R-49 flr	-32.19	-3.33
Intercept		-5.847
Slope(DD)		5171.13
Curve(DDS)		-117.633

Infiltration ELF	Ach	(/sf flr)
.0007(.80)	.00	14.76
.0005(.58)	-6.67	10.43
.0003(.35)	-13.20	6.19
Slope/.001ELF		20.292
Curve/.001ELF		1.137

Window U-value	Delta (MBtu)	(KBtu) (/sf)
1-Pane	.00	131.50
2-Pane	-12.85	61.96
3-Pane	-17.02	39.38
R-10	-21.93	12.83
Slope(DD)		5500.18
Curve(DDS)		-19.668

Base Load = 143.38 MBtu
Typical Load = 44.26 MBtu
Residual Load = 2.00 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	5.86
R-7	-5.36	2.38
R-11	-6.21	1.83
R-19	-6.98	1.33
R-22	-7.29	1.13
R-30	-7.70	.86
R-38	-7.95	.70
R-49	-8.19	.55
R-60	-8.34	.45
Slope(DD)		1255.66
Curve(DDS)		-44.991

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	2.93
R-7	-1.55	1.56
R-11	-1.77	1.36
R-13	-2.12	1.05
R-19	-2.29	.90
R-27	-2.54	.67
R-34	-2.70	.53
Slope(DD)		687.52
Curve(DDS)		-26.364

Slab	Delta (MBtu)	(/ft)
R-0	-4.30	-7.32
R-5 2ft	-4.18	-6.60
R-5 4ft	-4.06	-5.88
R-10 2ft	-4.15	-6.42
R-10 4ft	-3.98	-5.39
Intercept		-2.926
Slope(DD)		-849.74
Curve(DDS)		40.712

Heated Basement	Delta (MBtu)	(/ft)
R-0	-2.45	3.82
R-5 4ft	-2.85	1.41
R-5 8ft	-2.85	1.41
R-10 4ft	-2.96	.75
R-10 8ft	-2.98	.63
Intercept		.000
Slope(DD)		46.25
Curve(DDS)		1.221

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-2.45	.41
R-11 flr	-.53	1.66
R-19 flr	-.00	2.00
R-30 flr	.34	2.22
Intercept		2.817
Slope(DD)		-805.73
Curve(DDS)		65.667

Crawl	Delta (MBtu)	(/sf)
R-0	.00	2.00
R-11 flr	.94	2.61
R-19 flr	.98	2.64
R-30 flr	1.03	2.67
R-38 flr	1.04	2.68
R-49 flr	1.07	2.70
Intercept		2.693
Slope(DD)		-10.94
Curve(DDS)		-24.097

Infiltration ELF	Ach	(/sf flr)
.0007(.54)	.00	.76
.0005(.39)	-.36	.53
.0003(.23)	-.70	.31
Slope/.001ELF		.974
Curve/.001ELF		.162

Window U-value	Delta (MBtu)	(KBtu) (/sf)
1-Pane	.00	1.02
2-Pane	-.13	.32
3-Pane	-.15	.19
R-10	-.18	.05
Slope(DD)		17.44
Curve(DDS)		.802

Base Load = 20.69 MBtu
Typical Load = 7.11 MBtu
Residual Load = -2.20 MBtu

Cincinnati OH TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	30.94
R-7	-11.41	11.92
R-11	-13.23	8.89
R-19	-14.87	6.16
R-22	-15.44	5.20
R-30	-16.21	3.93
R-38	-16.67	3.16
R-49	-17.07	2.49
R-60	-17.33	2.06
Slope(DD)	5650.38	
Curve(DDS)	-72.804	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	27.01
R-7	-6.82	12.70
R-11	-7.79	10.67
R-13	-8.91	8.32
R-19	-9.46	7.16
R-27	-10.42	5.15
R-34	-11.01	3.91
Slope(DD)	5024.58	
Curve(DDS)	-.409	

Slab		(/ft)
R-0	-8.71	51.31
R-5 2ft	-9.83	23.31
R-5 4ft	-10.12	16.06
R-10 2ft	-10.02	18.56
R-10 4ft	-10.43	8.31
Intercept	-11.917	
Slope(DD)	6028.90	
Curve(DDS)	-41.168	

Heated Basement		(/ft)
R-0	-6.25	112.81
R-5 4ft	-8.09	66.81
R-5 8ft	-8.59	54.31
R-10 4ft	-8.51	56.31
R-10 8ft	-9.22	38.56
Intercept	.000	
Slope(DD)	3830.70	
Curve(DDS)	-25.395	

Unheated Basement		(/sf)
R-0	-6.25	7.52
R-11 flr	-9.22	2.57
R-19 flr	-10.19	.96
R-30 flr	-10.81	-.08
Intercept	-2.940	
Slope(DD)	3925.81	
Curve(DDS)	-367.746	

Crawl		(/sf)
R-0	.00	17.94
R-11 flr	-8.55	3.69
R-19 flr	-10.00	1.27
R-30 flr	-10.89	-.21
R-38 flr	-11.09	-.55
R-49 flr	-11.67	-1.52
Intercept	-3.796	
Slope(DD)	4605.66	
Curve(DDS)	-71.642	

Infiltration ELF	Ach	(/sf flr)
.0007(.81)	.00	13.38
.0005(.60)	-5.05	9.17
.0003(.35)	-9.73	5.27
Slope/.001ELF	16.417	
Curve/.001ELF	3.854	

Window U-value		(/sf)
1-Pane	.00	118.74
2-Pane	-9.65	51.72
3-Pane	-12.40	32.64
R-10	-15.63	10.19
Slope(DD)	4318.25	
Curve(DDS)	6.792	

Base Load = 67.79 MBtu
Typical Load = 18.87 MBtu
Residual Load = .47 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.55
R-7	-2.03	2.17
R-11	-2.35	1.63
R-19	-2.64	1.15
R-22	-2.74	.97
R-30	-2.89	.74
R-38	-2.97	.60
R-49	-3.05	.47
R-60	-3.10	.38
Slope(DD)	1065.15	
Curve(DDS)	-21.795	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.56
R-7	-.62	1.28
R-11	-.71	1.07
R-13	-.82	.85
R-19	-.87	.74
R-27	-.97	.53
R-34	-1.03	.40
Slope(DD)	526.97	
Curve(DDS)	-9.373	

Slab		(/ft)
R-0	-1.60	-14.27
R-5 2ft	-1.54	-12.77
R-5 4ft	-1.47	-11.02
R-10 2ft	-1.52	-12.27
R-10 4ft	-1.43	-10.02
Intercept	-4.385	
Slope(DD)	-1931.61	
Curve(DDS)	93.376	

Heated Basement		(/ft)
R-0	-.84	4.73
R-5 4ft	-.92	2.73
R-5 8ft	-.94	2.23
R-10 4ft	-.97	1.48
R-10 8ft	-.97	1.48
Intercept	.000	
Slope(DD)	129.76	
Curve(DDS)	-.287	

Unheated Basement		(/sf)
R-0	-.84	.32
R-11 flr	-.14	1.48
R-19 flr	.12	1.91
R-30 flr	.28	2.18
Intercept	2.950	
Slope(DD)	-1059.94	
Curve(DDS)	106.505	

Crawl		(/sf)
R-0	.00	1.72
R-11 flr	.38	2.35
R-19 flr	.43	2.43
R-30 flr	.48	2.51
R-38 flr	.49	2.53
R-49 flr	.52	2.59
Intercept	2.665	
Slope(DD)	-198.18	
Curve(DDS)	2.543	

Infiltration ELF	Ach	(/sf flr)
.0007(.54)	.00	.61
.0005(.36)	-.22	.42
.0003(.22)	-.43	.25
Slope/.001ELF	.792	
Curve/.001ELF	.104	

Window U-value		(/sf)
1-Pane	.00	-4.13
2-Pane	.02	-3.99
3-Pane	.21	-2.65
R-10	.44	-1.07
Slope(DD)	-486.38	
Curve(DDS)	12.497	

Base Load = 13.65 MBtu
Typical Load = 8.69 MBtu
Residual Load = 3.24 MBtu

Cincinnati OH TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	30.18
R-7	-11.18	11.54
R-11	-12.97	8.57
R-19	-14.57	5.90
R-22	-15.12	4.97
R-30	-15.87	3.74
R-38	-16.31	2.99
R-49	-16.68	2.38
R-60	-16.92	1.98
Slope(DD)	5381.19	
Curve(DDS)	-49.044	

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	27.22
R-7	-4.63	12.61
R-11	-5.29	10.53
R-13	-6.03	8.20
R-19	-6.39	7.04
R-27	-7.03	5.05
R-34	-7.41	3.82
Slope(DD)	4895.17	
Curve(DDS)	30.633	

Slab		(/ft)
R-0	-9.50	64.59
R-5 2ft	-10.37	35.43
R-5 4ft	-10.61	27.43
R-10 2ft	-10.52	30.43
R-10 4ft	-10.85	19.59
Intercept	-1.912	
Slope(DD)	6404.84	
Curve(DDS)	-48.830	

Heated Basement		(/ft)
R-0	-7.53	130.26
R-5 4ft	-9.16	75.76
R-5 8ft	-9.59	61.43
R-10 4ft	-9.53	63.59
R-10 8ft	-10.13	43.43
Intercept	.000	
Slope(DD)	4283.57	
Curve(DDS)	-25.843	

Unheated Basement		(/sf)
R-0	-7.53	6.51
R-11 flr	-9.86	2.63
R-19 flr	-10.69	1.24
R-30 flr	-11.22	.35
Intercept	-2.133	
Slope(DD)	3429.76	
Curve(DDS)	-340.028	

Crawl		(/sf)
R-0	.00	19.05
R-11 flr	-8.72	4.53
R-19 flr	-10.18	2.09
R-30 flr	-11.10	.55
R-38 flr	-11.32	.20
R-49 flr	-11.92	-.82
Intercept	-3.125	
Slope(DD)	4725.73	
Curve(DDS)	-78.071	

Infiltration ELF	Ach	(/sf flr)
.0007	(.81) .00	13.30
.0005	(.60) -5.03	9.10
.0003	(.35) -9.69	5.22
Slope/.001ELF	16.228	
Curve/.001ELF	3.959	

Window U-value		(/sf)
1-Pane	.00	117.58
2-Pane	-9.72	50.11
3-Pane	-12.39	31.56
R-10	-15.53	9.73
Slope(DD)	4106.88	
Curve(DDS)	13.139	

Base Load = 63.71 MBtu
Typical Load = 17.09 MBtu
Residual Load = .68 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.25
R-7	-2.00	1.92
R-11	-2.31	1.39
R-19	-2.60	.91
R-22	-2.69	.77
R-30	-2.81	.57
R-38	-2.88	.45
R-49	-2.93	.36
R-60	-2.96	.31
Slope(DD)	810.41	
Curve(DDS)	12.618	

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	2.11
R-7	-.41	.82
R-11	-.47	.63
R-13	-.53	.43
R-19	-.57	.33
R-27	-.59	.25
R-34	-.61	.21
Slope(DD)	216.04	
Curve(DDS)	32.979	

Slab		(/ft)
R-0	-1.19	-11.34
R-5 2ft	-1.14	-9.67
R-5 4ft	-1.11	-8.67
R-10 2ft	-1.13	-9.34
R-10 4ft	-1.09	-8.00
Intercept	-4.958	
Slope(DD)	-1009.43	
Curve(DDS)	39.431	

Heated Basement		(/ft)
R-0	-.72	4.50
R-5 4ft	-.77	2.83
R-5 8ft	-.77	2.83
R-10 4ft	-.79	2.00
R-10 8ft	-.80	1.66
Intercept	.000	
Slope(DD)	171.99	
Curve(DDS)	-1.493	

Unheated Basement		(/sf)
R-0	-.72	.22
R-11 flr	-.07	1.29
R-19 flr	.17	1.69
R-30 flr	.32	1.95
Intercept	2.675	
Slope(DD)	-1001.83	
Curve(DDS)	102.197	

Crawl		(/sf)
R-0	.00	1.42
R-11 flr	.48	2.22
R-19 flr	.57	2.37
R-30 flr	.64	2.49
R-38 flr	.66	2.52
R-49 flr	.71	2.59
Intercept	2.750	
Slope(DD)	-344.98	
Curve(DDS)	16.586	

Infiltration ELF	Ach	(/sf flr)
.0007	(.54) .00	.44
.0005	(.39) -.19	.28
.0003	(.23) -.35	.15
Slope/.001ELF	.375	
Curve/.001ELF	.365	

Window U-value		(/sf)
1-Pane	.00	-2.37
2-Pane	.01	-2.33
3-Pane	.12	-1.55
R-10	.25	-.63
Slope(DD)	-285.58	
Curve(DDS)	7.422	

Base Load = 12.10 MBtu
Typical Load = 7.70 MBtu
Residual Load = 2.55 MBtu

Denver CO WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	34.17
R-7	-31.53	13.70
R-11	-36.57	10.43
R-19	-41.09	7.49
R-22	-42.85	6.35
R-30	-45.21	4.81
R-38	-46.64	3.89
R-49	-47.91	3.06
R-60	-48.73	2.53
Slope(DD)	7012.62	
Curve(DDS)	-210.575	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	31.85
R-7	-18.26	15.60
R-11	-20.86	13.29
R-13	-24.07	10.43
R-19	-25.66	9.02
R-27	-28.47	6.51
R-34	-30.20	4.98
Slope(DD)	6475.21	
Curve(DDS)	-102.898	

Slab		(/ft)
R-0	-16.79	54.88
R-5 2ft	-22.04	23.25
R-5 4ft	-23.56	14.09
R-10 2ft	-23.01	17.41
R-10 4ft	-25.10	4.82
Intercept	-21.627	
Slope(DD)	8533.28	
Curve(DDS)	-142.963	

Heated Basement		(/ft)
R-0	-9.02	101.68
R-5 4ft	-14.40	69.28
R-5 8ft	-16.43	57.05
R-10 4ft	-15.86	60.48
R-10 8ft	-18.94	41.93
Intercept	.000	
Slope(DD)	4511.61	
Curve(DDS)	-49.062	

Unheated Basement		(/sf)
R-0	-9.02	10.96
R-11 flr	-24.49	.92
R-19 flr	-28.71	-1.83
R-30 flr	-31.43	-3.59
Intercept	-8.315	
Slope(DD)	6411.00	
Curve(DDS)	-517.169	

Crawl		(/sf)
R-0	.00	16.82
R-11 flr	-26.19	-.19
R-19 flr	-30.67	-3.10
R-30 flr	-33.44	-4.90
R-38 flr	-34.07	-5.31
R-49 flr	-35.89	-6.49
Intercept	-9.248	
Slope(DD)	5601.06	
Curve(DDS)	-101.000	

Infiltration ELF	Ach	(/sf flr)
.0007(.75)	.00	15.22
.0005(.54)	-6.97	10.69
.0003(.32)	-13.72	6.31
Slope/.001ELF	20.487	
Curve/.001ELF	1.786	

Window U-value		(/sf)
1-Pane	.00	148.09
2-Pane	-14.39	70.22
3-Pane	-19.11	44.65
R-10	-24.67	14.59
Slope(DD)	6261.38	
Curve(DDS)	-24.700	

Base Load = 155.85 MBtu
Typical Load = 47.79 MBtu
Residual Load = 8.23 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	6.91
R-7	-6.48	2.70
R-11	-7.52	2.02
R-19	-8.45	1.42
R-22	-8.78	1.20
R-30	-9.23	.91
R-38	-9.50	.74
R-49	-9.75	.58
R-60	-9.91	.47
Slope(DD)	1315.30	
Curve(DDS)	-25.323	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	2.96
R-7	-1.65	1.50
R-11	-1.88	1.29
R-13	-2.24	.97
R-19	-2.42	.81
R-27	-2.64	.61
R-34	-2.77	.50
Slope(DD)	619.25	
Curve(DDS)	-12.749	

Slab		(/ft)
R-0	-3.96	-4.89
R-5 2ft	-3.79	-3.87
R-5 4ft	-3.70	-3.33
R-10 2ft	-3.75	-3.63
R-10 4ft	-3.62	-2.84
Intercept	-.996	
Slope(DD)	-649.47	
Curve(DDS)	26.830	

Heated Basement		(/ft)
R-0	-2.70	2.70
R-5 4ft	-3.03	.71
R-5 8ft	-3.03	.71
R-10 4ft	-3.11	.23
R-10 8ft	-3.11	.23
Intercept	.000	
Slope(DD)	4.94	
Curve(DDS)	1.602	

Unheated Basement		(/sf)
R-0	-2.70	.29
R-11 flr	-1.21	1.26
R-19 flr	-.80	1.53
R-30 flr	-.53	1.70
Intercept	2.164	
Slope(DD)	-630.89	
Curve(DDS)	51.786	

Crawl		(/sf)
R-0	.00	2.04
R-11 flr	.58	2.42
R-19 flr	.59	2.43
R-30 flr	.61	2.44
R-38 flr	.61	2.44
R-49 flr	.62	2.45
Intercept	2.428	
Slope(DD)	26.45	
Curve(DDS)	-19.770	

Infiltration ELF	Ach	(/sf flr)
.0007(.62)	.00	.36
.0005(.45)	-.16	.26
.0003(.27)	-.32	.16
Slope/.001ELF	.519	
Curve/.001ELF	.000	

Window U-value		(/sf)
1-Pane	.00	3.40
2-Pane	-.28	1.89
3-Pane	-.40	1.21
R-10	-.55	.42
Slope(DD)	185.70	
Curve(DDS)	-2.154	

Base Load = 19.16 MBtu
Typical Load = 3.77 MBtu
Residual Load = -3.68 MBtu

Denver CO WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	35.41
R-7	-13.05	13.67
R-11	-15.13	10.19
R-19	-17.00	7.08
R-22	-17.66	5.98
R-30	-18.55	4.50
R-38	-19.08	3.61
R-49	-19.53	2.86
R-60	-19.82	2.38
Slope(DD)	6493.21	
Curve(DDS)	-87.831	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	30.10
R-7	-7.68	13.99
R-11	-8.77	11.69
R-13	-10.03	9.04
R-19	-10.66	7.73
R-27	-11.68	5.58
R-34	-12.31	4.26
Slope(DD)	5419.80	
Curve(DDS)	32.776	

Slab		(/ft)
R-0	-8.48	40.79
R-5 2ft	-9.69	10.54
R-5 4ft	-9.99	3.04
R-10 2ft	-9.89	5.54
R-10 4ft	-10.27	-3.96
Intercept	-22.065	
Slope(DD)	5417.96	
Curve(DDS)	27.498	

Heated Basement		(/ft)
R-0	-5.84	106.79
R-5 4ft	-7.67	61.04
R-5 8ft	-8.16	48.79
R-10 4ft	-8.07	51.04
R-10 8ft	-8.72	34.79
Intercept	.000	
Slope(DD)	3517.06	
Curve(DDS)	-20.629	

Unheated Basement		(/sf)
R-0	-5.84	7.12
R-11 flr	-9.37	1.24
R-19 flr	-10.53	-.69
R-30 flr	-11.27	-1.93
Intercept	-5.353	
Slope(DD)	4696.30	
Curve(DDS)	-441.542	

Crawl		(/sf)
R-0	.00	16.85
R-11 flr	-9.28	1.39
R-19 flr	-10.83	-1.20
R-30 flr	-11.68	-2.62
R-38 flr	-11.88	-2.95
R-49 flr	-12.44	-3.89
Intercept	-6.236	
Slope(DD)	4572.62	
Curve(DDS)	-13.628	

Infiltration ELF Ach		(/sf flr)
.0007(.75)	.00	12.61
.0005(.55)	-5.11	8.35
.0003(.33)	-9.59	4.62
Slope/.001ELF	13.416	
Curve/.001ELF	6.563	

Window U-value		(/sf)
1-Pane	.00	118.64
2-Pane	-10.26	47.39
3-Pane	-12.82	29.64
R-10	-15.82	8.78
Slope(DD)	3656.51	
Curve(DDS)	31.716	

Base Load = 71.51 MBtu
Typical Load = 18.73 MBtu
Residual Load = 7.86 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	7.13
R-7	-2.56	2.87
R-11	-2.96	2.19
R-19	-3.33	1.58
R-22	-3.47	1.34
R-30	-3.66	1.02
R-38	-3.78	.83
R-49	-3.89	.65
R-60	-3.96	.53
Slope(DD)	1484.31	
Curve(DDS)	-47.517	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.47
R-7	-.77	1.85
R-11	-.88	1.62
R-13	-1.05	1.26
R-19	-1.14	1.08
R-27	-1.27	.80
R-34	-1.35	.64
Slope(DD)	826.29	
Curve(DDS)	-33.669	

Slab		(/ft)
R-0	-1.53	-12.83
R-5 2ft	-1.47	-11.33
R-5 4ft	-1.44	-10.58
R-10 2ft	-1.46	-11.08
R-10 4ft	-1.41	-9.83
Intercept	-7.045	
Slope(DD)	-988.76	
Curve(DDS)	42.120	

Heated Basement		(/ft)
R-0	-.98	.92
R-5 4ft	-1.04	-.58
R-5 8ft	-1.03	-.33
R-10 4ft	-1.06	-1.08
R-10 8ft	-1.04	-.58
Intercept	.000	
Slope(DD)	-85.91	
Curve(DDS)	2.766	

Unheated Basement		(/sf)
R-0	-.98	.06
R-11 flr	-.42	.99
R-19 flr	-.27	1.25
R-30 flr	-.17	1.41
Intercept	1.848	
Slope(DD)	-592.02	
Curve(DDS)	47.515	

Crawl		(/sf)
R-0	.00	1.69
R-11 flr	.24	2.09
R-19 flr	.25	2.11
R-30 flr	.26	2.13
R-38 flr	.26	2.13
R-49 flr	.27	2.14
Intercept	2.130	
Slope(DD)	7.93	
Curve(DDS)	-18.077	

Infiltration ELF Ach		(/sf flr)
.0007(.62)	.00	.20
.0005(.45)	-.13	.09
.0003(.27)	-.21	.02
Slope/.001ELF	-.083	
Curve/.001ELF	.521	

Window U-value		(/sf)
1-Pane	.00	1.72
2-Pane	-.15	.68
3-Pane	-.19	.43
R-10	-.23	.12
Slope(DD)	51.95	
Curve(DDS)	.503	

Base Load = 12.23 MBtu
Typical Load = 5.99 MBtu
Residual Load = 1.47 MBtu

Denver CO WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	34.06
R-7	-12.72	12.86
R-11	-14.75	9.48
R-19	-16.57	6.44
R-22	-17.19	5.42
R-30	-18.01	4.04
R-38	-18.51	3.21
R-49	-18.89	2.58
R-60	-19.13	2.18
Slope(DD)		5823.89
Curve(DDS)		-13.371

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	29.83
R-7	-5.20	13.42
R-11	-5.94	11.08
R-13	-6.77	8.49
R-19	-7.17	7.20
R-27	-7.81	5.20
R-34	-8.20	3.97
Slope(DD)		4962.33
Curve(DDS)		108.735

Slab		(/ft)
R-0	-9.45	64.52
R-5 2ft	-10.46	30.86
R-5 4ft	-10.73	21.86
R-10 2ft	-10.63	25.02
R-10 4ft	-10.98	13.52
Intercept		-9.325
Slope(DD)		7042.21
Curve(DDS)		-29.227

Heated Basement		(/ft)
R-0	-7.34	134.86
R-5 4ft	-9.07	77.19
R-5 8ft	-9.53	61.86
R-10 4ft	-9.45	64.52
R-10 8ft	-10.06	44.02
Intercept		.000
Slope(DD)		4455.78
Curve(DDS)		-26.413

Unheated Basement		(/sf)
R-0	-7.34	6.74
R-11 flr	-10.30	1.81
R-19 flr	-11.34	.07
R-30 flr	-12.01	-1.04
Intercept		-4.152
Slope(DD)		4285.65
Curve(DDS)		-421.444

Crawl		(/sf)
R-0	.00	18.98
R-11 flr	-9.76	2.70
R-19 flr	-11.36	.04
R-30 flr	-12.32	-1.57
R-38 flr	-12.55	-1.93
R-49 flr	-13.18	-2.99
Intercept		-5.438
Slope(DD)		4935.56
Curve(DDS)		-34.022

Infiltration ELF	Ach	(/sf flr)
.0007(.75)	.00	12.28
.0005(.55)	-5.12	8.01
.0003(.33)	-9.51	4.35
Slope/.001ELF		12.250
Curve/.001ELF		7.552

Window U-value		(/sf)
1-Pane	.00	119.17
2-Pane	-10.42	46.77
3-Pane	-12.95	29.20
R-10	-15.93	8.54
Slope(DD)		3546.14
Curve(DDS)		36.659

Base Load = 67.06 MBtu
Typical Load = 16.76 MBtu
Residual Load = 8.15 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	7.36
R-7	-2.63	2.97
R-11	-3.05	2.27
R-19	-3.43	1.64
R-22	-3.58	1.39
R-30	-3.78	1.06
R-38	-3.89	.87
R-49	-4.01	.67
R-60	-4.08	.55
Slope(DD)		1544.24
Curve(DDS)		-51.153

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.10
R-7	-.47	1.61
R-11	-.54	1.39
R-13	-.65	1.06
R-19	-.70	.89
R-27	-.77	.67
R-34	-.81	.54
Slope(DD)		686.23
Curve(DDS)		-20.484

Slab		(/ft)
R-0	-1.04	-7.58
R-5 2ft	-1.00	-6.24
R-5 4ft	-.97	-5.41
R-10 2ft	-.99	-5.91
R-10 4ft	-.95	-4.74
Intercept		-1.955
Slope(DD)		-987.03
Curve(DDS)		43.241

Heated Basement		(/ft)
R-0	-.78	.92
R-5 4ft	-.82	-.41
R-5 8ft	-.81	-.08
R-10 4ft	-.83	-.58
R-10 8ft	-.82	-.41
Intercept		.000
Slope(DD)		-56.17
Curve(DDS)		2.008

Unheated Basement		(/sf)
R-0	-.78	.05
R-11 flr	-.38	.72
R-19 flr	-.25	.93
R-30 flr	-.16	1.07
Intercept		1.447
Slope(DD)		-515.04
Curve(DDS)		47.159

Crawl		(/sf)
R-0	.00	1.35
R-11 flr	.23	1.73
R-19 flr	.23	1.74
R-30 flr	.23	1.73
R-38 flr	.23	1.73
R-49 flr	.23	1.72
Intercept		1.701
Slope(DD)		59.52
Curve(DDS)		-25.095

Infiltration ELF	Ach	(/sf flr)
.0007(.62)	.00	.30
.0005(.45)	-.12	.20
.0003(.27)	-.22	.11
Slope/.001ELF		.312
Curve/.001ELF		.156

Window U-value		(/sf)
1-Pane	.00	2.58
2-Pane	-.20	1.23
3-Pane	-.26	.78
R-10	-.34	.26
Slope(DD)		109.70
Curve(DDS)		-.451

Base Load = 10.43 MBtu
Typical Load = 4.70 MBtu
Residual Load = .17 MBtu

El Paso TX WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	14.89
R-7	-14.04	5.77
R-11	-16.29	4.32
R-19	-18.30	3.01
R-22	-19.03	2.54
R-30	-20.01	1.90
R-38	-20.60	1.52
R-49	-21.06	1.22
R-60	-21.36	1.02
Slope(DD)	2762.28	
Curve(DDS)	-42.219	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	12.06
R-7	-7.54	5.35
R-11	-8.61	4.40
R-13	-9.84	3.30
R-19	-10.45	2.76
R-27	-11.28	2.02
R-34	-11.79	1.57
Slope(DD)	1916.88	
Curve(DDS)	60.594	

Slab		(/ft)
R-0	-10.98	17.49
R-5 2ft	-12.77	6.71
R-5 4ft	-13.05	5.02
R-10 2ft	-13.08	4.84
R-10 4ft	-13.35	3.22
Intercept	.000	
Slope(DD)	867.86	
Curve(DDS)	111.298	

Heated Basement		(/ft)
R-0	-6.58	44.00
R-5 4ft	-9.88	24.12
R-5 8ft	-10.48	20.51
R-10 4ft	-10.60	19.78
R-10 8ft	-11.21	16.11
Intercept	6.447	
Slope(DD)	991.88	
Curve(DDS)	1.379	

Unheated Basement		(/sf)
R-0	-6.58	4.74
R-11 flr	-11.24	1.72
R-19 flr	-12.31	1.02
R-30 flr	-13.00	.57
Intercept	-.582	
Slope(DD)	1547.91	
Curve(DDS)	-99.347	

Crawl		(/sf)
R-0	.00	9.02
R-11 flr	-10.57	2.15
R-19 flr	-12.09	1.16
R-30 flr	-12.90	.64
R-38 flr	-13.08	.52
R-49 flr	-13.61	.18
Intercept	-.634	
Slope(DD)	1557.86	
Curve(DDS)	63.195	

Infiltration ELF Ach		(/sf flr)
.0007(.73)	.00	4.62
.0005(.52)	-2.82	2.79
.0003(.31)	-5.01	1.37
Slope/.001ELF	3.019	
Curve/.001ELF	5.114	

Window U-value		(/sf)
1-Pane	.00	45.97
2-Pane	-5.60	15.66
3-Pane	-6.72	9.62
R-10	-8.03	2.51
Slope(DD)	1003.22	
Curve(DDS)	27.952	

Base Load = 62.20 MBtu
Typical Load = 19.70 MBtu
Residual Load = 3.92 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	12.23
R-7	-11.43	4.81
R-11	-13.26	3.62
R-19	-14.90	2.56
R-22	-15.50	2.17
R-30	-16.31	1.64
R-38	-16.80	1.33
R-49	-17.24	1.04
R-60	-17.52	.86
Slope(DD)	2374.29	
Curve(DDS)	-52.411	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	5.33
R-7	-3.14	2.54
R-11	-3.59	2.14
R-13	-4.10	1.69
R-19	-4.35	1.46
R-27	-4.82	1.04
R-34	-5.11	.79
Slope(DD)	1025.52	
Curve(DDS)	-6.273	

Slab		(/ft)
R-0	-6.48	2.17
R-5 2ft	-6.66	1.09
R-5 4ft	-6.64	1.21
R-10 2ft	-6.72	.73
R-10 4ft	-6.73	.67
Intercept	.000	
Slope(DD)	249.35	
Curve(DDS)	-1.537	

Heated Basement		(/ft)
R-0	-2.92	23.62
R-5 4ft	-3.55	19.82
R-5 8ft	-3.63	19.34
R-10 4ft	-3.76	18.56
R-10 8ft	-3.93	17.53
Intercept	13.893	
Slope(DD)	424.10	
Curve(DDS)	-4.283	

Unheated Basement		(/sf)
R-0	-2.92	2.55
R-11 flr	-1.93	3.19
R-19 flr	-1.75	3.30
R-30 flr	-1.64	3.38
Intercept	3.555	
Slope(DD)	-231.57	
Curve(DDS)	6.782	

Crawl		(/sf)
R-0	.00	4.44
R-11 flr	-.28	4.26
R-19 flr	-.52	4.10
R-30 flr	-.75	3.96
R-38 flr	-.80	3.92
R-49 flr	-.95	3.82
Intercept	3.597	
Slope(DD)	516.53	
Curve(DDS)	-68.594	

Infiltration ELF Ach		(/sf flr)
.0007(.55)	.00	.99
.0005(.39)	-.61	.59
.0003(.23)	-1.08	.29
Slope/.001ELF	.617	
Curve/.001ELF	1.136	

Window U-value		(/sf)
1-Pane	.00	5.20
2-Pane	-.67	1.57
3-Pane	-.78	.95
R-10	-.92	.22
Slope(DD)	82.85	
Curve(DDS)	4.319	

Base Load = 47.82 MBtu
Typical Load = 22.06 MBtu
Residual Load = 3.99 MBtu

El Paso TX WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	15.22
R-7	-5.86	5.46
R-11	-6.79	3.90
R-19	-7.63	2.50
R-22	-7.87	2.10
R-30	-8.19	1.56
R-38	-8.39	1.24
R-49	-8.54	.98
R-60	-8.64	.82
Slope(DD)	2191.14	
Curve(DDS)	63.454	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	10.94
R-7	-3.11	4.42
R-11	-3.55	3.49
R-13	-3.98	2.58
R-19	-4.20	2.13
R-27	-4.48	1.53
R-34	-4.66	1.16
Slope(DD)	1362.39	
Curve(DDS)	125.058	

Slab		(/ft)
R-0	-4.34	12.97
R-5 2ft	-4.67	4.72
R-5 4ft	-4.71	3.72
R-10 2ft	-4.72	3.47
R-10 4ft	-4.77	2.22
Intercept	.000	
Slope(DD)	582.64	
Curve(DDS)	89.073	

Heated Basement		(/ft)
R-0	-3.09	44.22
R-5 4ft	-3.90	23.97
R-5 8ft	-4.02	20.97
R-10 4ft	-4.04	20.47
R-10 8ft	-4.18	16.97
Intercept	9.357	
Slope(DD)	743.96	
Curve(DDS)	6.180	

Unheated Basement		(/sf)
R-0	-3.09	2.95
R-11 flr	-4.05	1.35
R-19 flr	-4.31	.91
R-30 flr	-4.48	.63
Intercept	-.120	
Slope(DD)	1019.15	
Curve(DDS)	-82.083	

Crawl		(/sf)
R-0	.00	8.10
R-11 flr	-3.42	2.40
R-19 flr	-3.90	1.60
R-30 flr	-4.15	1.18
R-38 flr	-4.21	1.08
R-49 flr	-4.38	.80
Intercept	.159	
Slope(DD)	1234.43	
Curve(DDS)	61.201	

Infiltration ELF	Ach	(/sf flr)
.0007(.73)	.00	3.32
.0005(.52)	-1.85	1.78
.0003(.31)	-3.13	.71
Slope/.001ELF	.583	
Curve/.001ELF	5.938	

Window U-value		(/sf)
1-Pane	.00	37.71
2-Pane	-3.54	13.13
3-Pane	-4.27	8.08
R-10	-5.12	2.15
Slope(DD)	865.28	
Curve(DDS)	21.329	

Base Load = 27.37 MBtu
Typical Load = 9.67 MBtu
Residual Load = 5.14 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	12.26
R-7	-4.54	4.70
R-11	-5.26	3.49
R-19	-5.91	2.41
R-22	-6.14	2.03
R-30	-6.44	1.53
R-38	-6.62	1.22
R-49	-6.77	.97
R-60	-6.87	.81
Slope(DD)	2200.23	
Curve(DDS)	-22.402	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	5.61
R-7	-1.39	2.69
R-11	-1.59	2.27
R-13	-1.84	1.74
R-19	-1.97	1.48
R-27	-2.16	1.09
R-34	-2.27	.85
Slope(DD)	1070.42	
Curve(DDS)	-5.044	

Slab		(/ft)
R-0	-2.51	.03
R-5 2ft	-2.55	-.97
R-5 4ft	-2.53	-.47
R-10 2ft	-2.55	-.97
R-10 4ft	-2.54	-.72
Intercept	.000	
Slope(DD)	-362.38	
Curve(DDS)	39.486	

Heated Basement		(/ft)
R-0	-1.08	35.78
R-5 4ft	-1.24	31.78
R-5 8ft	-1.26	31.28
R-10 4ft	-1.30	30.28
R-10 8ft	-1.31	30.03
Intercept	27.600	
Slope(DD)	247.06	
Curve(DDS)	-.559	

Unheated Basement		(/sf)
R-0	-1.08	2.39
R-11 flr	-.66	3.09
R-19 flr	-.56	3.25
R-30 flr	-.50	3.35
Intercept	3.622	
Slope(DD)	-362.18	
Curve(DDS)	23.585	

Crawl		(/sf)
R-0	.00	4.19
R-11 flr	.00	4.19
R-19 flr	-.09	4.04
R-30 flr	-.17	3.90
R-38 flr	-.19	3.87
R-49 flr	-.24	3.78
Intercept	3.548	
Slope(DD)	510.46	
Curve(DDS)	-75.317	

Infiltration ELF	Ach	(/sf flr)
.0007(.54)	.00	.85
.0005(.38)	-.39	.52
.0003(.23)	-.70	.26
Slope/.001ELF	.625	
Curve/.001ELF	.833	

Window U-value		(/sf)
1-Pane	.00	2.87
2-Pane	-.30	.79
3-Pane	-.35	.47
R-10	-.40	.09
Slope(DD)	33.62	
Curve(DDS)	2.848	

Base Load = 30.16 MBtu
Typical Load = 19.72 MBtu
Residual Load = 8.71 MBtu

El Paso TX WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	(/sf)
R-0	.00	15.57
R-7	-6.03	5.52
R-11	-6.99	3.91
R-19	-7.86	2.47
R-22	-8.10	2.07
R-30	-8.42	1.53
R-38	-8.62	1.20
R-49	-8.76	.97
R-60	-8.85	.82
Slope(DD)		2138.27
Curve(DDS)		82.161

Wall	Delta (MBtu)	(/sf)
R-0	.00	10.71
R-7	-2.12	4.02
R-11	-2.42	3.07
R-13	-2.68	2.24
R-19	-2.82	1.83
R-27	-2.99	1.29
R-34	-3.09	.96
Slope(DD)		1072.10
Curve(DDS)		170.802

Slab	Delta (MBtu)	(/ft)
R-0	-4.85	12.87
R-5 2ft	-5.15	3.04
R-5 4ft	-5.17	2.21
R-10 2ft	-5.18	2.04
R-10 4ft	-5.21	.87
Intercept		.000
Slope(DD)		-95.13
Curve(DDS)		161.248

Heated Basement	Delta (MBtu)	(/ft)
R-0	-3.91	44.21
R-5 4ft	-4.70	17.87
R-5 8ft	-4.77	15.54
R-10 4ft	-4.79	14.87
R-10 8ft	-4.89	11.54
Intercept		6.913
Slope(DD)		313.72
Curve(DDS)		19.965

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-3.91	2.21
R-11 flr	-4.73	.85
R-19 flr	-4.88	.59
R-30 flr	-4.99	.42
Intercept		-.001
Slope(DD)		552.55
Curve(DDS)		-23.643

Crawl	Delta (MBtu)	(/sf)
R-0	.00	8.73
R-11 flr	-3.92	2.19
R-19 flr	-4.37	1.45
R-30 flr	-4.62	1.02
R-38 flr	-4.68	.93
R-49 flr	-4.85	.65
Intercept		.134
Slope(DD)		1027.45
Curve(DDS)		126.429

Infiltration ELF Ach	Delta (MBtu)	(/sf flr)
.0007(.73)	.00	3.02
.0005(.52)	-1.88	1.46
.0003(.31)	-3.09	.45
Slope/.001ELF		-.604
Curve/.001ELF		7.031

Window U-value	Delta (MBtu)	(/sf)
1-Pane	.00	35.93
2-Pane	-3.57	11.11
3-Pane	-4.20	6.73
R-10	-4.94	1.59
Slope(DD)		609.56
Curve(DDS)		28.465

Base Load = 26.04 MBtu
Typical Load = 8.74 MBtu
Residual Load = 5.66 MBtu

Cooling Load

Ceiling	Delta (MBtu)	(/sf)
R-0	.00	12.99
R-7	-4.79	5.00
R-11	-5.56	3.72
R-19	-6.24	2.58
R-22	-6.48	2.18
R-30	-6.81	1.64
R-38	-7.00	1.32
R-49	-7.17	1.04
R-60	-7.27	.86
Slope(DD)		2364.95
Curve(DDS)		-29.417

Wall	Delta (MBtu)	(/sf)
R-0	.00	5.21
R-7	-.91	2.34
R-11	-1.04	1.93
R-13	-1.20	1.41
R-19	-1.28	1.15
R-27	-1.37	.87
R-34	-1.43	.70
Slope(DD)		829.76
Curve(DDS)		25.806

Slab	Delta (MBtu)	(/ft)
R-0	-1.90	.50
R-5 2ft	-1.95	-1.00
R-5 4ft	-1.94	-.67
R-10 2ft	-1.95	-1.17
R-10 4ft	-1.94	-.84
Intercept		.000
Slope(DD)		-462.00
Curve(DDS)		55.842

Heated Basement	Delta (MBtu)	(/ft)
R-0	-.91	33.66
R-5 4ft	-1.06	28.66
R-5 8ft	-1.07	28.16
R-10 4ft	-1.09	27.50
R-10 8ft	-1.12	26.50
Intercept		23.509
Slope(DD)		328.61
Curve(DDS)		-1.306

Unheated Basement	Delta (MBtu)	(/sf)
R-0	-.91	1.68
R-11 flr	-.42	2.50
R-19 flr	-.33	2.65
R-30 flr	-.27	2.74
Intercept		2.971
Slope(DD)		-298.53
Curve(DDS)		9.255

Crawl	Delta (MBtu)	(/sf)
R-0	.00	3.19
R-11 flr	.16	3.46
R-19 flr	.08	3.33
R-30 flr	.02	3.22
R-38 flr	.00	3.19
R-49 flr	-.05	3.12
Intercept		2.900
Slope(DD)		471.00
Curve(DDS)		-80.777

Infiltration ELF Ach	Delta (MBtu)	(/sf flr)
.0007(.55)	.00	.78
.0005(.39)	-.38	.47
.0003(.23)	-.66	.23
Slope/.001ELF		.500
Curve/.001ELF		.885

Window U-value	Delta (MBtu)	(/sf)
1-Pane	.00	3.89
2-Pane	-.35	1.43
3-Pane	-.43	.88
R-10	-.52	.25
Slope(DD)		100.31
Curve(DDS)		1.784

Base Load = 27.72 MBtu
Typical Load = 18.11 MBtu
Residual Load = 7.38 MBtu

Fort Worth TX WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	14.43
R-7	-13.46	5.69
R-11	-15.61	4.30
R-19	-17.54	3.04
R-22	-18.27	2.57
R-30	-19.24	1.94
R-38	-19.83	1.56
R-49	-20.32	1.24
R-60	-20.64	1.03
Slope(DD)	2824.03	
Curve(DDS)	-65.673	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	12.90
R-7	-7.66	6.08
R-11	-8.75	5.11
R-13	-10.05	3.95
R-19	-10.69	3.38
R-27	-11.74	2.45
R-34	-12.38	1.88
Slope(DD)	2396.43	
Curve(DDS)	.245	

Slab		(/ft)
R-0	-11.49	26.98
R-5 2ft	-13.74	13.43
R-5 4ft	-14.27	10.24
R-10 2ft	-14.11	11.20
R-10 4ft	-14.77	7.22
Intercept	.000	
Slope(DD)	1985.32	
Curve(DDS)	31.749	

Heated Basement		(/ft)
R-0	-8.04	47.77
R-5 4ft	-11.23	28.55
R-5 8ft	-12.10	23.31
R-10 4ft	-12.00	23.91
R-10 8ft	-13.17	16.86
Intercept	1.182	
Slope(DD)	1545.79	
Curve(DDS)	-9.541	

Unheated Basement		(/sf)
R-0	-8.04	5.15
R-11 flr	-13.15	1.83
R-19 flr	-14.44	.99
R-30 flr	-15.27	.45
Intercept	-.967	
Slope(DD)	1917.75	
Curve(DDS)	-141.391	

Crawl		(/sf)
R-0	.00	10.37
R-11 flr	-12.00	2.58
R-19 flr	-13.88	1.36
R-30 flr	-14.92	.68
R-38 flr	-15.16	.53
R-49 flr	-15.85	.08
Intercept	-.993	
Slope(DD)	2093.27	
Curve(DDS)	23.912	

Infiltration ELF	Ach	(/sf flr)
.0007 (.71)	.00	6.99
.0005 (.53)	-3.50	4.72
.0003 (.32)	-6.66	2.66
Slope/.001ELF	8.052	
Curve/.001ELF	2.760	

Window U-value		(/sf)
1-Pane	.00	56.96
2-Pane	-6.30	22.87
3-Pane	-7.88	14.31
R-10	-9.74	4.25
Slope(DD)	1773.22	
Curve(DDS)	14.554	

Base Load = 67.92 MBtu
Typical Load = 24.39 MBtu
Residual Load = .28 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	8.86
R-7	-8.30	3.47
R-11	-9.63	2.61
R-19	-10.82	1.84
R-22	-11.26	1.55
R-30	-11.85	1.17
R-38	-12.21	.93
R-49	-12.50	.75
R-60	-12.69	.62
Slope(DD)	1697.12	
Curve(DDS)	-34.094	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	5.06
R-7	-2.91	2.47
R-11	-3.32	2.10
R-13	-3.83	1.65
R-19	-4.08	1.43
R-27	-4.53	1.03
R-34	-4.80	.79
Slope(DD)	1023.75	
Curve(DDS)	-15.484	

Slab		(/ft)
R-0	-7.71	4.42
R-5 2ft	-8.19	1.52
R-5 4ft	-8.26	1.10
R-10 2ft	-8.30	.86
R-10 4ft	-8.35	.56
Intercept	.000	
Slope(DD)	64.48	
Curve(DDS)	27.894	

Heated Basement		(/ft)
R-0	-3.19	31.65
R-5 4ft	-4.05	26.46
R-5 8ft	-4.35	24.66
R-10 4ft	-4.39	24.42
R-10 8ft	-4.70	22.55
Intercept	17.017	
Slope(DD)	549.90	
Curve(DDS)	-4.600	

Unheated Basement		(/sf)
R-0	-3.19	3.41
R-11 flr	-2.28	4.00
R-19 flr	-2.17	4.07
R-30 flr	-2.10	4.12
Intercept	4.213	
Slope(DD)	-112.48	
Curve(DDS)	-8.549	

Crawl		(/sf)
R-0	.00	5.48
R-11 flr	-.68	5.04
R-19 flr	-1.03	4.81
R-30 flr	-1.34	4.61
R-38 flr	-1.41	4.57
R-49 flr	-1.61	4.43
Intercept	4.122	
Slope(DD)	695.95	
Curve(DDS)	-83.996	

Infiltration ELF	Ach	(/sf flr)
.0007 (.63)	.00	5.05
.0005 (.45)	-2.06	3.71
.0003 (.27)	-4.25	2.29
Slope/.001ELF	7.954	
Curve/.001ELF	-1.055	

Window U-value		(/sf)
1-Pane	.00	9.82
2-Pane	-1.12	3.76
3-Pane	-1.38	2.34
R-10	-1.69	.67
Slope(DD)	277.31	
Curve(DDS)	3.581	

Base Load = 51.72 MBtu
Typical Load = 27.33 MBtu
Residual Load = 4.65 MBtu

Fort Worth TX WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	15.19
R-7	-5.75	5.61
R-11	-6.67	4.08
R-19	-7.49	2.70
R-22	-7.75	2.27
R-30	-8.10	1.69
R-38	-8.31	1.34
R-49	-8.47	1.07
R-60	-8.57	.90
Slope(DD)		2411.07
Curve(DDS)		25.415

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	12.15
R-7	-3.33	5.16
R-11	-3.80	4.17
R-13	-4.29	3.13
R-19	-4.54	2.62
R-27	-4.89	1.89
R-34	-5.10	1.44
Slope(DD)		1744.31
Curve(DDS)		95.568

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-4.92	20.50
R-5 2ft	-5.39	8.75
R-5 4ft	-5.49	6.25
R-10 2ft	-5.46	7.00
R-10 4ft	-5.57	4.25
Intercept		.000
Slope(DD)		984.03
Curve(DDS)		69.823

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-3.87	46.75
R-5 4ft	-4.79	23.75
R-5 8ft	-4.98	19.00
R-10 4ft	-4.96	19.50
R-10 8ft	-5.19	13.75
Intercept		2.817
Slope(DD)		969.51
Curve(DDS)		3.203

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-3.87	3.12
R-11 flr	-4.99	1.25
R-19 flr	-5.31	.72
R-30 flr	-5.51	.38
Intercept		-.531
Slope(DD)		1243.53
Curve(DDS)		-103.791

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	9.57
R-11 flr	-4.21	2.55
R-19 flr	-4.84	1.50
R-30 flr	-5.16	.97
R-38 flr	-5.23	.85
R-49 flr	-5.44	.50
Intercept		-.374
Slope(DD)		1645.63
Curve(DDS)		57.145

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.74)	.00	5.32
.0005(.52)	-2.50	3.24
.0003(.31)	-4.46	1.61
Slope/.001ELF		3.666
Curve/.001ELF		5.625

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	46.58
2-Pane	-4.51	15.26
3-Pane	-5.36	9.33
R-10	-6.37	2.35
Slope(DD)		923.23
Curve(DDS)		31.868

Base Load = 31.33 MBtu
Typical Load = 12.15 MBtu
Residual Load = 2.78 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	8.66
R-7	-3.19	3.34
R-11	-3.70	2.49
R-19	-4.16	1.72
R-22	-4.32	1.46
R-30	-4.53	1.10
R-38	-4.66	.89
R-49	-4.78	.70
R-60	-4.85	.57
Slope(DD)		1582.42
Curve(DDS)		-20.652

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.27
R-7	-1.19	1.78
R-11	-1.36	1.42
R-13	-1.50	1.12
R-19	-1.57	.98
R-27	-1.72	.67
R-34	-1.81	.47
Slope(DD)		606.92
Curve(DDS)		34.832

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-3.06	1.63
R-5 2ft	-3.19	-1.62
R-5 4ft	-3.18	-1.37
R-10 2ft	-3.20	-1.87
R-10 4ft	-3.19	-1.62
Intercept		.000
Slope(DD)		-705.14
Curve(DDS)		73.738

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-1.30	45.63
R-5 4ft	-1.54	39.63
R-5 8ft	-1.58	38.63
R-10 4ft	-1.60	38.13
R-10 8ft	-1.66	36.63
Intercept		33.006
Slope(DD)		343.28
Curve(DDS)		-.696

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-1.30	3.04
R-11 flr	-.74	3.98
R-19 flr	-.65	4.13
R-30 flr	-.59	4.23
Intercept		4.455
Slope(DD)		-294.41
Curve(DDS)		3.691

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.21
R-11 flr	-.05	5.13
R-19 flr	-.18	4.91
R-30 flr	-.29	4.73
R-38 flr	-.31	4.69
R-49 flr	-.38	4.58
Intercept		4.257
Slope(DD)		685.03
Curve(DDS)		-97.388

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.63)	.00	4.67
.0005(.45)	-1.44	3.47
.0003(.27)	-3.01	2.17
Slope/.001ELF		7.625
Curve/.001ELF		-1.354

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	4.76
2-Pane	-.58	.73
3-Pane	-.63	.38
R-10	-.69	-.03
Slope(DD)		-32.60
Curve(DDS)		8.064

Base Load = 34.23 MBtu
Typical Load = 24.08 MBtu
Residual Load = 10.02 MBtu

Fort Worth TX WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	15.49
R-7	-5.91	5.63
R-11	-6.86	4.06
R-19	-7.71	2.64
R-22	-7.96	2.21
R-30	-8.31	1.64
R-38	-8.52	1.29
R-49	-8.67	1.04
R-60	-8.76	.89
Slope(DD)		2328.59
Curve(DDS)		47.814

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-5.36	22.17
R-5 2ft	-5.75	9.34
R-5 4ft	-5.83	6.67
R-10 2ft	-5.80	7.50
R-10 4ft	-5.89	4.50
Intercept		.000
Slope(DD)		1029.58
Curve(DDS)		78.501

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-4.57	2.43
R-11 flr	-5.48	.92
R-19 flr	-5.73	.49
R-30 flr	-5.90	.21
Intercept		-.540
Slope(DD)		1019.15
Curve(DDS)		-85.977

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007	(.74)	.00	5.10
.0005	(.52)	-2.51	3.01
.0003	(.32)	-4.40	1.43
Slope/.001ELF			2.875
Curve/.001ELF			6.302

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	12.15
R-7	-2.26	5.02
R-11	-2.58	4.01
R-13	-2.90	2.99
R-19	-3.06	2.48
R-27	-3.28	1.79
R-34	-3.42	1.36
Slope(DD)		1616.69
Curve(DDS)		119.397

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-4.57	48.50
R-5 4ft	-5.40	21.00
R-5 8ft	-5.56	15.67
R-10 4ft	-5.54	16.17
R-10 8ft	-5.73	9.84
Intercept		-1.695
Slope(DD)		986.53
Curve(DDS)		6.687

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	10.04
R-11 flr	-4.47	2.59
R-19 flr	-5.11	1.53
R-30 flr	-5.45	.96
R-38 flr	-5.53	.83
R-49 flr	-5.76	.45
Intercept		-.426
Slope(DD)		1687.19
Curve(DDS)		69.095

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	45.38
2-Pane	-4.53	13.92
3-Pane	-5.32	8.43
R-10	-6.25	1.97
Slope(DD)		753.69
Curve(DDS)		36.559

Base Load = 29.74 MBtu
Typical Load = 11.20 MBtu
Residual Load = 3.10 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	8.82
R-7	-3.34	3.26
R-11	-3.87	2.37
R-19	-4.35	1.57
R-22	-4.50	1.32
R-30	-4.70	.99
R-38	-4.82	.79
R-49	-4.92	.62
R-60	-4.98	.52
Slope(DD)		1402.43
Curve(DDS)		14.379

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.60	-1.35
R-5 2ft	-2.68	-3.85
R-5 4ft	-2.67	-3.52
R-10 2ft	-2.70	-4.52
R-10 4ft	-2.66	-3.19
Intercept		.000
Slope(DD)		-1289.36
Curve(DDS)		102.082

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-1.19	2.29
R-11 flr	-.67	3.17
R-19 flr	-.54	3.37
R-30 flr	-.47	3.50
Intercept		3.837
Slope(DD)		-452.73
Curve(DDS)		29.483

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007	(.63)	.00	4.64
.0005	(.45)	-1.47	3.42
.0003	(.27)	-3.03	2.11
Slope/.001ELF			7.354
Curve/.001ELF			-1.042

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.47
R-7	-.82	1.89
R-11	-.93	1.52
R-13	-1.03	1.24
R-19	-1.07	1.10
R-27	-1.18	.73
R-34	-1.25	.51
Slope(DD)		677.12
Curve(DDS)		28.602

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-1.19	45.81
R-5 4ft	-1.44	37.65
R-5 8ft	-1.50	35.31
R-10 4ft	-1.52	34.98
R-10 8ft	-1.57	33.15
Intercept		27.735
Slope(DD)		492.54
Curve(DDS)		-1.008

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.27
R-11 flr	.07	4.39
R-19 flr	-.06	4.18
R-30 flr	-.16	4.01
R-38 flr	-.18	3.97
R-49 flr	-.25	3.86
Intercept		3.540
Slope(DD)		688.99
Curve(DDS)		-106.426

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	5.30
2-Pane	-.63	.89
3-Pane	-.69	.48
R-10	-.76	-.01
Slope(DD)		-24.49
Curve(DDS)		8.535

Base Load = 32.41 MBtu
Typical Load = 22.98 MBtu
Residual Load = 9.25 MBtu

Fresno CA TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	17.20
R-7	-16.08	6.76
R-11	-18.64	5.10
R-19	-20.95	3.60
R-22	-21.81	3.04
R-30	-22.96	2.30
R-38	-23.65	1.85
R-49	-24.24	1.46
R-60	-24.62	1.22
Slope(DD)	3333.49	
Curve(DDS)	-72.860	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	14.33
R-7	-8.44	6.82
R-11	-9.64	5.75
R-13	-11.11	4.44
R-19	-11.84	3.79
R-27	-13.00	2.76
R-34	-13.71	2.13
Slope(DD)	2710.38	
Curve(DDS)	-8.619	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-10.22	32.74	
R-5 2ft	-12.79	17.26	
R-5 4ft	-13.42	13.46	
R-10 2ft	-13.22	14.67	
R-10 4ft	-14.06	9.61	
Intercept	.000		
Slope(DD)	2665.37		
Curve(DDS)	3.752		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-6.55	54.85	
R-5 4ft	-9.93	34.49	
R-5 8ft	-10.88	28.76	
R-10 4ft	-10.73	29.67	
R-10 8ft	-12.11	21.35	
Intercept	3.296		
Slope(DD)	1752.24		
Curve(DDS)	-12.045		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-6.55	5.91	
R-11 flr	-12.77	1.87	
R-19 flr	-14.36	.84	
R-30 flr	-15.39	.17	
Intercept	-1.590		
Slope(DD)	2380.12		
Curve(DDS)	-178.847		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	10.17	
R-11 flr	-12.46	2.07	
R-19 flr	-14.42	.80	
R-30 flr	-15.52	.09	
R-38 flr	-15.77	-.07	
R-49 flr	-16.49	-.54	
Intercept	-1.669		
Slope(DD)	2203.92		
Curve(DDS)	20.288		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.58)	.00	6.37	
.0005	(.42)	-3.33	4.21	
.0003	(.26)	-6.24	2.32	
Slope/.001ELF		6.721		
Curve/.001ELF		3.409		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	57.86	
2-Pane	-6.08	24.96	
3-Pane	-7.78	15.74	
R-10	-9.79	4.89	
Slope(DD)	2067.37		
Curve(DDS)	4.715		

Base Load = 72.63 MBtu
Typical Load = 25.92 MBtu
Residual Load = .90 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	13.17	
R-7	-12.16	5.28	
R-11	-14.10	4.02	
R-19	-15.84	2.88	
R-22	-16.51	2.45	
R-30	-17.42	1.86	
R-38	-17.96	1.51	
R-49	-18.46	1.18	
R-60	-18.79	.97	
Slope(DD)	2702.40		
Curve(DDS)	-81.128		

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	6.56	
R-7	-3.61	3.35	
R-11	-4.12	2.89	
R-13	-4.86	2.23	
R-19	-5.22	1.91	
R-27	-5.78	1.41	
R-34	-6.12	1.11	
Slope(DD)	1430.21		
Curve(DDS)	-39.252		

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-7.08	-1.02	
R-5 2ft	-7.09	-1.08	
R-5 4ft	-7.06	-.90	
R-10 2ft	-7.10	-1.14	
R-10 4ft	-7.04	-.78	
Intercept	.000		
Slope(DD)	-273.47		
Curve(DDS)	15.668		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-3.69	19.40	
R-5 4ft	-4.13	16.75	
R-5 8ft	-4.20	16.33	
R-10 4ft	-4.28	15.85	
R-10 8ft	-4.39	15.19	
Intercept	13.169		
Slope(DD)	191.43		
Curve(DDS)	-.956		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-3.69	2.09	
R-11 flr	-2.40	2.93	
R-19 flr	-2.19	3.06	
R-30 flr	-2.06	3.15	
Intercept	3.351		
Slope(DD)	-257.81		
Curve(DDS)	2.367		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	4.49	
R-11 flr	-.56	4.12	
R-19 flr	-.89	3.91	
R-30 flr	-1.13	3.75	
R-38 flr	-1.19	3.71	
R-49 flr	-1.35	3.61	
Intercept	3.324		
Slope(DD)	602.26		
Curve(DDS)	-73.202		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.45)	.00	1.47	
.0005	(.32)	-.67	1.03	
.0003	(.19)	-1.32	.61	
Slope/.001ELF		1.981		
Curve/.001ELF		.162		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	9.26	
2-Pane	-.89	4.45	
3-Pane	-1.19	2.83	
R-10	-1.54	.93	
Slope(DD)	400.21		
Curve(DDS)	-1.867		

Base Load = 47.03 MBtu
Typical Load = 19.31 MBtu
Residual Load = -.66 MBtu

Fresno CA TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	17.99
R-7	-6.78	6.68
R-11	-7.87	4.88
R-19	-8.84	3.25
R-22	-9.15	2.74
R-30	-9.57	2.04
R-38	-9.82	1.62
R-49	-10.01	1.30
R-60	-10.14	1.09
Slope(DD)		2913.86
Curve(DDS)		20.244

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	13.57
R-7	-3.67	5.88
R-11	-4.19	4.78
R-13	-4.75	3.60
R-19	-5.03	3.02
R-27	-5.43	2.18
R-34	-5.67	1.67
Slope(DD)		2039.96
Curve(DDS)		89.953

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-4.56	24.90
R-5 2ft	-5.11	11.15
R-5 4ft	-5.22	8.40
R-10 2ft	-5.19	9.15
R-10 4ft	-5.33	5.65
Intercept		.000
Slope(DD)		1375.51
Curve(DDS)		56.810

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-3.34	55.40
R-5 4ft	-4.34	30.40
R-5 8ft	-4.58	24.40
R-10 4ft	-4.55	25.15
R-10 8ft	-4.82	18.40
Intercept		4.699
Slope(DD)		1201.77
Curve(DDS)		.906

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-3.34	3.69
R-11 flr	-4.76	1.33
R-19 flr	-5.18	.63
R-30 flr	-5.45	.18
Intercept		-1.046
Slope(DD)		1668.03
Curve(DDS)		-145.055

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	9.26
R-11 flr	-4.30	2.09
R-19 flr	-4.95	1.01
R-30 flr	-5.28	.45
R-38 flr	-5.36	.33
R-49 flr	-5.58	-.04
Intercept		-.953
Slope(DD)		1729.85
Curve(DDS)		51.079

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007	(.58)	.00	4.83
.0005	(.44)	-2.32	2.90
.0003	(.27)	-4.11	1.41
Slope/.001ELF			3.041
Curve/.001ELF			5.521

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	45.56
2-Pane	-4.29	15.77
3-Pane	-5.16	9.70
R-10	-6.19	2.57
Slope(DD)		1031.32
Curve(DDS)		26.301

Base Load = 32.49 MBtu
Typical Load = 12.03 MBtu
Residual Load = 3.07 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	13.64
R-7	-4.93	5.43
R-11	-5.71	4.12
R-19	-6.42	2.94
R-22	-6.69	2.49
R-30	-7.05	1.89
R-38	-7.27	1.52
R-49	-7.46	1.20
R-60	-7.59	.99
Slope(DD)		2744.43
Curve(DDS)		-74.812

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	7.10
R-7	-1.71	3.52
R-11	-1.95	3.01
R-13	-2.28	2.31
R-19	-2.45	1.96
R-27	-2.69	1.45
R-34	-2.84	1.14
Slope(DD)		1450.82
Curve(DDS)		-24.262

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-2.80	-2.93
R-5 2ft	-2.77	-2.18
R-5 4ft	-2.75	-1.68
R-10 2ft	-2.77	-2.18
R-10 4ft	-2.74	-1.43
Intercept		.000
Slope(DD)		-461.42
Curve(DDS)		18.109

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.33	33.82
R-5 4ft	-1.47	30.32
R-5 8ft	-1.52	29.07
R-10 4ft	-1.54	28.57
R-10 8ft	-1.54	28.57
Intercept		26.937
Slope(DD)		109.09
Curve(DDS)		1.456

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-1.33	2.25
R-11 flr	-.87	3.02
R-19 flr	-.79	3.15
R-30 flr	-.74	3.24
Intercept		3.440
Slope(DD)		-262.03
Curve(DDS)		6.006

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	4.47
R-11 flr	-.16	4.20
R-19 flr	-.28	4.00
R-30 flr	-.35	3.88
R-38 flr	-.37	3.85
R-49 flr	-.42	3.77
Intercept		3.512
Slope(DD)		521.15
Curve(DDS)		-65.130

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007	(.49)	.00	1.23
.0005	(.35)	-.46	.85
.0003	(.21)	-.89	.49
Slope/.001ELF			1.542
Curve/.001ELF			.313

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	6.79
2-Pane	-.57	2.83
3-Pane	-.72	1.78
R-10	-.90	.54
Slope(DD)		227.87
Curve(DDS)		1.114

Base Load = 29.29 MBtu
Typical Load = 17.69 MBtu
Residual Load = 5.53 MBtu

Fresno CA TMY MApartment Prototype Siding . Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	18.37
R-7	-7.03	6.66
R-11	-8.15	4.79
R-19	-9.16	3.11
R-22	-9.46	2.60
R-30	-9.87	1.92
R-38	-10.12	1.51
R-49	-10.29	1.22
R-60	-10.40	1.04
Slope(DD)		2728.53
Curve(DDS)		62.511

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	13.30
R-7	-2.47	5.50
R-11	-2.83	4.39
R-13	-3.18	3.26
R-19	-3.36	2.71
R-27	-3.60	1.95
R-34	-3.75	1.49
Slope(DD)		1768.52
Curve(DDS)		131.163

Slab		(/ft)
R-0	-5.05	28.45
R-5 2ft	-5.51	12.95
R-5 4ft	-5.61	9.61
R-10 2ft	-5.58	10.61
R-10 4ft	-5.70	6.61
Intercept		.000
Slope(DD)		1617.42
Curve(DDS)		61.106

Heated Basement		(/ft)
R-0	-4.16	57.78
R-5 4ft	-5.08	27.45
R-5 8ft	-5.27	20.95
R-10 4ft	-5.25	21.61
R-10 8ft	-5.49	13.61
Intercept		-1.797
Slope(DD)		1342.36
Curve(DDS)		2.759

Unheated Basement		(/sf)
R-0	-4.16	2.89
R-11 flr	-5.31	.98
R-19 flr	-5.65	.41
R-30 flr	-5.87	.05
Intercept		-.946
Slope(DD)		1355.80
Curve(DDS)		-118.553

Crawl		(/sf)
R-0	.00	9.83
R-11 flr	-4.60	2.16
R-19 flr	-5.25	1.07
R-30 flr	-5.58	.52
R-38 flr	-5.66	.40
R-49 flr	-5.88	.04
Intercept		-.834
Slope(DD)		1637.93
Curve(DDS)		86.169

Infiltration ELF	Ach	(/sf flr)
.0007(.58)	.00	4.51
.0005(.44)	-2.31	2.59
.0003(.27)	-4.01	1.17
Slope/.001ELF		2.000
Curve/.001ELF		6.354

Window U-value		(/sf)
1-Pane	.00	43.59
2-Pane	-4.26	13.97
3-Pane	-5.05	8.51
R-10	-5.97	2.09
Slope(DD)		815.74
Curve(DDS)		31.639

Base Load = 30.60 MBtu
Typical Load = 10.80 MBtu
Residual Load = 3.52 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	14.57
R-7	-5.27	5.79
R-11	-6.11	4.39
R-19	-6.87	3.13
R-22	-7.15	2.65
R-30	-7.54	2.01
R-38	-7.77	1.62
R-49	-7.98	1.28
R-60	-8.11	1.05
Slope(DD)		2917.57
Curve(DDS)		-77.565

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	6.82
R-7	-1.11	3.33
R-11	-1.26	2.83
R-13	-1.47	2.17
R-19	-1.57	1.85
R-27	-1.73	1.36
R-34	-1.82	1.06
Slope(DD)		1353.02
Curve(DDS)		-15.786

Slab		(/ft)
R-0	-2.15	-3.73
R-5 2ft	-2.16	-3.89
R-5 4ft	-2.14	-3.23
R-10 2ft	-2.15	-3.73
R-10 4ft	-2.13	-2.73
Intercept		.000
Slope(DD)		-941.30
Curve(DDS)		52.377

Heated Basement		(/ft)
R-0	-1.24	26.77
R-5 4ft	-1.34	23.27
R-5 8ft	-1.36	22.77
R-10 4ft	-1.37	22.27
R-10 8ft	-1.39	21.61
Intercept		19.733
Slope(DD)		165.60
Curve(DDS)		.156

Unheated Basement		(/sf)
R-0	-1.24	1.34
R-11 flr	-.81	2.05
R-19 flr	-.73	2.18
R-30 flr	-.68	2.27
Intercept		2.490
Slope(DD)		-286.41
Curve(DDS)		12.075

Crawl		(/sf)
R-0	.00	3.41
R-11 flr	-.07	3.29
R-19 flr	-.16	3.14
R-30 flr	-.23	3.02
R-38 flr	-.24	3.00
R-49 flr	-.29	2.92
Intercept		2.708
Slope(DD)		451.51
Curve(DDS)		-61.517

Infiltration ELF	Ach	(/sf flr)
.0007(.45)	.00	1.23
.0005(.32)	-.44	.85
.0003(.19)	-.87	.50
Slope/.001ELF		1.604
Curve/.001ELF		.208

Window U-value		(/sf)
1-Pane	.00	8.32
2-Pane	-.66	3.74
3-Pane	-.86	2.37
R-10	-1.09	.75
Slope(DD)		319.95
Curve(DDS)		-.180

Base Load = 26.44 MBtu
Typical Load = 15.71 MBtu
Residual Load = 3.78 MBtu

Great Falls MT WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	43.23
R-7	-39.89	17.33
R-11	-46.26	13.19
R-19	-51.98	9.48
R-22	-54.21	8.03
R-30	-57.19	6.10
R-38	-58.99	4.93
R-49	-60.61	3.88
R-60	-61.65	3.20
Slope(DD)		8872.89
Curve(DDS)		-266.684

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	41.60
R-7	-23.66	20.54
R-11	-27.03	17.55
R-13	-31.20	13.84
R-19	-33.26	12.00
R-27	-37.03	8.65
R-34	-39.34	6.59
Slope(DD)		8628.80
Curve(DDS)		-166.309

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-24.94	60.41	
R-5 2ft	-31.48	21.01	
R-5 4ft	-33.48	8.96	
R-10 2ft	-32.71	13.60	
R-10 4ft	-35.52	-3.33	
Intercept		-40.277	
Slope(DD)		16142.20	
Curve(DDS)		-548.839	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-12.69	134.20	
R-5 4ft	-19.45	93.48	
R-5 8ft	-22.27	76.49	
R-10 4ft	-21.28	82.46	
R-10 8ft	-25.61	56.37	
Intercept		.000	
Slope(DD)		7255.03	
Curve(DDS)		-97.914	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-12.69	14.47	
R-11 flr	-33.50	.95	
R-19 flr	-39.57	-2.99	
R-30 flr	-43.47	-5.52	
Intercept		-12.387	
Slope(DD)		9359.54	
Curve(DDS)		-804.004	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	22.71	
R-11 flr	-36.96	-1.29	
R-19 flr	-43.18	-5.33	
R-30 flr	-47.10	-7.88	
R-38 flr	-48.00	-8.46	
R-49 flr	-50.58	-10.14	
Intercept		-13.960	
Slope(DD)		7822.59	
Curve(DDS)		-131.083	

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.98)	.00	27.12	
.0005	(.72)	-12.12	19.25	
.0003	(.43)	-24.09	11.48	
Slope/.001ELF			37.890	
Curve/.001ELF			1.218	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	202.24	
2-Pane	-19.71	95.58	
3-Pane	-26.14	60.77	
R-10	-33.71	19.82	
Slope(DD)		8502.72	
Curve(DDS)		-31.905	

Base Load = 224.05 MBtu
Typical Load = 80.52 MBtu
Residual Load = 13.26 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	3.70	
R-7	-3.45	1.45	
R-11	-4.00	1.10	
R-19	-4.50	.77	
R-22	-4.68	.65	
R-30	-4.93	.49	
R-38	-5.08	.40	
R-49	-5.21	.31	
R-60	-5.29	.26	
Slope(DD)		717.58	
Curve(DDS)		-15.876	

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	1.45	
R-7	-.80	.74	
R-11	-.91	.64	
R-13	-1.08	.48	
R-19	-1.17	.41	
R-27	-1.28	.31	
R-34	-1.35	.25	
Slope(DD)		310.67	
Curve(DDS)		-7.708	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.50	-2.75	
R-5 2ft	-2.36	-1.91	
R-5 4ft	-2.29	-1.49	
R-10 2ft	-2.33	-1.73	
R-10 4ft	-2.23	-1.12	
Intercept		.242	
Slope(DD)		-626.66	
Curve(DDS)		32.652	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-1.89		.92
R-5 4ft	-2.10		-.34
R-5 8ft	-2.08		-.22
R-10 4ft	-2.14		-.58
R-10 8ft	-2.10		-.34
Intercept			.000
Slope(DD)			-62.33
Curve(DDS)			2.480

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-1.89	.10	
R-11 flr	-.81	.80	
R-19 flr	-.50	1.00	
R-30 flr	-.30	1.13	
Intercept		1.482	
Slope(DD)		-477.14	
Curve(DDS)		40.459	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		1.33
R-11 flr	.47		1.63
R-19 flr	.50		1.65
R-30 flr	.51		1.66
R-38 flr	.51		1.66
R-49 flr	.52		1.66
Intercept			1.662
Slope(DD)			5.55
Curve(DDS)			-13.815

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.58)	.00	.18	
.0005	(.41)	-.08	.13	
.0003	(.25)	-.16	.08	
Slope/.001ELF			.260	
Curve/.001ELF			.000	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		1.34
2-Pane	-.09		.85
3-Pane	-.15		.55
R-10	-.21		.20
Slope(DD)			90.00
Curve(DDS)			-1.487

Base Load = 10.22 MBtu
Typical Load = 1.70 MBtu
Residual Load = -2.07 MBtu

Great Falls MT WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	45.31
R-7	-16.59	17.66
R-11	-19.24	13.24
R-19	-21.62	9.28
R-22	-22.48	7.85
R-30	-23.63	5.93
R-38	-24.32	4.78
R-49	-24.93	3.76
R-60	-25.32	3.11
Slope(DD)	8563.47	
Curve(DDS)	-155.390	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	40.71
R-7	-10.17	19.36
R-11	-11.62	16.32
R-13	-13.31	12.77
R-19	-14.15	11.01
R-27	-15.62	7.92
R-34	-16.53	6.01
Slope(DD)	7769.70	
Curve(DDS)	-37.520	

Slab		(/ft)
R-0	-12.39	59.48
R-5 2ft	-13.98	19.73
R-5 4ft	-14.43	8.48
R-10 2ft	-14.26	12.73
R-10 4ft	-14.88	-2.77
Intercept	-35.643	
Slope(DD)	14116.76	
Curve(DDS)	-392.290	

Heated Basement		(/ft)
R-0	-8.41	158.98
R-5 4ft	-10.81	98.98
R-5 8ft	-11.55	80.48
R-10 4ft	-11.37	84.98
R-10 8ft	-12.45	57.98
Intercept	.000	
Slope(DD)	7245.78	
Curve(DDS)	-78.097	

Unheated Basement		(/sf)
R-0	-8.41	10.60
R-11 flr	-13.26	2.52
R-19 flr	-15.01	-.41
R-30 flr	-16.14	-2.28
Intercept	-7.544	
Slope(DD)	7254.65	
Curve(DDS)	-724.787	

Crawl		(/sf)
R-0	.00	24.62
R-11 flr	-13.51	2.10
R-19 flr	-15.78	-1.68
R-30 flr	-17.20	-4.05
R-38 flr	-17.52	-4.58
R-49 flr	-18.45	-6.14
Intercept	-9.704	
Slope(DD)	7269.95	
Curve(DDS)	-112.569	

Infiltration ELF	Ach	(/sf flr)
.0007(***)	.00	24.67
.0005(.74)	-9.12	17.07
.0003(.44)	-17.71	9.91
Slope/.001ELF	31.374	
Curve/.001ELF	5.521	

Window U-value		(/sf)
1-Pane	.00	184.69
2-Pane	-14.67	82.81
3-Pane	-19.05	52.40
R-10	-24.20	16.63
Slope(DD)	7079.01	
Curve(DDS)	-3.154	

Base Load = 109.31 MBtu
Typical Load = 36.24 MBtu
Residual Load = 5.24 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.05
R-7	-1.45	1.63
R-11	-1.68	1.24
R-19	-1.89	.90
R-22	-1.97	.76
R-30	-2.08	.59
R-38	-2.14	.48
R-49	-2.21	.37
R-60	-2.25	.30
Slope(DD)	844.38	
Curve(DDS)	-27.311	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.76
R-7	-.39	.95
R-11	-.44	.83
R-13	-.53	.64
R-19	-.58	.54
R-27	-.64	.41
R-34	-.68	.33
Slope(DD)	422.36	
Curve(DDS)	-17.790	

Slab		(/ft)
R-0	-1.01	-8.33
R-5 2ft	-.95	-6.83
R-5 4ft	-.92	-6.08
R-10 2ft	-.94	-6.58
R-10 4ft	-.91	-5.83
Intercept	-4.271	
Slope(DD)	-664.20	
Curve(DDS)	23.581	

Heated Basement		(/ft)
R-0	-.71	-.83
R-5 4ft	-.74	-1.58
R-5 8ft	-.72	-1.08
R-10 4ft	-.75	-1.83
R-10 8ft	-.72	-1.08
Intercept	.000	
Slope(DD)	-158.62	
Curve(DDS)	3.802	

Unheated Basement		(/sf)
R-0	-.71	-.06
R-11 flr	-.30	.63
R-19 flr	-.19	.81
R-30 flr	-.12	.93
Intercept	1.241	
Slope(DD)	-424.40	
Curve(DDS)	33.457	

Crawl		(/sf)
R-0	.00	1.13
R-11 flr	.23	1.51
R-19 flr	.26	1.56
R-30 flr	.26	1.56
R-38 flr	.26	1.56
R-49 flr	.26	1.56
Intercept	1.589	
Slope(DD)	-20.05	
Curve(DDS)	-13.619	

Infiltration ELF	Ach	(/sf flr)
.0007(.58)	.00	.07
.0005(.41)	-.06	.02
.0003(.25)	-.09	-.01
Slope/.001ELF	-.125	
Curve/.001ELF	.313	

Window U-value		(/sf)
1-Pane	.00	.67
2-Pane	-.06	.25
3-Pane	-.07	.16
R-10	-.09	.04
Slope(DD)	18.44	
Curve(DDS)	.263	

Base Load = 6.98 MBtu
Typical Load = 3.40 MBtu
Residual Load = 1.21 MBtu

Great Falls MT WYEC MApartment Prototype Siding Series Two

Heating Load

Component	Delta (MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	43.94
R-7	-16.20	16.94
R-11	-18.79	12.63
R-19	-21.11	8.76
R-22	-21.93	7.39
R-30	-23.02	5.57
R-38	-23.69	4.46
R-49	-24.24	3.54
R-60	-24.60	2.94
Slope(DD)	8029.77	
Curve(DDS)	-104.329	

Component	Delta (MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	40.96
R-7	-6.92	19.13
R-11	-7.90	16.02
R-13	-9.02	12.49
R-19	-9.58	10.74
R-27	-10.54	7.71
R-34	-11.13	5.85
Slope(DD)	7502.64	
Curve(DDS)	20.867	

Component	Delta (MBtu)	(KBtu)
Slab		(/ft)
R-0	-13.55	83.42
R-5 2ft	-14.84	40.42
R-5 4ft	-15.22	27.92
R-10 2ft	-15.07	32.76
R-10 4ft	-15.59	15.59
Intercept	-21.027	
Slope(DD)	15780.18	
Curve(DDS)	-461.812	

Component	Delta (MBtu)	(KBtu)
Heated Basement		(/ft)
R-0	-10.39	188.76
R-5 4ft	-12.60	115.26
R-5 8ft	-13.26	93.09
R-10 4ft	-13.11	98.26
R-10 8ft	-14.04	67.09
Intercept	.000	
Slope(DD)	8319.41	
Curve(DDS)	-84.751	

Component	Delta (MBtu)	(KBtu)
Unheated Basement		(/sf)
R-0	-10.39	9.44
R-11 flr	-14.30	2.92
R-19 flr	-15.83	.37
R-30 flr	-16.82	-1.27
Intercept	-5.910	
Slope(DD)	6423.47	
Curve(DDS)	-668.967	

Component	Delta (MBtu)	(KBtu)
Crawl		(/sf)
R-0	.00	26.75
R-11 flr	-13.94	3.52
R-19 flr	-16.23	-.29
R-30 flr	-17.67	-2.70
R-38 flr	-18.00	-3.25
R-49 flr	-18.95	-4.83
Intercept	-8.386	
Slope(DD)	7294.79	
Curve(DDS)	-86.178	

Component	Delta (MBtu)	(KBtu)
Infiltration		(/sf flr)
ELF Ach		
.0007(***)	.00	24.39
.0005(.74)	-9.12	16.79
.0003(.44)	-17.63	9.70
Slope/.001ELF	30.437	
Curve/.001ELF	6.303	

Component	Delta (MBtu)	(KBtu)
Window U-value		(/sf)
1-Pane	.00	183.76
2-Pane	-14.89	80.36
3-Pane	-19.16	50.73
R-10	-24.17	15.88
Slope(DD)	6730.81	
Curve(DDS)	8.706	

Base Load = 103.21 MBtu
Typical Load = 33.35 MBtu
Residual Load = 5.56 MBtu

Cooling Load

Component	Delta (MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	4.14
R-7	-1.46	1.71
R-11	-1.69	1.32
R-19	-1.90	.97
R-22	-1.99	.83
R-30	-2.11	.63
R-38	-2.18	.51
R-49	-2.24	.40
R-60	-2.28	.33
Slope(DD)	923.28	
Curve(DDS)	-37.920	

Component	Delta (MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	1.69
R-7	-.25	.92
R-11	-.28	.81
R-13	-.34	.63
R-19	-.37	.54
R-27	-.41	.40
R-34	-.44	.32
Slope(DD)	416.08	
Curve(DDS)	-18.894	

Component	Delta (MBtu)	(KBtu)
Slab		(/ft)
R-0	-.62	-4.80
R-5 2ft	-.57	-3.47
R-5 4ft	-.56	-2.97
R-10 2ft	-.56	-3.14
R-10 4ft	-.54	-2.30
Intercept	-.312	
Slope(DD)	-917.53	
Curve(DDS)	46.476	

Component	Delta (MBtu)	(KBtu)
Heated Basement		(/ft)
R-0	-.51	-1.47
R-5 4ft	-.53	-1.97
R-5 8ft	-.51	-1.47
R-10 4ft	-.52	-1.80
R-10 8ft	-.51	-1.30
Intercept	.000	
Slope(DD)	-177.72	
Curve(DDS)	3.829	

Component	Delta (MBtu)	(KBtu)
Unheated Basement		(/sf)
R-0	-.51	-.07
R-11 flr	-.23	.39
R-19 flr	-.14	.55
R-30 flr	-.09	.64
Intercept	.913	
Slope(DD)	-370.41	
Curve(DDS)	34.714	

Component	Delta (MBtu)	(KBtu)
Crawl		(/sf)
R-0	.00	.78
R-11 flr	.19	1.11
R-19 flr	.20	1.12
R-30 flr	.20	1.12
R-38 flr	.20	1.12
R-49 flr	.20	1.12
Intercept	1.101	
Slope(DD)	36.87	
Curve(DDS)	-19.232	

Component	Delta (MBtu)	(KBtu)
Infiltration		(/sf flr)
ELF Ach		
.0007(.58)	.00	.18
.0005(.41)	-.05	.13
.0003(.25)	-.12	.08
Slope/.001ELF	.292	
Curve/.001ELF	-.052	

Component	Delta (MBtu)	(KBtu)
Window U-value		(/sf)
1-Pane	.00	.91
2-Pane	-.06	.49
3-Pane	-.09	.32
R-10	-.12	.11
Slope(DD)	47.72	
Curve(DDS)	-.505	

Base Load = 5.81 MBtu
Typical Load = 2.62 MBtu
Residual Load = .31 MBtu

Honolulu HI TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.35
R-7	-.42	.08
R-11	-.49	.03
R-19	-.55	-.01
R-22	-.55	-.01
R-30	-.55	-.01
R-38	-.55	-.01
R-49	-.55	-.01
R-60	-.55	-.01
Slope(DD)		-20.15
Curve(DDS)		13.383

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.08
R-7	-.07	.02
R-11	-.08	.01
R-13	-.09	.00
R-19	-.09	.00
R-27	-.09	.00
R-34	-.09	.00
Slope(DD)		-3.50
Curve(DDS)		3.427

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-.09	-.03
R-5 2ft	-.08	.03
R-5 4ft	-.08	.03
R-10 2ft	-.08	.03
R-10 4ft	-.08	.03
Intercept		.000
Slope(DD)		13.87
Curve(DDS)		-1.816

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-.09	-.03
R-5 4ft	-.10	-.10
R-5 8ft	-.10	-.10
R-10 4ft	-.10	-.10
R-10 8ft	-.10	-.10
Intercept		-.076
Slope(DD)		-2.99
Curve(DDS)		.113

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-.09	-.00
R-11 flr	-.10	-.01
R-19 flr	-.10	-.01
R-30 flr	-.10	-.01
Intercept		-.010
Slope(DD)		-1.06
Curve(DDS)		.432

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.05
R-11 flr	-.06	.02
R-19 flr	-.06	.02
R-30 flr	-.06	.02
R-38 flr	-.06	.02
R-49 flr	-.06	.02
Intercept		.019
Slope(DD)		-6.00
Curve(DDS)		2.531

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.52) .00	.00	-.01
.0005(.37) -.02	-.02	-.02
.0003(.22) -.02	-.02	-.02
Slope/.001ELF		-.130
Curve/.001ELF		.162

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	.20
2-Pane	-.04	-.02
3-Pane	-.04	-.02
R-10	-.04	-.02
Slope(DD)		-8.68
Curve(DDS)		.615

Base Load = .78 MBtu
Typical Load = .05 MBtu
Residual Load = .06 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	8.18
R-7	-8.30	2.79
R-11	-9.62	1.93
R-19	-10.81	1.16
R-22	-11.12	.96
R-30	-11.53	.69
R-38	-11.78	.53
R-49	-11.91	.44
R-60	-12.00	.38
Slope(DD)		959.56
Curve(DDS)		70.790

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	1.96
R-7	-1.96	.21
R-11	-2.24	-.04
R-13	-2.40	-.18
R-19	-2.48	-.25
R-27	-2.39	-.17
R-34	-2.34	-.13
Slope(DD)		-299.19
Curve(DDS)		123.337

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-6.12	-.05
R-5 2ft	-6.13	-.11
R-5 4ft	-6.14	-.17
R-10 2ft	-6.15	-.23
R-10 4ft	-6.13	-.11
Intercept		.000
Slope(DD)		-64.53
Curve(DDS)		6.203

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-.63	33.02
R-5 4ft	.26	38.38
R-5 8ft	.41	39.29
R-10 4ft	.48	39.71
R-10 8ft	.77	41.46
Intercept		45.601
Slope(DD)		-479.10
Curve(DDS)		3.683

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-.63	3.56
R-11 flr	.21	4.11
R-19 flr	.11	4.04
R-30 flr	.04	3.99
Intercept		3.810
Slope(DD)		285.94
Curve(DDS)		-65.286

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.97
R-11 flr	1.28	4.80
R-19 flr	1.03	4.64
R-30 flr	.92	4.57
R-38 flr	.90	4.55
R-49 flr	.83	4.51
Intercept		4.222
Slope(DD)		523.16
Curve(DDS)		-111.630

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.68) .00	.00	4.47
.0005(.48) -1.69	3.37	
.0003(.29) -3.60	2.13	
Slope/.001ELF		7.630
Curve/.001ELF		-1.786

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	-23.54
2-Pane	1.28	-16.61
3-Pane	2.34	-10.86
R-10	3.59	-4.11
Slope(DD)		-1830.71
Curve(DDS)		35.576

Base Load = 63.62 MBtu
Typical Load = 42.75 MBtu
Residual Load = 19.94 MBtu

Honolulu HI TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.21
R-7	-.10	.05
R-11	-.12	.02
R-19	-.13	-.00
R-22	-.13	-.00
R-30	-.13	-.00
R-38	-.13	-.00
R-49	-.13	-.00
R-60	-.13	-.00
Slope(DD)		-12.23
Curve(DDS)		8.119

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.06
R-7	-.03	.00
R-11	-.03	-.01
R-13	-.03	-.01
R-19	-.03	-.01
R-27	-.03	-.01
R-34	-.03	-.01
Slope(DD)		-11.68
Curve(DDS)		4.101

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-.03	-.00
R-5 2ft	-.03	-.00
R-5 4ft	-.03	-.00
R-10 2ft	-.03	-.00
R-10 4ft	-.03	-.00
Intercept		.000
Slope(DD)		-.00
Curve(DDS)		.000

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-.03	-.00
R-5 4ft	-.03	-.00
R-5 8ft	-.03	-.00
R-10 4ft	-.03	-.00
R-10 8ft	-.03	-.00
Intercept		-.000
Slope(DD)		-.00
Curve(DDS)		.000

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-.03	-.00
R-11 flr	-.03	-.00
R-19 flr	-.03	-.00
R-30 flr	-.03	-.00
Intercept		-.000
Slope(DD)		.00
Curve(DDS)		.000

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.05
R-11 flr	-.02	.02
R-19 flr	-.02	.02
R-30 flr	-.02	.02
R-38 flr	-.02	.02
R-49 flr	-.02	.02
Intercept		.019
Slope(DD)		-5.13
Curve(DDS)		2.165

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.52)	.00	-.01
.0005(.37)	-.01	-.02
.0003(.22)	-.01	-.02
Slope/.001ELF		-.083
Curve/.001ELF		.104

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	.06
2-Pane	-.01	-.01
3-Pane	-.01	-.01
R-10	-.01	-.01
Slope(DD)		-2.78
Curve(DDS)		.197

Base Load = .21 MBtu
Typical Load = .01 MBtu
Residual Load = .04 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	5.96
R-7	-2.71	1.44
R-11	-3.14	.72
R-19	-3.53	.07
R-22	-3.54	.05
R-30	-3.56	.02
R-38	-3.57	.01
R-49	-3.59	-.02
R-60	-3.60	-.04
Slope(DD)		-139.31
Curve(DDS)		192.980

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	.55
R-7	-.55	-.61
R-11	-.63	-.77
R-13	-.65	-.82
R-19	-.66	-.84
R-27	-.54	-.58
R-34	-.46	-.42
Slope(DD)		-723.21
Curve(DDS)		153.501

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-2.41	-4.91
R-5 2ft	-2.42	-5.16
R-5 4ft	-2.42	-5.16
R-10 2ft	-2.42	-5.16
R-10 4ft	-2.36	-3.66
Intercept		.000
Slope(DD)		-1718.74
Curve(DDS)		125.667

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	.00	55.34
R-5 4ft	.26	61.84
R-5 8ft	.27	62.09
R-10 4ft	.30	62.84
R-10 8ft	.39	65.09
Intercept		69.472
Slope(DD)		-526.05
Curve(DDS)		3.813

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.69
R-11 flr	.45	4.44
R-19 flr	.49	4.51
R-30 flr	.52	4.56
Intercept		4.635
Slope(DD)		-86.18
Curve(DDS)		-19.181

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	-.42	2.99
R-11 flr	.69	4.84
R-19 flr	.66	4.79
R-30 flr	.66	4.79
R-38 flr	.66	4.79
R-49 flr	.66	4.79
Intercept		4.580
Slope(DD)		364.02
Curve(DDS)		-131.463

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.68)	.00	3.22
.0005(.48)	-.94	2.43
.0003(.28)	-2.01	1.54
Slope/.001ELF		5.542
Curve/.001ELF		-1.354

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	-27.61
2-Pane	1.44	-17.61
3-Pane	2.33	-11.45
R-10	3.37	-4.20
Slope(DD)		-1859.78
Curve(DDS)		30.837

Base Load = 45.93 MBtu
Typical Load = 38.41 MBtu
Residual Load = 24.01 MBtu

Honolulu HI TMY .MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	.34
R-7	-.15	.09
R-11	-.18	.05
R-19	-.20	.01
R-22	-.20	.01
R-30	-.20	.00
R-38	-.20	.00
R-49	-.20	.00
R-60	-.20	.00
Slope(DD)		-3.54
Curve(DDS)		10.334

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	.04
R-7	-.01	.00
R-11	-.01	-.01
R-13	-.01	-.01
R-19	-.01	-.01
R-27	-.01	-.01
R-34	-.01	-.01
Slope(DD)		-8.78
Curve(DDS)		3.082

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.01		.00
R-5 2ft	-.01		.00
R-5 4ft	-.01		.00
R-10 2ft	-.01		.00
R-10 4ft	-.01		.00
Intercept			.000
Slope(DD)			.00
Curve(DDS)			-.000

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.01		.00
R-5 4ft	-.01		.00
R-5 8ft	-.01		.00
R-10 4ft	-.01		.00
R-10 8ft	-.01		.00
Intercept			.000
Slope(DD)			.00
Curve(DDS)			.000

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-.01		.00
R-11 flr	-.01		.00
R-19 flr	-.01		.00
R-30 flr	-.01		.00
Intercept			.000
Slope(DD)			-.00
Curve(DDS)			.000

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		.02
R-11 flr	-.01		.00
R-19 flr	-.01		.00
R-30 flr	-.01		.00
R-38 flr	-.01		.00
R-49 flr	-.01		.00
Intercept			.001
Slope(DD)			-2.57
Curve(DDS)			1.083

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.52)	.00	-.00	
.0005	(.37)	-.01	-.01	
.0003	(.22)	-.01	-.01	
Slope/.001ELF				-.042
Curve/.001ELF				.052

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		.10
2-Pane	-.01		-.01
3-Pane	-.01		-.01
R-10	-.01		-.01
Slope(DD)			-4.18
Curve(DDS)			.296

Base Load = .25 MBtu
Typical Load = .02 MBtu
Residual Load = .02 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		6.75
R-7	-3.02		1.71
R-11	-3.51		.91
R-19	-3.94		.19
R-22	-4.00		.09
R-30	-4.08		-.04
R-38	-4.13		-.12
R-49	-4.05		.00
R-60	-4.00		.09
Slope(DD)			-99.59
Curve(DDS)			208.899

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		-.34
R-7	-.33		-1.38
R-11	-.38		-1.52
R-13	-.26		-1.18
R-19	-.21		-1.00
R-27	-.17		-.87
R-34	-.14		-.78
Slope(DD)			-1074.69
Curve(DDS)			187.817

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-1.71	-2.13	
R-5 2ft	-1.75	-3.30	
R-5 4ft	-1.75	-3.30	
R-10 2ft	-1.75	-3.30	
R-10 4ft	-1.72	-2.47	
Intercept			.000
Slope(DD)			-1191.48
Curve(DDS)			100.802

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	.00		54.87
R-5 4ft	.26		63.70
R-5 8ft	.35		66.37
R-10 4ft	.35		66.37
R-10 8ft	.41		68.53
Intercept			74.496
Slope(DD)			-633.99
Curve(DDS)			2.609

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		2.74
R-11 flr	.80		4.08
R-19 flr	.84		4.14
R-30 flr	.87		4.19
Intercept			4.204
Slope(DD)			23.70
Curve(DDS)			-60.152

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-.86		1.32
R-11 flr	.74		3.98
R-19 flr	.86		4.19
R-30 flr	.93		4.30
R-38 flr	.95		4.33
R-49 flr	1.00		4.40
Intercept			4.477
Slope(DD)			-152.33
Curve(DDS)			-90.429

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.68)	.00		3.14
.0005	(.47)	-.77		2.50
.0003	(.28)	-1.78		1.65
Slope/.001ELF				6.271
Curve/.001ELF				-2.552

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		-27.48
2-Pane	1.50		-17.10
3-Pane	2.36		-11.10
R-10	3.38		-4.04
Slope(DD)			-1785.91
Curve(DDS)			28.217

Base Load = 43.43 MBtu
Typical Load = 36.60 MBtu
Residual Load = 22.04 MBtu

Jacksonville FL TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	9.41
R-7	-8.93	3.61
R-11	-10.35	2.69
R-19	-11.63	1.85
R-22	-12.08	1.56
R-30	-12.69	1.17
R-38	-13.05	.93
R-49	-13.34	.75
R-60	-13.52	.63
Slope(DD)	1693.93	
Curve(DDS)	-18.093	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	7.61
R-7	-4.70	3.43
R-11	-5.37	2.83
R-13	-6.13	2.16
R-19	-6.50	1.83
R-27	-7.06	1.32
R-34	-7.41	1.02
Slope(DD)	1264.52	
Curve(DDS)	27.966	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-6.18	13.75
R-5 2ft	-7.38	6.52
R-5 4ft	-7.73	4.41
R-10 2ft	-7.73	4.41
R-10 4ft	-8.10	2.18
Intercept	.000	
Slope(DD)	676.79	
Curve(DDS)	35.529	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-4.74	22.42
R-5 4ft	-6.59	11.28
R-5 8ft	-7.06	8.45
R-10 4ft	-6.99	8.87
R-10 8ft	-7.54	5.55
Intercept	-1.000	
Slope(DD)	595.79	
Curve(DDS)	-.531	

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-4.74	2.42
R-11 flr	-7.39	.70
R-19 flr	-7.99	.31
R-30 flr	-8.37	.06
Intercept	-.581	
Slope(DD)	856.10	
Curve(DDS)	-52.939	

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	5.49
R-11 flr	-6.71	1.14
R-19 flr	-7.66	.52
R-30 flr	-8.05	.27
R-38 flr	-8.14	.21
R-49 flr	-8.40	.04
Intercept	-.430	
Slope(DD)	815.59	
Curve(DDS)	66.291	

Infiltration ELF	Ach	(KBtu/sf flr)
.0007	(.66) .00	3.52
.0005	(.45) -1.95	2.26
.0003	(.29) -3.58	1.20
Slope/.001ELF	3.214	
Curve/.001ELF	2.598	

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	26.88
2-Pane	-3.47	8.10
3-Pane	-4.06	4.90
R-10	-4.76	1.12
Slope(DD)	424.74	
Curve(DDS)	22.480	

Base Load = 38.79 MBtu
Typical Load = 12.46 MBtu
Residual Load = 1.16 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	8.53
R-7	-8.17	3.22
R-11	-9.48	2.38
R-19	-10.65	1.61
R-22	-11.04	1.36
R-30	-11.57	1.02
R-38	-11.89	.81
R-49	-12.14	.65
R-60	-12.30	.54
Slope(DD)	1460.70	
Curve(DDS)	-3.716	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.94
R-7	-2.48	1.73
R-11	-2.83	1.42
R-13	-3.23	1.06
R-19	-3.43	.89
R-27	-3.70	.65
R-34	-3.86	.50
Slope(DD)	613.32	
Curve(DDS)	22.176	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-6.80	-.59
R-5 2ft	-6.95	-1.50
R-5 4ft	-6.90	-1.20
R-10 2ft	-7.00	-1.80
R-10 4ft	-6.86	-.96
Intercept	.000	
Slope(DD)	-449.29	
Curve(DDS)	32.544	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-2.43	25.73
R-5 4ft	-2.44	25.67
R-5 8ft	-2.43	25.73
R-10 4ft	-2.42	25.79
R-10 8ft	-2.49	25.37
Intercept	24.704	
Slope(DD)	81.07	
Curve(DDS)	-1.374	

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-2.43	2.77
R-11 flr	-.86	3.79
R-19 flr	-.62	3.95
R-30 flr	-.46	4.05
Intercept	4.287	
Slope(DD)	-297.79	
Curve(DDS)	.527	

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.35
R-11 flr	.74	4.83
R-19 flr	.52	4.69
R-30 flr	.45	4.65
R-38 flr	.44	4.64
R-49 flr	.40	4.61
Intercept	4.386	
Slope(DD)	385.13	
Curve(DDS)	-76.378	

Infiltration ELF	Ach	(KBtu/sf flr)
.0007	(.58) .00	3.99
.0005	(.41) -1.58	2.96
.0003	(.24) -3.30	1.85
Slope/.001ELF	6.494	
Curve/.001ELF	-1.136	

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	-3.96
2-Pane	-.04	-4.18
3-Pane	.22	-2.78
R-10	.52	-1.15
Slope(DD)	-519.79	
Curve(DDS)	14.009	

Base Load = 48.97 MBtu
Typical Load = 26.96 MBtu
Residual Load = 6.95 MBtu

Jacksonville FL TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	9.39
R-7	-3.65	3.31
R-11	-4.24	2.33
R-19	-4.76	1.46
R-22	-4.90	1.22
R-30	-5.09	.90
R-38	-5.21	.71
R-49	-5.30	.57
R-60	-5.35	.48
Slope(DD)		1255.72
Curve(DDS)		55.438

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	6.56
R-7	-1.94	2.48
R-11	-2.22	1.90
R-13	-2.47	1.38
R-19	-2.59	1.12
R-27	-2.74	.80
R-34	-2.84	.60
Slope(DD)		665.57
Curve(DDS)		102.919

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.59	7.79
R-5 2ft	-2.81	2.29
R-5 4ft	-2.85	1.29
R-10 2ft	-2.85	1.29
R-10 4ft	-2.89	.29
Intercept		.000
Slope(DD)		-39.88
Curve(DDS)		54.376

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.19	17.79
R-5 4ft	-2.68	5.54
R-5 8ft	-2.76	3.54
R-10 4ft	-2.74	4.04
R-10 8ft	-2.82	2.04
Intercept		.037
Slope(DD)		85.31
Curve(DDS)		8.571

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-2.19	1.19
R-11 flr	-2.73	.29
R-19 flr	-2.85	.09
R-30 flr	-2.92	-.03
Intercept		-.346
Slope(DD)		418.89
Curve(DDS)		-23.437

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.84
R-11 flr	-2.23	1.12
R-19 flr	-2.49	.69
R-30 flr	-2.62	.47
R-38 flr	-2.65	.42
R-49 flr	-2.74	.28
Intercept		-.017
Slope(DD)		550.11
Curve(DDS)		77.306

Infiltration ELF (Ach)	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.64)	.00	1.98
.0005(.48)	-1.33	.87
.0003(.29)	-2.14	.20
Slope/.001ELF		-.959
Curve/.001ELF		5.417

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	22.18
2-Pane	-2.23	6.69
3-Pane	-2.61	4.04
R-10	-3.06	.93
Slope(DD)		351.44
Curve(DDS)		18.510

Base Load = 16.85 MBtu
Typical Load = 5.73 MBtu
Residual Load = 3.11 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	7.85
R-7	-2.97	2.90
R-11	-3.44	2.11
R-19	-3.87	1.40
R-22	-4.00	1.18
R-30	-4.18	.88
R-38	-4.29	.70
R-49	-4.38	.56
R-60	-4.43	.46
Slope(DD)		1247.82
Curve(DDS)		12.794

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.00
R-7	-.90	1.11
R-11	-1.03	.84
R-13	-1.12	.65
R-19	-1.17	.55
R-27	-1.26	.37
R-34	-1.31	.25
Slope(DD)		301.93
Curve(DDS)		47.675

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.53	-5.25
R-5 2ft	-2.56	-6.00
R-5 4ft	-2.51	-4.75
R-10 2ft	-2.53	-5.25
R-10 4ft	-2.45	-3.25
Intercept		.000
Slope(DD)		-1376.81
Curve(DDS)		77.020

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.66	41.50
R-5 4ft	-.63	42.25
R-5 8ft	-.75	39.25
R-10 4ft	-.64	42.00
R-10 8ft	-.64	42.00
Intercept		41.607
Slope(DD)		-24.77
Curve(DDS)		.581

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.66	2.77
R-11 flr	.01	3.88
R-19 flr	.11	4.05
R-30 flr	.17	4.15
Intercept		4.384
Slope(DD)		-294.32
Curve(DDS)		-4.113

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.87
R-11 flr	.62	4.90
R-19 flr	.60	4.87
R-30 flr	.49	4.69
R-38 flr	.47	4.65
R-49 flr	.40	4.53
Intercept		4.339
Slope(DD)		567.02
Curve(DDS)		-128.557

Infiltration ELF (Ach)	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.57)	.00	3.33
.0005(.41)	-1.13	2.39
.0003(.25)	-2.27	1.44
Slope/.001ELF		4.833
Curve/.001ELF		-.104

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-12.00
2-Pane	.46	-8.80
3-Pane	.90	-5.77
R-10	1.41	-2.20
Slope(DD)		-984.69
Curve(DDS)		20.086

Base Load = 33.62 MBtu
Typical Load = 25.03 MBtu
Residual Load = 13.27 MBtu

Jacksonville FL TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	9.53
R-7	-3.77	3.25
R-11	-4.37	2.24
R-19	-4.91	1.34
R-22	-5.04	1.12
R-30	-5.22	.83
R-38	-5.32	.65
R-49	-5.41	.51
R-60	-5.46	.43
Slope(DD)		1123.01
Curve(DDS)		81.603

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.84	8.76
R-5 2ft	-3.03	2.60
R-5 4ft	-3.07	1.10
R-10 2ft	-3.07	1.10
R-10 4ft	-3.10	.26
Intercept		.000
Slope(DD)		-115.81
Curve(DDS)		67.062

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-2.57	.89
R-11 flr	-3.01	.15
R-19 flr	-3.11	.00
R-30 flr	-3.16	-.10
Intercept		-.342
Slope(DD)		326.97
Curve(DDS)		-16.984

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.64)	.00	1.86
.0005(.48)	-1.32	.76
.0003(.29)	-2.09	.12
Slope/.001ELF		-1.313
Curve/.001ELF		5.677

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	6.29
R-7	-1.30	2.21
R-11	-1.48	1.62
R-13	-1.63	1.14
R-19	-1.71	.90
R-27	-1.79	.63
R-34	-1.85	.47
Slope(DD)		479.55
Curve(DDS)		128.363

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.57	17.76
R-5 4ft	-2.99	3.76
R-5 8ft	-3.06	1.43
R-10 4ft	-3.06	1.60
R-10 8ft	-3.10	.26
Intercept		-.780
Slope(DD)		-56.79
Curve(DDS)		12.537

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.18
R-11 flr	-2.41	1.16
R-19 flr	-2.71	.66
R-30 flr	-2.83	.47
R-38 flr	-2.85	.42
R-49 flr	-2.93	.29
Intercept		-.047
Slope(DD)		568.38
Curve(DDS)		87.970

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	21.24
2-Pane	-2.21	5.89
3-Pane	-2.55	3.52
R-10	-2.95	.72
Slope(DD)		257.45
Curve(DDS)		20.725

Base Load = 15.94 MBtu
Typical Load = 5.20 MBtu
Residual Load = 3.33 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	7.87
R-7	-3.10	2.70
R-11	-3.60	1.88
R-19	-4.04	1.14
R-22	-4.14	.96
R-30	-4.29	.73
R-38	-4.37	.59
R-49	-4.46	.44
R-60	-4.51	.35
Slope(DD)		968.76
Curve(DDS)		60.525

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-1.83	4.98
R-5 2ft	-1.85	3.98
R-5 4ft	-1.84	4.48
R-10 2ft	-1.85	3.98
R-10 4ft	-1.91	2.14
Intercept		.000
Slope(DD)		989.74
Curve(DDS)		-47.883

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.40	2.62
R-11 flr	.22	3.66
R-19 flr	.34	3.86
R-30 flr	.42	3.99
Intercept		4.314
Slope(DD)		-425.57
Curve(DDS)		18.402

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.57)	.00	3.45
.0005(.41)	-1.09	2.54
.0003(.24)	-2.25	1.57
Slope/.001ELF		5.479
Curve/.001ELF		-.781

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	2.40
R-7	-.60	.52
R-11	-.68	.25
R-13	-.75	.03
R-19	-.79	-.08
R-27	-.77	-.03
R-34	-.76	.00
Slope(DD)		-139.48
Curve(DDS)		108.939

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.40	52.31
R-5 4ft	-.40	52.48
R-5 8ft	-.39	52.81
R-10 4ft	-.40	52.48
R-10 8ft	-.38	53.14
Intercept		54.442
Slope(DD)		-143.59
Curve(DDS)		2.241

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.29
R-11 flr	.83	4.67
R-19 flr	.81	4.63
R-30 flr	.85	4.71
R-38 flr	.86	4.73
R-49 flr	.90	4.79
Intercept		4.668
Slope(DD)		100.59
Curve(DDS)		-71.964

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-11.99
2-Pane	.37	-9.42
3-Pane	.83	-6.20
R-10	1.38	-2.41
Slope(DD)		-1080.02
Curve(DDS)		23.703

Base Load = 31.35 MBtu
Typical Load = 23.68 MBtu
Residual Load = 11.85 MBtu

Juneau AK TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	49.32
R-7	-45.32	19.89
R-11	-52.56	15.19
R-19	-59.06	10.97
R-22	-61.63	9.30
R-30	-65.06	7.07
R-38	-67.14	5.72
R-49	-69.03	4.49
R-60	-70.25	3.70
Slope(DD)	10298.72	
Curve(DDS)	-334.001	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	48.11
R-7	-27.15	23.95
R-11	-31.02	20.51
R-13	-35.81	16.24
R-19	-38.19	14.13
R-27	-42.64	10.16
R-34	-45.38	7.73
Slope(DD)	10168.56	
Curve(DDS)	-227.541	

Slab			(/ft)
R-0		-23.37	122.39
R-5	2ft	-33.15	63.48
R-5	4ft	-36.61	42.64
R-10	2ft	-34.90	52.94
R-10	4ft	-39.60	24.62
Intercept		-33.664	
Slope(DD)		16956.09	
Curve(DDS)		-338.654	

Heated Basement			(/ft)
R-0		-14.50	175.83
R-5	4ft	-23.04	124.38
R-5	8ft	-26.81	101.67
R-10	4ft	-25.39	110.23
R-10	8ft	-31.15	75.53
Intercept		.000	
Slope(DD)		7627.98	
Curve(DDS)		-81.964	

Unheated Basement			(/sf)
R-0		-14.50	18.95
R-11	flr	-40.28	2.21
R-19	flr	-47.37	-2.39
R-30	flr	-51.92	-5.35
Intercept		-13.278	
Slope(DD)		10770.33	
Curve(DDS)		-874.605	

Crawl			(/sf)
R-0		.00	28.37
R-11	flr	-42.28	.91
R-19	flr	-49.68	-3.89
R-30	flr	-54.40	-6.96
R-38	flr	-55.48	-7.66
R-49	flr	-58.59	-9.68
Intercept		-14.325	
Slope(DD)		9545.62	
Curve(DDS)		-237.908	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.77)	.00	28.20
.0005	(.56)	-12.46	20.11
.0003	(.33)	-24.88	12.05
Slope/.001ELF		40.064	
Curve/.001ELF		.325	

Window U-value			(/sf)
1-Pane		.00	226.57
2-Pane		-21.18	111.96
3-Pane		-28.67	71.45
R-10		-37.47	23.81
Slope(DD)		10273.97	
Curve(DDS)		-64.083	

Base Load = 255.36 MBtu
Typical Load = 93.35 MBtu
Residual Load = 9.92 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	.05
R-7	-.05	.02
R-11	-.06	.01
R-19	-.07	.01
R-22	-.07	.01
R-30	-.07	.01
R-38	-.07	.01
R-49	-.08	.00
R-60	-.08	.00
Slope(DD)	6.60	
Curve(DDS)	.375	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	.00
R-7	.00	.00
R-11	.00	.00
R-13	.00	.00
R-19	.00	.00
R-27	.00	.00
R-34	.00	.00
Slope(DD)	.00	
Curve(DDS)	.000	

Slab			(/ft)
R-0		-.03	-.31
R-5	2ft	-.02	-.25
R-5	4ft	-.02	-.25
R-10	2ft	-.02	-.25
R-10	4ft	-.01	-.19
Intercept		-.070	
Slope(DD)		-39.84	
Curve(DDS)		1.684	

Heated Basement			(/ft)
R-0		-.01	-.19
R-5	4ft	-.01	-.19
R-5	8ft	-.01	-.19
R-10	4ft	-.01	-.19
R-10	8ft	.00	-.13
Intercept		.000	
Slope(DD)		-14.46	
Curve(DDS)		.239	

Unheated Basement			(/sf)
R-0		-.01	-.02
R-11	flr	.00	-.01
R-19	flr	.00	-.01
R-30	flr	.00	-.01
Intercept		-.014	
Slope(DD)		1.08	
Curve(DDS)		-.432	

Crawl			(/sf)
R-0		.00	-.01
R-11	flr	.01	-.01
R-19	flr	.00	-.01
R-30	flr	.00	-.01
R-38	flr	.00	-.01
R-49	flr	.00	-.01
Intercept		-.022	
Slope(DD)		11.27	
Curve(DDS)		-1.887	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.58)	.00	.00
.0005	(.42)	.00	.00
.0003	(.25)	.00	.00
Slope/.001ELF		.000	
Curve/.001ELF		.000	

Window U-value			(/sf)
1-Pane		.00	.00
2-Pane		.00	.00
3-Pane		.00	.00
R-10		.00	.00
Slope(DD)		.00	
Curve(DDS)		.000	

Base Load = .10 MBtu
Typical Load = .02 MBtu
Residual Load = .00 MBtu

Juneau AK TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	52.42
R-7	-19.12	20.56
R-11	-22.17	15.48
R-19	-24.91	10.91
R-22	-25.92	9.22
R-30	-27.27	6.97
R-38	-28.09	5.61
R-49	-28.80	4.43
R-60	-29.25	3.67
Slope(DD)	10096.13	
Curve(DDS)	-211.526	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	47.57
R-7	-11.81	22.78
R-11	-13.49	19.26
R-13	-15.48	15.07
R-19	-16.47	13.00
R-27	-18.20	9.36
R-34	-19.27	7.13
Slope(DD)	9219.22	
Curve(DDS)	-69.836	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-12.62	136.65	
R-5 2ft	-15.09	74.90	
R-5 4ft	-15.91	54.40	
R-10 2ft	-15.51	64.40	
R-10 4ft	-16.58	37.65	
Intercept	-15.369		
Slope(DD)	15024.47		
Curve(DDS)	-207.030		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-9.55	213.40	
R-5 4ft	-12.61	136.90	
R-5 8ft	-13.68	110.15	
R-10 4ft	-13.35	118.40	
R-10 8ft	-14.87	80.40	
Intercept	.000		
Slope(DD)	7872.97		
Curve(DDS)	-66.519		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-9.55	14.23	
R-11 flr	-15.73	3.93	
R-19 flr	-17.77	.53	
R-30 flr	-19.08	-1.66	
Intercept	-7.696		
Slope(DD)	8292.19		
Curve(DDS)	-783.368		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	30.14	
R-11 flr	-15.53	4.26	
R-19 flr	-18.18	-.16	
R-30 flr	-19.86	-2.95	
R-38 flr	-20.24	-3.59	
R-49 flr	-21.34	-5.43	
Intercept	-9.640		
Slope(DD)	8627.40		
Curve(DDS)	-169.476		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.78)	.00	25.90	
.0005	(.57)	-9.53	17.96	
.0003	(.35)	-18.54	10.45	
Slope/.001ELF		33.208		
Curve/.001ELF		5.417		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	206.38	
2-Pane	-16.08	94.72	
3-Pane	-21.07	60.06	
R-10	-26.94	19.30	
Slope(DD)	8244.36		
Curve(DDS)	-16.165		

Base Load = 123.53 MBtu
Typical Load = 40.75 MBtu
Residual Load = 1.44 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		.09
R-7	-.03		.03
R-11	-.04		.03
R-19	-.04		.02
R-22	-.04		.02
R-30	-.04		.02
R-38	-.04		.02
R-49	-.05		.01
R-60	-.05		.00
Slope(DD)	19.76		
Curve(DDS)	-.912		

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		.00
R-7	.00		.00
R-11	.00		.00
R-13	.00		.00
R-19	.00		.00
R-27	.00		.00
R-34	.00		.00
Slope(DD)	.00		
Curve(DDS)	.000		

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	.00		.00
R-5 2ft	.00		.00
R-5 4ft	.01		.25
R-10 2ft	.00		.00
R-10 4ft	.01		.25
Intercept	.890		
Slope(DD)	-203.99		
Curve(DDS)	10.738		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	.00		.00
R-5 4ft	.00		.00
R-5 8ft	.00		.00
R-10 4ft	.00		.00
R-10 8ft	.00		.00
Intercept	.000		
Slope(DD)	.00		
Curve(DDS)	.000		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		.00
R-11 flr	.00		.00
R-19 flr	.00		.00
R-30 flr	.00		.00
Intercept	.000		
Slope(DD)	.00		
Curve(DDS)	.000		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		.00
R-11 flr	.02		.03
R-19 flr	.02		.03
R-30 flr	.02		.03
R-38 flr	.02		.03
R-49 flr	.02		.03
Intercept	.031		
Slope(DD)	5.13		
Curve(DDS)	-2.165		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.58)	.00		.00
.0005	(.42)	.00		.00
.0003	(.25)	.00		.00
Slope/.001ELF		.000		
Curve/.001ELF		.000		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		-.10
2-Pane	.00		-.10
3-Pane	.00		-.06
R-10	.01		-.03
Slope(DD)	-11.71		
Curve(DDS)	.307		

Base Load = .08 MBtu
Typical Load = .04 MBtu
Residual Load = .02 MBtu

Juneau AK TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	51.18
R-7	-18.80	19.85
R-11	-21.80	14.85
R-19	-24.49	10.36
R-22	-25.46	8.75
R-30	-26.75	6.59
R-38	-27.53	5.29
R-49	-28.19	4.19
R-60	-28.62	3.48
Slope(DD)		9531.35
Curve(DDS)		-151.495

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	48.04
R-7	-8.06	22.62
R-11	-9.21	19.00
R-13	-10.52	14.84
R-19	-11.18	12.78
R-27	-12.32	9.18
R-34	-13.02	6.96
Slope(DD)		8968.45
Curve(DDS)		-6.980

Slab		(/ft)
R-0	-14.29	170.43
R-5 2ft	-16.28	104.10
R-5 4ft	-16.98	80.93
R-10 2ft	-16.63	92.60
R-10 4ft	-17.56	61.43
Intercept		-1.880
Slope(DD)		1829 7.85
Curve(DDS)		-339.012

Heated Basement		(/ft)
R-0	-11.93	249.10
R-5 4ft	-14.76	154.93
R-5 8ft	-15.69	123.93
R-10 4ft	-15.42	132.77
R-10 8ft	-16.71	89.93
Intercept		.000
Slope(DD)		8705.21
Curve(DDS)		-66.109

Unheated Basement		(/sf)
R-0	-11.93	12.45
R-11 flr	-16.92	4.15
R-19 flr	-18.67	1.21
R-30 flr	-19.81	-.67
Intercept		-5.930
Slope(DD)		7247.64
Curve(DDS)		-714.192

Crawl		(/sf)
R-0	.00	32.34
R-11 flr	-15.97	5.72
R-19 flr	-18.63	1.28
R-30 flr	-20.31	-1.52
R-38 flr	-20.69	-2.15
R-49 flr	-21.80	-3.99
Intercept		-8.174
Slope(DD)		8553.98
Curve(DDS)		-127.477

Infiltration ELF Ach		(/sf flr)
.0007(.78)	.00	25.67
.0005(.57)	-9.50	17.75
.0003(.35)	-18.44	10.30
Slope/.001ELF		32.583
Curve/.001ELF		5.834

Window U-value		(/sf)
1-Pane	.00	206.72
2-Pane	-16.37	93.04
3-Pane	-21.29	58.89
R-10	-27.07	18.73
Slope(DD)		7976.22
Curve(DDS)		-5.533

Base Load = 116.30 MBtu
Typical Load = 36.97 MBtu
Residual Load = 1.31 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	.08
R-7	-.03	.03
R-11	-.04	.02
R-19	-.04	.01
R-22	-.04	.01
R-30	-.04	.01
R-38	-.05	.01
R-49	-.05	.01
R-60	-.05	.01
Slope(DD)		11.51
Curve(DDS)		.341

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	.03
R-7	.00	.03
R-11	.00	.03
R-13	.00	.03
R-19	.00	.03
R-27	-.00	.02
R-34	-.01	.01
Slope(DD)		20.54
Curve(DDS)		-2.854

Slab		(/ft)
R-0	-.01	-.17
R-5 2ft	.00	.00
R-5 4ft	.00	.00
R-10 2ft	.00	.00
R-10 4ft	.00	.00
Intercept		-.081
Slope(DD)		33.82
Curve(DDS)		-3.358

Heated Basement		(/ft)
R-0	.00	.00
R-5 4ft	.00	.00
R-5 8ft	.00	.00
R-10 4ft	.00	.00
R-10 8ft	.00	.00
Intercept		.000
Slope(DD)		.00
Curve(DDS)		.000

Unheated Basement		(/sf)
R-0	.00	.00
R-11 flr	.01	.01
R-19 flr	.00	.00
R-30 flr	.00	.00
Intercept		-.011
Slope(DD)		16.24
Curve(DDS)		-2.745

Crawl		(/sf)
R-0	.00	.00
R-11 flr	.00	.01
R-19 flr	.00	.01
R-30 flr	.00	.00
R-38 flr	-.00	-.00
R-49 flr	-.00	-.00
Intercept		-.008
Slope(DD)		14.94
Curve(DDS)		-2.615

Infiltration ELF Ach		(/sf flr)
.0007(.58)	.00	-.02
.0005(.42)	.00	-.02
.0003(.25)	.01	-.01
Slope/.001ELF		-.063
Curve/.001ELF		.052

Window U-value		(/sf)
1-Pane	.00	.13
2-Pane	-.00	.09
3-Pane	-.01	.06
R-10	-.01	.02
Slope(DD)		10.32
Curve(DDS)		-.208

Base Load = .08 MBtu
Typical Load = .02 MBtu
Residual Load = -.00 MBtu

Kansas City MO WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	27.74
R-7	-25.66	11.08
R-11	-29.76	8.42
R-19	-33.44	6.03
R-22	-34.86	5.11
R-30	-36.76	3.87
R-38	-37.91	3.13
R-49	-38.93	2.46
R-60	-39.59	2.03
Slope(DD)	5632.19	
Curve(DDS)	-160.727	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	25.89
R-7	-14.80	12.72
R-11	-16.91	10.84
R-13	-19.49	8.55
R-19	-20.77	7.41
R-27	-23.10	5.34
R-34	-24.53	4.06
Slope(DD)	5311.20	
Curve(DDS)	-92.473	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-15.06	38.74
R-5 2ft	-19.21	13.74
R-5 4ft	-20.41	6.51
R-10 2ft	-19.97	9.16
R-10 4ft	-21.64	-.90
Intercept	-21.898	
Slope(DD)	6612.03	
Curve(DDS)	-108.571	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-7.75	82.78
R-5 4ft	-12.20	55.97
R-5 8ft	-13.82	46.21
R-10 4ft	-13.36	48.98
R-10 8ft	-15.88	33.80
Intercept	.000	
Slope(DD)	3556.31	
Curve(DDS)	-37.170	

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-7.75	8.92
R-11 flr	-20.71	.51
R-19 flr	-24.28	-1.81
R-30 flr	-26.58	-3.30
Intercept	-7.307	
Slope(DD)	5435.76	
Curve(DDS)	-442.821	

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	13.96
R-11 flr	-21.84	-.23
R-19 flr	-25.61	-2.67
R-30 flr	-27.96	-4.20
R-38 flr	-28.50	-4.55
R-49 flr	-30.05	-5.56
Intercept	-7.895	
Slope(DD)	4764.07	
Curve(DDS)	-98.069	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.76) .00	.00	13.74
.0005(.54) -6.17	-12.06	9.73
.0003(.33) -12.24	-16.09	5.79
	-20.83	5.79
Slope/.001ELF	19.058	
Curve/.001ELF	.812	

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	125.26
2-Pane	-12.06	60.00
3-Pane	-16.09	38.19
R-10	-20.83	12.54
Slope(DD)	5388.58	
Curve(DDS)	-24.396	

Base Load = 132.09 MBtu
Typical Load = 42.98 MBtu
Residual Load = 6.32 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	8.21
R-7	-7.53	3.32
R-11	-8.73	2.54
R-19	-9.81	1.84
R-22	-10.24	1.56
R-30	-10.81	1.19
R-38	-11.16	.96
R-49	-11.48	.76
R-60	-11.69	.62
Slope(DD)	1732.35	
Curve(DDS)	-58.591	

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.66
R-7	-2.52	2.42
R-11	-2.88	2.10
R-13	-3.37	1.66
R-19	-3.62	1.44
R-27	-4.06	1.05
R-34	-4.33	.81
Slope(DD)	1065.41	
Curve(DDS)	-36.959	

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-8.07	-1.65
R-5 2ft	-8.28	-2.92
R-5 4ft	-8.26	-2.80
R-10 2ft	-8.33	-3.22
R-10 4ft	-8.27	-2.86
Intercept	-1.950	
Slope(DD)	-394.88	
Curve(DDS)	37.454	

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-4.86	17.68
R-5 4ft	-6.24	9.37
R-5 8ft	-6.44	8.17
R-10 4ft	-6.64	6.96
R-10 8ft	-6.94	5.15
Intercept	.000	
Slope(DD)	493.43	
Curve(DDS)	-1.278	

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-4.86	1.91
R-11 flr	-1.80	3.89
R-19 flr	-.93	4.46
R-30 flr	-.37	4.82
Intercept	5.802	
Slope(DD)	-1334.50	
Curve(DDS)	112.073	

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	5.06
R-11 flr	.95	5.68
R-19 flr	.94	5.67
R-30 flr	1.05	5.74
R-38 flr	1.07	5.78
R-49 flr	1.14	5.80
Intercept	5.772	
Slope(DD)	-33.09	
Curve(DDS)	-20.536	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.60) .00	.00	2.40
.0005(.43) -1.08	-1.08	1.70
.0003(.26) -2.14	-2.14	1.01
Slope/.001ELF	3.312	
Curve/.001ELF	.162	

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	7.52
2-Pane	-.69	3.79
3-Pane	-.94	2.42
R-10	-1.24	.81
Slope(DD)	352.33	
Curve(DDS)	-2.549	

Base Load = 35.83 MBtu
Typical Load = 13.04 MBtu
Residual Load = -3.64 MBtu

Kansas City MO WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	28.80
R-7	-10.61	11.11
R-11	-12.31	8.28
R-19	-13.83	5.75
R-22	-14.37	4.85
R-30	-15.09	3.65
R-38	-15.52	2.93
R-49	-15.88	2.32
R-60	-16.12	1.93
Slope(DD)		5271.21
Curve(DDS)		-69.852

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	24.93
R-7	-6.33	11.65
R-11	-7.23	9.75
R-13	-8.27	7.58
R-19	-8.78	6.50
R-27	-9.65	4.68
R-34	-10.18	3.56
Slope(DD)		4558.11
Curve(DDS)		14.248

Slab		(/ft)
R-0	-7.38	33.09
R-5 2ft	-8.37	8.34
R-5 4ft	-8.61	2.34
R-10 2ft	-8.53	4.34
R-10 4ft	-8.85	-3.66
Intercept		-18.790
Slope(DD)		4457.71
Curve(DDS)		13.717

Heated Basement		(/ft)
R-0	-4.96	93.59
R-5 4ft	-6.48	55.59
R-5 8ft	-6.91	44.84
R-10 4ft	-6.82	47.09
R-10 8ft	-7.42	32.09
Intercept		.000
Slope(DD)		3223.85
Curve(DDS)		-22.081

Unheated Basement		(/sf)
R-0	-4.96	6.24
R-11 flr	-7.97	1.22
R-19 flr	-8.96	-.43
R-30 flr	-9.60	-1.49
Intercept		-4.432
Slope(DD)		4033.98
Curve(DDS)		-380.842

Crawl		(/sf)
R-0	.00	14.51
R-11 flr	-7.88	1.37
R-19 flr	-9.20	-.83
R-30 flr	-10.00	-2.16
R-38 flr	-10.18	-2.46
R-49 flr	-10.71	-3.34
Intercept		-5.388
Slope(DD)		4134.41
Curve(DDS)		-49.674

Infiltration ELF	Ach	(/sf flr)
.0007	(.78) .00	11.97
.0005	(.54) -4.64	8.10
.0003	(.32) -8.85	4.59
Slope/.001ELF		13.958
Curve/.001ELF		4.479

Window U-value		(/sf)
1-Pane	.00	107.36
2-Pane	-8.93	45.35
3-Pane	-11.35	28.53
R-10	-14.20	8.75
Slope(DD)		3687.04
Curve(DDS)		14.384

Base Load = 61.92 MBtu
Typical Load = 17.57 MBtu
Residual Load = 3.84 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.89
R-7	-2.91	3.05
R-11	-3.37	2.27
R-19	-3.79	1.58
R-22	-3.94	1.33
R-30	-4.13	1.01
R-38	-4.25	.81
R-49	-4.35	.64
R-60	-4.42	.53
Slope(DD)		1448.04
Curve(DDS)		-19.686

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.05
R-7	-1.02	1.90
R-11	-1.17	1.59
R-13	-1.35	1.22
R-19	-1.44	1.03
R-27	-1.57	.75
R-34	-1.65	.59
Slope(DD)		736.25
Curve(DDS)		3.120

Slab		(/ft)
R-0	-3.21	-7.83
R-5 2ft	-3.24	-8.58
R-5 4ft	-3.20	-7.58
R-10 2ft	-3.23	-8.33
R-10 4ft	-3.21	-7.83
Intercept		-5.918
Slope(DD)		-672.17
Curve(DDS)		44.530

Heated Basement		(/ft)
R-0	-2.01	22.17
R-5 4ft	-2.37	13.17
R-5 8ft	-2.40	12.42
R-10 4ft	-2.48	10.42
R-10 8ft	-2.59	7.67
Intercept		.000
Slope(DD)		795.14
Curve(DDS)		-6.027

Unheated Basement		(/sf)
R-0	-2.01	1.48
R-11 flr	-.71	3.64
R-19 flr	-.31	4.31
R-30 flr	-.05	4.74
Intercept		5.923
Slope(DD)		-1611.36
Curve(DDS)		145.208

Crawl		(/sf)
R-0	.00	4.83
R-11 flr	.52	5.69
R-19 flr	.59	5.81
R-30 flr	.65	5.91
R-38 flr	.66	5.93
R-49 flr	.70	5.99
Intercept		6.096
Slope(DD)		-242.29
Curve(DDS)		-.946

Infiltration ELF	Ach	(/sf flr)
.0007	(.60) .00	2.05
.0005	(.43) -.79	1.39
.0003	(.25) -1.51	.79
Slope/.001ELF		2.417
Curve/.001ELF		.729

Window U-value		(/sf)
1-Pane	.00	2.62
2-Pane	-.38	-.02
3-Pane	-.39	-.08
R-10	-.40	-.16
Slope(DD)		-82.35
Curve(DDS)		6.882

Base Load = 23.78 MBtu
Typical Load = 14.55 MBtu
Residual Load = 4.62 MBtu

Kansas City MO WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	27.86
R-7	-10.37	10.58
R-11	-12.02	7.82
R-19	-13.51	5.34
R-22	-14.01	4.50
R-30	-14.69	3.37
R-38	-15.10	2.69
R-49	-15.43	2.15
R-60	-15.64	1.79
Slope(DD)		4854.69
Curve(DDS)		-26.220

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	25.05
R-7	-4.29	11.52
R-11	-4.90	9.59
R-13	-5.58	7.44
R-19	-5.92	6.37
R-27	-6.49	4.58
R-34	-6.84	3.47
Slope(DD)		4420.21
Curve(DDS)		44.052

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-8.14	47.23	
R-5 2ft	-8.93	21.06	
R-5 4ft	-9.14	14.06	
R-10 2ft	-9.06	16.73	
R-10 4ft	-9.34	7.06	
Intercept		-12.030	
Slope(DD)		5858.81	
Curve(DDS)		-52.566	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-6.11	114.89	
R-5 4ft	-7.51	68.23	
R-5 8ft	-7.91	55.06	
R-10 4ft	-7.82	57.89	
R-10 8ft	-8.38	39.39	
Intercept		.000	
Slope(DD)		3959.58	
Curve(DDS)		-27.158	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-6.11	5.74	
R-11 flr	-8.61	1.58	
R-19 flr	-9.51	.07	
R-30 flr	-10.10	-.90	
Intercept		-3.609	
Slope(DD)		3740.86	
Curve(DDS)		-373.799	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	15.93	
R-11 flr	-8.13	2.38	
R-19 flr	-9.49	.11	
R-30 flr	-10.31	-1.26	
R-38 flr	-10.50	-1.57	
R-49 flr	-11.04	-2.47	
Intercept		-4.587	
Slope(DD)		4257.66	
Curve(DDS)		-50.093	

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.78)	.00	11.78	
.0005	(.54)	-4.63	7.92	
.0003	(.32)	-8.78	4.46	
Slope/.001ELF			13.395	
Curve/.001ELF			4.897	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	107.29	
2-Pane	-9.01	44.68	
3-Pane	-11.41	28.07	
R-10	-14.22	8.54	
Slope(DD)		3587.25	
Curve(DDS)		18.055	

Base Load = 58.17 MBtu
Typical Load = 15.99 MBtu
Residual Load = 3.97 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	7.46
R-7	-2.79	2.81
R-11	-3.23	2.07
R-19	-3.64	1.40
R-22	-3.77	1.18
R-30	-3.95	.87
R-38	-4.07	.69
R-49	-4.14	.56
R-60	-4.19	.48
Slope(DD)		1265.20
Curve(DDS)		-1.085

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.10
R-7	-.67	1.98
R-11	-.76	1.68
R-13	-.88	1.32
R-19	-.93	1.15
R-27	-1.04	.82
R-34	-1.10	.63
Slope(DD)		814.87
Curve(DDS)		-9.934

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.64	-9.17	
R-5 2ft	-2.68	-10.34	
R-5 4ft	-2.65	-9.51	
R-10 2ft	-2.67	-10.17	
R-10 4ft	-2.65	-9.51	
Intercept		-7.131	
Slope(DD)		-884.87	
Curve(DDS)		62.430	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-1.81	18.66	
R-5 4ft	-2.11	8.66	
R-5 8ft	-2.14	7.49	
R-10 4ft	-2.18	6.33	
R-10 8ft	-2.23	4.49	
Intercept		.000	
Slope(DD)		404.32	
Curve(DDS)		1.560	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-1.81	.93	
R-11 flr	-.72	2.75	
R-19 flr	-.38	3.30	
R-30 flr	-.17	3.66	
Intercept		4.628	
Slope(DD)		-1326.10	
Curve(DDS)		118.076	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		3.94
R-11 flr	.62		4.97
R-19 flr	.70		5.11
R-30 flr	.75		5.19
R-38 flr	.76		5.21
R-49 flr	.79		5.26
Intercept			5.367
Slope(DD)			-215.67
Curve(DDS)			-12.158

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.60)	.00	1.97	
.0005	(.43)	-.75	1.34	
.0003	(.26)	-1.44	.77	
Slope/.001ELF			2.375	
Curve/.001ELF			.625	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		2.86
2-Pane	-.33		.53
3-Pane	-.37		.29
R-10	-.41		.01
Slope(DD)			-5.40
Curve(DDS)			4.306

Base Load = 21.66 MBtu
Typical Load = 13.47 MBtu
Residual Load = 3.98 MBtu

Lake Charles LA WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	10.29
R-7	-9.66	4.01
R-11	-11.20	3.01
R-19	-12.59	2.11
R-22	-13.10	1.78
R-30	-13.78	1.34
R-38	-14.19	1.07
R-49	-14.52	.86
R-60	-14.74	.72
Slope(DD)	1946.25	
Curve(DDS)	-35.618	

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	8.73
R-7	-5.27	4.04
R-11	-6.02	3.37
R-13	-6.90	2.59
R-19	-7.33	2.21
R-27	-8.01	1.60
R-34	-8.43	1.23
Slope(DD)	1552.06	
Curve(DDS)	13.261	

Slab		(/ft)
R-0	-7.48	16.36
R-5 2ft	-8.94	7.57
R-5 4ft	-9.28	5.52
R-10 2ft	-9.13	6.42
R-10 4ft	-9.56	3.83
Intercept	.000	
Slope(DD)	924.73	
Curve(DDS)	39.256	

Heated Basement		(/ft)
R-0	-5.67	27.27
R-5 4ft	-7.77	14.62
R-5 8ft	-8.30	11.42
R-10 4ft	-8.24	11.78
R-10 8ft	-8.91	7.75
Intercept	-.497	
Slope(DD)	768.34	
Curve(DDS)	-2.090	

Unheated Basement		(/sf)
R-0	-5.67	2.94
R-11 flr	-8.91	.84
R-19 flr	-9.66	.35
R-30 flr	-10.15	.03
Intercept	-.787	
Slope(DD)	1095.14	
Curve(DDS)	-71.859	

Crawl		(/sf)
R-0	.00	6.62
R-11 flr	-8.15	1.33
R-19 flr	-9.33	.56
R-30 flr	-9.93	.17
R-38 flr	-10.07	.08
R-49 flr	-10.47	-.18
Intercept	-.803	
Slope(DD)	1184.54	
Curve(DDS)	51.327	

Infiltration ELF	Ach	(/sf flr)
.0007(.76)	.00	4.68
.0005(.51)	-2.46	3.08
.0003(.31)	-4.60	1.69
Slope/.001ELF	4.870	
Curve/.001ELF	2.598	

Window U-value		(/sf)
1-Pane	.00	34.85
2-Pane	-4.04	12.99
3-Pane	-4.95	8.06
R-10	-6.02	2.27
Slope(DD)	930.87	
Curve(DDS)	14.738	

Base Load = 45.64 MBtu
Typical Load = 15.63 MBtu
Residual Load = .49 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	9.18
R-7	-8.71	3.53
R-11	-10.10	2.62
R-19	-11.35	1.81
R-22	-11.78	1.53
R-30	-12.36	1.16
R-38	-12.71	.93
R-49	-13.01	.73
R-60	-13.21	.60
Slope(DD)	1660.30	
Curve(DDS)	-18.809	

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.86
R-7	-2.84	2.34
R-11	-3.24	1.98
R-13	-3.71	1.56
R-19	-3.95	1.35
R-27	-4.38	.97
R-34	-4.64	.73
Slope(DD)	953.67	
Curve(DDS)	-9.237	

Slab		(/ft)
R-0	-7.94	-1.25
R-5 2ft	-8.23	-3.00
R-5 4ft	-8.17	-2.64
R-10 2ft	-8.27	-3.24
R-10 4ft	-8.14	-2.46
Intercept	.000	
Slope(DD)	-920.30	
Curve(DDS)	69.043	

Heated Basement		(/ft)
R-0	-3.01	28.45
R-5 4ft	-3.47	25.68
R-5 8ft	-3.55	25.19
R-10 4ft	-3.61	24.83
R-10 8ft	-3.74	24.05
Intercept	22.070	
Slope(DD)	191.14	
Curve(DDS)	-.842	

Unheated Basement		(/sf)
R-0	-3.01	3.07
R-11 flr	-1.56	4.01
R-19 flr	-1.37	4.13
R-30 flr	-1.25	4.21
Intercept	4.377	
Slope(DD)	-206.12	
Curve(DDS)	-9.661	

Crawl		(/sf)
R-0	.00	5.02
R-11 flr	.22	5.16
R-19 flr	-.04	4.99
R-30 flr	-.22	4.88
R-38 flr	-.26	4.85
R-49 flr	-.38	4.78
Intercept	4.519	
Slope(DD)	523.22	
Curve(DDS)	-82.922	

Infiltration ELF	Ach	(/sf flr)
.0007(.48)	.00	5.10
.0005(.34)	-2.03	3.78
.0003(.22)	-4.23	2.35
Slope/.001ELF	8.247	
Curve/.001ELF	-1.380	

Window U-value		(/sf)
1-Pane	.00	1.52
2-Pane	-.26	.11
3-Pane	-.27	.04
R-10	-.29	-.05
Slope(DD)	-29.01	
Curve(DDS)	3.279	

Base Load = 53.31 MBtu
Typical Load = 28.46 MBtu
Residual Load = 6.28 MBtu

Lake Charles LA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	10.58
R-7	-4.04	3.84
R-11	-4.69	2.77
R-19	-5.27	1.80
R-22	-5.44	1.51
R-30	-5.68	1.12
R-38	-5.82	.88
R-49	-5.92	.71
R-60	-5.99	.60
Slope(DD)		1583.70
Curve(DDS)		33.922

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	7.95
R-7	-2.23	3.27
R-11	-2.55	2.60
R-13	-2.87	1.92
R-19	-3.03	1.59
R-27	-3.24	1.15
R-34	-3.37	.88
Slope(DD)		1034.78
Curve(DDS)		82.453

Slab	Delta Component (MBtu)	(/ft) (KBtu)
R-0	-3.19	11.31
R-5 2ft	-3.47	4.31
R-5 4ft	-3.53	2.81
R-10 2ft	-3.51	3.31
R-10 4ft	-3.57	1.81
Intercept		.000
Slope(DD)		291.60
Curve(DDS)		56.640

Heated Basement	Delta Component (MBtu)	(/ft) (KBtu)
R-0	-2.66	24.56
R-5 4ft	-3.22	10.56
R-5 8ft	-3.33	7.81
R-10 4ft	-3.31	8.31
R-10 8ft	-3.44	5.06
Intercept		-.122
Slope(DD)		417.16
Curve(DDS)		4.684

Unheated Basement	Delta Component (MBtu)	(/sf) (KBtu)
R-0	-2.66	1.64
R-11 flr	-3.33	.52
R-19 flr	-3.50	.24
R-30 flr	-3.61	.05
Intercept		-.429
Slope(DD)		651.41
Curve(DDS)		-48.470

Crawl	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	6.07
R-11 flr	-2.78	1.44
R-19 flr	-3.16	.80
R-30 flr	-3.35	.49
R-38 flr	-3.39	.42
R-49 flr	-3.51	.22
Intercept		-.277
Slope(DD)		916.50
Curve(DDS)		62.697

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr) (KBtu)
.0007(.71)	.00	3.11
.0005(.51)	-1.68	1.71
.0003(.30)	-2.87	.72
Slope/.001ELF		.875
Curve/.001ELF		5.104

Window U-value	Delta Component (MBtu)	(/sf) (KBtu)
1-Pane	.00	28.40
2-Pane	-2.74	9.37
3-Pane	-3.26	5.73
R-10	-3.88	1.45
Slope(DD)		572.59
Curve(DDS)		19.055

Base Load = 20.49 MBtu
Typical Load = 7.52 MBtu
Residual Load = 2.46 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	8.42
R-7	-3.20	3.08
R-11	-3.71	2.23
R-19	-4.17	1.47
R-22	-4.31	1.23
R-30	-4.50	.92
R-38	-4.61	.73
R-49	-4.70	.58
R-60	-4.76	.48
Slope(DD)		1304.21
Curve(DDS)		19.491

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	4.12
R-7	-1.02	1.97
R-11	-1.17	1.67
R-13	-1.35	1.29
R-19	-1.44	1.10
R-27	-1.58	.80
R-34	-1.67	.62
Slope(DD)		790.90
Curve(DDS)		-4.474

Slab	Delta Component (MBtu)	(/ft) (KBtu)
R-0	-3.00	-5.07
R-5 2ft	-3.05	-6.32
R-5 4ft	-3.02	-5.57
R-10 2ft	-3.07	-6.82
R-10 4ft	-2.99	-4.82
Intercept		.000
Slope(DD)		-1737.62
Curve(DDS)		110.972

Heated Basement	Delta Component (MBtu)	(/ft) (KBtu)
R-0	-1.03	44.18
R-5 4ft	-1.17	40.68
R-5 8ft	-1.17	40.68
R-10 4ft	-1.19	40.18
R-10 8ft	-1.19	40.18
Intercept		40.639
Slope(DD)		-84.15
Curve(DDS)		4.216

Unheated Basement	Delta Component (MBtu)	(/sf) (KBtu)
R-0	-1.03	2.95
R-11 flr	-.45	3.91
R-19 flr	-.33	4.10
R-30 flr	-.26	4.23
Intercept		4.538
Slope(DD)		-408.03
Curve(DDS)		19.005

Crawl	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	4.66
R-11 flr	.41	5.35
R-19 flr	.36	5.26
R-30 flr	.36	5.26
R-38 flr	.36	5.26
R-49 flr	.36	5.26
Intercept		5.109
Slope(DD)		237.06
Curve(DDS)		-63.195

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr) (KBtu)
.0007(.51)	.00	4.13
.0005(.37)	-1.48	2.90
.0003(.22)	-2.91	1.71
Slope/.001ELF		5.542
Curve/.001ELF		.521

Window U-value	Delta Component (MBtu)	(/sf) (KBtu)
1-Pane	.00	-6.45
2-Pane	.13	-5.55
3-Pane	.40	-3.67
R-10	.72	-1.45
Slope(DD)		-654.88
Curve(DDS)		15.546

Base Load = 35.72 MBtu
Typical Load = 25.85 MBtu
Residual Load = 12.82 MBtu

Lake Charles LA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	10.72
R-7	-4.15	3.81
R-11	-4.81	2.71
R-19	-5.40	1.72
R-22	-5.57	1.44
R-30	-5.80	1.06
R-38	-5.93	.83
R-49	-6.03	.67
R-60	-6.09	.57
Slope(DD)		1486.40
Curve(DDS)		54.392

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	7.65
R-7	-1.49	2.94
R-11	-1.70	2.27
R-13	-1.90	1.65
R-19	-2.00	1.34
R-27	-2.12	.96
R-34	-2.20	.73
Slope(DD)		817.94
Curve(DDS)		112.456

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-3.50	10.99
R-5 2ft	-3.72	3.49
R-5 4ft	-3.77	1.99
R-10 2ft	-3.75	2.49
R-10 4ft	-3.80	1.16
Intercept		.000
Slope(DD)		38.30
Curve(DDS)		75.868

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-3.14	23.16
R-5 4ft	-3.63	6.66
R-5 8ft	-3.73	3.49
R-10 4ft	-3.71	3.99
R-10 8ft	-3.77	2.16
Intercept		.227
Slope(DD)		2.02
Curve(DDS)		13.858

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-3.14	1.16
R-11 flr	-3.68	.25
R-19 flr	-3.80	.04
R-30 flr	-3.88	-.09
Intercept		-.437
Slope(DD)		462.14
Curve(DDS)		-29.451

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	6.38
R-11 flr	-2.98	1.41
R-19 flr	-3.38	.74
R-30 flr	-3.55	.47
R-38 flr	-3.58	.41
R-49 flr	-3.69	.23
Intercept		-.258
Slope(DD)		834.64
Curve(DDS)		89.811

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007	(.71)	.00	2.92
.0005	(.50)	-1.69	1.52
.0003	(.30)	-2.83	.57
Slope/.001ELF			.166
Curve/.001ELF			5.729

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	27.33
2-Pane	-2.76	8.17
3-Pane	-3.23	4.93
R-10	-3.78	1.12
Slope(DD)		420.61
Curve(DDS)		23.286

Base Load = 19.38 MBtu
Typical Load = 6.86 MBtu
Residual Load = 2.82 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	8.57
R-7	-3.23	3.18
R-11	-3.75	2.32
R-19	-4.21	1.55
R-22	-4.36	1.30
R-30	-4.56	.97
R-38	-4.67	.77
R-49	-4.77	.62
R-60	-4.83	.52
Slope(DD)		1388.55
Curve(DDS)		9.499

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	4.04
R-7	-.69	1.87
R-11	-.78	1.57
R-13	-.90	1.20
R-19	-.96	1.01
R-27	-1.05	.74
R-34	-1.10	.57
Slope(DD)		717.66
Curve(DDS)		6.301

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.33	.94
R-5 2ft	-2.38	-.06
R-5 4ft	-2.37	-.23
R-10 2ft	-2.37	-.23
R-10 4ft	-2.37	-.23
Intercept		.000
Slope(DD)		-133.00
Curve(DDS)		18.044

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.78	52.77
R-5 4ft	-.89	49.10
R-5 8ft	-.91	48.27
R-10 4ft	-.93	47.77
R-10 8ft	-.92	47.94
Intercept		47.509
Slope(DD)		-12.87
Curve(DDS)		3.516

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.78	2.64
R-11 flr	-.20	3.60
R-19 flr	-.11	3.74
R-30 flr	-.06	3.84
Intercept		4.055
Slope(DD)		-275.47
Curve(DDS)		-.161

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.93
R-11 flr	.56	4.86
R-19 flr	.49	4.75
R-30 flr	.42	4.62
R-38 flr	.40	4.60
R-49 flr	.35	4.52
Intercept		4.254
Slope(DD)		574.16
Curve(DDS)		-124.279

Infiltration ELF	Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007	(.48)	.00	4.36
.0005	(.37)	-1.49	3.12
.0003	(.22)	-2.99	1.88
Slope/.001ELF			6.271
Curve/.001ELF			-.052

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-3.54
2-Pane	-.02	-3.68
3-Pane	.16	-2.45
R-10	.36	-1.01
Slope(DD)		-456.52
Curve(DDS)		12.212

Base Load = 33.65 MBtu
Typical Load = 24.81 MBtu
Residual Load = 11.08 MBtu

Las Vegas NV WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	14.55
R-7	-13.61	5.71
R-11	-15.79	4.30
R-19	-17.74	3.04
R-22	-18.47	2.56
R-30	-19.44	1.93
R-38	-20.03	1.55
R-49	-20.52	1.23
R-60	-20.83	1.03
Slope(DD)	2807.54	
Curve(DDS)	-59.478	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	12.22
R-7	-7.39	5.64
R-11	-8.44	4.71
R-13	-9.70	3.59
R-19	-10.32	3.03
R-27	-11.24	2.22
R-34	-11.80	1.72
Slope(DD)	2146.02	
Curve(DDS)	23.353	

Slab		(/ft)
R-0	-12.05	18.76
R-5 2ft	-13.89	7.68
R-5 4ft	-14.19	5.87
R-10 2ft	-14.23	5.63
R-10 4ft	-14.55	3.70
Intercept	.000	
Slope(DD)	1001.40	
Curve(DDS)	121.241	

Heated Basement		(/ft)
R-0	-7.51	46.11
R-5 4ft	-10.69	26.95
R-5 8ft	-11.34	23.04
R-10 4ft	-11.46	22.32
R-10 8ft	-12.22	17.74
Intercept	5.420	
Slope(DD)	1331.67	
Curve(DDS)	-5.812	

Unheated Basement		(/sf)
R-0	-7.51	4.97
R-11 flr	-12.58	1.68
R-19 flr	-13.86	.84
R-30 flr	-14.69	.31
Intercept	-1.107	
Slope(DD)	1910.40	
Curve(DDS)	-141.412	

Crawl		(/sf)
R-0	.00	9.85
R-11 flr	-11.74	2.22
R-19 flr	-13.55	1.05
R-30 flr	-14.43	.48
R-38 flr	-14.63	.35
R-49 flr	-15.21	-.03
Intercept	-1.019	
Slope(DD)	1834.49	
Curve(DDS)	55.515	

Infiltration ELF Ach		(/sf flr)
.0007(.71)	.00	6.30
.0005(.55)	-3.42	4.07
.0003(.31)	-6.32	2.19
Slope/.001ELF	6.039	
Curve/.001ELF	4.221	

Window U-value		(/sf)
1-Pane	.00	48.35
2-Pane	-5.75	17.23
3-Pane	-6.97	10.64
R-10	-8.40	2.89
Slope(DD)	1171.48	
Curve(DDS)	24.996	

Base Load = 64.86 MBtu
Typical Load = 21.37 MBtu
Residual Load = 2.58 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	15.59
R-7	-14.47	6.19
R-11	-16.78	4.69
R-19	-18.86	3.34
R-22	-19.64	2.83
R-30	-20.70	2.15
R-38	-21.33	1.74
R-49	-21.91	1.36
R-60	-22.28	1.12
Slope(DD)	3118.09	
Curve(DDS)	-82.404	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.21
R-7	-5.21	4.58
R-11	-5.95	3.92
R-13	-6.90	3.07
R-19	-7.37	2.65
R-27	-8.19	1.92
R-34	-8.69	1.48
Slope(DD)	1925.31	
Curve(DDS)	-39.535	

Slab		(/ft)
R-0	-11.13	8.26
R-5 2ft	-11.59	5.49
R-5 4ft	-11.66	5.07
R-10 2ft	-11.74	4.59
R-10 4ft	-11.92	3.50
Intercept	.000	
Slope(DD)	1443.33	
Curve(DDS)	-58.323	

Heated Basement		(/ft)
R-0	-5.75	40.67
R-5 4ft	-7.36	30.97
R-5 8ft	-7.59	29.59
R-10 4ft	-7.83	28.14
R-10 8ft	-8.23	25.73
Intercept	17.872	
Slope(DD)	885.68	
Curve(DDS)	-7.103	

Unheated Basement		(/sf)
R-0	-5.75	4.38
R-11 flr	-5.51	4.54
R-19 flr	-5.64	4.46
R-30 flr	-5.72	4.40
Intercept	4.220	
Slope(DD)	268.87	
Curve(DDS)	-46.215	

Crawl		(/sf)
R-0	.00	8.12
R-11 flr	-3.07	6.12
R-19 flr	-3.87	5.60
R-30 flr	-4.46	5.22
R-38 flr	-4.59	5.14
R-49 flr	-4.98	4.89
Intercept	4.285	
Slope(DD)	1281.02	
Curve(DDS)	-104.050	

Infiltration ELF Ach		(/sf flr)
.0007(.69)	.00	3.57
.0005(.49)	-1.61	2.53
.0003(.29)	-3.19	1.50
Slope/.001ELF	4.935	
Curve/.001ELF	.244	

Window U-value		(/sf)
1-Pane	.00	22.75
2-Pane	-2.15	11.12
3-Pane	-2.89	7.09
R-10	-3.77	2.35
Slope(DD)	1012.24	
Curve(DDS)	-5.701	

Base Load = 69.53 MBtu
Typical Load = 31.52 MBtu
Residual Load = 2.66 MBtu

Las Vegas NV WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	15.16
R-7	-5.77	5.54
R-11	-6.69	4.00
R-19	-7.52	2.63
R-22	-7.77	2.20
R-30	-8.11	1.63
R-38	-8.32	1.29
R-49	-8.47	1.04
R-60	-8.57	.88
Slope(DD)		2323.66
Curve(DDS)		39.327

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	11.27
R-7	-3.17	4.62
R-11	-3.62	3.68
R-13	-4.08	2.71
R-19	-4.31	2.23
R-27	-4.60	1.62
R-34	-4.78	1.24
Slope(DD)		1454.01
Curve(DDS)		119.411

Slab		(/ft)
R-0	-4.89	12.97
R-5 2ft	-5.25	3.97
R-5 4ft	-5.29	2.97
R-10 2ft	-5.30	2.72
R-10 4ft	-5.35	1.47
Intercept		.000
Slope(DD)		147.57
Curve(DDS)		144.451

Heated Basement		(/ft)
R-0	-3.54	46.72
R-5 4ft	-4.39	25.47
R-5 8ft	-4.52	22.22
R-10 4ft	-4.54	21.72
R-10 8ft	-4.67	18.47
Intercept		11.333
Slope(DD)		650.40
Curve(DDS)		8.925

Unheated Basement		(/sf)
R-0	-3.54	3.11
R-11 flr	-4.63	1.30
R-19 flr	-4.93	.80
R-30 flr	-5.12	.48
Intercept		-.375
Slope(DD)		1162.43
Curve(DDS)		-93.974

Crawl		(/sf)
R-0	.00	9.01
R-11 flr	-4.00	2.35
R-19 flr	-4.55	1.43
R-30 flr	-4.82	.98
R-38 flr	-4.88	.88
R-49 flr	-5.06	.59
Intercept		-.128
Slope(DD)		1324.71
Curve(DDS)		89.377

Infiltration ELF Ach		(/sf flr)
.0007(.77)	.00	4.15
.0005(.52)	-2.36	2.18
.0003(.33)	-3.97	.84
Slope/.001ELF		.458
Curve/.001ELF		7.813

Window U-value		(/sf)
1-Pane	.00	39.44
2-Pane	-3.87	12.56
3-Pane	-4.58	7.65
R-10	-5.41	1.87
Slope(DD)		726.57
Curve(DDS)		29.066

Base Load = 29.33 MBtu
Typical Load = 10.58 MBtu
Residual Load = 5.11 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	16.41
R-7	-5.96	6.49
R-11	-6.91	4.90
R-19	-7.76	3.48
R-22	-8.08	2.95
R-30	-8.50	2.24
R-38	-8.76	1.81
R-49	-9.00	1.42
R-60	-9.15	1.16
Slope(DD)		3241.08
Curve(DDS)		-79.696

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.83
R-7	-2.34	4.93
R-11	-2.67	4.23
R-13	-3.11	3.30
R-19	-3.33	2.84
R-27	-3.70	2.08
R-34	-3.92	1.60
Slope(DD)		2083.23
Curve(DDS)		-47.461

Slab		(/ft)
R-0	-4.46	5.45
R-5 2ft	-4.55	3.20
R-5 4ft	-4.56	2.95
R-10 2ft	-4.58	2.45
R-10 4ft	-4.60	1.95
Intercept		.000
Slope(DD)		747.97
Curve(DDS)		-15.669

Heated Basement		(/ft)
R-0	-2.36	57.95
R-5 4ft	-2.85	45.70
R-5 8ft	-2.92	43.95
R-10 4ft	-2.98	42.45
R-10 8ft	-3.08	39.95
Intercept		31.944
Slope(DD)		868.86
Curve(DDS)		-4.205

Unheated Basement		(/sf)
R-0	-2.36	3.86
R-11 flr	-2.14	4.23
R-19 flr	-2.13	4.24
R-30 flr	-2.13	4.25
Intercept		4.236
Slope(DD)		29.97
Curve(DDS)		-19.995

Crawl		(/sf)
R-0	.00	7.80
R-11 flr	-1.03	6.08
R-19 flr	-1.33	5.58
R-30 flr	-1.55	5.21
R-38 flr	-1.60	5.13
R-49 flr	-1.74	4.89
Intercept		4.293
Slope(DD)		1264.10
Curve(DDS)		-113.275

Infiltration ELF Ach		(/sf flr)
.0007(.69)	.00	3.33
.0005(.49)	-1.23	2.31
.0003(.29)	-2.39	1.34
Slope/.001ELF		4.250
Curve/.001ELF		.729

Window U-value		(/sf)
1-Pane	.00	21.45
2-Pane	-1.61	10.27
3-Pane	-2.15	6.54
R-10	-2.78	2.15
Slope(DD)		922.27
Curve(DDS)		-4.155

Base Load = 42.49 MBtu
Typical Load = 26.28 MBtu
Residual Load = 8.25 MBtu

Las Vegas NV WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	15.43
R-7	-5.97	5.49
R-11	-6.92	3.90
R-19	-7.77	2.48
R-22	-8.02	2.07
R-30	-8.34	1.53
R-38	-8.54	1.20
R-49	-8.68	.97
R-60	-8.77	.82
Slope(DD)	2145.73	
Curve(DDS)	77.174	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	11.09
R-7	-2.14	4.33
R-11	-2.45	3.36
R-13	-2.75	2.43
R-19	-2.89	1.96
R-27	-3.07	1.42
R-34	-3.17	1.09
Slope(DD)	1226.55	
Curve(DDS)	155.510	

Slab		(/ft)
R-0	-5.34	14.51
R-5 2ft	-5.65	4.17
R-5 4ft	-5.70	2.67
R-10 2ft	-5.70	2.67
R-10 4ft	-5.74	1.34
Intercept	.000	
Slope(DD)	-23.47	
Curve(DDS)	182.597	

Heated Basement		(/ft)
R-0	-4.30	49.17
R-5 4ft	-5.11	22.17
R-5 8ft	-5.23	18.17
R-10 4ft	-5.25	17.67
R-10 8ft	-5.35	14.17
Intercept	6.994	
Slope(DD)	579.42	
Curve(DDS)	16.030	

Unheated Basement		(/sf)
R-0	-4.30	2.46
R-11 flr	-5.22	.93
R-19 flr	-5.44	.55
R-30 flr	-5.59	.31
Intercept	-.335	
Slope(DD)	867.69	
Curve(DDS)	-62.967	

Crawl		(/sf)
R-0	.00	9.63
R-11 flr	-4.40	2.30
R-19 flr	-5.01	1.28
R-30 flr	-5.27	.84
R-38 flr	-5.33	.74
R-49 flr	-5.50	.45
Intercept	-.324	
Slope(DD)	1367.83	
Curve(DDS)	111.653	

Infiltration ELF Ach		(/sf flr)
.0007(.77)	.00	3.85
.0005(.52)	-2.37	1.87
.0003(.33)	-3.90	.60
Slope/.001ELF	-.625	
Curve/.001ELF	8.750	

Window U-value		(/sf)
1-Pane	.00	38.16
2-Pane	-3.96	10.66
3-Pane	-4.58	6.36
R-10	-5.31	1.32
Slope(DD)	473.11	
Curve(DDS)	36.827	

Base Load = 27.91 MBtu
Typical Load = 9.66 MBtu
Residual Load = 5.56 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	17.47
R-7	-6.30	6.98
R-11	-7.30	5.30
R-19	-8.20	3.80
R-22	-8.55	3.22
R-30	-9.02	2.44
R-38	-9.30	1.97
R-49	-9.55	1.55
R-60	-9.72	1.28
Slope(DD)	3548.13	
Curve(DDS)	-101.408	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.71
R-7	-1.56	4.80
R-11	-1.78	4.10
R-13	-2.06	3.21
R-19	-2.20	2.77
R-27	-2.44	2.01
R-34	-2.59	1.54
Slope(DD)	2005.10	
Curve(DDS)	-37.074	

Slab		(/ft)
R-0	-3.80	6.73
R-5 2ft	-3.90	3.40
R-5 4ft	-3.92	2.89
R-10 2ft	-3.93	2.39
R-10 4ft	-3.95	1.89
Intercept	.000	
Slope(DD)	635.96	
Curve(DDS)	12.683	

Heated Basement		(/ft)
R-0	-2.33	55.73
R-5 4ft	-2.74	41.90
R-5 8ft	-2.81	39.56
R-10 4ft	-2.86	38.06
R-10 8ft	-2.95	35.06
Intercept	25.462	
Slope(DD)	1047.02	
Curve(DDS)	-5.880	

Unheated Basement		(/sf)
R-0	-2.33	2.79
R-11 flr	-2.08	3.20
R-19 flr	-2.07	3.22
R-30 flr	-2.06	3.24
Intercept	3.242	
Slope(DD)	8.34	
Curve(DDS)	-18.935	

Crawl		(/sf)
R-0	.00	6.67
R-11 flr	-.98	5.04
R-19 flr	-1.26	4.57
R-30 flr	-1.48	4.20
R-38 flr	-1.53	4.12
R-49 flr	-1.67	3.88
Intercept	3.305	
Slope(DD)	1238.68	
Curve(DDS)	-113.590	

Infiltration ELF Ach		(/sf flr)
.0007(.69)	.00	3.34
.0005(.49)	-1.24	2.31
.0003(.29)	-2.40	1.34
Slope/.001ELF	4.229	
Curve/.001ELF	.781	

Window U-value		(/sf)
1-Pane	.00	22.77
2-Pane	-1.70	10.93
3-Pane	-2.28	6.96
R-10	-2.95	2.29
Slope(DD)	983.67	
Curve(DDS)	-4.584	

Base Load = 39.37 MBtu
Typical Load = 24.24 MBtu
Residual Load = 6.57 MBtu

Los Angeles CA WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	(KBtu)/sf
R-0	.00	13.07
R-7	-12.35	5.05
R-11	-14.32	3.77
R-19	-16.09	2.62
R-22	-16.73	2.21
R-30	-17.59	1.65
R-38	-18.11	1.31
R-49	-18.50	1.06
R-60	-18.75	.89
Slope(DD)		2400.17
Curve(DDS)		-32.995

Wall	Delta (MBtu)	(KBtu)/sf
R-0	.00	9.87
R-7	-6.38	4.19
R-11	-7.29	3.38
R-13	-8.28	2.50
R-19	-8.77	2.06
R-27	-9.39	1.51
R-34	-9.77	1.17
Slope(DD)		1391.46
Curve(DDS)		82.403

Slab	Delta (MBtu)	(KBtu)/ft
R-0	-5.67	16.83
R-5 2ft	-7.48	5.93
R-5 4ft	-7.80	4.00
R-10 2ft	-7.71	4.54
R-10 4ft	-8.03	2.61
Intercept		.000
Slope(DD)		642.26
Curve(DDS)		111.044

Heated Basement	Delta (MBtu)	(KBtu)/ft
R-0	-4.13	26.11
R-5 4ft	-6.18	13.76
R-5 8ft	-6.65	10.93
R-10 4ft	-6.55	11.53
R-10 8ft	-7.02	8.70
Intercept		3.167
Slope(DD)		556.89
Curve(DDS)		1.277

Unheated Basement	Delta (MBtu)	(KBtu)/sf
R-0	-4.13	2.81
R-11 flr	-8.38	.05
R-19 flr	-9.22	-.49
R-30 flr	-9.76	-.84
Intercept		-1.715
Slope(DD)		1150.68
Curve(DDS)		-52.166

Crawl	Delta (MBtu)	(KBtu)/sf
R-0	.00	5.50
R-11 flr	-9.72	-.82
R-19 flr	-10.69	-1.45
R-30 flr	-11.11	-1.72
R-38 flr	-11.21	-1.78
R-49 flr	-11.49	-1.96
Intercept		-2.301
Slope(DD)		577.69
Curve(DDS)		183.867

Infiltration ELF Ach	Delta (MBtu)	(KBtu)/sf flr
.0007(.63)	.00	3.05
.0005(.44)	-2.54	1.40
.0003(.28)	-4.12	.37
Slope/.001ELF		-1.104
Curve/.001ELF		7.793

Window U-value	Delta (MBtu)	(KBtu)/sf
1-Pane	.00	33.30
2-Pane	-4.43	9.33
3-Pane	-5.12	5.57
R-10	-5.94	1.16
Slope(DD)		417.30
Curve(DDS)		31.974

Base Load = 48.89 MBtu
Typical Load = 15.49 MBtu
Residual Load = 7.29 MBtu

Cooling Load

Ceiling	Delta (MBtu)	(KBtu)/sf
R-0	.00	2.46
R-7	-2.61	.77
R-11	-3.03	.50
R-19	-3.40	.26
R-22	-3.48	.20
R-30	-3.59	.14
R-38	-3.65	.09
R-49	-3.66	.09
R-60	-3.66	.09
Slope(DD)		182.02
Curve(DDS)		39.389

Wall	Delta (MBtu)	(KBtu)/sf
R-0	.00	.79
R-7	-.42	.42
R-11	-.48	.36
R-13	-.57	.28
R-19	-.62	.24
R-27	-.69	.18
R-34	-.73	.14
Slope(DD)		184.09
Curve(DDS)		-6.835

Slab	Delta (MBtu)	(KBtu)/ft
R-0	-1.19	-2.81
R-5 2ft	-1.04	-1.91
R-5 4ft	-.98	-1.54
R-10 2ft	-1.01	-1.73
R-10 4ft	-.92	-1.18
Intercept		.000
Slope(DD)		-492.23
Curve(DDS)		20.935

Heated Basement	Delta (MBtu)	(KBtu)/ft
R-0	-.98	-1.54
R-5 4ft	-.96	-1.42
R-5 8ft	-.94	-1.30
R-10 4ft	-.96	-1.42
R-10 8ft	-.93	-1.24
Intercept		-.949
Slope(DD)		-36.62
Curve(DDS)		.552

Unheated Basement	Delta (MBtu)	(KBtu)/sf
R-0	-.98	-.17
R-11 flr	-.28	.29
R-19 flr	-.08	.42
R-30 flr	.05	.50
Intercept		.729
Slope(DD)		-308.61
Curve(DDS)		26.129

Crawl	Delta (MBtu)	(KBtu)/sf
R-0	.00	.47
R-11 flr	.68	.91
R-19 flr	.77	.97
R-30 flr	.79	.99
R-38 flr	.80	.99
R-49 flr	.82	1.00
Intercept		1.039
Slope(DD)		-56.36
Curve(DDS)		-10.650

Infiltration ELF Ach	Delta (MBtu)	(KBtu)/sf flr
.0007(.56)	.00	-.01
.0005(.40)	.03	.01
.0003(.24)	.04	.01
Slope/.001ELF		.097
Curve/.001ELF		-.162

Window U-value	Delta (MBtu)	(KBtu)/sf
1-Pane	.00	-.18
2-Pane	.05	.10
3-Pane	.05	.07
R-10	.04	.04
Slope(DD)		19.97
Curve(DDS)		-1.008

Base Load = 6.60 MBtu
Typical Load = 1.71 MBtu
Residual Load = -.52 MBtu

Los Angeles CA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	12.66
R-7	-5.00	4.33
R-11	-5.79	3.01
R-19	-6.51	1.81
R-22	-6.69	1.52
R-30	-6.93	1.12
R-38	-7.07	.88
R-49	-7.18	.70
R-60	-7.25	.58
Slope(DD)		1521.14
Curve(DDS)		103.639

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	7.95
R-7	-2.40	2.92
R-11	-2.74	2.20
R-13	-3.02	1.61
R-19	-3.16	1.32
R-27	-3.35	.92
R-34	-3.47	.67
Slope(DD)		741.48
Curve(DDS)		136.948

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-2.54	11.81
R-5 2ft	-2.81	5.06
R-5 4ft	-2.86	3.81
R-10 2ft	-2.85	4.06
R-10 4ft	-2.91	2.56
Intercept		.000
Slope(DD)		834.51
Curve(DDS)		38.524

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-1.90	27.81
R-5 4ft	-2.36	16.31
R-5 8ft	-2.45	14.06
R-10 4ft	-2.43	14.56
R-10 8ft	-2.53	12.06
Intercept		7.686
Slope(DD)		429.18
Curve(DDS)		2.680

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-1.90	1.85
R-11 flr	-2.74	.45
R-19 flr	-2.95	.10
R-30 flr	-3.09	-.13
Intercept		-.732
Slope(DD)		813.63
Curve(DDS)		-60.317

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.02
R-11 flr	-2.76	.42
R-19 flr	-3.06	-.08
R-30 flr	-3.21	-.34
R-38 flr	-3.25	-.40
R-49 flr	-3.35	-.57
Intercept		-.883
Slope(DD)		601.46
Curve(DDS)		107.206

Infiltration ELF (Ach)	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.66)	.00	1.81
.0005(.45)	-1.32	.71
.0003(.26)	-2.08	.07
Slope/.001ELF		-1.500
Curve/.001ELF		5.834

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	23.51
2-Pane	-2.26	7.82
3-Pane	-2.70	4.79
R-10	-3.21	1.22
Slope(DD)		483.65
Curve(DDS)		15.419

Base Load = 19.37 MBtu
Typical Load = 5.99 MBtu
Residual Load = 6.94 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	3.80
R-7	-1.25	1.71
R-11	-1.45	1.38
R-19	-1.63	1.08
R-22	-1.73	.92
R-30	-1.86	.70
R-38	-1.94	.56
R-49	-2.01	.45
R-60	-2.05	.38
Slope(DD)		1052.05
Curve(DDS)		-69.429

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	1.11
R-7	-.25	.59
R-11	-.28	.52
R-13	-.34	.39
R-19	-.37	.33
R-27	-.41	.25
R-34	-.43	.21
Slope(DD)		260.92
Curve(DDS)		-10.200

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-.36	-4.86
R-5 2ft	-.30	-3.36
R-5 4ft	-.28	-2.86
R-10 2ft	-.29	-3.11
R-10 4ft	-.25	-2.11
Intercept		.000
Slope(DD)		-901.80
Curve(DDS)		41.362

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.30	-3.36
R-5 4ft	-.27	-2.61
R-5 8ft	-.27	-2.61
R-10 4ft	-.26	-2.36
R-10 8ft	-.24	-1.86
Intercept		-.605
Slope(DD)		-159.02
Curve(DDS)		2.278

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.30	-.22
R-11 flr	.15	.53
R-19 flr	.22	.64
R-30 flr	.26	.71
Intercept		.872
Slope(DD)		-205.23
Curve(DDS)		-1.651

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.28
R-11 flr	.45	1.03
R-19 flr	.50	1.11
R-30 flr	.53	1.16
R-38 flr	.54	1.18
R-49 flr	.56	1.21
Intercept		1.270
Slope(DD)		-125.58
Curve(DDS)		-13.329

Infiltration ELF (Ach)	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.56)	.00	-2.24
.0005(.40)	.38	-1.92
.0003(.24)	1.07	-1.35
Slope/.001ELF		-5.458
Curve/.001ELF		3.229

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-6.81
2-Pane	.35	-4.38
3-Pane	.57	-2.85
R-10	.83	-1.05
Slope(DD)		-464.80
Curve(DDS)		7.830

Base Load = 5.06 MBtu
Typical Load = 3.23 MBtu
Residual Load = 4.67 MBtu

Los Angeles CA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	(/sf)
R-0	.00	12.41
R-7	-5.02	4.04
R-11	-5.82	2.71
R-19	-6.54	1.51
R-22	-6.69	1.25
R-30	-6.90	.91
R-38	-7.02	.71
R-49	-7.11	.56
R-60	-7.16	.47
Slope(DD)		1191.69
Curve(DDS)		151.959

Wall	Delta (MBtu)	(/sf)
R-0	.00	7.33
R-7	-1.56	2.42
R-11	-1.78	1.72
R-13	-1.94	1.21
R-19	-2.02	.96
R-27	-2.12	.65
R-34	-2.18	.46
Slope(DD)		441.06
Curve(DDS)		171.445

Slab	Delta (MBtu)	(KBtu)	(/ft)
R-0	-2.97	11.48	
R-5 2ft	-3.23	2.98	
R-5 4ft	-3.26	1.98	
R-10 2ft	-3.25	2.31	
R-10 4ft	-3.29	.98	
Intercept		.000	
Slope(DD)		66.16	
Curve(DDS)		113.770	

Heated Basement	Delta (MBtu)	(KBtu)	(/ft)
R-0	-2.66	21.98	
R-5 4ft	-3.12	6.65	
R-5 8ft	-3.18	4.65	
R-10 4ft	-3.16	5.15	
R-10 8ft	-3.24	2.65	
Intercept		-.220	
Slope(DD)		212.66	
Curve(DDS)		9.830	

Unheated Basement	Delta (MBtu)	(KBtu)	(/sf)
R-0	-2.66	1.10	
R-11 flr	-3.32	-.01	
R-19 flr	-3.45	-.22	
R-30 flr	-3.53	-.35	
Intercept		-.679	
Slope(DD)		429.56	
Curve(DDS)		-16.155	

Crawl	Delta (MBtu)	(KBtu)	(/sf)
R-0	.00	5.53	
R-11 flr	-3.20	.20	
R-19 flr	-3.42	-.17	
R-30 flr	-3.55	-.38	
R-38 flr	-3.57	-.43	
R-49 flr	-3.66	-.56	
Intercept		-.646	
Slope(DD)		182.00	
Curve(DDS)		199.446	

Infiltration ELF	Ach	Delta (MBtu)	(KBtu)	(/sf flr)
.0007(.66)	.00		1.33	
.0005(.45)	-1.24		.30	
.0003(.26)	-1.86		-.22	
Slope/.001ELF			-2.688	
Curve/.001ELF			6.563	

Window U-value	Delta (MBtu)	(KBtu)	(/sf)
1-Pane	.00	21.13	
2-Pane	-2.11	6.47	
3-Pane	-2.48	3.92	
R-10	-2.91	.92	
Slope(DD)		349.71	
Curve(DDS)		17.064	

Base Load = 17.76 MBtu
Typical Load = 4.97 MBtu
Residual Load = 7.55 MBtu

Cooling Load

Ceiling	Delta (MBtu)	(/sf)
R-0	.00	3.57
R-7	-1.27	1.46
R-11	-1.47	1.12
R-19	-1.65	.82
R-22	-1.72	.71
R-30	-1.81	.55
R-38	-1.86	.46
R-49	-1.94	.34
R-60	-1.98	.26
Slope(DD)		783.58
Curve(DDS)		-30.612

Wall	Delta (MBtu)	(/sf)
R-0	.00	.96
R-7	-.15	.49
R-11	-.17	.42
R-13	-.22	.27
R-19	-.24	.20
R-27	-.25	.18
R-34	-.25	.17
Slope(DD)		182.39
Curve(DDS)		-.815

Slab	Delta (MBtu)	(KBtu)	(/ft)
R-0	-.22	-5.77	
R-5 2ft	-.19	-4.94	
R-5 4ft	-.15	-3.61	
R-10 2ft	-.19	-4.77	
R-10 4ft	-.14	-3.27	
Intercept		.000	
Slope(DD)		-1397.61	
Curve(DDS)		82.520	

Heated Basement	Delta (MBtu)	(KBtu)	(/ft)
R-0	-.17	-4.27	
R-5 4ft	-.19	-4.77	
R-5 8ft	-.18	-4.61	
R-10 4ft	-.19	-4.77	
R-10 8ft	-.18	-4.44	
Intercept		-3.674	
Slope(DD)		-103.45	
Curve(DDS)		2.312	

Unheated Basement	Delta (MBtu)	(KBtu)	(/sf)
R-0	-.17	-.21	
R-11 flr	-.07	-.05	
R-19 flr	-.00	.07	
R-30 flr	.04	.14	
Intercept		.368	
Slope(DD)		-315.10	
Curve(DDS)		39.319	

Crawl	Delta (MBtu)	(KBtu)	(/sf)
R-0	.00	.07	
R-11 flr	.15	.32	
R-19 flr	.22	.44	
R-30 flr	.25	.49	
R-38 flr	.26	.50	
R-49 flr	.28	.54	
Intercept		.677	
Slope(DD)		-255.31	
Curve(DDS)		26.674	

Infiltration ELF	Ach	Delta (MBtu)	(KBtu)	(/sf flr)
.0007(.56)	.00		-.84	
.0005(.40)	.17		-.69	
.0003(.24)	.44		-.47	
Slope/.001ELF			-1.854	
Curve/.001ELF			.938	

Window U-value	Delta (MBtu)	(KBtu)	(/sf)
1-Pane	.00	-3.71	
2-Pane	.21	-2.22	
3-Pane	.33	-1.44	
R-10	.46	-.52	
Slope(DD)		-227.12	
Curve(DDS)		3.279	

Base Load = 3.83 MBtu
Typical Load = 1.99 MBtu
Residual Load = 1.80 MBtu

Medford OR WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	28.06
R-7	-25.80	11.30
R-11	-29.92	8.63
R-19	-33.62	6.22
R-22	-35.10	5.27
R-30	-37.08	3.98
R-38	-38.27	3.21
R-49	-39.29	2.55
R-60	-39.94	2.12
Slope(DD)		5830.59
Curve(DDS)		-185.269

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	25.46
R-7	-14.68	12.39
R-11	-16.77	10.53
R-13	-19.40	8.20
R-19	-20.70	7.04
R-27	-22.86	5.12
R-34	-24.18	3.94
Slope(DD)		5077.75
Curve(DDS)		-63.974

Slab		(/ft)
R-0	-10.14	134.63
R-5 2ft	-15.19	104.21
R-5 4ft	-16.87	94.09
R-10 2ft	-16.05	99.03
R-10 4ft	-18.31	85.41
Intercept		58.895
Slope(DD)		7296.29
Curve(DDS)		-108.274

Heated Basement		(/ft)
R-0	-5.49	162.64
R-5 4ft	-10.12	134.75
R-5 8ft	-12.07	123.00
R-10 4ft	-11.35	127.34
R-10 8ft	-14.29	109.63
Intercept		71.868
Slope(DD)		3672.53
Curve(DDS)		-36.189

Unheated Basement		(/sf)
R-0	-5.49	17.53
R-11 flr	-19.24	8.60
R-19 flr	-22.93	6.20
R-30 flr	-25.31	4.66
Intercept		.542
Slope(DD)		5584.08
Curve(DDS)		-442.862

Crawl		(/sf)
R-0	.00	21.10
R-11 flr	-21.10	7.40
R-19 flr	-24.76	5.02
R-30 flr	-27.01	3.56
R-38 flr	-27.52	3.23
R-49 flr	-29.00	2.27
Intercept		.000
Slope(DD)		4586.68
Curve(DDS)		-92.157

Infiltration ELF	Ach	(/sf flr)
.0007	(.58) .00	10.37
.0005	(.42) -5.30	6.93
.0003	(.26) -10.01	3.87
Slope/.001ELF		11.461
Curve/.001ELF		4.789

Window U-value		(/sf)
1-Pane	.00	98.22
2-Pane	-9.75	45.46
3-Pane	-12.82	28.85
R-10	-16.43	9.31
Slope(DD)		3982.07
Curve(DDS)		-9.913

Base Load = 125.13 MBtu
Typical Load = 48.34 MBtu
Residual Load = -4.54 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	7.93
R-7	-7.34	3.16
R-11	-8.51	2.40
R-19	-9.56	1.72
R-22	-9.96	1.46
R-30	-10.50	1.11
R-38	-10.82	.90
R-49	-11.12	.70
R-60	-11.32	.58
Slope(DD)		1606.92
Curve(DDS)		-45.560

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	3.62
R-7	-2.00	1.85
R-11	-2.28	1.59
R-13	-2.71	1.21
R-19	-2.93	1.01
R-27	-3.21	.77
R-34	-3.38	.61
Slope(DD)		775.83
Curve(DDS)		-18.978

Slab		(/ft)
R-0	-4.11	-26.32
R-5 2ft	-3.80	-24.45
R-5 4ft	-3.66	-23.61
R-10 2ft	-3.74	-24.09
R-10 4ft	-3.56	-23.00
Intercept		-20.700
Slope(DD)		-658.27
Curve(DDS)		17.164

Heated Basement		(/ft)
R-0	-2.70	-17.82
R-5 4ft	-2.84	-18.67
R-5 8ft	-2.81	-18.48
R-10 4ft	-2.88	-18.91
R-10 8ft	-2.84	-18.67
Intercept		-18.255
Slope(DD)		-50.26
Curve(DDS)		1.418

Unheated Basement		(/sf)
R-0	-2.70	-1.92
R-11 flr	-1.21	-.95
R-19 flr	-.84	-.72
R-30 flr	-.61	-.56
Intercept		-.164
Slope(DD)		-538.14
Curve(DDS)		38.128

Crawl		(/sf)
R-0	.00	-.17
R-11 flr	.41	.10
R-19 flr	.39	.09
R-30 flr	.36	.06
R-38 flr	.35	.06
R-49 flr	.33	.05
Intercept		.000
Slope(DD)		104.12
Curve(DDS)		-26.688

Infiltration ELF	Ach	(/sf flr)
.0007	(.43) .00	.50
.0005	(.30) -.22	.36
.0003	(.18) -.44	.21
Slope/.001ELF		.714
Curve/.001ELF		.000

Window U-value		(/sf)
1-Pane	.00	2.71
2-Pane	-.29	1.14
3-Pane	-.37	.72
R-10	-.46	.22
Slope(DD)		92.26
Curve(DDS)		.391

Base Load = 21.60 MBtu
Typical Load = 9.95 MBtu
Residual Load = -.27 MBtu

Medford OR WYEC . Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	29.45
R-7	-10.83	11.40
R-11	-12.56	8.52
R-19	-14.11	5.93
R-22	-14.67	5.01
R-30	-15.41	3.77
R-38	-15.86	3.02
R-49	-16.23	2.40
R-60	-16.47	2.00
Slope(DD)		5451.54
Curve(DDS)		-81.643

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	24.99
R-7	-6.43	11.51
R-11	-7.34	9.59
R-13	-8.40	7.37
R-19	-8.92	6.27
R-27	-9.74	4.54
R-34	-10.25	3.48
Slope(DD)		4392.60
Curve(DDS)		47.308

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-5.77	138.92
R-5 2ft	-6.97	108.92
R-5 4ft	-7.33	99.92
R-10 2ft	-7.16	104.17
R-10 4ft	-7.63	92.42
Intercept		70.850
Slope(DD)		5716.81
Curve(DDS)		-31.726

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-4.05	181.92
R-5 4ft	-5.63	142.42
R-5 8ft	-6.16	129.17
R-10 4ft	-5.99	133.42
R-10 8ft	-6.72	115.17
Intercept		78.157
Slope(DD)		3457.80
Curve(DDS)		-23.980

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-4.05	12.13
R-11 flr	-7.28	6.74
R-19 flr	-8.33	5.00
R-30 flr	-9.00	3.88
Intercept		.785
Slope(DD)		4242.08
Curve(DDS)		-395.904

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	18.88
R-11 flr	-7.48	6.41
R-19 flr	-8.74	4.31
R-30 flr	-9.49	3.06
R-38 flr	-9.66	2.78
R-49 flr	-10.15	1.96
Intercept		.000
Slope(DD)		3914.97
Curve(DDS)		-45.532

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.58)	.00	9.10
.0005(.43)	-3.97	5.79
.0003(.25)	-7.26	3.05
Slope/.001ELF		8.041
Curve/.001ELF		7.084

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	83.59
2-Pane	-7.21	33.52
3-Pane	-9.02	20.98
R-10	-11.14	6.23
Slope(DD)		2596.27
Curve(DDS)		21.587

Base Load = 56.90 MBtu
Typical Load = 24.00 MBtu
Residual Load = .14 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	8.05
R-7	-2.82	3.34
R-11	-3.27	2.59
R-19	-3.68	1.91
R-22	-3.85	1.63
R-30	-4.08	1.24
R-38	-4.22	1.01
R-49	-4.35	.79
R-60	-4.44	.65
Slope(DD)		1820.31
Curve(DDS)		-78.121

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.78
R-7	-.88	1.95
R-11	-1.00	1.68
R-13	-1.21	1.25
R-19	-1.31	1.03
R-27	-1.42	.80
R-34	-1.49	.66
Slope(DD)		812.01
Curve(DDS)		-20.147

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.59	-45.21
R-5 2ft	-1.49	-42.71
R-5 4ft	-1.44	-41.46
R-10 2ft	-1.47	-42.21
R-10 4ft	-1.40	-40.46
Intercept		-36.636
Slope(DD)		-1123.92
Curve(DDS)		35.502

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.00	-30.46
R-5 4ft	-1.01	-30.71
R-5 8ft	-.99	-30.21
R-10 4ft	-1.01	-30.71
R-10 8ft	-.98	-29.96
Intercept		-28.336
Slope(DD)		-171.25
Curve(DDS)		2.851

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-1.00	-2.03
R-11 flr	-.48	-1.16
R-19 flr	-.34	-.93
R-30 flr	-.25	-.78
Intercept		-.380
Slope(DD)		-543.36
Curve(DDS)		43.183

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	-.36
R-11 flr	.17	-.08
R-19 flr	.19	-.05
R-30 flr	.20	-.03
R-38 flr	.20	-.03
R-49 flr	.21	-.02
Intercept		.000
Slope(DD)		-36.41
Curve(DDS)		-6.737

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.43)	.00	.36
.0005(.30)	-.15	.24
.0003(.18)	-.28	.13
Slope/.001ELF		.375
Curve/.001ELF		.208

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	1.60
2-Pane	-.16	.48
3-Pane	-.19	.29
R-10	-.22	.07
Slope(DD)		25.74
Curve(DDS)		1.314

Base Load = 13.28 MBtu
Typical Load = 8.62 MBtu
Residual Load = 2.91 MBtu

Medford OR WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	29.15
R-7	-10.82	11.11
R-11	-12.55	8.23
R-19	-14.10	5.64
R-22	-14.64	4.75
R-30	-15.35	3.56
R-38	-15.78	2.84
R-49	-16.13	2.27
R-60	-16.35	1.90
Slope(DD)		5132.42
Curve(DDS)		-36.417

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	24.86
R-7	-4.32	11.22
R-11	-4.94	9.27
R-13	-5.63	7.10
R-19	-5.97	6.02
R-27	-6.50	4.35
R-34	-6.82	3.33
Slope(DD)		4164.15
Curve(DDS)		85.086

Slab		(/ft)
R-0	-6.63	166.22
R-5 2ft	-7.61	133.55
R-5 4ft	-7.93	123.05
R-10 2ft	-7.77	128.22
R-10 4ft	-8.18	114.55
Intercept		88.696
Slope(DD)		6971.56
Curve(DDS)		-72.046

Heated Basement		(/ft)
R-0	-5.31	210.05
R-5 4ft	-6.81	160.38
R-5 8ft	-7.27	144.88
R-10 4ft	-7.13	149.55
R-10 8ft	-7.77	128.22
Intercept		85.750
Slope(DD)		3926.05
Curve(DDS)		-23.651

Unheated Basement		(/sf)
R-0	-5.31	10.50
R-11 flr	-7.99	6.04
R-19 flr	-8.90	4.52
R-30 flr	-9.49	3.54
Intercept		.838
Slope(DD)		3721.73
Curve(DDS)		-358.234

Crawl		(/sf)
R-0	.00	19.36
R-11 flr	-7.76	6.43
R-19 flr	-9.03	4.30
R-30 flr	-9.78	3.05
R-38 flr	-9.95	2.77
R-49 flr	-10.45	1.95
Intercept		.000
Slope(DD)		3882.69
Curve(DDS)		-20.866

Infiltration ELF Ach		(/sf flr)
.0007(.58)	.00	8.83
.0005(.43)	-3.94	5.55
.0003(.25)	-7.15	2.88
Slope/.001ELF		7.333
Curve/.001ELF		7.552

Window U-value		(/sf)
1-Pane	.00	82.30
2-Pane	-7.27	31.82
3-Pane	-9.00	19.83
R-10	-11.03	5.74
Slope(DD)		2374.59
Curve(DDS)		28.142

Base Load = 52.96 MBtu
Typical Load = 22.22 MBtu
Residual Load = .62 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	7.96
R-7	-2.81	3.28
R-11	-3.26	2.53
R-19	-3.66	1.86
R-22	-3.83	1.58
R-30	-4.06	1.20
R-38	-4.20	.97
R-49	-4.32	.77
R-60	-4.39	.63
Slope(DD)		1759.90
Curve(DDS)		-70.394

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.57
R-7	-.56	1.81
R-11	-.63	1.56
R-13	-.76	1.19
R-19	-.81	1.00
R-27	-.89	.75
R-34	-.94	.60
Slope(DD)		761.05
Curve(DDS)		-18.107

Slab		(/ft)
R-0	-1.07	-40.16
R-5 2ft	-1.00	-37.66
R-5 4ft	-.97	-36.66
R-10 2ft	-.99	-37.33
R-10 4ft	-.94	-35.83
Intercept		-32.871
Slope(DD)		-852.86
Curve(DDS)		22.170

Heated Basement		(/ft)
R-0	-.80	-30.99
R-5 4ft	-.80	-31.16
R-5 8ft	-.81	-31.16
R-10 4ft	-.82	-31.49
R-10 8ft	-.80	-30.99
Intercept		-30.427
Slope(DD)		-68.81
Curve(DDS)		1.307

Unheated Basement		(/sf)
R-0	-.80	-1.55
R-11 flr	-.42	-.92
R-19 flr	-.30	-.71
R-30 flr	-.21	-.57
Intercept		-.205
Slope(DD)		-506.95
Curve(DDS)		47.737

Crawl		(/sf)
R-0	.00	-.22
R-11 flr	.16	.06
R-19 flr	.15	.04
R-30 flr	.15	.04
R-38 flr	.15	.04
R-49 flr	.15	.04
Intercept		.000
Slope(DD)		68.72
Curve(DDS)		-21.626

Infiltration ELF Ach		(/sf flr)
.0007(.43)	.00	.40
.0005(.30)	-.17	.26
.0003(.18)	-.32	.14
Slope/.001ELF		.396
Curve/.001ELF		.260

Window U-value		(/sf)
1-Pane	.00	2.41
2-Pane	-.19	1.09
3-Pane	-.25	.69
R-10	-.32	.22
Slope(DD)		93.52
Curve(DDS)		-.089

Base Load = 11.26 MBtu
Typical Load = 6.96 MBtu
Residual Load = 1.36 MBtu

Memphis TN TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	17.73
R-7	-16.40	7.08
R-11	-19.02	5.38
R-19	-21.37	3.85
R-22	-22.28	3.26
R-30	-23.50	2.47
R-38	-24.23	2.00
R-49	-24.88	1.57
R-60	-25.30	1.30
Slope(DD)	3600.04	
Curve(DDS)	-102.808	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	16.26
R-7	-9.34	7.95
R-11	-10.67	6.77
R-13	-12.31	5.31
R-19	-13.13	4.58
R-27	-14.55	3.31
R-34	-15.43	2.53
Slope(DD)	3290.95	
Curve(DDS)	-49.627	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-11.41	43.90
R-5 2ft	-14.52	25.17
R-5 4ft	-15.49	19.33
R-10 2ft	-15.03	22.10
R-10 4ft	-16.30	14.45
Intercept	.000	
Slope(DD)	3824.72	
Curve(DDS)	-27.226	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-7.69	66.31
R-5 4ft	-11.24	44.93
R-5 8ft	-12.56	36.98
R-10 4ft	-12.14	39.51
R-10 8ft	-14.07	27.88
Intercept		3.198
Slope(DD)		2373.59
Curve(DDS)		-20.744

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-7.69	7.15
R-11 flr	-15.43	2.12
R-19 flr	-17.43	.83
R-30 flr	-18.71	-.01
Intercept	-2.216	
Slope(DD)	2984.60	
Curve(DDS)	-225.916	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	12.14
R-11 flr	-15.01	2.39
R-19 flr	-17.49	.78
R-30 flr	-18.95	-.16
R-38 flr	-19.28	-.38
R-49 flr	-20.24	-1.00
Intercept		-2.481
Slope(DD)		2951.38
Curve(DDS)		-19.439

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.78)	.00	9.41
.0005(.57)	-4.38	6.57
.0003(.34)	-8.57	3.85
Slope/.001ELF	12.370	
Curve/.001ELF	1.542	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	75.82
2-Pane	-7.67	34.31
3-Pane	-10.00	21.73
R-10	-12.73	6.93
Slope(DD)	2954.65	
Curve(DDS)	-3.136	

Base Load = 85.92 MBtu
Typical Load = 34.98 MBtu
Residual Load = .88 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	8.26
R-7	-7.62	3.31
R-11	-8.84	2.52
R-19	-9.93	1.81
R-22	-10.36	1.54
R-30	-10.93	1.17
R-38	-11.27	.94
R-49	-11.58	.74
R-60	-11.78	.61
Slope(DD)	1697.71	
Curve(DDS)	-51.330	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	4.67
R-7	-2.61	2.35
R-11	-2.98	2.02
R-13	-3.45	1.60
R-19	-3.69	1.39
R-27	-4.12	1.00
R-34	-4.39	.77
Slope(DD)	1008.18	
Curve(DDS)	-25.919	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-7.71	-1.15
R-5 2ft	-7.87	-2.12
R-5 4ft	-7.79	-1.64
R-10 2ft	-7.89	-2.24
R-10 4ft	-7.80	-1.70
Intercept	.000	
Slope(DD)	-561.67	
Curve(DDS)	37.246	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-3.62	23.49
R-5 4ft	-4.43	18.61
R-5 8ft	-4.68	17.10
R-10 4ft	-4.73	16.80
R-10 8ft	-5.02	15.05
Intercept		10.389
Slope(DD)		432.96
Curve(DDS)		-2.883

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-3.62	2.53
R-11 flr	-1.21	4.10
R-19 flr	-.66	4.46
R-30 flr	-.30	4.69
Intercept	5.285	
Slope(DD)	-800.30	
Curve(DDS)	51.345	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	4.88
R-11 flr	.79	5.40
R-19 flr	.77	5.38
R-30 flr	.85	5.44
R-38 flr	.87	5.45
R-49 flr	.92	5.48
Intercept		5.446
Slope(DD)		-6.88
Curve(DDS)		-20.100

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.47)	.00	2.89
.0005(.34)	-1.22	2.09
.0003(.20)	-2.48	1.28
Slope/.001ELF	4.351	
Curve/.001ELF	-.325	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	4.00
2-Pane	-.52	1.19
3-Pane	-.61	.72
R-10	-.71	.16
Slope(DD)	60.62	
Curve(DDS)	3.448	

Base Load = 40.70 MBtu
Typical Load = 18.70 MBtu
Residual Load = 1.25 MBtu

Memphis TN TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	19.15
R-7	-7.12	7.28
R-11	-8.26	5.38
R-19	-9.28	3.68
R-22	-9.63	3.11
R-30	-10.09	2.33
R-38	-10.37	1.87
R-49	-10.60	1.48
R-60	-10.75	1.23
Slope(DD)		3349.48
Curve(DDS)		-20.183

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	15.87
R-7	-4.15	7.16
R-11	-4.74	5.92
R-13	-5.40	4.55
R-19	-5.72	3.87
R-27	-6.23	2.79
R-34	-6.55	2.12
Slope(DD)		2665.44
Curve(DDS)		53.025

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-5.41	35.34
R-5 2ft	-6.12	17.59
R-5 4ft	-6.31	12.84
R-10 2ft	-6.22	15.09
R-10 4ft	-6.45	9.34
Intercept		.000
Slope(DD)		2215.95
Curve(DDS)		46.496

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-4.21	65.34
R-5 4ft	-5.33	37.34
R-5 8ft	-5.64	29.59
R-10 4ft	-5.56	31.59
R-10 8ft	-5.96	21.59
Intercept		2.340
Slope(DD)		1719.35
Curve(DDS)		-5.239

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-4.21	4.36
R-11 flr	-5.94	1.47
R-19 flr	-6.46	.61
R-30 flr	-6.79	.06
Intercept		-1.453
Slope(DD)		2060.08
Curve(DDS)		-180.830

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	11.37
R-11 flr	-5.40	2.37
R-19 flr	-6.24	.97
R-30 flr	-6.70	.20
R-38 flr	-6.81	.02
R-49 flr	-7.12	-.49
Intercept		-1.711
Slope(DD)		2385.52
Curve(DDS)		32.362

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.79)	.00	7.63
.0005(.56)	-3.23	4.94
.0003(.34)	-5.97	2.66
Slope/.001ELF		7.333
Curve/.001ELF		5.104

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	63.41
2-Pane	-5.68	23.97
3-Pane	-6.99	14.90
R-10	-8.52	4.24
Slope(DD)		1745.44
Curve(DDS)		24.865

Base Load = 40.28 MBtu
Typical Load = 16.91 MBtu
Residual Load = 2.39 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	7.33
R-7	-2.85	2.59
R-11	-3.30	1.83
R-19	-3.71	1.15
R-22	-3.82	.97
R-30	-3.96	.73
R-38	-4.05	.58
R-49	-4.13	.45
R-60	-4.18	.36
Slope(DD)		995.06
Curve(DDS)		40.716

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	3.75
R-7	-1.00	1.66
R-11	-1.14	1.36
R-13	-1.29	1.05
R-19	-1.36	.90
R-27	-1.48	.64
R-34	-1.56	.48
Slope(DD)		606.17
Curve(DDS)		17.090

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-2.96	-5.03
R-5 2ft	-2.98	-5.53
R-5 4ft	-2.94	-4.53
R-10 2ft	-2.98	-5.53
R-10 4ft	-2.92	-4.03
Intercept		.000
Slope(DD)		-1298.19
Curve(DDS)		71.253

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-1.35	35.22
R-5 4ft	-1.59	29.22
R-5 8ft	-1.63	28.22
R-10 4ft	-1.65	27.72
R-10 8ft	-1.69	26.72
Intercept		24.528
Slope(DD)		163.29
Curve(DDS)		2.168

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-1.35	2.35
R-11 flr	-.35	4.01
R-19 flr	-.09	4.44
R-30 flr	.07	4.71
Intercept		5.439
Slope(DD)		-978.52
Curve(DDS)		73.266

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.60
R-11 flr	.52	5.46
R-19 flr	.52	5.46
R-30 flr	.53	5.48
R-38 flr	.53	5.48
R-49 flr	.54	5.49
Intercept		5.425
Slope(DD)		106.16
Curve(DDS)		-52.153

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.47)	.00	2.61
.0005(.35)	-.87	1.89
.0003(.21)	-1.76	1.14
Slope/.001ELF		3.875
Curve/.001ELF		-.208

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	-3.36
2-Pane	-.13	-4.26
3-Pane	.07	-2.86
R-10	.31	-1.21
Slope(DD)		-551.56
Curve(DDS)		16.070

Base Load = 27.23 MBtu
Typical Load = 18.53 MBtu
Residual Load = 8.78 MBtu

Memphis TN TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	19.51
R-7	-7.36	7.24
R-11	-8.54	5.28
R-19	-9.60	3.52
R-22	-9.93	2.96
R-30	-10.39	2.20
R-38	-10.66	1.75
R-49	-10.87	1.40
R-60	-11.00	1.18
Slope(DD)		3149.35
Curve(DDS)		23.928

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	15.96
R-7	-2.84	7.00
R-11	-3.25	5.72
R-13	-3.68	4.36
R-19	-3.89	3.69
R-27	-4.22	2.65
R-34	-4.42	2.02
Slope(DD)		2496.79
Curve(DDS)		87.496

Slab		(/ft)
R-0	-6.02	40.52
R-5 2ft	-6.59	21.35
R-5 4ft	-6.76	15.85
R-10 2ft	-6.68	18.35
R-10 4ft	-6.88	11.69
Intercept		.000
Slope(DD)		2901.78
Curve(DDS)		24.704

Heated Basement		(/ft)
R-0	-5.04	73.02
R-5 4ft	-6.07	38.69
R-5 8ft	-6.36	29.19
R-10 4ft	-6.28	31.69
R-10 8ft	-6.65	19.52
Intercept		-3.799
Slope(DD)		2076.94
Curve(DDS)		-5.922

Unheated Basement		(/sf)
R-0	-5.04	3.65
R-11 flr	-6.44	1.32
R-19 flr	-6.90	.57
R-30 flr	-7.18	.08
Intercept		-1.245
Slope(DD)		1822.26
Curve(DDS)		-169.182

Crawl		(/sf)
R-0	.00	12.06
R-11 flr	-5.63	2.68
R-19 flr	-6.50	1.23
R-30 flr	-7.00	.39
R-38 flr	-7.11	.20
R-49 flr	-7.44	-.35
Intercept		-1.625
Slope(DD)		2528.47
Curve(DDS)		27.327

Infiltration ELF (Ach)		(/sf flr)
.0007(.79)	.00	7.60
.0005(.56)	-3.23	4.91
.0003(.34)	-5.96	2.63
Slope/.001ELF		7.208
Curve/.001ELF		5.209

Window U-value		(/sf)
1-Pane	.00	63.48
2-Pane	-5.80	23.24
3-Pane	-7.07	14.40
R-10	-8.56	4.00
Slope(DD)		1631.43
Curve(DDS)		29.282

Base Load = 38.51 MBtu
Typical Load = 15.85 MBtu
Residual Load = 2.52 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	7.55
R-7	-2.91	2.70
R-11	-3.37	1.93
R-19	-3.79	1.23
R-22	-3.91	1.03
R-30	-4.08	.75
R-38	-4.18	.58
R-49	-4.24	.48
R-60	-4.28	.42
Slope(DD)		1069.69
Curve(DDS)		34.374

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.38
R-7	-.64	1.35
R-11	-.74	1.08
R-13	-.82	.78
R-19	-.86	.65
R-27	-.92	.46
R-34	-.96	.35
Slope(DD)		407.27
Curve(DDS)		41.021

Slab		(/ft)
R-0	-2.46	-2.36
R-5 2ft	-2.46	-2.36
R-5 4ft	-2.45	-1.86
R-10 2ft	-2.46	-2.36
R-10 4ft	-2.44	-1.69
Intercept		.000
Slope(DD)		-529.98
Curve(DDS)		27.188

Heated Basement		(/ft)
R-0	-1.20	39.64
R-5 4ft	-1.38	33.81
R-5 8ft	-1.40	32.98
R-10 4ft	-1.42	32.31
R-10 8ft	-1.47	30.81
Intercept		27.483
Slope(DD)		296.48
Curve(DDS)		-.173

Unheated Basement		(/sf)
R-0	-1.20	1.98
R-11 flr	-.28	3.52
R-19 flr	-.07	3.87
R-30 flr	.08	4.09
Intercept		4.660
Slope(DD)		-760.80
Curve(DDS)		46.517

Crawl		(/sf)
R-0	.00	3.99
R-11 flr	.63	5.04
R-19 flr	.65	5.07
R-30 flr	.67	5.11
R-38 flr	.68	5.12
R-49 flr	.70	5.16
Intercept		5.118
Slope(DD)		26.55
Curve(DDS)		-48.054

Infiltration ELF (Ach)		(/sf flr)
.0007(.47)	.00	2.32
.0005(.34)	-.89	1.57
.0003(.20)	-1.71	.89
Slope/.001ELF		2.729
Curve/.001ELF		.833

Window U-value		(/sf)
1-Pane	.00	-2.47
2-Pane	-.14	-3.41
3-Pane	.03	-2.29
R-10	.22	-.98
Slope(DD)		-447.53
Curve(DDS)		13.406

Base Load = 25.45 MBtu
Typical Load = 17.57 MBtu
Residual Load = 8.18 MBtu

Miami FL WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.05
R-7	-2.10	.68
R-11	-2.44	.46
R-19	-2.74	.27
R-22	-2.81	.22
R-30	-2.90	.16
R-38	-2.96	.12
R-49	-3.00	.10
R-60	-3.02	.09
Slope(DD)		216.32
Curve(DDS)		21.729

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.26
R-7	-.88	.48
R-11	-1.01	.36
R-13	-1.12	.26
R-19	-1.18	.21
R-27	-1.25	.15
R-34	-1.29	.11
Slope(DD)		125.69
Curve(DDS)		20.256

Slab		(/ft)
R-0	-1.58	.17
R-5 2ft	-1.63	-.13
R-5 4ft	-1.63	-.13
R-10 2ft	-1.63	-.13
R-10 4ft	-1.63	-.13
Intercept		.000
Slope(DD)		-66.72
Curve(DDS)		8.113

Heated Basement		(/ft)
R-0	-1.53	.47
R-5 4ft	-1.79	-1.09
R-5 8ft	-1.81	-1.21
R-10 4ft	-1.82	-1.28
R-10 8ft	-1.84	-1.40
Intercept		-1.425
Slope(DD)		-12.51
Curve(DDS)		1.614

Unheated Basement		(/sf)
R-0	-1.53	.05
R-11 flr	-1.65	-.03
R-19 flr	-1.65	-.03
R-30 flr	-1.65	-.03
Intercept		-.020
Slope(DD)		-12.69
Curve(DDS)		5.180

Crawl		(/sf)
R-0	.00	1.04
R-11 flr	-1.05	.36
R-19 flr	-1.17	.28
R-30 flr	-1.24	.24
R-38 flr	-1.25	.23
R-49 flr	-1.29	.20
Intercept		.152
Slope(DD)		103.40
Curve(DDS)		13.783

Infiltration ELF	Ach	(/sf flr)
.0007	(.59) .00	.39
.0005	(.42) -.31	.19
.0003	(.25) -.51	.06
Slope/.001ELF		-.065
Curve/.001ELF		.893

Window U-value		(/sf)
1-Pane	.00	3.93
2-Pane	-.52	1.12
3-Pane	-.60	.67
R-10	-.70	.14
Slope(DD)		51.50
Curve(DDS)		3.687

Base Load = 7.24 MBtu
Typical Load = 1.55 MBtu
Residual Load = .06 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	10.29
R-7	-9.92	3.85
R-11	-11.50	2.82
R-19	-12.92	1.90
R-22	-13.37	1.61
R-30	-13.97	1.22
R-38	-14.33	.98
R-49	-14.67	.76
R-60	-14.89	.62
Slope(DD)		1717.25
Curve(DDS)		3.017

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.78
R-7	-3.09	2.03
R-11	-3.53	1.64
R-13	-3.97	1.25
R-19	-4.19	1.06
R-27	-4.53	.75
R-34	-4.74	.57
Slope(DD)		695.02
Curve(DDS)		36.169

Slab		(/ft)
R-0	-6.06	.41
R-5 2ft	-6.36	-1.40
R-5 4ft	-6.39	-1.58
R-10 2ft	-6.37	-1.46
R-10 4ft	-6.33	-1.22
Intercept		.000
Slope(DD)		-615.40
Curve(DDS)		63.848

Heated Basement		(/ft)
R-0	.00	36.91
R-5 4ft	1.18	44.02
R-5 8ft	1.25	44.44
R-10 4ft	1.42	45.47
R-10 8ft	1.57	46.37
Intercept		48.287
Slope(DD)		-167.26
Curve(DDS)		-3.361

Unheated Basement		(/sf)
R-0	.00	3.98
R-11 flr	-1.22	3.19
R-19 flr	-1.88	2.76
R-30 flr	-2.30	2.49
Intercept		1.683
Slope(DD)		1123.24
Curve(DDS)		-131.739

Crawl		(/sf)
R-0	-.18	3.86
R-11 flr	-.94	3.37
R-19 flr	-1.66	2.90
R-30 flr	-2.11	2.61
R-38 flr	-2.21	2.54
R-49 flr	-2.50	2.35
Intercept		1.726
Slope(DD)		1248.92
Curve(DDS)		-162.303

Infiltration ELF	Ach	(/sf flr)
.0007	(.56) .00	8.41
.0005	(.40) -3.14	6.38
.0003	(.25) -6.73	4.04
Slope/.001ELF		14.578
Curve/.001ELF		-3.653

Window U-value		(/sf)
1-Pane	.00	-6.98
2-Pane	.12	-6.34
3-Pane	.52	-4.20
R-10	.98	-1.68
Slope(DD)		-758.90
Curve(DDS)		18.725

Base Load = 76.25 MBtu
Typical Load = 50.30 MBtu
Residual Load = 19.39 MBtu

Miami FL WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	1.90
R-7	-.76	.63
R-11	-.88	.43
R-19	-.99	.25
R-22	-1.02	.20
R-30	-1.05	.15
R-38	-1.07	.11
R-49	-1.08	.09
R-60	-1.09	.08
Slope(DD)		198.23
Curve(DDS)		20.501

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.12
R-7	-.34	.40
R-11	-.39	.30
R-13	-.43	.21
R-19	-.45	.17
R-27	-.47	.12
R-34	-.49	.09
Slope(DD)		94.77
Curve(DDS)		20.996

Slab		(/ft)
R-0	-.54	.14
R-5 2ft	-.55	-.11
R-5 4ft	-.55	-.11
R-10 2ft	-.55	-.11
R-10 4ft	-.55	-.11
Intercept		.000
Slope(DD)		-55.40
Curve(DDS)		6.736

Heated Basement		(/ft)
R-0	-.53	.39
R-5 4ft	-.59	-1.11
R-5 8ft	-.60	-1.36
R-10 4ft	-.60	-1.36
R-10 8ft	-.61	-1.61
Intercept		-2.018
Slope(DD)		32.99
Curve(DDS)		.777

Unheated Basement		(/sf)
R-0	-.53	.03
R-11 flr	-.55	-.01
R-19 flr	-.55	-.01
R-30 flr	-.55	-.01
Intercept		-.004
Slope(DD)		-5.43
Curve(DDS)		2.216

Crawl		(/sf)
R-0	.00	.91
R-11 flr	-.34	.34
R-19 flr	-.38	.28
R-30 flr	-.40	.24
R-38 flr	-.41	.23
R-49 flr	-.43	.20
Intercept		.151
Slope(DD)		100.13
Curve(DDS)		9.328

Infiltration ELF	Ach	(/sf flr)
.0007(.59)	.00	.35
.0005(.42)	-.22	.17
.0003(.25)	-.36	.05
Slope/.001ELF		-.083
Curve/.001ELF		.833

Window U-value		(/sf)
1-Pane	.00	3.54
2-Pane	-.36	1.04
3-Pane	-.42	.63
R-10	-.49	.14
Slope(DD)		52.06
Curve(DDS)		3.111

Base Load = 3.02 MBtu
Typical Load = .87 MBtu
Residual Load = .13 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	9.66
R-7	-3.62	3.62
R-11	-4.20	2.66
R-19	-4.72	1.79
R-22	-4.89	1.50
R-30	-5.13	1.11
R-38	-5.27	.88
R-49	-5.37	.72
R-60	-5.43	.61
Slope(DD)		1611.92
Curve(DDS)		2.980

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.17
R-7	-1.24	1.56
R-11	-1.42	1.19
R-13	-1.58	.85
R-19	-1.66	.69
R-27	-1.75	.49
R-34	-1.81	.37
Slope(DD)		406.28
Curve(DDS)		68.642

Slab		(/ft)
R-0	-2.54	1.27
R-5 2ft	-2.61	-.48
R-5 4ft	-2.63	-.98
R-10 2ft	-2.60	-.23
R-10 4ft	-2.61	-.48
Intercept		.000
Slope(DD)		-320.60
Curve(DDS)		43.329

Heated Basement		(/ft)
R-0	.00	64.77
R-5 4ft	.29	72.02
R-5 8ft	.33	73.02
R-10 4ft	.35	73.52
R-10 8ft	.42	75.27
Intercept		78.852
Slope(DD)		-368.11
Curve(DDS)		.034

Unheated Basement		(/sf)
R-0	.00	4.32
R-11 flr	-.05	4.23
R-19 flr	-.29	3.83
R-30 flr	-.45	3.57
Intercept		2.747
Slope(DD)		1176.85
Curve(DDS)		-169.758

Crawl		(/sf)
R-0	-.29	3.83
R-11 flr	-.21	3.97
R-19 flr	-.40	3.65
R-30 flr	-.57	3.37
R-38 flr	-.61	3.30
R-49 flr	-.72	3.11
Intercept		2.616
Slope(DD)		1095.13
Curve(DDS)		-167.203

Infiltration ELF	Ach	(/sf flr)
.0007(.56)	.00	6.59
.0005(.40)	-2.16	4.79
.0003(.25)	-4.40	2.92
Slope/.001ELF		10.000
Curve/.001ELF		-.833

Window U-value		(/sf)
1-Pane	.00	-13.46
2-Pane	.51	-9.92
3-Pane	1.00	-6.50
R-10	1.58	-2.49
Slope(DD)		-1111.33
Curve(DDS)		22.783

Base Load = 52.26 MBtu
Typical Load = 41.35 MBtu
Residual Load = 21.84 MBtu

Miami FL WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.06
R-7	-.82	.68
R-11	-.96	.47
R-19	-1.08	.27
R-22	-1.10	.22
R-30	-1.14	.16
R-38	-1.16	.13
R-49	-1.18	.10
R-60	-1.19	.08
Slope(DD)		217.26
Curve(DDS)		21.949

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.11
R-7	-.22	.42
R-11	-.25	.32
R-13	-.28	.24
R-19	-.29	.20
R-27	-.31	.14
R-34	-.32	.10
Slope(DD)		114.52
Curve(DDS)		17.083

Slab	Delta Component (MBtu)	(/ft)
R-0	-.53	.09
R-5 2ft	-.53	-.07
R-5 4ft	-.53	-.07
R-10 2ft	-.53	-.07
R-10 4ft	-.53	-.07
Intercept		.000
Slope(DD)		-36.89
Curve(DDS)		4.487

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.53	-.07
R-5 4ft	-.57	-1.24
R-5 8ft	-.57	-1.24
R-10 4ft	-.57	-1.24
R-10 8ft	-.57	-1.41
Intercept		-1.367
Slope(DD)		-12.51
Curve(DDS)		1.203

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.53	-.00
R-11 flr	-.54	-.02
R-19 flr	-.54	-.02
R-30 flr	-.54	-.01
Intercept		-.000
Slope(DD)		-17.59
Curve(DDS)		3.299

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	.88
R-11 flr	-.35	.30
R-19 flr	-.39	.23
R-30 flr	-.41	.19
R-38 flr	-.42	.18
R-49 flr	-.44	.15
Intercept		.106
Slope(DD)		97.56
Curve(DDS)		10.410

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.59)	.00	.31
.0005(.42)	-.21	.14
.0003(.25)	-.33	.03
Slope/.001ELF		-.146
Curve/.001ELF		.833

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	3.43
2-Pane	-.35	1.00
3-Pane	-.41	.60
R-10	-.47	.13
Slope(DD)		48.99
Curve(DDS)		3.067

Base Load = 2.88 MBtu
Typical Load = .82 MBtu
Residual Load = .16 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	10.06
R-7	-3.93	3.52
R-11	-4.55	2.47
R-19	-5.11	1.53
R-22	-5.27	1.27
R-30	-5.48	.92
R-38	-5.61	.71
R-49	-5.68	.59
R-60	-5.72	.52
Slope(DD)		1300.97
Curve(DDS)		66.722

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.67
R-7	-.87	1.92
R-11	-.99	1.53
R-13	-1.13	1.12
R-19	-1.19	.91
R-27	-1.27	.67
R-34	-1.32	.52
Slope(DD)		601.95
Curve(DDS)		49.429

Slab	Delta Component (MBtu)	(/ft)
R-0	-2.02	3.37
R-5 2ft	-2.06	1.87
R-5 4ft	-2.08	1.37
R-10 2ft	-2.08	1.54
R-10 4ft	-2.09	1.04
Intercept		.000
Slope(DD)		345.13
Curve(DDS)		-1.584

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	.00	70.71
R-5 4ft	.22	77.87
R-5 8ft	.24	78.54
R-10 4ft	.25	79.04
R-10 8ft	.29	80.54
Intercept		83.131
Slope(DD)		-253.81
Curve(DDS)		-1.816

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	.00	3.54
R-11 flr	.09	3.69
R-19 flr	-.10	3.38
R-30 flr	-.21	3.18
Intercept		2.533
Slope(DD)		932.12
Curve(DDS)		-143.636

Crawl	Delta Component (MBtu)	(/sf)
R-0	-.57	2.59
R-11 flr	-.10	3.36
R-19 flr	-.26	3.10
R-30 flr	-.35	2.95
R-38 flr	-.37	2.92
R-49 flr	-.43	2.82
Intercept		2.394
Slope(DD)		828.50
Curve(DDS)		-154.256

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.56)	.00	6.42
.0005(.40)	-2.12	4.65
.0003(.25)	-4.30	2.83
Slope/.001ELF		9.646
Curve/.001ELF		-.677

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-9.05
2-Pane	.32	-6.83
3-Pane	.66	-4.48
R-10	1.05	-1.73
Slope(DD)		-771.83
Curve(DDS)		16.249

Base Load = 50.09 MBtu
Typical Load = 39.80 MBtu
Residual Load = 19.98 MBtu

Minneapolis MN WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	43.75
R-7	-40.37	17.53
R-11	-46.82	13.35
R-19	-52.61	9.59
R-22	-54.86	8.12
R-30	-57.88	6.16
R-38	-59.70	4.98
R-49	-61.34	3.92
R-60	-62.39	3.23
Slope(DD)		8972.33
Curve(DDS)		-268.763

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	41.64
R-7	-23.67	20.57
R-11	-27.04	17.57
R-13	-31.19	13.88
R-19	-33.24	12.06
R-27	-37.04	8.68
R-34	-39.37	6.60
Slope(DD)		8655.96
Curve(DDS)		-170.145

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-26.96	66.15
R-5 2ft	-34.00	23.74
R-5 4ft	-36.07	11.27
R-10 2ft	-35.31	15.85
R-10 4ft	-38.23	-1.74
Intercept		-38.713
Slope(DD)		11467.25
Curve(DDS)		-203.604

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-15.41	135.73
R-5 4ft	-22.70	91.81
R-5 8ft	-25.32	76.03
R-10 4ft	-24.64	80.13
R-10 8ft	-28.74	55.43
Intercept		.000
Slope(DD)		5800.95
Curve(DDS)		-60.331

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-15.41	14.63
R-11 flr	-35.88	1.34
R-19 flr	-41.72	-2.46
R-30 flr	-45.48	-4.90
Intercept		-11.483
Slope(DD)		8966.55
Curve(DDS)		-755.517

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	24.64
R-11 flr	-36.96	.64
R-19 flr	-43.43	-3.56
R-30 flr	-47.62	-6.29
R-38 flr	-48.58	-6.91
R-49 flr	-51.34	-8.70
Intercept		-12.783
Slope(DD)		8430.60
Curve(DDS)		-221.029

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.88)	.00	26.97
.0005(.63)	-11.98	19.19
.0003(.39)	-23.87	11.47
Slope/.001ELF		38.020
Curve/.001ELF		.730

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	200.73
2-Pane	-19.17	97.00
3-Pane	-25.68	61.79
R-10	-33.33	20.37
Slope(DD)		8765.87
Curve(DDS)		-44.031

Base Load = 228.00 MBtu
Typical Load = 81.21 MBtu
Residual Load = 11.24 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.38
R-7	-3.96	1.81
R-11	-4.59	1.40
R-19	-5.16	1.03
R-22	-5.40	.88
R-30	-5.72	.67
R-38	-5.91	.54
R-49	-6.09	.42
R-60	-6.21	.35
Slope(DD)		978.14
Curve(DDS)		-40.346

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	2.31
R-7	-1.17	1.27
R-11	-1.34	1.12
R-13	-1.62	.87
R-19	-1.76	.75
R-27	-1.97	.56
R-34	-2.10	.44
Slope(DD)		580.36
Curve(DDS)		-27.913

Slab	Delta Component (MBtu)	(KBtu/ft)
R-0	-4.80	-3.71
R-5 2ft	-4.66	-2.87
R-5 4ft	-4.56	-2.26
R-10 2ft	-4.63	-2.69
R-10 4ft	-4.48	-1.78
Intercept		.318
Slope(DD)		-718.93
Curve(DDS)		32.049

Heated Basement	Delta Component (MBtu)	(KBtu/ft)
R-0	-3.34	5.08
R-5 4ft	-3.92	1.59
R-5 8ft	-3.92	1.59
R-10 4ft	-4.04	.87
R-10 8ft	-4.08	.63
Intercept		.000
Slope(DD)		37.95
Curve(DDS)		2.199

Unheated Basement	Delta Component (MBtu)	(KBtu/sf)
R-0	-3.34	.55
R-11 flr	-1.00	2.07
R-19 flr	-.37	2.47
R-30 flr	.03	2.74
Intercept		3.435
Slope(DD)		-946.84
Curve(DDS)		74.856

Crawl	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	2.72
R-11 flr	1.00	3.37
R-19 flr	1.18	3.48
R-30 flr	1.31	3.57
R-38 flr	1.34	3.59
R-49 flr	1.43	3.64
Intercept		3.761
Slope(DD)		-255.17
Curve(DDS)		10.043

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu/sf flr)
.0007(.61)	.00	.73
.0005(.44)	-.37	.49
.0003(.26)	-.70	.27
Slope/.001ELF		.812
Curve/.001ELF		.325

Window U-value	Delta Component (MBtu)	(KBtu/sf)
1-Pane	.00	1.74
2-Pane	-.17	.82
3-Pane	-.23	.52
R-10	-.29	.17
Slope(DD)		72.65
Curve(DDS)		-.257

Base Load = 15.99 MBtu
Typical Load = 3.86 MBtu
Residual Load = -3.20 MBtu

Minneapolis MN WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	45.92
R-7	-16.78	17.96
R-11	-19.45	13.49
R-19	-21.86	9.48
R-22	-22.74	8.02
R-30	-23.91	6.07
R-38	-24.62	4.88
R-49	-25.24	3.85
R-60	-25.64	3.18
Slope(DD)	8771.15	
Curve(DDS)	-173.100	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	41.22
R-7	-10.18	19.86
R-11	-11.63	16.81
R-13	-13.35	13.21
R-19	-14.20	11.42
R-27	-15.73	8.21
R-34	-16.67	6.24
Slope(DD)	8103.33	
Curve(DDS)	-81.751	

Slab	Delta Component (MBtu)	(/ft)
R-0	-13.16	71.82
R-5 2ft	-14.92	27.81
R-5 4ft	-15.42	15.31
R-10 2ft	-15.24	19.81
R-10 4ft	-15.93	2.57
Intercept	-33.041	
Slope(DD)	10890.37	
Curve(DDS)	-153.419	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-9.18	171.32
R-5 4ft	-11.78	106.32
R-5 8ft	-12.56	86.82
R-10 4ft	-12.41	90.57
R-10 8ft	-13.54	62.32
Intercept	.000	
Slope(DD)	6330.01	
Curve(DDS)	-51.470	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-9.18	11.42
R-11 flr	-14.24	2.99
R-19 flr	-16.00	.06
R-30 flr	-17.13	-1.83
Intercept	-7.078	
Slope(DD)	7227.34	
Curve(DDS)	-705.891	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	26.72
R-11 flr	-13.73	3.84
R-19 flr	-16.13	-.16
R-30 flr	-17.65	-2.70
R-38 flr	-18.00	-3.28
R-49 flr	-19.00	-4.95
Intercept	-8.811	
Slope(DD)	7911.40	
Curve(DDS)	-191.561	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.90)	.00	25.32
.0005(.64)	-9.13	17.71
.0003(.38)	-17.90	10.40
Slope/.001ELF	33.542	
Curve/.001ELF	3.750	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	188.72
2-Pane	-14.63	87.12
3-Pane	-19.22	55.27
R-10	-24.61	17.82
Slope(DD)	7617.25	
Curve(DDS)	-17.756	

Base Load = 111.71 MBtu
Typical Load = 37.35 MBtu
Residual Load = 2.13 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	4.19
R-7	-1.49	1.71
R-11	-1.73	1.31
R-19	-1.94	.95
R-22	-2.03	.81
R-30	-2.14	.62
R-38	-2.21	.50
R-49	-2.28	.39
R-60	-2.32	.32
Slope(DD)	900.75	
Curve(DDS)	-32.816	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	2.26
R-7	-.49	1.23
R-11	-.56	1.08
R-13	-.69	.81
R-19	-.75	.68
R-27	-.82	.53
R-34	-.87	.43
Slope(DD)	544.73	
Curve(DDS)	-23.255	

Slab	Delta Component (MBtu)	(/ft)
R-0	-1.91	-11.49
R-5 2ft	-1.82	-9.24
R-5 4ft	-1.77	-7.99
R-10 2ft	-1.81	-8.99
R-10 4ft	-1.74	-7.24
Intercept	-3.642	
Slope(DD)	-1191.04	
Curve(DDS)	44.184	

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-1.30	3.76
R-5 4ft	-1.44	.26
R-5 8ft	-1.43	.51
R-10 4ft	-1.46	-.24
R-10 8ft	-1.46	-.24
Intercept	.000	
Slope(DD)	-56.98	
Curve(DDS)	3.737	

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-1.30	.25
R-11 flr	-.44	1.68
R-19 flr	-.16	2.15
R-30 flr	.02	2.45
Intercept	3.278	
Slope(DD)	-1135.55	
Curve(DDS)	106.307	

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	2.42
R-11 flr	.50	3.25
R-19 flr	.63	3.47
R-30 flr	.71	3.60
R-38 flr	.73	3.63
R-49 flr	.78	3.72
Intercept	3.965	
Slope(DD)	-487.56	
Curve(DDS)	36.226	

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.61)	.00	.64
.0005(.44)	-.17	.50
.0003(.26)	-.38	.32
Slope/.001ELF	1.208	
Curve/.001ELF	-.417	

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-1.21
2-Pane	.04	-.93
3-Pane	.09	-.61
R-10	.14	-.24
Slope(DD)	-106.00	
Curve(DDS)	2.280	

Base Load = 11.11 MBtu
Typical Load = 6.58 MBtu
Residual Load = 2.38 MBtu

Minneapolis MN WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	44.84
R-7	-16.42	17.46
R-11	-19.04	13.09
R-19	-21.40	9.17
R-22	-22.25	7.75
R-30	-23.40	5.84
R-38	-24.08	4.69
R-49	-24.67	3.72
R-60	-25.05	3.09
Slope(DD)	8455.97	
Curve(DDS)	-150.713	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	41.79
R-7	-6.95	19.85
R-11	-7.94	16.73
R-13	-9.09	13.11
R-19	-9.66	11.32
R-27	-10.67	8.12
R-34	-11.29	6.16
Slope(DD)	7966.00	
Curve(DDS)	-36.595	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-14.38	89.71
R-5 2ft	-15.74	44.05
R-5 4ft	-16.15	30.55
R-10 2ft	-16.00	35.55
R-10 4ft	-16.56	16.88
Intercept	-22.241	
Slope(DD)	12079.04	
Curve(DDS)	-203.082	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-11.12	198.21
R-5 4ft	-13.46	120.21
R-5 8ft	-14.14	97.71
R-10 4ft	-14.01	101.88
R-10 8ft	-14.97	69.88
Intercept	.000	
Slope(DD)	7037.91	
Curve(DDS)	-52.437	

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-11.12	9.91
R-11 flr	-15.13	3.23
R-19 flr	-16.67	.66
R-30 flr	-17.66	-.99
Intercept	-5.646	
Slope(DD)	6441.08	
Curve(DDS)	-664.479	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	28.44
R-11 flr	-13.97	5.15
R-19 flr	-16.41	1.09
R-30 flr	-17.97	-1.50
R-38 flr	-18.32	-2.09
R-49 flr	-19.34	-3.79
Intercept	-7.716	
Slope(DD)	8049.60	
Curve(DDS)	-194.597	

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.90)	.00	25.12
.0005(.64)	-9.13	17.52
.0003(.38)	-17.84	10.25
Slope/.001ELF	32.895	
Curve/.001ELF	4.272	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	189.87
2-Pane	-14.87	86.61
3-Pane	-19.44	54.89
R-10	-24.81	17.58
Slope(DD)	7503.59	
Curve(DDS)	-11.794	

Base Load = 105.72 MBtu
Typical Load = 34.53 MBtu
Residual Load = 2.22 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.99
R-7	-1.41	1.64
R-11	-1.64	1.26
R-19	-1.84	.93
R-22	-1.93	.77
R-30	-2.06	.57
R-38	-2.13	.44
R-49	-2.17	.38
R-60	-2.20	.34
Slope(DD)	865.40	
Curve(DDS)	-32.341	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.98
R-7	-.32	.96
R-11	-.37	.81
R-13	-.44	.60
R-19	-.47	.49
R-27	-.51	.38
R-34	-.53	.31
Slope(DD)	373.93	
Curve(DDS)	-1.130	

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.38	-5.59
R-5 2ft	-1.33	-3.92
R-5 4ft	-1.32	-3.42
R-10 2ft	-1.33	-3.75
R-10 4ft	-1.28	-2.25
Intercept	.933	
Slope(DD)	-1117.83	
Curve(DDS)	47.972	

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.07	5.08
R-5 4ft	-1.15	2.25
R-5 8ft	-1.16	1.91
R-10 4ft	-1.19	1.08
R-10 8ft	-1.19	1.08
Intercept	.000	
Slope(DD)	81.56	
Curve(DDS)	1.118	

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-1.07	.25
R-11 flr	-.38	1.40
R-19 flr	-.16	1.77
R-30 flr	-.02	2.00
Intercept	2.649	
Slope(DD)	-884.10	
Curve(DDS)	81.319	

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	2.03
R-11 flr	.44	2.76
R-19 flr	.55	2.95
R-30 flr	.60	3.03
R-38 flr	.61	3.05
R-49 flr	.64	3.10
Intercept	3.288	
Slope(DD)	-340.96	
Curve(DDS)	18.614	

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.61)	.00	.32
.0005(.44)	-.19	.17
.0003(.26)	-.31	.06
Slope/.001ELF	.021	
Curve/.001ELF	.625	

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	-1.54
2-Pane	-.00	-1.58
3-Pane	.07	-1.05
R-10	.16	-.43
Slope(DD)	-194.66	
Curve(DDS)	5.163	

Base Load = 9.61 MBtu
Typical Load = 5.68 MBtu
Residual Load = 2.12 MBtu

Nashville TN WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	20.05
R-7	-18.48	8.05
R-11	-21.43	6.14
R-19	-24.08	4.41
R-22	-25.12	3.74
R-30	-26.51	2.84
R-38	-27.35	2.29
R-49	-28.10	1.81
R-60	-28.58	1.49
Slope(DD)	4135.22	
Curve(DDS)	-127.039	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	18.67
R-7	-10.63	9.22
R-11	-12.14	7.87
R-13	-14.03	6.19
R-19	-14.96	5.36
R-27	-16.63	3.87
R-34	-17.66	2.96
Slope(DD)	3861.13	
Curve(DDS)	-72.401	

Slab		(/ft)
R-0	-12.54	54.09
R-5 2ft	-16.17	32.22
R-5 4ft	-17.38	24.93
R-10 2ft	-16.79	28.49
R-10 4ft	-18.39	18.85
Intercept	.000	
Slope(DD)	4953.52	
Curve(DDS)	-58.774	

Heated Basement		(/ft)
R-0	-8.27	79.81
R-5 4ft	-12.14	56.50
R-5 8ft	-13.63	47.52
R-10 4ft	-13.13	50.53
R-10 8ft	-15.40	36.86
Intercept	7.685	
Slope(DD)	2772.52	
Curve(DDS)	-25.374	

Unheated Basement		(/sf)
R-0	-8.27	8.60
R-11 flr	-17.72	2.47
R-19 flr	-20.25	.83
R-30 flr	-21.87	-.23
Intercept	-3.042	
Slope(DD)	3812.59	
Curve(DDS)	-300.656	

Crawl		(/sf)
R-0	.00	13.97
R-11 flr	-17.66	2.51
R-19 flr	-20.62	.58
R-30 flr	-22.43	-.59
R-38 flr	-22.84	-.86
R-49 flr	-24.03	-1.63
Intercept	-3.429	
Slope(DD)	3636.99	
Curve(DDS)	-47.453	

Infiltration ELF Ach		(/sf flr)
.0007(.75)	.00	11.58
.0005(.56)	-5.27	8.16
.0003(.33)	-10.40	4.83
Slope/.001ELF	15.747	
Curve/.001ELF	1.136	

Window U-value		(/sf)
1-Pane	.00	88.77
2-Pane	-8.60	42.23
3-Pane	-11.44	26.87
R-10	-14.78	8.79
Slope(DD)	3775.14	
Curve(DDS)	-15.629	

Base Load = 100.98 MBtu
Typical Load = 43.32 MBtu
Residual Load = .86 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	8.25
R-7	-7.60	3.32
R-11	-8.81	2.53
R-19	-9.90	1.82
R-22	-10.33	1.54
R-30	-10.90	1.17
R-38	-11.24	.95
R-49	-11.56	.75
R-60	-11.76	.61
Slope(DD)	1707.97	
Curve(DDS)	-53.389	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	4.17
R-7	-2.30	2.12
R-11	-2.63	1.83
R-13	-3.06	1.44
R-19	-3.27	1.26
R-27	-3.66	.91
R-34	-3.90	.70
Slope(DD)	916.92	
Curve(DDS)	-26.462	

Slab		(/ft)
R-0	-6.89	-5.71
R-5 2ft	-6.87	-5.59
R-5 4ft	-6.67	-4.38
R-10 2ft	-6.85	-5.47
R-10 4ft	-6.60	-3.96
Intercept	.000	
Slope(DD)	-1202.22	
Curve(DDS)	58.852	

Heated Basement		(/ft)
R-0	-3.52	14.59
R-5 4ft	-4.14	10.86
R-5 8ft	-4.26	10.13
R-10 4ft	-4.35	9.59
R-10 8ft	-4.50	8.69
Intercept	6.201	
Slope(DD)	216.65	
Curve(DDS)	-.470	

Unheated Basement		(/sf)
R-0	-3.52	1.57
R-11 flr	-.83	3.32
R-19 flr	-.17	3.75
R-30 flr	.26	4.03
Intercept	4.755	
Slope(DD)	-979.40	
Curve(DDS)	69.992	

Crawl		(/sf)
R-0	.00	3.86
R-11 flr	1.18	4.62
R-19 flr	1.28	4.69
R-30 flr	1.39	4.76
R-38 flr	1.41	4.77
R-49 flr	1.48	4.82
Intercept	4.861	
Slope(DD)	-123.07	
Curve(DDS)	-14.120	

Infiltration ELF Ach		(/sf flr)
.0007(.41)	.00	1.95
.0005(.29)	-.86	1.40
.0003(.18)	-1.72	.84
Slope/.001ELF	2.792	
Curve/.001ELF	-.000	

Window U-value		(/sf)
1-Pane	.00	2.51
2-Pane	-.28	.99
3-Pane	-.35	.62
R-10	-.43	.18
Slope(DD)	76.17	
Curve(DDS)	.716	

Base Load = 34.35 MBtu
Typical Load = 14.09 MBtu
Residual Load = -.30 MBtu

Nashville TN WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	21.91
R-7	-8.07	8.45
R-11	-9.36	6.30
R-19	-10.52	4.37
R-22	-10.93	3.69
R-30	-11.48	2.77
R-38	-11.81	2.22
R-49	-12.08	1.77
R-60	-12.26	1.47
Slope(DD)		4008.21
Curve(DDS)		-52.878

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	18.74
R-7	-4.79	8.69
R-11	-5.47	7.26
R-13	-6.26	5.61
R-19	-6.65	4.79
R-27	-7.28	3.46
R-34	-7.67	2.65
Slope(DD)		3358.13
Curve(DDS)		23.578

Slab		(/ft)
R-0	-6.16	45.17
R-5 2ft	-7.02	23.67
R-5 4ft	-7.26	17.67
R-10 2ft	-7.15	20.42
R-10 4ft	-7.45	12.92
Intercept		.000
Slope(DD)		3115.17
Curve(DDS)		30.164

Heated Basement		(/ft)
R-0	-4.69	81.92
R-5 4ft	-5.98	49.67
R-5 8ft	-6.37	39.92
R-10 4ft	-6.26	42.67
R-10 8ft	-6.76	30.17
Intercept		5.355
Slope(DD)		2202.48
Curve(DDS)		-9.575

Unheated Basement		(/sf)
R-0	-4.69	5.46
R-11 flr	-6.91	1.76
R-19 flr	-7.59	.63
R-30 flr	-8.03	-.11
Intercept		-2.102
Slope(DD)		2730.63
Curve(DDS)		-244.868

Crawl		(/sf)
R-0	.00	13.28
R-11 flr	-6.46	2.51
R-19 flr	-7.49	.79
R-30 flr	-8.07	-.17
R-38 flr	-8.20	-.39
R-49 flr	-8.58	-1.02
Intercept		-2.552
Slope(DD)		2996.78
Curve(DDS)		17.614

Infiltration ELF Ach		(/sf flr)
.0007(.78)	.00	10.03
.0005(.56)	-3.95	6.73
.0003(.35)	-7.49	3.78
Slope/.001ELF		11.333
Curve/.001ELF		4.271

Window U-value		(/sf)
1-Pane	.00	77.65
2-Pane	-6.61	31.75
3-Pane	-8.31	19.91
R-10	-10.32	5.98
Slope(DD)		2505.60
Curve(DDS)		16.505

Base Load = 48.31 MBtu
Typical Load = 21.35 MBtu
Residual Load = 1.12 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	7.90
R-7	-2.92	3.02
R-11	-3.39	2.25
R-19	-3.81	1.55
R-22	-3.97	1.29
R-30	-4.17	.94
R-38	-4.30	.73
R-49	-4.37	.62
R-60	-4.41	.55
Slope(DD)		1396.70
Curve(DDS)		-10.921

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	3.50
R-7	-.91	1.59
R-11	-1.04	1.31
R-13	-1.19	.99
R-19	-1.27	.83
R-27	-1.38	.61
R-34	-1.44	.48
Slope(DD)		586.01
Curve(DDS)		11.957

Slab		(/ft)
R-0	-2.61	-5.02
R-5 2ft	-2.56	-3.77
R-5 4ft	-2.53	-3.02
R-10 2ft	-2.56	-3.77
R-10 4ft	-2.51	-2.52
Intercept		.000
Slope(DD)		-733.86
Curve(DDS)		26.753

Heated Basement		(/ft)
R-0	-1.25	28.98
R-5 4ft	-1.38	25.73
R-5 8ft	-1.39	25.48
R-10 4ft	-1.42	24.73
R-10 8ft	-1.46	23.73
Intercept		21.246
Slope(DD)		234.34
Curve(DDS)		-1.248

Unheated Basement		(/sf)
R-0	-1.25	1.93
R-11 flr	-.12	3.82
R-19 flr	.13	4.23
R-30 flr	.29	4.50
Intercept		5.184
Slope(DD)		-913.48
Curve(DDS)		54.481

Crawl		(/sf)
R-0	.00	4.02
R-11 flr	.58	4.98
R-19 flr	.68	5.15
R-30 flr	.74	5.24
R-38 flr	.75	5.27
R-49 flr	.79	5.33
Intercept		5.484
Slope(DD)		-305.97
Curve(DDS)		3.840

Infiltration ELF Ach		(/sf flr)
.0007(.44)	.00	1.79
.0005(.31)	-.60	1.29
.0003(.19)	-1.21	.78
Slope/.001ELF		2.625
Curve/.001ELF		-.104

Window U-value		(/sf)
1-Pane	.00	-6.17
2-Pane	.07	-5.68
3-Pane	.35	-3.76
R-10	.87	-1.51
Slope(DD)		-683.30
Curve(DDS)		17.036

Base Load = 22.91 MBtu
Typical Load = 14.90 MBtu
Residual Load = 6.75 MBtu

Nashville TN WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	22.48
R-7	-8.38	8.51
R-11	-9.72	6.28
R-19	-10.92	4.28
R-22	-11.33	3.60
R-30	-11.88	2.68
R-38	-12.21	2.13
R-49	-12.46	1.72
R-60	-12.62	1.45
Slope(DD)		3876.50
Curve(DDS)		-14.253

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	18.90
R-7	-3.28	8.56
R-11	-3.75	7.09
R-13	-4.26	5.45
R-19	-4.52	4.64
R-27	-4.93	3.34
R-34	-5.18	2.55
Slope(DD)		3205.89
Curve(DDS)		57.401

Slab		(/ft)
R-0	-6.85	51.74
R-5 2ft	-7.53	28.91
R-5 4ft	-7.74	21.91
R-10 2ft	-7.64	25.41
R-10 4ft	-7.91	16.41
Intercept		.000
Slope(DD)		4143.37
Curve(DDS)		-10.063

Heated Basement		(/ft)
R-0	-5.68	90.74
R-5 4ft	-6.84	51.91
R-5 8ft	-7.20	40.07
R-10 4ft	-7.10	43.41
R-10 8ft	-7.57	27.74
Intercept		-3.565
Slope(DD)		2805.61
Curve(DDS)		-13.972

Unheated Basement		(/sf)
R-0	-5.68	4.54
R-11 flr	-7.48	1.53
R-19 flr	-8.09	.51
R-30 flr	-8.48	-.14
Intercept		-1.947
Slope(DD)		2486.15
Curve(DDS)		-238.260

Crawl		(/sf)
R-0	.00	14.00
R-11 flr	-6.71	2.81
R-19 flr	-7.77	1.05
R-30 flr	-8.38	.02
R-38 flr	-8.52	-.21
R-49 flr	-8.93	-.89
Intercept		-2.466
Slope(DD)		3134.60
Curve(DDS)		14.743

Infiltration ELF Ach		(/sf flr)
.0007(.78)	.00	9.72
.0005(.56)	-3.94	6.43
.0003(.35)	-7.40	3.55
Slope/.001ELF		10.312
Curve/.001ELF		5.104

Window U-value		(/sf)
1-Pane	.00	77.85
2-Pane	-6.73	31.11
3-Pane	-8.41	19.46
R-10	-10.38	5.76
Slope(DD)		2401.92
Curve(DDS)		20.714

Base Load = 46.08 MBtu
Typical Load = 19.94 MBtu
Residual Load = 1.39 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.45
R-7	-2.90	2.61
R-11	-3.36	1.84
R-19	-3.78	1.15
R-22	-3.90	.94
R-30	-4.06	.67
R-38	-4.16	.51
R-49	-4.20	.44
R-60	-4.23	.40
Slope(DD)		969.53
Curve(DDS)		48.295

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.22
R-7	-.57	1.41
R-11	-.65	1.15
R-13	-.76	.84
R-19	-.80	.68
R-27	-.86	.51
R-34	-.89	.41
Slope(DD)		481.82
Curve(DDS)		21.707

Slab		(/ft)
R-0	-2.01	-7.43
R-5 2ft	-1.98	-6.59
R-5 4ft	-1.95	-5.59
R-10 2ft	-1.98	-6.59
R-10 4ft	-1.92	-4.59
Intercept		.000
Slope(DD)		-1414.73
Curve(DDS)		65.077

Heated Basement		(/ft)
R-0	-1.04	24.74
R-5 4ft	-1.16	20.91
R-5 8ft	-1.16	20.91
R-10 4ft	-1.18	20.07
R-10 8ft	-1.20	19.41
Intercept		18.109
Slope(DD)		107.21
Curve(DDS)		1.120

Unheated Basement		(/sf)
R-0	-1.04	1.24
R-11 flr	-.13	2.76
R-19 flr	.15	3.21
R-30 flr	.32	3.50
Intercept		4.292
Slope(DD)		-1075.99
Curve(DDS)		93.640

Crawl		(/sf)
R-0	.00	2.97
R-11 flr	.75	4.22
R-19 flr	.84	4.37
R-30 flr	.87	4.42
R-38 flr	.88	4.44
R-49 flr	.90	4.47
Intercept		4.569
Slope(DD)		-154.03
Curve(DDS)		-30.765

Infiltration ELF Ach		(/sf flr)
.0007(.41)	.00	1.54
.0005(.29)	-.59	1.05
.0003(.18)	-1.13	.60
Slope/.001ELF		1.833
Curve/.001ELF		.521

Window U-value		(/sf)
1-Pane	.00	-4.86
2-Pane	.03	-4.65
3-Pane	.28	-3.09
R-10	.52	-1.25
Slope(DD)		-565.59
Curve(DDS)		14.449

Base Load = 20.94 MBtu
Typical Load = 13.93 MBtu
Residual Load = 6.43 MBtu

New York NY WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	29.52
R-7	-27.39	11.74
R-11	-31.76	8.90
R-19	-35.69	6.35
R-22	-37.19	5.38
R-30	-39.19	4.07
R-38	-40.40	3.29
R-49	-41.48	2.59
R-60	-42.17	2.14
Slope(DD)		5917.73
Curve(DDS)		-158.266

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	27.61
R-7	-15.87	13.49
R-11	-18.13	11.48
R-13	-20.86	9.05
R-19	-22.21	7.85
R-27	-24.69	5.64
R-34	-26.21	4.29
Slope(DD)		5601.43
Curve(DDS)		-87.037

Slab		(/ft)
R-0	-19.16	46.80
R-5 2ft	-23.67	19.63
R-5 4ft	-24.96	11.86
R-10 2ft	-24.51	14.57
R-10 4ft	-26.31	3.72
Intercept		-18.707
Slope(DD)		6446.43
Curve(DDS)		-84.030

Heated Basement		(/ft)
R-0	-12.19	88.78
R-5 4ft	-17.06	59.45
R-5 8ft	-18.76	49.20
R-10 4ft	-18.36	51.61
R-10 8ft	-20.99	35.77
Intercept		.000
Slope(DD)		3571.11
Curve(DDS)		-34.332

Unheated Basement		(/sf)
R-0	-12.19	9.57
R-11 flr	-25.22	1.11
R-19 flr	-28.82	-1.23
R-30 flr	-31.14	-2.74
Intercept		-6.774
Slope(DD)		5486.27
Curve(DDS)		-448.327

Crawl		(/sf)
R-0	.00	17.49
R-11 flr	-25.39	1.00
R-19 flr	-29.62	-1.75
R-30 flr	-32.35	-3.52
R-38 flr	-32.97	-3.92
R-49 flr	-34.77	-5.09
Intercept		-7.689
Slope(DD)		5371.10
Curve(DDS)		-90.041

Infiltration ELF	Ach	(/sf flr)
.0007(.89)	.00	18.12
.0005(.64)	-8.15	12.83
.0003(.38)	-16.16	7.63
Slope/.001ELF		25.097
Curve/.001ELF		1.137

Window U-value		(/sf)
1-Pane	.00	139.08
2-Pane	-13.88	63.97
3-Pane	-18.20	40.57
R-10	-23.29	13.05
Slope(DD)		5577.95
Curve(DDS)		-11.730

Base Load = 150.95 MBtu
Typical Load = 49.25 MBtu
Residual Load = 4.24 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.28
R-7	-3.85	1.78
R-11	-4.47	1.38
R-19	-5.02	1.02
R-22	-5.26	.87
R-30	-5.58	.66
R-38	-5.77	.54
R-49	-5.95	.42
R-60	-6.06	.35
Slope(DD)		974.08
Curve(DDS)		-42.421

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.32
R-7	-1.18	1.26
R-11	-1.35	1.11
R-13	-1.60	.89
R-19	-1.73	.78
R-27	-1.97	.57
R-34	-2.11	.44
Slope(DD)		586.24
Curve(DDS)		-28.932

Slab		(/ft)
R-0	-4.25	-3.37
R-5 2ft	-4.16	-2.83
R-5 4ft	-4.01	-1.93
R-10 2ft	-4.12	-2.59
R-10 4ft	-3.96	-1.62
Intercept		.853
Slope(DD)		-793.08
Curve(DDS)		36.670

Heated Basement		(/ft)
R-0	-2.74	5.72
R-5 4ft	-3.23	2.77
R-5 8ft	-3.27	2.53
R-10 4ft	-3.37	1.93
R-10 8ft	-3.45	1.45
Intercept		.000
Slope(DD)		126.98
Curve(DDS)		.299

Unheated Basement		(/sf)
R-0	-2.74	.62
R-11 flr	-.55	2.04
R-19 flr	-.01	2.39
R-30 flr	.34	2.62
Intercept		3.211
Slope(DD)		-800.37
Curve(DDS)		57.427

Crawl		(/sf)
R-0	.00	2.40
R-11 flr	1.05	3.08
R-19 flr	1.18	3.16
R-30 flr	1.35	3.27
R-38 flr	1.39	3.30
R-49 flr	1.50	3.37
Intercept		3.461
Slope(DD)		-252.04
Curve(DDS)		8.685

Infiltration ELF	Ach	(/sf flr)
.0007(.70)	.00	.86
.0005(.50)	-.38	.62
.0003(.30)	-.76	.37
Slope/.001ELF		1.234
Curve/.001ELF		.000

Window U-value		(/sf)
1-Pane	.00	1.24
2-Pane	-.13	.54
3-Pane	-.17	.34
R-10	-.21	.11
Slope(DD)		44.82
Curve(DDS)		.085

Base Load = 17.02 MBtu
Typical Load = 5.78 MBtu
Residual Load = -2.39 MBtu

New York NY WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	30.68
R-7	-11.27	11.89
R-11	-13.07	8.89
R-19	-14.69	6.19
R-22	-15.26	5.23
R-30	-16.04	3.95
R-38	-16.50	3.18
R-49	-16.90	2.51
R-60	-17.16	2.08
Slope(DD)		5697.80
Curve(DDS)		-88.352

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	27.20
R-7	-6.82	12.89
R-11	-7.79	10.85
R-13	-8.91	8.50
R-19	-9.47	7.33
R-27	-10.46	5.26
R-34	-11.06	3.99
Slope(DD)		5156.81
Curve(DDS)		-18.457

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-9.17	48.85
R-5 2ft	-10.29	20.85
R-5 4ft	-10.59	13.35
R-10 2ft	-10.49	15.85
R-10 4ft	-10.90	5.60
Intercept		-14.874
Slope(DD)		5743.60
Curve(DDS)		-37.943

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-6.77	108.85
R-5 4ft	-8.47	66.35
R-5 8ft	-8.96	54.10
R-10 4ft	-8.87	56.35
R-10 8ft	-9.58	38.60
Intercept		.000
Slope(DD)		3726.98
Curve(DDS)		-26.237

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-6.77	7.26
R-11 flr	-10.00	1.87
R-19 flr	-11.08	.07
R-30 flr	-11.78	-1.09
Intercept		-4.310
Slope(DD)		4420.60
Curve(DDS)		-422.192

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	18.54
R-11 flr	-9.43	2.82
R-19 flr	-10.99	.22
R-30 flr	-11.92	-1.32
R-38 flr	-12.13	-1.68
R-49 flr	-12.74	-2.70
Intercept		-5.094
Slope(DD)		4806.33
Curve(DDS)		-38.467

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.89)	.00	17.03
.0005(.66)	-6.19	11.87
.0003(.39)	-12.10	6.95
Slope/.001ELF		22.292
Curve/.001ELF		2.917

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	126.72
2-Pane	-10.51	53.73
3-Pane	-13.38	33.82
R-10	-16.75	10.40
Slope(DD)		4383.39
Curve(DDS)		15.776

Base Load = 72.95 MBtu
Typical Load = 21.81 MBtu
Residual Load = .07 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.73
R-7	-1.37	1.44
R-11	-1.59	1.07
R-19	-1.79	.74
R-22	-1.86	.63
R-30	-1.95	.48
R-38	-2.00	.39
R-49	-2.05	.30
R-60	-2.09	.24
Slope(DD)		684.59
Curve(DDS)		-9.481

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.93
R-7	-.45	.99
R-11	-.51	.86
R-13	-.61	.65
R-19	-.66	.54
R-27	-.72	.41
R-34	-.76	.33
Slope(DD)		418.00
Curve(DDS)		-11.076

Slab	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.62	-11.59
R-5 2ft	-1.56	-10.09
R-5 4ft	-1.50	-8.59
R-10 2ft	-1.54	-9.59
R-10 4ft	-1.48	-8.09
Intercept		-4.334
Slope(DD)		-1167.66
Curve(DDS)		46.832

Heated Basement	Delta (MBtu)	Component (KBtu) (/ft)
R-0	-1.00	3.91
R-5 4ft	-1.11	1.16
R-5 8ft	-1.10	1.41
R-10 4ft	-1.14	.41
R-10 8ft	-1.14	.41
Intercept		.000
Slope(DD)		20.38
Curve(DDS)		1.816

Unheated Basement	Delta (MBtu)	Component (KBtu) (/sf)
R-0	-1.00	.26
R-11 flr	-.16	1.66
R-19 flr	.15	2.18
R-30 flr	.35	2.51
Intercept		3.445
Slope(DD)		-1289.79
Curve(DDS)		130.436

Crawl	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.93
R-11 flr	.56	2.86
R-19 flr	.64	2.99
R-30 flr	.74	3.16
R-38 flr	.76	3.19
R-49 flr	.82	3.30
Intercept		3.448
Slope(DD)		-394.98
Curve(DDS)		19.218

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu) (/sf flr)
.0007(.70)	.00	.90
.0005(.50)	-.26	.69
.0003(.30)	-.56	.44
Slope/.001ELF		1.583
Curve/.001ELF		-.417

Window U-value	Delta (MBtu)	Component (KBtu) (/sf)
1-Pane	.00	-2.26
2-Pane	.04	-1.98
3-Pane	.14	-1.31
R-10	.25	-.52
Slope(DD)		-234.84
Curve(DDS)		5.657

Base Load = 11.75 MBtu
Typical Load = 7.76 MBtu
Residual Load = 2.92 MBtu

New York NY WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	29.94
R-7	-11.05	11.53
R-11	-12.81	8.59
R-19	-14.40	5.95
R-22	-14.95	5.01
R-30	-15.70	3.77
R-38	-16.16	3.01
R-49	-16.52	2.40
R-60	-16.76	2.00
Slope(DD)		5443.63
Curve(DDS)		-66.471

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	27.22
R-7	-4.62	12.64
R-11	-5.28	10.56
R-13	-6.02	8.22
R-19	-6.39	7.06
R-27	-7.02	5.07
R-34	-7.41	3.84
Slope(DD)		4918.20
Curve(DDS)		26.437

Slab		(/ft)
R-0	-10.05	61.57
R-5 2ft	-10.93	32.23
R-5 4ft	-11.18	23.90
R-10 2ft	-11.09	26.90
R-10 4ft	-11.42	15.73
Intercept		-6.908
Slope(DD)		6402.25
Curve(DDS)		-59.884

Heated Basement		(/ft)
R-0	-8.08	126.90
R-5 4ft	-9.63	75.57
R-5 8ft	-10.06	61.23
R-10 4ft	-9.98	63.90
R-10 8ft	-10.59	43.57
Intercept		.000
Slope(DD)		4165.66
Curve(DDS)		-26.224

Unheated Basement		(/sf)
R-0	-8.08	6.35
R-11 flr	-10.65	2.07
R-19 flr	-11.59	.50
R-30 flr	-12.20	-.50
Intercept		-3.332
Slope(DD)		3901.64
Curve(DDS)		-392.871

Crawl		(/sf)
R-0	.00	19.82
R-11 flr	-9.68	3.70
R-19 flr	-11.27	1.05
R-30 flr	-12.25	-.60
R-38 flr	-12.48	-.97
R-49 flr	-13.12	-2.05
Intercept		-4.516
Slope(DD)		5013.76
Curve(DDS)		-52.251

Infiltration ELF	Ach	(/sf flr)
.0007	(.89) .00	16.71
.0005	(.66) -6.18	11.55
.0003	(.39) -12.00	6.70
Slope/.001ELF		21.208
Curve/.001ELF		3.802

Window U-value		(/sf)
1-Pane	.00	126.82
2-Pane	-10.63	53.00
3-Pane	-13.47	33.31
R-10	-16.80	10.15
Slope(DD)		4268.01
Curve(DDS)		20.291

Base Load = 68.96 MBtu
Typical Load = 19.97 MBtu
Residual Load = .46 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.65
R-7	-1.35	1.39
R-11	-1.57	1.03
R-19	-1.76	.70
R-22	-1.84	.58
R-30	-1.94	.42
R-38	-2.00	.32
R-49	-2.02	.28
R-60	-2.04	.25
Slope(DD)		630.43
Curve(DDS)		-2.619

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.73
R-7	-.27	.89
R-11	-.30	.77
R-13	-.36	.61
R-19	-.38	.53
R-27	-.43	.38
R-34	-.45	.29
Slope(DD)		387.58
Curve(DDS)		-12.320

Slab		(/ft)
R-0	-1.28	-7.75
R-5 2ft	-1.24	-6.25
R-5 4ft	-1.21	-5.42
R-10 2ft	-1.23	-6.08
R-10 4ft	-1.19	-4.58
Intercept		-1.346
Slope(DD)		-1046.39
Curve(DDS)		42.745

Heated Basement		(/ft)
R-0	-.90	4.92
R-5 4ft	-1.00	1.58
R-5 8ft	-1.01	1.25
R-10 4ft	-1.03	.75
R-10 8ft	-1.03	.58
Intercept		.000
Slope(DD)		22.88
Curve(DDS)		2.356

Unheated Basement		(/sf)
R-0	-.90	.25
R-11 flr	-.21	1.40
R-19 flr	.03	1.79
R-30 flr	.17	2.04
Intercept		2.723
Slope(DD)		-942.26
Curve(DDS)		89.529

Crawl		(/sf)
R-0	.00	1.75
R-11 flr	.48	2.55
R-19 flr	.55	2.65
R-30 flr	.70	2.91
R-38 flr	.74	2.97
R-49 flr	.84	3.14
Intercept		3.297
Slope(DD)		-552.75
Curve(DDS)		48.844

Infiltration ELF	Ach	(/sf flr)
.0007	(.70) .00	.84
.0005	(.50) -.28	.61
.0003	(.30) -.58	.37
Slope/.001ELF		1.271
Curve/.001ELF		-.104

Window U-value		(/sf)
1-Pane	.00	-4.27
2-Pane	.05	-3.93
3-Pane	.24	-2.60
R-10	.47	-1.05
Slope(DD)		-472.17
Curve(DDS)		11.752

Base Load = 10.60 MBtu
Typical Load = 7.01 MBtu
Residual Load = 2.67 MBtu

Oklahoma City OK WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	21.07
R-7	-19.51	8.41
R-11	-22.62	6.38
R-19	-25.42	4.57
R-22	-26.50	3.87
R-30	-27.94	2.93
R-38	-28.81	2.37
R-49	-29.58	1.87
R-60	-30.08	1.54
Slope(DD)	4265.52	
Curve(DDS)	-119.912	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	19.67
R-7	-11.29	9.62
R-11	-12.90	8.19
R-13	-14.88	6.43
R-19	-15.86	5.56
R-27	-17.59	4.01
R-34	-18.66	3.06
Slope(DD)	3987.38	
Curve(DDS)	-61.393	

Slab		(/ft)
R-0	-16.69	47.97
R-5 2ft	-20.13	27.25
R-5 4ft	-21.07	21.58
R-10 2ft	-20.76	23.45
R-10 4ft	-22.03	15.80
Intercept	.000	
Slope(DD)	4854.82	
Curve(DDS)	-53.133	

Heated Basement		(/ft)
R-0	-11.17	81.22
R-5 4ft	-15.62	54.41
R-5 8ft	-17.01	46.04
R-10 4ft	-16.77	47.49
R-10 8ft	-18.86	34.90
Intercept	6.419	
Slope(DD)	2937.50	
Curve(DDS)	-26.678	

Unheated Basement		(/sf)
R-0	-11.17	8.76
R-11 flr	-20.01	3.01
R-19 flr	-22.42	1.45
R-30 flr	-23.97	.44
Intercept	-2.251	
Slope(DD)	3656.79	
Curve(DDS)	-294.547	

Crawl		(/sf)
R-0	.00	16.01
R-11 flr	-18.95	3.70
R-19 flr	-22.10	1.66
R-30 flr	-23.96	.45
R-38 flr	-24.39	.17
R-49 flr	-25.62	-.63
Intercept	-2.516	
Slope(DD)	3777.68	
Curve(DDS)	-32.195	

Infiltration ELF Ach		(/sf flr)
.0007(.87)	.00	12.97
.0005(.62)	-5.97	9.09
.0003(.36)	-11.73	5.35
Slope/.001ELF	17.337	
Curve/.001ELF	1.705	

Window U-value		(/sf)
1-Pane	.00	95.40
2-Pane	-9.81	42.31
3-Pane	-12.69	26.75
R-10	-16.07	8.44
Slope(DD)	3585.71	
Curve(DDS)	1.055	

Base Load = 107.79 MBtu
Typical Load = 43.37 MBtu
Residual Load = .47 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.54
R-7	-6.93	3.04
R-11	-8.04	2.32
R-19	-9.03	1.68
R-22	-9.43	1.42
R-30	-9.97	1.07
R-38	-10.29	.86
R-49	-10.56	.69
R-60	-10.73	.57
Slope(DD)	1571.39	
Curve(DDS)	-50.489	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.26
R-7	-2.38	2.14
R-11	-2.72	1.84
R-13	-3.16	1.44
R-19	-3.38	1.25
R-27	-3.76	.91
R-34	-4.00	.70
Slope(DD)	909.89	
Curve(DDS)	-22.057	

Slab		(/ft)
R-0	-7.61	-1.61
R-5 2ft	-7.77	-2.57
R-5 4ft	-7.70	-2.15
R-10 2ft	-7.79	-2.69
R-10 4ft	-7.67	-1.97
Intercept	.000	
Slope(DD)	-763.37	
Curve(DDS)	55.055	

Heated Basement		(/ft)
R-0	-4.03	19.96
R-5 4ft	-4.84	15.08
R-5 8ft	-4.89	14.78
R-10 4ft	-5.09	13.57
R-10 8ft	-5.30	12.31
Intercept	8.584	
Slope(DD)	379.63	
Curve(DDS)	-2.385	

Unheated Basement		(/sf)
R-0	-4.03	2.15
R-11 flr	-1.56	3.76
R-19 flr	-1.01	4.11
R-30 flr	-.66	4.34
Intercept	4.926	
Slope(DD)	-782.35	
Curve(DDS)	47.047	

Crawl		(/sf)
R-0	.00	4.77
R-11 flr	.26	4.94
R-19 flr	.27	4.94
R-30 flr	.34	4.99
R-38 flr	.36	5.00
R-49 flr	.41	5.03
Intercept	5.047	
Slope(DD)	-80.06	
Curve(DDS)	5.038	

Infiltration ELF Ach		(/sf flr)
.0007(.64)	.00	3.41
.0005(.45)	-1.45	2.47
.0003(.29)	-2.94	1.50
Slope/.001ELF	5.097	
Curve/.001ELF	-.325	

Window U-value		(/sf)
1-Pane	.00	5.55
2-Pane	-.71	1.70
3-Pane	-.83	1.03
R-10	-.98	.24
Slope(DD)	92.43	
Curve(DDS)	4.455	

Base Load = 39.81 MBtu
Typical Load = 18.84 MBtu
Residual Load = .74 MBtu

Oklahoma City OK WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	22.80
R-7	-8.47	8.68
R-11	-9.82	6.42
R-19	-11.04	4.40
R-22	-11.46	3.70
R-30	-12.01	2.77
R-38	-12.35	2.21
R-49	-12.62	1.77
R-60	-12.79	1.48
Slope(DD)	3996.89	
Curve(DDS)	-25.622	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	19.31
R-7	-5.05	8.71
R-11	-5.77	7.20
R-13	-6.58	5.50
R-19	-6.98	4.66
R-27	-7.59	3.37
R-34	-7.97	2.58
Slope(DD)	3228.02	
Curve(DDS)	67.412	

Slab		(/ft)
R-0	-7.54	38.86
R-5 2ft	-8.34	18.86
R-5 4ft	-8.52	14.36
R-10 2ft	-8.46	15.86
R-10 4ft	-8.69	10.11
Intercept	.000	
Slope(DD)	2798.30	
Curve(DDS)	57.634	

Heated Basement		(/ft)
R-0	-5.80	82.36
R-5 4ft	-7.21	47.11
R-5 8ft	-7.56	38.36
R-10 4ft	-7.51	39.61
R-10 8ft	-7.93	29.11
Intercept	7.096	
Slope(DD)	2083.05	
Curve(DDS)	-5.001	

Unheated Basement		(/sf)
R-0	-5.80	5.49
R-11 flr	-7.83	2.11
R-19 flr	-8.46	1.06
R-30 flr	-8.86	.39
Intercept	-1.447	
Slope(DD)	2514.33	
Curve(DDS)	-226.473	

Crawl		(/sf)
R-0	.00	15.16
R-11 flr	-6.93	3.61
R-19 flr	-8.01	1.81
R-30 flr	-8.59	.84
R-38 flr	-8.72	.62
R-49 flr	-9.10	-.01
Intercept	-1.573	
Slope(DD)	3007.95	
Curve(DDS)	49.695	

Infiltration ELF	Ach	(/sf flr)
.0007	(.87) .00	10.57
.0005	(.60) -4.45	6.86
.0003	(.37) -8.24	3.71
Slope/.001ELF	10.291	
Curve/.001ELF	6.875	

Window U-value		(/sf)
1-Pane	.00	81.85
2-Pane	-7.40	30.46
3-Pane	-9.06	18.91
R-10	-11.02	5.32
Slope(DD)	2180.28	
Curve(DDS)	34.850	

Base Load = 51.77 MBtu
Typical Load = 22.17 MBtu
Residual Load = 3.01 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	6.67
R-7	-2.58	2.37
R-11	-2.99	1.69
R-19	-3.36	1.07
R-22	-3.45	.92
R-30	-3.58	.71
R-38	-3.65	.59
R-49	-3.75	.42
R-60	-3.81	.32
Slope(DD)	945.85	
Curve(DDS)	30.194	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.85
R-7	-.95	.85
R-11	-1.09	.56
R-13	-1.17	.39
R-19	-1.21	.31
R-27	-1.27	.19
R-34	-1.30	.12
Slope(DD)	96.15	
Curve(DDS)	80.573	

Slab		(/ft)
R-0	-2.96	-1.03
R-5 2ft	-2.97	-1.28
R-5 4ft	-2.95	-.78
R-10 2ft	-2.99	-1.78
R-10 4ft	-2.96	-1.03
Intercept	.000	
Slope(DD)	-382.39	
Curve(DDS)	25.820	

Heated Basement		(/ft)
R-0	-1.56	33.97
R-5 4ft	-1.79	28.22
R-5 8ft	-1.86	26.47
R-10 4ft	-1.84	26.97
R-10 8ft	-1.92	24.97
Intercept	20.790	
Slope(DD)	403.48	
Curve(DDS)	-1.843	

Unheated Basement		(/sf)
R-0	-1.56	2.26
R-11 flr	-.63	3.81
R-19 flr	-.39	4.22
R-30 flr	-.23	4.48
Intercept	5.175	
Slope(DD)	-938.00	
Curve(DDS)	72.257	

Crawl		(/sf)
R-0	.00	4.86
R-11 flr	.23	5.25
R-19 flr	.25	5.28
R-30 flr	.24	5.27
R-38 flr	.24	5.26
R-49 flr	.23	5.26
Intercept	5.258	
Slope(DD)	33.63	
Curve(DDS)	-21.527	

Infiltration ELF	Ach	(/sf flr)
.0007	(.67) .00	2.93
.0005	(.48) -1.08	2.03
.0003	(.29) -2.10	1.18
Slope/.001ELF	3.750	
Curve/.001ELF	.625	

Window U-value		(/sf)
1-Pane	.00	-2.34
2-Pane	-.29	-4.35
3-Pane	-.09	-2.95
R-10	.15	-1.30
Slope(DD)	-596.10	
Curve(DDS)	19.226	

Base Load = 26.86 MBtu
Typical Load = 18.36 MBtu
Residual Load = 8.33 MBtu

Oklahoma City OK WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	23.34
R-7	-8.76	8.74
R-11	-10.16	6.41
R-19	-11.42	4.32
R-22	-11.83	3.62
R-30	-12.39	2.69
R-38	-12.73	2.13
R-49	-12.97	1.72
R-60	-13.13	1.46
Slope(DD)		3879.24
Curve(DDS)		9.744

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	19.60
R-7	-3.47	8.66
R-11	-3.96	7.11
R-13	-4.49	5.42
R-19	-4.76	4.58
R-27	-5.17	3.30
R-34	-5.41	2.52
Slope(DD)		3125.00
Curve(DDS)		96.557

Slab		(/ft)
R-0	-8.19	44.50
R-5 2ft	-8.84	23.00
R-5 4ft	-9.01	17.33
R-10 2ft	-8.95	19.16
R-10 4ft	-9.15	12.66
Intercept		.000
Slope(DD)		3609.25
Curve(DDS)		30.142

Heated Basement		(/ft)
R-0	-6.81	90.83
R-5 4ft	-8.08	48.33
R-5 8ft	-8.39	38.00
R-10 4ft	-8.35	39.33
R-10 8ft	-8.73	26.66
Intercept		.127
Slope(DD)		2515.44
Curve(DDS)		-6.160

Unheated Basement		(/sf)
R-0	-6.81	4.54
R-11 flr	-8.46	1.78
R-19 flr	-9.03	.84
R-30 flr	-9.39	.23
Intercept		-1.452
Slope(DD)		2318.52
Curve(DDS)		-224.199

Crawl		(/sf)
R-0	.00	15.88
R-11 flr	-7.23	3.82
R-19 flr	-8.38	1.92
R-30 flr	-8.99	.90
R-38 flr	-9.13	.67
R-49 flr	-9.53	-.00
Intercept		-1.674
Slope(DD)		3210.30
Curve(DDS)		41.684

Infiltration ELF Ach		(/sf flr)
.0007(.87)	.00	10.45
.0005(.62)	-4.45	6.74
.0003(.37)	-8.20	3.61
Slope/.001ELF		9.854
Curve/.001ELF		7.240

Window U-value		(/sf)
1-Pane	.00	81.79
2-Pane	-7.60	29.02
3-Pane	-9.20	17.91
R-10	-11.08	4.85
Slope(DD)		1960.62
Curve(DDS)		43.093

Base Load = 49.51 MBtu
Typical Load = 20.85 MBtu
Residual Load = 3.14 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	6.88
R-7	-2.64	2.48
R-11	-3.07	1.77
R-19	-3.44	1.14
R-22	-3.56	.95
R-30	-3.71	.70
R-38	-3.80	.55
R-49	-3.86	.45
R-60	-3.90	.38
Slope(DD)		995.24
Curve(DDS)		27.926

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	2.86
R-7	-.63	.88
R-11	-.72	.60
R-13	-.78	.39
R-19	-.82	.29
R-27	-.84	.20
R-34	-.86	.15
Slope(DD)		110.37
Curve(DDS)		78.324

Slab		(/ft)
R-0	-2.44	-2.48
R-5 2ft	-2.43	-2.31
R-5 4ft	-2.42	-1.81
R-10 2ft	-2.44	-2.48
R-10 4ft	-2.42	-1.64
Intercept		.000
Slope(DD)		-595.21
Curve(DDS)		33.328

Heated Basement		(/ft)
R-0	-1.36	33.52
R-5 4ft	-1.57	26.69
R-5 8ft	-1.61	25.02
R-10 4ft	-1.65	24.02
R-10 8ft	-1.67	23.36
Intercept		19.778
Slope(DD)		298.81
Curve(DDS)		1.142

Unheated Basement		(/sf)
R-0	-1.36	1.68
R-11 flr	-.50	3.11
R-19 flr	-.26	3.52
R-30 flr	-.10	3.78
Intercept		4.480
Slope(DD)		-957.00
Curve(DDS)		80.013

Crawl		(/sf)
R-0	.00	3.94
R-11 flr	.39	4.58
R-19 flr	.39	4.58
R-30 flr	.38	4.58
R-38 flr	.38	4.58
R-49 flr	.38	4.57
Intercept		4.517
Slope(DD)		112.49
Curve(DDS)		-43.758

Infiltration ELF Ach		(/sf flr)
.0007(.64)	.00	2.85
.0005(.48)	-1.01	2.01
.0003(.29)	-1.99	1.19
Slope/.001ELF		3.896
Curve/.001ELF		.260

Window U-value		(/sf)
1-Pane	.00	-1.49
2-Pane	-.31	-3.65
3-Pane	-.14	-2.48
R-10	.06	-1.11
Slope(DD)		-513.82
Curve(DDS)		17.318

Base Load = 24.86 MBtu
Typical Load = 17.26 MBtu
Residual Load = 7.19 MBtu

Omaha NB WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	34.31
R-7	-31.75	13.70
R-11	-36.82	10.40
R-19	-41.37	7.45
R-22	-43.12	6.31
R-30	-45.47	4.78
R-38	-46.89	3.86
R-49	-48.15	3.04
R-60	-48.97	2.51
Slope(DD)	6957.45	
Curve(DDS)	-197.385	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	32.24
R-7	-18.54	15.74
R-11	-21.18	13.39
R-13	-24.37	10.56
R-19	-25.95	9.15
R-27	-28.84	6.58
R-34	-30.61	5.00
Slope(DD)	6532.25	
Curve(DDS)	-100.028	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-21.55	56.77	
R-5 2ft	-26.96	24.18	
R-5 4ft	-28.52	14.78	
R-10 2ft	-27.97	18.10	
R-10 4ft	-30.16	4.91	
Intercept	-22.786		
Slope(DD)	8396.37		
Curve(DDS)	-135.822		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-12.93	108.70	
R-5 4ft	-18.90	72.74	
R-5 8ft	-20.97	60.27	
R-10 4ft	-20.48	63.22	
R-10 8ft	-23.71	43.76	
Intercept	.000		
Slope(DD)	4463.37		
Curve(DDS)	-44.083		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-12.93	11.72	
R-11 flr	-27.96	1.96	
R-19 flr	-32.18	-.79	
R-30 flr	-34.90	-2.55	
Intercept	-7.298		
Slope(DD)	6457.53		
Curve(DDS)	-536.162		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	20.11	
R-11 flr	-28.04	1.91	
R-19 flr	-32.92	-1.26	
R-30 flr	-36.06	-3.30	
R-38 flr	-36.78	-3.77	
R-49 flr	-38.85	-5.11	
Intercept	-8.178		
Slope(DD)	6316.58		
Curve(DDS)	-155.906		

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.85)	.00	19.90	
.0005(.59)	-8.93	14.10	
.0003(.35)	-17.72	8.39	
Slope/.001ELF	27.630		
Curve/.001ELF	1.137		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	154.62	
2-Pane	-14.94	73.77	
3-Pane	-19.90	46.94	
R-10	-25.73	15.38	
Slope(DD)	6607.56		
Curve(DDS)	-28.444		

Base Load = 172.10 MBtu
Typical Load = 56.49 MBtu
Residual Load = 5.69 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	6.56	
R-7	-5.96	2.69	
R-11	-6.91	2.08	
R-19	-7.76	1.52	
R-22	-8.12	1.29	
R-30	-8.60	.98	
R-38	-8.89	.79	
R-49	-9.14	.62	
R-60	-9.30	.52	
Slope(DD)	1435.75		
Curve(DDS)	-55.555		

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	3.59	
R-7	-1.93	1.87	
R-11	-2.21	1.62	
R-13	-2.60	1.28	
R-19	-2.79	1.11	
R-27	-3.12	.81	
R-34	-3.33	.63	
Slope(DD)	823.75		
Curve(DDS)	-29.054		

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-6.23	-5.75	
R-5 2ft	-6.19	-5.51	
R-5 4ft	-6.08	-4.85	
R-10 2ft	-6.17	-5.39	
R-10 4ft	-6.02	-4.49	
Intercept	-2.222		
Slope(DD)	-782.46		
Curve(DDS)	41.095		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-3.83	8.71	
R-5 4ft	-4.55	4.37	
R-5 8ft	-4.63	3.89	
R-10 4ft	-4.78	2.98	
R-10 8ft	-4.89	2.32	
Intercept	.000		
Slope(DD)	207.86		
Curve(DDS)	.142		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-3.83	.94	
R-11 flr	-1.11	2.70	
R-19 flr	-.37	3.19	
R-30 flr	.11	3.50	
Intercept	4.327		
Slope(DD)	-1126.95		
Curve(DDS)	90.893		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	3.43	
R-11 flr	.98	4.05	
R-19 flr	1.08	4.13	
R-30 flr	1.17	4.18	
R-38 flr	1.19	4.20	
R-49 flr	1.25	4.24	
Intercept	4.301		
Slope(DD)	-144.33		
Curve(DDS)	-5.140		

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.58)	.00	1.72	
.0005(.42)	-.72	1.25	
.0003(.25)	-1.47	.77	
Slope/.001ELF	2.630		
Curve/.001ELF	-.243		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	4.05	
2-Pane	-.38	1.99	
3-Pane	-.51	1.27	
R-10	-.67	.42	
Slope(DD)	182.26		
Curve(DDS)	-1.098		

Base Load = 26.80 MBtu
Typical Load = 9.47 MBtu
Residual Load = -3.14 MBtu

Omaha NB WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	35.65
R-7	-13.07	13.87
R-11	-15.16	10.40
R-19	-17.03	7.27
R-22	-17.70	6.15
R-30	-18.61	4.65
R-38	-19.15	3.74
R-49	-19.62	2.95
R-60	-19.93	2.44
Slope(DD)		6706.65
Curve(DDS)		-116.857

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	31.58
R-7	-7.89	15.03
R-11	-9.01	12.67
R-13	-10.33	9.89
R-19	-10.99	8.51
R-27	-12.12	6.14
R-34	-12.82	4.67
Slope(DD)		6024.22
Curve(DDS)		-28.456

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-10.33		56.92
R-5 2ft	-11.66		23.67
R-5 4ft	-12.02		14.67
R-10 2ft	-11.90		17.67
R-10 4ft	-12.38		5.67
Intercept	-18.662		
Slope(DD)	7154.36		
Curve(DDS)	-58.578		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-7.40		130.17
R-5 4ft	-9.47		78.42
R-5 8ft	-10.06		63.67
R-10 4ft	-9.96		66.17
R-10 8ft	-10.79		45.42
Intercept	.000		
Slope(DD)	4454.47		
Curve(DDS)	-30.928		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-7.40		8.68
R-11 flr	-11.09		2.53
R-19 flr	-12.33		.47
R-30 flr	-13.12		-.86
Intercept	-4.523		
Slope(DD)	5039.74		
Curve(DDS)	-480.784		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		21.01
R-11 flr	-10.40		3.68
R-19 flr	-12.18		.71
R-30 flr	-13.25		-1.08
R-38 flr	-13.50		-1.49
R-49 flr	-14.21		-2.67
Intercept	-5.465		
Slope(DD)	5629.07		
Curve(DDS)	-90.830		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.82)	.00		18.46
.0005	(.61)	-6.78		12.81
.0003	(.37)	-13.20		7.46
Slope/.001ELF		23.750		
Curve/.001ELF		3.750		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		140.00
2-Pane	-11.35		61.18
3-Pane	-14.60		38.62
R-10	-18.42		12.08
Slope(DD)	5121.76		
Curve(DDS)	6.868		

Base Load = 82.80 MBtu
Typical Load = 25.06 MBtu
Residual Load = 1.76 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		6.15
R-7	-2.25		2.40
R-11	-2.61		1.81
R-19	-2.93		1.27
R-22	-3.04		1.08
R-30	-3.20		.82
R-38	-3.29		.67
R-49	-3.38		.52
R-60	-3.44		.42
Slope(DD)			1176.53
Curve(DDS)			-23.445

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		2.80
R-7	-.71		1.31
R-11	-.81		1.10
R-13	-.94		.83
R-19	-1.00		.70
R-27	-1.09		.52
R-34	-1.14		.40
Slope(DD)			502.04
Curve(DDS)			3.326

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.36		-16.85
R-5 2ft	-2.33		-16.10
R-5 4ft	-2.28		-14.85
R-10 2ft	-2.32		-15.85
R-10 4ft	-2.27		-14.60
Intercept	-11.546		
Slope(DD)	-1010.66		
Curve(DDS)	47.545		

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-1.39		7.40
R-5 4ft	-1.58		2.65
R-5 8ft	-1.58		2.65
R-10 4ft	-1.63		1.40
R-10 8ft	-1.64		1.15
Intercept	.000		
Slope(DD)	79.44		
Curve(DDS)	2.501		

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-1.39		.49
R-11 flr	-.39		2.16
R-19 flr	-.10		2.64
R-30 flr	.08		2.94
Intercept	3.771		
Slope(DD)	-1127.32		
Curve(DDS)	95.179		

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		2.81
R-11 flr	.43		3.53
R-19 flr	.46		3.58
R-30 flr	.50		3.64
R-38 flr	.51		3.66
R-49 flr	.54		3.70
Intercept	3.732		
Slope(DD)	-105.30		
Curve(DDS)	-14.539		

Infiltration ELF	Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007	(.54)	.00		1.68
.0005	(.38)	-.54		1.23
.0003	(.23)	-1.11		.76
Slope/.001ELF		2.625		
Curve/.001ELF		-.312		

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		-1.36
2-Pane	-.10		-2.06
3-Pane	-.00		-1.39
R-10	.11		-.60
Slope(DD)	-273.81		
Curve(DDS)	8.418		

Base Load = 17.96 MBtu
Typical Load = 11.45 MBtu
Residual Load = 3.97 MBtu

Omaha NB WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	34.84
R-7	-12.80	13.50
R-11	-14.85	10.10
R-19	-16.68	7.04
R-22	-17.35	5.94
R-30	-18.23	4.46
R-38	-18.76	3.57
R-49	-19.20	2.85
R-60	-19.48	2.38
Slope(DD)		6464.09
Curve(DDS)		-98.986

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	31.82
R-7	-5.37	14.86
R-11	-6.14	12.45
R-13	-7.01	9.69
R-19	-7.44	8.33
R-27	-8.19	5.98
R-34	-8.65	4.54
Slope(DD)		5825.14
Curve(DDS)		16.727

Slab	Delta (MBtu)	Component (/ft)
R-0	-11.30	72.40
R-5 2ft	-12.34	37.56
R-5 4ft	-12.64	27.56
R-10 2ft	-12.53	31.23
R-10 4ft	-12.94	17.73
Intercept		-10.081
Slope(DD)		8314.40
Curve(DDS)		-107.372

Heated Basement	Delta (MBtu)	Component (/ft)
R-0	-8.90	152.23
R-5 4ft	-10.75	90.56
R-5 8ft	-11.27	73.40
R-10 4ft	-11.18	76.40
R-10 8ft	-11.90	52.23
Intercept		.000
Slope(DD)		5101.15
Curve(DDS)		-33.520

Unheated Basement	Delta (MBtu)	Component (/sf)
R-0	-8.90	7.61
R-11 flr	-11.82	2.74
R-19 flr	-12.91	.94
R-30 flr	-13.60	-.21
Intercept		-3.465
Slope(DD)		4489.92
Curve(DDS)		-454.357

Crawl	Delta (MBtu)	Component (/sf)
R-0	.00	22.45
R-11 flr	-10.63	4.74
R-19 flr	-12.45	1.70
R-30 flr	-13.59	-.20
R-38 flr	-13.85	-.63
R-49 flr	-14.60	-1.88
Intercept		-4.769
Slope(DD)		5894.06
Curve(DDS)		-114.152

Infiltration ELF (Ach)	Delta (MBtu)	Component (/sf flr)
.0007(.82)	.00	18.26
.0005(.61)	-6.78	12.61
.0003(.36)	-13.15	7.31
Slope/.001ELF		23.063
Curve/.001ELF		4.322

Window U-value	Delta (MBtu)	Component (/sf)
1-Pane	.00	140.40
2-Pane	-11.50	60.58
3-Pane	-14.72	38.19
R-10	-18.51	11.86
Slope(DD)		5016.96
Curve(DDS)		11.417

Base Load = 78.27 MBtu
Typical Load = 23.03 MBtu
Residual Load = 2.00 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	5.78
R-7	-2.18	2.15
R-11	-2.52	1.58
R-19	-2.83	1.06
R-22	-2.93	.89
R-30	-3.07	.67
R-38	-3.14	.54
R-49	-3.21	.42
R-60	-3.26	.35
Slope(DD)		950.47
Curve(DDS)		4.125

Wall	Delta (MBtu)	Component (/sf)
R-0	.00	2.78
R-7	-.47	1.31
R-11	-.63	1.09
R-13	-.61	.85
R-19	-.65	.73
R-27	-.72	.53
R-34	-.76	.40
Slope(DD)		513.81
Curve(DDS)		.652

Slab	Delta (MBtu)	Component (/ft)
R-0	-1.88	-13.05
R-5 2ft	-1.85	-12.22
R-5 4ft	-1.82	-11.05
R-10 2ft	-1.84	-11.89
R-10 4ft	-1.81	-10.72
Intercept		-7.750
Slope(DD)		-979.80
Curve(DDS)		44.930

Heated Basement	Delta (MBtu)	Component (/ft)
R-0	-1.24	8.11
R-5 4ft	-1.36	3.95
R-5 8ft	-1.37	3.78
R-10 4ft	-1.39	2.95
R-10 8ft	-1.42	2.11
Intercept		.000
Slope(DD)		197.97
Curve(DDS)		.022

Unheated Basement	Delta (MBtu)	Component (/sf)
R-0	-1.24	.41
R-11 flr	-.43	1.76
R-19 flr	-.11	2.29
R-30 flr	.10	2.63
Intercept		3.589
Slope(DD)		-1326.33
Curve(DDS)		137.588

Crawl	Delta (MBtu)	Component (/sf)
R-0	.00	2.47
R-11 flr	.54	3.37
R-19 flr	.59	3.46
R-30 flr	.62	3.51
R-38 flr	.63	3.52
R-49 flr	.65	3.55
Intercept		3.607
Slope(DD)		-102.00
Curve(DDS)		-23.266

Infiltration ELF (Ach)	Delta (MBtu)	Component (/sf flr)
.0007(.58)	.00	1.54
.0005(.42)	-.49	1.13
.0003(.25)	-1.01	.70
Slope/.001ELF		2.417
Curve/.001ELF		-.313

Window U-value	Delta (MBtu)	Component (/sf)
1-Pane	.00	-2.98
2-Pane	-.15	-3.99
3-Pane	.04	-2.68
R-10	.26	-1.14
Slope(DD)		-520.60
Curve(DDS)		15.445

Base Load = 16.08 MBtu
Typical Load = 10.29 MBtu
Residual Load = 3.38 MBtu

Philadelphia PA TMY One Story Prototype Siding Series Two

Heating Load

Component	Delta (MBtu)	(KBtu/sf)
Ceiling		
R-0	.00	29.25
R-7	-27.15	11.62
R-11	-31.49	8.81
R-19	-35.38	6.28
R-22	-36.86	5.32
R-30	-38.84	4.03
R-38	-40.04	3.25
R-49	-41.10	2.56
R-60	-41.79	2.12
Slope(DD)		5851.26
Curve(DDS)		-154.747
Slab		(/ft)
R-0	-18.66	50.26
R-5 2ft	-23.21	22.85
R-5 4ft	-24.52	14.96
R-10 2ft	-24.04	17.85
R-10 4ft	-25.87	6.83
Intercept		-15.917
Slope(DD)		6735.14
Curve(DDS)		-95.899
Unheated Basement		(/sf)
R-0	-11.79	9.88
R-11 flr	-24.56	1.59
R-19 flr	-28.08	-.70
R-30 flr	-30.35	-2.17
Intercept		-6.122
Slope(DD)		5363.04
Curve(DDS)		-437.355
Infiltration		(/sf flr)
ELF Ach		
.0007(.81)	.00	17.44
.0005(.57)	-7.85	12.35
.0003(.34)	-15.56	7.34
Slope/.001ELF		24.123
Curve/.001ELF		1.136

Component	Delta (MBtu)	(KBtu/sf)
Wall		
R-0	.00	27.10
R-7	-15.52	13.29
R-11	-17.73	11.32
R-13	-20.42	8.92
R-19	-21.76	7.73
R-27	-24.19	5.57
R-34	-25.69	4.24
Slope(DD)		5537.79
Curve(DDS)		-92.893
Heated Basement		(/ft)
R-0	-11.79	91.65
R-5 4ft	-16.79	61.53
R-5 8ft	-18.53	51.04
R-10 4ft	-18.13	53.45
R-10 8ft	-20.85	37.07
Intercept		.000
Slope(DD)		3756.49
Curve(DDS)		-37.037
Crawl		(/sf)
R-0	.00	17.53
R-11 flr	-24.56	1.59
R-19 flr	-28.68	-1.09
R-30 flr	-31.27	-2.77
R-38 flr	-31.86	-3.15
R-49 flr	-33.57	-4.26
Intercept		-6.784
Slope(DD)		5160.17
Curve(DDS)		-81.467
Window U-value		(/sf)
1-Pane	.00	131.25
2-Pane	-12.74	62.31
3-Pane	-16.93	39.63
R-10	-21.86	12.96
Slope(DD)		5560.54
Curve(DDS)		-22.316

Base Load = 145.77 MBtu
Typical Load = 46.59 MBtu
Residual Load = 3.09 MBtu

Cooling Load

Component	Delta (MBtu)	(KBtu/sf)
Ceiling		
R-0	.00	5.42
R-7	-4.94	2.21
R-11	-5.73	1.70
R-19	-6.44	1.24
R-22	-6.73	1.05
R-30	-7.12	.80
R-38	-7.36	.64
R-49	-7.57	.51
R-60	-7.70	.42
Slope(DD)		1170.14
Curve(DDS)		-43.084
Slab		(/ft)
R-0	-4.70	-5.65
R-5 2ft	-4.57	-4.86
R-5 4ft	-4.47	-4.26
R-10 2ft	-4.55	-4.74
R-10 4ft	-4.40	-3.84
Intercept		-1.810
Slope(DD)		-670.90
Curve(DDS)		29.299
Unheated Basement		(/sf)
R-0	-2.97	.51
R-11 flr	-.80	1.92
R-19 flr	-.23	2.30
R-30 flr	.14	2.53
Intercept		3.170
Slope(DD)		-860.46
Curve(DDS)		66.828
Infiltration		(/sf flr)
ELF Ach		
.0007(.55)	.00	1.17
.0005(.39)	-.54	.82
.0003(.24)	-1.06	.48
Slope/.001ELF		1.558
Curve/.001ELF		.162

Component	Delta (MBtu)	(KBtu/sf)
Wall		
R-0	.00	2.84
R-7	-1.48	1.52
R-11	-1.69	1.33
R-13	-2.02	1.04
R-19	-2.19	.89
R-27	-2.44	.66
R-34	-2.60	.52
Slope(DD)		681.32
Curve(DDS)		-28.580
Heated Basement		(/ft)
R-0	-2.97	4.78
R-5 4ft	-3.44	1.94
R-5 8ft	-3.45	1.88
R-10 4ft	-3.57	1.16
R-10 8ft	-3.61	.92
Intercept		.000
Slope(DD)		72.76
Curve(DDS)		1.081
Crawl		(/sf)
R-0	.00	2.44
R-11 flr	.86	3.00
R-19 flr	.96	3.07
R-30 flr	1.09	3.15
R-38 flr	1.12	3.17
R-49 flr	1.21	3.23
Intercept		3.291
Slope(DD)		-187.00
Curve(DDS)		4.226
Window U-value		(/sf)
1-Pane	.00	2.36
2-Pane	-.22	1.17
3-Pane	-.30	.75
R-10	-.39	.25
Slope(DD)		107.44
Curve(DDS)		-.685

Base Load = 20.84 MBtu
Typical Load = 7.09 MBtu
Residual Load = -2.45 MBtu

Philadelphia PA TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	30.41
R-7	-11.17	11.79
R-11	-12.96	8.82
R-19	-14.56	6.15
R-22	-15.13	5.19
R-30	-15.90	3.92
R-38	-16.36	3.15
R-49	-16.76	2.49
R-60	-17.01	2.06
Slope(DD)		5656.04
Curve(DDS)		-88.758

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	26.52
R-7	-6.68	12.50
R-11	-7.63	10.51
R-13	-8.73	8.21
R-19	-9.27	7.07
R-27	-10.22	5.08
R-34	-10.80	3.86
Slope(DD)		4963.57
Curve(DDS)		-6.124

Slab		(/ft)
R-0	-8.91	49.68
R-5 2ft	-10.02	21.93
R-5 4ft	-10.31	14.68
R-10 2ft	-10.21	17.18
R-10 4ft	-10.61	7.18
Intercept		-12.491
Slope(DD)		5651.70
Curve(DDS)		-32.933

Heated Basement		(/ft)
R-0	-6.59	107.68
R-5 4ft	-8.31	64.68
R-5 8ft	-8.80	52.43
R-10 4ft	-8.71	54.68
R-10 8ft	-9.40	37.43
Intercept		.000
Slope(DD)		3638.79
Curve(DDS)		-24.533

Unheated Basement		(/sf)
R-0	-6.59	7.18
R-11 flr	-9.67	2.05
R-19 flr	-10.69	.34
R-30 flr	-11.35	-.75
Intercept		-3.786
Slope(DD)		4163.75
Curve(DDS)		-394.993

Crawl		(/sf)
R-0	.00	18.16
R-11 flr	-9.09	3.01
R-19 flr	-10.59	.51
R-30 flr	-11.49	-.98
R-38 flr	-11.69	-1.32
R-49 flr	-12.28	-2.30
Intercept		-4.610
Slope(DD)		4626.17
Curve(DDS)		-36.128

Infiltration ELF Ach		(/sf flr)
.0007(.80)	.00	15.86
.0005(.60)	-5.95	10.90
.0003(.36)	-11.49	6.28
Slope/.001ELF		19.666
Curve/.001ELF		4.272

Window U-value		(/sf)
1-Pane	.00	116.83
2-Pane	-9.59	50.23
3-Pane	-12.26	31.66
R-10	-15.41	9.81
Slope(DD)		4147.54
Curve(DDS)		10.520

Base Load = 69.76 MBtu
Typical Load = 20.28 MBtu
Residual Load = .91 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.11
R-7	-1.83	2.07
R-11	-2.12	1.58
R-19	-2.38	1.15
R-22	-2.48	.98
R-30	-2.62	.75
R-38	-2.70	.61
R-49	-2.79	.47
R-60	-2.84	.38
Slope(DD)		1082.61
Curve(DDS)		-37.133

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.30
R-7	-.59	1.07
R-11	-.67	.90
R-13	-.78	.67
R-19	-.83	.56
R-27	-.90	.42
R-34	-.94	.33
Slope(DD)		405.91
Curve(DDS)		4.144

Slab		(/ft)
R-0	-1.82	-13.37
R-5 2ft	-1.76	-11.87
R-5 4ft	-1.72	-10.87
R-10 2ft	-1.75	-11.62
R-10 4ft	-1.69	-10.12
Intercept		-6.754
Slope(DD)		-1105.10
Curve(DDS)		46.132

Heated Basement		(/ft)
R-0	-1.13	3.88
R-5 4ft	-1.24	1.13
R-5 8ft	-1.24	1.13
R-10 4ft	-1.27	.38
R-10 8ft	-1.27	.38
Intercept		.000
Slope(DD)		12.21
Curve(DDS)		2.028

Unheated Basement		(/sf)
R-0	-1.13	.26
R-11 flr	-.26	1.71
R-19 flr	-.02	2.11
R-30 flr	.14	2.38
Intercept		3.077
Slope(DD)		-954.28
Curve(DDS)		78.905

Crawl		(/sf)
R-0	.00	2.14
R-11 flr	.41	2.83
R-19 flr	.53	3.03
R-30 flr	.57	3.09
R-38 flr	.58	3.11
R-49 flr	.61	3.15
Intercept		3.360
Slope(DD)		-347.70
Curve(DDS)		21.475

Infiltration ELF Ach		(/sf flr)
.0007(.55)	.00	1.10
.0005(.39)	-.39	.78
.0003(.23)	-.77	.46
Slope/.001ELF		1.500
Curve/.001ELF		.104

Window U-value		(/sf)
1-Pane	.00	-2.45
2-Pane	.01	-2.38
3-Pane	.12	-1.58
R-10	.26	-.64
Slope(DD)		-290.04
Curve(DDS)		7.476

Base Load = 14.06 MBtu
Typical Load = 8.91 MBtu
Residual Load = 3.23 MBtu

Philadelphia PA TMY MApartment Prototype Siding Series Two

Heating Load

Delta Component	(MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	29.69
R-7	-10.97	11.41
R-11	-12.72	8.49
R-19	-14.30	5.87
R-22	-14.85	4.95
R-30	-15.58	3.72
R-38	-16.03	2.97
R-49	-16.39	2.37
R-60	-16.63	1.97
Slope(DD)		5364.80
Curve(DDS)		-60.207

Delta Component	(MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	26.59
R-7	-4.52	12.34
R-11	-5.16	10.32
R-13	-5.89	8.02
R-19	-6.25	6.88
R-27	-6.86	4.94
R-34	-7.24	3.75
Slope(DD)		4796.42
Curve(DDS)		27.481

Slab		(/ft)
R-0	-9.77	62.21
R-5 2ft	-10.64	33.04
R-5 4ft	-10.88	25.21
R-10 2ft	-10.80	28.04
R-10 4ft	-11.12	17.21
Intercept		-4.258
Slope(DD)		6215.31
Curve(DDS)		-49.834

Heated Basement		(/ft)
R-0	-7.86	125.88
R-5 4ft	-9.42	73.88
R-5 8ft	-9.85	59.54
R-10 4ft	-9.77	62.21
R-10 8ft	-10.36	42.38
Intercept		.000
Slope(DD)		4080.98
Curve(DDS)		-24.446

Unheated Basement		(/sf)
R-0	-7.86	6.29
R-11 flr	-10.34	2.16
R-19 flr	-11.23	.67
R-30 flr	-11.80	-.28
Intercept		-2.955
Slope(DD)		3686.83
Curve(DDS)		-367.260

Crawl		(/sf)
R-0	.00	19.39
R-11 flr	-9.33	3.84
R-19 flr	-10.87	1.28
R-30 flr	-11.81	-.28
R-38 flr	-12.02	-.64
R-49 flr	-12.64	-1.67
Intercept		-4.036
Slope(DD)		4792.15
Curve(DDS)		-43.500

Infiltration		(/sf flr)
ELF	Ach	
.0007(.80)	.00	15.84
.0005(.60)	-5.93	10.90
.0003(.36)	-11.46	6.29
Slope/.001ELF		19.708
Curve/.001ELF		4.167

Window U-value		(/sf)
1-Pane	.00	116.99
2-Pane	-9.72	49.49
3-Pane	-12.36	31.14
R-10	-15.47	9.56
Slope(DD)		4029.36
Curve(DDS)		15.233

Base Load = 65.95 MBtu
Typical Load = 18.60 MBtu
Residual Load = 1.00 MBtu

Cooling Load

Delta Component	(MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	4.92
R-7	-1.77	1.96
R-11	-2.06	1.49
R-19	-2.31	1.07
R-22	-2.41	.89
R-30	-2.55	.66
R-38	-2.63	.52
R-49	-2.69	.43
R-60	-2.72	.37
Slope(DD)		986.86
Curve(DDS)		-26.608

Delta Component	(MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	2.34
R-7	-.39	1.13
R-11	-.44	.96
R-13	-.51	.73
R-19	-.55	.62
R-27	-.60	.46
R-34	-.63	.36
Slope(DD)		452.86
Curve(DDS)		-3.161

Slab		(/ft)
R-0	-1.40	-10.45
R-5 2ft	-1.36	-8.95
R-5 4ft	-1.34	-8.28
R-10 2ft	-1.35	-8.78
R-10 4ft	-1.32	-7.62
Intercept		-5.190
Slope(DD)		-789.11
Curve(DDS)		29.122

Heated Basement		(/ft)
R-0	-.95	4.38
R-5 4ft	-1.05	1.22
R-5 8ft	-1.05	1.22
R-10 4ft	-1.08	.38
R-10 8ft	-1.08	.38
Intercept		.000
Slope(DD)		8.16
Curve(DDS)		2.429

Unheated Basement		(/sf)
R-0	-.95	.22
R-11 flr	-.26	1.39
R-19 flr	-.03	1.77
R-30 flr	.12	2.01
Intercept		2.686
Slope(DD)		-926.02
Curve(DDS)		86.784

Crawl		(/sf)
R-0	.00	1.81
R-11 flr	.48	2.60
R-19 flr	.58	2.79
R-30 flr	.66	2.91
R-38 flr	.68	2.94
R-49 flr	.73	3.03
Intercept		3.232
Slope(DD)		-427.59
Curve(DDS)		29.336

Infiltration		(/sf flr)
ELF	Ach	
.0007(.55)	.00	.79
.0005(.39)	-.36	.49
.0003(.24)	-.65	.25
Slope/.001ELF		.625
Curve/.001ELF		.729

Window U-value		(/sf)
1-Pane	.00	-2.75
2-Pane	.03	-2.51
3-Pane	.16	-1.66
R-10	.30	-.67
Slope(DD)		-300.65
Curve(DDS)		7.444

Base Load = 12.56 MBtu
Typical Load = 8.01 MBtu
Residual Load = 2.81 MBtu

Phoenix AZ WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	9.67
R-7	-9.37	3.59
R-11	-10.87	2.62
R-19	-12.21	1.75
R-22	-12.64	1.46
R-30	-13.23	1.08
R-38	-13.58	.86
R-49	-13.83	.69
R-60	-13.99	.59
Slope(DD)		1558.23
Curve(DDS)		12.393

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	6.92
R-7	-4.56	2.86
R-11	-5.21	2.28
R-13	-5.91	1.66
R-19	-6.26	1.35
R-27	-6.66	1.00
R-34	-6.90	.78
Slope(DD)		900.41
Curve(DDS)		71.850

Slab		(/ft)
R-0	-6.81	6.22
R-5 2ft	-7.71	.79
R-5 4ft	-7.82	.13
R-10 2ft	-7.83	.07
R-10 4ft	-7.93	-.53
Intercept		.000
Slope(DD)		-660.83
Curve(DDS)		169.737

Heated Basement		(/ft)
R-0	-4.40	20.73
R-5 4ft	-6.18	10.01
R-5 8ft	-6.47	8.26
R-10 4ft	-6.51	8.02
R-10 8ft	-6.78	6.40
Intercept		2.731
Slope(DD)		325.97
Curve(DDS)		4.531

Unheated Basement		(/sf)
R-0	-4.40	2.23
R-11 flr	-6.58	.82
R-19 flr	-7.06	.51
R-30 flr	-7.37	.31
Intercept		-.208
Slope(DD)		685.46
Curve(DDS)		-40.782

Crawl		(/sf)
R-0	.00	5.09
R-11 flr	-5.84	1.30
R-19 flr	-6.63	.79
R-30 flr	-6.99	.55
R-38 flr	-7.07	.50
R-49 flr	-7.31	.35
Intercept		-.040
Slope(DD)		695.69
Curve(DDS)		59.500

Infiltration ELF Ach		(/sf flr)
.0007(.55)	.00	2.18
.0005(.39)	-1.56	1.17
.0003(.25)	-2.64	.47
Slope/.001ELF		.389
Curve/.001ELF		3.896

Window U-value		(/sf)
1-Pane	.00	22.65
2-Pane	-2.83	7.34
3-Pane	-3.36	4.48
R-10	-3.98	1.11
Slope(DD)		435.78
Curve(DDS)		15.992

Base Load = 36.44 MBtu
Typical Load = 9.75 MBtu
Residual Load = 1.61 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	20.05
R-7	-18.55	8.01
R-11	-21.51	6.08
R-19	-24.17	4.36
R-22	-25.19	3.69
R-30	-26.56	2.80
R-38	-27.39	2.27
R-49	-28.14	1.78
R-60	-28.62	1.47
Slope(DD)		4072.36
Curve(DDS)		-116.435

Wall	Delta Component (MBtu)	(/sf) (KBtu)
R-0	.00	11.97
R-7	-6.65	6.05
R-11	-7.60	5.21
R-13	-8.82	4.13
R-19	-9.42	3.59
R-27	-10.54	2.59
R-34	-11.23	1.98
Slope(DD)		2608.90
Curve(DDS)		-71.211

Slab		(/ft)
R-0	-12.36	10.20
R-5 2ft	-12.67	8.33
R-5 4ft	-12.83	7.37
R-10 2ft	-12.89	7.01
R-10 4ft	-13.13	5.56
Intercept		.000
Slope(DD)		2345.73
Curve(DDS)		-134.458

Heated Basement		(/ft)
R-0	-5.23	53.15
R-5 4ft	-6.94	42.85
R-5 8ft	-7.21	41.22
R-10 4ft	-7.42	39.96
R-10 8ft	-7.90	37.07
Intercept		28.406
Slope(DD)		970.46
Curve(DDS)		-8.048

Unheated Basement		(/sf)
R-0	-5.23	5.73
R-11 flr	-6.16	5.13
R-19 flr	-6.68	4.79
R-30 flr	-7.01	4.57
Intercept		3.940
Slope(DD)		887.23
Curve(DDS)		-104.988

Crawl		(/sf)
R-0	.00	9.13
R-11 flr	-3.89	6.60
R-19 flr	-5.05	5.85
R-30 flr	-5.88	5.31
R-38 flr	-6.07	5.18
R-49 flr	-6.62	4.83
Intercept		3.932
Slope(DD)		1888.09
Curve(DDS)		-170.681

Infiltration ELF Ach		(/sf flr)
.0007(.51)	.00	4.52
.0005(.37)	-2.00	3.22
.0003(.22)	-3.99	1.93
Slope/.001ELF		6.396
Curve/.001ELF		.081

Window U-value		(/sf)
1-Pane	.00	27.96
2-Pane	-2.57	14.06
3-Pane	-3.51	8.98
R-10	-4.61	3.02
Slope(DD)		1304.47
Curve(DDS)		-9.291

Base Load = 89.69 MBtu
Typical Load = 43.25 MBtu
Residual Load = 6.73 MBtu

Phoenix AZ WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	9.59
R-7	-3.73	3.37
R-11	-4.33	2.38
R-19	-4.86	1.49
R-22	-5.01	1.24
R-30	-5.20	.92
R-38	-5.32	.72
R-49	-5.41	.58
R-60	-5.46	.49
Slope(DD)	1276.87	
Curve(DDS)	57.367	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	6.43
R-7	-1.85	2.55
R-11	-2.11	2.00
R-13	-2.36	1.48
R-19	-2.48	1.22
R-27	-2.65	.87
R-34	-2.75	.66
Slope(DD)	763.06	
Curve(DDS)	80.288	

Slab		(/ft)
R-0	-2.59	4.97
R-5 2ft	-2.76	.72
R-5 4ft	-2.77	.47
R-10 2ft	-2.78	.22
R-10 4ft	-2.80	-.28
Intercept	.000	
Slope(DD)	-431.78	
Curve(DDS)	123.999	

Heated Basement		(/ft)
R-0	-1.88	22.72
R-5 4ft	-2.31	11.97
R-5 8ft	-2.37	10.47
R-10 4ft	-2.39	9.97
R-10 8ft	-2.45	8.47
Intercept		4.928
Slope(DD)		312.00
Curve(DDS)		4.755

Unheated Basement		(/sf)
R-0	-1.88	1.51
R-11 flr	-2.36	.71
R-19 flr	-2.49	.50
R-30 flr	-2.57	.36
Intercept	-.000	
Slope(DD)	494.68	
Curve(DDS)	-38.849	

Crawl		(/sf)
R-0	.00	4.65
R-11 flr	-1.92	1.45
R-19 flr	-2.18	1.01
R-30 flr	-2.32	.78
R-38 flr	-2.35	.73
R-49 flr	-2.44	.58
Intercept		.238
Slope(DD)		657.01
Curve(DDS)		39.596

Infiltration ELF	Ach	(/sf flr)
.0007	(.55) .00	1.88
.0005	(.41) -1.02	1.03
.0003	(.25) -1.74	.43
Slope/.001ELF		.500
Curve/.001ELF		3.125

Window U-value		(/sf)
1-Pane	.00	19.40
2-Pane	-1.84	6.62
3-Pane	-2.21	4.07
R-10	-2.64	1.06
Slope(DD)		424.87
Curve(DDS)		11.738

Base Load = 15.72 MBtu
Typical Load = 4.97 MBtu
Residual Load = 1.75 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	21.21
R-7	-7.68	8.40
R-11	-8.91	6.36
R-19	-10.01	4.52
R-22	-10.43	3.83
R-30	-10.98	2.90
R-38	-11.32	2.34
R-49	-11.62	1.84
R-60	-11.81	1.52
Slope(DD)	4211.30	
Curve(DDS)	-106.994	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	12.71
R-7	-3.00	6.41
R-11	-3.43	5.51
R-13	-3.98	4.36
R-19	-4.25	3.79
R-27	-4.75	2.74
R-34	-5.06	2.09
Slope(DD)	2754.69	
Curve(DDS)	-72.780	

Slab		(/ft)
R-0	-4.99	9.31
R-5 2ft	-5.06	7.56
R-5 4ft	-5.09	6.81
R-10 2ft	-5.11	6.31
R-10 4ft	-5.16	5.06
Intercept	.000	
Slope(DD)	2134.28	
Curve(DDS)	-121.898	

Heated Basement		(/ft)
R-0	-2.29	76.81
R-5 4ft	-2.84	63.06
R-5 8ft	-2.92	61.06
R-10 4ft	-2.97	59.81
R-10 8ft	-3.10	56.56
Intercept		47.611
Slope(DD)		967.60
Curve(DDS)		-4.647

Unheated Basement		(/sf)
R-0	-2.29	5.12
R-11 flr	-2.36	5.00
R-19 flr	-2.49	4.78
R-30 flr	-2.58	4.64
Intercept	4.192	
Slope(DD)	635.72	
Curve(DDS)	-88.657	

Crawl		(/sf)
R-0	.00	8.94
R-11 flr	-1.36	8.67
R-19 flr	-1.80	5.94
R-30 flr	-2.12	5.41
R-38 flr	-2.19	5.29
R-49 flr	-2.40	4.94
Intercept		4.048
Slope(DD)		1876.30
Curve(DDS)		-179.961

Infiltration ELF	Ach	(/sf flr)
.0007	(.51) .00	4.02
.0005	(.37) -1.44	2.82
.0003	(.22) -2.83	1.66
Slope/.001ELF		5.375
Curve/.001ELF		.521

Window U-value		(/sf)
1-Pane	.00	27.03
2-Pane	-1.96	13.42
3-Pane	-2.66	8.56
R-10	-3.48	2.86
Slope(DD)		1234.80
Curve(DDS)		-7.995

Base Load = 54.20 MBtu
Typical Load = 34.26 MBtu
Residual Load = 11.69 MBtu

Pittsburgh PA WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	34.52
R-7	-31.83	13.85
R-11	-36.91	10.55
R-19	-41.47	7.59
R-22	-43.25	6.43
R-30	-45.64	4.88
R-38	-47.08	3.94
R-49	-48.37	3.10
R-60	-49.21	2.56
Slope(DD)		7106.66
Curve(DDS)		-216.717

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	32.67
R-7	-18.69	16.04
R-11	-21.35	13.67
R-13	-24.61	10.78
R-19	-26.22	9.34
R-27	-29.16	6.73
R-34	-30.96	5.12
Slope(DD)		6693.97
Curve(DDS)		-115.167

Slab		(/ft)
R-0	-20.25	56.96
R-5 2ft	-25.68	24.25
R-5 4ft	-27.28	14.61
R-10 2ft	-26.68	18.22
R-10 4ft	-28.92	4.73
Intercept		-23.426
Slope(DD)		8774.71
Curve(DDS)		-148.890

Heated Basement		(/ft)
R-0	-11.90	107.26
R-5 4ft	-17.59	72.98
R-5 8ft	-19.69	60.33
R-10 4ft	-19.14	63.65
R-10 8ft	-22.38	44.13
Intercept		.000
Slope(DD)		4647.95
Curve(DDS)		-49.181

Unheated Basement		(/sf)
R-0	-11.90	11.56
R-11 flr	-27.51	1.43
R-19 flr	-31.88	-1.41
R-30 flr	-34.69	-3.24
Intercept		-8.146
Slope(DD)		6674.42
Curve(DDS)		-552.094

Crawl		(/sf)
R-0	.00	19.29
R-11 flr	-28.23	.96
R-19 flr	-33.10	-2.20
R-30 flr	-36.19	-4.21
R-38 flr	-36.89	-4.67
R-49 flr	-38.92	-5.99
Intercept		-9.016
Slope(DD)		6212.77
Curve(DDS)		-135.112

Infiltration ELF Ach		(/sf flr)
.0007(.78)	.00	18.98
.0005(.58)	-8.50	13.46
.0003(.35)	-16.88	8.02
Slope/.001ELF		26.428
Curve/.001ELF		.974

Window U-value		(/sf)
1-Pane	.00	153.47
2-Pane	-14.65	74.19
3-Pane	-19.63	47.26
R-10	-25.48	15.59
Slope(DD)		6706.98
Curve(DDS)		-33.858

Base Load = 171.44 MBtu
Typical Load = 57.40 MBtu
Residual Load = 5.55 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	4.29
R-7	-3.89	1.76
R-11	-4.51	1.36
R-19	-5.07	1.00
R-22	-5.31	.84
R-30	-5.63	.63
R-38	-5.83	.50
R-49	-5.98	.41
R-60	-6.07	.35
Slope(DD)		938.34
Curve(DDS)		-36.242

Wall	Delta Component (MBtu)	(KBtu/sf)
R-0	.00	2.23
R-7	-1.17	1.19
R-11	-1.34	1.04
R-13	-1.59	.81
R-19	-1.72	.70
R-27	-1.92	.52
R-34	-2.05	.40
Slope(DD)		529.95
Curve(DDS)		-21.461

Slab		(/ft)
R-0	-3.45	-5.17
R-5 2ft	-3.28	-4.14
R-5 4ft	-3.19	-3.60
R-10 2ft	-3.25	-3.96
R-10 4ft	-3.10	-3.06
Intercept		-1.028
Slope(DD)		-697.81
Curve(DDS)		29.343

Heated Basement		(/ft)
R-0	-2.24	2.12
R-5 4ft	-2.52	.43
R-5 8ft	-2.50	.55
R-10 4ft	-2.60	-.05
R-10 8ft	-2.58	.07
Intercept		.000
Slope(DD)		-9.36
Curve(DDS)		1.556

Unheated Basement		(/sf)
R-0	-2.24	.23
R-11 flr	-.51	1.35
R-19 flr	-.02	1.67
R-30 flr	.30	1.88
Intercept		2.434
Slope(DD)		-756.26
Curve(DDS)		63.625

Crawl		(/sf)
R-0	.00	1.68
R-11 flr	.88	2.25
R-19 flr	1.00	2.33
R-30 flr	1.07	2.37
R-38 flr	1.08	2.38
R-49 flr	1.12	2.41
Intercept		2.474
Slope(DD)		-120.40
Curve(DDS)		-6.612

Infiltration ELF Ach		(/sf flr)
.0007(.50)	.00	.43
.0005(.36)	-.19	.31
.0003(.22)	-.38	.19
Slope/.001ELF		.617
Curve/.001ELF		-.000

Window U-value		(/sf)
1-Pane	.00	.77
2-Pane	-.05	.50
3-Pane	-.08	.32
R-10	-.12	.12
Slope(DD)		53.04
Curve(DDS)		-.906

Base Load = 13.98 MBtu
Typical Load = 3.67 MBtu
Residual Load = -2.75 MBtu

Phoenix AZ WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	9.97
R-7	-3.90	3.47
R-11	-4.52	2.43
R-19	-5.08	1.50
R-22	-5.23	1.26
R-30	-5.42	.93
R-38	-5.54	.73
R-49	-5.63	.58
R-60	-5.69	.48
Slope(DD)		1279.69
Curve(DDS)		67.698

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	6.04
R-7	-1.21	2.23
R-11	-1.38	1.68
R-13	-1.53	1.21
R-19	-1.60	.97
R-27	-1.69	.69
R-34	-1.75	.52
Slope(DD)		561.96
Curve(DDS)		104.252

Slab		(/ft)
R-0	-2.67	4.62
R-5 2ft	-2.78	.78
R-5 4ft	-2.80	.28
R-10 2ft	-2.80	.28
R-10 4ft	-2.81	-.22
Intercept		.000
Slope(DD)		-392.71
Curve(DDS)		114.232

Heated Basement		(/ft)
R-0	-2.22	19.78
R-5 4ft	-2.57	7.95
R-5 8ft	-2.60	6.95
R-10 4ft	-2.61	6.78
R-10 8ft	-2.65	5.28
Intercept		3.690
Slope(DD)		76.13
Curve(DDS)		9.920

Unheated Basement		(/sf)
R-0	-2.22	.99
R-11 flr	-2.58	.39
R-19 flr	-2.65	.27
R-30 flr	-2.70	.19
Intercept		-.007
Slope(DD)		259.41
Curve(DDS)		-12.702

Crawl		(/sf)
R-0	.00	4.68
R-11 flr	-2.06	1.25
R-19 flr	-2.30	.86
R-30 flr	-2.40	.67
R-38 flr	-2.43	.63
R-49 flr	-2.50	.51
Intercept		.256
Slope(DD)		459.53
Curve(DDS)		78.671

Infiltration ELF Ach		(/sf flr)
.0007(.57)	.00	1.47
.0005(.41)	-.98	.66
.0003(.25)	-1.58	.16
Slope/.001ELF		-.667
Curve/.001ELF		3.959

Windoww U-value		(/sf)
1-Pane	.00	17.80
2-Pane	-1.70	6.03
3-Pane	-2.03	3.70
R-10	-2.43	.96
Slope(DD)		383.24
Curve(DDS)		11.027

Base Load = 14.53 MBtu
Typical Load = 4.31 MBtu
Residual Load = 2.18 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	22.36
R-7	-8.12	8.83
R-11	-9.42	6.66
R-19	-10.58	4.72
R-22	-11.02	4.00
R-30	-11.60	3.04
R-38	-11.94	2.46
R-49	-12.26	1.92
R-60	-12.47	1.58
Slope(DD)		4392.25
Curve(DDS)		-104.590

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	13.03
R-7	-2.06	6.54
R-11	-2.35	5.62
R-13	-2.73	4.41
R-19	-2.92	3.82
R-27	-3.25	2.77
R-34	-3.46	2.13
Slope(DD)		2783.15
Curve(DDS)		-67.079

Slab		(/ft)
R-0	-4.34	9.19
R-5 2ft	-4.39	7.52
R-5 4ft	-4.41	6.69
R-10 2ft	-4.43	6.19
R-10 4ft	-4.46	5.02
Intercept		.000
Slope(DD)		2107.37
Curve(DDS)		-120.365

Heated Basement		(/ft)
R-0	-2.37	74.86
R-5 4ft	-2.83	59.36
R-5 8ft	-2.90	57.02
R-10 4ft	-2.96	55.19
R-10 8ft	-3.05	52.02
Intercept		41.928
Slope(DD)		1074.32
Curve(DDS)		-4.772

Unheated Basement		(/sf)
R-0	-2.37	3.74
R-11 flr	-2.27	3.91
R-19 flr	-2.37	3.74
R-30 flr	-2.44	3.63
Intercept		3.260
Slope(DD)		533.04
Curve(DDS)		-85.576

Crawl		(/sf)
R-0	.00	7.68
R-11 flr	-1.24	5.61
R-19 flr	-1.65	4.93
R-30 flr	-1.96	4.42
R-38 flr	-2.02	4.31
R-49 flr	-2.22	3.98
Intercept		3.142
Slope(DD)		1772.09
Curve(DDS)		-172.836

Infiltration ELF Ach		(/sf flr)
.0007(.51)	.00	3.96
.0005(.37)	-1.47	2.74
.0003(.22)	-2.85	1.59
Slope/.001ELF		5.042
Curve/.001ELF		.886

Window U-value		(/sf)
1-Pane	.00	29.24
2-Pane	-2.14	14.42
3-Pane	-2.89	9.20
R-10	-3.77	3.06
Slope(DD)		1320.79
Curve(DDS)		-8.073

Base Load = 50.59 MBtu
Typical Load = 31.80 MBtu
Residual Load = 9.81 MBtu

Pittsburgh PA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	35.05
R-7	-12.95	13.48
R-11	-15.01	10.03
R-19	-16.87	6.94
R-22	-17.52	5.86
R-30	-18.39	4.41
R-38	-18.92	3.53
R-49	-19.35	2.80
R-60	-19.64	2.33
Slope(DD)		6351.56
Curve(DDS)		-74.038

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	32.00
R-7	-5.41	14.92
R-11	-6.18	12.49
R-13	-7.06	9.73
R-19	-7.49	8.36
R-27	-8.24	6.00
R-34	-8.70	4.55
Slope(DD)		5836.51
Curve(DDS)		20.978

Slab		(/ft)
R-0	-10.91	72.45
R-5 2ft	-11.96	37.28
R-5 4ft	-12.26	27.28
R-10 2ft	-12.15	31.11
R-10 4ft	-12.56	17.28
Intercept		-10.815
Slope(DD)		8637.40
Curve(DDS)		-114.440

Heated Basement		(/ft)
R-0	-8.61	149.11
R-5 4ft	-10.42	88.95
R-5 8ft	-10.92	72.28
R-10 4ft	-10.83	75.28
R-10 8ft	-11.54	51.45
Intercept		.000
Slope(DD)		5188.02
Curve(DDS)		-36.553

Unheated Basement		(/sf)
R-0	-8.61	7.46
R-11 flr	-11.61	2.46
R-19 flr	-12.70	.63
R-30 flr	-13.41	-.54
Intercept		-3.817
Slope(DD)		4527.69
Curve(DDS)		-454.252

Crawl		(/sf)
R-0	.00	21.81
R-11 flr	-10.66	4.04
R-19 flr	-12.43	1.09
R-30 flr	-13.53	-.74
R-38 flr	-13.77	-1.15
R-49 flr	-14.50	-2.35
Intercept		-5.110
Slope(DD)		5604.31
Curve(DDS)		-69.294

Infiltration ELF	Ach	(/sf flr)
.0007	(.81) .00	17.17
.0005	(.58) -6.43	11.82
.0003	(.36) -12.42	6.82
Slope/.001ELF		21.395
Curve/.001ELF		4.480

Window U-value		(/sf)
1-Pane	.00	137.32
2-Pane	-11.15	59.86
3-Pane	-14.34	37.78
R-10	-18.07	11.80
Slope(DD)		5000.35
Curve(DDS)		7.625

Base Load = 77.22 MBtu
Typical Load = 22.82 MBtu
Residual Load = 1.69 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	4.27
R-7	-1.48	1.80
R-11	-1.72	1.41
R-19	-1.93	1.06
R-22	-2.03	.88
R-30	-2.17	.65
R-38	-2.25	.52
R-49	-2.30	.43
R-60	-2.33	.38
Slope(DD)		999.08
Curve(DDS)		-46.931

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.82
R-7	-.32	.81
R-11	-.37	.67
R-13	-.42	.49
R-19	-.45	.40
R-27	-.48	.30
R-34	-.50	.24
Slope(DD)		284.17
Curve(DDS)		9.987

Slab		(/ft)
R-0	-.95	-8.52
R-5 2ft	-.89	-6.69
R-5 4ft	-.86	-5.52
R-10 2ft	-.88	-6.36
R-10 4ft	-.84	-4.86
Intercept		-1.512
Slope(DD)		-1118.38
Curve(DDS)		44.077

Heated Basement		(/ft)
R-0	-.66	.81
R-5 4ft	-.70	-.52
R-5 8ft	-.70	-.36
R-10 4ft	-.71	-.86
R-10 8ft	-.70	-.52
Intercept		.000
Slope(DD)		-74.92
Curve(DDS)		2.378

Unheated Basement		(/sf)
R-0	-.66	.04
R-11 flr	-.16	.88
R-19 flr	.02	1.19
R-30 flr	.14	1.38
Intercept		1.930
Slope(DD)		-755.75
Curve(DDS)		75.521

Crawl		(/sf)
R-0	.00	1.15
R-11 flr	.40	1.82
R-19 flr	.47	1.94
R-30 flr	.62	2.18
R-38 flr	.66	2.24
R-49 flr	.75	2.40
Intercept		2.593
Slope(DD)		-586.79
Curve(DDS)		59.542

Infiltration ELF	Ach	(/sf flr)
.0007	(.50) .00	-.19
.0005	(.36) -.09	-.26
.0003	(.22) -.05	-.23
Slope/.001ELF		-1.146
Curve/.001ELF		1.250

Window U-value		(/sf)
1-Pane	.00	-3.51
2-Pane	.09	-2.85
3-Pane	.24	-1.88
R-10	.40	-.74
Slope(DD)		-330.80
Curve(DDS)		7.488

Base Load = 8.28 MBtu
Typical Load = 4.88 MBtu
Residual Load = 2.08 MBtu

Pittsburgh PA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	36.01
R-7	-13.22	13.98
R-11	-15.32	10.46
R-19	-17.22	7.31
R-22	-17.90	6.17
R-30	-18.81	4.65
R-38	-19.36	3.74
R-49	-19.83	2.96
R-60	-20.13	2.46
Slope(DD)	6726.25	
Curve(DDS)	-110.195	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	31.92
R-7	-7.99	15.15
R-11	-9.13	12.76
R-13	-10.47	9.95
R-19	-11.13	8.56
R-27	-12.27	6.17
R-34	-12.97	4.70
Slope(DD)	6050.60	
Curve(DDS)	-21.560	

Slab		(/ft)
R-0	-9.96	57.09
R-5 2ft	-11.29	23.84
R-5 4ft	-11.66	14.59
R-10 2ft	-11.52	18.09
R-10 4ft	-12.01	5.84
Intercept	-18.541	
Slope(DD)	7347.53	
Curve(DDS)	-59.963	

Heated Basement		(/ft)
R-0	-7.13	127.84
R-5 4ft	-9.13	77.84
R-5 8ft	-9.71	63.34
R-10 4ft	-9.60	66.09
R-10 8ft	-10.43	45.34
Intercept	.000	
Slope(DD)	4602.86	
Curve(DDS)	-35.206	

Unheated Basement		(/sf)
R-0	-7.13	8.52
R-11 flr	-10.87	2.29
R-19 flr	-12.11	.22
R-30 flr	-12.91	-1.11
Intercept	-4.792	
Slope(DD)	5056.04	
Curve(DDS)	-479.643	

Crawl		(/sf)
R-0	.00	20.41
R-11 flr	-10.44	3.01
R-19 flr	-12.19	.09
R-30 flr	-13.27	-1.72
R-38 flr	-13.52	-2.13
R-49 flr	-14.23	-3.32
Intercept	-6.054	
Slope(DD)	5566.98	
Curve(DDS)	-79.355	

Infiltration ELF Ach		(/sf flr)
.0007(.81)	.00	17.31
.0005(.58)	-6.46	11.93
.0003(.36)	-12.50	6.89
Slope/.001ELF	21.666	
Curve/.001ELF	4.376	

Window U-value		(/sf)
1-Pane	.00	138.62
2-Pane	-11.06	61.82
3-Pane	-14.33	39.09
R-10	-18.18	12.37
Slope(DD)	5261.05	
Curve(DDS)	-.387	

Base Load = 82.20 MBtu
Typical Load = 25.06 MBtu
Residual Load = 1.52 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	4.32
R-7	-1.53	1.77
R-11	-1.78	1.36
R-19	-2.00	.99
R-22	-2.09	.85
R-30	-2.20	.66
R-38	-2.27	.54
R-49	-2.35	.41
R-60	-2.40	.32
Slope(DD)	942.14	
Curve(DDS)	-35.887	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	2.19
R-7	-.52	1.11
R-11	-.59	.95
R-13	-.70	.73
R-19	-.75	.62
R-27	-.82	.46
R-34	-.87	.36
Slope(DD)	464.39	
Curve(DDS)	-10.590	

Slab		(/ft)
R-0	-1.31	-11.47
R-5 2ft	-1.24	-9.72
R-5 4ft	-1.20	-8.72
R-10 2ft	-1.23	-9.47
R-10 4ft	-1.17	-7.97
Intercept	-4.722	
Slope(DD)	-1102.62	
Curve(DDS)	44.735	

Heated Basement		(/ft)
R-0	-.79	1.53
R-5 4ft	-.84	.28
R-5 8ft	-.84	.28
R-10 4ft	-.85	.03
R-10 8ft	-.85	.03
Intercept	.000	
Slope(DD)	-9.95	
Curve(DDS)	1.201	

Unheated Basement		(/sf)
R-0	-.79	.10
R-11 flr	-.18	1.12
R-19 flr	.00	1.42
R-30 flr	.12	1.62
Intercept	2.151	
Slope(DD)	-727.25	
Curve(DDS)	63.887	

Crawl		(/sf)
R-0	.00	1.42
R-11 flr	.37	2.04
R-19 flr	.44	2.15
R-30 flr	.56	2.36
R-38 flr	.59	2.40
R-49 flr	.67	2.54
Intercept	2.705	
Slope(DD)	-499.35	
Curve(DDS)	48.468	

Infiltration ELF Ach		(/sf flr)
.0007(.50)	.00	.14
.0005(.36)	-.06	.09
.0003(.22)	-.11	.05
Slope/.001ELF	.125	
Curve/.001ELF	.104	

Window U-value		(/sf)
1-Pane	.00	-1.91
2-Pane	.09	-1.29
3-Pane	.15	-.84
R-10	.23	-.31
Slope(DD)	-138.93	
Curve(DDS)	2.522	

Base Load = 9.53 MBtu
Typical Load = 5.70 MBtu
Residual Load = 2.05 MBtu

Portland ME WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	43.68
R-7	-16.00	17.01
R-11	-18.56	12.75
R-19	-20.85	8.93
R-22	-21.68	7.55
R-30	-22.78	5.71
R-38	-23.45	4.59
R-49	-24.03	3.62
R-60	-24.41	2.99
Slope(DD)	8236.49	
Curve(DDS)	-146.711	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	38.64
R-7	-9.62	18.45
R-11	-10.99	15.57
R-13	-12.60	12.19
R-19	-13.40	10.52
R-27	-14.81	7.57
R-34	-15.67	5.75
Slope(DD)	7439.82	
Curve(DDS)	-47.623	

Slab		(/ft)
R-0	-11.12	68.24
R-5 2ft	-12.77	26.99
R-5 4ft	-13.23	15.49
R-10 2ft	-13.06	19.74
R-10 4ft	-13.70	3.74
Intercept	-28.392	
Slope(DD)	9286.11	
Curve(DDS)	-101.384	

Heated Basement		(/ft)
R-0	-7.74	152.74
R-5 4ft	-10.06	94.74
R-5 8ft	-10.76	77.24
R-10 4ft	-10.62	80.74
R-10 8ft	-11.63	55.49
Intercept	.000	
Slope(DD)	5426.75	
Curve(DDS)	-41.643	

Unheated Basement		(/sf)
R-0	-7.74	10.18
R-11 flr	-12.56	2.15
R-19 flr	-14.19	-.57
R-30 flr	-15.24	-2.32
Intercept	-7.167	
Slope(DD)	6667.52	
Curve(DDS)	-640.451	

Crawl		(/sf)
R-0	.00	23.08
R-11 flr	-12.43	2.37
R-19 flr	-14.56	-1.18
R-30 flr	-15.90	-3.41
R-38 flr	-16.20	-3.92
R-49 flr	-17.08	-5.38
Intercept	-8.765	
Slope(DD)	6904.81	
Curve(DDS)	-135.363	

Infiltration ELF Ach		(/sf flr)
.0007(.76)	.00	20.60
.0005(.56)	-7.60	14.27
.0003(.34)	-14.77	8.29
Slope/.001ELF	26.291	
Curve/.001ELF	4.479	

Window U-value		(/sf)
1-Pane	.00	171.46
2-Pane	-13.57	77.22
3-Pane	-17.65	48.88
R-10	-22.45	15.55
Slope(DD)	6623.85	
Curve(DDS)	-4.899	

Base Load = 99.28 MBtu
Typical Load = 31.20 MBtu
Residual Load = 2.86 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	2.58
R-7	-.90	1.09
R-11	-1.04	.85
R-19	-1.17	.63
R-22	-1.23	.54
R-30	-1.30	.41
R-38	-1.35	.33
R-49	-1.39	.26
R-60	-1.42	.22
Slope(DD)	604.26	
Curve(DDS)	-28.442	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.12
R-7	-.27	.55
R-11	-.31	.47
R-13	-.36	.36
R-19	-.39	.30
R-27	-.43	.23
R-34	-.45	.18
Slope(DD)	226.35	
Curve(DDS)	-3.244	

Slab		(/ft)
R-0	-.92	-7.24
R-5 2ft	-.85	-5.49
R-5 4ft	-.81	-4.49
R-10 2ft	-.83	-4.99
R-10 4ft	-.77	-3.49
Intercept	.187	
Slope(DD)	-1189.82	
Curve(DDS)	47.527	

Heated Basement		(/ft)
R-0	-.67	-.99
R-5 4ft	-.70	-1.74
R-5 8ft	-.68	-1.24
R-10 4ft	-.70	-1.74
R-10 8ft	-.68	-1.24
Intercept	.000	
Slope(DD)	-138.95	
Curve(DDS)	2.789	

Unheated Basement		(/sf)
R-0	-.67	-.07
R-11 flr	-.09	.90
R-19 flr	.08	1.18
R-30 flr	.19	1.37
Intercept	1.863	
Slope(DD)	-675.87	
Curve(DDS)	58.447	

Crawl		(/sf)
R-0	.00	1.05
R-11 flr	.43	1.77
R-19 flr	.47	1.83
R-30 flr	.53	1.93
R-38 flr	.54	1.95
R-49 flr	.58	2.01
Intercept	2.071	
Slope(DD)	-186.31	
Curve(DDS)	-2.485	

Infiltration ELF Ach		(/sf flr)
.0007(.47)	.00	-.06
.0005(.34)	-.03	-.08
.0003(.20)	-.02	-.08
Slope/.001ELF	-.375	
Curve/.001ELF	.417	

Window U-value		(/sf)
1-Pane	.00	-2.13
2-Pane	.14	-1.16
3-Pane	.20	-.75
R-10	.27	-.26
Slope(DD)	-113.30	
Curve(DDS)	1.229	

Base Load = 5.65 MBtu
Typical Load = 3.32 MBtu
Residual Load = 1.81 MBtu

Portland ME WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	41.73
R-7	-38.49	16.74
R-11	-44.63	12.75
R-19	-50.15	9.16
R-22	-52.30	7.77
R-30	-55.18	5.90
R-38	-56.92	4.77
R-49	-58.49	3.75
R-60	-59.50	3.09
Slope(DD)	8581.06	
Curve(DDS)	-260.244	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	39.43
R-7	-22.44	19.46
R-11	-25.64	16.61
R-13	-29.57	13.11
R-19	-31.52	11.38
R-27	-35.10	8.19
R-34	-37.30	6.24
Slope(DD)	8171.02	
Curve(DDS)	-156.213	

Slab			(/ft)
R-0		-21.87	64.82
R-5	2ft	-28.52	24.76
R-5	4ft	-30.52	12.71
R-10	2ft	-29.78	17.17
R-10	4ft	-32.59	.24
Intercept		-35.291	
Slope(DD)		10502.82	
Curve(DDS)		-178.732	

Heated Basement			(/ft)
R-0		-12.19	123.14
R-5	4ft	-18.68	84.04
R-5	8ft	-21.09	69.52
R-10	4ft	-20.42	73.56
R-10	8ft	-24.18	50.91
Intercept		.000	
Slope(DD)		5147.78	
Curve(DDS)		-52.374	

Unheated Basement			(/sf)
R-0		-12.19	13.27
R-11	flr	-32.26	.24
R-19	flr	-37.80	-3.36
R-30	flr	-41.36	-5.67
Intercept		-11.875	
Slope(DD)		8429.10	
Curve(DDS)		-687.412	

Crawl			(/sf)
R-0		.00	21.19
R-11	flr	-33.99	-.88
R-19	flr	-39.88	-4.71
R-30	flr	-43.66	-7.16
R-38	flr	-44.52	-7.72
R-49	flr	-47.01	-9.34
Intercept		-13.023	
Slope(DD)		7589.09	
Curve(DDS)		-178.930	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.75)	.00	22.45
.0005	(.54)	-10.03	15.94
.0003	(.33)	-19.94	9.51
Slope/.001ELF		31.396	
Curve/.001ELF		.974	

Window U-value		(/sf)
1-Pane	.00	189.13
2-Pane	-18.05	91.46
3-Pane	-24.18	58.26
R-10	-31.40	19.22
Slope(DD)	8269.54	
Curve(DDS)	-41.873	

Base Load = 207.17 MBtu
Typical Load = 71.97 MBtu
Residual Load = 10.68 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	2.45
R-7	-2.25	.99
R-11	-2.61	.76
R-19	-2.93	.55
R-22	-3.05	.47
R-30	-3.22	.36
R-38	-3.32	.30
R-49	-3.43	.23
R-60	-3.50	.18
Slope(DD)	521.58	
Curve(DDS)	-18.164	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	1.16
R-7	-.62	.60
R-11	-.71	.52
R-13	-.85	.40
R-19	-.92	.34
R-27	-1.01	.26
R-34	-1.07	.20
Slope(DD)	260.40	
Curve(DDS)	-8.417	

Slab			(/ft)
R-0		-2.17	-2.47
R-5	2ft	-2.02	-1.57
R-5	4ft	-1.93	-1.03
R-10	2ft	-1.99	-1.39
R-10	4ft	-1.88	-.72
Intercept		.757	
Slope(DD)		-462.33	
Curve(DDS)		16.075	

Heated Basement			(/ft)
R-0		-1.55	1.26
R-5	4ft	-1.71	.30
R-5	8ft	-1.72	.24
R-10	4ft	-1.76	-.00
R-10	8ft	-1.75	.06
Intercept		.000	
Slope(DD)		-6.27	
Curve(DDS)		.901	

Unheated Basement			(/sf)
R-0		-1.55	.14
R-11	flr	-.25	.98
R-19	flr	.13	1.23
R-30	flr	.38	1.39
Intercept		1.824	
Slope(DD)		-593.01	
Curve(DDS)		51.452	

Crawl			(/sf)
R-0		.00	1.14
R-11	flr	.65	1.56
R-19	flr	.74	1.62
R-30	flr	.86	1.70
R-38	flr	.89	1.72
R-49	flr	.97	1.77
Intercept		1.839	
Slope(DD)		-187.09	
Curve(DDS)		10.003	

Infiltration			(/sf flr)
ELF	Ach		
.0007	(.47)	.00	.24
.0005	(.34)	-.08	.19
.0003	(.20)	-.18	.12
Slope/.001ELF		.455	
Curve/.001ELF		-.162	

Window U-value		(/sf)
1-Pane	.00	.20
2-Pane	-.01	.14
3-Pane	-.02	.09
R-10	-.03	.04
Slope(DD)	16.09	
Curve(DDS)	-.325	

Base Load = 7.61 MBtu
Typical Load = 1.57 MBtu
Residual Load = -1.78 MBtu

Portland OR WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	27.53
R-7	-25.47	10.99
R-11	-29.54	8.35
R-19	-33.19	5.97
R-22	-34.61	5.05
R-30	-36.50	3.82
R-38	-37.65	3.08
R-49	-38.63	2.44
R-60	-39.27	2.03
Slope(DD)	5574.50	
Curve(DDS)	-157.161	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	24.98
R-7	-14.43	12.14
R-11	-16.49	10.31
R-13	-19.03	8.05
R-19	-20.29	6.93
R-27	-22.43	5.02
R-34	-23.75	3.85
Slope(DD)	4974.69	
Curve(DDS)	-61.254	

Slab		(/ft)
R-0	-10.40	146.49
R-5 2ft	-15.16	117.82
R-5 4ft	-16.77	108.12
R-10 2ft	-15.97	112.94
R-10 4ft	-18.13	99.92
Intercept	74.229	
Slope(DD)	7444.40	
Curve(DDS)	-128.954	

Heated Basement		(/ft)
R-0	-6.06	172.63
R-5 4ft	-9.84	149.86
R-5 8ft	-11.63	139.08
R-10 4ft	-10.88	143.60
R-10 8ft	-13.59	127.27
Intercept	92.364	
Slope(DD)	3513.81	
Curve(DDS)	-38.182	

Unheated Basement		(/sf)
R-0	-6.06	18.61
R-11 flr	-20.34	9.34
R-19 flr	-24.24	6.80
R-30 flr	-26.75	5.17
Intercept	.810	
Slope(DD)	5922.28	
Curve(DDS)	-478.039	

Crawl		(/sf)
R-0	.00	22.54
R-11 flr	-22.86	7.70
R-19 flr	-26.69	5.21
R-30 flr	-29.04	3.68
R-38 flr	-29.58	3.34
R-49 flr	-31.13	2.33
Intercept	.000	
Slope(DD)	4723.67	
Curve(DDS)	-63.833	

Infiltration ELF	Ach	(/sf flr)
.0007	(.68) .00	12.26
.0005	(.50) -6.12	8.29
.0003	(.30) -11.66	4.69
Slope/.001ELF	14.220	
Curve/.001ELF	4.708	

Window U-value		(/sf)
1-Pane	.00	106.13
2-Pane	-10.95	46.88
3-Pane	-14.14	29.62
R-10	-17.89	9.32
Slope(DD)	3959.09	
Curve(DDS)	2.313	

Base Load = 130.27 MBtu
Typical Load = 51.61 MBtu
Residual Load = -2.47 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	3.34
R-7	-2.97	1.41
R-11	-3.44	1.10
R-19	-3.87	.83
R-22	-4.06	.70
R-30	-4.32	.54
R-38	-4.47	.44
R-49	-4.62	.34
R-60	-4.71	.28
Slope(DD)	791.95	
Curve(DDS)	-38.553	

Wall	Delta (MBtu)	Component (KBtu) (/sf)
R-0	.00	1.82
R-7	-.95	.97
R-11	-1.09	.85
R-13	-1.30	.66
R-19	-1.40	.57
R-27	-1.57	.42
R-34	-1.67	.33
Slope(DD)	433.76	
Curve(DDS)	-17.818	

Slab		(/ft)
R-0	-2.14	-16.59
R-5 2ft	-1.96	-15.51
R-5 4ft	-1.89	-15.08
R-10 2ft	-1.93	-15.32
R-10 4ft	-1.80	-14.54
Intercept	-12.889	
Slope(DD)	-521.13	
Curve(DDS)	17.948	

Heated Basement		(/ft)
R-0	-1.41	-12.19
R-5 4ft	-1.50	-12.73
R-5 8ft	-1.46	-12.49
R-10 4ft	-1.52	-12.85
R-10 8ft	-1.48	-12.61
Intercept	-12.143	
Slope(DD)	-53.37	
Curve(DDS)	1.238	

Unheated Basement		(/sf)
R-0	-1.41	-1.31
R-11 flr	-.42	-.67
R-19 flr	-.18	-.52
R-30 flr	-.03	-.42
Intercept	-.159	
Slope(DD)	-347.51	
Curve(DDS)	23.855	

Crawl		(/sf)
R-0	.00	-.40
R-11 flr	.56	-.03
R-19 flr	.58	-.02
R-30 flr	.60	-.01
R-38 flr	.61	-.00
R-49 flr	.63	.01
Intercept	.000	
Slope(DD)	3.53	
Curve(DDS)	-15.845	

Infiltration ELF	Ach	(/sf flr)
.0007	(.60) .00	.10
.0005	(.43) -.12	.02
.0003	(.26) -.18	-.01
Slope/.001ELF	-.195	
Curve/.001ELF	.487	

Window U-value		(/sf)
1-Pane	.00	-.25
2-Pane	-.01	-.30
3-Pane	.01	-.20
R-10	.03	-.08
Slope(DD)	-38.68	
Curve(DDS)	1.110	

Base Load = 9.91 MBtu
Typical Load = 5.39 MBtu
Residual Load = .21 MBtu

Portland ME WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	42.46
R-7	-15.63	16.40
R-11	-18.13	12.24
R-19	-20.37	8.51
R-22	-21.16	7.18
R-30	-22.23	5.41
R-38	-22.87	4.34
R-49	-23.41	3.44
R-60	-23.76	2.86
Slope(DD)		7811.62
Curve(DDS)		-109.681

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	38.86
R-7	-6.54	18.23
R-11	-7.47	15.30
R-13	-8.53	11.94
R-19	-9.06	10.28
R-27	-9.98	7.38
R-34	-10.55	5.60
Slope(DD)		7197.82
Curve(DDS)		5.056

Slab	Delta Component (MBtu)	(/ft)
R-0	-12.29	86.01
R-5 2ft	-13.60	42.51
R-5 4ft	-13.99	29.51
R-10 2ft	-13.84	34.51
R-10 4ft	-14.37	16.68
Intercept		-20.126
Slope(DD)		10770.26
Curve(DDS)		-159.019

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-9.53	178.18
R-5 4ft	-11.65	107.34
R-5 8ft	-12.27	86.84
R-10 4ft	-12.15	90.84
R-10 8ft	-13.01	62.18
Intercept		.000
Slope(DD)		6007.42
Curve(DDS)		-40.720

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-9.53	8.91
R-11 flr	-13.45	2.38
R-19 flr	-14.86	.02
R-30 flr	-15.77	-1.49
Intercept		-5.726
Slope(DD)		5840.46
Curve(DDS)		-582.407

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	24.78
R-11 flr	-12.73	3.57
R-19 flr	-14.88	-.02
R-30 flr	-16.27	-2.34
R-38 flr	-16.59	-2.87
R-49 flr	-17.50	-4.39
Intercept		-7.816
Slope(DD)		7071.35
Curve(DDS)		-139.250

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.76)	.00	20.61
.0005(.56)	-7.57	14.30
.0003(.34)	-14.73	8.33
Slope/.001ELF		26.520
Curve/.001ELF		4.167

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	170.02
2-Pane	-13.75	74.50
3-Pane	-17.71	47.04
R-10	-22.36	14.74
Slope(DD)		6250.25
Curve(DDS)		7.191

Base Load = 93.42 MBtu
Typical Load = 28.52 MBtu
Residual Load = 3.00 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	2.53
R-7	-.88	1.06
R-11	-1.02	.82
R-19	-1.15	.61
R-22	-1.21	.52
R-30	-1.28	.39
R-38	-1.33	.31
R-49	-1.37	.25
R-60	-1.39	.21
Slope(DD)		582.61
Curve(DDS)		-26.280

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.16
R-7	-.15	.69
R-11	-.17	.62
R-13	-.23	.44
R-19	-.25	.35
R-27	-.27	.30
R-34	-.28	.26
Slope(DD)		316.15
Curve(DDS)		-18.667

Slab	Delta Component (MBtu)	(/ft)
R-0	-.59	-4.06
R-5 2ft	-.55	-2.72
R-5 4ft	-.51	-1.56
R-10 2ft	-.52	-1.89
R-10 4ft	-.49	-.72
Intercept		2.903
Slope(DD)		-1156.62
Curve(DDS)		47.982

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.48	-.56
R-5 4ft	-.50	-1.22
R-5 8ft	-.49	-.89
R-10 4ft	-.50	-1.22
R-10 8ft	-.49	-.89
Intercept		.000
Slope(DD)		-100.72
Curve(DDS)		2.119

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.48	-.03
R-11 flr	-.07	.66
R-19 flr	.06	.87
R-30 flr	.13	1.00
Intercept		1.351
Slope(DD)		-482.57
Curve(DDS)		41.668

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	.77
R-11 flr	.33	1.33
R-19 flr	.41	1.46
R-30 flr	.46	1.53
R-38 flr	.46	1.55
R-49 flr	.49	1.59
Intercept		1.730
Slope(DD)		-261.50
Curve(DDS)		14.551

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.47)	.00	.00
.0005(.34)	-.02	-.01
.0003(.20)	-.03	-.02
Slope/.001ELF		-.104
Curve/.001ELF		.156

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-2.34
2-Pane	.11	-1.61
3-Pane	.19	-1.05
R-10	.28	-.40
Slope(DD)		-175.75
Curve(DDS)		3.300

Base Load = 4.71 MBtu
Typical Load = 2.71 MBtu
Residual Load = 1.19 MBtu

Portland OR WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	27.53
R-7	-25.47	10.99
R-11	-29.54	8.35
R-19	-33.19	5.97
R-22	-34.61	5.05
R-30	-36.50	3.82
R-38	-37.65	3.08
R-49	-38.63	2.44
R-60	-39.27	2.03
Slope(DD)	5574.50	
Curve(DDS)	-157.161	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	24.98
R-7	-14.43	12.14
R-11	-16.49	10.31
R-13	-19.03	8.05
R-19	-20.29	6.93
R-27	-22.43	5.02
R-34	-23.75	3.85
Slope(DD)	4974.69	
Curve(DDS)	-61.254	

Slab		(/ft)
R-0	-10.40	146.49
R-5 2ft	-15.16	117.82
R-5 4ft	-16.77	108.12
R-10 2ft	-15.97	112.94
R-10 4ft	-18.13	99.92
Intercept	74.229	
Slope(DD)	7444.40	
Curve(DDS)	-128.954	

Heated Basement		(/ft)
R-0	-6.06	172.63
R-5 4ft	-9.84	149.86
R-5 8ft	-11.63	139.08
R-10 4ft	-10.88	143.60
R-10 8ft	-13.59	127.27
Intercept	92.364	
Slope(DD)	3513.81	
Curve(DDS)	-38.182	

Unheated Basement		(/sf)
R-0	-6.06	18.61
R-11 flr	-20.34	9.34
R-19 flr	-24.24	6.80
R-30 flr	-26.75	5.17
Intercept	.810	
Slope(DD)	5922.28	
Curve(DDS)	-478.039	

Crawl		(/sf)
R-0	.00	22.54
R-11 flr	-22.86	7.70
R-19 flr	-26.69	5.21
R-30 flr	-29.04	3.68
R-38 flr	-29.58	3.34
R-49 flr	-31.13	2.33
Intercept	.000	
Slope(DD)	4723.67	
Curve(DDS)	-63.833	

Infiltration ELF Ach		(/sf flr)
.0007(.68)	.00	12.26
.0005(.50)	-6.12	8.29
.0003(.30)	-11.66	4.69
Slope/.001ELF	14.220	
Curve/.001ELF	4.708	

Window U-value		(/sf)
1-Pane	.00	106.13
2-Pane	-10.95	46.88
3-Pane	-14.14	29.62
R-10	-17.89	9.32
Slope(DD)	3959.09	
Curve(DDS)	2.313	

Base Load = 130.27 MBtu
Typical Load = 51.61 MBtu
Residual Load = -2.47 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.34
R-7	-2.97	1.41
R-11	-3.44	1.10
R-19	-3.87	.83
R-22	-4.06	.70
R-30	-4.32	.54
R-38	-4.47	.44
R-49	-4.62	.34
R-60	-4.71	.28
Slope(DD)	791.95	
Curve(DDS)	-38.553	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.82
R-7	-.95	.97
R-11	-1.09	.85
R-13	-1.30	.66
R-19	-1.40	.57
R-27	-1.57	.42
R-34	-1.67	.33
Slope(DD)	433.76	
Curve(DDS)	-17.818	

Slab		(/ft)
R-0	-2.14	-16.59
R-5 2ft	-1.96	-15.51
R-5 4ft	-1.89	-15.08
R-10 2ft	-1.93	-15.32
R-10 4ft	-1.80	-14.54
Intercept	-12.889	
Slope(DD)	-521.13	
Curve(DDS)	17.948	

Heated Basement		(/ft)
R-0	-1.41	-12.19
R-5 4ft	-1.50	-12.73
R-5 8ft	-1.46	-12.49
R-10 4ft	-1.52	-12.85
R-10 8ft	-1.48	-12.61
Intercept	-12.143	
Slope(DD)	-53.37	
Curve(DDS)	1.238	

Unheated Basement		(/sf)
R-0	-1.41	-1.31
R-11 flr	-.42	-.67
R-19 flr	-.18	-.52
R-30 flr	-.03	-.42
Intercept	-.159	
Slope(DD)	-347.51	
Curve(DDS)	23.855	

Crawl		(/sf)
R-0	.00	-.40
R-11 flr	.56	-.03
R-19 flr	.58	-.02
R-30 flr	.60	-.01
R-38 flr	.61	-.00
R-49 flr	.63	.01
Intercept	.000	
Slope(DD)	3.53	
Curve(DDS)	-15.845	

Infiltration ELF Ach		(/sf flr)
.0007(.60)	.00	.10
.0005(.43)	-.12	.02
.0003(.26)	-.18	-.01
Slope/.001ELF	-.195	
Curve/.001ELF	.487	

Window U-value		(/sf)
1-Pane	.00	-.25
2-Pane	-.01	-.30
3-Pane	.01	-.20
R-10	.03	-.08
Slope(DD)	-38.68	
Curve(DDS)	1.110	

Base Load = 9.91 MBtu
Typical Load = 5.39 MBtu
Residual Load = .21 MBtu

Portland OR WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	28.78
R-7	-10.64	11.05
R-11	-12.33	8.22
R-19	-13.86	5.68
R-22	-14.39	4.79
R-30	-15.11	3.60
R-38	-15.54	2.88
R-49	-15.89	2.29
R-60	-16.12	1.91
Slope(DD)	5190.69	
Curve(DDS)	-56.826	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	24.59
R-7	-6.31	11.34
R-11	-7.21	9.46
R-13	-8.24	7.30
R-19	-8.75	6.23
R-27	-9.57	4.50
R-34	-10.08	3.44
Slope(DD)	4351.71	
Curve(DDS)	40.950	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-6.04	159.22	
R-5 2ft	-7.19	130.47	
R-5 4ft	-7.55	121.47	
R-10 2ft	-7.37	125.97	
R-10 4ft	-7.84	114.22	
Intercept		92.158	
Slope(DD)		6212.07	
Curve(DDS)		-63.231	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-4.35	201.47	
R-5 4ft	-5.75	166.47	
R-5 8ft	-6.26	153.72	
R-10 4ft	-6.08	158.22	
R-10 8ft	-6.78	140.72	
Intercept		104.690	
Slope(DD)		3491.21	
Curve(DDS)		-28.335	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-4.35	13.43	
R-11 flr	-7.86	7.58	
R-19 flr	-8.99	5.69	
R-30 flr	-9.72	4.48	
Intercept		1.140	
Slope(DD)		4582.73	
Curve(DDS)		-426.235	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	20.68	
R-11 flr	-8.32	6.81	
R-19 flr	-9.68	4.55	
R-30 flr	-10.47	3.23	
R-38 flr	-10.65	2.93	
R-49 flr	-11.17	2.06	
Intercept		.000	
Slope(DD)		4099.59	
Curve(DDS)		-12.932	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.70)	.00	11.00	
.0005(.51)	-4.62	7.15	
.0003(.32)	-8.56	3.86	
Slope/.001ELF		10.750	
Curve/.001ELF		7.084	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	93.36	
2-Pane	-8.26	35.99	
3-Pane	-10.21	22.43	
R-10	-12.51	6.48	
Slope(DD)		2678.81	
Curve(DDS)		32.476	

Base Load = 60.51 MBtu
Typical Load = 28.50 MBtu
Residual Load = 1.49 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.33
R-7	-1.18	1.36
R-11	-1.37	1.04
R-19	-1.54	.76
R-22	-1.61	.64
R-30	-1.70	.49
R-38	-1.76	.39
R-49	-1.81	.31
R-60	-1.84	.26
Slope(DD)	715.13	
Curve(DDS)	-25.998	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.83
R-7	-.39	1.03
R-11	-.44	.91
R-13	-.54	.70
R-19	-.59	.60
R-27	-.66	.45
R-34	-.70	.36
Slope(DD)	472.58	
Curve(DDS)	-24.443	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.80	-25.60	
R-5 2ft	-.74	-24.10	
R-5 4ft	-.72	-23.60	
R-10 2ft	-.73	-23.85	
R-10 4ft	-.69	-22.85	
Intercept		-20.766	
Slope(DD)		-655.04	
Curve(DDS)		21.400	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.48	-17.60	
R-5 4ft	-.49	-17.85	
R-5 8ft	-.47	-17.35	
R-10 4ft	-.49	-17.85	
R-10 8ft	-.47	-17.35	
Intercept		-16.271	
Slope(DD)		-112.97	
Curve(DDS)		1.933	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-.48	-1.17	
R-11 flr	-.08	-.51	
R-19 flr	.01	-.36	
R-30 flr	.06	-.27	
Intercept		-.041	
Slope(DD)		-308.08	
Curve(DDS)		17.036	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	-.37	
R-11 flr	.22	-.01	
R-19 flr	.23	.01	
R-30 flr	.23	.01	
R-38 flr	.23	.01	
R-49 flr	.23	.01	
Intercept		.000	
Slope(DD)		30.11	
Curve(DDS)		-20.058	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.60)	.00	-.00	
.0005(.43)	-.05	-.04	
.0003(.26)	-.06	-.05	
Slope/.001ELF		-.292	
Curve/.001ELF		.417	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	-1.40	
2-Pane	.07	-.91	
3-Pane	.12	-.60	
R-10	.17	-.22	
Slope(DD)		-97.65	
Curve(DDS)		1.689	

Base Load = 6.67 MBtu
Typical Load = 4.86 MBtu
Residual Load = 2.09 MBtu

Portland OR WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	28.53
R-7	-10.63	10.82
R-11	-12.33	7.99
R-19	-13.85	5.45
R-22	-14.37	4.58
R-30	-15.06	3.42
R-38	-15.48	2.72
R-49	-15.81	2.18
R-60	-16.01	1.84
Slope(DD)		4936.64
Curve(DDS)		-20.992

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	24.51
R-7	-4.26	11.06
R-11	-4.87	9.15
R-13	-5.54	7.03
R-19	-5.88	5.98
R-27	-6.40	4.31
R-34	-6.73	3.28
Slope(DD)		4119.19
Curve(DDS)		81.420

Slab	Delta Component (MBtu)	(/ft)
R-0	-6.95	188.34
R-5 2ft	-7.88	157.51
R-5 4ft	-8.19	147.17
R-10 2ft	-8.04	152.34
R-10 4ft	-8.44	139.01
Intercept		113.042
Slope(DD)		7416.76
Curve(DDS)		-106.752

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-5.63	232.51
R-5 4ft	-6.93	189.01
R-5 8ft	-7.38	174.17
R-10 4ft	-7.23	179.01
R-10 8ft	-7.85	158.34
Intercept		116.116
Slope(DD)		4073.19
Curve(DDS)		-31.104

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-5.63	11.63
R-11 flr	-8.49	6.85
R-19 flr	-9.50	5.18
R-30 flr	-10.14	4.11
Intercept		1.118
Slope(DD)		4118.02
Curve(DDS)		-403.488

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	21.01
R-11 flr	-8.51	6.82
R-19 flr	-9.87	4.56
R-30 flr	-10.67	3.22
R-38 flr	-10.85	2.92
R-49 flr	-11.38	2.04
Intercept		.000
Slope(DD)		4077.34
Curve(DDS)		3.839

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.70)	.00	10.77
.0005(.53)	-4.58	6.95
.0003(.32)	-8.45	3.72
Slope/.001ELF		10.166
Curve/.001ELF		7.449

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	91.80
2-Pane	-8.28	34.27
3-Pane	-10.16	21.28
R-10	-12.35	6.00
Slope(DD)		2461.00
Curve(DDS)		38.495

Base Load = 56.57 MBtu
Typical Load = 24.75 MBtu
Residual Load = 1.94 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.27
R-7	-1.16	1.33
R-11	-1.35	1.02
R-19	-1.51	.75
R-22	-1.58	.63
R-30	-1.67	.48
R-38	-1.73	.39
R-49	-1.78	.31
R-60	-1.81	.25
Slope(DD)		702.21
Curve(DDS)		-25.403

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	1.82
R-7	-.25	1.03
R-11	-.29	.92
R-13	-.35	.72
R-19	-.38	.62
R-27	-.43	.47
R-34	-.46	.37
Slope(DD)		488.64
Curve(DDS)		-27.866

Slab	Delta Component (MBtu)	(/ft)
R-0	-.54	-22.64
R-5 2ft	-.49	-21.14
R-5 4ft	-.48	-20.80
R-10 2ft	-.49	-20.97
R-10 4ft	-.46	-19.97
Intercept		-18.035
Slope(DD)		-620.68
Curve(DDS)		20.144

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.40	-18.14
R-5 4ft	-.41	-18.47
R-5 8ft	-.41	-18.30
R-10 4ft	-.42	-18.64
R-10 8ft	-.41	-18.30
Intercept		-17.783
Slope(DD)		-59.94
Curve(DDS)		1.225

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.40	-.91
R-11 flr	-.15	-.49
R-19 flr	-.08	-.37
R-30 flr	-.03	-.29
Intercept		-.078
Slope(DD)		-289.27
Curve(DDS)		24.890

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	-.24
R-11 flr	.14	.00
R-19 flr	.15	.01
R-30 flr	.15	.01
R-38 flr	.15	.01
R-49 flr	.15	.01
Intercept		.000
Slope(DD)		24.04
Curve(DDS)		-13.818

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.60)	.00	.04
.0005(.43)	-.04	.00
.0003(.26)	-.06	-.01
Slope/.001ELF		-.125
Curve/.001ELF		.260

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	-.86
2-Pane	.00	-.86
3-Pane	.04	-.57
R-10	.09	-.23
Slope(DD)		-105.42
Curve(DDS)		2.763

Base Load = 5.50 MBtu
Typical Load = 3.80 MBtu
Residual Load = 1.05 MBtu

Reno NV TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	34.07
R-7	-31.47	13.63
R-11	-36.50	10.37
R-19	-41.01	7.44
R-22	-42.76	6.30
R-30	-45.11	4.77
R-38	-46.53	3.85
R-49	-47.78	3.04
R-60	-48.59	2.51
Slope(DD)	6952.34	
Curve(DDS)	-203.490	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	29.51
R-7	-16.93	14.44
R-11	-19.34	12.30
R-13	-22.38	9.60
R-19	-23.88	8.26
R-27	-26.42	6.00
R-34	-27.98	4.61
Slope(DD)	5963.95	
Curve(DDS)	-88.683	

Slab		(/ft)
R-0	-18.21	37.54
R-5 2ft	-22.51	11.63
R-5 4ft	-23.36	6.51
R-10 2ft	-23.39	6.33
R-10 4ft	-24.56	-.72
Intercept	-17.857	
Slope(DD)	6645.65	
Curve(DDS)	-66.277	

Heated Basement		(/ft)
R-0	-8.75	94.52
R-5 4ft	-14.98	56.99
R-5 8ft	-16.42	48.32
R-10 4ft	-16.61	47.17
R-10 8ft	-18.78	34.10
Intercept	.000	
Slope(DD)	4031.12	
Curve(DDS)	-39.067	

Unheated Basement		(/sf)
R-0	-8.75	10.19
R-11 flr	-21.43	1.96
R-19 flr	-24.92	-.31
R-30 flr	-27.17	-1.77
Intercept	-5.686	
Slope(DD)	5314.57	
Curve(DDS)	-432.702	

Crawl		(/sf)
R-0	.00	15.87
R-11 flr	-22.26	1.42
R-19 flr	-26.10	-1.08
R-30 flr	-28.33	-2.53
R-38 flr	-28.84	-2.86
R-49 flr	-30.31	-3.81
Intercept	-6.147	
Slope(DD)	4634.31	
Curve(DDS)	-66.377	

Infiltration ELF	Ach	(/sf flr)
.0007	(.67) .00	12.26
.0005	(.48) -5.83	8.47
.0003	(.29) -11.31	4.91
Slope/.001ELF	15.519	
Curve/.001ELF	2.841	

Window U-value		(/sf)
1-Pane	.00	122.04
2-Pane	-12.01	57.05
3-Pane	-15.86	36.23
R-10	-20.38	11.75
Slope(DD)	5034.34	
Curve(DDS)	-15.597	

Base Load = 139.75 MBtu
Typical Load = 36.52 MBtu
Residual Load = 4.98 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	8.91
R-7	-8.26	3.55
R-11	-9.58	2.69
R-19	-10.76	1.93
R-22	-11.21	1.63
R-30	-11.82	1.24
R-38	-12.18	1.00
R-49	-12.51	.79
R-60	-12.73	.65
Slope(DD)	1799.17	
Curve(DDS)	-49.899	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.63
R-7	-1.93	1.91
R-11	-2.20	1.67
R-13	-2.67	1.25
R-19	-2.90	1.05
R-27	-3.17	.81
R-34	-3.34	.66
Slope(DD)	825.98	
Curve(DDS)	-28.059	

Slab		(/ft)
R-0	-3.52	-6.64
R-5 2ft	-3.25	-5.02
R-5 4ft	-3.18	-4.59
R-10 2ft	-3.20	-4.72
R-10 4ft	-3.08	-3.99
Intercept	-2.355	
Slope(DD)	-691.89	
Curve(DDS)	24.498	

Heated Basement		(/ft)
R-0	-2.56	-.86
R-5 4ft	-2.59	-1.04
R-5 8ft	-2.55	-.80
R-10 4ft	-2.61	-1.16
R-10 8ft	-2.53	-.68
Intercept	.000	
Slope(DD)	-97.17	
Curve(DDS)	2.037	

Unheated Basement		(/sf)
R-0	-2.56	-.09
R-11 flr	-1.10	.86
R-19 flr	-.71	1.11
R-30 flr	-.46	1.27
Intercept	1.705	
Slope(DD)	-587.69	
Curve(DDS)	46.253	

Crawl		(/sf)
R-0	.00	1.57
R-11 flr	.49	1.89
R-19 flr	.48	1.88
R-30 flr	.49	1.89
R-38 flr	.49	1.89
R-49 flr	.50	1.89
Intercept	1.860	
Slope(DD)	48.63	
Curve(DDS)	-20.519	

Infiltration ELF	Ach	(/sf flr)
.0007	(.51) .00	.33
.0005	(.37) -.17	.22
.0003	(.22) -.32	.12
Slope/.001ELF	.357	
Curve/.001ELF	.162	

Window U-value		(/sf)
1-Pane	.00	4.17
2-Pane	-.33	2.38
3-Pane	-.49	1.54
R-10	-.67	.54
Slope(DD)	238.74	
Curve(DDS)	-3.060	

Base Load = 22.76 MBtu
Typical Load = 4.59 MBtu
Residual Load = -4.02 MBtu

Reno NV TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	34.76
R-7	-12.91	13.25
R-11	-14.97	9.81
R-19	-16.82	6.73
R-22	-17.46	5.67
R-30	-18.31	4.25
R-38	-18.82	3.40
R-49	-19.23	2.71
R-60	-19.50	2.26
Slope(DD)		6124.71
Curve(DDS)		-44.099

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	27.25
R-7	-7.12	12.32
R-11	-8.13	10.19
R-13	-9.29	7.76
R-19	-9.86	6.56
R-27	-10.71	4.77
R-34	-11.24	3.67
Slope(DD)		4564.94
Curve(DDS)		93.491

Slab		(/ft)
R-0	-8.20	22.09
R-5 2ft	-9.14	-1.41
R-5 4ft	-9.30	-5.41
R-10 2ft	-9.31	-5.66
R-10 4ft	-9.51	-10.66
Intercept		-21.771
Slope(DD)		3938.96
Curve(DDS)		91.794

Heated Basement		(/ft)
R-0	-5.34	93.59
R-5 4ft	-7.21	46.84
R-5 8ft	-7.55	38.34
R-10 4ft	-7.60	37.09
R-10 8ft	-8.03	26.34
Intercept		.000
Slope(DD)		2890.28
Curve(DDS)		-8.106

Unheated Basement		(/sf)
R-0	-5.34	6.24
R-11 flr	-8.12	1.61
R-19 flr	-9.00	.15
R-30 flr	-9.56	-.79
Intercept		-3.372
Slope(DD)		3530.93
Curve(DDS)		-323.054

Crawl		(/sf)
R-0	.00	15.14
R-11 flr	-7.71	2.29
R-19 flr	-8.96	.21
R-30 flr	-9.64	-.92
R-38 flr	-9.79	-1.18
R-49 flr	-10.24	-1.92
Intercept		-3.774
Slope(DD)		3583.71
Curve(DDS)		20.451

Infiltration ELF	Ach	(/sf flr)
.0007(.67)	.00	9.19
.0005(.49)	-4.19	5.70
.0003(.30)	-7.55	2.90
Slope/.001ELF		7.083
Curve/.001ELF		8.646

Window U-value		(/sf)
1-Pane	.00	91.67
2-Pane	-8.19	34.79
3-Pane	-10.08	21.65
R-10	-12.31	6.18
Slope(DD)		2546.03
Curve(DDS)		35.086

Base Load = 62.26 MBtu
Typical Load = 13.99 MBtu
Residual Load = 8.81 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.29
R-7	-3.32	3.76
R-11	-3.84	2.88
R-19	-4.32	2.09
R-22	-4.50	1.78
R-30	-4.75	1.37
R-38	-4.90	1.12
R-49	-5.06	.86
R-60	-5.16	.69
Slope(DD)		1976.33
Curve(DDS)		-69.043

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.32
R-7	-.93	2.37
R-11	-1.06	2.09
R-13	-1.29	1.60
R-19	-1.41	1.36
R-27	-1.56	1.03
R-34	-1.66	.83
Slope(DD)		1071.49
Curve(DDS)		-49.944

Slab		(/ft)
R-0	-1.35	-18.63
R-5 2ft	-1.25	-16.13
R-5 4ft	-1.23	-15.63
R-10 2ft	-1.23	-15.63
R-10 4ft	-1.19	-14.63
Intercept		-12.210
Slope(DD)		-1020.25
Curve(DDS)		34.953

Heated Basement		(/ft)
R-0	-.83	-5.63
R-5 4ft	-.80	-4.88
R-5 8ft	-.77	-4.13
R-10 4ft	-.79	-4.63
R-10 8ft	-.73	-3.13
Intercept		.000
Slope(DD)		-412.73
Curve(DDS)		7.122

Unheated Basement		(/sf)
R-0	-.83	-.38
R-11 flr	-.34	.44
R-19 flr	-.22	.64
R-30 flr	-.14	.77
Intercept		1.118
Slope(DD)		-462.22
Curve(DDS)		33.359

Crawl		(/sf)
R-0	.00	1.01
R-11 flr	.24	1.41
R-19 flr	.24	1.41
R-30 flr	.25	1.42
R-38 flr	.25	1.42
R-49 flr	.26	1.43
Intercept		1.407
Slope(DD)		34.29
Curve(DDS)		-21.838

Infiltration ELF	Ach	(/sf flr)
.0007(.51)	.00	.18
.0005(.37)	-.10	.10
.0003(.22)	-.17	.04
Slope/.001ELF		.042
Curve/.001ELF		.313

Window U-value		(/sf)
1-Pane	.00	2.20
2-Pane	-.18	.95
3-Pane	-.23	.60
R-10	-.29	.19
Slope(DD)		78.74
Curve(DDS)		.174

Base Load = 14.04 MBtu
Typical Load = 6.65 MBtu
Residual Load = 1.40 MBtu

Reno NV TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	33.51
R-7	-12.61	12.49
R-11	-14.63	9.14
R-19	-16.44	6.12
R-22	-17.02	5.14
R-30	-17.81	3.83
R-38	-18.28	3.04
R-49	-18.64	2.44
R-60	-18.88	2.06
Slope(DD)		5491.16
Curve(DDS)		27.255

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-9.04	42.34
R-5 2ft	-9.83	15.84
R-5 4ft	-9.97	11.18
R-10 2ft	-9.97	11.18
R-10 4ft	-10.16	5.01
Intercept		-8.439
Slope(DD)		4899.81
Curve(DDS)		69.229

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-6.79	5.86
R-11 flr	-9.09	2.03
R-19 flr	-9.90	.69
R-30 flr	-10.41	-.17
Intercept		-2.574
Slope(DD)		3304.03
Curve(DDS)		-323.638

Infiltration ELF Ach		(/sf flr)
.0007(.67)	.00	9.07
.0005(.49)	-4.20	5.57
.0003(.30)	-7.53	2.80
Slope/.001ELF		6.583
Curve/.001ELF		9.115

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	27.07
R-7	-4.81	11.89
R-11	-5.50	9.73
R-13	-6.24	7.38
R-19	-6.61	6.21
R-27	-7.16	4.49
R-34	-7.49	3.44
Slope(DD)		4234.49
Curve(DDS)		148.374

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-6.79	117.18
R-5 4ft	-8.56	58.34
R-5 8ft	-8.86	48.34
R-10 4ft	-8.91	46.51
R-10 8ft	-9.32	32.84
Intercept		.000
Slope(DD)		3618.22
Curve(DDS)		-10.146

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	17.18
R-11 flr	-8.24	3.44
R-19 flr	-9.58	1.21
R-30 flr	-10.31	.01
R-38 flr	-10.47	-.27
R-49 flr	-10.94	-1.06
Intercept		-3.046
Slope(DD)		3833.87
Curve(DDS)		21.722

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	90.23
2-Pane	-8.38	32.07
3-Pane	-10.14	19.80
R-10	-12.22	5.37
Slope(DD)		2172.42
Curve(DDS)		47.176

Base Load = 58.14 MBtu
Typical Load = 12.10 MBtu
Residual Load = 8.97 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.25
R-7	-3.30	3.76
R-11	-3.82	2.88
R-19	-4.30	2.09
R-22	-4.48	1.78
R-30	-4.73	1.36
R-38	-4.89	1.11
R-49	-5.03	.86
R-60	-5.13	.70
Slope(DD)		1973.92
Curve(DDS)		-69.800

Slab	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-.84	-8.16
R-5 2ft	-.78	-6.16
R-5 4ft	-.76	-5.33
R-10 2ft	-.76	-5.49
R-10 4ft	-.74	-4.66
Intercept		-2.264
Slope(DD)		-990.48
Curve(DDS)		37.868

Unheated Basement	Delta Component (MBtu)	(KBtu) (/sf)
R-0	-.68	-.14
R-11 flr	-.31	.48
R-19 flr	-.20	.67
R-30 flr	-.12	.80
Intercept		1.150
Slope(DD)		-479.90
Curve(DDS)		44.463

Infiltration ELF Ach		(/sf flr)
.0007(.51)	.00	.28
.0005(.37)	-.12	.18
.0003(.22)	-.22	.09
Slope/.001ELF		.250
Curve/.001ELF		.208

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.81
R-7	-.57	2.00
R-11	-.65	1.74
R-13	-.80	1.30
R-19	-.86	1.08
R-27	-.94	.83
R-34	-.99	.68
Slope(DD)		852.55
Curve(DDS)		-26.872

Heated Basement	Delta Component (MBtu)	(KBtu) (/ft)
R-0	-.68	-2.83
R-5 4ft	-.66	-2.16
R-5 8ft	-.65	-1.66
R-10 4ft	-.66	-1.99
R-10 8ft	-.64	-1.33
Intercept		.000
Slope(DD)		-168.03
Curve(DDS)		2.487

Crawl	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.00
R-11 flr	.19	1.33
R-19 flr	.19	1.33
R-30 flr	.20	1.33
R-38 flr	.20	1.33
R-49 flr	.20	1.34
Intercept		1.314
Slope(DD)		36.40
Curve(DDS)		-19.039

Window U-value	Delta Component (MBtu)	(KBtu) (/sf)
1-Pane	.00	3.19
2-Pane	-.24	1.49
3-Pane	-.32	.94
R-10	-.41	.31
Slope(DD)		130.92
Curve(DDS)		-.385

Base Load = 11.85 MBtu
Typical Load = 5.07 MBtu
Residual Load = -.16 MBtu

Salt Lake City U WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	31.65
R-7	-29.20	12.69
R-11	-33.86	9.67
R-19	-38.05	6.95
R-22	-39.69	5.88
R-30	-41.88	4.46
R-38	-43.20	3.60
R-49	-44.37	2.84
R-60	-45.13	2.35
Slope(DD)	6501.41	
Curve(DDS)	-196.052	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	30.33
R-7	-17.45	14.80
R-11	-19.94	12.59
R-13	-22.98	9.89
R-19	-24.48	8.55
R-27	-27.16	6.17
R-34	-28.80	4.70
Slope(DD)	6119.81	
Curve(DDS)	-89.324	

Slab		(/ft)
R-0	-17.74	54.72
R-5 2ft	-22.89	23.70
R-5 4ft	-24.35	14.90
R-10 2ft	-23.84	17.98
R-10 4ft	-25.88	5.69
Intercept	-19.737	
Slope(DD)	7398.48	
Curve(DDS)	-100.445	

Heated Basement		(/ft)
R-0	-10.13	100.57
R-5 4ft	-15.74	66.77
R-5 8ft	-17.66	55.20
R-10 4ft	-17.22	57.86
R-10 8ft	-20.18	40.02
Intercept	.000	
Slope(DD)	3995.10	
Curve(DDS)	-37.699	

Unheated Basement		(/sf)
R-0	-10.13	10.84
R-11 flr	-24.60	1.44
R-19 flr	-28.54	-1.11
R-30 flr	-31.07	-2.76
Intercept	-7.158	
Slope(DD)	5971.77	
Curve(DDS)	-480.084	

Crawl		(/sf)
R-0	.00	17.42
R-11 flr	-25.27	1.01
R-19 flr	-29.63	-1.82
R-30 flr	-32.32	-3.57
R-38 flr	-32.93	-3.96
R-49 flr	-34.70	-5.11
Intercept	-7.808	
Slope(DD)	5463.41	
Curve(DDS)	-106.074	

Infiltration ELF	Ach	(/sf flr)
.0007	(.78) .00	15.05
.0005	(.56) -6.91	10.56
.0003	(.34) -13.59	6.23
Slope/.001ELF	20.195	
Curve/.001ELF	1.867	

Window U-value		(/sf)
1-Pane	.00	140.24
2-Pane	-13.59	66.70
3-Pane	-18.08	42.43
R-10	-23.35	13.88
Slope(DD)	5960.31	
Curve(DDS)	-24.559	

Base Load = 149.99 MBtu
Typical Load = 46.07 MBtu
Residual Load = 6.31 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	8.41
R-7	-7.74	3.38
R-11	-8.98	2.58
R-19	-10.09	1.86
R-22	-10.52	1.58
R-30	-11.09	1.21
R-38	-11.44	.98
R-49	-11.78	.76
R-60	-12.00	.62
Slope(DD)	1749.57	
Curve(DDS)	-55.762	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.91
R-7	-2.19	1.96
R-11	-2.50	1.68
R-13	-2.95	1.29
R-19	-3.17	1.09
R-27	-3.48	.81
R-34	-3.67	.64
Slope(DD)	816.86	
Curve(DDS)	-16.698	

Slab		(/ft)
R-0	-5.31	-6.54
R-5 2ft	-5.26	-6.24
R-5 4ft	-5.19	-5.82
R-10 2ft	-5.25	-6.18
R-10 4ft	-5.14	-5.52
Intercept	-3.957	
Slope(DD)	-521.72	
Curve(DDS)	25.501	

Heated Basement		(/ft)
R-0	-3.21	6.11
R-5 4ft	-3.74	2.92
R-5 8ft	-3.77	2.73
R-10 4ft	-3.87	2.13
R-10 8ft	-3.97	1.53
Intercept	.000	
Slope(DD)	137.37	
Curve(DDS)	.267	

Unheated Basement		(/sf)
R-0	-3.21	.66
R-11 flr	-1.68	1.65
R-19 flr	-1.27	1.92
R-30 flr	-1.01	2.09
Intercept	2.541	
Slope(DD)	-615.08	
Curve(DDS)	48.354	

Crawl		(/sf)
R-0	.00	2.74
R-11 flr	.25	2.91
R-19 flr	.17	2.85
R-30 flr	.10	2.81
R-38 flr	.09	2.80
R-49 flr	.05	2.77
Intercept	2.682	
Slope(DD)	192.32	
Curve(DDS)	-35.193	

Infiltration ELF	Ach	(/sf flr)
.0007	(.52) .00	.54
.0005	(.37) -.30	.34
.0003	(.22) -.55	.18
Slope/.001ELF	.487	
Curve/.001ELF	.406	

Window U-value		(/sf)
1-Pane	.00	6.43
2-Pane	-.56	3.40
3-Pane	-.79	2.18
R-10	-1.05	.75
Slope(DD)	325.76	
Curve(DDS)	-3.112	

Base Load = 26.60 MBtu
Typical Load = 7.39 MBtu
Residual Load = -3.26 MBtu

Salt Lake City U WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	33.00
R-7	-12.16	12.74
R-11	-14.10	9.51
R-19	-15.84	6.60
R-22	-16.46	5.57
R-30	-17.28	4.20
R-38	-17.78	3.37
R-49	-18.20	2.67
R-60	-18.47	2.22
Slope(DD)	6057.26	
Curve(DDS)	-82.847	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	28.82
R-7	-7.35	13.39
R-11	-8.40	11.19
R-13	-9.60	8.67
R-19	-10.20	7.42
R-27	-11.19	5.35
R-34	-11.79	4.08
Slope(DD)	5193.93	
Curve(DDS)	30.672	

Slab	(/ft)	
R-0	-8.63	47.12
R-5 2ft	-9.86	16.37
R-5 4ft	-10.16	8.87
R-10 2ft	-10.06	11.37
R-10 4ft	-10.47	1.12
Intercept	-18.236	
Slope(DD)	5333.59	
Curve(DDS)	8.264	

Heated Basement	(/ft)	
R-0	-6.03	112.12
R-5 4ft	-7.91	65.12
R-5 8ft	-8.42	52.37
R-10 4ft	-8.33	54.62
R-10 8ft	-9.03	37.12
Intercept	.000	
Slope(DD)	3516.87	
Curve(DDS)	-19.243	

Unheated Basement	(/sf)	
R-0	-6.03	7.47
R-11 flr	-9.43	1.81
R-19 flr	-10.53	-.03
R-30 flr	-11.24	-1.21
Intercept	-4.463	
Slope(DD)	4463.84	
Curve(DDS)	-416.520	

Crawl	(/sf)	
R-0	.00	17.52
R-11 flr	-9.09	2.37
R-19 flr	-10.60	-.14
R-30 flr	-11.49	-1.62
R-38 flr	-11.69	-1.96
R-49 flr	-12.27	-2.93
Intercept	-5.252	
Slope(DD)	4625.22	
Curve(DDS)	-35.743	

Infiltration ELF Ach	(/sf flr)	
.0007(.78)	.00	12.81
.0005(.57)	-5.13	8.54
.0003(.34)	-9.67	4.75
Slope/.001ELF	13.999	
Curve/.001ELF	6.146	

Window U-value	(/sf)	
1-Pane	.00	117.19
2-Pane	-9.87	48.65
3-Pane	-12.48	30.55
R-10	-15.54	9.27
Slope(DD)	3893.91	
Curve(DDS)	20.647	

Base Load = 69.57 MBtu
Typical Load = 18.68 MBtu
Residual Load = 5.54 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	8.42
R-7	-3.03	3.37
R-11	-3.52	2.56
R-19	-3.95	1.84
R-22	-4.11	1.57
R-30	-4.33	1.20
R-38	-4.46	.99
R-49	-4.60	.75
R-60	-4.69	.60
Slope(DD)	1726.82	
Curve(DDS)	-51.728	

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.23
R-7	-.96	2.21
R-11	-1.10	1.92
R-13	-1.31	1.47
R-19	-1.42	1.25
R-27	-1.57	.94
R-34	-1.66	.75
Slope(DD)	959.92	
Curve(DDS)	-32.114	

Slab	(/ft)	
R-0	-2.13	-18.86
R-5 2ft	-2.11	-18.36
R-5 4ft	-2.09	-17.86
R-10 2ft	-2.10	-18.11
R-10 4ft	-2.05	-16.86
Intercept	-13.604	
Slope(DD)	-1117.87	
Curve(DDS)	56.647	

Heated Basement	(/ft)	
R-0	-1.19	4.64
R-5 4ft	-1.34	.89
R-5 8ft	-1.33	1.14
R-10 4ft	-1.36	.39
R-10 8ft	-1.37	.14
Intercept	.000	
Slope(DD)	-13.05	
Curve(DDS)	3.053	

Unheated Basement	(/sf)	
R-0	-1.19	.31
R-11 flr	-.63	1.24
R-19 flr	-.48	1.49
R-30 flr	-.39	1.64
Intercept	2.058	
Slope(DD)	-562.26	
Curve(DDS)	43.133	

Crawl	(/sf)	
R-0	.00	2.29
R-11 flr	.11	2.48
R-19 flr	.09	2.44
R-30 flr	.07	2.40
R-38 flr	.06	2.39
R-49 flr	.04	2.37
Intercept	2.295	
Slope(DD)	162.92	
Curve(DDS)	-31.872	

Infiltration ELF Ach	(/sf flr)	
.0007(.52)	.00	.39
.0005(.37)	-.17	.24
.0003(.22)	-.31	.13
Slope/.001ELF	.333	
Curve/.001ELF	.313	

Window U-value	(/sf)	
1-Pane	.00	4.62
2-Pane	-.35	2.19
3-Pane	-.46	1.39
R-10	-.60	.46
Slope(DD)	195.40	
Curve(DDS)	-.770	

Base Load = 16.66 MBtu
Typical Load = 8.92 MBtu
Residual Load = 2.39 MBtu

Salt Lake City U WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	32.12
R-7	-11.94	12.23
R-11	-13.84	9.05
R-19	-15.56	6.20
R-22	-16.14	5.22
R-30	-16.92	3.92
R-38	-17.40	3.13
R-49	-17.78	2.49
R-60	-18.03	2.08
Slope(DD)		5637.50
Curve(DDS)		-37.038

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	28.97
R-7	-4.99	13.22
R-11	-5.71	10.98
R-13	-6.50	8.48
R-19	-6.89	7.24
R-27	-7.53	5.21
R-34	-7.93	3.96
Slope(DD)		5009.67
Curve(DDS)		70.160

Slab		(/ft)
R-0	-9.60	67.86
R-5 2ft	-10.60	34.53
R-5 4ft	-10.88	25.36
R-10 2ft	-10.78	28.70
R-10 4ft	-11.14	16.53
Intercept		-7.683
Slope(DD)		6855.95
Curve(DDS)		-47.808

Heated Basement		(/ft)
R-0	-7.51	137.53
R-5 4ft	-9.26	79.53
R-5 8ft	-9.74	63.53
R-10 4ft	-9.65	66.36
R-10 8ft	-10.29	45.20
Intercept		.000
Slope(DD)		4260.38
Curve(DDS)		-22.297

Unheated Basement		(/sf)
R-0	-7.51	6.88
R-11 flr	-10.34	2.18
R-19 flr	-11.32	.53
R-30 flr	-11.96	-.53
Intercept		-3.487
Slope(DD)		4070.57
Curve(DDS)		-399.686

Crawl		(/sf)
R-0	.00	19.40
R-11 flr	-9.50	3.57
R-19 flr	-11.07	.94
R-30 flr	-12.01	-.61
R-38 flr	-12.22	-.97
R-49 flr	-12.83	-1.99
Intercept		-4.410
Slope(DD)		4841.61
Curve(DDS)		-38.610

Infiltration ELF Ach		(/sf flr)
.0007(.78)	.00	12.61
.0005(.57)	-5.13	8.33
.0003(.34)	-9.62	4.59
Slope/.001ELF		13.270
Curve/.001ELF		6.771

Window U-value		(/sf)
1-Pane	.00	116.04
2-Pane	-10.01	46.52
3-Pane	-12.52	29.11
R-10	-15.46	8.64
Slope(DD)		3603.12
Curve(DDS)		30.008

Base Load = 65.45 MBtu
Typical Load = 16.76 MBtu
Residual Load = 5.78 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	8.58
R-7	-3.08	3.44
R-11	-3.57	2.62
R-19	-4.02	1.88
R-22	-4.19	1.60
R-30	-4.42	1.21
R-38	-4.56	.98
R-49	-4.68	.77
R-60	-4.77	.63
Slope(DD)		1765.28
Curve(DDS)		-53.788

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	3.84
R-7	-.59	1.99
R-11	-.67	1.73
R-13	-.80	1.32
R-19	-.87	1.11
R-27	-.95	.84
R-34	-1.01	.67
Slope(DD)		853.79
Curve(DDS)		-25.914

Slab		(/ft)
R-0	-1.53	-10.05
R-5 2ft	-1.51	-9.38
R-5 4ft	-1.49	-8.71
R-10 2ft	-1.51	-9.21
R-10 4ft	-1.48	-8.38
Intercept		-6.402
Slope(DD)		-638.83
Curve(DDS)		27.891

Heated Basement		(/ft)
R-0	-1.01	7.29
R-5 4ft	-1.12	3.62
R-5 8ft	-1.13	3.45
R-10 4ft	-1.15	2.79
R-10 8ft	-1.17	1.95
Intercept		.000
Slope(DD)		182.27
Curve(DDS)		-.131

Unheated Basement		(/sf)
R-0	-1.01	.36
R-11 flr	-.58	1.08
R-19 flr	-.45	1.30
R-30 flr	-.37	1.44
Intercept		1.822
Slope(DD)		-523.14
Curve(DDS)		46.580

Crawl		(/sf)
R-0	.00	2.05
R-11 flr	.14	2.27
R-19 flr	.12	2.24
R-30 flr	.09	2.20
R-38 flr	.09	2.19
R-49 flr	.07	2.16
Intercept		2.089
Slope(DD)		169.33
Curve(DDS)		-34.578

Infiltration ELF Ach		(/sf flr)
.0007(.52)	.00	.45
.0005(.37)	-.21	.27
.0003(.22)	-.38	.14
Slope/.001ELF		.312
Curve/.001ELF		.469

Window U-value		(/sf)
1-Pane	.00	5.58
2-Pane	-.41	2.73
3-Pane	-.55	1.74
R-10	-.72	.58
Slope(DD)		248.98
Curve(DDS)		-1.428

Base Load = 14.57 MBtu
Typical Load = 7.40 MBtu
Residual Load = .93 MBtu

San Antonio TX WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	10.43
R-7	-9.86	4.03
R-11	-11.44	3.01
R-19	-12.85	2.09
R-22	-13.35	1.76
R-30	-14.03	1.32
R-38	-14.44	1.06
R-49	-14.77	.84
R-60	-14.98	.71
Slope(DD)		1915.69
Curve(DDS)		-26.286

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	8.60
R-7	-5.36	3.83
R-11	-6.12	3.15
R-13	-6.98	2.39
R-19	-7.40	2.01
R-27	-8.02	1.46
R-34	-8.40	1.13
Slope(DD)		1390.55
Curve(DDS)		38.791

Slab		(/ft)
R-0	-7.98	13.34
R-5 2ft	-9.28	5.51
R-5 4ft	-9.53	4.00
R-10 2ft	-9.47	4.37
R-10 4ft	-9.76	2.62
Intercept		.000
Slope(DD)		605.72
Curve(DDS)		53.422

Heated Basement		(/ft)
R-0	-5.72	26.96
R-5 4ft	-7.90	13.82
R-5 8ft	-8.36	11.05
R-10 4ft	-8.35	11.11
R-10 8ft	-8.90	7.80
Intercept		.973
Slope(DD)		632.29
Curve(DDS)		.740

Unheated Basement		(/sf)
R-0	-5.72	2.91
R-11 flr	-8.56	1.06
R-19 flr	-9.24	.62
R-30 flr	-9.68	.33
Intercept		-.409
Slope(DD)		998.31
Curve(DDS)		-68.638

Crawl		(/sf)
R-0	.00	6.62
R-11 flr	-7.51	1.74
R-19 flr	-8.62	1.02
R-30 flr	-9.20	.65
R-38 flr	-9.33	.56
R-49 flr	-9.71	.31
Intercept		-.287
Slope(DD)		1144.73
Curve(DDS)		39.433

Infiltration ELF Ach		(/sf flr)
.0007(.68)	.00	3.82
.0005(.48)	-2.17	2.41
.0003(.29)	-3.95	1.26
Slope/.001ELF		3.247
Curve/.001ELF		3.166

Window U-value		(/sf)
1-Pane	.00	32.39
2-Pane	-3.80	11.82
3-Pane	-4.63	7.32
R-10	-5.61	2.03
Slope(DD)		827.77
Curve(DDS)		15.115

Base Load = 44.47 MBtu
Typical Load = 14.05 MBtu
Residual Load = .64 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	10.24
R-7	-9.66	3.96
R-11	-11.20	2.96
R-19	-12.59	2.06
R-22	-13.09	1.74
R-30	-13.76	1.30
R-38	-14.16	1.04
R-49	-14.48	.83
R-60	-14.69	.70
Slope(DD)		1892.20
Curve(DDS)		-27.914

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.49
R-7	-3.16	2.68
R-11	-3.61	2.28
R-13	-4.10	1.84
R-19	-4.35	1.62
R-27	-4.89	1.14
R-34	-5.22	.85
Slope(DD)		1130.28
Curve(DDS)		-20.404

Slab		(/ft)
R-0	-7.55	2.71
R-5 2ft	-7.94	.36
R-5 4ft	-7.99	.06
R-10 2ft	-8.04	-.25
R-10 4ft	-8.03	-.19
Intercept		.000
Slope(DD)		-196.61
Curve(DDS)		39.599

Heated Basement		(/ft)
R-0	-2.62	32.40
R-5 4ft	-3.19	28.97
R-5 8ft	-3.33	28.13
R-10 4ft	-3.36	27.95
R-10 8ft	-3.55	26.80
Intercept		23.873
Slope(DD)		296.88
Curve(DDS)		-2.029

Unheated Basement		(/sf)
R-0	-2.62	3.49
R-11 flr	-2.28	3.71
R-19 flr	-2.40	3.63
R-30 flr	-2.48	3.58
Intercept		3.403
Slope(DD)		267.86
Curve(DDS)		-48.827

Crawl		(/sf)
R-0	.00	5.19
R-11 flr	-.69	4.75
R-19 flr	-1.15	4.45
R-30 flr	-1.50	4.22
R-38 flr	-1.58	4.17
R-49 flr	-1.81	4.02
Intercept		3.612
Slope(DD)		861.15
Curve(DDS)		-107.771

Infiltration ELF Ach		(/sf flr)
.0007(.58)	.00	5.25
.0005(.41)	-2.11	3.88
.0003(.25)	-4.38	2.41
Slope/.001ELF		8.409
Curve/.001ELF		-1.299

Window U-value		(/sf)
1-Pane	.00	6.71
2-Pane	-.72	2.81
3-Pane	-.91	1.77
R-10	-1.14	.54
Slope(DD)		227.17
Curve(DDS)		1.021

Base Load = 57.62 MBtu
Typical Load = 31.37 MBtu
Residual Load = 6.83 MBtu

San Antonio TX WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	10.60
R-7	-4.05	3.84
R-11	-4.70	2.77
R-19	-5.28	1.80
R-22	-5.45	1.51
R-30	-5.69	1.12
R-38	-5.83	.88
R-49	-5.93	.71
R-60	-6.00	.60
Slope(DD)		1582.78
Curve(DDS)		34.543

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	7.93
R-7	-2.21	3.30
R-11	-2.52	2.64
R-13	-2.84	1.97
R-19	-3.00	1.64
R-27	-3.22	1.18
R-34	-3.35	.90
Slope(DD)		1073.79
Curve(DDS)		74.554

Slab		(/ft)
R-0	-3.27	11.36
R-5 2ft	-3.53	4.86
R-5 4ft	-3.59	3.36
R-10 2ft	-3.57	3.86
R-10 4ft	-3.63	2.36
Intercept		.000
Slope(DD)		553.25
Curve(DDS)		42.184

Heated Basement		(/ft)
R-0	-2.58	28.61
R-5 4ft	-3.18	14.11
R-5 8ft	-3.26	11.61
R-10 4ft	-3.26	11.61
R-10 8ft	-3.38	8.61
Intercept		3.263
Slope(DD)		451.89
Curve(DDS)		4.919

Unheated Basement		(/sf)
R-0	-2.58	1.91
R-11 flr	-3.20	.87
R-19 flr	-3.37	.59
R-30 flr	-3.48	.41
Intercept		-.082
Slope(DD)		665.00
Curve(DDS)		-54.013

Crawl		(/sf)
R-0	.00	6.21
R-11 flr	-2.59	1.89
R-19 flr	-2.95	1.29
R-30 flr	-3.14	.98
R-38 flr	-3.18	.91
R-49 flr	-3.30	.70
Intercept		.223
Slope(DD)		912.54
Curve(DDS)		49.649

Infiltration ELF	Ach	(/sf flr)
.0007(.68)	.00	2.95
.0005(.48)	-1.51	1.69
.0003(.29)	-2.62	.76
Slope/.001ELF		1.291
Curve/.001ELF		4.167

Window U-value		(/sf)
1-Pane	.00	27.22
2-Pane	-2.63	8.95
3-Pane	-3.13	5.47
R-10	-3.72	1.38
Slope(DD)		544.64
Curve(DDS)		18.420

Base Load = 19.89 MBtu
Typical Load = 7.05 MBtu
Residual Load = 1.86 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	10.18
R-7	-3.80	3.84
R-11	-4.41	2.83
R-19	-4.95	1.93
R-22	-5.12	1.63
R-30	-5.36	1.24
R-38	-5.50	1.01
R-49	-5.64	.78
R-60	-5.73	.63
Slope(DD)		1754.91
Curve(DDS)		-6.526

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.23
R-7	-1.34	2.42
R-11	-1.53	2.02
R-13	-1.76	1.53
R-19	-1.88	1.28
R-27	-2.04	.95
R-34	-2.14	.74
Slope(DD)		915.81
Curve(DDS)		10.507

Slab		(/ft)
R-0	-2.96	.30
R-5 2ft	-3.06	-2.20
R-5 4ft	-3.07	-2.45
R-10 2ft	-3.07	-2.45
R-10 4ft	-3.05	-1.95
Intercept		.000
Slope(DD)		-880.27
Curve(DDS)		81.621

Heated Basement		(/ft)
R-0	-1.03	48.55
R-5 4ft	-1.17	45.05
R-5 8ft	-1.19	44.55
R-10 4ft	-1.20	44.30
R-10 8ft	-1.23	43.55
Intercept		41.911
Slope(DD)		150.74
Curve(DDS)		.461

Unheated Basement		(/sf)
R-0	-1.03	3.24
R-11 flr	-.72	3.75
R-19 flr	-.71	3.77
R-30 flr	-.70	3.79
Intercept		3.783
Slope(DD)		24.62
Curve(DDS)		-25.582

Crawl		(/sf)
R-0	.00	4.95
R-11 flr	-.11	4.77
R-19 flr	-.25	4.54
R-30 flr	-.23	4.56
R-38 flr	-.23	4.57
R-49 flr	-.22	4.59
Intercept		4.340
Slope(DD)		286.21
Curve(DDS)		-32.451

Infiltration ELF	Ach	(/sf flr)
.0007(.57)	.00	4.64
.0005(.41)	-1.38	3.49
.0003(.25)	-2.93	2.20
Slope/.001ELF		7.875
Curve/.001ELF		-1.771

Window U-value		(/sf)
1-Pane	.00	-4.18
2-Pane	-.27	-6.06
3-Pane	.01	-4.08
R-10	.35	-1.75
Slope(DD)		-801.36
Curve(DDS)		24.356

Base Load = 37.96 MBtu
Typical Load = 27.04 MBtu
Residual Load = 12.42 MBtu

San Antonio TX WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	10.84
R-7	-4.18	3.88
R-11	-4.85	2.77
R-19	-5.45	1.77
R-22	-5.62	1.48
R-30	-5.85	1.09
R-38	-5.99	.86
R-49	-6.09	.69
R-60	-6.16	.59
Slope(DD)		1540.20
Curve(DDS)		48.715

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	7.65
R-7	-1.48	2.97
R-11	-1.70	2.30
R-13	-1.89	1.69
R-19	-1.99	1.39
R-27	-2.11	.99
R-34	-2.19	.74
Slope(DD)		847.67
Curve(DDS)		106.839

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-3.45	10.33	
R-5 2ft	-3.65	3.66	
R-5 4ft	-3.69	2.50	
R-10 2ft	-3.68	2.66	
R-10 4ft	-3.72	1.50	
Intercept		.000	
Slope(DD)		236.06	
Curve(DDS)		62.312	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.99	25.66	
R-5 4ft	-3.48	9.50	
R-5 8ft	-3.54	7.33	
R-10 4ft	-3.54	7.33	
R-10 8ft	-3.61	5.00	
Intercept		2.190	
Slope(DD)		142.08	
Curve(DDS)		11.585	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-2.99	1.28	
R-11 flr	-3.47	.48	
R-19 flr	-3.59	.30	
R-30 flr	-3.66	.17	
Intercept		-.139	
Slope(DD)		420.27	
Curve(DDS)		-27.890	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	6.27	
R-11 flr	-2.76	1.68	
R-19 flr	-3.11	1.09	
R-30 flr	-3.28	.81	
R-38 flr	-3.32	.74	
R-49 flr	-3.43	.55	
Intercept		.118	
Slope(DD)		802.39	
Curve(DDS)		77.684	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.68)	.00	2.63	
.0005(.49)	-1.46	1.41	
.0003(.29)	-2.48	.57	
Slope/.001ELF		.479	
Curve/.001ELF		4.688	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	25.78	
2-Pane	-2.57	7.94	
3-Pane	-3.02	4.81	
R-10	-3.55	1.13	
Slope(DD)		432.50	
Curve(DDS)		20.613	

Base Load = 18.57 MBtu
Typical Load = 6.31 MBtu
Residual Load = 2.29 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	10.51	
R-7	-3.99	3.87	
R-11	-4.62	2.81	
R-19	-5.19	1.85	
R-22	-5.37	1.57	
R-30	-5.60	1.18	
R-38	-5.74	.95	
R-49	-5.86	.74	
R-60	-5.94	.60	
Slope(DD)		1657.77	
Curve(DDS)		19.462	

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	5.06	
R-7	-.88	2.28	
R-11	-1.01	1.89	
R-13	-1.13	1.49	
R-19	-1.19	1.29	
R-27	-1.32	.91	
R-34	-1.39	.67	
Slope(DD)		866.42	
Curve(DDS)		13.678	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-2.40	-1.56	
R-5 2ft	-2.45	-3.39	
R-5 4ft	-2.46	-3.56	
R-10 2ft	-2.46	-3.73	
R-10 4ft	-2.43	-2.73	
Intercept		.000	
Slope(DD)		-1159.65	
Curve(DDS)		91.766	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-.85	50.11	
R-5 4ft	-.98	45.61	
R-5 8ft	-1.02	44.27	
R-10 4ft	-1.02	44.44	
R-10 8ft	-1.05	43.27	
Intercept		40.516	
Slope(DD)		255.00	
Curve(DDS)		-.273	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-.85	2.51	
R-11 flr	-.55	3.00	
R-19 flr	-.52	3.04	
R-30 flr	-.51	3.07	
Intercept		3.122	
Slope(DD)		-53.85	
Curve(DDS)		-12.964	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	3.91	
R-11 flr	.09	4.06	
R-19 flr	-.04	3.86	
R-30 flr	-.08	3.79	
R-38 flr	-.09	3.77	
R-49 flr	-.11	3.73	
Intercept		3.443	
Slope(DD)		489.24	
Curve(DDS)		-77.491	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.58)	.00	4.83	
.0005(.41)	-1.41	3.66	
.0003(.25)	-3.01	2.32	
Slope/.001ELF		8.354	
Curve/.001ELF		-2.083	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	-1.94	
2-Pane	-.39	-4.64	
3-Pane	-.18	-3.16	
R-10	.07	-1.41	
Slope(DD)		-653.22	
Curve(DDS)		21.966	

Base Load = 35.85 MBtu
Typical Load = 25.79 MBtu
Residual Load = 11.08 MBtu

San Diego CA TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	10.16
R-7	-9.83	3.77
R-11	-11.40	2.75
R-19	-12.81	1.84
R-22	-13.27	1.54
R-30	-13.89	1.14
R-38	-14.26	.90
R-49	-14.52	.73
R-60	-14.68	.62
Slope(DD)	1640.61	
Curve(DDS)	12.217	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	7.16
R-7	-4.92	2.78
R-11	-5.62	2.16
R-13	-6.29	1.56
R-19	-6.62	1.27
R-27	-7.02	.91
R-34	-7.26	.70
Slope(DD)	784.20	
Curve(DDS)	101.668	

Slab		(/ft)
R-0	-4.43	11.04
R-5 2ft	-5.70	3.39
R-5 4ft	-5.89	2.24
R-10 2ft	-5.84	2.54
R-10 4ft	-6.05	1.28
Intercept	.000	
Slope(DD)	175.72	
Curve(DDS)	73.662	

Heated Basement		(/ft)
R-0	-3.26	18.08
R-5 4ft	-4.89	8.27
R-5 8ft	-5.20	6.40
R-10 4ft	-5.15	6.70
R-10 8ft	-5.49	4.65
Intercept	1.209	
Slope(DD)	291.82	
Curve(DDS)	3.320	

Unheated Basement		(/sf)
R-0	-3.26	1.95
R-11 flr	-6.06	.13
R-19 flr	-6.58	-.20
R-30 flr	-6.91	-.42
Intercept	-.948	
Slope(DD)	689.48	
Curve(DDS)	-24.265	

Crawl		(/sf)
R-0	.00	4.07
R-11 flr	-6.63	-.24
R-19 flr	-7.24	-.64
R-30 flr	-7.53	-.83
R-38 flr	-7.60	-.87
R-49 flr	-7.79	-.99
Intercept	-1.186	
Slope(DD)	346.65	
Curve(DDS)	132.124	

Infiltration		(/sf flr)
ELF	Ach	
.0007(.56)	.00	1.51
.0005(.41)	-1.59	.48
.0003(.25)	-2.44	-.07
Slope/.001ELF	-2.046	
Curve/.001ELF	6.007	

Window U-value		(/sf)
1-Pane	.00	21.98
2-Pane	-2.89	6.35
3-Pane	-3.36	3.81
R-10	-3.91	.83
Slope(DD)	304.11	
Curve(DDS)	20.023	

Base Load = 35.58 MBtu
Typical Load = 9.86 MBtu
Residual Load = 4.96 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	3.52
R-7	-3.26	1.40
R-11	-3.78	1.07
R-19	-4.25	.76
R-22	-4.44	.64
R-30	-4.70	.47
R-38	-4.85	.37
R-49	-4.95	.31
R-60	-5.01	.27
Slope(DD)	704.73	
Curve(DDS)	-18.678	

Wall	Delta (MBtu)	Component (KBtu)
		(/sf)
R-0	.00	1.34
R-7	-.57	.83
R-11	-.65	.76
R-13	-.84	.59
R-19	-.94	.50
R-27	-1.07	.39
R-34	-1.15	.32
Slope(DD)	417.48	
Curve(DDS)	-31.242	

Slab		(/ft)
R-0	-1.23	-7.60
R-5 2ft	-1.04	-6.46
R-5 4ft	-.87	-5.43
R-10 2ft	-1.00	-6.22
R-10 4ft	-.68	-4.29
Intercept	.000	
Slope(DD)	-1646.80	
Curve(DDS)	86.671	

Heated Basement		(/ft)
R-0	-.79	-4.95
R-5 4ft	-.75	-4.71
R-5 8ft	-.72	-4.53
R-10 4ft	-.74	-4.65
R-10 8ft	-.64	-4.05
Intercept	-2.813	
Slope(DD)	-146.41	
Curve(DDS)	2.330	

Unheated Basement		(/sf)
R-0	-.79	-.53
R-11 flr	.31	.18
R-19 flr	.69	.43
R-30 flr	.93	.58
Intercept	1.021	
Slope(DD)	-602.56	
Curve(DDS)	58.377	

Crawl		(/sf)
R-0	.00	-.02
R-11 flr	.80	.50
R-19 flr	.84	.52
R-30 flr	.99	.62
R-38 flr	1.02	.64
R-49 flr	1.12	.70
Intercept	.731	
Slope(DD)	-152.67	
Curve(DDS)	1.197	

Infiltration		(/sf flr)
ELF	Ach	
.0007(.50)	.00	-.55
.0005(.35)	.13	-.47
.0003(.21)	.35	-.32
Slope/.001ELF	-1.299	
Curve/.001ELF	.731	

Window U-value		(/sf)
1-Pane	.00	-4.52
2-Pane	.40	-2.36
3-Pane	.56	-1.51
R-10	.74	-.51
Slope(DD)	-223.56	
Curve(DDS)	1.984	

Base Load = 8.46 MBtu
Typical Load = 2.65 MBtu
Residual Load = .56 MBtu

San Diego CA TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	9.42
R-7	-3.75	3.18
R-11	-4.34	2.19
R-19	-4.88	1.29
R-22	-5.01	1.08
R-30	-5.18	.79
R-38	-5.28	.62
R-49	-5.36	.49
R-60	-5.41	.41
Slope(DD)		1068.25
Curve(DDS)		87.907

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	5.64
R-7	-1.70	2.08
R-11	-1.94	1.57
R-13	-2.14	1.15
R-19	-2.24	.94
R-27	-2.38	.65
R-34	-2.46	.48
Slope(DD)		532.41
Curve(DDS)		98.018

Slab		(/ft)
R-0	-1.78	8.47
R-5 2ft	-1.98	3.47
R-5 4ft	-2.01	2.72
R-10 2ft	-2.00	2.97
R-10 4ft	-2.05	1.72
Intercept		.000
Slope(DD)		482.92
Curve(DDS)		25.123

Heated Basement		(/ft)
R-0	-1.31	20.22
R-5 4ft	-1.66	11.47
R-5 8ft	-1.72	9.97
R-10 4ft	-1.71	10.22
R-10 8ft	-1.80	7.97
Intercept		4.246
Slope(DD)		347.18
Curve(DDS)		1.353

Unheated Basement		(/sf)
R-0	-1.31	1.35
R-11 flr	-1.88	.40
R-19 flr	-2.02	.16
R-30 flr	-2.11	.01
Intercept		-.379
Slope(DD)		529.79
Curve(DDS)		-37.644

Crawl		(/sf)
R-0	.00	3.53
R-11 flr	-1.83	.48
R-19 flr	-2.03	.15
R-30 flr	-2.14	-.03
R-38 flr	-2.16	-.07
R-49 flr	-2.23	-.19
Intercept		-.399
Slope(DD)		412.65
Curve(DDS)		69.005

Infiltration ELF Ach		(/sf flr)
.0007(.58)	.00	1.22
.0005(.41)	-.77	.58
.0003(.25)	-1.26	.17
Slope/.001ELF		-.292
Curve/.001ELF		2.917

Window U-value		(/sf)
1-Pane	.00	15.32
2-Pane	-1.50	4.90
3-Pane	-1.78	2.98
R-10	-2.10	.73
Slope(DD)		285.25
Curve(DDS)		11.171

Base Load = 13.42 MBtu
Typical Load = 3.85 MBtu
Residual Load = 4.11 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	4.17
R-7	-1.37	1.89
R-11	-1.58	1.53
R-19	-1.78	1.20
R-22	-1.89	1.01
R-30	-2.05	.76
R-38	-2.14	.60
R-49	-2.20	.50
R-60	-2.24	.44
Slope(DD)		1167.12
Curve(DDS)		-78.218

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	.75
R-7	-.25	.21
R-11	-.29	.14
R-13	-.34	.04
R-19	-.36	-.01
R-27	-.35	.02
R-34	-.34	.03
Slope(DD)		-7.37
Curve(DDS)		27.254

Slab		(/ft)
R-0	-.38	-22.33
R-5 2ft	-.30	-20.33
R-5 4ft	-.30	-20.33
R-10 2ft	-.28	-19.83
R-10 4ft	-.04	-13.83
Intercept		.000
Slope(DD)		-5666.74
Curve(DDS)		329.714

Heated Basement		(/ft)
R-0	-.16	-16.83
R-5 4ft	-.09	-15.08
R-5 8ft	-.07	-14.58
R-10 4ft	-.07	-14.58
R-10 8ft	-.03	-13.58
Intercept		-11.293
Slope(DD)		-251.81
Curve(DDS)		2.831

Unheated Basement		(/sf)
R-0	-.16	-1.12
R-11 flr	.27	-.41
R-19 flr	.34	-.29
R-30 flr	.38	-.22
Intercept		-.057
Slope(DD)		-210.66
Curve(DDS)		.565

Crawl		(/sf)
R-0	.00	-.86
R-11 flr	.37	-.24
R-19 flr	.34	-.29
R-30 flr	.71	.34
R-38 flr	.80	.48
R-49 flr	1.05	.89
Intercept		1.034
Slope(DD)		-1082.62
Curve(DDS)		139.408

Infiltration ELF Ach		(/sf flr)
.0007(.50)	.00	-1.94
.0005(.35)	.24	-1.74
.0003(.21)	.82	-1.26
Slope/.001ELF		-5.250
Curve/.001ELF		3.542

Window U-value		(/sf)
1-Pane	.00	-17.60
2-Pane	.68	-12.88
3-Pane	1.32	-8.44
R-10	2.07	-3.22
Slope(DD)		-1438.83
Curve(DDS)		29.252

Base Load = 6.23 MBtu
Typical Load = 4.10 MBtu
Residual Load = 6.86 MBtu

San Diego CA TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	9.35
R-7	-3.77	3.06
R-11	-4.37	2.06
R-19	-4.91	1.16
R-22	-5.03	.96
R-30	-5.19	.70
R-38	-5.28	.55
R-49	-5.35	.43
R-60	-5.39	.36
Slope(DD)		922.80
Curve(DDS)		110.306

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	5.04
R-7	-1.09	1.60
R-11	-1.24	1.11
R-13	-1.34	.80
R-19	-1.39	.65
R-27	-1.46	.42
R-34	-1.51	.27
Slope(DD)		263.06
Curve(DDS)		125.111

Slab		(/ft)
R-0	-2.09	6.28
R-5 2ft	-2.20	2.78
R-5 4ft	-2.22	2.11
R-10 2ft	-2.21	2.44
R-10 4ft	-2.24	1.44
Intercept		.000
Slope(DD)		427.00
Curve(DDS)		12.433

Heated Basement		(/ft)
R-0	-1.85	14.44
R-5 4ft	-2.08	6.61
R-5 8ft	-2.13	5.11
R-10 4ft	-2.12	5.44
R-10 8ft	-2.17	3.61
Intercept		.606
Slope(DD)		266.31
Curve(DDS)		2.042

Unheated Basement		(/sf)
R-0	-1.85	.72
R-11 flr	-2.22	.11
R-19 flr	-2.30	-.04
R-30 flr	-2.36	-.13
Intercept		-.364
Slope(DD)		316.21
Curve(DDS)		-20.358

Crawl		(/sf)
R-0	.00	3.80
R-11 flr	-2.03	.42
R-19 flr	-2.18	.17
R-30 flr	-2.26	.02
R-38 flr	-2.29	-.01
R-49 flr	-2.34	-.11
Intercept		-.189
Slope(DD)		176.15
Curve(DDS)		117.216

Infiltration ELF	Ach	(/sf flr)
.0007(.58)	.00	.87
.0005(.42)	-.75	.25
.0003(.25)	-1.14	-.08
Slope/.001ELF		-1.375
Curve/.001ELF		3.750

Window	U-value	(/sf)
1-Pane	.00	13.08
2-Pane	-1.29	4.16
3-Pane	-1.52	2.53
R-10	-1.80	.62
Slope(DD)		239.68
Curve(DDS)		9.692

Base Load = 12.17 MBtu
Typical Load = 3.07 MBtu
Residual Load = 4.58 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	3.86
R-7	-1.29	1.72
R-11	-1.49	1.38
R-19	-1.67	1.07
R-22	-1.78	.89
R-30	-1.93	.65
R-38	-2.01	.50
R-49	-2.05	.44
R-60	-2.07	.40
Slope(DD)		1021.83
Curve(DDS)		-62.506

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	.78
R-7	-.19	.17
R-11	-.22	.08
R-13	-.25	-.01
R-19	-.27	-.06
R-27	-.25	-.02
R-34	-.25	.00
Slope(DD)		-56.11
Curve(DDS)		37.311

Slab		(/ft)
R-0	-.16	-23.95
R-5 2ft	-.05	-20.12
R-5 4ft	-.01	-18.62
R-10 2ft	-.04	-19.79
R-10 4ft	.15	-13.45
Intercept		.000
Slope(DD)		-5330.08
Curve(DDS)		286.100

Heated Basement		(/ft)
R-0	-.16	-23.79
R-5 4ft	-.09	-21.45
R-5 8ft	-.09	-21.45
R-10 4ft	-.09	-21.62
R-10 8ft	-.04	-19.95
Intercept		-17.570
Slope(DD)		-283.15
Curve(DDS)		3.203

Unheated Basement		(/sf)
R-0	-.16	-1.19
R-11 flr	.28	-.46
R-19 flr	.41	-.23
R-30 flr	.51	-.08
Intercept		.332
Slope(DD)		-566.42
Curve(DDS)		52.600

Crawl		(/sf)
R-0	.00	-.92
R-11 flr	.42	-.21
R-19 flr	.47	-.14
R-30 flr	.54	-.03
R-38 flr	.55	-.01
R-49 flr	.59	.07
Intercept		.140
Slope(DD)		-228.09
Curve(DDS)		4.084

Infiltration ELF	Ach	(/sf flr)
.0007(.50)	.00	-.81
.0005(.35)	.19	-.65
.0003(.21)	.45	-.43
Slope/.001ELF		-1.667
Curve/.001ELF		.729

Window	U-value	(/sf)
1-Pane	.00	-13.42
2-Pane	.40	-10.65
3-Pane	.92	-7.01
R-10	1.54	-2.73
Slope(DD)		-1223.94
Curve(DDS)		27.102

Base Load = 4.68 MBtu
Typical Load = 2.92 MBtu
Residual Load = 3.69 MBtu

San Francisco CA TMY One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	20.25
R-7	-18.58	8.18
R-11	-21.55	6.25
R-19	-24.21	4.52
R-22	-25.28	3.83
R-30	-26.72	2.89
R-38	-27.59	2.33
R-49	-28.33	1.85
R-60	-28.80	1.54
Slope(DD)		4242.92
Curve(DDS)		-139.693

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	18.45
R-7	-10.87	8.78
R-11	-12.42	7.40
R-13	-14.33	5.71
R-19	-15.27	4.87
R-27	-16.75	3.55
R-34	-17.66	2.74
Slope(DD)		3484.77
Curve(DDS)		-9.887

Slab	Delta Component (MBtu)	(/ft)
R-0	-9.92	45.99
R-5 2ft	-13.59	23.88
R-5 4ft	-14.53	18.22
R-10 2ft	-14.22	20.08
R-10 4ft	-15.37	13.16
Intercept		.000
Slope(DD)		5032.69
Curve(DDS)		-40.624

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-7.20	62.37
R-5 4ft	-10.60	41.89
R-5 8ft	-11.81	34.60
R-10 4ft	-11.47	36.65
R-10 8ft	-13.13	26.65
Intercept		5.162
Slope(DD)		2514.90
Curve(DDS)		-26.646

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-7.20	6.72
R-11 flr	-16.87	.44
R-19 flr	-19.25	-1.10
R-30 flr	-20.78	-2.09
Intercept		-4.703
Slope(DD)		3511.05
Curve(DDS)		-250.182

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	11.40
R-11 flr	-19.17	-1.05
R-19 flr	-21.72	-2.71
R-30 flr	-22.78	-3.39
R-38 flr	-23.02	-3.55
R-49 flr	-23.72	-4.00
Intercept		-5.210
Slope(DD)		2085.61
Curve(DDS)		224.961

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.73) .00		9.72
.0005(.51) -5.49		6.16
.0003(.31) -10.01		3.22
Slope/.001ELF		8.376
Curve/.001ELF		7.874

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	79.18
2-Pane	-8.97	30.64
3-Pane	-11.10	19.10
R-10	-13.61	5.53
Slope(DD)		2289.33
Curve(DDS)		26.891

Base Load = 91.77 MBtu
Typical Load = 36.06 MBtu
Residual Load = 9.18 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	.74
R-7	-.72	.28
R-11	-.84	.20
R-19	-.94	.13
R-22	-.97	.11
R-30	-1.01	.09
R-38	-1.04	.07
R-49	-1.06	.05
R-60	-1.08	.04
Slope(DD)		121.18
Curve(DDS)		.753

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	.31
R-7	-.16	.17
R-11	-.18	.15
R-13	-.22	.11
R-19	-.24	.09
R-27	-.26	.07
R-34	-.28	.06
Slope(DD)		74.86
Curve(DDS)		-3.270

Slab	Delta Component (MBtu)	(/ft)
R-0	-.38	-1.00
R-5 2ft	-.30	-.52
R-5 4ft	-.27	-.34
R-10 2ft	-.28	-.40
R-10 4ft	-.26	-.28
Intercept		.000
Slope(DD)		-98.23
Curve(DDS)		-.281

Heated Basement	Delta Component (MBtu)	(/ft)
R-0	-.31	-.58
R-5 4ft	-.28	-.40
R-5 8ft	-.26	-.28
R-10 4ft	-.27	-.34
R-10 8ft	-.25	-.22
Intercept		.044
Slope(DD)		-30.75
Curve(DDS)		.376

Unheated Basement	Delta Component (MBtu)	(/sf)
R-0	-.31	-.06
R-11 flr	-.10	.07
R-19 flr	-.05	.11
R-30 flr	-.02	.13
Intercept		.178
Slope(DD)		-70.55
Curve(DDS)		4.594

Crawl	Delta Component (MBtu)	(/sf)
R-0	.00	.14
R-11 flr	.15	.24
R-19 flr	.15	.24
R-30 flr	.16	.24
R-38 flr	.16	.24
R-49 flr	.17	.25
Intercept		.240
Slope(DD)		4.36
Curve(DDS)		-4.712

Infiltration ELF Ach	Delta Component (MBtu)	(/sf flr)
.0007(.93) .00		.05
.0005(.67) -.01		.04
.0003(.40) -.03		.03
Slope/.001ELF		.130
Curve/.001ELF		-.081

Window U-value	Delta Component (MBtu)	(/sf)
1-Pane	.00	.32
2-Pane	.01	.38
3-Pane	-.01	.25
R-10	-.04	.10
Slope(DD)		47.80
Curve(DDS)		-1.350

Base Load = 1.95 MBtu
Typical Load = .52 MBtu
Residual Load = -.38 MBtu

San Francisco CA TMY Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	21.73
R-7	-8.30	7.89
R-11	-9.63	5.68
R-19	-10.82	3.70
R-22	-11.18	3.10
R-30	-11.66	2.30
R-38	-11.95	1.81
R-49	-12.16	1.46
R-60	-12.30	1.23
Slope(DD)		3256.26
Curve(DDS)		68.970

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	16.25
R-7	-4.63	6.54
R-11	-5.29	5.15
R-13	-5.93	3.80
R-19	-6.25	3.14
R-27	-6.67	2.25
R-34	-6.93	1.71
Slope(DD)		1995.57
Curve(DDS)		190.880

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-5.12	30.00
R-5 2ft	-5.83	12.25
R-5 4ft	-5.97	8.75
R-10 2ft	-5.92	10.00
R-10 4ft	-6.08	6.00
Intercept		.000
Slope(DD)		1963.08
Curve(DDS)		106.363

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-3.99	58.25
R-5 4ft	-5.02	32.50
R-5 8ft	-5.25	26.75
R-10 4ft	-5.20	28.00
R-10 8ft	-5.47	21.25
Intercept		8.548
Slope(DD)		1340.77
Curve(DDS)		-1.082

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-3.99	3.88
R-11 flr	-5.99	.55
R-19 flr	-6.54	-.37
R-30 flr	-6.90	-.97
Intercept		-2.560
Slope(DD)		2165.32
Curve(DDS)		-177.203

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	10.53
R-11 flr	-6.16	.27
R-19 flr	-6.90	-.97
R-30 flr	-7.26	-1.56
R-38 flr	-7.34	-1.70
R-49 flr	-7.58	-2.09
Intercept		-2.946
Slope(DD)		1571.64
Curve(DDS)		206.169

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.72)	.00	5.26
.0005(.50)	-3.34	2.47
.0003(.31)	-5.45	.72
Slope/.001ELF		-1.459
Curve/.001ELF		12.813

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	55.36
2-Pane	-5.42	17.72
3-Pane	-6.42	10.80
R-10	-7.59	2.65
Slope(DD)		1033.03
Curve(DDS)		40.302

Base Load = 39.82 MBtu
Typical Load = 14.54 MBtu
Residual Load = 12.13 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	1.01
R-7	-.34	.45
R-11	-.39	.36
R-19	-.44	.28
R-22	-.47	.24
R-30	-.50	.18
R-38	-.52	.15
R-49	-.54	.12
R-60	-.55	.10
Slope(DD)		273.47
Curve(DDS)		-17.258

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.38
R-7	-.09	.20
R-11	-.10	.17
R-13	-.13	.12
R-19	-.14	.09
R-27	-.15	.08
R-34	-.15	.07
Slope(DD)		79.94
Curve(DDS)		-1.546

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-.15	-1.76
R-5 2ft	-.13	-1.26
R-5 4ft	-.12	-1.01
R-10 2ft	-.12	-1.01
R-10 4ft	-.11	-.76
Intercept		.000
Slope(DD)		-318.17
Curve(DDS)		14.179

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.12	-1.01
R-5 4ft	-.11	-.76
R-5 8ft	-.10	-.51
R-10 4ft	-.10	-.51
R-10 8ft	-.09	-.26
Intercept		.551
Slope(DD)		-97.21
Curve(DDS)		1.474

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.12	-.07
R-11 flr	-.03	.08
R-19 flr	.01	.14
R-30 flr	.03	.18
Intercept		.294
Slope(DD)		-154.14
Curve(DDS)		16.323

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.13
R-11 flr	.05	.22
R-19 flr	.06	.23
R-30 flr	.07	.25
R-38 flr	.07	.25
R-49 flr	.08	.26
Intercept		.277
Slope(DD)		-40.85
Curve(DDS)		2.494

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.93)	.00	.04
.0005(.67)	.01	.05
.0003(.40)	.00	.04
Slope/.001ELF		.208
Curve/.001ELF		-.208

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-.10
2-Pane	.00	-.10
3-Pane	.00	-.06
R-10	.01	-.03
Slope(DD)		-11.71
Curve(DDS)		.307

Base Load = 1.53 MBtu
Typical Load = .87 MBtu
Residual Load = .29 MBtu

San Francisco CA TMY MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	21.53
R-7	-8.49	7.39
R-11	-9.84	5.13
R-19	-11.06	3.10
R-22	-11.37	2.59
R-30	-11.78	1.90
R-38	-12.03	1.48
R-49	-12.21	1.19
R-60	-12.32	1.00
Slope(DD)		2603.87
Curve(DDS)		173.453

Wall	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	16.00
R-7	-3.14	6.09
R-11	-3.59	4.68
R-13	-3.98	3.44
R-19	-4.17	2.83
R-27	-4.44	1.99
R-34	-4.60	1.47
Slope(DD)		1677.64
Curve(DDS)		241.215

Slab	Delta (MBtu)	Component (/ft) (KBtu)
R-0	-6.03	39.39
R-5 2ft	-6.67	18.22
R-5 4ft	-6.81	13.55
R-10 2ft	-6.76	15.22
R-10 4ft	-6.93	9.55
Intercept		.000
Slope(DD)		3442.99
Curve(DDS)		52.461

Heated Basement	Delta (MBtu)	Component (/ft) (KBtu)
R-0	-5.37	61.55
R-5 4ft	-6.36	28.39
R-5 8ft	-6.58	21.05
R-10 4ft	-6.54	22.55
R-10 8ft	-6.83	12.72
Intercept		-5.960
Slope(DD)		2041.56
Curve(DDS)		-7.240

Unheated Basement	Delta (MBtu)	Component (/sf) (KBtu)
R-0	-5.37	3.08
R-11 flr	-7.08	.23
R-19 flr	-7.59	-.62
R-30 flr	-7.92	-1.17
Intercept		-2.663
Slope(DD)		2035.67
Curve(DDS)		-178.651

Crawl	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	12.03
R-11 flr	-6.86	.59
R-19 flr	-7.67	-.76
R-30 flr	-7.95	-1.22
R-38 flr	-8.01	-1.33
R-49 flr	-8.20	-1.64
Intercept		-2.482
Slope(DD)		1316.96
Curve(DDS)		295.023

Infiltration ELF Ach	Delta (MBtu)	Component (/sf flr) (KBtu)
.0007(.72)	.00	4.77
.0005(.50)	-3.40	1.93
.0003(.31)	-5.39	.28
Slope/.001ELF		-3.500
Curve/.001ELF		14.740

Window U-value	Delta (MBtu)	Component (/sf) (KBtu)
1-Pane	.00	52.53
2-Pane	-5.40	15.07
3-Pane	-6.26	9.04
R-10	-7.29	1.94
Slope(DD)		712.03
Curve(DDS)		48.403

Base Load = 37.64 MBtu
Typical Load = 12.92 MBtu
Residual Load = 12.83 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	1.00
R-7	-.37	.39
R-11	-.43	.29
R-19	-.48	.20
R-22	-.50	.17
R-30	-.52	.13
R-38	-.54	.10
R-49	-.55	.08
R-60	-.56	.07
Slope(DD)		185.11
Curve(DDS)		-2.723

Wall	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	.31
R-7	-.05	.15
R-11	-.06	.13
R-13	-.07	.09
R-19	-.08	.08
R-27	-.08	.06
R-34	-.09	.05
Slope(DD)		57.56
Curve(DDS)		.184

Slab	Delta (MBtu)	Component (/ft) (KBtu)
R-0	-.06	-.85
R-5 2ft	-.04	-.35
R-5 4ft	-.04	-.35
R-10 2ft	-.04	-.35
R-10 4ft	-.04	-.19
Intercept		.000
Slope(DD)		-77.80
Curve(DDS)		-.802

Heated Basement	Delta (MBtu)	Component (/ft) (KBtu)
R-0	-.06	-.85
R-5 4ft	-.05	-.52
R-5 8ft	-.04	-.35
R-10 4ft	-.04	-.35
R-10 8ft	-.04	-.19
Intercept		.306
Slope(DD)		-57.46
Curve(DDS)		.709

Unheated Basement	Delta (MBtu)	Component (/sf) (KBtu)
R-0	-.06	-.04
R-11 flr	-.01	.03
R-19 flr	-.00	.05
R-30 flr	.01	.07
Intercept		.100
Slope(DD)		-47.31
Curve(DDS)		3.779

Crawl	Delta (MBtu)	Component (/sf) (KBtu)
R-0	.00	.06
R-11 flr	.06	.15
R-19 flr	.05	.14
R-30 flr	.05	.14
R-38 flr	.05	.14
R-49 flr	.05	.14
Intercept		.123
Slope(DD)		27.30
Curve(DDS)		-7.835

Infiltration ELF Ach	Delta (MBtu)	Component (/sf flr) (KBtu)
.0007(.93)	.00	.08
.0005(.67)	-.02	.06
.0003(.40)	-.04	.04
Slope/.001ELF		.146
Curve/.001ELF		-.052

Window U-value	Delta (MBtu)	Component (/sf) (KBtu)
1-Pane	.00	.11
2-Pane	-.01	.04
3-Pane	-.01	.03
R-10	-.02	.01
Slope(DD)		3.07
Curve(DDS)		.044

Base Load = 1.19 MBtu
Typical Load = .59 MBtu
Residual Load = .02 MBtu

Seattle WA WYEC One Story Prototype Siding Series Two

Heating Load

	Delta Component (MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	31.22
R-7	-28.79	12.53
R-11	-33.39	9.54
R-19	-37.52	6.86
R-22	-39.13	5.82
R-30	-41.29	4.41
R-38	-42.59	3.57
R-49	-43.76	2.81
R-60	-44.52	2.32
Slope(DD)	6425.75	
Curve(DDS)	-195.521	

	Delta Component (MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	30.16
R-7	-17.18	14.87
R-11	-19.63	12.69
R-13	-22.65	10.01
R-19	-24.15	8.67
R-27	-26.87	6.25
R-34	-28.54	4.77
Slope(DD)	6232.69	
Curve(DDS)	-116.143	

Slab		(/ft)
R-0	-12.36	66.50
R-5 2ft	-18.00	32.52
R-5 4ft	-19.95	20.78
R-10 2ft	-18.98	26.62
R-10 4ft	-21.61	10.78
Intercept	-21.102	
Slope(DD)	8877.46	
Curve(DDS)	-159.825	

Heated Basement		(/ft)
R-0	-8.14	91.92
R-5 4ft	-12.34	66.62
R-5 8ft	-14.40	54.21
R-10 4ft	-13.50	59.63
R-10 8ft	-16.64	40.72
Intercept	.000	
Slope(DD)	4020.65	
Curve(DDS)	-43.749	

Unheated Basement		(/sf)
R-0	-8.14	9.91
R-11 flr	-25.02	-1.05
R-19 flr	-29.46	-3.94
R-30 flr	-32.32	-5.79
Intercept	-10.727	
Slope(DD)	6679.29	
Curve(DDS)	-517.766	

Crawl		(/sf)
R-0	.00	15.19
R-11 flr	-27.71	-2.80
R-19 flr	-32.20	-5.71
R-30 flr	-34.97	-7.51
R-38 flr	-35.60	-7.92
R-49 flr	-37.42	-9.11
Intercept	-11.792	
Slope(DD)	5459.26	
Curve(DDS)	-38.340	

Infiltration ELF	Ach	(/sf flr)
.0007	(.75) .00	17.02
.0005	(.54) -7.69	12.03
.0003	(.33) -15.22	7.14
Slope/.001ELF	23.408	
Curve/.001ELF	1.300	

Window U-value		(/sf)
1-Pane	.00	142.35
2-Pane	-13.94	66.92
3-Pane	-18.45	42.52
R-10	-23.75	13.83
Slope(DD)	5930.02	
Curve(DDS)	-20.375	

Base Load = 153.65 MBtu
Typical Load = 52.94 MBtu
Residual Load = 9.21 MBtu

Cooling Load

	Delta Component (MBtu)	(KBtu)
Ceiling		(/sf)
R-0	.00	1.54
R-7	-1.44	.61
R-11	-1.66	.46
R-19	-1.87	.33
R-22	-1.94	.28
R-30	-2.04	.22
R-38	-2.10	.18
R-49	-2.17	.13
R-60	-2.21	.11
Slope(DD)	305.91	
Curve(DDS)	-7.766	

	Delta Component (MBtu)	(KBtu)
Wall		(/sf)
R-0	.00	.58
R-7	-.28	.33
R-11	-.32	.30
R-13	-.40	.23
R-19	-.44	.19
R-27	-.49	.15
R-34	-.52	.12
Slope(DD)	156.33	
Curve(DDS)	-8.859	

Slab		(/ft)
R-0	-.98	-2.02
R-5 2ft	-.90	-1.54
R-5 4ft	-.86	-1.30
R-10 2ft	-.88	-1.42
R-10 4ft	-.83	-1.12
Intercept	-.420	
Slope(DD)	-202.42	
Curve(DDS)	6.051	

Heated Basement		(/ft)
R-0	-.66	-.09
R-5 4ft	-.69	-.27
R-5 8ft	-.68	-.21
R-10 4ft	-.70	-.33
R-10 8ft	-.68	-.21
Intercept	.000	
Slope(DD)	-24.47	
Curve(DDS)	.522	

Unheated Basement		(/sf)
R-0	-.66	-.01
R-11 flr	-.21	.28
R-19 flr	-.08	.37
R-30 flr	-.00	.42
Intercept	.563	
Slope(DD)	-195.91	
Curve(DDS)	16.431	

Crawl		(/sf)
R-0	.00	.42
R-11 flr	.22	.56
R-19 flr	.21	.55
R-30 flr	.21	.55
R-38 flr	.21	.55
R-49 flr	.21	.55
Intercept	.536	
Slope(DD)	32.27	
Curve(DDS)	-10.746	

Infiltration ELF	Ach	(/sf flr)
.0007	(.57) .00	.07
.0005	(.41) -.03	.05
.0003	(.24) -.06	.03
Slope/.001ELF	.097	
Curve/.001ELF	.000	

Window U-value		(/sf)
1-Pane	.00	.20
2-Pane	-.01	.14
3-Pane	-.02	.09
R-10	-.03	.04
Slope(DD)	16.09	
Curve(DDS)	-.325	

Base Load = 4.18 MBtu
Typical Load = .91 MBtu
Residual Load = -.90 MBtu

Seattle WA WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	32.73
R-7	-12.05	12.65
R-11	-13.97	9.44
R-19	-15.70	6.56
R-22	-16.31	5.55
R-30	-17.13	4.19
R-38	-17.62	3.36
R-49	-18.05	2.66
R-60	-18.32	2.20
Slope(DD)		6032.82
Curve(DDS)		-86.366

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	28.99
R-7	-7.36	13.54
R-11	-8.41	11.34
R-13	-9.61	8.82
R-19	-10.21	7.56
R-27	-11.22	5.44
R-34	-11.84	4.14
Slope(DD)		5299.37
Curve(DDS)		16.848

Slab		(/ft)
R-0	-7.21	67.87
R-5 2ft	-8.58	33.62
R-5 4ft	-9.01	22.87
R-10 2ft	-8.80	28.12
R-10 4ft	-9.36	14.12
Intercept		-12.554
Slope(DD)		7179.54
Curve(DDS)		-71.131

Heated Basement		(/ft)
R-0	-5.49	110.87
R-5 4ft	-7.07	71.37
R-5 8ft	-7.64	57.12
R-10 4ft	-7.44	62.12
R-10 8ft	-8.25	41.87
Intercept		.000
Slope(DD)		3985.93
Curve(DDS)		-32.547

Unheated Basement		(/sf)
R-0	-5.49	7.39
R-11 flr	-9.55	.62
R-19 flr	-10.86	-1.56
R-30 flr	-11.70	-2.96
Intercept		-6.821
Slope(DD)		5296.50
Curve(DDS)		-492.388

Crawl		(/sf)
R-0	.00	16.54
R-11 flr	-9.97	-.08
R-19 flr	-11.55	-2.71
R-30 flr	-12.48	-4.26
R-38 flr	-12.69	-4.61
R-49 flr	-13.30	-5.63
Intercept		-7.992
Slope(DD)		4720.38
Curve(DDS)		12.487

Infiltration ELF Ach		(/sf flr)
.0007(.76)	.00	14.66
.0005(.56)	-5.69	9.92
.0003(.33)	-10.85	5.62
Slope/.001ELF		17.083
Curve/.001ELF		5.521

Window U-value		(/sf)
1-Pane	.00	122.82
2-Pane	-10.11	52.61
3-Pane	-12.91	33.15
R-10	-16.21	10.25
Slope(DD)		4330.76
Curve(DDS)		12.183

Base Load = 71.54 MBtu
Typical Load = 20.84 MBtu
Residual Load = 3.88 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	1.86
R-7	-.61	.85
R-11	-.70	.69
R-19	-.79	.55
R-22	-.84	.46
R-30	-.91	.35
R-38	-.95	.28
R-49	-.98	.23
R-60	-1.00	.20
Slope(DD)		531.89
Curve(DDS)		-36.727

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	.84
R-7	-.16	.51
R-11	-.18	.47
R-13	-.23	.35
R-19	-.26	.30
R-27	-.29	.23
R-34	-.31	.19
Slope(DD)		249.64
Curve(DDS)		-17.218

Slab		(/ft)
R-0	-.43	-5.43
R-5 2ft	-.40	-4.68
R-5 4ft	-.39	-4.43
R-10 2ft	-.40	-4.68
R-10 4ft	-.37	-3.93
Intercept		-2.478
Slope(DD)		-457.05
Curve(DDS)		17.709

Heated Basement		(/ft)
R-0	-.28	-1.68
R-5 4ft	-.27	-1.43
R-5 8ft	-.26	-1.18
R-10 4ft	-.27	-1.43
R-10 8ft	-.25	-.93
Intercept		.000
Slope(DD)		-97.08
Curve(DDS)		1.352

Unheated Basement		(/sf)
R-0	-.28	-.11
R-11 flr	-.02	.32
R-19 flr	.05	.43
R-30 flr	.09	.50
Intercept		.695
Slope(DD)		-256.80
Curve(DDS)		19.400

Crawl		(/sf)
R-0	.00	.35
R-11 flr	.16	.62
R-19 flr	.18	.65
R-30 flr	.18	.65
R-38 flr	.18	.65
R-49 flr	.18	.65
Intercept		.672
Slope(DD)		-11.65
Curve(DDS)		-9.801

Infiltration ELF Ach		(/sf flr)
.0007(.57)	.00	-.07
.0005(.41)	.00	-.07
.0003(.24)	.02	-.06
Slope/.001ELF		-.250
Curve/.001ELF		.208

Window U-value		(/sf)
1-Pane	.00	-.54
2-Pane	.07	-.06
3-Pane	.07	-.03
R-10	.08	.01
Slope(DD)		7.77
Curve(DDS)		-1.074

Base Load = 3.06 MBtu
Typical Load = 1.65 MBtu
Residual Load = .61 MBtu

Seattle WA WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	31.55
R-7	-11.75	11.97
R-11	-13.62	8.85
R-19	-15.31	6.04
R-22	-15.87	5.09
R-30	-16.64	3.82
R-38	-17.10	3.05
R-49	-17.47	2.43
R-60	-17.72	2.03
Slope(DD)		5488.24
Curve(DDS)		-28.114

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	28.80
R-7	-4.98	13.10
R-11	-5.68	10.87
R-13	-6.47	8.38
R-19	-6.86	7.15
R-27	-7.50	5.14
R-34	-7.89	3.91
Slope(DD)		4942.54
Curve(DDS)		76.759

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-8.37	86.69
R-5 2ft	-9.48	49.52
R-5 4ft	-9.85	37.35
R-10 2ft	-9.67	43.35
R-10 4ft	-10.14	27.69
Intercept		-2.738
Slope(DD)		8249.54
Curve(DDS)		-99.812

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-7.05	130.69
R-5 4ft	-8.55	80.69
R-5 8ft	-9.06	63.52
R-10 4ft	-8.89	69.19
R-10 8ft	-9.57	46.52
Intercept		.000
Slope(DD)		4342.38
Curve(DDS)		-30.019

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-7.05	6.53
R-11 flr	-10.37	1.00
R-19 flr	-11.50	-.90
R-30 flr	-12.24	-2.12
Intercept		-5.506
Slope(DD)		4664.08
Curve(DDS)		-451.672

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	18.28
R-11 flr	-10.45	.87
R-19 flr	-12.05	-1.81
R-30 flr	-13.00	-3.39
R-38 flr	-13.22	-3.75
R-49 flr	-13.84	-4.79
Intercept		-7.153
Slope(DD)		4732.77
Curve(DDS)		44.127

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.76)	.00	14.23
.0005(.56)	-5.66	9.51
.0003(.33)	-10.69	5.32
Slope/.001ELF		15.770
Curve/.001ELF		6.511

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	120.18
2-Pane	-10.26	48.96
3-Pane	-12.89	30.69
R-10	-15.98	9.20
Slope(DD)		3851.17
Curve(DDS)		26.553

Base Load = 66.96 MBtu
Typical Load = 18.54 MBtu
Residual Load = 4.56 MBtu

Cooling Load

Ceiling	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	1.90
R-7	-.66	.80
R-11	-.77	.63
R-19	-.86	.47
R-22	-.90	.40
R-30	-.95	.32
R-38	-.98	.26
R-49	-1.02	.20
R-60	-1.05	.15
Slope(DD)		453.70
Curve(DDS)		-22.374

Wall	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.75
R-7	-.10	.45
R-11	-.11	.40
R-13	-.14	.30
R-19	-.16	.25
R-27	-.18	.20
R-34	-.18	.17
Slope(DD)		210.32
Curve(DDS)		-13.122

Slab	Delta (MBtu)	Component (KBtu/ft)
R-0	-.23	-2.46
R-5 2ft	-.22	-1.96
R-5 4ft	-.20	-1.62
R-10 2ft	-.21	-1.79
R-10 4ft	-.19	-1.29
Intercept		-.050
Slope(DD)		-378.83
Curve(DDS)		14.912

Heated Basement	Delta (MBtu)	Component (KBtu/ft)
R-0	-.18	-.62
R-5 4ft	-.17	-.46
R-5 8ft	-.17	-.46
R-10 4ft	-.17	-.46
R-10 8ft	-.17	-.29
Intercept		.000
Slope(DD)		-31.27
Curve(DDS)		.393

Unheated Basement	Delta (MBtu)	Component (KBtu/sf)
R-0	-.18	-.03
R-11 flr	-.05	.18
R-19 flr	-.01	.24
R-30 flr	.01	.28
Intercept		.383
Slope(DD)		-144.64
Curve(DDS)		12.445

Crawl	Delta (MBtu)	Component (KBtu/sf)
R-0	.00	.26
R-11 flr	.08	.39
R-19 flr	.07	.39
R-30 flr	.07	.39
R-38 flr	.07	.39
R-49 flr	.07	.39
Intercept		.365
Slope(DD)		33.72
Curve(DDS)		-10.542

Infiltration ELF Ach	Delta (MBtu)	Component (KBtu/sf flr)
.0007(.57)	.00	.04
.0005(.41)	.00	.04
.0003(.24)	-.01	.03
Slope/.001ELF		.125
Curve/.001ELF		-.104

Window U-value	Delta (MBtu)	Component (KBtu/sf)
1-Pane	.00	-.05
2-Pane	.00	-.05
3-Pane	.00	-.03
R-10	.00	-.01
Slope(DD)		-5.86
Curve(DDS)		.153

Base Load = 2.53 MBtu
Typical Load = 1.22 MBtu
Residual Load = .07 MBtu

Washington DC WYEC One Story Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	25.63
R-7	-23.74	10.21
R-11	-27.53	7.75
R-19	-30.93	5.54
R-22	-32.24	4.69
R-30	-33.99	3.55
R-38	-35.05	2.87
R-49	-35.98	2.26
R-60	-36.58	1.87
Slope(DD)		5170.37
Curve(DDS)		-143.062

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	23.61
R-7	-13.51	11.59
R-11	-15.43	9.87
R-13	-17.78	7.78
R-19	-18.95	6.74
R-27	-21.07	4.86
R-34	-22.37	3.70
Slope(DD)		4831.60
Curve(DDS)		-82.360

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-16.17	42.63	
R-5 2ft	-20.11	18.89	
R-5 4ft	-21.23	12.15	
R-10 2ft	-20.84	14.50	
R-10 4ft	-22.40	5.10	
Intercept		-14.360	
Slope(DD)		5745.95	
Curve(DDS)		-80.642	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-9.99	79.86	
R-5 4ft	-14.53	52.51	
R-5 8ft	-16.04	43.41	
R-10 4ft	-15.69	45.52	
R-10 8ft	-18.04	31.36	
Intercept		.000	
Slope(DD)		3146.97	
Curve(DDS)		-29.185	

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-9.99	8.61	
R-11 flr	-21.18	1.34	
R-19 flr	-24.25	-.65	
R-30 flr	-26.22	-1.93	
Intercept		-5.364	
Slope(DD)		4660.51	
Curve(DDS)		-377.503	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	15.10	
R-11 flr	-21.19	1.34	
R-19 flr	-24.77	-.99	
R-30 flr	-26.96	-2.41	
R-38 flr	-27.46	-2.74	
R-49 flr	-28.90	-3.67	
Intercept		-5.857	
Slope(DD)		4421.03	
Curve(DDS)		-65.332	

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.79) .00	.00	14.43	
.0005(.56) -6.50	-8.50	10.21	
.0003(.36) -12.88	-12.88	6.07	
Slope/.001ELF		19.935	
Curve/.001ELF		.974	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00	112.34	
2-Pane	-10.93	53.20	
3-Pane	-14.51	33.83	
R-10	-18.72	11.05	
Slope(DD)		4739.24	
Curve(DDS)		-18.325	

Base Load = 124.39 MBtu
Typical Load = 38.43 MBtu
Residual Load = 1.98 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	7.04	
R-7	-6.38	2.89	
R-11	-7.40	2.23	
R-19	-8.32	1.63	
R-22	-8.70	1.39	
R-30	-9.21	1.05	
R-38	-9.52	.85	
R-49	-9.80	.67	
R-60	-9.98	.55	
Slope(DD)		1544.34	
Curve(DDS)		-60.337	

Wall	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00	3.53	
R-7	-1.90	1.83	
R-11	-2.17	1.59	
R-13	-2.55	1.26	
R-19	-2.74	1.09	
R-27	-3.07	.79	
R-34	-3.27	.62	
Slope(DD)		809.06	
Curve(DDS)		-28.552	

Slab	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-5.92	-7.51	
R-5 2ft	-5.90	-7.39	
R-5 4ft	-5.82	-6.90	
R-10 2ft	-5.89	-7.33	
R-10 4ft	-5.77	-6.60	
Intercept		-4.822	
Slope(DD)		-610.01	
Curve(DDS)		32.284	

Heated Basement	Delta Component (MBtu)	(KBtu)	(/ft)
R-0	-3.30		8.28
R-5 4ft	-4.05		3.76
R-5 8ft	-4.11		3.40
R-10 4ft	-4.25		2.55
R-10 8ft	-4.36		1.69
Intercept			.000
Slope(DD)			160.33
Curve(DDS)			1.035

Unheated Basement	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	-3.30	.89	
R-11 flr	-.78	2.53	
R-19 flr	-.10	2.97	
R-30 flr	.33	3.25	
Intercept		4.002	
Slope(DD)		-1020.56	
Curve(DDS)		80.745	

Crawl	Delta Component (MBtu)	(KBtu)	(/sf)
R-0	.00		3.04
R-11 flr	1.07		3.73
R-19 flr	1.22		3.83
R-30 flr	1.33		3.90
R-38 flr	1.35		3.91
R-49 flr	1.42		3.96
Intercept			4.043
Slope(DD)			-185.43
Curve(DDS)			-2.153

Infiltration ELF Ach	Delta Component (MBtu)	(KBtu)	(/sf flr)
.0007(.48) .00	.00	1.70	
.0005(.34) -.75	-.75	1.22	
.0003(.20) -1.50	-1.50	.73	
Slope/.001ELF		2.435	
Curve/.001ELF		.000	

Window U-value	Delta Component (MBtu)	(KBtu)	(/sf)
1-Pane	.00		2.09
2-Pane	-.21		.95
3-Pane	-.27		.60
R-10	-.35		.19
Slope(DD)			82.23
Curve(DDS)			-.121

Base Load = 27.97 MBtu
Typical Load = 10.70 MBtu
Residual Load = -2.06 MBtu

Washington DC WYEC Mid Town Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	26.71
R-7	-9.85	10.29
R-11	-11.43	7.67
R-19	-12.84	5.31
R-22	-13.34	4.49
R-30	-14.00	3.38
R-38	-14.40	2.71
R-49	-14.74	2.15
R-60	-14.96	1.78
Slope(DD)		4873.24
Curve(DDS)		-61.963

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	22.90
R-7	-5.81	10.70
R-11	-6.64	8.96
R-13	-7.59	6.97
R-19	-8.06	5.98
R-27	-8.86	4.30
R-34	-9.35	3.27
Slope(DD)		4189.69
Curve(DDS)		12.479

Slab		(/ft)
R-0	-7.64	42.29
R-5 2ft	-8.59	18.54
R-5 4ft	-8.83	12.54
R-10 2ft	-8.75	14.54
R-10 4ft	-9.08	6.29
Intercept		-9.712
Slope(DD)		4548.03
Curve(DDS)		-15.253

Heated Basement		(/ft)
R-0	-5.64	92.29
R-5 4ft	-7.15	54.54
R-5 8ft	-7.57	44.04
R-10 4ft	-7.49	46.04
R-10 8ft	-8.08	31.29
Intercept		.000
Slope(DD)		3010.59
Curve(DDS)		-18.390

Unheated Basement		(/sf)
R-0	-5.64	6.15
R-11 flr	-8.30	1.72
R-19 flr	-9.16	.28
R-30 flr	-9.72	-.65
Intercept		-3.202
Slope(DD)		3503.99
Curve(DDS)		-327.586

Crawl		(/sf)
R-0	.00	15.55
R-11 flr	-7.80	2.55
R-19 flr	-9.06	.45
R-30 flr	-9.80	-.78
R-38 flr	-9.97	-1.06
R-49 flr	-10.46	-1.88
Intercept		-3.784
Slope(DD)		3805.52
Curve(DDS)		-6.740

Infiltration ELF	Ach	(/sf flr)
.0007	(.83) .00	12.80
.0005	(.58) -4.95	8.67
.0003	(.36) -9.45	4.92
Slope/.001ELF		15.000
Curve/.001ELF		4.687

Window U-value		(/sf)
1-Pane	.00	96.94
2-Pane	-8.18	40.14
3-Pane	-10.33	25.20
R-10	-12.86	7.64
Slope(DD)		3204.74
Curve(DDS)		17.699

Base Load = 58.80 MBtu
Typical Load = 16.06 MBtu
Residual Load = 1.11 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	6.75
R-7	-2.52	2.56
R-11	-2.92	1.89
R-19	-3.28	1.29
R-22	-3.40	1.09
R-30	-3.55	.83
R-38	-3.65	.67
R-49	-3.74	.52
R-60	-3.80	.42
Slope(DD)		1174.17
Curve(DDS)		-5.901

Wall	Delta Component (MBtu)	(KBtu) (/sf)
R-0	.00	2.76
R-7	-.69	1.30
R-11	-.79	1.10
R-13	-.91	.85
R-19	-.97	.72
R-27	-1.06	.52
R-34	-1.12	.41
Slope(DD)		514.26
Curve(DDS)		-.350

Slab		(/ft)
R-0	-2.16	-16.60
R-5 2ft	-2.12	-15.60
R-5 4ft	-2.09	-14.85
R-10 2ft	-2.12	-15.60
R-10 4ft	-2.06	-14.10
Intercept		-10.939
Slope(DD)		-1071.16
Curve(DDS)		50.073

Heated Basement		(/ft)
R-0	-1.18	7.90
R-5 4ft	-1.36	3.40
R-5 8ft	-1.37	3.15
R-10 4ft	-1.41	2.15
R-10 8ft	-1.43	1.65
Intercept		.000
Slope(DD)		134.18
Curve(DDS)		1.450

Unheated Basement		(/sf)
R-0	-1.18	.53
R-11 flr	-.18	2.19
R-19 flr	.11	2.67
R-30 flr	.29	2.98
Intercept		3.805
Slope(DD)		-1127.32
Curve(DDS)		95.178

Crawl		(/sf)
R-0	.00	2.49
R-11 flr	.67	3.61
R-19 flr	.76	3.76
R-30 flr	.83	3.88
R-38 flr	.85	3.91
R-49 flr	.90	3.99
Intercept		4.125
Slope(DD)		-311.15
Curve(DDS)		-1.370

Infiltration ELF	Ach	(/sf flr)
.0007	(.48) .00	1.35
.0005	(.34) -.50	.93
.0003	(.20) -.97	.54
Slope/.001ELF		1.708
Curve/.001ELF		.312

Window U-value		(/sf)
1-Pane	.00	-4.64
2-Pane	.07	-4.15
3-Pane	.27	-2.75
R-10	.51	-1.10
Slope(DD)		-495.89
Curve(DDS)		12.125

Base Load = 18.67 MBtu
Typical Load = 12.26 MBtu
Residual Load = 5.05 MBtu

Washington DC WYEC MApartment Prototype Siding Series Two

Heating Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	26.00
R-7	-9.65	9.92
R-11	-11.19	7.35
R-19	-12.57	5.04
R-22	-13.05	4.25
R-30	-13.69	3.19
R-38	-14.07	2.55
R-49	-14.38	2.03
R-60	-14.58	1.69
Slope(DD)	4593.79	
Curve(DDS)	-35.121	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	23.11
R-7	-3.96	10.63
R-11	-4.52	8.85
R-13	-5.15	6.86
R-19	-5.47	5.87
R-27	-5.99	4.22
R-34	-6.31	3.21
Slope(DD)	4076.50	
Curve(DDS)	40.965	

Slab		(/ft)
R-0	-8.39	54.52
R-5 2ft	-9.13	29.52
R-5 4ft	-9.33	22.85
R-10 2ft	-9.26	25.19
R-10 4ft	-9.54	16.02
Intercept	-2.191	
Slope(DD)	5257.64	
Curve(DDS)	-41.616	

Heated Basement		(/ft)
R-0	-6.73	109.69
R-5 4ft	-8.10	64.02
R-5 8ft	-8.47	51.52
R-10 4ft	-8.41	53.69
R-10 8ft	-8.92	36.52
Intercept	.000	
Slope(DD)	3490.64	
Curve(DDS)	-19.712	

Unheated Basement		(/sf)
R-0	-6.73	5.48
R-11 flr	-8.90	1.87
R-19 flr	-9.66	.59
R-30 flr	-10.15	-.22
Intercept	-2.508	
Slope(DD)	3145.91	
Curve(DDS)	-309.562	

Crawl		(/sf)
R-0	.00	16.70
R-11 flr	-8.04	3.30
R-19 flr	-9.33	1.14
R-30 flr	-10.10	-.13
R-38 flr	-10.27	-.42
R-49 flr	-10.78	-1.26
Intercept	-3.223	
Slope(DD)	3918.12	
Curve(DDS)	-6.356	

Infiltration ELF Ach		(/sf flr)
.0007(.83)	.00	12.69
.0005(.58)	-4.92	8.60
.0003(.35)	-9.38	4.88
Slope/.001ELF	14.854	
Curve/.001ELF	4.688	

Window U-value		(/sf)
1-Pane	.00	96.07
2-Pane	-8.31	38.40
3-Pane	-10.38	24.02
R-10	-12.81	7.11
Slope(DD)	2964.96	
Curve(DDS)	25.537	

Base Load = 55.40 MBtu
Typical Load = 14.55 MBtu
Residual Load = 1.28 MBtu

Cooling Load

Ceiling	Delta Component (MBtu)	(/sf)
R-0	.00	6.24
R-7	-2.39	2.26
R-11	-2.77	1.62
R-19	-3.11	1.05
R-22	-3.22	.87
R-30	-3.38	.64
R-38	-3.44	.49
R-49	-3.49	.41
R-60	-3.53	.36
Slope(DD)	918.63	
Curve(DDS)	22.452	

Wall	Delta Component (MBtu)	(/sf)
R-0	.00	2.46
R-7	-.46	.99
R-11	-.53	.78
R-13	-.60	.56
R-19	-.64	.45
R-27	-.67	.34
R-34	-.69	.26
Slope(DD)	297.48	
Curve(DDS)	29.602	

Slab		(/ft)
R-0	-1.77	-16.00
R-5 2ft	-1.74	-15.17
R-5 4ft	-1.71	-14.00
R-10 2ft	-1.73	-14.67
R-10 4ft	-1.69	-13.33
Intercept	-9.664	
Slope(DD)	-1212.12	
Curve(DDS)	57.039	

Heated Basement		(/ft)
R-0	-1.04	8.17
R-5 4ft	-1.18	3.50
R-5 8ft	-1.19	3.17
R-10 4ft	-1.23	2.00
R-10 8ft	-1.24	1.67
Intercept	.000	
Slope(DD)	128.66	
Curve(DDS)	1.746	

Unheated Basement		(/sf)
R-0	-1.04	.41
R-11 flr	-.19	1.83
R-19 flr	.06	2.23
R-30 flr	.21	2.49
Intercept	3.185	
Slope(DD)	-943.48	
Curve(DDS)	78.376	

Crawl		(/sf)
R-0	.00	2.14
R-11 flr	.63	3.20
R-19 flr	.74	3.37
R-30 flr	.82	3.50
R-38 flr	.84	3.53
R-49 flr	.89	3.62
Intercept	3.790	
Slope(DD)	-373.34	
Curve(DDS)	10.134	

Infiltration ELF Ach		(/sf flr)
.0007(.48)	.00	1.44
.0005(.34)	-.47	1.05
.0003(.20)	-.96	.64
Slope/.001ELF	2.208	
Curve/.001ELF	-.208	

Window U-value		(/sf)
1-Pane	.00	-3.89
2-Pane	.05	-3.55
3-Pane	.22	-2.35
R-10	.42	-.94
Slope(DD)	-425.32	
Curve(DDS)	10.524	

Base Load = 16.97 MBtu
Typical Load = 11.29 MBtu
Residual Load = 4.18 MBtu

Tables for Mass Walls and WIndow Solar Gain Measures

Section 3.B contain tables of insulation measures in mass walls and window solar gain measures for the one-story prototype building in 45 base locations. For each mass wall measure, the tables show the Δ load in MBtu, and the component load in kBtu normalized by ft^2 *relative to the R-0 wood frame wall.* Following the Δ and component loads, the tables give quadratic regression coefficients for the mass walls, with the linear coefficient listed as "Slope", the quadratic coefficient as "Curve", and the intercept relative to the wood-frame wall as "Intercept".

For window solar gain, the tables give first the Δ loads for 184.8 ft^2 of double and triple-pane windows of average orientation relative to single-pane due to changes in shading coefficients. These Δ loads should be added to the Δ loads for window U-values in Section 3.A to derive the net changes in building loads. Component loads are not shown since they will vary depending on the total amount of solar gain, as explained in Section 2.E. Following the Δ loads, the tables give the coefficients for each cardinal orientation (α), and a fifth coefficient for solar usability (β) based on Equation 11. The units for the α's are kBtu/ft^2, the β's are dimensionless. The intercepts from the regressions are not used.

Albuquerque NM One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	3.57	20.81
R-5	-10.95	7.88
R-10	-15.97	3.42
R-15	-18.11	1.51
R-30	-20.50	-.61
Intercept		-.973
Slope(DD)		3400.08
Curve(DDS)		-3.063
120 lb Mass Wall		
R-0	2.98	20.28
R-5	-11.22	7.64
R-10	-16.15	3.26
R-15	-18.27	1.37
R-30	-20.64	-.74
Intercept		-1.071
Slope(DD)		3373.34
Curve(DDS)		-7.793
Log Mass Wall		
4in	-5.92	12.36
6in	-11.65	7.26
8in	-14.48	4.74
10in	-16.05	3.35
12in	-17.06	2.45
Intercept		.357
Slope(DD)		2419.12
Curve(DDS)		250.334

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.98	1.95
R-5	-4.44	-.23
R-10	-5.13	-.85
R-15	-5.40	-1.09
R-30	-5.75	-1.40
Intercept		-1.229
Slope(DD)		397.76
Curve(DDS)		16.309
120 lb Mass Wall		
R-0	-2.59	1.41
R-5	-4.70	-.47
R-10	-5.36	-1.05
R-15	-5.61	-1.28
R-30	-5.93	-1.56
Intercept		-1.397
Slope(DD)		400.30
Curve(DDS)		8.523
Log Mass Wall		
4in	-1.81	2.11
6in	-3.59	.52
8in	-4.19	-.01
10in	-4.33	-.14
12in	-4.36	-.16
Intercept		.918
Slope(DD)		-898.60
Curve(DDS)		316.032

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00	
2-Pane	.83	2-Pane	-.67	
3-Pane	1.55	3-Pane	-1.22	

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-33.562	-74.079	-127.970	-64.114	.013047	-.058493
Cooling	19.923	41.398	30.058	46.376	.013036	-.058951

Atlanta GA One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	-1.25	14.13	-4.35	-.65
R-5	-12.72	3.93	-6.56	-2.62
R-10	-16.72	.37	-7.25	-3.23
R-15	-18.44	-1.16	-7.52	-3.47
R-30	-20.47	-2.97	-7.89	-3.80
Intercept	-3.141		-3.719	
Slope(DD)	2805.20		444.17	
Curve(DDS)	-14.653		6.287	
120 lb Mass Wall				
R-0	-1.62	13.80	-4.79	-1.04
R-5	-12.91	3.76	-6.86	-2.88
R-10	-16.86	.24	-7.46	-3.42
R-15	-18.56	-1.27	-7.71	-3.64
R-30	-20.57	-3.06	-8.07	-3.96
Intercept	-3.210		-3.834	
Slope(DD)	2779.39		397.94	
Curve(DDS)	-16.193		7.285	
Log Mass Wall				
4in	-8.96	7.27	-4.54	-.82
6in	-13.31	3.40	-5.90	-2.03
8in	-15.53	1.43	-6.52	-2.58
10in	-16.81	.29	-6.75	-2.79
12in	-17.65	-.46	-6.85	-2.87
Intercept	-2.315		-2.741	
Slope(DD)	2258.23		-78.25	
Curve(DDS)	129.145		156.564	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.57	2-Pane	-.73
3-Pane	1.08	3-Pane	-1.33

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-30.880	-50.604	-77.435	-46.923	.018499	-.073908
Cooling	30.841	49.814	42.056	53.453	-.001343	-.023132

Birmingham AL One Story Prototype Mass and Window runs

Heating Load	Delta (MBtu)	Component (KBtu)
95 lb Mass Wall		
R-0	2.55	14.86
R-5	-7.49	5.93
R-10	-11.04	2.77
R-15	-12.56	1.41
R-30	-14.39	-.21
Intercept		-.496
Slope(DD)		2520.83
Curve(DDS)		-19.197
120 lb Mass Wall		
R-0	2.18	14.53
R-5	-7.66	5.78
R-10	-11.16	2.66
R-15	-12.66	1.33
R-30	-14.48	-.29
Intercept		-.559
Slope(DD)		2503.51
Curve(DDS)		-22.049
Log Mass Wall		
4in	-4.09	8.95
6in	-8.04	5.44
8in	-10.01	3.68
10in	-11.14	2.68
12in	-11.87	2.03
Intercept		.415
Slope(DD)		1863.08
Curve(DDS)		143.745

Cooling Load	Delta (MBtu)	Component (KBtu)
95 lb Mass Wall		
R-0	-.70	3.41
R-5	-3.78	.67
R-10	-4.79	-.23
R-15	-5.19	-.59
R-30	-5.74	-1.08
Intercept		-1.064
Slope(DD)		680.00
Curve(DDS)		2.898
120 lb Mass Wall		
R-0	-1.07	3.08
R-5	-4.02	.45
R-10	-4.99	-.41
R-15	-5.42	-.79
R-30	-5.98	-1.29
Intercept		-1.288
Slope(DD)		704.31
Curve(DDS)		-2.655
Log Mass Wall		
4in	-1.58	2.62
6in	-3.18	1.20
8in	-3.90	.56
10in	-4.22	.28
12in	-4.37	.14
Intercept		.142
Slope(DD)		73.13
Curve(DDS)		158.678

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.55	2-Pane	-.86
3-Pane	1.04	3-Pane	-1.57

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-30.264	-57.613	-74.012	-39.414	.019566	-.010262
Cooling	37.149	73.280	48.872	45.048	-.000148	-.051870

Bismarck ND One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	7.60	48.57	-1.76	.36
R-5	-22.35	21.92	-3.00	-.75
R-10	-34.23	11.35	-3.25	-.97
R-15	-39.40	6.75	-3.34	-1.05
R-30	-45.87	.99	-3.44	-1.14
Intercept		-.479		-.961
Slope(DD)		9202.32		74.53
Curve(DDS)		-219.660		20.372
120 lb Mass Wall				
R-0	7.20	48.22	-2.28	-.11
R-5	-22.56	21.73	-3.26	-.98
R-10	-34.38	11.21	-3.44	-1.14
R-15	-39.54	6.62	-3.51	-1.20
R-30	-45.98	.89	-3.64	-1.32
Intercept		-.557		-1.123
Slope(DD)		9174.09		78.17
Curve(DDS)		-221.212		13.836
Log Mass Wall				
4in	-13.60	29.71	-1.19	.86
6in	-25.06	19.51	-2.25	-.08
8in	-31.28	13.97	-2.58	-.37
10in	-35.10	10.57	-2.62	-.41
12in	-37.70	8.26	-2.60	-.39
Intercept		1.008		.452
Slope(DD)		8129.08		-737.40
Curve(DDS)		25.402		217.752

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.28	2-Pane	-.42
3-Pane	2.37	3-Pane	-.76

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-49.936	-95.548	-162.236	-85.817	.006586	-.252503
Cooling	7.328	14.581	14.520	16.528	.194447	-.062182

Boise ID One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)	Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall			95 lb Mass Wall		
R-0	7.03	33.76	R-0	-1.95	1.08
R-5	-15.29	13.90	R-5	-3.82	-.58
R-10	-23.25	6.81	R-10	-4.32	-1.03
R-15	-26.68	3.76	R-15	-4.50	-1.19
R-30	-30.82	.08	R-30	-4.70	-1.36
Intercept		-.684	Intercept		-1.200
Slope(DD)		5715.33	Slope(DD)		234.48
Curve(DDS)		-53.571	Curve(DDS)		19.264
120 lb Mass Wall			120 lb Mass Wall		
R-0	6.51	33.30	R-0	-2.54	.56
R-5	-15.52	13.69	R-5	-4.18	-.90
R-10	-23.43	6.65	R-10	-4.58	-1.26
R-15	-26.83	3.63	R-15	-4.75	-1.41
R-30	-30.94	-.03	R-30	-4.93	-1.57
Intercept		-.776	Intercept		-1.368
Slope(DD)		5692.28	Slope(DD)		196.97
Curve(DDS)		-57.676	Curve(DDS)		17.437
Log Mass Wall			Log Mass Wall		
4in	-8.54	19.90	4in	-1.54	1.45
6in	-16.87	12.49	6in	-2.95	.19
8in	-21.12	8.71	8in	-3.45	-.25
10in	-23.66	6.45	10in	-3.56	-.35
12in	-25.35	4.94	12in	-3.56	-.35
Intercept		.781	Intercept		.503
Slope(DD)		4683.76	Slope(DD)		-732.26
Curve(DDS)		192.445	Curve(DDS)		254.814

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.08	2-Pane	-.54
3-Pane	2.02	3-Pane	-.97

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-50.481	-89.441	-152.201	-83.052	.009550	-.159518
Cooling	12.197	24.945	23.671	32.459	.044875	-.034589

Boston MA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	8.65	36.22
R-5	-14.79	15.36
R-10	-23.16	7.91
R-15	-26.77	4.70
R-30	-31.17	.78
Intercept		-.078
Slope(DD)		6042.90
Curve(DDS)		-60.464
120 lb Mass Wall		
R-0	8.37	35.97
R-5	-14.94	15.23
R-10	-23.29	7.79
R-15	-26.87	4.61
R-30	-31.26	.70
Intercept		-.144
Slope(DD)		6024.20
Curve(DDS)		-61.453
Log Mass Wall		
4in	-8.50	20.96
6in	-16.70	13.66
8in	-21.08	9.76
10in	-23.81	7.33
12in	-25.66	5.69
Intercept		.462
Slope(DD)		5711.69
Curve(DDS)		30.934

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.13	.47
R-5	-2.23	-.51
R-10	-2.51	-.76
R-15	-2.61	-.85
R-30	-2.75	-.97
Intercept		-.892
Slope(DD)		139.33
Curve(DDS)		10.996
120 lb Mass Wall		
R-0	-1.52	.12
R-5	-2.45	-.71
R-10	-2.69	-.92
R-15	-2.78	-1.00
R-30	-2.90	-1.11
Intercept		-1.015
Slope(DD)		124.22
Curve(DDS)		8.671
Log Mass Wall		
4in	-.78	.78
6in	-1.55	.09
8in	-1.91	-.23
10in	-2.01	-.32
12in	-2.05	-.35
Intercept		-.216
Slope(DD)		-135.91
Curve(DDS)		102.936

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.98	2-Pane	-.44
3-Pane	1.82	3-Pane	-.80

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-43.297	-72.903	-121.598	-69.021	.008890	-.098387
Cooling	13.035	21.663	20.109	22.291	.051927	-.084028

Brownsville TX One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.12	3.17
R-5	-3.00	.61
R-10	-3.85	-.15
R-15	-4.21	-.47
R-30	-4.52	-.74
Intercept		-.710
Slope(DD)		461.04
Curve(DDS)		20.259
120 lb Mass Wall		
R-0	-.44	2.89
R-5	-3.14	.48
R-10	-3.96	-.25
R-15	-4.30	-.55
R-30	-4.60	-.81
Intercept		-.773
Slope(DD)		451.18
Curve(DDS)		17.241
Log Mass Wall		
4in	-1.51	1.93
6in	-2.87	.72
8in	-3.47	.19
10in	-3.76	-.07
12in	-3.95	-.24
Intercept		-.408
Slope(DD)		210.06
Curve(DDS)		111.361

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.55	5.55
R-5	-3.94	1.55
R-10	-5.59	.08
R-15	-6.24	-.50
R-30	-7.01	-1.18
Intercept		-1.391
Slope(DD)		1110.99
Curve(DDS)		-6.258
120 lb Mass Wall		
R-0	.36	5.38
R-5	-4.17	1.35
R-10	-5.78	-.09
R-15	-6.47	-.70
R-30	-7.26	-1.40
Intercept		-1.611
Slope(DD)		1124.18
Curve(DDS)		-7.138
Log Mass Wall		
4in	-1.87	3.39
6in	-3.47	1.97
8in	-4.47	1.08
10in	-5.06	.55
12in	-5.45	.21
Intercept		-1.315
Slope(DD)		1461.57
Curve(DDS)		-39.888

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.09	2-Pane	-1.42
3-Pane	.17	3-Pane	-2.60

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-5.990	-8.407	-9.858	-7.927	.116016	-.034475
Cooling	60.084	105.905	87.728	101.020	-.001616	-.033090

Buffalo NY One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	9.67	41.19	-.98	.22
R-5	-16.84	17.60	-1.74	-.45
R-10	-26.43	9.07	-1.92	-.61
R-15	-30.55	5.40	-1.99	-.68
R-30	-35.60	.91	-2.08	-.76
Intercept		-.121		-.683
Slope(DD)		6965.89		86.16
Curve(DDS)		-80.873		8.529
120 lb Mass Wall				
R-0	9.37	40.93	-1.25	-.02
R-5	-17.01	17.45	-1.90	-.60
R-10	-26.55	8.96	-2.05	-.73
R-15	-30.66	5.30	-2.11	-.78
R-30	-35.69	.83	-2.18	-.85
Intercept		-.180		-.760
Slope(DD)		6940.05		67.77
Curve(DDS)		-81.352		7.882
Log Mass Wall				
4in	-9.70	23.95	-.59	.57
6in	-19.10	15.59	-1.24	-.01
8in	-24.11	11.13	-1.47	-.21
10in	-27.21	8.37	-1.52	-.26
12in	-29.31	6.50	-1.54	-.28
Intercept		.642		.056
Slope(DD)		6427.48		-301.46
Curve(DDS)		53.210		111.759

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.89	2-Pane	-.32
3-Pane	1.65	3-Pane	-.57

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-46.267	-69.270	-99.603	-65.537	.009967	-.109060
Cooling	5.990	9.563	8.931	10.775	.368728	-.077150

Burlington VT One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	10.53	45.34	-1.14	.22
R-5	-18.58	19.44	-1.87	-.43
R-10	-29.16	10.02	-2.06	-.59
R-15	-33.73	5.96	-2.13	-.66
R-30	-39.31	.99	-2.25	-.76
Intercept		-.169		-.684
Slope(DD)		7726.31		112.61
Curve(DDS)		-96.298		5.208
120 lb Mass Wall				
R-0	10.17	45.02	-1.43	-.03
R-5	-18.77	19.27	-2.03	-.57
R-10	-29.31	9.89	-2.19	-.71
R-15	-33.85	5.85	-2.26	-.77
R-30	-39.42	.89	-2.31	-.82
Intercept		-.247		-.728
Slope(DD)		7702.96		75.47
Curve(DDS)		-97.826		6.204
Log Mass Wall				
4in	-10.63	26.51	-.71	.61
6in	-21.01	17.27	-1.37	.02
8in	-26.56	12.34	-1.62	-.20
10in	-29.99	9.28	-1.66	-.24
12in	-32.30	7.23	-1.68	-.26
Intercept		.725		.101
Slope(DD)		7115.79		-313.41
Curve(DDS)		56.936		115.280

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.13	2-Pane	-.29
3-Pane	2.10	3-Pane	-.51

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-49.588	-83.416	-139.473	-78.363	.007492	-.184208
Cooling	4.186	7.359	6.876	8.804	.629224	-.083819

Charleston SC One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta (MBtu)	Component (KBtu)	Delta (MBtu)	Component (KBtu)
95 lb Mass Wall				
R-0	1.63	12.35	-.98	2.60
R-5	-7.56	4.17	-4.30	-.36
R-10	-10.75	1.34	-5.40	-1.33
R-15	-12.12	.12	-5.86	-1.74
R-30	-13.59	-1.19	-6.22	-2.06
Intercept	-1.461		-2.152	
Slope(DD)	2145.01		626.03	
Curve(DDS)	-.982		14.810	
120 lb Mass Wall				
R-0	1.16	11.93	-1.48	2.15
R-5	-7.79	3.97	-4.59	-.61
R-10	-10.93	1.18	-5.69	-1.59
R-15	-12.27	-.02	-6.11	-1.97
R-30	-13.72	-1.31	-6.45	-2.27
Intercept	-1.558		-2.356	
Slope(DD)	2120.61		616.13	
Curve(DDS)	-3.930		11.442	
Log Mass Wall				
4in	-4.02	7.32	-1.86	1.82
6in	-7.83	3.93	-3.49	.37
8in	-9.67	2.30	-4.27	-.33
10in	-10.67	1.41	-4.64	-.66
12in	-11.32	.83	-4.85	-.84
Intercept	-.435		-1.228	
Slope(DD)	1420.43		336.34	
Curve(DDS)	193.019		123.753	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.40	2-Pane	-1.08
3-Pane	.75	3-Pane	-1.99

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-23.186	-39.311	-63.359	-34.691	.028733	-.048477
Cooling	46.223	76.092	68.165	70.553	-.000637	-.012741

Cheyenne WY One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	9.28	43.79	-1.55	-.23
R-5	-19.46	18.22	-2.13	-.74
R-10	-29.71	9.09	-2.21	-.82
R-15	-34.11	5.18	-2.24	-.84
R-30	-39.47	.41	-2.26	-.86
Intercept		-.550		-.716
Slope(DD)		7364.60		-7.81
Curve(DDS)		-69.619		13.617
120 lb Mass Wall				
R-0	8.70	43.28	-1.88	-.52
R-5	-19.72	17.98	-2.27	-.87
R-10	-29.92	8.91	-2.33	-.92
R-15	-34.29	5.02	-2.35	-.94
R-30	-39.61	.28	-2.35	-.94
Intercept		-.662		-.799
Slope(DD)		7339.98		-9.86
Curve(DDS)		-74.163		9.718
Log Mass Wall				
4in	-11.00	25.74	-.87	.38
6in	-21.53	16.37	-1.59	-.26
8in	-27.00	11.51	-1.75	-.41
10in	-30.28	8.59	-1.74	-.40
12in	-32.47	6.64	-1.70	-.36
Intercept		1.024		.446
Slope(DD)		6289.74		-707.48
Curve(DDS)		191.654		176.345

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.56	2-Pane	-.30
3-Pane	2.91	3-Pane	-.53

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-57.741	-124.361	-215.669	-116.245	.006116	-.089002
Cooling	2.464	4.976	4.187	5.280	2.138813	-.053984

Chicago IL One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	8.72	36.99	-1.47	1.02
R-5	-15.37	15.55	-3.19	-.51
R-10	-23.98	7.89	-3.63	-.90
R-15	-27.67	4.61	-3.80	-1.05
R-30	-32.17	.60	-4.03	-1.26
Intercept		-.282		-1.139
Slope(DD)		6187.95		234.83
Curve(DDS)		-59.731		15.464
120 lb Mass Wall				
R-0	8.39	36.70	-1.96	.58
R-5	-15.56	15.38	-3.48	-.77
R-10	-24.12	7.77	-3.87	-1.12
R-15	-27.80	4.49	-4.03	-1.26
R-30	-32.29	.50	-4.24	-1.45
Intercept		-.370		-1.313
Slope(DD)		6169.21		218.78
Curve(DDS)		-61.173		12.519
Log Mass Wall				
4in	-8.76	21.44	-1.22	1.24
6in	-17.28	13.85	-2.39	.20
8in	-21.83	9.80	-2.86	-.22
10in	-24.64	7.30	-3.02	-.36
12in	-26.54	5.61	-3.08	-.41
Intercept		.254		-.101
Slope(DD)		5830.35		-274.04
Curve(DDS)		47.968		163.176

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.04	2-Pane	-.57
3-Pane	1.94	3-Pane	-1.04

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-37.613	-74.980	-139.005	-69.295	.008024	-.072823
Cooling	17.544	31.802	28.050	34.602	.021287	-.090338

Cincinnati OH One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	7.20	31.19
R-5	-13.13	13.10
R-10	-20.43	6.60
R-15	-23.56	3.82
R-30	-27.34	.45
Intercept		-.305
Slope(DD)		5240.57
Curve(DDS)		-51.925
120 lb Mass Wall		
R-0	6.91	30.93
R-5	-13.27	12.97
R-10	-20.53	6.51
R-15	-23.65	3.74
R-30	-27.42	.38
Intercept		-.365
Slope(DD)		5228.36
Curve(DDS)		-54.154
Log Mass Wall		
4in	-7.51	18.10
6in	-14.77	11.64
8in	-18.60	8.23
10in	-20.96	6.13
12in	-22.55	4.71
Intercept		.358
Slope(DD)		4781.17
Curve(DDS)		67.164

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.65	1.14
R-5	-3.43	-.44
R-10	-3.88	-.84
R-15	-4.07	-1.01
R-30	-4.34	-1.25
Intercept		-1.109
Slope(DD)		268.34
Curve(DDS)		13.299
120 lb Mass Wall		
R-0	-2.18	.67
R-5	-3.71	-.69
R-10	-4.12	-1.06
R-15	-4.29	-1.21
R-30	-4.52	-1.41
Intercept		-1.260
Slope(DD)		246.03
Curve(DDS)		10.080
Log Mass Wall		
4in	-1.31	1.45
6in	-2.60	.30
8in	-3.09	-.14
10in	-3.20	-.24
12in	-3.23	-.26
Intercept		.386
Slope(DD)		-555.20
Curve(DDS)		216.966

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.78	2-Pane	-.59
3-Pane	1.45	3-Pane	-1.08

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-37.151	-58.246	-99.364	-54.128	.011555	-.075737
Cooling	20.686	35.141	30.700	36.795	.012903	-.062128

Denver CO One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	6.45	34.08	-2.73	.21
R-5	-16.30	13.84	-4.18	-1.09
R-10	-29.33	2.24	-.83	1.90
R-15	-27.81	3.60	-4.57	-1.43
R-30	-31.97	-.11	-4.68	-1.53
Intercept		-.807		-1.251
Slope(DD)		4815.36		749.57
Curve(DDS)		87.283		-72.467
120 lb Mass Wall				
R-0	5.75	33.46	-3.40	-.39
R-5	-16.60	13.57	-4.49	-1.36
R-10	-24.56	6.49	-4.70	-1.55
R-15	-28.00	3.43	-4.79	-1.63
R-30	-32.12	-.24	-4.90	-1.73
Intercept		-.896		-1.455
Slope(DD)		5706.74		80.72
Curve(DDS)		-52.001		16.219
Log Mass Wall				
4in	-8.98	20.35	-1.74	1.09
6in	-17.70	12.59	-3.16	-.18
8in	-22.10	8.68	-3.54	-.52
10in	-24.65	6.41	-3.55	-.52
12in	-26.33	4.91	-3.49	-.47
Intercept		1.051		.949
Slope(DD)		4427.88		-1219.97
Curve(DDS)		271.532		324.141

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	1.29	2-Pane	-.51
3-Pane	2.42	3-Pane	-.92

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-50.000	-112.636	-195.523	-98.823	.008103	-.104505
Cooling	10.611	21.240	17.380	23.263	.106055	-.108635

El Paso TX One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta (MBtu)	Component (KBtu)	Delta (MBtu)	Component (KBtu)
95 lb Mass Wall				
R-0	1.61	12.17	-.51	4.29
R-5	-7.62	3.95	-4.19	1.02
R-10	-10.75	1.17	-5.42	-.08
R-15	-12.08	-.02	-5.95	-.55
R-30	-13.39	-1.18	-6.60	-1.13
Intercept	-1.397		-1.158	
Slope(DD)	1989.41		856.65	
Curve(DDS)	15.602		-.769	
120 lb Mass Wall				
R-0	1.13	11.74	-.91	3.94
R-5	-7.82	3.77	-4.45	.79
R-10	-10.90	1.03	-5.64	-.27
R-15	-12.21	-.13	-6.14	-.72
R-30	-13.52	-1.30	-6.77	-1.28
Intercept	-1.505		-1.284	
Slope(DD)	1989.01		823.39	
Curve(DDS)	9.322		-.633	
Log Mass Wall				
4in	-4.09	7.09	-1.97	2.99
6in	-7.93	3.68	-3.70	1.45
8in	-9.70	2.10	-4.44	.80
10in	-10.64	1.26	-4.84	.44
12in	-11.24	.73	-5.01	.29
Intercept	-.148		.231	
Slope(DD)	1077.01		176.14	
Curve(DDS)	244.600		155.328	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.51	2-Pane	-.90
3-Pane	.97	3-Pane	-1.66

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-26.763	-56.073	-86.146	-46.612	.022735	-.141425
Cooling	29.775	62.588	44.411	65.974	.003441	-.017241

Fort Worth TX One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	2.57	13.76
R-5	-7.15	5.11
R-10	-10.50	2.13
R-15	-11.91	.88
R-30	-13.49	-.53
Intercept		-.789
Slope(DD)		2243.59
Curve(DDS)		1.204
120 lb Mass Wall		
R-0	2.19	13.43
R-5	-7.35	4.94
R-10	-10.63	2.02
R-15	-12.03	.77
R-30	-13.60	-.63
Intercept		-.863
Slope(DD)		2220.20
Curve(DDS)		-.778
Log Mass Wall		
4in	-3.86	8.04
6in	-7.59	4.72
8in	-9.46	3.06
10in	-10.53	2.11
12in	-11.22	1.49
Intercept		-.109
Slope(DD)		1778.18
Curve(DDS)		133.331

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.51	4.96
R-5	-3.28	1.58
R-10	-4.63	.38
R-15	-5.21	-.13
R-30	-5.90	-.75
Intercept		-.895
Slope(DD)		960.55
Curve(DDS)		-8.064
120 lb Mass Wall		
R-0	.27	4.74
R-5	-3.49	1.40
R-10	-4.84	.19
R-15	-5.40	-.30
R-30	-6.12	-.94
Intercept		-1.087
Slope(DD)		967.92
Curve(DDS)		-9.546
Log Mass Wall		
4in	-1.53	3.14
6in	-2.96	1.87
8in	-3.80	1.12
10in	-4.28	.69
12in	-4.58	.43
Intercept		-.627
Slope(DD)		1045.43
Curve(DDS)		1.657

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.46	2-Pane	-.88
3-Pane	.86	3-Pane	-1.62

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-23.915	-40.238	-66.500	-37.520	.023757	-.039180
Cooling	34.790	60.086	48.659	66.413	-.000001	-.006814

Fresno CA One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta (MBtu)	Component (KBtu)	Delta (MBtu)	Component (KBtu)
95 lb Mass Wall				
R-0	1.32	13.92	-2.35	3.74
R-5	-8.79	4.93	-6.13	.38
R-10	-12.22	1.88	-7.31	-.67
R-15	-13.69	.57	-7.76	-1.07
R-30	-15.32	-.88	-8.35	-1.60
Intercept		-1.025		-1.407
Slope(DD)		2300.44		726.94
Curve(DDS)		4.195		14.203
120 lb Mass Wall				
R-0	.66	13.34	-3.15	3.03
R-5	-9.07	4.68	-6.60	-.04
R-10	-12.42	1.70	-7.62	-.95
R-15	-13.85	.42	-8.04	-1.32
R-30	-15.47	-1.02	-8.59	-1.81
Intercept		-1.134		-1.550
Slope(DD)		2278.97		647.27
Curve(DDS)		-2.286		14.088
Log Mass Wall				
4in	-4.62	8.64	-2.70	3.43
6in	-9.04	4.71	-5.15	1.25
8in	-11.07	2.90	-6.09	.41
10in	-12.12	1.96	-6.36	.17
12in	-12.77	1.39	-6.44	.10
Intercept		.603		1.215
Slope(DD)		1080.35		-859.40
Curve(DDS)		305.596		383.050

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.50	2-Pane	-.87
3-Pane	.95	3-Pane	-1.60

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-26.710	-43.924	-73.966	-42.690	.021732	-.089236
Cooling	25.952	52.789	45.688	63.406	.006371	-.032326

Great Falls MT One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	7.85	44.01
R-5	-19.95	19.27
R-10	-30.58	9.81
R-15	-35.19	5.71
R-30	-40.88	.64
Intercept		-.591
Slope(DD)		8026.11
Curve(DDS)		-154.120
120 lb Mass Wall		
R-0	7.38	43.59
R-5	-20.20	19.04
R-10	-30.78	9.63
R-15	-35.37	5.54
R-30	-41.04	.50
Intercept		-.717
Slope(DD)		8005.86
Curve(DDS)		-157.062
Log Mass Wall		
4in	-11.63	26.67
6in	-22.18	17.28
8in	-27.81	12.27
10in	-31.26	9.20
12in	-33.57	7.15
Intercept		.786
Slope(DD)		7064.56
Curve(DDS)		82.984

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.49	-.04
R-5	-2.24	-.71
R-10	-2.38	-.83
R-15	-2.43	-.87
R-30	-2.48	-.92
Intercept		-.786
Slope(DD)		30.25
Curve(DDS)		13.760
120 lb Mass Wall		
R-0	-1.85	-.36
R-5	-2.42	-.87
R-10	-2.52	-.95
R-15	-2.56	-.99
R-30	-2.60	-1.03
Intercept		-.884
Slope(DD)		22.24
Curve(DDS)		10.474
Log Mass Wall		
4in	-.89	.50
6in	-1.65	-.18
8in	-1.88	-.39
10in	-1.89	-.39
12in	-1.87	-.38
Intercept		.291
Slope(DD)		-589.79
Curve(DDS)		165.030

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.27	2-Pane	-.32
3-Pane	2.36	3-Pane	-.57

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-55.712	-104.291	-172.592	-92.364	.007778	-.203081
Cooling	3.161	6.517	7.467	8.081	.908638	-.023047

Honolulu HI One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	-.07	.01	-.71	1.11
R-5	-.11	-.03	-2.96	-.89
R-10	-.11	-.03	-3.78	-1.62
R-15	-.11	-.03	-4.18	-1.98
R-30	-.11	-.03	-4.34	-2.12
Intercept	-.013		-2.334	
Slope(DD)	-5.60		476.17	
Curve(DDS)	1.408		5.721	
120 lb Mass Wall				
R-0	-.09	-.01	-.98	.87
R-5	-.11	-.03	-3.27	-1.17
R-10	-.11	-.03	-4.17	-1.97
R-15	-.11	-.03	-4.43	-2.20
R-30	-.11	-.03	-4.52	-2.28
Intercept	-.015		-2.450	
Slope(DD)	-2.80		374.01	
Curve(DDS)	.704		17.747	
Log Mass Wall				
4in	-.06	.02	-1.21	.66
6in	-.10	-.02	-2.21	-.23
8in	-.11	-.03	-2.81	-.76
10in	-.11	-.03	-3.18	-1.09
12in	-.11	-.03	-3.32	-1.21
Intercept	.012		-2.103	
Slope(DD)	-32.55		690.35	
Curve(DDS)	8.804		8.839	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.00	2-Pane	-1.74
3-Pane	.00	3-Pane	-3.21

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-.046	-.071	-.090	-.071	-13.709700	-.000957
Cooling	76.444	155.997	125.618	107.318	-.002716	.086398

Jacksonville FL One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.89	7.56
R-5	-4.86	2.45
R-10	-6.79	.73
R-15	-7.60	.01
R-30	-8.45	-.75
Intercept		-.854
Slope(DD)		1235.54
Curve(DDS)		9.819
120 lb Mass Wall		
R-0	.54	7.25
R-5	-5.03	2.30
R-10	-6.92	.61
R-15	-7.71	-.09
R-30	-8.54	-.83
Intercept		-.919
Slope(DD)		1214.85
Curve(DDS)		7.845
Log Mass Wall		
4in	-2.56	4.49
6in	-4.96	2.36
8in	-6.12	1.33
10in	-6.75	.76
12in	-7.14	.42
Intercept		-.353
Slope(DD)		858.67
Curve(DDS)		127.305

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.68	2.90
R-5	-3.64	.27
R-10	-4.60	-.59
R-15	-5.06	-1.00
R-30	-5.58	-1.46
Intercept		-1.526
Slope(DD)		695.88
Curve(DDS)		-1.535
120 lb Mass Wall		
R-0	-1.04	2.58
R-5	-3.83	.10
R-10	-4.84	-.80
R-15	-5.24	-1.16
R-30	-5.75	-1.61
Intercept		-1.690
Slope(DD)		697.78
Curve(DDS)		-4.874
Log Mass Wall		
4in	-1.65	2.04
6in	-3.01	.83
8in	-3.62	.28
10in	-3.95	-.01
12in	-4.19	-.22
Intercept		-.590
Slope(DD)		408.85
Curve(DDS)		81.398

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.30	2-Pane	-1.12
3-Pane	.57	3-Pane	-2.06

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-15.843	-28.554	-45.874	-24.591	.037142	-.036945
Cooling	44.973	83.173	71.588	68.217	-.000246	-.020907

Juneau AK One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	14.23	55.48
R-5	-20.63	24.46
R-10	-33.41	13.08
R-15	-38.95	8.15
R-30	-45.80	2.06
Intercept		.524
Slope(DD)		9451.70
Curve(DDS)		-135.068
120 lb Mass Wall		
R-0	14.11	55.37
R-5	-20.70	24.39
R-10	-33.47	13.03
R-15	-39.00	8.11
R-30	-45.85	2.01
Intercept		.485
Slope(DD)		9446.60
Curve(DDS)		-135.689
Log Mass Wall		
4in	-12.09	32.06
6in	-24.05	21.41
8in	-30.59	15.59
10in	-34.73	11.91
12in	-37.57	9.38
Intercept		.966
Slope(DD)		9132.54
Curve(DDS)		-70.033

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.02	-.02
R-5	-.02	-.02
R-10	-.02	-.02
R-15	-.02	-.02
R-30	-.02	-.02
Intercept		-.018
Slope(DD)		.00
Curve(DDS)		-.000
120 lb Mass Wall		
R-0	-.02	-.02
R-5	-.02	-.02
R-10	-.02	-.02
R-15	-.02	-.02
R-30	-.02	-.02
Intercept		-.018
Slope(DD)		.00
Curve(DDS)		-.000
Log Mass Wall		
4in	-.01	-.01
6in	-.02	-.02
8in	-.02	-.02
10in	-.02	-.02
12in	-.02	-.02
Intercept		-.007
Slope(DD)		-10.88
Curve(DDS)		2.503

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.07	2-Pane	-.01
3-Pane	1.99	3-Pane	-.01

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-58.949	-82.496	-114.489	-80.517	.008198	.043927
Cooling	.007	.023	.047	.057805	.213500	-.013247

Kansas City MO One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	6.60	28.92
R-5	-12.26	12.13
R-10	-19.02	6.12
R-15	-21.93	3.53
R-30	-25.46	.38
Intercept		-.311
Slope(DD)		4873.12
Curve(DDS)		-49.509
120 lb Mass Wall		
R-0	6.30	28.65
R-5	-12.40	12.01
R-10	-19.14	6.01
R-15	-22.04	3.43
R-30	-25.56	.30
Intercept		-.400
Slope(DD)		4872.57
Curve(DDS)		-52.958
Log Mass Wall		
4in	-6.96	16.85
6in	-13.72	10.83
8in	-17.29	7.66
10in	-19.47	5.72
12in	-20.96	4.39
Intercept		.353
Slope(DD)		4434.05
Curve(DDS)		65.212

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.31	3.87
R-5	-3.35	1.17
R-10	-4.40	.23
R-15	-4.84	-.16
R-30	-5.52	-.76
Intercept		-.799
Slope(DD)		808.21
Curve(DDS)		-10.986
120 lb Mass Wall		
R-0	-.61	3.61
R-5	-3.55	.99
R-10	-4.55	.10
R-15	-4.98	-.28
R-30	-5.60	-.84
Intercept		-.842
Slope(DD)		755.35
Curve(DDS)		-7.972
Log Mass Wall		
4in	-1.52	2.80
6in	-2.97	1.50
8in	-3.69	.86
10in	-4.05	.54
12in	-4.27	.35
Intercept		-.053
Slope(DD)		462.51
Curve(DDS)		86.361

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.90	2-Pane	-.80
3-Pane	1.68	3-Pane	-1.48

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-40.535	-83.004	-124.884	-54.365	.010969	-.043467
Cooling	30.364	67.811	43.036	44.061	.002044	-.042547

Lake Charles LA One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	1.25	8.88
R-5	-5.21	3.13
R-10	-7.40	1.18
R-15	-8.34	.35
R-30	-9.36	-.56
Intercept		-.694
Slope(DD)		1457.26
Curve(DDS)		4.017
120 lb Mass Wall		
R-0	.93	8.60
R-5	-5.37	2.99
R-10	-7.51	1.09
R-15	-8.43	.27
R-30	-9.46	-.65
Intercept		-.764
Slope(DD)		1445.77
Curve(DDS)		1.351
Log Mass Wall		
4in	-2.78	5.30
6in	-5.41	2.96
8in	-6.68	1.83
10in	-7.39	1.19
12in	-7.84	.79
Intercept		-.106
Slope(DD)		1028.28
Curve(DDS)		126.092

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.28	4.58
R-5	-3.22	1.46
R-10	-4.53	.30
R-15	-5.08	-.19
R-30	-5.78	-.82
Intercept		-.980
Slope(DD)		965.40
Curve(DDS)		-15.040
120 lb Mass Wall		
R-0	.16	4.47
R-5	-3.45	1.26
R-10	-4.71	.14
R-15	-5.26	-.35
R-30	-5.97	-.99
Intercept		-1.111
Slope(DD)		930.05
Curve(DDS)		-9.602
Log Mass Wall		
4in	-1.54	2.96
6in	-2.89	1.76
8in	-3.63	1.10
10in	-4.13	.65
12in	-4.41	.40
Intercept		-.625
Slope(DD)		1030.45
Curve(DDS)		-7.148

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.30	2-Pane	-1.04
3-Pane	.57	3-Pane	-1.90

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-18.513	-29.136	-43.239	-26.885	.037026	-.021703
Cooling	44.134	76.260	64.049	70.718	-.001502	-.028693

Las Vegas NV One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	1.36	12.08
R-5	-7.69	4.03
R-10	-10.68	1.37
R-15	-11.94	.25
R-30	-13.37	-1.03
Intercept		-1.144
Slope(DD)		1962.41
Curve(DDS)		12.948
120 lb Mass Wall		
R-0	.83	11.61
R-5	-7.92	3.82
R-10	-10.85	1.22
R-15	-12.08	.12
R-30	-13.48	-1.12
Intercept		-1.223
Slope(DD)		1935.58
Curve(DDS)		8.931
Log Mass Wall		
4in	-4.07	7.25
6in	-7.87	3.87
8in	-9.63	2.30
10in	-10.52	1.51
12in	-11.08	1.01
Intercept		.338
Slope(DD)		917.86
Curve(DDS)		264.980

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.21	8.01
R-5	-6.13	2.74
R-10	-8.26	.85
R-15	-9.18	.03
R-30	-10.29	-.96
Intercept		-1.067
Slope(DD)		1539.48
Curve(DDS)		-16.472
120 lb Mass Wall		
R-0	-.74	7.54
R-5	-6.49	2.42
R-10	-8.51	.62
R-15	-9.41	-.18
R-30	-10.49	-1.14
Intercept		-1.190
Slope(DD)		1475.76
Curve(DDS)		-14.440
Log Mass Wall		
4in	-3.09	5.45
6in	-5.78	3.05
8in	-7.06	1.91
10in	-7.77	1.28
12in	-8.13	.96
Intercept		.343
Slope(DD)		801.75
Curve(DDS)		166.944

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.53	2-Pane	-.98
3-Pane	1.00	3-Pane	-1.79

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-24.608	-50.486	-89.326	-44.692	.021445	-.101239
Cooling	27.688	64.272	51.513	68.666	.005241	.025594

Los Angeles CA One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	-.04	8.74	-.68	.10
R-5	-7.71	1.92	-1.02	-.20
R-10	-10.13	-.24	-1.07	-.25
R-15	-11.15	-1.14	-1.13	-.30
R-30	-12.04	-1.93	-1.16	-.33
Intercept	-1.964		-.266	
Slope(DD)	1387.52		37.03	
Curve(DDS)	38.930		3.756	
120 lb Mass Wall				
R-0	-.79	8.08	-.78	.01
R-5	-8.02	1.64	-1.08	-.26
R-10	-10.36	-.44	-1.16	-.33
R-15	-11.34	-1.31	-1.18	-.35
R-30	-12.19	-2.07	-1.22	-.38
Intercept	-2.076		-.319	
Slope(DD)	1357.35		35.83	
Curve(DDS)	32.164		3.240	
Log Mass Wall				
4in	-3.79	5.41	-.39	.36
6in	-7.37	2.22	-.75	.04
8in	-8.91	.85	-.82	-.02
10in	-9.62	.22	-.86	-.06
12in	-10.05	-.16	-.88	-.08
Intercept	-.251		.154	
Slope(DD)	252.68		-184.55	
Curve(DDS)	337.267		61.916	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.54	2-Pane	-.30
3-Pane	1.03	3-Pane	-.53

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-44.153	-65.332	-85.665	-69.967	.022196	-.284815
Cooling	.235	.516	.489	.541247	.921203	-.091191

Medford OR One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	3.78	26.02	-3.19	.38
R-5	-14.60	9.66	-5.12	-1.33
R-10	-21.12	3.86	-5.53	-1.70
R-15	-23.94	1.35	-5.68	-1.83
R-30	-27.16	-1.51	-5.84	-1.97
Intercept	-2.097		-1.684	
Slope(DD)	4577.44		136.13	
Curve(DDS)	-30.744		29.838	
120 lb Mass Wall				
R-0	2.82	25.17	-3.99	-.33
R-5	-15.00	9.31	-5.52	-1.69
R-10	-21.40	3.61	-5.82	-1.96
R-15	-24.18	1.14	-5.93	-2.05
R-30	-27.38	-1.71	-6.06	-2.17
Intercept	-2.265		-1.839	
Slope(DD)	4554.99		90.66	
Curve(DDS)	-41.217		25.174	
Log Mass Wall				
4in	-7.69	15.81	-2.15	1.31
6in	-15.37	8.98	-3.92	-.26
8in	-19.13	5.63	-4.47	-.75
10in	-21.16	3.83	-4.49	-.77
12in	-22.46	2.67	-4.43	-.72
Intercept	.109		.877	
Slope(DD)	2932.32		-1391.16	
Curve(DDS)	381.131		387.788	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.66	2-Pane	-.55
3-Pane	1.23	3-Pane	-.99

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-38.150	-52.110	-80.784	-53.708	.015144	-.042401
Cooling	9.583	15.884	17.137	21.225	.188206	.962447

Memphis TN One Story Prototype Mass and Window runs

Heating Load

Component	Delta (MBtu)	Delta (KBtu)
95 lb Mass Wall		
R-0	3.86	17.91
R-5	-8.04	7.32
R-10	-12.25	3.57
R-15	-14.05	1.97
R-30	-16.20	.06
Intercept		-.331
Slope(DD)		2977.06
Curve(DDS)		-21.581
120 lb Mass Wall		
R-0	3.57	17.65
R-5	-8.22	7.16
R-10	-12.37	3.47
R-15	-14.16	1.87
R-30	-16.29	-.02
Intercept		-.383
Slope(DD)		2943.29
Curve(DDS)		-20.923
Log Mass Wall		
4in	-4.44	10.52
6in	-8.80	6.64
8in	-11.11	4.59
10in	-12.51	3.34
12in	-13.42	2.53
Intercept		-.015
Slope(DD)		2756.54
Curve(DDS)		58.555

Cooling Load

Component	Delta (MBtu)	Delta (KBtu)
95 lb Mass Wall		
R-0	-.09	4.08
R-5	-3.23	1.28
R-10	-4.34	.30
R-15	-4.85	-.16
R-30	-5.45	-.69
Intercept		-.774
Slope(DD)		828.20
Curve(DDS)		-10.110
120 lb Mass Wall		
R-0	-.28	3.91
R-5	-3.41	1.12
R-10	-4.53	.13
R-15	-5.00	-.29
R-30	-5.66	-.88
Intercept		-.953
Slope(DD)		841.06
Curve(DDS)		-11.748
Log Mass Wall		
4in	-1.56	2.77
6in	-2.94	1.54
8in	-3.60	.95
10in	-4.02	.58
12in	-4.26	.37
Intercept		-.224
Slope(DD)		649.22
Curve(DDS)		49.485

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.59	2-Pane	-.79
3-Pane	1.10	3-Pane	-1.45

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-25.182	-46.235	-82.958	-42.984	.016487	-.010883
Cooling	31.946	56.223	44.416	59.557	-.001367	-.033671

Miami FL One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	-.24	.91	.62	4.81
R-5	-1.21	.05	-3.69	.97
R-10	-1.46	-.18	-5.34	-.49
R-15	-1.56	-.27	-6.00	-1.08
R-30	-1.63	-.33	-6.74	-1.74
Intercept	-.279		-2.070	
Slope(DD)	102.20		1126.05	
Curve(DDS)	11.992		-11.468	
120 lb Mass Wall				
R-0	-.41	.76	.31	4.53
R-5	-1.29	-.03	-4.09	.62
R-10	-1.52	-.23	-5.54	-.67
R-15	-1.62	-.32	-6.18	-1.24
R-30	-1.68	-.37	-6.85	-1.84
Intercept	-.322		-2.032	
Slope(DD)	98.83		956.91	
Curve(DDS)	10.303		6.072	
Log Mass Wall				
4in	-.61	.58	-1.59	2.84
6in	-1.13	.12	-3.12	1.48
8in	-1.34	-.07	-4.15	.56
10in	-1.44	-.16	-4.73	.05
12in	-1.50	-.21	-5.14	-.32
Intercept	-.209		-2.072	
Slope(DD)	9.74		1585.94	
Curve(DDS)	52.456		-63.607	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.03	2-Pane	-1.54
3-Pane	.05	3-Pane	-2.85

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-1.403	-2.048	-2.577	-1.895	.317152	-.007584
Cooling	70.903	116.346	113.599	106.614	-.002752	-.021583

Minneapolis MN One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	9.35	45.37	-1.58	.65
R-5	-18.92	20.22	-3.00	-.61
R-10	-29.78	10.55	-3.33	-.90
R-15	-34.49	6.36	-3.46	-1.02
R-30	-40.28	1.21	-3.68	-1.22
Intercept		-.159		-1.079
Slope(DD)		8205.13		186.76
Curve(DDS)		-160.688		13.104
120 lb Mass Wall				
R-0	9.08	45.13	-2.06	.23
R-5	-19.07	20.08	-3.25	-.83
R-10	-29.90	10.44	-3.56	-1.11
R-15	-34.60	6.26	-3.64	-1.18
R-30	-40.40	1.10	-3.77	-1.30
Intercept		-.258		-1.137
Slope(DD)		8205.25		122.47
Curve(DDS)		-163.512		14.873
Log Mass Wall				
4in	-11.20	27.09	-1.07	1.11
6in	-21.53	17.89	-2.13	.16
8in	-27.16	12.88	-2.55	-.21
10in	-30.69	9.74	-2.65	-.30
12in	-33.09	7.61	-2.68	-.33
Intercept		.605		.133
Slope(DD)		7660.85		-404.78
Curve(DDS)		-26.648		171.282

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	1.12	2-Pane	-.47
3-Pane	2.09	3-Pane	-.86

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-43.733	-81.060	-138.954	-77.440	.007192	-.144884
Cooling	10.580	18.440	17.401	21.050	.113085	-.094345

Nashville TN One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	4.33	20.47	-1.03	2.79
R-5	-9.16	8.47	-3.80	.33
R-10	-13.96	4.19	-4.66	-.44
R-15	-16.02	2.36	-5.01	-.75
R-30	-18.49	.16	-5.53	-1.21
Intercept		-.281		-1.163
Slope(DD)		3421.23		594.42
Curve(DDS)		-29.026		3.847
120 lb Mass Wall				
R-0	4.00	20.18	-1.47	2.40
R-5	-9.36	8.29	-4.09	.07
R-10	-14.10	4.07	-4.91	-.66
R-15	-16.14	2.25	-5.26	-.97
R-30	-18.60	.07	-5.74	-1.40
Intercept		-.349		-1.340
Slope(DD)		3388.98		572.07
Curve(DDS)		-28.979		2.744
Log Mass Wall				
4in	-5.05	12.12	-1.58	2.30
6in	-10.01	7.71	-3.12	.93
8in	-12.66	5.35	-3.87	.26
10in	-14.24	3.95	-4.15	.01
12in	-15.27	3.03	-4.26	-.08
Intercept		.161		-.047
Slope(DD)		3121.00		2.74
Curve(DDS)		69.861		165.785

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.58	2-Pane	-.73
3-Pane	1.08	3-Pane	-1.33

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-27.511	-44.348	-74.397	-42.917	.016194	-.030420
Cooling	29.151	48.712	40.690	47.631	.002913	-.032631

New York NY One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	7.74	31.46
R-5	-12.85	13.14
R-10	-20.13	6.66
R-15	-23.25	3.88
R-30	-27.01	.54
Intercept		-.201
Slope(DD)		5175.48
Curve(DDS)		-39.976
120 lb Mass Wall		
R-0	7.46	31.21
R-5	-13.00	13.00
R-10	-20.25	6.55
R-15	-23.35	3.79
R-30	-27.10	.45
Intercept		-.268
Slope(DD)		5158.64
Curve(DDS)		-41.234
Log Mass Wall		
4in	-7.27	18.10
6in	-14.46	11.70
8in	-18.29	8.30
10in	-20.66	6.19
12in	-22.27	4.75
Intercept		.226
Slope(DD)		4918.52
Curve(DDS)		40.226

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.00	1.17
R-5	-2.53	-.19
R-10	-2.97	-.58
R-15	-3.14	-.73
R-30	-3.37	-.94
Intercept		-.870
Slope(DD)		261.43
Curve(DDS)		8.775
120 lb Mass Wall		
R-0	-1.35	.86
R-5	-2.75	-.39
R-10	-3.17	-.76
R-15	-3.33	-.90
R-30	-3.58	-1.12
Intercept		-1.058
Slope(DD)		273.81
Curve(DDS)		4.549
Log Mass Wall		
4in	-.89	1.27
6in	-1.85	.41
8in	-2.29	.02
10in	-2.47	-.14
12in	-2.55	-.21
Intercept		-.212
Slope(DD)		5.91
Curve(DDS)		101.362

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.82	2-Pane	-.50
3-Pane	1.52	3-Pane	-.91

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-38.631	-60.106	-97.645	-58.638	.010480	-.159122
Cooling	16.519	25.781	24.953	27.258	.031140	-.081255

Oklahoma City OK One Story Prototype Mass and Window runs

	Heating Load		Cooling Load	
	Delta Component (MBtu)	(KBtu)	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	4.86	21.83	-.62	3.24
R-5	-9.64	8.93	-3.55	.63
R-10	-14.73	4.40	-4.54	-.25
R-15	-16.89	2.47	-4.95	-.62
R-30	-19.51	.14	-5.52	-1.13
Intercept		-.308		-1.155
Slope(DD)		3583.99		709.13
Curve(DDS)		-22.243		-3.435
120 lb Mass Wall				
R-0	4.55	21.55	-1.00	2.90
R-5	-9.84	8.75	-3.76	.44
R-10	-14.86	4.28	-4.76	-.45
R-15	-17.01	2.37	-5.17	-.81
R-30	-19.62	.04	-5.67	-1.26
Intercept		-.374		-1.304
Slope(DD)		3550.79		698.12
Curve(DDS)		-21.759		-5.586
Log Mass Wall				
4in	-5.35	12.74	-1.56	2.40
6in	-10.60	8.07	-2.94	1.17
8in	-13.37	5.61	-3.62	.57
10in	-15.02	4.14	-3.95	.27
12in	-16.11	3.17	-4.22	.03
Intercept		.240		-.444
Slope(DD)		3213.17		521.34
Curve(DDS)		85.906		68.943

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.72	2-Pane	-.82
3-Pane	1.35	3-Pane	-1.51

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-31.634	-58.815	-96.792	-54.799	.013497	.029556
Cooling	31.949	56.506	45.783	62.788	-.000527	-.063606

Omaha NB One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	8.37	36.14
R-5	-15.06	15.29
R-10	-23.50	7.78
R-15	-27.12	4.56
R-30	-31.50	.66
Intercept		-.220
Slope(DD)		6075.80
Curve(DDS)		-63.345
120 lb Mass Wall		
R-0	8.05	35.86
R-5	-15.23	15.14
R-10	-23.63	7.66
R-15	-27.23	4.46
R-30	-31.60	.57
Intercept		-.292
Slope(DD)		6056.62
Curve(DDS)		-64.871
Log Mass Wall		
4in	-8.65	20.99
6in	-16.98	13.58
8in	-21.40	9.65
10in	-24.12	7.23
12in	-25.96	5.59
Intercept		.520
Slope(DD)		5572.23
Curve(DDS)		65.034

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.23	2.10
R-5	-3.51	.07
R-10	-4.17	-.52
R-15	-4.43	-.75
R-30	-4.79	-1.07
Intercept		-.960
Slope(DD)		406.29
Curve(DDS)		11.368
120 lb Mass Wall		
R-0	-1.65	1.73
R-5	-3.76	-.15
R-10	-4.38	-.70
R-15	-4.63	-.93
R-30	-5.00	-1.25
Intercept		-1.140
Slope(DD)		408.30
Curve(DDS)		7.214
Log Mass Wall		
4in	-1.45	1.90
6in	-2.82	.69
8in	-3.40	.17
10in	-3.59	-.00
12in	-3.70	-.10
Intercept		.197
Slope(DD)		-206.17
Curve(DDS)		174.640

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.02	2-Pane	-.69
3-Pane	1.89	3-Pane	-1.27

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-39.856	-73.986	-134.997	-68.479	.008432	-.149947
Cooling	21.760	40.569	34.311	45.488	.012970	-.088089

Philadelphia PA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	7.03	30.37
R-5	-12.83	12.70
R-10	-19.89	6.42
R-15	-22.92	3.72
R-30	-26.59	.45
Intercept		-.242
Slope(DD)		5050.64
Curve(DDS)		-44.304
120 lb Mass Wall		
R-0	6.68	30.06
R-5	-12.98	12.56
R-10	-20.00	6.32
R-15	-23.02	3.63
R-30	-26.68	.37
Intercept		-.316
Slope(DD)		5045.46
Curve(DDS)		-48.296
Log Mass Wall		
4in	-7.22	17.69
6in	-14.35	11.35
8in	-18.11	8.00
10in	-20.37	5.99
12in	-21.90	4.63
Intercept		.545
Slope(DD)		4500.81
Curve(DDS)		95.405

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.34	1.33
R-5	-3.07	-.21
R-10	-3.56	-.64
R-15	-3.75	-.81
R-30	-4.01	-1.04
Intercept		-.938
Slope(DD)		290.16
Curve(DDS)		10.408
120 lb Mass Wall		
R-0	-1.77	.95
R-5	-3.34	-.45
R-10	-3.77	-.83
R-15	-3.95	-.99
R-30	-4.20	-1.21
Intercept		-1.086
Slope(DD)		269.09
Curve(DDS)		8.696
Log Mass Wall		
4in	-1.19	1.47
6in	-2.35	.43
8in	-2.82	.02
10in	-3.01	-.15
12in	-3.05	-.19
Intercept		.092
Slope(DD)		-232.30
Curve(DDS)		156.381

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.87	2-Pane	-.56
3-Pane	1.62	3-Pane	-1.02

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-36.379	-61.961	-113.110	-57.881	.009707	-.103012
Cooling	19.086	31.325	29.623	35.812	.013840	-.031879

Phoenix AZ One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.98	5.29
R-5	-6.05	.77
R-10	-7.56	-.57
R-15	-8.17	-1.11
R-30	-8.67	-1.56
Intercept		-1.441
Slope(DD)		775.96
Curve(DDS)		39.528
120 lb Mass Wall		
R-0	-1.63	4.71
R-5	-6.32	.53
R-10	-7.74	-.73
R-15	-8.33	-1.26
R-30	-8.80	-1.67
Intercept		-1.535
Slope(DD)		751.91
Curve(DDS)		33.296
Log Mass Wall		
4in	-3.04	3.45
6in	-5.73	1.06
8in	-6.76	.14
10in	-7.14	-.20
12in	-7.36	-.39
Intercept		.312
Slope(DD)		-500.55
Curve(DDS)		352.432

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.95	11.50
R-5	-7.21	4.24
R-10	-10.14	1.63
R-15	-11.37	.54
R-30	-12.93	-.85
Intercept		-1.059
Slope(DD)		2109.48
Curve(DDS)		-21.602
120 lb Mass Wall		
R-0	.44	11.05
R-5	-7.63	3.86
R-10	-10.41	1.39
R-15	-11.62	.31
R-30	-13.16	-1.06
Intercept		-1.180
Slope(DD)		2019.72
Curve(DDS)		-15.621
Log Mass Wall		
4in	-3.56	7.49
6in	-7.02	4.41
8in	-8.75	2.87
10in	-9.67	2.05
12in	-10.23	1.55
Intercept		.433
Slope(DD)		1323.93
Curve(DDS)		173.227

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.21	2-Pane	-1.16
3-Pane	.40	3-Pane	-2.12

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-15.022	-24.606	-31.009	-20.284	.055144	-.200102
Cooling	34.200	77.679	67.536	83.439	.002107	-.044129

Pittsburgh PA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	8.02	36.21
R-5	-15.53	15.26
R-10	-23.98	7.74
R-15	-27.61	4.51
R-30	-32.06	.55
Intercept		-.292
Slope(DD)		6111.04
Curve(DDS)		-64.523
120 lb Mass Wall		
R-0	7.60	35.84
R-5	-15.74	15.07
R-10	-24.13	7.60
R-15	-27.75	4.38
R-30	-32.18	.44
Intercept		-.382
Slope(DD)		6091.30
Curve(DDS)		-67.388
Log Mass Wall		
4in	-8.79	21.25
6in	-17.33	13.65
8in	-21.82	9.66
10in	-24.56	7.22
12in	-26.39	5.59
Intercept		.660
Slope(DD)		5447.54
Curve(DDS)		105.273

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.85	.34
R-5	-3.07	-.75
R-10	-3.32	-.97
R-15	-3.43	-1.07
R-30	-3.55	-1.18
Intercept		-1.004
Slope(DD)		102.70
Curve(DDS)		17.044
120 lb Mass Wall		
R-0	-2.36	-.12
R-5	-3.30	-.95
R-10	-3.52	-1.15
R-15	-3.62	-1.24
R-30	-3.73	-1.34
Intercept		-1.172
Slope(DD)		113.83
Curve(DDS)		9.801
Log Mass Wall		
4in	-1.20	.92
6in	-2.26	-.03
8in	-2.60	-.33
10in	-2.64	-.37
12in	-2.62	-.35
Intercept		.489
Slope(DD)		-726.45
Curve(DDS)		216.549

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.87	2-Pane	-.48
3-Pane	1.62	3-Pane	-.86

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-47.337	-62.301	-99.780	-75.105	.010820	-.093961
Cooling	12.013	13.750	16.530	24.913	.115445	-.085631

Portland ME One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	10.16	44.13
R-5	-18.44	18.68
R-10	-28.72	9.53
R-15	-33.14	5.60
R-30	-38.54	.79
Intercept		-.268
Slope(DD)		7436.37
Curve(DDS)		-79.697
120 lb Mass Wall		
R-0	9.71	43.73
R-5	-18.65	18.49
R-10	-28.87	9.40
R-15	-33.27	5.48
R-30	-38.66	.69
Intercept		-.357
Slope(DD)		7419.54
Curve(DDS)		-83.523
Log Mass Wall		
4in	-10.47	25.77
6in	-20.72	16.65
8in	-26.15	11.82
10in	-29.47	8.86
12in	-31.71	6.87
Intercept		.741
Slope(DD)		6738.45
Curve(DDS)		97.630

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.19	-.03
R-5	-1.81	-.58
R-10	-1.94	-.70
R-15	-1.98	-.73
R-30	-2.05	-.80
Intercept		-.700
Slope(DD)		47.76
Curve(DDS)		9.100
120 lb Mass Wall		
R-0	-1.50	-.31
R-5	-1.99	-.74
R-10	-2.08	-.82
R-15	-2.10	-.84
R-30	-2.15	-.88
Intercept		-.768
Slope(DD)		20.06
Curve(DDS)		8.886
Log Mass Wall		
4in	-.69	.42
6in	-1.29	-.12
8in	-1.50	-.31
10in	-1.52	-.32
12in	-1.49	-.30
Intercept		.182
Slope(DD)		-433.80
Curve(DDS)		126.985

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.12	2-Pane	-.28
3-Pane	2.08	3-Pane	-.49

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-51.808	-83.089	-136.151	-82.981	.007923	-.161722
Cooling	4.299	7.052	6.804	7.270	.703054	-.081469

Portland OR One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	4.19	25.96	-1.56	.23
R-5	-14.10	9.69	-2.71	-.79
R-10	-20.50	3.99	-2.93	-.99
R-15	-23.25	1.54	-3.02	-1.07
R-30	-26.43	-1.29	-3.12	-1.16
Intercept	-1.825		-1.012	
Slope(DD)	4456.82		71.73	
Curve(DDS)	-21.342		18.508	
120 lb Mass Wall				
R-0	3.38	25.24	-2.10	-.25
R-5	-14.48	9.35	-2.98	-1.03
R-10	-20.78	3.74	-3.15	-1.19
R-15	-23.49	1.33	-3.22	-1.25
R-30	-26.63	-1.46	-3.29	-1.31
Intercept	-1.970		-1.152	
Slope(DD)	4414.97		52.81	
Curve(DDS)	-26.884		14.409	
Log Mass Wall				
4in	-7.48	15.58	-.94	.78
6in	-14.77	9.09	-1.95	-.12
8in	-18.36	5.89	-2.33	-.46
10in	-20.38	4.10	-2.37	-.49
12in	-21.68	2.94	-2.34	-.47
Intercept	.181		.228	
Slope(DD)	3147.35		-647.27	
Curve(DDS)	307.422		202.218	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)			
1-Pane	.00	1-Pane	.00
2-Pane	.76	2-Pane	-.38
3-Pane	1.44	3-Pane	-.68

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-52.468	-93.714	-98.498	-52.942	.014879	-.401812
Cooling	6.267	18.129	9.157	4.310	.414196	.028915

Reno NV One Story Prototype Mass and Window runs

	Heating Load Delta Component (MBtu)	(KBtu)	Cooling Load Delta Component (MBtu)	(KBtu)
95 lb Mass Wall				
R-0	4.34	30.12	-3.19	.39
R-5	-16.35	11.71	-5.00	-1.22
R-10	-23.62	5.24	-5.35	-1.53
R-15	-26.75	2.46	-5.49	-1.66
R-30	-30.44	-.83	-5.62	-1.77
Intercept	-1.336		-1.454	
Slope(DD)	5123.41		98.05	
Curve(DDS)	-32.456		30.753	
120 lb Mass Wall				
R-0	3.31	29.21	-4.03	-.36
R-5	-16.78	11.33	-5.38	-1.56
R-10	-23.93	4.97	-5.65	-1.80
R-15	-27.02	2.22	-5.74	-1.88
R-30	-30.67	-1.03	-5.83	-1.96
Intercept	-1.515		-1.616	
Slope(DD)	5095.09		63.69	
Curve(DDS)	-43.112		23.985	
Log Mass Wall				
4in	-8.72	18.50	-1.99	1.46
6in	-17.30	10.87	-3.80	-.15
8in	-21.45	7.17	-4.31	-.61
10in	-23.71	5.16	-4.30	-.60
12in	-25.14	3.89	-4.20	-.51
Intercept	1.291		1.355	
Slope(DD)	3159.61		-1624.27	
Curve(DDS)	441.299		424.946	

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.19	2-Pane	-.60
3-Pane	2.23	3-Pane	-1.08

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-49.219	-111.056	-196.146	-92.120	.009334	-.098980
Cooling	11.224	23.471	20.030	28.667	.096144	-.048575

Salt Lake City U One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	6.58	32.85
R-5	-15.22	13.45
R-10	-22.98	6.54
R-15	-26.33	3.56
R-30	-30.31	.02
Intercept		-.692
Slope(DD)		5538.40
Curve(DDS)		-47.810
120 lb Mass Wall		
R-0	6.05	32.38
R-5	-15.46	13.23
R-10	-23.16	6.38
R-15	-26.48	3.43
R-30	-30.44	-.10
Intercept		-.789
Slope(DD)		5515.90
Curve(DDS)		-52.087
Log Mass Wall		
4in	-8.51	19.42
6in	-16.70	12.13
8in	-20.89	8.40
10in	-23.35	6.21
12in	-24.99	4.75
Intercept		.783
Slope(DD)		4490.50
Curve(DDS)		207.098

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-2.14	1.57
R-5	-4.52	-.54
R-10	-5.09	-1.05
R-15	-5.30	-1.24
R-30	-5.61	-1.51
Intercept		-1.279
Slope(DD)		282.69
Curve(DDS)		25.363
120 lb Mass Wall		
R-0	-2.84	.95
R-5	-4.84	-.83
R-10	-5.33	-1.26
R-15	-5.54	-1.45
R-30	-5.80	-1.68
Intercept		-1.440
Slope(DD)		266.31
Curve(DDS)		18.512
Log Mass Wall		
4in	-1.94	1.75
6in	-3.57	.30
8in	-4.09	-.16
10in	-4.16	-.22
12in	-4.20	-.26
Intercept		.925
Slope(DD)		-965.28
Curve(DDS)		309.166

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.12	2-Pane	-.66
3-Pane	2.09	3-Pane	-1.20

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-48.785	-93.332	-163.448	-86.551	.009277	-.126593
Cooling	15.283	33.198	26.211	37.441	.040661	-.030251

San Antonio TX One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.64	8.22
R-5	-5.89	2.41
R-10	-7.99	.54
R-15	-8.88	-.25
R-30	-9.73	-1.01
Intercept		-1.051
Slope(DD)		1269.39
Curve(DDS)		24.274
120 lb Mass Wall		
R-0	.15	7.79
R-5	-6.11	2.22
R-10	-8.16	.39
R-15	-9.02	-.37
R-30	-9.85	-1.11
Intercept		-1.142
Slope(DD)		1249.19
Curve(DDS)		20.267
Log Mass Wall		
4in	-3.04	4.95
6in	-5.88	2.42
8in	-7.16	1.28
10in	-7.81	.70
12in	-8.21	.35
Intercept		-.082
Slope(DD)		576.91
Curve(DDS)		213.053

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	.37	5.22
R-5	-3.66	1.63
R-10	-5.07	.37
R-15	-5.69	-.18
R-30	-6.43	-.84
Intercept		-.968
Slope(DD)		1014.17
Curve(DDS)		-8.080
120 lb Mass Wall		
R-0	.15	5.02
R-5	-3.84	1.47
R-10	-5.25	.21
R-15	-5.85	-.32
R-30	-6.60	-.99
Intercept		-1.114
Slope(DD)		1011.53
Curve(DDS)		-8.695
Log Mass Wall		
4in	-1.66	3.41
6in	-3.23	2.01
8in	-4.07	1.26
10in	-4.59	.80
12in	-4.87	.55
Intercept		-.370
Slope(DD)		946.90
Curve(DDS)		28.979

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.27	2-Pane	-1.04
3-Pane	.51	3-Pane	-1.92

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-18.517	-29.415	-36.192	-26.230	.043338	-.124841
Cooling	42.401	67.528	62.273	78.952	-.000548	-.034356

San Diego CA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.54	5.89
R-5	-6.32	.75
R-10	-8.07	-.81
R-15	-8.79	-1.45
R-30	-9.26	-1.87
Intercept		-1.835
Slope(DD)		859.35
Curve(DDS)		48.196
120 lb Mass Wall		
R-0	-1.18	5.32
R-5	-6.56	.53
R-10	-8.31	-1.03
R-15	-8.94	-1.59
R-30	-9.41	-2.00
Intercept		-1.964
Slope(DD)		852.56
Curve(DDS)		40.430
Log Mass Wall		
4in	-3.13	3.58
6in	-5.95	1.07
8in	-7.09	.06
10in	-7.56	-.36
12in	-7.85	-.62
Intercept		-.296
Slope(DD)		-180.10
Curve(DDS)		319.782

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.28	.05
R-5	-1.82	-.43
R-10	-1.93	-.52
R-15	-2.02	-.60
R-30	-2.08	-.66
Intercept		-.566
Slope(DD)		77.87
Curve(DDS)		4.253
120 lb Mass Wall		
R-0	-1.60	-.23
R-5	-1.97	-.56
R-10	-2.12	-.69
R-15	-2.15	-.72
R-30	-2.17	-.74
Intercept		-.649
Slope(DD)		57.52
Curve(DDS)		3.178
Log Mass Wall		
4in	-.65	.61
6in	-1.25	.08
8in	-1.42	-.07
10in	-1.45	-.10
12in	-1.49	-.13
Intercept		.264
Slope(DD)		-320.68
Curve(DDS)		107.334

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.34	2-Pane	-.35
3-Pane	.65	3-Pane	-.62

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-31.951	-41.345	-55.026	-42.541	.034901	-.359778
Cooling	4.927	8.470	8.347	10.197	.557238	-.062756

San Francisco CA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	3.58	19.61
R-5	-10.27	7.28
R-10	-15.06	3.02
R-15	-17.11	1.20
R-30	-19.36	-.81
Intercept		-1.198
Slope(DD)		3233.18
Curve(DDS)		-1.795
120 lb Mass Wall		
R-0	3.05	19.14
R-5	-10.50	7.08
R-10	-15.22	2.88
R-15	-17.24	1.08
R-30	-19.48	-.91
Intercept		-1.283
Slope(DD)		3212.62
Curve(DDS)		-6.596
Log Mass Wall		
4in	-5.45	11.57
6in	-10.85	6.77
8in	-13.51	4.40
10in	-14.98	3.09
12in	-15.91	2.26
Intercept		.352
Slope(DD)		2208.35
Curve(DDS)		246.595

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.38	-.06
R-5	-.44	-.12
R-10	-.45	-.13
R-15	-.46	-.14
R-30	-.47	-.14
Intercept		-.116
Slope(DD)		9.41
Curve(DDS)		.366
120 lb Mass Wall		
R-0	-.43	-.11
R-5	-.47	-.14
R-10	-.47	-.14
R-15	-.47	-.14
R-30	-.48	-.15
Intercept		-.116
Slope(DD)		.11
Curve(DDS)		.799
Log Mass Wall		
4in	-.22	.08
6in	-.37	-.06
8in	-.39	-.07
10in	-.38	-.06
12in	-.37	-.06
Intercept		.163
Slope(DD)		-183.45
Curve(DDS)		41.565

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	1.09	2-Pane	-.07
3-Pane	2.07	3-Pane	-.12

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-65.635	-107.513	-165.029	-125.357	.010747	-.197964
Cooling	.524	1.226	1.478	1.066	7.235912	-.021202

Seattle WA One Story Prototype Mass and Window runs

Heating Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	7.41	33.44
R-5	-14.56	13.89
R-10	-22.37	6.94
R-15	-25.72	3.95
R-30	-29.79	.33
Intercept		-.416
Slope(DD)		5591.63
Curve(DDS)		-49.490
120 lb Mass Wall		
R-0	6.96	33.04
R-5	-14.77	13.70
R-10	-22.52	6.80
R-15	-25.86	3.83
R-30	-29.91	.23
Intercept		-.509
Slope(DD)		5576.08
Curve(DDS)		-53.410
Log Mass Wall		
4in	-8.08	19.65
6in	-16.09	12.52
8in	-20.24	8.83
10in	-22.73	6.62
12in	-24.39	5.14
Intercept		.886
Slope(DD)		4749.60
Curve(DDS)		150.610

Cooling Load

	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-.62	-.03
R-5	-.92	-.30
R-10	-.97	-.34
R-15	-.99	-.36
R-30	-1.02	-.39
Intercept		-.332
Slope(DD)		14.73
Curve(DDS)		5.155
120 lb Mass Wall		
R-0	-.79	-.18
R-5	-1.00	-.37
R-10	-1.04	-.41
R-15	-1.05	-.41
R-30	-1.08	-.44
Intercept		-.384
Slope(DD)		15.22
Curve(DDS)		3.123
Log Mass Wall		
4in	-.33	.23
6in	-.64	-.05
8in	-.72	-.12
10in	-.75	-.15
12in	-.73	-.13
Intercept		.114
Slope(DD)		-218.74
Curve(DDS)		63.649

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.98	2-Pane	-.16
3-Pane	1.84	3-Pane	-.29

	Alphas (KBtu/sf)				Beta	Intercept
	North	East	South	West		
Heating	-60.738	-86.417	-121.839	-86.124	.010924	-.200868
Cooling	1.811	3.350	4.133	5.809	1.163168	-.036479

Washington DC One Story Prototype Mass and Window runs

Heating Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	5.95	26.30
R-5	-11.18	11.06
R-10	-17.31	5.60
R-15	-19.94	3.26
R-30	-23.16	.40
Intercept		-.215
Slope(DD)		4419.77
Curve(DDS)		-44.458
120 lb Mass Wall		
R-0	5.67	26.05
R-5	-11.31	10.94
R-10	-17.39	5.53
R-15	-20.03	3.18
R-30	-23.24	.33
Intercept		-.280
Slope(DD)		4416.39
Curve(DDS)		-47.657
Log Mass Wall		
4in	-6.39	15.32
6in	-12.55	9.84
8in	-15.77	6.97
10in	-17.75	5.21
12in	-19.10	4.01
Intercept		.417
Slope(DD)		3974.20
Curve(DDS)		68.002

Cooling Load	Delta Component (MBtu)	(KBtu)
95 lb Mass Wall		
R-0	-1.19	2.08
R-5	-3.42	.09
R-10	-4.10	-.51
R-15	-4.39	-.77
R-30	-4.76	-1.10
Intercept		-1.031
Slope(DD)		450.20
Curve(DDS)		6.021
120 lb Mass Wall		
R-0	-1.58	1.73
R-5	-3.62	-.08
R-10	-4.28	-.67
R-15	-4.55	-.91
R-30	-4.89	-1.21
Intercept		-1.143
Slope(DD)		435.47
Curve(DDS)		3.435
Log Mass Wall		
4in	-1.40	1.89
6in	-2.78	.66
8in	-3.32	.18
10in	-3.55	-.02
12in	-3.64	-.10
Intercept		.185
Slope(DD)		-207.12
Curve(DDS)		174.249

Window Solar Gain

Deltas for Average Window Orientations (MBtu)

1-Pane	.00	1-Pane	.00
2-Pane	.77	2-Pane	-.72
3-Pane	1.44	3-Pane	-1.32

	Alphas (KBtu/sf) North	East	South	West	Beta	Intercept
Heating	-34.732	-56.477	-97.795	-54.820	.011459	.013901
Cooling	26.241	40.473	39.431	47.690	.008840	-.037545

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APPENDIX A. MASTER DOE-2.1C INPUT FILE

Because of the need to make and catalogue the large number of DOE-2 simulations, an automated input/output procedure has been developed. A single master input file was created and used for the entire data base. The input file is processed by an utility program and reduced to a DOE-2 readable input file with the selected parametric inputs and necessary foundation flux data.

```
          POST-PROCESSOR PARTIAL  ..

 $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*) File name: LDS.PROD (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)  Date:  Jan 10 1987 (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)                      (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 $
 $  Internal loads as in PNL data base runs (January 1987)
 $
 $-------------------------------------------------------------------------

        INPUT  LOADS ..
*Dummy  TITLE  LINE-1 *PROTOTYPE  FOUNDATION  OPTION AND CODE  *
*Dummy         LINE-2 *LOCATION  WEATHER TAPE  WALL  EQUIPMENT *
*Dummy         LINE-3 *                                        *
*Dummy      -  LINE-4 *                                        *
*Dummy         LINE-5 *                                        *
                  ..
 $-------------------------------------------------------------------------
            PARAMETER
 $-------------------------------------------------------------------------
 $                                                                       $
 $    IWALLAREA = area of interior walls                                 $
 $                                                                       $
* ---- prototype parameters ----------------------------------------------
$One Story       $ FLOORAREA=1540 PERIM=166 IWALLAREA=1088
$One Story       $ BSMTAREA=1540
$One Story       $ ROOFZ=8.0 ROOFHT=14.757 ROOFWD=27.5
$One Story       $ WALLWD=41.5 WALLHT=8.0 WINDOWWD=11.55
$One Story       $ WALLX=61.5 SHADEX=81.5
$One Story       $ INTLOAD=56857 LATLOAD=.2138
*
$Two Story       $ FLOORAREA=2240 PERIM=136 IWALLAREA=1560
$Two Story       $ BSMTAREA=1120
$Two Story       $ ROOFZ=16.0 ROOFHT=14.757 ROOFWD=20.0
$Two Story       $ WALLWD=34.0 WALLHT=16.0  WINDOWWD=8.4
$Two Story       $ WALLX=54.0 SHADEX=74.0
$Two Story       $ INTLOAD=62724 LATLOAD=.1938
*
$Split Level     $ FLOORAREA=1904 PERIM=84 IWALLAREA=1328
$Split Level     $ UPERIM=68  UPFNDAREA=560
$Split Level     $ BSMTAREA=784
$Split Level     $ ROOFZ=8.0 ROOFHT=14.0 ROOFWD=14.757
$Split Level     $ WALLWD=21.0 WALLHT=8.0  WINDOWWD=5.712
$Split Level     $ WALLX=59.17 SHADEX=79.17
$Split Level     $ INTLOAD=59900 LATLOAD=.2029
*
$Townhouse       $ FLOORAREA=1200 IWALLAREA=976 BSMTAREA=600
$Townhouse       $ ROOFZ=16.0 ROOFHT=15.811 ROOFWD=10.0
$Townhouse       $ WALLHT=16.0  WINDOWWD=4.5
$Townhouse       $ WALLX=45.0 SHADEX=65.0
$Townhouse       $ INTLOAD=53972 LATLOAD=.2252
$Mid Town        $ PERIM=40  WALLWD=10.0
$End Town        $ PERIM=70  WALLWD=17.5
*
$Apartment       $ FLOORAREA=1200 IWALLAREA=976 BSMTAREA=1200
```

```
$Apartment        $ ROOFZ=16.0 ROOFHT=21.082 ROOFWD=15.0
$Apartment        $ WALLHT=8.0  WINDOWWD=9.0
$Apartment        $ WALLX=45.0 SHADEX=65.0
$Apartment        $ INTLOAD=53972 LATLOAD=.2252
$MApartment       $ PERIM=60  WALLWD=15.0
$EApartment       $ PERIM=100  WALLWD=25.0
*
* ---- Location parameters     ----------------------------------------
*Dummy            Fdn Layers dependent on soil type for location
*
* ---- Conservation parameters ----------------------------------------
$High Infiltration        $ INFILT = .0007
$Medium Infiltration      $ INFILT = .0005
$Low  Infiltration        $ INFILT = .0003
*
$1-pane Windows           $ UWINDOW = 1.35
$2-pane Windows           $ UWINDOW = .535
$3-pane Windows           $ UWINDOW = .327
$M-pane Windows           $ UWINDOW = .1
$1. Shading Coefficient   $ GLSCOEF=1.0
$.7 Shading Coefficient   $ GLSCOEF=0.7
$.4 Shading Coefficient   $ GLSCOEF=0.4
*
$R00 Ceiling              $ ROOFL = r0roof
$R11 Ceiling              $ ROOFL = r11roof
$R19 Ceiling              $ ROOFL = r19roof
$R22 Ceiling              $ ROOFL = r22roof
$R30 Ceiling              $ ROOFL = r30roof
$R38 Ceiling              $ ROOFL = r38roof
$R49 Ceiling              $ ROOFL = r49roof
$R60 Ceiling              $ ROOFL = r60roof
$R00 Reg siding wall      $ WALLL = r0rwall
$R11 Reg siding wall      $ WALLL = r11rwall
$R19 Reg siding wall      $ WALLL = r19rwall
$R27 Reg siding wall      $ WALLL = r27rwall
$R34 Reg siding wall      $ WALLL = r34rwall
$R00 Stucco wall          $ WALLL = r0swall
$R11 Stucco wall          $ WALLL = r11swall
$R19 Stucco wall          $ WALLL = r19swall
$R27 Stucco wall          $ WALLL = r27swall
$R34 Stucco wall          $ WALLL = r34swall
*
*Dummy     Main  Fdn U-effective from file proto.fdn
*Dummy     Upper UFd U-effective from file proto.fdn
*
$FM0 Bsmt     $ FLRL=r0flr B1WALLHT=8  B2WALLHT=0.00001
$FM1 Bsmt     $ FLRL=r0flr B1WALLHT=4  B2WALLHT=4
$FM2 Bsmt     $ FLRL=r0flr B1WALLHT=4  B2WALLHT=4
$FM3 Bsmt     $ FLRL=r0flr B1WALLHT=0.00001  B2WALLHT=8
$FM4 Bsmt     $ FLRL=r0flr B1WALLHT=0.00001  B2WALLHT=8
$FM5 Bsmt     $ FLRL=r11flr B1WALLHT=8  B2WALLHT=0.00001
$FM6 Bsmt     $ FLRL=r30flr B1WALLHT=8  B2WALLHT=0.00001
$FM0 Crawl                $ FLRL=r0flr
$FM1 Crawl                $ FLRL=r11flr
$FM2 Crawl                $ FLRL=r19flr
$FM3 Crawl                $ FLRL=r30flr
```

```
$FM4 Crawl                    $ FLRL=r38flr
$FM5 Crawl                    $ FLRL=-999
 $ ---  end of parameters ----------------------------------------------
          ..
        RUN-PERIOD              JAN 1 1986 THRU DEC 31 1986  ..
        DIAGNOSTIC              CAUTIONS,WIDE,ECHO,SINGLE-SPACED ..
*Dummy  BUILDING-LOCATION       LAT=L1, LON=L2,T-Z=L3, ALT=L4,
*Dummy                          WS-HEIGHT-LIST=(12 MONTH TOWER HEIGHTS)
                                AZIMUTH=0 SHIELDING-COEF=0.19
                                TERRAIN-PAR1=.85 TERRAIN-PAR2=.20
                                WS-TERRAIN-PAR1=.85 WS-TERRAIN-PAR2=.20
                                FUNCTION =(*SHADING*,*NONE*)
                                 ..
        ABORT     WARNINGS ..
        LOADS-REPORT            SUMMARY=(LS-E)  ..
 $-------------------------------------------------------------------
 $-----  Loads Schedules  ----------------------------------------------
 $-------------------------------------------------------------------
DAYINTSCH DAY-SCHEDULE          $CEC internal loads profile
                  (1) (.024)  (2) (.022)  (3,5) (.021)
                  (6) (.026)  (7) (.038)  (8) (.059)
                  (9) (.056) (10) (.060) (11) (.059)
                 (12) (.046) (13) (.045) (14) (.030)
                 (15) (.028) (16) (.031) (17) (.057)
               (18,19) (.064) (20) (.052) (21) (.050)
                 (22) (.055) (23) (.044) (24) (.027) ..
INTLDSCH  SCHEDULE  THRU DEC 31 (ALL)  DAYINTSCH ..
 $-------------------------------------------------------------------
 $ The following shading schedule is modified by function SHADING
 $ to give .63 during the cooling season defined as periods with
 $ more than 5 cooling degree days for the four previous days.
 $-------------------------------------------------------------------
SHADCO    SCHEDULE  THRU DEC 31 (ALL) (1,24) (0.80) ..
 $-------------------------------------------------------------------
 $-----  Constructions  ----------------------------------------------
 $-------------------------------------------------------------------
WINDOWGT            GLASS-TYPE        $ Windows
                        SHADING-COEF=GLSCOEF
                        GLASS-CONDUCTANCE=UWINDOW ..
WALLCON             CONSTRUCTION      $ Wall section
                        LAYERS=WALLL ..
ROOFCON             CONSTRUCTION      $ Roof section, with joist
                        LAYERS=ROOFL ..
IWALLCON            CONSTRUCTION      $ Interior walls
                        LAYERS=iwalll ..
DOORCON             CONSTRUCTION      $ Solid door
                        U-VALUE=.7181 ..
FSLABCON            CONSTRUCTION      $ Floor slab in contact with soil
*
$Slab concrete floor$  LAYERS=FSLABL ..
$Bsmt concrete floor$  LAYERS=BSLABL ..
$Crawl dirt floor   $  LAYERS=CGNDL  ..
* Split level upper foundation slab ----------------------
$Split $ SLABCON    CONSTRUCTION    $ Upperfloor slab in contact with soil
$Split $                LAYERS=FSLABL ..
*
```

```
$Two St$ IFLRCON   CONSTRUCTION  $ Floor over conditioned space
$Two St$             LAYERS=iflrl ..
$Split $ IFLRCON   CONSTRUCTION  $ Floor over conditioned space
$Split $             LAYERS=iflrl ..
$Townho$ IFLRCON   CONSTRUCTION  $ Floor over conditioned space
$Townho$             LAYERS=iflrl ..
$Apart $ IFLRCON   CONSTRUCTION  $ Floor over conditioned space
$Apart $             LAYERS=iflrl ..
$Bsmt constructions ------------------------------
$Bsmt     $ FLRCON    CONSTRUCTION  $ Floor over unconditioned space
$Bsmt     $             LAYERS=FLRL  ..
$Bsmt     $ BWALL1CON CONSTRUCTION  $ Uninsulated Basement wall
$Bsmt     $             LAYERS=R0BWALL ..
$Bsmt     $ BWALL2CON CONSTRUCTION  $ Insulated Basement wall
$FM0 Bsmt $             LAYERS=R0BWALL  ..
$FM1 Bsmt $             LAYERS=R5BWALL  ..
$FM2 Bsmt $             LAYERS=R10BWALL ..
$FM3 Bsmt $             LAYERS=R5BWALL  ..
$FM4 Bsmt $             LAYERS=R10BWALL ..
$FM5 Bsmt $             LAYERS=R0BWALL  ..
$FM6 Bsmt $             LAYERS=R0BWALL  ..
$Crawl space constructions -------------------------
$Crawl    $ FLRCON    CONSTRUCTION  $ Floor over unconditioned space
$Crawl    $             LAYERS=FLRL  ..
$Regcrawl $ CWALLCON  CONSTRUCTION  $ Uninsul. siding crawlspace walls
$Regcrawl $             LAYERS=r0rcwall ..
$Stucrawl $ CWALLCON  CONSTRUCTION  $ Uninsul. stucco crawlspace walls
$Stucrawl $             LAYERS=r0scwall ..
$SpltSlab $ BWALL2CON CONSTRUCTION  $ Interior fdnwall in Split-level
$SpltSlab $             LAYERS=r0fcwall ..
$SpltBsmt $ UWALLCON  CONSTRUCTION  $ Wall bet Room & Bsmt in Splitlevel
$SpltBsmt $             LAYERS=uwalll ..
$SpltCrawl$ UWALLCON  CONSTRUCTION  $Wall bet Room & Crawl in Splitlevel
$SpltCrawl$              LAYERS=uwalll ..
$-------------------------------------------------------------------------
$-----  Shades  ----------------------------------------------------------
$-------------------------------------------------------------------------
SURROUNDN BUILDING-SHADE      $ Effect of neighboring houses north
                    HEIGHT=10 WIDTH=SHADEX
                    X=0 Y=SHADEX AZIMUTH=180
                    TRANSMITTANCE=0.50 TILT=90 ..
SURROUNDS BUILDING-SHADE      $ Effect of neighboring houses south
                    LIKE SURROUNDN
                    X=SHADEX Y=0 AZIMUTH=0 ..
SURROUNDE BUILDING-SHADE      $ Effect of neighboring houses east
                    LIKE SURROUNDN
                    X=SHADEX Y=SHADEX AZIMUTH=270 ..
SURROUNDW BUILDING-SHADE      $ Effect of neighboring houses west
                    LIKE SURROUNDN
                    X=0 Y=0 AZIMUTH=90 ..
$Apartment $ LANDINGN BUILDING-SHADE  $ 4ft 2nd story landing north
$Apartment $          HEIGHT=4 WIDTH=WALLX
$Apartment $          X=20 Y=WALLX Z=8.0 AZIMUTH=180
$Apartment $          TILT=0 ..
$Apartment $ LANDINGS BUILDING-SHADE  $ 4ft 2nd story landing south
$Apartment $          LIKE LANDINGN X=WALLX Y=20 AZIMUTH=0 ..
```

```
$Apartment $ LANDINGE BUILDING-SHADE  $ 4ft 2nd story landing east
$Apartment $          LIKE LANDINGN X=WALLX Y=WALLX AZIMUTH=270 ..
$Apartment $ LANDINGW BUILDING-SHADE  $ 4ft 2nd story landing west
$Apartment $          LIKE SURROUNDN X=20 Y=20 AZIMUTH=90 ..
$----------------------------------------------------------------------
$-----  Space ---------------------------------------------------------
$----------------------------------------------------------------------
$  Sensible internal loads are assumed at 4692kWh/year plus
$  0.9kWh/sqft for lighting. Latent loads assumed 1300kWh/year
$
ROOMCOND  SPACE-CONDITIONS
                    TEMPERATURE = (74)
                    SOURCE-TYPE=PROCESS
                    SOURCE-SCHEDULE=INTLDSCH
                    SOURCE-BTU/HR=INTLOAD
                    SOURCE-SENSIBLE=1.
                    SOURCE-LATENT=LATLOAD
                    INF-METHOD=S-G
                    FRAC-LEAK-AREA = INFILT
                    FLOOR-WEIGHT=0
                    FURNITURE-TYPE=LIGHT
                    FURN-FRACTION=0.29
                    FURN-WEIGHT=3.30
$Ach  report$       FUNCTION=(*NONE*,*INFILTRATION*)
                    ..
THEROOM   SPACE
                    SPACE-CONDITIONS=ROOMCOND
                    AREA=FLOORAREA
                    VOLUME=FLOORAREA TIMES 8. ..
* Walls ----------------------------------------------------------------
INTWALL   INTERIOR-WALL
                    INT-WALL-TYPE=INTERNAL
                    AREA=IWALLAREA CONSTRUCTION=IWALLCON ..
NWALL     EXTERIOR-WALL
                    WIDTH=WALLWD  CONSTRUCTION=WALLCON
                    X=WALLX Y=WALLX HEIGHT=WALLHT  ..
NDOOR     DOOR      HEIGHT=6.5 WIDTH=.75 CONSTRUCTION=DOORCON X=3.0 ..
NWIND1    WINDOW    GLASS-TYPE=WINDOWGT X=5.0 Y=3
                    HEIGHT=4.0 WIDTH=WINDOWWD SHADING-SCHEDULE=SHADCO
$Split $            OH-A=5.0  OH-B=1.0 OH-W=WALLWD  OH-D=2.0
$One St$            OH-A=5.0  OH-B=1.0 OH-W=WALLWD  OH-D=2.0
                    ..
$Two St$  NWIND2    WINDOW  LIKE NWIND1 Y=11.0
$Two St$            OH-A=5.0  OH-B=1.0 OH-W=WALLWD  OH-D=2.0  ..
$Townho$  NWIND2    WINDOW  LIKE NWIND1 Y=11.0
$Mid To$            OH-A=15.0  OH-B=1.0 OH-W=WALLWD TIMES 3 OH-D=2.0 ..
$End To$            OH-A=5.0  OH-B=1.0 OH-W=WALLWD TIMES 2 OH-D=2.0 ..
SWALL     EXTERIOR-WALL     LIKE NWALL X=20 Y=20 AZIMUTH=180 ..
SDOOR     DOOR      LIKE NDOOR  ..
SWIND1    WINDOW    LIKE NWIND1  ..
$Two St$  SWIND2    WINDOW  LIKE NWIND2 Y=11.0 ..
$Townho$  SWIND2    WINDOW  LIKE NWIND2 Y=11.0 ..
EWALL     EXTERIOR-WALL     LIKE NWALL X=WALLX Y=20 AZIMUTH=90 ..
EDOOR     DOOR      LIKE NDOOR  ..
EWIND1    WINDOW    LIKE NWIND1  ..
$Two St$  EWIND2    WINDOW  LIKE NWIND2 Y=11.0 ..
```

```
$Townho$  EWIND2     WINDOW  LIKE NWIND2 Y=11.0 ..
WWALL     EXTERIOR-WALL     LIKE NWALL X=20 Y=WALLX AZIMUTH=270 ..
WDOOR     DOOR      LIKE NDOOR    ..
WWIND1    WINDOW    LIKE NWIND1   ..
$Two St$  WWIND2    WINDOW  LIKE NWIND2 Y=11.0 ..
$Townho$  WWIND2    WINDOW  LIKE NWIND2 Y=11.0 ..
* Floors ----------------------------------------------------------------
$Slab  $ FOUNDATION UNDERGROUND-FLOOR $ Slab floor
$Slab  $            HEIGHT=10 WIDTH=BSMTAREA TIMES .1
$Slab  $            TILT=180 CONSTRUCTION=FSLABCON
$Slab  $            U-EFFECTIVE=FDNUEFF
$Slab  $            FUNCTION =(*NONE*,*FNDQ*)  ..
$Bsmt  $ INTERFLR   INTERIOR-WALL    $ Floor bet Theroom and Basement
$Bsmt  $            TILT=180 CONSTRUCTION=FLRCON
$Bsmt  $            AREA=BSMTAREA NEXT-TO=BASEMENT ..
$Crawl $ INTERFLR   INTERIOR-WALL    $ Floor bet Theroom and Crawlspace
$Crawl $            TILT=180 CONSTRUCTION=FLRCON
$Crawl $            AREA=BSMTAREA NEXT-TO=CRAWLSPACE  ..
*
$Two St$  INTFLOOR  INTERIOR-WALL INT-WALL-TYPE=INTERNAL
$Two St$            AREA=BSMTAREA CONSTRUCTION=IFLRCON TILT=180 ..
$Split $  INTFLOOR  INTERIOR-WALL INT-WALL-TYPE=INTERNAL
$Split $            AREA=UPFNDAREA CONSTRUCTION=IFLRCON TILT=180 ..
$Townho$  INTFLOOR  INTERIOR-WALL INT-WALL-TYPE=INTERNAL
$Townho$            AREA=BSMTAREA CONSTRUCTION=IFLRCON TILT=180 ..
*
* Split level walls and floors ---------------------
$Split $  NWALL2    EXTERIOR-WALL LIKE NWALL X=38.17 WIDTH=18.17
$Split $            Z=-3 HEIGHT=16 ..
$Split $  NWIND2    WINDOW GLASS-TYPE=WINDOWGT X=5.0 Y=3.0
$Split $             SHADING-SCHEDULE=SHADCO  HEIGHT=4 WIDTH=4.284 ..
$Split $  NWIND3    WINDOW LIKE NWIND1 Y=11 WIDTH=4.284 OH-W=18.17 ..
$Split $  SWALL2    EXTERIOR-WALL LIKE SWALL X=41 WIDTH=18.17
$Split $            Z=-3 HEIGHT=16 ..
$Split $  SWIND2    WINDOW LIKE NWIND2 ..
$Split $  SWIND3    WINDOW LIKE NWIND3 ..
$Split $  EWALL2    EXTERIOR-WALL LIKE EWALL Y=41 WIDTH=18.17
$Split $            Z=-3 HEIGHT=16 ..
$Split $  EWIND2    WINDOW LIKE NWIND2 ..
$Split $  EWIND3    WINDOW LIKE NWIND3 ..
$Split $  WWALL2    EXTERIOR-WALL LIKE WWALL Y=38.17 WIDTH=18.17
$Split $            Z=-3 HEIGHT=16 ..
$Split $  WWIND2    WINDOW LIKE NWIND2 ..
$Split $  WWIND3    WINDOW LIKE NWIND3 ..
$Split $  UPPERFND  UNDERGROUND-FLOOR   $ Upper foundation slab
$Split $            HEIGHT=10 WIDTH=UPFNDAREA TIMES .1
$Split $            TILT=180  CONSTRUCTION=SLABCON
$Split $            U-EFFECTIVE=UPFUEFF
$Split $            FUNCTION =(*NONE*,*UPFNDQ*)   ..
$SpltSlab $ MIDFND  UNDERGROUND-WALL $ Vertical concrete wall
$SpltSlab $         HEIGHT=3.0 WIDTH=28
$SpltSlab $         U-EFFECTIVE=FDNUEFF
$SpltSlab $         CONSTRUCTION=BWALL2CON ..
$SpltBsmt $ MIDFND  INTERIOR-WALL    $ Vertical wall next to basement
$SpltBsmt $         HEIGHT=3.0 WIDTH=28 NEXT-TO=BASEMENT
$SpltBsmt $         CONSTRUCTION=UWALLCON ..
```

```
$SpltCrawl$ MIDFND  INTERIOR-WALL    $ Vertical wall next to crawl
$SpltCrawl$         HEIGHT=3.0 WIDTH=28 NEXT-TO=CRAWLSPACE
$SpltCrawl$         CONSTRUCTION=UWALLCON ..
*
* Apartment upper unit space ----------------------
$Apartment $ UPROOM     SPACE      LIKE THEROOM
$Apartment $                       FUNCTION=(*NONE*,*NONE*)  ..
$Apartment $ APTFLR     INTERIOR-WALL    $Floor bet Theroom and Uproom
$Apartment $            CONSTRUCTION=IFLRCON AREA=BSMTAREA
$Apartment $            NEXT-TO=THEROOM TILT=180  ..
$Apartment $ UPINTWALL INTERIOR-WALL  LIKE INTWALL ..
$Apartment $ UPNWALL    EXTERIOR-WALL LIKE NWALL Z=8.0 ..
$Apartment $ UPNDOOR    DOOR       LIKE NDOOR ..
$Apartment $ UPNWIND    WINDOW     LIKE NWIND1
$MApartment$            OH-A=15.0  OH-B=1.0 OH-W=WALLWD TIMES 3 OH-D=2.0 .
$EApartment$            OH-A=5.0   OH-B=1.0 OH-W=WALLWD TIMES 2 OH-D=2.0 ..
$Apartment $ UPSWALL    EXTERIOR-WALL      LIKE SWALL Z=8.0 ..
$Apartment $ UPSDOOR    DOOR       LIKE NDOOR   ..
$Apartment $ UPSWIND    WINDOW     LIKE UPNWIND   ..
$Apartment $ UPEWALL    EXTERIOR-WALL      LIKE EWALL Z=8.0 ..
$Apartment $ UPEDOOR    DOOR       LIKE NDOOR   ..
$Apartment $ UPEWIND    WINDOW     LIKE UPNWIND   ..
$Apartment $ UPWWALL    EXTERIOR-WALL      LIKE WWALL Z=8.0 ..
$Apartment $ UPWDOOR    DOOR       LIKE NDOOR   ..
$Apartment $ UPWWIND    WINDOW     LIKE UPNWIND   ..
* Roofs ------------------------------------------------------------------
NROOF       ROOF        X=WALLX Y=WALLX Z=ROOFZ HEIGHT=ROOFHT WIDTH=ROOFWD
                        CONSTRUCTION=ROOFCON TILT=18.435      ..
SROOF       ROOF        LIKE NROOF AZIMUTH=180 X=20 Y=20      ..
EROOF       ROOF        LIKE NROOF AZIMUTH=90 X=WALLX Y=20    ..
WROOF       ROOF        LIKE NROOF AZIMUTH=270 X=20 Y=WALLX   ..
* Split level roof ---------------------------------
$Split $   NROOF2     ROOF LIKE NROOF HEIGHT=14 WIDTH=10.54 Z=13 X=45.17 ..
$Split $   SROOF2     ROOF LIKE SROOF HEIGHT=14 WIDTH=10.54 Z=13 X=34 ..
$Split $   EROOF2     ROOF LIKE EROOF HEIGHT=14 WIDTH=10.54 Z=13 Y=34 ..
$Split $   WROOF2     ROOF LIKE WROOF HEIGHT=14 WIDTH=10.54 Z=13 Y=45.17 ..
* Basement ---------------------------------------------------------------
$Bsmt   $   BASEMENT  SPACE
$Bsmt   $             AREA=BSMTAREA VOLUME=BSMTAREA TIMES 8.
$Bsmt   $             FURNITURE-TYPE=LIGHT
$Bsmt   $             FURN-FRACTION=0.29
$Bsmt   $             FURN-WEIGHT=3.30
$Bsmt   $             FLOOR-WEIGHT=0
$Bsmt   $             ZONE-TYPE=UNCONDITIONED T=(70) ..
$Bsmt   $ FND1WALL    UNDERGROUND-WALL  $ Basement wall w/o insulation
$Bsmt   $             HEIGHT=B1WALLHT WIDTH=PERIM
$Bsmt   $             CONSTRUCTION=BWALL1CON TILT=90
$Bsmt   $             U-EFFECTIVE= FDNUEFF
$Bsmt   $             FUNCTION =(*NONE*,*FNDQ*) ..
$Bsmt   $ FND2WALL    UNDERGROUND-WALL  $ Basement wall with insulation
$Bsmt   $             HEIGHT=B2WALLHT WIDTH=PERIM
$Bsmt   $             U-EFFECTIVE=FDNUEFF
$Bsmt   $             CONSTRUCTION=BWALL2CON TILT=90  ..
$Bsmt   $ FOUNDATION UNDERGROUND-FLOOR  $ basement concrete floor
$Bsmt   $             HEIGHT=10 WIDTH=BSMTAREA TIMES .1
$Bsmt   $             U-EFFECTIVE=FDNUEFF
```

```
$Bsmt  $              CONSTRUCTION=FSLABCON TILT=180 ..
*
$Crawl $  CRAWLSPACE SPACE
$Crawl $              AREA=BSMTAREA VOLUME=BSMTAREA TIMES 3.00
$Crawl $              INF-METHOD=S-G
$Crawl      assume 1 ft2 of vents per 150 ft2 of crawl space area,
$Crawl      effective-leakage-area = 75% of vent area
$Crawl $              FRAC-LEAK-AREA= .005
$Crawl $              FLOOR-WEIGHT=0
$Crawl $              ZONE-TYPE=UNCONDITIONED T=(60)
$CAch report$         FUNCTION=(*NONE*,*CRAWLINFILT*)
$Crawl $               ..
$Crawl $ NCWALL       EXTERIOR-WALL   LIKE NWALL
$Crawl $              CONSTRUCTION=CWALLCON   HEIGHT=1.50 Z=-3.00  ..
$Crawl $ SCWALL       EXTERIOR-WALL   LIKE SWALL
$Crawl $              CONSTRUCTION=CWALLCON   HEIGHT=1.50 Z=-3.00  ..
$Crawl $ ECWALL       EXTERIOR-WALL   LIKE EWALL
$Crawl $              CONSTRUCTION=CWALLCON   HEIGHT=1.50 Z=-3.00  ..
$Crawl $ WCWALL       EXTERIOR-WALL   LIKE WWALL
$Crawl $              CONSTRUCTION=CWALLCON   HEIGHT=1.50 Z=-3.00  ..
$Crawl $ FOUNDATION UNDERGROUND-FLOOR  $ Crawlspace dirt floor
$Crawl $              HEIGHT=10 WIDTH=BSMTAREA TIMES .1
$Crawl $              TILT=180 CONSTRUCTION=FSLABCON
$Crawl $              U-EFFECTIVE=FDNUEFF
$Crawl $              FUNCTION=(*NONE*,*FNDQ*)     ..
          END ..
FUNCTION  NAME=SHADING
          LEVEL=BUILDING     ..
ASSIGN    Y=SCHEDULE-NAME(SHADCO)  ..
ASSIGN    IHR=IHR IDAY=IDAY IMO=IMO DBT=DBT    ..
ASSIGN    IPRDFL=IPRDFL ISUNUP=ISUNUP ..
CALCULATE     ..
      IF (IPRDFL .LE. 0) GO TO 2
      SC=Y
      GO TO 70
    2 IF (IHR .NE. 1) GO TO 5
      CDH=0
      HDH=0
      IDAYH=0
    5 CONTINUE
      IF (ISUNUP .EQ. 0) GO TO 25
      DELTA=DBT-65.0
      IF (DELTA .GT. 0.00) GO TO 10
      HDH=HDH+ABS(DELTA)
      GO TO 20
   10 CDH=CDH+DELTA
   20 CONTINUE
      IDAYH=IDAYH+1
   25 IF (IHR .NE. 24) GO TO 70
      CDDD=CDH/IDAYH
      HDDD=HDH/IDAYH
      IF (CDDD .LT. 5.00) GO TO 29
      IF (SC .NE. 0.80) GO TO 27
      ICOUNT=ICOUNT+1
      IF (ICOUNT .LE. 4) GO TO 40
   27 IHCOUNT=0
```

```
      SC=0.60
      GO TO 70
   29 IF (SC .NE. 0.60) GO TO 30
      IHCOUNT=IHCOUNT+1
      IF (IHCOUNT .GE. 4) GO TO 30
      SC=0.60
      GO TO 70
   30 ICOUNT=0.0
   40 SC=0.80
   70 CONTINUE
      Y=SC
C     PRINT 80,Y,IMO,IDAY,IHR,CDDD,CDH,ICOUNT,IHCOUNT
   80 FORMAT( ' SHADING : ADD=' ,8F10.2)
      END
END-FUNCTION    ..
$FndQ function
$FndQ function  FUNCTION NAME = FNDQ
$FndQ function           LEVEL = UNDERGROUND-WALL  ..
$FndQ function  ASSIGN   DOY=IDOY UGFQ=QUGF UGWQ=QUGW ..
$FndQ function  ASSIGN   QTABL = TABLE
$FndQ flux table for main foundation from Minnesota model data file
$FndQ function        CALCULATE  ..
$FndQ function        WEEK = DOY / 3.0
$FndQ function        UGWQ = 0.0
$FndQ function        UGFQ = PWL(QTABL, WEEK)
$FndQ function  C     PRINT 10, DOY, WEEK, UGWQ, UGFQ
$FndQ function     10 FORMAT('FNDQ',4F10.2)
$FndQ function        END-FUNCTION  ..
$UFdQ function
$UFdQ function  FUNCTION NAME = UPFNDQ
$UFdQ function           LEVEL = UNDERGROUND-WALL  ..
$UFdQ function  ASSIGN   DOY=IDOY UPUGFQ=QUGF UPUGWQ=QUGW ..
$UFdQ function  ASSIGN   UPQTABL = TABLE
$UFdQ flux table for upper foundation from Minnesota model data file
$UFdQ function        CALCULATE  ..
$UFdQ function        WEEK = DOY / 3.0
$UFdQ function        UPUGWQ = 0.0
$UFdQ function        UPUGFQ = PWL(UPQTABL, WEEK)
$UFdQ function  C     PRINT 10, DOY, WEEK, UPUGWQ, UPUGFQ
$UFdQ function     10 FORMAT('UPFNDQ',4F10.2)
$UFdQ function        END-FUNCTION  ..
$Ach  function
$Ach  function  FUNCTION  NAME=INFILTRATION
$Ach  function           LEVEL=BUILDING     ..
$Ach  function  ASSIGN IDOY=IDOY IMO=IMO HR=IHR FLOORAREA=FLOORAREA ..
$Ach  function  ASSIGN IPRDFL=IPRDFL FNTYPE=FNTYPE  INFIL1=CFMINF  ..
$Ach  function  CALCULATE    ..
$Ach  function        IF (FNTYPE .NE. 2) GO TO 8
$Ach  function        IF (IPRDFL .LE. 0) GO TO 2
$Ach  function        IMTH=1
$Ach  function        DL=0
$Ach  function        TOTAL=0
$Ach  function      2 IF ((IDOY .EQ. 365) .AND. (HR .EQ. 24)) GO TO 3
$Ach  function        IF (IMTH .EQ. IMO) GO TO 5
$Ach  function      3 AVG=TOTAL/(DS*24)
$Ach  function        INF=AVG*60/(FLOORAREA*8)
```

```
$Ach  function          PRINT 80,IMTH,AVG,INF
$Ach  function          TOTAL=0
$Ach  function          DL=DL+DS
$Ach  function        5 IMTH=IMO
$Ach  function          DS=IDOY-DL
$Ach  function          TOTAL=TOTAL+INFIL1
$Ach  function       80 FORMAT( '$$INF 1' ,F4.0,F10.2,F10.5)
$Ach  function        8 CONTINUE
$Ach  function          END
$Ach  function  END-FUNCTION    ..
$CAch function
$CAch function  FUNCTION  NAME=CRAWLINFILT
$CAch function            LEVEL=BUILDING     ..
$CAch function  ASSIGN IDOY=IDOY IMO=IMO HR=IHR FLOORAREA=FLOORAREA ..
$CAch function  ASSIGN IPRDFL=IPRDFL FNTYPE=FNTYPE  INFIL3=CFMINF ..
$CAch function  CALCULATE     ..
$CAch function        IF (FNTYPE .NE. 2) GO TO 8
$CAch function        IF (IPRDFL .LE. 0) GO TO 2
$CAch function        IMTH=1
$CAch function        DL=0
$CAch function        TOTAL=0
$CAch function      2 IF ((IDOY .EQ. 365) .AND. (HR .EQ. 24)) GO TO 3
$CAch function        IF (IMTH .EQ. IMO) GO TO 5
$CAch function      3 AVG=TOTAL/(DS*24)
$CAch function        INF=AVG*60/(FLOORAREA*3)
$CAch function        PRINT 80,IMTH,AVG,INF
$CAch function        TOTAL=0
$CAch function        DL=DL+DS
$CAch function      5 IMTH=IMO
$CAch function        DS=IDOY-DL
$CAch function        TOTAL=TOTAL+INFIL3
$CAch function     80 FORMAT( '$$INF 3',F4.0,F10.2,F10.5)
$CAch function      8 CONTINUE
$CAch function        END
$CAch function        END-FUNCTION    ..
          COMPUTE LOADS ..
$Loads report$   SAVE-FILES ..
 $
 $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)                              (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*) File name:SYS.PROD           (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)  Date:  Nov 3 1986           (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)                              (*)*(*)*(*)*(*)*(*)*
 $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 $
          INPUT     SYSTEMS ..
*Dummy   TITLE  LINE-1 *PROTOTYPE  FOUNDATION  OPTION AND CODE  *
*Dummy          LINE-2 *LOCATION  WEATHER TAPE  WALL  EQUIPMENT *
*Dummy          LINE-3 *                                        *
*Dummy          LINE-4 *                                        *
*Dummy          LINE-5 *                                        *
                  ..
          DIAGNOSTIC    CAUTIONS ECHO ..
          SYSTEMS-REPORT
                SUMMARY=(SS-A,SS-B,SS-C,SS-F,SS-H,SS-I) ..
$-------------------------------------------------------------
```

```
          PARAMETER
 $-------------------------------------------------------------------
   HEATSET=70     SETBACK=70     $ no night setback
   COOLSET=78     SETUP=78       $ no day setup
   VTYPE=-1                      $ enthalpic venting
$Furn $           FHIR=1.4286    $ 77% efficiency + 10% duct losses
$Furn $           MAXTEMP=120
$HP   $           MAXTEMP=100
   CBF=.098       CEIR=.3703     $ 2.7 COP air conditioner
*
$One Story    $   HCAPF=-50000.  HPHCAP=-36000  HPBKUP=-17000
$One Story    $   ACCFM=1050     CTCAP=36000    CSCAP=28800.
*
$Two Story    $   HCAPF=-100000. HPHCAP=-48000  HPBKUP=-17000
$Two Story    $   ACCFM=2100     CTCAP=48000    CSCAP=38400.
*
$Split Level  $   HCAPF=-100000. HPHCAP=-36000  HPBKUP=-17000
$Split Level  $   ACCFM=2100     CTCAP=36000    CSCAP=28800.
*
$Townhouse    $   HCAPF=-50000.  HPHCAP=-33000  HPBKUP=-17000
$Townhouse    $   ACCFM=1050     CTCAP=33000    CSCAP=26400.
*
$Apartment    $   HCAPF=-50000.  HPHCAP=-33000  HPBKUP=-17000
$Apartment    $   ACCFM=1050     CTCAP=33000    CSCAP=26400.
                  ..
 $-------------------------------------------------------------------
 $-----  Systems Schedules  ---------------------------------------
 $-------------------------------------------------------------------
HTSCH      SCHEDULE  $ heat temperature schedule, 7 hour night setback
                     THRU DEC 31 (ALL) (1,6)  (SETBACK)
                                       (7,23) (HEATSET)
                                       (24)   (SETBACK)  ..
CTSCH      SCHEDULE  $ cool temperature schedule, 7 hour day setup
                     THRU DEC 31 (ALL) (1,9)  (COOLSET)
                                       (10,16) (SETUP)
                                       (17,24)   (COOLSET)  ..
VTSCH      SCHEDULE  $Vent schedule based on previous 4 days load
                     THRU MAY 14 (ALL) (1,24) (-4)
                     THRU SEP 30 (ALL) (1,24) (-4)
                     THRU DEC 31 (ALL) (1,24) (-4) ..
VOPSCH     SCHEDULE  $Vent operation schedule
                     THRU DEC 31 (ALL) (1,24) (VTYPE) ..
WINDOPER   SCHEDULE  $No window operation between 11 p.m. and 6 a.m.
                     THRU DEC 31 (ALL) (1,6)  (0.0)
                                       (7,23) (1.0)
                                       (24)   (0.0)  ..
 $-------------------------------------------------------------------
 $-----  Zones  ---------------------------------------------------
 $-------------------------------------------------------------------
ZC1                  ZONE-CONTROL
                              DESIGN-HEAT-T=70.
                              DESIGN-COOL-T=78.
                              COOL-TEMP-SCH=CTSCH
                              HEAT-TEMP-SCH=HTSCH
                              THERMOSTAT-TYPE=TWO-POSITION ..
THEROOM              ZONE     ZONE-CONTROL=ZC1
```

```
$Apartment$  UPROOM ZONE          ZONE-TYPE=CONDITIONED ..
$Apartment$                       ZONE-CONTROL=ZC1
$Bsmt  $ BASEMENT   ZONE          ZONE-TYPE=CONDITIONED ..
$Crawl $ CRAWLSPACE ZONE          ZONE-TYPE=UNCONDITIONED  ..
 $-------------------------------------------------------------------
 $-----  Systems  ---------------------------------------------------
 $-------------------------------------------------------------------
SYSCONTRL SYSTEM-CONTROL
                  MAX-SUPPLY-T=MAXTEMP
                  MIN-SUPPLY-T=50
                    ..
SYSAIR    SYSTEM-AIR
                  SUPPLY-CFM=ACCFM
                  NATURAL-VENT-SCH=VOPSCH
                  VENT-TEMP-SCH=VTSCH
                  OPEN-VENT-SCH=WINDOPER
                  HOR-VENT-FRAC=0.0
 $ assume 1/4 of total window area opened for venting,
 $ and discharge coefficient of 0.6
                  FRAC-VENT-AREA=0.018
                  VENT-METHOD=S-G
                  MAX-VENT-RATE=20
                    ..
SYSEQP    SYSTEM-EQUIPMENT
                  COOLING-CAPACITY=CTCAP
                  COOL-SH-CAP=CSCAP
                  COIL-BF=CBF
                  COMPRESSOR-TYPE=SINGLE-SPEED
$HP       Heatpump specifications ------------------------------
$HP    $          HEATING-CAPACITY=HPHCAP
$HP    $          HEATING-EIR=.37
$HP    $          HP-SUPP-HT-CAP=HPBKUP
$HP    $          MAX-HP-SUPP-T=40.
$Furn     Furnace specifications    $
$Furn  $          HEATING-CAPACITY=HCAPF
$Furn  $          FURNACE-AUX=0.
$Furn  $          FURNACE-HIR=FHIR $ duct losses in FHIR already
                    ..
RESIDEN  SYSTEM  SYSTEM-TYPE=RESYS
$Slab  $       ZONE-NAMES=(THEROOM)
$Bsmt  $       ZONE-NAMES=(THEROOM,BASEMENT)
$Crawl $       ZONE-NAMES=(THEROOM,CRAWLSPACE)
                 SYSTEM-CONTROL=SYSCONTRL
                 SYSTEM-AIR=SYSAIR
                 SYSTEM-EQUIPMENT=SYSEQP
$Furn  $         HEAT-SOURCE=GAS-FURNACE
$HP    $         HEAT-SOURCE=HEAT-PUMP
                  ..
$Apartment$  UPRESIDEN SYSTEM  SYSTEM-TYPE=RESYS
$Apartment$      ZONE-NAMES=(UPROOM)
$Apartment$      SYSTEM-CONTROL=SYSCONTRL
$Apartment$      SYSTEM-AIR=SYSAIR
$Apartment$      SYSTEM-EQUIPMENT=SYSEQP
$AptFurn  $      HEAT-SOURCE=GAS-FURNACE
$AptHP    $      HEAT-SOURCE=HEAT-PUMP
```

```
$Apartment$       ..
          END ..
          COMPUTE  SYSTEMS ..
          STOP  ..
```

APPENDIX B. SAMPLE PROCESSED DOE-2.1C INPUT FILE

Appendix B contains a sample processed file for a medium insulated house with a slab foundation in Albuquerque NM.

L D L P R O C E S S O R I N P U T D A T A

08-Sep-87 18:20:07 LDL RUN 1

```
*  14 *   TITLE  LINE-1  *One Story  Slab  F02 (19-11-FM1-M-2/1.) *
*  15 *          LINE-2  *Albuquerque NM   WYEC  Siding Furn/AC   *
*  16 *          LINE-3  *                                        *
*  17 *          LINE-4  *                                        *
*  18 *          LINE-5  *                                        *
*  19 *                                ..
*  20 *   $-------------------------------------------------------------------
*  21 *                 PARAMETER
*  22 *   $-------------------------------------------------------------------
*  23 *   $
*  24 *   $     IWALLAREA = area of interior walls                          $
*  25 *   $                                                                 $
*  26 *  $One Story         $ FLOORAREA=1540 PERIM=166 IWALLAREA=1088       $
*  27 *  $One Story         $ BSMTAREA=1540
*  28 *  $One Story         $ ROOFZ=8.0 ROOFHT=14.757 ROOFWD=27.5
*  29 *  $One Story         $ WALLWD=41.5 WALLHT=8.0 WINDOWWD=11.55
*  30 *  $One Story         $ WALLX=61.5 SHADEX=81.5
*  31 *  $One Story         $ INTLOAD=56857 LATLOAD=.2138
*  32 *  $Albuquerque $ FSLABL=fslabldy BSLABL=bslabldy CGNDL=cgndldy
*  33 *  $Albuquerque $ R5BWALL=r5bwlldy R10BWALL=r10bwldy ROBWALL=r0bwlldy
*  34 *  $Medium Infiltration      $ INFILT = .0005
*  35 *  $2-pane Windows           $ UWINDOW = .535
*  36 *  $1. Shading Coefficient   $ GLSCOEF=1.0
*  37 *  $R19 Ceiling              $ ROOFL = r19roof
*  38 *  $R11 Reg siding wall      $ WALLL = r11rwall
*  39 *  $Albuqu One  Slab  FM1    $ FDNUEFF =.0217  $ GndU=.0000 GndT=62
*  40 *   $ ---  end of parameters ------------------------------------------
*  41 *                    ..
*  42 *          RUN-PERIOD           JAN 1 1986 THRU DEC 31 1986  ..
*  43 *          DIAGNOSTIC           CAUTIONS,WIDE,ECHO,SINGLE-SPACED ..
*  44 *          BUILDING-LOCATION    LAT=35.05 LON=106.62 T-Z=7  ALT=5310
*  45 *                               WS-HEIGHT-LIST=
*  46 *                                (48,23,48,23,48,23,23,23,48,23,23,23)
*  47 *                               AZIMUTH=0 SHIELDING-COEF=0.19
*  48 *                               TERRAIN-PAR1=.85 TERRAIN-PAR2=.20
*  49 *                               WS-TERRAIN-PAR1=.85 WS-TERRAIN-PAR2=.20
*  50 *                               FUNCTION =(*SHADING*,*NONE*)
*  51 *                                ..
*  52 *           ABORT     WARNINGS ..
*  53 *           LOADS-REPORT       SUMMARY=(LS-E)  ..
*  54 *   $-------------------------------------------------------------------
*  55 *   $-----  Loads Schedules  ----------------------------------------------
*  56 *   $-------------------------------------------------------------------
*  57 *  DAYINTSCH DAY-SCHEDULE        $CEC internal loads profile
*  58 *                     (1) (.024)  (2) (.022)  (3,5) (.021)
*  59 *                     (6) (.026)  (7) (.038)  (8) (.059)
*  60 *                     (9) (.056) (10) (.060) (11) (.059)
*  61 *                    (12) (.046) (13) (.045) (14) (.030)
*  62 *                    (15) (.028) (16) (.031) (17) (.057)
*  63 *                  (18,19) (.064) (20) (.052) (21) (.050)
*  64 *                    (22) (.055) (23) (.044) (24) (.027) ..
*  65 *  INTLDSCH  SCHEDULE  THRU DEC 31 (ALL)  DAYINTSCH ..
```

```
*  66 *   $-------------------------------------------------------------------
*  67 *   $ The following shading schedule is modified by function SHADING
*  68 *   $ to give .63 during the cooling season defined as periods with
*  69 *   $ more than 5 cooling degree days for the four previous days.
*  70 *   $-------------------------------------------------------------------
*  71 *  SHADCO    SCHEDULE  THRU DEC 31 (ALL) (1,24) (0.80) ..
*  72 *   $-------------------------------------------------------------------
*  73 *   $-----  Constructions  ----------------------------------------------
*  74 *   $-------------------------------------------------------------------
*  75 *  WINDOWGT            GLASS-TYPE        $ Windows
*  76 *                          SHADING-COEF=GLSCOEF
*  77 *                          GLASS-CONDUCTANCE=UWINDOW ..
*  78 *  WALLCON             CONSTRUCTION      $ Wall section
*  79 *                          LAYERS=WALLL ..
*  80 *  ROOFCON             CONSTRUCTION      $ Roof section, with joist
*  81 *                          LAYERS=ROOFL ..
*  82 *  IWALLCON            CONSTRUCTION      $ Interior walls
*  83 *                          LAYERS=iwalll ..
*  84 *  DOORCON             CONSTRUCTION      $ Solid door
*  85 *                          U-VALUE=.7181 ..
*  86 *  FSLABCON            CONSTRUCTION      $ Floor slab in contact with soil
*  87 *  $Slab concrete floor$  LAYERS=FSLABL ..
*  88 *   $-------------------------------------------------------------------
*  89 *   $-----  Shades  ----------------------------------------------------
*  90 *   $-------------------------------------------------------------------
*  91 *  SURROUNDN BUILDING-SHADE      $ Effect of neighboring houses north
*  92 *                         HEIGHT=10 WIDTH=SHADEX
*  93 *                         X=0 Y=SHADEX AZIMUTH=180
*  94 *                         TRANSMITTANCE=0.50 TILT=90 ..
*  95 *  SURROUNDS BUILDING-SHADE      $ Effect of neighboring houses south
*  96 *                         LIKE SURROUNDN
*  97 *                         X=SHADEX Y=0 AZIMUTH=0 ..
*  98 *  SURROUNDE BUILDING-SHADE      $ Effect of neighboring houses east
*  99 *                         LIKE SURROUNDN
* 100 *                         X=SHADEX Y=SHADEX AZIMUTH=270 ..
* 101 *  SURROUNDW BUILDING-SHADE      $ Effect of neighboring houses west
* 102 *                         LIKE SURROUNDN
* 103 *                         X=0 Y=0 AZIMUTH=90 ..
* 104 *   $-------------------------------------------------------------------
* 105 *   $-----  Space  ----------------------------------------------------
* 106 *   $-------------------------------------------------------------------
* 107 *   $  Sensible internal loads are assumed at 4692kWh/year plus
* 108 *   $  0.9kWh/sqft for lighting. Latent loads assumed 1300kWh/year
* 109 *   $
* 110 *  ROOMCOND  SPACE-CONDITIONS
* 111 *                        TEMPERATURE = (74)
* 112 *                        SOURCE-TYPE=PROCESS
* 113 *                        SOURCE-SCHEDULE=INTLDSCH
* 114 *                        SOURCE-BTU/HR=INTLOAD
* 115 *                        SOURCE-SENSIBLE=1.
* 116 *                        SOURCE-LATENT=LATLOAD
* 117 *                        INF-METHOD=S-G
* 118 *                        FRAC-LEAK-AREA = INFILT
* 119 *                        FLOOR-WEIGHT=0
* 120 *                        FURNITURE-TYPE=LIGHT
* 121 *                        FURN-FRACTION=0.29
* 122 *                        FURN-WEIGHT=3.30
* 123 *                        ..
* 124 *  THEROOM   SPACE
* 125 *                        SPACE-CONDITIONS=ROOMCOND
```

```
 * 126 *                          AREA=FLOORAREA
 * 127 *                          VOLUME=FLOORAREA TIMES 8. ..
 * 128 *  INTWALL    INTERIOR-WALL
 * 129 *                          INT-WALL-TYPE=INTERNAL
 * 130 *                          AREA=IWALLAREA CONSTRUCTION=IWALLCON ..
 * 131 *  NWALL      EXTERIOR-WALL
 * 132 *                          WIDTH=WALLWD  CONSTRUCTION=WALLCON
 * 133 *                          X=WALLX Y=WALLX HEIGHT=WALLHT   ..
 * 134 *  NDOOR      DOOR         HEIGHT=6.5 WIDTH=.75 CONSTRUCTION=DOORCON X=3.0 ..
 * 135 *  NWIND1     WINDOW       GLASS-TYPE=WINDOWGT X=5.0 Y=3
 * 136 *                          HEIGHT=4.0 WIDTH=WINDOWWD SHADING-SCHEDULE=SHADC0
 * 137 *  $One St$                OH-A=5.0  OH-B=1.0 OH-W=WALLWD  OH-D=2.0
 * 138 *                          ..
 * 139 *  SWALL      EXTERIOR-WALL      LIKE NWALL X=20 Y=20 AZIMUTH=180 ..
 * 140 *  SDOOR      DOOR       LIKE NDOOR   ..
 * 141 *  SWIND1     WINDOW     LIKE NWIND1  ..
 * 142 *  EWALL      EXTERIOR-WALL      LIKE NWALL X=WALLX Y=20 AZIMUTH=90 ..
 * 143 *  EDOOR      DOOR       LIKE NDOOR   ..
 * 144 *  EWIND1     WINDOW     LIKE NWIND1  ..
 * 145 *  WWALL      EXTERIOR-WALL      LIKE NWALL X=20 Y=WALLX AZIMUTH=270 ..
 * 146 *  WDOOR      DOOR       LIKE NDOOR   ..
 * 147 *  WWIND1     WINDOW     LIKE NWIND1  ..
 * 148 *  $Slab  $ FOUNDATION UNDERGROUND-FLOOR $ Slab floor
 * 149 *  $Slab  $            HEIGHT=10 WIDTH=BSMTAREA TIMES .1
 * 150 *  $Slab  $            TILT=180 CONSTRUCTION=FSLABCON
 * 151 *  $Slab  $            U-EFFECTIVE=FDNUEFF
 * 152 *  $Slab  $            FUNCTION =(*NONE*,*FNDQ*)   ..
 * 153 *  NROOF      ROOF       X=WALLX Y=WALLX Z=ROOFZ HEIGHT=ROOFHT WIDTH=ROOFWD
 * 154 *                        CONSTRUCTION=ROOFCON TILT=18.435      ..
 * 155 *  SROOF      ROOF       LIKE NROOF AZIMUTH=180 X=20 Y=20      ..
 * 156 *  EROOF      ROOF       LIKE NROOF AZIMUTH=90 X=WALLX Y=20    ..
 * 157 *  WROOF      ROOF       LIKE NROOF AZIMUTH=270 X=20 Y=WALLX   ..
 * 158 *             END ..
-CAUTION-------------------------------------------------------------------------------------
         ALL DIAGNOSTICS FOR THE WEIGHTING-FACTOR
         CALCULATION SECTION ARE GIVEN IN ENGLISH UNITS
 * 159 *  FUNCTION  NAME=SHADING
 * 160 *            LEVEL=BUILDING     ..
 * 161 *  ASSIGN    Y=SCHEDULE-NAME(SHADC0)   ..
 * 162 *  ASSIGN    IHR=IHR IDAY=IDAY IMO=IMO DBT=DBT    ..
 * 163 *  ASSIGN    IPRDFL=IPRDFL ISUNUP=ISUNUP ..
 * 164 *  CALCULATE     ..
 * 165 *       IF (IPRDFL .LE. 0) GO TO 2
 * 166 *       SC=Y
 * 167 *       GO TO 70
 * 168 *     2 IF (IHR .NE. 1) GO TO 5
 * 169 *       CDH=0
 * 170 *       HDH=0
 * 171 *       IDAYH=0
 * 172 *     5 CONTINUE
 * 173 *       IF (ISUNUP .EQ. 0) GO TO 25
 * 174 *       DELTA=DBT-65.0
 * 175 *       IF (DELTA .GT. 0.00) GO TO 10
 * 176 *       HDH=HDH+ABS(DELTA)
 * 177 *       GO TO 20
 * 178 *    10 CDH=CDH+DELTA
 * 179 *    20 CONTINUE
 * 180 *       IDAYH=IDAYH+1
 * 181 *    25 IF (IHR .NE. 24) GO TO 70
 * 182 *       CDDD=CDH/IDAYH
```

```
* 183 *          HDDD=HDH/IDAYH
* 184 *          IF (CDDD .LT. 5.00) GO TO 29
* 185 *          IF (SC .NE. 0.80) GO TO 27
* 186 *          ICOUNT=ICOUNT+1
* 187 *          IF (ICOUNT .LE. 4) GO TO 40
* 188 *       27 IHCOUNT=0
* 189 *          SC=0.60
* 190 *          GO TO 70
* 191 *       29 IF (SC .NE. 0.60) GO TO 30
* 192 *          IHCOUNT=IHCOUNT+1
* 193 *          IF (IHCOUNT .GE. 4) GO TO 30
* 194 *          SC=0.60
* 195 *          GO TO 70
* 196 *       30 ICOUNT=0.0
* 197 *       40 SC=0.80
* 198 *       70 CONTINUE
* 199 *          Y=SC
* 200 *  C       PRINT 80,Y,IMO,IDAY,IHR,CDDD,CDH,ICOUNT,IHCOUNT
* 201 *       80 FORMAT( ' SHADING : ADD=' ,8F10.2)
* 202 *          END
```

---------- S Y M B O L T A B L E ----------

CDDD	**LOCAL*	CDH	**LOCAL*	DBT	(GLOBAL)	DELTA	**LOCAL*
HDH	**LOCAL*	ICOUNT	**LOCAL*	IDAYH	**LOCAL*	IHCOUNT	**LOCAL*
IPRDFL	(GLOBAL)	ISUNUP	(GLOBAL)	SC	**LOCAL*	Y	(SCH-NM)

```
* 203 *  END-FUNCTION    ..
* 204 *
* 205 *  FUNCTION NAME = FNDQ
* 206 *           LEVEL = UNDERGROUND-WALL   ..
* 207 *  ASSIGN   DOY=IDOY UGFQ=QUGF UGWQ=QUGW ..
* 208 *  ASSIGN   QTABL = TABLE
* 209 *  (  0, -2848.0)(  1, -2890.9)(  2, -2923.0)(  3, -2940.5)(  4, -2951.1)
* 210 *  (  5, -2965.2)(  6, -2969.1)(  7, -2989.7)(  8, -3056.8)(  9, -3079.3)
* 211 *  ( 10, -3078.6)( 11, -3047.5)( 12, -2992.4)( 13, -2924.8)( 14, -2888.9)
* 212 *  ( 15, -2965.7)( 16, -3055.0)( 17, -3086.0)( 18, -3095.1)( 19, -3080.7)
* 213 *  ( 20, -3044.5)( 21, -3005.8)( 22, -3026.0)( 23, -3023.6)( 24, -3005.5)
* 214 *  ( 25, -2990.5)( 26, -2971.8)( 27, -2949.1)( 28, -2909.0)( 29, -2891.7)
* 215 *  ( 30, -2857.4)( 31, -2839.2)( 32, -2816.4)( 33, -2748.9)( 34, -2701.0)
* 216 *  ( 35, -2678.6)( 36, -2622.4)( 37, -2558.6)( 38, -2498.7)( 39, -2430.0)
* 217 *  ( 40, -2388.9)( 41, -2327.6)( 42, -2296.8)( 43, -2282.9)( 44, -2244.7)
* 218 *  ( 45, -2183.0)( 46, -2126.5)( 47, -2084.6)( 48, -2065.4)( 49, -2049.5)
* 219 *  ( 50, -2005.4)( 51, -1959.2)( 52, -1919.2)( 53, -1877.8)( 54, -1848.3)
* 220 *  ( 55, -1798.8)( 56, -1743.0)( 57, -1689.2)( 58, -1637.7)( 59, -1573.3)
* 221 *  ( 60, -1493.8)( 61, -1418.4)( 62, -1366.4)( 63, -1360.2)( 64, -1367.1)
* 222 *  ( 65, -1349.9)( 66, -1328.9)( 67, -1304.8)( 68, -1270.3)( 69, -1227.4)
* 223 *  ( 70, -1172.8)( 71, -1137.0)( 72, -1123.4)( 73, -1101.7)( 74, -1077.6)
* 224 *  ( 75, -1064.5)( 76, -1076.9)( 77, -1069.8)( 78, -1063.8)( 79, -1065.1)
* 225 *  ( 80, -1065.8)( 81, -1071.6)( 82, -1087.8)( 83, -1096.9)( 84, -1097.7)
* 226 *  ( 85, -1094.9)( 86, -1099.1)( 87, -1109.7)( 88, -1120.6)( 89, -1156.5)
* 227 *  ( 90, -1193.6)( 91, -1209.2)( 92, -1240.8)( 93, -1269.8)( 94, -1309.8)
* 228 *  ( 95, -1343.8)( 96, -1375.3)( 97, -1411.7)( 98, -1466.7)( 99, -1522.6)
* 229 *  (100, -1571.5)(101, -1622.6)(102, -1671.8)(103, -1710.1)(104, -1757.4)
* 230 *  (105, -1791.8)(106, -1822.5)(107, -1874.3)(108, -1934.4)(109, -2034.2)
* 231 *  (110, -2134.7)(111, -2260.7)(112, -2342.2)(113, -2382.9)(114, -2418.0)
* 232 *  (115, -2450.5)(116, -2502.9)(117, -2548.4)(118, -2577.7)(119, -2610.2)
* 233 *  (120, -2659.0)(121, -2751.0)(122, -2814.3)  ..
```

```
 * 234 *          CALCULATE  ..
 * 235 *          WEEK = DOY / 3.0
 * 236 *          UGWQ = 0.0
 * 237 *          UGFQ = PWL(QTABL, WEEK)
 * 238 *  C       PRINT 10, DOY, WEEK, UGWQ, UGFQ
 * 239 *       10 FORMAT('FNDQ',4F10.2)
 * 240 *          END-FUNCTION  ..

------------------------------------------- S Y M B O L   T A B L E ----------------------

DOY       (GLOBAL)       QTABL     (TABLE)        UGFQ      (GLOBAL)       UGWQ      (GLOBAL)

-------------------------------------------------------------------------------------------

 * 241 *             COMPUTE LOADS ..
 * 242 *    $
 * 243 *    $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 * 244 *    $ *(*)*(*)*(*)*(*)*(*)                                  (*)*(*)*(*)*(*)*(*)*
 * 245 *    $ *(*)*(*)*(*)*(*)*(*)*(*) File name:SYS.PROD           (*)*(*)*(*)*(*)*(*)*
 * 246 *    $ *(*)*(*)*(*)*(*)*(*)*(*)  Date:  Nov 3 1986          (*)*(*)*(*)*(*)*(*)*
 * 247 *    $ *(*)*(*)*(*)*(*)*(*)*(*)                             (*)*(*)*(*)*(*)*(*)*
 * 248 *    $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 * 249 *    $
 * 250 *              INPUT     SYSTEMS ..
```

S D L P R O C E S S O R I N P U T D A T A

08-Sep-87 18:20:07 SDL RUN 1

```
* 251 *   TITLE  LINE-1  *One Story  Slab  F02 (19-11-FM1-M-2/1.) *
* 252 *          LINE-2  *Albuquerque NM   WYEC  Siding Furn/AC   *
* 253 *          LINE-3  *                                        *
* 254 *          LINE-4  *                                        *
* 255 *          LINE-5  *                                        *
* 256 *                                                           *
* 257 *            DIAGNOSTIC    CAUTIONS ECHO ..
* 258 *            SYSTEMS-REPORT
* 259 *                  SUMMARY=(SS-A,SS-B,SS-C,SS-F,SS-H,SS-I) ..
* 260 *   $-------------------------------------------------------------
* 261 *          PARAMETER
* 262 *   $-------------------------------------------------------------
* 263 *     HEATSET=70     SETBACK=70     $ no night setback
* 264 *     COOLSET=78     SETUP=78       $ no day setup
* 265 *     VTYPE=-1                      $ enthalpic venting
* 266 *  $Furn $           FHIR=1.4286    $ 77% efficiency + 10% duct losses
* 267 *  $Furn $           MAXTEMP=120
* 268 *     CBF=.098       CEIR=.3703     $ 2.7 COP air conditioner
* 269 *  $One Story     $  HCAPF=-50000.   HPHCAP=-36000  HPBKUP=-17000
* 270 *  $One Story     $  ACCFM=1050      CTCAP=36000    CSCAP=28800.
* 271 *                      ..
* 272 *    $-------------------------------------------------------------
* 273 *    $-----  Systems Schedules  ----------------------------------
* 274 *    $-------------------------------------------------------------
* 275 *  HTSCH     SCHEDULE  $ heat temperature schedule, 7 hour night setback
* 276 *                      THRU DEC 31 (ALL) (1,6)   (SETBACK)
* 277 *                                        (7,23)  (HEATSET)
* 278 *                                        (24)    (SETBACK)  ..
* 279 *  CTSCH     SCHEDULE  $ cool temperature schedule, 7 hour day setup
* 280 *                      THRU DEC 31 (ALL) (1,9)   (COOLSET)
* 281 *                                        (10,16) (SETUP)
* 282 *                                        (17,24)   (COOLSET)  ..
* 283 *  VTSCH     SCHEDULE  $Vent schedule based on previous 4 days load
* 284 *                      THRU MAY 14 (ALL) (1,24) (-4)
* 285 *                      THRU SEP 30 (ALL) (1,24) (-4)
* 286 *                      THRU DEC 31 (ALL) (1,24) (-4) ..
* 287 *  VOPSCH    SCHEDULE  $Vent operation schedule
* 288 *                      THRU DEC 31 (ALL) (1,24) (VTYPE) ..
* 289 *  WINDOPER  SCHEDULE  $No window operation between 11 p.m. and 6 a.m.
* 290 *                      THRU DEC 31 (ALL) (1,6)   (0.0)
* 291 *                                        (7,23)  (1.0)
* 292 *                                        (24)    (0.0)  ..
* 293 *    $-------------------------------------------------------------
* 294 *    $-----  Zones  ----------------------------------------------
* 295 *    $-------------------------------------------------------------
* 296 *  ZC1                 ZONE-CONTROL
* 297 *                              DESIGN-HEAT-T=70.
* 298 *                              DESIGN-COOL-T=78.
* 299 *                              COOL-TEMP-SCH=CTSCH
* 300 *                              HEAT-TEMP-SCH=HTSCH
* 301 *                              THERMOSTAT-TYPE=TWO-POSITION ..
* 302 *  THEROOM             ZONE    ZONE-CONTROL=ZC1
```

```
* 303 *                                        ZONE-TYPE=CONDITIONED ..
* 304 *   $-------------------------------------------------------------
* 305 *   $-----  Systems  ----------------------------------------------
* 306 *   $-------------------------------------------------------------
* 307 *  SYSCONTRL SYSTEM-CONTROL
* 308 *                    MAX-SUPPLY-T=MAXTEMP
* 309 *                    MIN-SUPPLY-T=50
* 310 *                      ..
* 311 *  SYSAIR    SYSTEM-AIR
* 312 *                    SUPPLY-CFM=ACCFM
* 313 *                    NATURAL-VENT-SCH=VOPSCH
* 314 *                    VENT-TEMP-SCH=VTSCH
* 315 *                    OPEN-VENT-SCH=WINDOPER
* 316 *                    HOR-VENT-FRAC=0.0
* 317 *   $ assume 1/4 of total window area opened for venting,
* 318 *   $ and discharge coefficient of 0.6
* 319 *                    FRAC-VENT-AREA=0.018
* 320 *                    VENT-METHOD=S-G
* 321 *                    MAX-VENT-RATE=20
* 322 *                      ..
* 323 *  SYSEQP    SYSTEM-EQUIPMENT
* 324 *                    COOLING-CAPACITY=CTCAP
* 325 *                    COOL-SH-CAP=CSCAP
* 326 *                    COIL-BF=CBF
* 327 *                    COMPRESSOR-TYPE=SINGLE-SPEED
* 328 *  $Furn     Furnace specifications    $
* 329 *  $Furn  $          HEATING-CAPACITY=HCAPF
* 330 *  $Furn  $          FURNACE-AUX=0.
* 331 *  $Furn  $          FURNACE-HIR=FHIR $ duct losses in FHIR already
* 332 *                      ..
* 333 *  RESIDEN  SYSTEM  SYSTEM-TYPE=RESYS
* 334 *  $Slab  $       ZONE-NAMES=(THEROOM)
* 335 *                    SYSTEM-CONTROL=SYSCONTRL
* 336 *                    SYSTEM-AIR=SYSAIR
* 337 *                    SYSTEM-EQUIPMENT=SYSEQP
* 338 *  $Furn  $          HEAT-SOURCE=GAS-FURNACE
* 339 *                      ..
* 340 *            END ..
* 341 *            COMPUTE  SYSTEMS ..
* 342 *            STOP  ..
```

```
 * 234 *          CALCULATE  ..
 * 235 *          WEEK = DOY / 3.0
 * 236 *          UGWQ = 0.0
 * 237 *          UGFQ = PWL(QTABL, WEEK)
 * 238 *  C       PRINT 10, DOY, WEEK, UGWQ, UGFQ
 * 239 *       10 FORMAT('FNDQ',4F10.2)
 * 240 *          END-FUNCTION  ..
```

---------- S Y M B O L T A B L E ----------

DOY	(GLOBAL)	QTABL	(TABLE)	UGFQ	(GLOBAL)	UGWQ	(GLOBAL)

```
 * 241 *             COMPUTE LOADS ..
 * 242 *    $
 * 243 *    $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 * 244 *    $ *(*)*(*)*(*)*(*)*(*)                              (*)*(*)*(*)*(*)*(*)*
 * 245 *    $ *(*)*(*)*(*)*(*)*(*) File name:SYS.PROD           (*)*(*)*(*)*(*)*(*)*
 * 246 *    $ *(*)*(*)*(*)*(*)*(*)  Date:  Nov 3 1986           (*)*(*)*(*)*(*)*(*)*
 * 247 *    $ *(*)*(*)*(*)*(*)*(*)                              (*)*(*)*(*)*(*)*(*)*
 * 248 *    $ *(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*(*)*
 * 249 *    $
 * 250 *              INPUT     SYSTEMS ..
```

S D L P R O C E S S O R I N P U T D A T A

08-Sep-87 18:20:07 SDL RUN 1

```
* 251 *   TITLE  LINE-1  *One Story  Slab  F02 (19-11-FM1-M-2/1.) *
* 252 *          LINE-2  *Albuquerque NM   WYEC  Siding Furn/AC   *
* 253 *          LINE-3  *                                        *
* 254 *          LINE-4  *                                        *
* 255 *          LINE-5  *                                        *
* 256 *                                                           *
* 257 *            DIAGNOSTIC    CAUTIONS ECHO ..
* 258 *            SYSTEMS-REPORT
* 259 *                  SUMMARY=(SS-A,SS-B,SS-C,SS-F,SS-H,SS-I) ..
* 260 *   $-------------------------------------------------------------
* 261 *            PARAMETER
* 262 *   $-------------------------------------------------------------
* 263 *     HEATSET=70     SETBACK=70     $ no night setback
* 264 *     COOLSET=78     SETUP=78       $ no day setup
* 265 *     VTYPE=-1                      $ enthalpic venting
* 266 *  $Furn $           FHIR=1.4286    $ 77% efficiency + 10% duct losses
* 267 *  $Furn $           MAXTEMP=120
* 268 *     CBF=.098       CEIR=.3703     $ 2.7 COP air conditioner
* 269 *  $One Story     $  HCAPF=-50000.  HPHCAP=-36000  HPBKUP=-17000
* 270 *  $One Story     $  ACCFM=1050     CTCAP=36000    CSCAP=28800.
* 271 *                      ..
* 272 *    $-------------------------------------------------------------
* 273 *    $-----  Systems Schedules  ----------------------------------
* 274 *    $-------------------------------------------------------------
* 275 *  HTSCH      SCHEDULE  $ heat temperature schedule, 7 hour night setback
* 276 *                       THRU DEC 31 (ALL) (1,6)   (SETBACK)
* 277 *                                         (7,23)  (HEATSET)
* 278 *                                         (24)    (SETBACK)  ..
* 279 *  CTSCH      SCHEDULE  $ cool temperature schedule, 7 hour day setup
* 280 *                       THRU DEC 31 (ALL) (1,9)   (COOLSET)
* 281 *                                         (10,16) (SETUP)
* 282 *                                         (17,24)   (COOLSET)  ..
* 283 *  VTSCH      SCHEDULE  $Vent schedule based on previous 4 days load
* 284 *                       THRU MAY 14 (ALL) (1,24) (-4)
* 285 *                       THRU SEP 30 (ALL) (1,24) (-4)
* 286 *                       THRU DEC 31 (ALL) (1,24) (-4) ..
* 287 *  VOPSCH     SCHEDULE  $Vent operation schedule
* 288 *                       THRU DEC 31 (ALL) (1,24) (VTYPE) ..
* 289 *  WINDOPER   SCHEDULE  $No window operation between 11 p.m. and 6 a.m.
* 290 *                       THRU DEC 31 (ALL) (1,6)   (0.0)
* 291 *                                         (7,23)  (1.0)
* 292 *                                         (24)    (0.0)  ..
* 293 *    $-------------------------------------------------------------
* 294 *    $-----  Zones  ------------------------------------------------
* 295 *    $-------------------------------------------------------------
* 296 *  ZC1                 ZONE-CONTROL
* 297 *                              DESIGN-HEAT-T=70.
* 298 *                              DESIGN-COOL-T=78.
* 299 *                              COOL-TEMP-SCH=CTSCH
* 300 *                              HEAT-TEMP-SCH=HTSCH
* 301 *                              THERMOSTAT-TYPE=TWO-POSITION ..
* 302 *  THEROOM             ZONE    ZONE-CONTROL=ZC1
```