

FURNACE

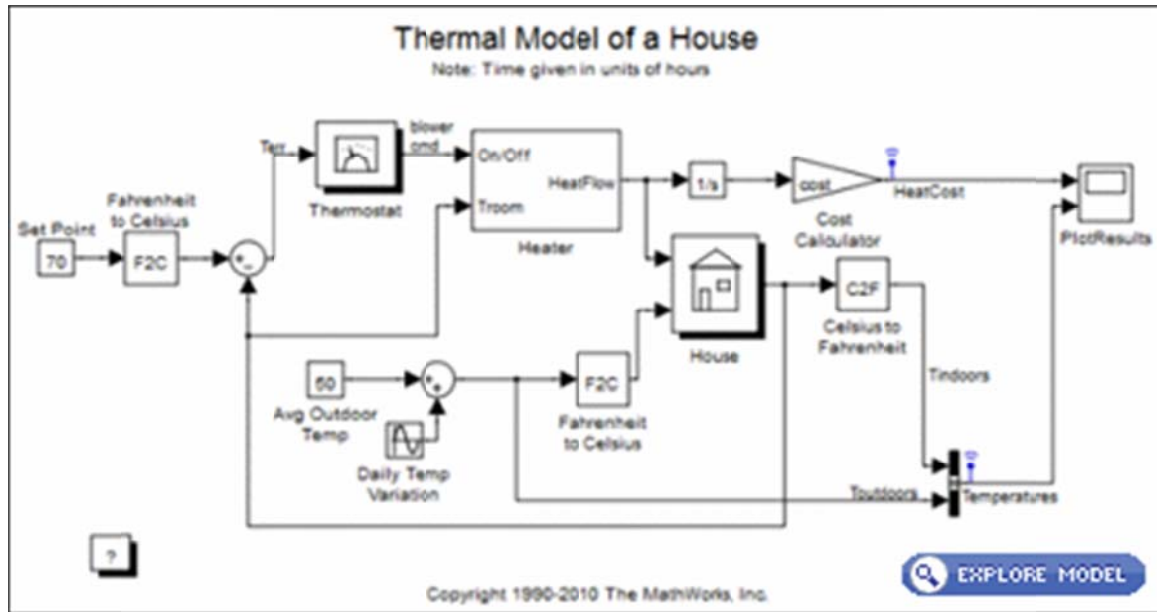
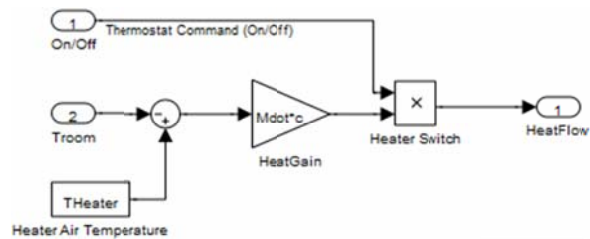
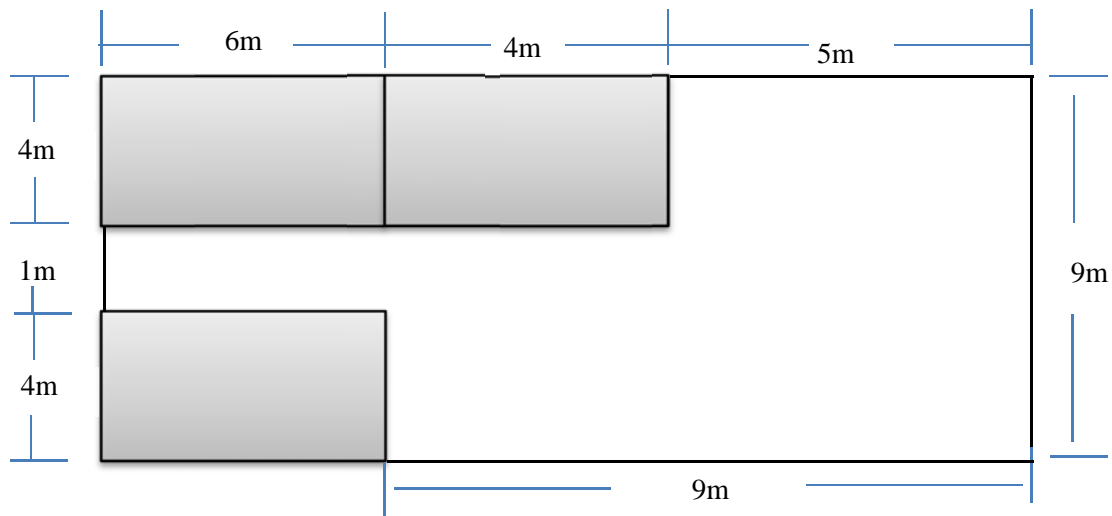


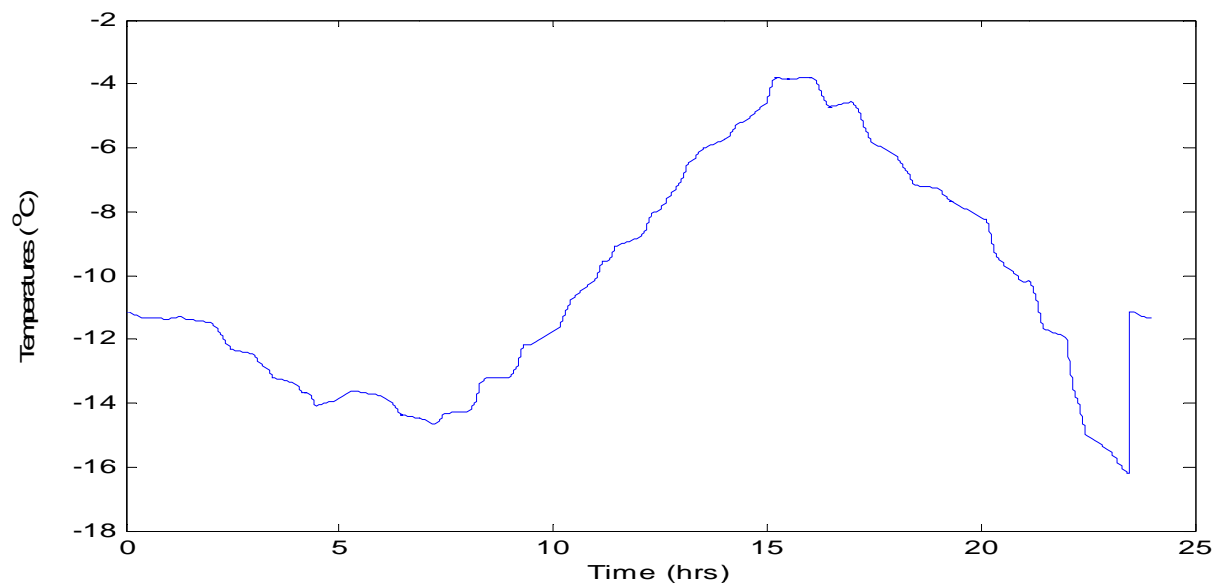
Figure 1: The House Heating Model

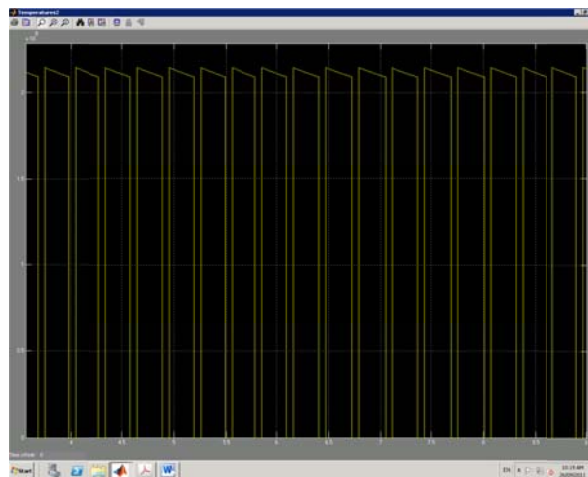
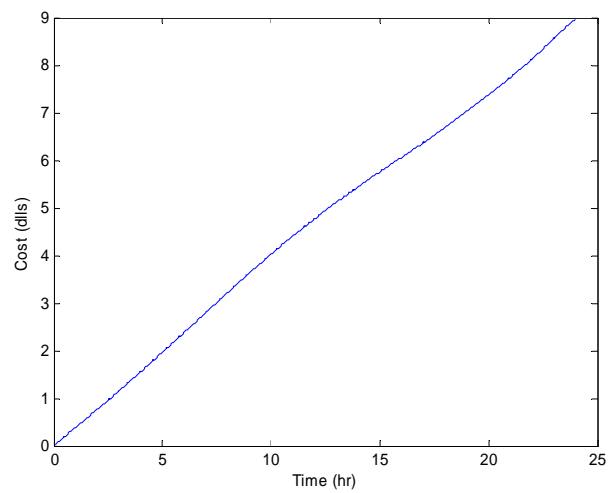
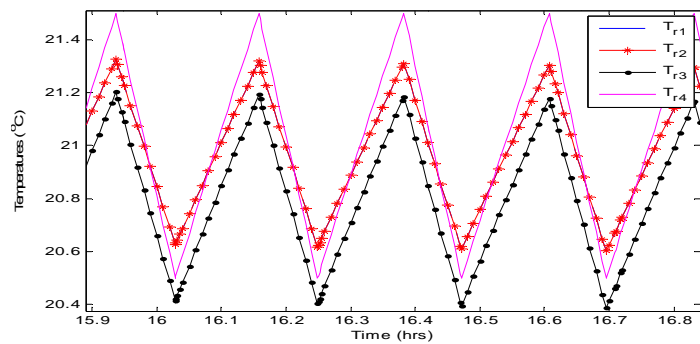
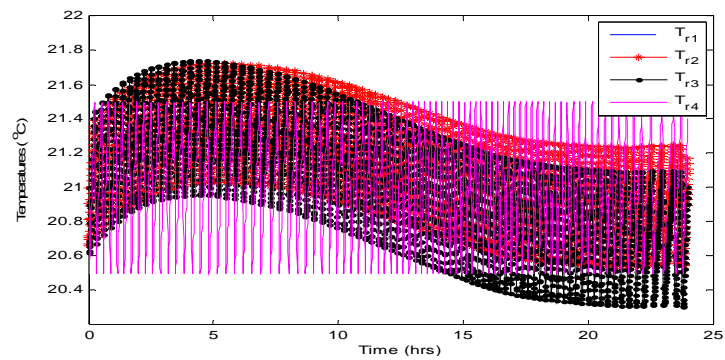
$$\left(\frac{dQ}{dt}\right)_{heater} = (T_{heater} - T_{room})M_{dot} \cdot c$$





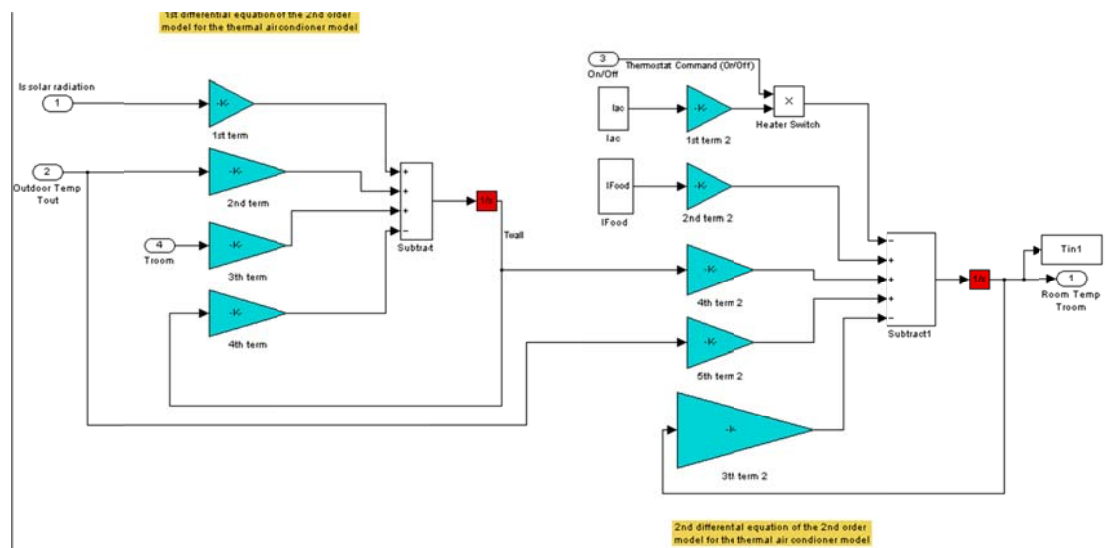
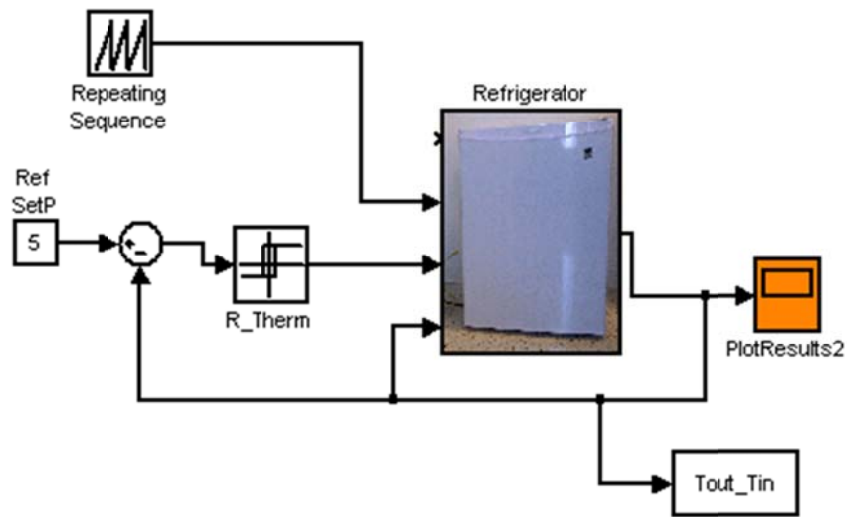
	Room 1	Room 2	Room 3	Room 4
Cw	5.8067e+006	5.8067e+006	3323100	15775980
Ci	1.9971e+006	1.9971e+006	8.8759e+005	7.4891e+006
Rw	8.8072e-006	8.8072e-006	1.5389e-005	3.2417e-006
Rc	1.7147e-006	1.7147e-006	3.4294e-006	3.1176e-007
Qheat	37e6	37e6	18.5e6	20e7

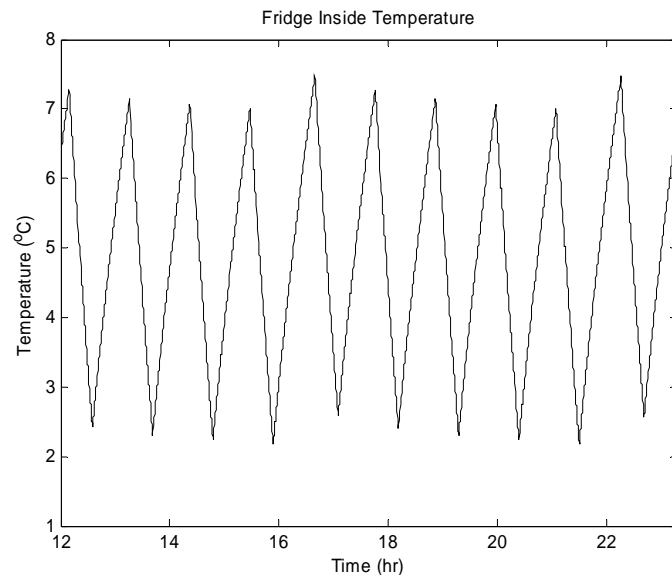




Q_{Heater}

REFRIGERATOR





Comparison with GLPK model from Hassen_Hussin Thesis

	Time	ON/OFF	Temp
1	12	0	4
2	12.15	0	5.2
3	12.3	1	1.11
4	12.45	0	2.31
5	1	0	3.51
6	1.15	0	4.71
7	1.3	0	5.91
8	1.45	1	1.81
9	2	0	3.01
10	2.15	0	4.21
11	2.3	0	5.41
12	2.45	1	1.32
13	3	0	2.52
14	3.15	0	3.72
15	3.3	0	4.92
16	3.45	0	6.12
17	4	1	2.02
18	4.15	0	3.22
19	4.3	0	4.42
20	4.45	0	5.62
21	5	0	6.82
22	5.15	1	2.73

23	5.3	0	3.93
24	5.45	0	5.13
25	6	1	1.03
26	6.15	0	2.23
27	6.3	0	3.43
28	6.45	0	4.63
29	7	0	5.83
30	7.15	1	1.74
31	7.3	0	2.94
32	7.45	0	4.14
33	8	0	5.34
34	8.15	1	1.24
35	8.3	0	2.44
36	8.45	0	3.64
37	9	0	4.84
38	9.15	0	6.04
39	9.3	1	1.95
40	9.45	0	3.15
41	10	0	4.35
42	10.15	0	5.55
43	10.3	0	6.75
44	10.45	1	2.65
45	11	0	3.85

46	11.15	0	5.05
47	11.3	0	6.25
48	11.45	1	2.16
49	12	0	3.36
50	12.15	0	4.56
51	12.3	0	5.76
52	12.45	1	1.66
53	13	0	2.86
54	13.15	0	4.06
55	13.3	0	5.26
56	13.45	1	1.17
57	14	0	2.37
58	14.15	0	3.57
59	14.3	0	4.77
60	14.45	0	5.97
61	15	1	1.87
62	15.15	0	3.07
63	15.3	0	4.27
64	15.45	0	5.47
65	16	1	1.38
66	16.15	0	2.58
67	16.3	0	3.78
68	16.45	0	4.98
69	17	0	6.18
70	17.15	1	2.08
71	17.3	0	3.28

72	17.45	0	4.48
73	18	0	5.68
74	18.15	1	1.59
75	18.3	0	2.79
76	18.45	0	3.99
77	19	0	5.19
78	19.15	1	1.09
79	19.3	0	2.29
80	19.45	0	3.49
81	20	0	4.69
82	20.15	0	5.89
83	20.3	1	1.8
84	20.45	0	3
85	21	0	4.2
86	21.15	0	5.4
87	21.3	1	1.3
88	21.45	0	2.5
89	22	0	3.7
90	22.15	0	4.9
91	22.3	0	6.1
92	22.45	1	2.01
93	23	0	3.21
94	23.15	0	4.41
95	23.3	0	5.61
96	23.45	0	6.81

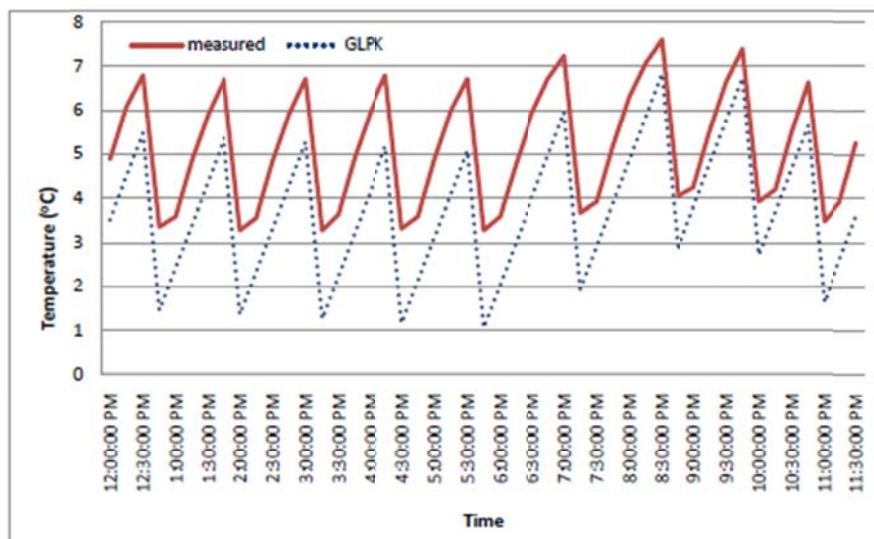
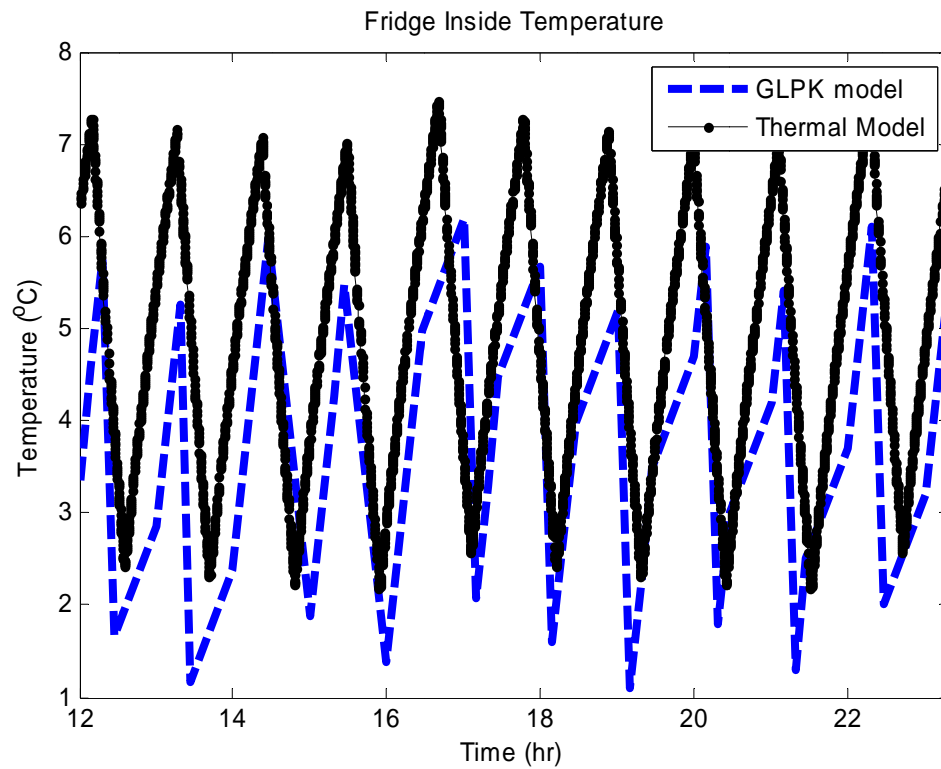


Figure 3.27. Measured and GLPK calculated refrigerator temperatures.

