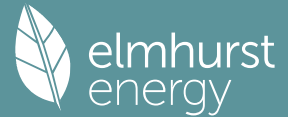


Full SAP Calculation Printout



tau	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974	77.3974
alpha	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598	6.1598
util living area	0.9814	0.9702	0.9436	0.8784	0.7438	0.5589	0.4064	0.4441	0.6687	0.8895	0.9667	0.9850 (86)
MIT	20.3183	20.4328	20.6099	20.8059	20.9428	20.9914	20.9990	20.9982	20.9760	20.8189	20.5296	20.2744 (87)
Th 2	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076	20.2076 (88)
util rest of house	0.9766	0.9626	0.9295	0.8497	0.6941	0.4929	0.3338	0.3685	0.6010	0.8574	0.9569	0.9810 (89)
MIT 2	19.6008	19.7121	19.8814	20.0599	20.1715	20.2038	20.2073	20.2071	20.1955	20.0751	19.8076	19.5580 (90)
Living area fraction									FLA = Living area / (4) =			0.3735 (91)
MIT	19.8688	19.9813	20.1535	20.3386	20.4596	20.4980	20.5030	20.5026	20.4871	20.3529	20.0773	19.8256 (92)
Temperature adjustment												0.0000
adjusted MIT	19.8688	19.9813	20.1535	20.3386	20.4596	20.4980	20.5030	20.5026	20.4871	20.3529	20.0773	19.8256 (93)

8. Space heating requirement

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Utilisation	0.9741	0.9601	0.9284	0.8549	0.7105	0.5174	0.3609	0.3968	0.6256	0.8639	0.9550	0.9787 (94)
Useful gains	517.0045	543.2704	548.2072	518.9851	437.2277	306.3978	204.3124	214.5773	326.6446	437.9145	478.1064	500.0933 (95)
Ext temp.	4.3000	4.9000	6.5000	8.9000	11.7000	14.6000	16.6000	16.4000	14.1000	10.6000	7.1000	4.2000 (96)
Heat loss rate W	815.9723	790.4204	715.5898	599.5030	459.0982	309.1170	204.5599	215.0197	334.7504	511.1555	680.1471	818.9467 (97)
Space heating kWh	222.4320	166.0848	124.5326	57.9729	16.2716	0.0000	0.0000	0.0000	0.0000	54.4913	145.4692	237.2269 (98a)
Space heating requirement - total per year (kWh/year)												1024.4815
Solar heating kWh	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (98b)
Solar heating contribution - total per year (kWh/year)												0.0000
Space heating kWh	222.4320	166.0848	124.5326	57.9729	16.2716	0.0000	0.0000	0.0000	0.0000	54.4913	145.4692	237.2269 (98c)
Space heating requirement after solar contribution - total per year (kWh/year)												1024.4815
Space heating per m2										(98c) / (4) =		16.6745 (99)

9a. Energy requirements - Individual heating systems, including micro-CHP

Fraction of space heat from secondary/supplementary system (Table 11)												0.0000 (201)
Fraction of space heat from main system(s)												1.0000 (202)
Efficiency of main space heating system 1 (in %)												88.7000 (206)
Efficiency of main space heating system 2 (in %)												0.0000 (207)
Efficiency of secondary/supplementary heating system, %												0.0000 (208)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Space heating requirement	222.4320	166.0848	124.5326	57.9729	16.2716	0.0000	0.0000	0.0000	0.0000	54.4913	145.4692	237.2269 (98)
Space heating efficiency (main heating system 1)	88.7000	88.7000	88.7000	88.7000	88.7000	0.0000	0.0000	0.0000	0.0000	88.7000	88.7000	88.7000 (210)
Space heating fuel (main heating system)	250.7689	187.2433	140.3976	65.3584	18.3445	0.0000	0.0000	0.0000	0.0000	61.4332	164.0014	267.4486 (211)
Space heating efficiency (main heating system 2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (212)
Space heating fuel (main heating system 2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (213)
Space heating fuel (secondary)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (215)
Water heating												
Water heating requirement	176.0572	154.9618	163.1861	140.5022	134.0510	118.4827	115.4768	121.5125	124.3951	141.4090	153.5605	173.7915 (64)
Efficiency of water heater (217)m	82.7058	82.1921	81.1498	79.4713	77.3804	76.2000	76.2000	76.2000	76.2000	79.3089	81.8084	76.2000 (216)
Fuel for water heating, kWh/month	212.8716	188.5362	201.0924	176.7963	173.2365	155.4890	151.5444	159.4652	163.2482	178.3016	187.7074	209.5220 (219)
Space cooling fuel requirement												
(221)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (221)
Pumps and Fa	15.4325	13.9390	15.4325	14.9346	15.4325	14.9346	15.4325	15.4325	14.9346	15.4325	14.9346	15.4325 (231)
Lighting	22.0659	17.7021	15.9388	11.6774	9.0200	7.3694	8.2283	10.6955	13.8924	18.2276	20.5880	22.6792 (232)
Electricity generated by PVs (Appendix M) (negative quantity)												
(233a)m	-8.2144	-12.7380	-20.1637	-25.0495	-29.1795	-28.0704	-27.7277	-25.0613	-20.7895	-15.5350	-9.4313	-6.9724 (233a)
Electricity generated by wind turbines (Appendix M) (negative quantity)												
(234a)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (234a)
Electricity generated by hydro-electric generators (Appendix M) (negative quantity)												
(235a)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235a)
Electricity used or net electricity generated by micro-CHP (Appendix N) (negative if net generation)												
(235c)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235c)
Electricity generated by PVs (Appendix M) (negative quantity)												
(233b)m	-1.8029	-3.9780	-8.3055	-13.1049	-17.9570	-18.2723	-18.0026	-14.8935	-10.5031	-5.8342	-2.4506	-1.4103 (233b)
Electricity generated by wind turbines (Appendix M) (negative quantity)												
(234b)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (234b)
Electricity generated by hydro-electric generators (Appendix M) (negative quantity)												
(235b)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235b)
Electricity used or net electricity generated by micro-CHP (Appendix N) (negative if net generation)												
(235d)m	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000 (235d)
Annual totals kWh/year												
Space heating fuel - main system 1												1154.9960 (211)
Space heating fuel - main system 2												0.0000 (213)
Space heating fuel - secondary												0.0000 (215)
Efficiency of water heater												76.2000
Water heating fuel used												2157.8109 (219)
Space cooling fuel												0.0000 (221)
Electricity for pumps and fans:												
(MEVCentralised, Database: in-use factor = 1.4000, SFP = 0.5320)												
mechanical ventilation fans (SFP = 0.5320)												95.7048 (230a)
central heating pump												41.0000 (230c)
main heating flue fan												45.0000 (230e)
Total electricity for the above, kWh/year												181.7048 (231)
Electricity for lighting (calculated in Appendix L)												178.0847 (232)
Energy saving/generation technologies (Appendices M ,N and Q)												
PV generation												-345.4479 (233)
Wind generation												0.0000 (234)
Hydro-electric generation (Appendix N)												0.0000 (235a)
Electricity generated - Micro CHP (Appendix N)												0.0000 (235)
Appendix Q - special features												