

Supplementary Material: File 2

2.1. i-Tree ECO simulation on case D

Species	Trees		Leaf Area		Leaf Biomass		Tree Dry Weight Biomass		Average Condition
	Number	SE	(ac)	SE	(ton)	SE	(ton)	SE	(%)
Holly oak	45	±0	0,560	±0,000	0,246	±0,000	169,316	±0,008	38,06
Glossy privet	23	±0	0,057	±0,000	0,023	±0,000	13,179	±0,001	37,50
Oriental planetree	15	±0	0,076	±0,000	0,016	±0,000	27,976	±0,002	42,50
California palm	11	±0	0,061	±0,000	0,042	±0,000	6,643	±0,000	55,68
Cherry plum	10	±0	0,011	±0,000	0,003	±0,000	7,972	±0,001	60,00
Cedar of lebanon	9	±0	0,225	±0,000	0,235	±0,000	40,267	±0,003	37,50
Italian stone pine	9	±0	0,397	±0,000	0,171	±0,000	40,383	±0,003	37,50
Boxelder	8	±0	0,040	±0,000	0,016	±0,000	17,286	±0,001	43,75
Oriental spruce	6	±0	0,108	±0,000	0,080	±0,000	33,495	±0,003	37,50
English walnut	5	±0	0,052	±0,000	0,010	±0,000	30,366	±0,003	47,50
White mulberry	4	±0	0,067	±0,000	0,022	±0,000	14,987	±0,002	37,50
Babylon weeping willow	4	±0	0,112	±0,000	0,032	±0,000	18,760	±0,002	37,50
Orange wattle	3	±0	0,015	±0,000	0,017	±0,000	2,277	±0,000	37,50
Italian cypress	3	±0	0,034	±0,000	0,036	±0,000	11,605	±0,002	37,50
Eucalyptus camaldulensis	3	±0	0,076	±0,000	0,044	±0,000	41,349	±0,006	37,50
Victorian box	3	±0	0,003	±0,000	0,001	±0,000	1,461	±0,000	37,50
Southern magnolia	2	±0	0,023	±0,000	0,014	±0,000	5,403	±0,001	37,50
Olive	2	±0	0,026	±0,000	0,009	±0,000	13,559	±0,002	37,50
Aloe yucca	2	±0	0,005	±0,000	0,004	±0,000	5,133	±0,001	37,50
Carob	1	±0	0,005	±0,000	0,002	±0,000	0,840	±0,000	62,50
Japanese persimmon	1	±0	0,003	±0,000	0,001	±0,000	1,121	±0,000	62,50
Common fig	1	±0	0,003	±0,000	0,001	±0,000	0,993	±0,000	37,50
Bay laurel	1	±0	0,008	±0,000	0,002	±0,000	14,655	±0,004	37,50
Study Area	171	±0	1,965	±0,000	1,024	±0,000	519,027	±0,010	41,45

Structure Summary

Species	Number of Trees	Percent of Population
Holly oak (<i>Quercus ilex</i>)	45	26,3%
Glossy privet (<i>Ligustrum lucidum</i>)	23	13,5%
Oriental planetree (<i>Platanus orientalis</i>)	15	8,8%
California palm (<i>Washingtonia filifera</i>)	11	6,4%
Cherry plum (<i>Prunus cerasifera</i>)	10	5,8%
Cedar of lebanon (<i>Cedrus libani</i>)	9	5,3%
Italian stone pine (<i>Pinus pinea</i>)	9	5,3%
Boxelder (<i>Acer negundo</i>)	8	4,7%
Oriental spruce (<i>Picea orientalis</i>)	6	3,5%
English walnut (<i>Juglans regia</i>)	5	2,9%
White mulberry (<i>Morus alba</i>)	4	2,3%
Babylon weeping willow (<i>Salix babylonica</i>)	4	2,3%
Orange wattle (<i>Acacia saligna</i>)	3	1,8%
Italian cypress (<i>Cupressus sempervirens</i>)	3	1,8%
Eucalyptus camaldulensis (<i>Eucalyptus camaldulensis</i> x <i>ovata</i>)	3	1,8%
Victorian box (<i>Pittosporum undulatum</i>)	3	1,8%
Southern magnolia (<i>Magnolia grandiflora</i>)	2	1,2%
Olive (<i>Olea europaea</i>)	2	1,2%
Aloe yucca (<i>Yucca aloifolia</i>)	2	1,2%
Carob (<i>Ceratonia siliqua</i>)	1	<0.1%
Japanese persimmon (<i>Diospyros kaki</i>)	1	<0.1%
Common fig (<i>Ficus carica</i>)	1	<0.1%
Bay laurel (<i>Laurus nobilis</i>)	1	<0.1%
Total	171	100%

Population summary

Species	Carbon Storage (ton)	Carbon Storage (%)	CO ₂ Equivalent (ton)
Boxelder	8,6	3,3%	31,7
Orange wattle	1,1	0,4%	4,2
Cedar of lebanon	20,1	7,8%	73,8
Carob	0,4	0,2%	1,5
Italian cypress	5,8	2,2%	21,3
Japanese persimmon	0,6	0,2%	2,1
Eucalyptus camaldulensis	20,7	8,0%	75,8
Common fig	0,5	0,2%	1,8
English walnut	15,2	5,9%	55,7
Bay laurel	7,3	2,8%	26,9
Glossy privet	6,6	2,5%	24,2
Southern magnolia	2,7	1,0%	9,9
White mulberry	7,5	2,9%	27,5
Olive	6,8	2,6%	24,9
Oriental spruce	16,7	6,5%	61,4
Italian stone pine	20,2	7,8%	74,0
Victorian box	0,7	0,3%	2,7
Oriental planetree	14,0	5,4%	51,3
Cherry plum	4,0	1,5%	14,6
Holly oak	84,7	32,6%	310,4
Babylon weeping willow	9,4	3,6%	34,4
Califomia palm	3,3	1,3%	12,2
Aloe yucca	2,6	1,0%	9,4
Total	259,5	100%	951,6

Carbon Storage of trees by species

Amounts

Type	Heating	Cooling	Total
MBTU	9,093	N/A	9,093
MWH	-0,173	6,838	6,665
Carbon Avoided (ton)	0,205	0,683	0,888

Energy Values (€)

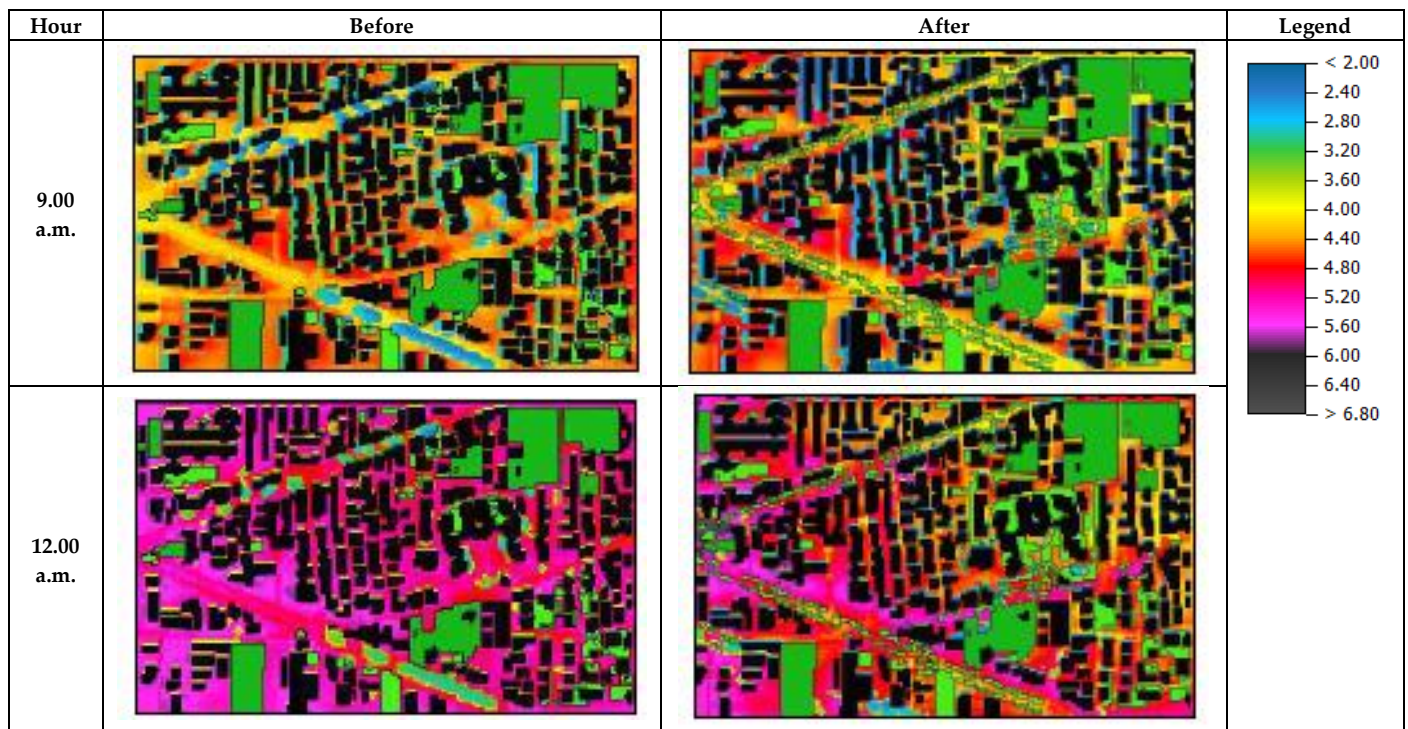
Type	Heating	Cooling	Total
MBTU	187	N/A	187
MWH	-37	1.463	1.426
Carbon Avoided	30	100	129

Energy Effects of Trees.

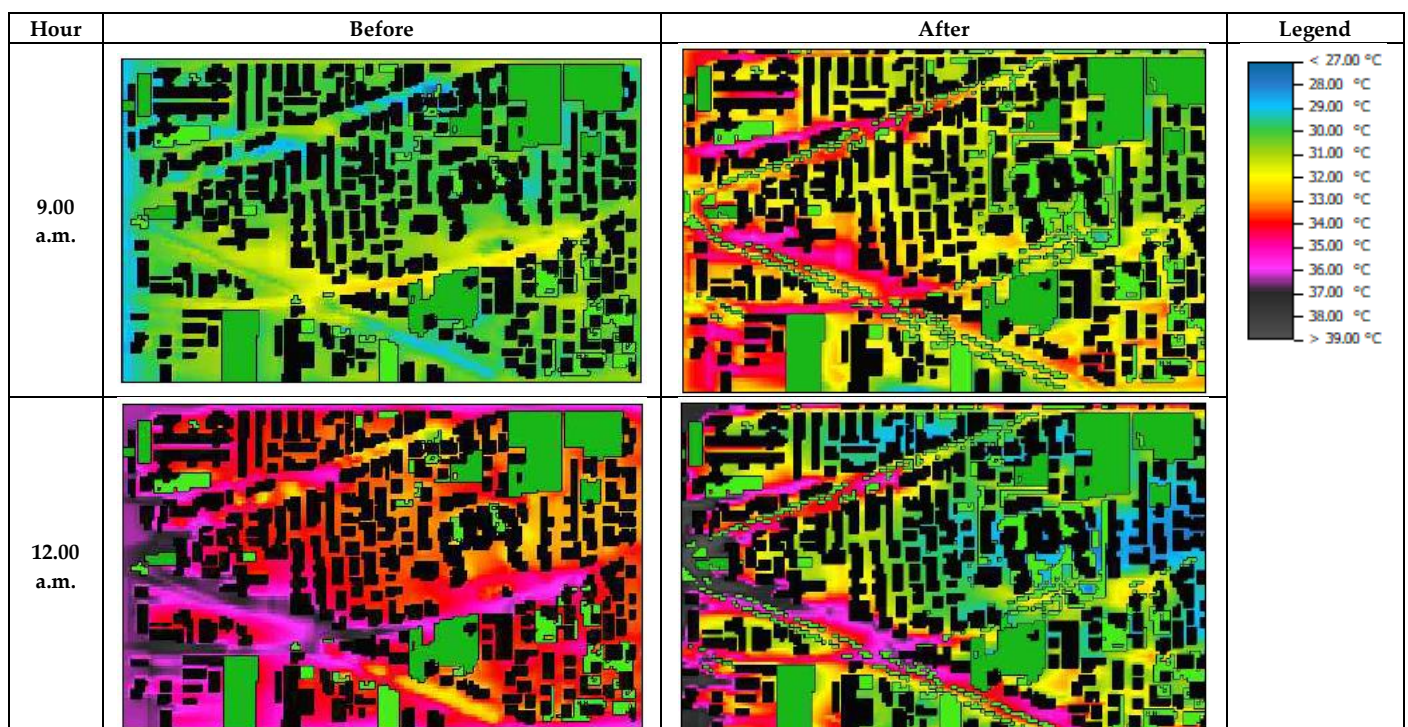
Species Name	Number of Trees	Leaf Area (ac)	Potential Evapotranspiration (gal/yr)	Evaporation (gal/yr)	Transpiration (gal/yr)	Water Intercepted (gal/yr)	Avoided Runoff (gal/yr)	Avoided Runoff Value (€/yr)
Holly oak	45	0,56	60.241,60	7.505,54	20.660,90	7.505,54	72,48	0,52
Italian stone pine	9	0,40	42.665,71	5.315,75	14.632,95	5.315,75	51,33	0,37
Cedar of lebanon	9	0,23	24.214,51	3.016,90	8.304,79	3.016,90	29,13	0,21
Babylon weeping willow	4	0,11	12.038,13	1.499,84	4.128,69	1.499,84	14,48	0,10
Oriental spruce	6	0,11	11.580,31	1.442,80	3.971,67	1.442,80	13,93	0,10
Oriental planetree	15	0,08	8.171,99	1.018,15	2.802,73	1.018,15	9,83	0,07
Eucalyptus camaldulensis	3	0,08	8.129,88	1.012,91	2.788,28	1.012,91	9,78	0,07
White mulberry	4	0,07	7.184,04	895,06	2.463,89	895,06	8,64	0,06
California palm	11	0,06	6.569,98	818,56	2.253,29	818,56	7,90	0,06
Glossy privet	23	0,06	6.171,43	768,90	2.116,60	768,90	7,43	0,05
English walnut	5	0,05	5.585,56	695,91	1.915,67	695,91	6,72	0,05
Boxelder	8	0,04	4.250,03	529,51	1.457,62	529,51	5,11	0,04
Italian cypress	3	0,03	3.671,75	457,47	1.259,29	457,47	4,42	0,03
Olive	2	0,03	2.788,54	347,43	956,38	347,43	3,36	0,02
Southern magnolia	2	0,02	2.484,52	309,55	852,11	309,55	2,99	0,02
Orange wattle	3	0,02	1.666,93	207,68	571,70	207,68	2,01	0,01
Cherry plum	10	0,01	1.133,95	141,28	388,91	141,28	1,36	0,01
Bay laurel	1	0,01	831,91	103,65	285,32	103,65	1,00	0,01
Aloe yucca	2	0,01	555,26	69,18	190,43	69,18	0,67	0,00
Carob	1	0,00	489,05	60,93	167,73	60,93	0,59	0,00
Japanese persimmon	1	0,00	369,59	46,05	126,76	46,05	0,44	0,00
Common fig	1	0,00	279,51	34,82	95,86	34,82	0,34	0,00
Victorian box	3	0,00	271,05	33,77	92,96	33,77	0,33	0,00
Total	171	1,97	211.345,23	26.331,64	72.484,52	26.331,64	254,29	1,83

Benefits summary of trees by species

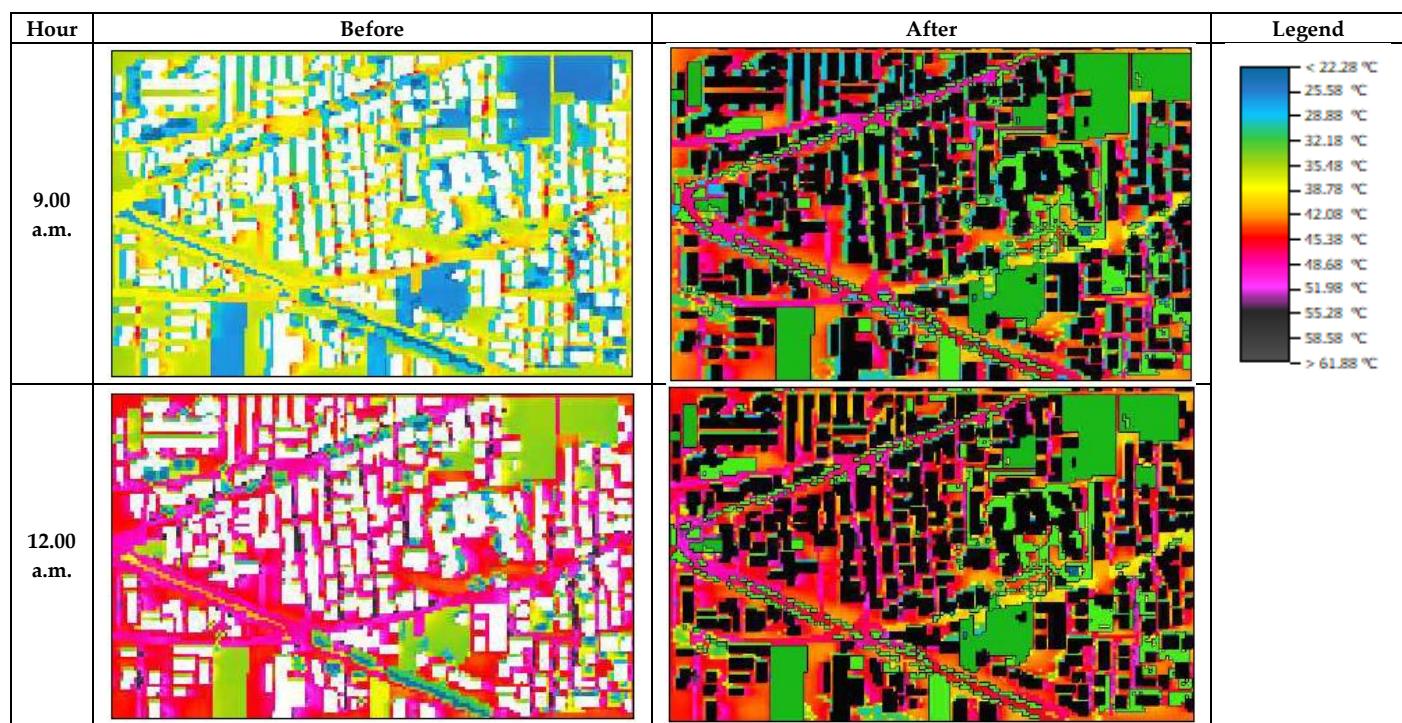
2.2. ENVI-met simulation on case D



PMV results



Potential Temperature results



Surface Temperature results

2.1. i-Tree ECO simulation on case E

Species	Trees		Leaf Area		Leaf Biomass		Tree Dry Weight Biomass		Average Condition
	Number	SE	(ac)	SE	(ton)	SE	(ton)	SE	(%)
Glossy privet	117	±0	0,238	±0,000	0,097	±0,000	63,856	±0,001	37,50
Holly oak	74	±0	0,780	±0,000	0,342	±0,000	225,791	±0,006	37,84
Southern magnolia	24	±0	0,277	±0,000	0,167	±0,000	64,831	±0,002	37,50
White mulberry	24	±0	0,404	±0,000	0,132	±0,000	89,924	±0,003	37,50
Oriental planetree	15	±0	0,076	±0,000	0,016	±0,000	27,976	±0,001	42,50
California palm	11	±0	0,061	±0,000	0,042	±0,000	6,643	±0,000	55,68
Cherry plum	10	±0	0,011	±0,000	0,003	±0,000	7,972	±0,000	60,00
Cedar of lebanon	9	±0	0,225	±0,000	0,235	±0,000	40,267	±0,002	37,50
Italian stone pine	9	±0	0,397	±0,000	0,171	±0,000	40,383	±0,002	37,50
Boxelder	8	±0	0,040	±0,000	0,016	±0,000	17,286	±0,001	43,75
Oriental spruce	6	±0	0,108	±0,000	0,080	±0,000	33,495	±0,002	37,50
English walnut	5	±0	0,052	±0,000	0,010	±0,000	30,366	±0,002	47,50
Babylon weeping willow	4	±0	0,112	±0,000	0,032	±0,000	18,760	±0,002	37,50
Orange wattle	3	±0	0,015	±0,000	0,017	±0,000	2,277	±0,000	37,50
Italian cypress	3	±0	0,034	±0,000	0,036	±0,000	11,605	±0,001	37,50
Eucalyptus camaldulensis	3	±0	0,076	±0,000	0,044	±0,000	41,349	±0,004	37,50
Victorian box	3	±0	0,003	±0,000	0,001	±0,000	1,461	±0,000	37,50
Olive	2	±0	0,026	±0,000	0,009	±0,000	13,559	±0,002	37,50
Aloe yucca	2	±0	0,005	±0,000	0,004	±0,000	5,133	±0,001	37,50
Carob	1	±0	0,005	±0,000	0,002	±0,000	0,840	±0,000	62,50
Japanese persimmon	1	±0	0,003	±0,000	0,001	±0,000	1,121	±0,000	62,50
Common fig	1	±0	0,003	±0,000	0,001	±0,000	0,993	±0,000	37,50
Bay laurel	1	±0	0,008	±0,000	0,002	±0,000	14,655	±0,003	37,50
Study Area	336	±0	2,956	±0,000	1,456	±0,000	760,544	±0,008	39,51

Structure Summary

Species	Number of Trees	Percent of Population
Glossy privet (<i>Ligustrum lucidum</i>)	117	34,8%
Holly oak (<i>Quercus ilex</i>)	74	22,0%
Southern magnolia (<i>Magnolia grandiflora</i>)	24	7,1%
White mulberry (<i>Morus alba</i>)	24	7,1%
Oriental planetree (<i>Platanus orientalis</i>)	15	4,5%
California palm (<i>Washingtonia filifera</i>)	11	3,3%
Cherry plum (<i>Prunus cerasifera</i>)	10	3,0%
Cedar of lebanon (<i>Cedrus libani</i>)	9	2,7%
Italian stone pine (<i>Pinus pinea</i>)	9	2,7%
Boxelder (<i>Acer negundo</i>)	8	2,4%
Oriental spruce (<i>Picea orientalis</i>)	6	1,8%
English walnut (<i>Juglans regia</i>)	5	1,5%
Babylon weeping willow (<i>Salix babylonica</i>)	4	1,2%
Orange wattle (<i>Acacia saligna</i>)	3	<0.1%
Italian cypress (<i>Cupressus sempervirens</i>)	3	<0.1%
Eucalyptus camaldulensis (<i>Eucalyptus camaldulensis</i> x <i>ovata</i>)	3	<0.1%
Victorian box (<i>Pittosporum undulatum</i>)	3	<0.1%
Olive (<i>Olea europaea</i>)	2	<0.1%
Aloe yucca (<i>Yucca aloifolia</i>)	2	<0.1%
Carob (<i>Ceratonia siliqua</i>)	1	<0.1%
Japanese persimmon (<i>Diospyros kaki</i>)	1	<0.1%
Common fig (<i>Ficus carica</i>)	1	<0.1%
Bay laurel (<i>Laurus nobilis</i>)	1	<0.1%
Total	336	100%

Population summary

Species	Carbon Storage	Carbon Storage	CO ₂ Equivalent
	(ton)	(%)	(ton)
Boxelder	8,6	2,3%	31,7
Orange wattle	1,1	0,3%	4,2
Cedar of lebanon	20,1	5,3%	73,8
Carob	0,4	0,1%	1,5
Italian cypress	5,8	1,5%	21,3
Japanese persimmon	0,6	0,1%	2,1
Eucalyptus camaldulensis	20,7	5,4%	75,8
Common fig	0,5	0,1%	1,8
English walnut	15,2	4,0%	55,7
Bay laurel	7,3	1,9%	26,9
Glossy privet	31,9	8,4%	117,1
Southern magnolia	32,4	8,5%	118,9
White mulberry	45,0	11,8%	164,9
Olive	6,8	1,8%	24,9
Oriental spruce	16,7	4,4%	61,4
Italian stone pine	20,2	5,3%	74,0
Victorian box	0,7	0,2%	2,7
Oriental planetree	14,0	3,7%	51,3
Cherry plum	4,0	1,0%	14,6
Holly oak	112,9	29,7%	414,0
Babylon weeping willow	9,4	2,5%	34,4
California palm	3,3	0,9%	12,2
Aloe yucca	2,6	0,7%	9,4
Total	380,3	100%	1.394,5

Carbon Storage of trees by species

Species	Trees Number	Carbon Storage		Gross Carbon Sequestration		Avoided Runoff		Pollution Removal		Replacement Value (€)
		(ton)	(€)	(ton/yr)	(€/yr)	(gal/yr)	(€/yr)	(ton/yr)	(€/yr)	
Boxelder	8	8,64	1.259,77	0,15	21,59	5,40	0,04	0,00	7,63	9.896,25
Orange wattle	3	1,14	165,94	0,00	0,05	2,12	0,02	0,00	2,99	4.009,66
Cedar of lebanon	9	20,13	2.934,57	0,04	5,37	30,76	0,22	0,00	43,46	36.799,38
Carob	1	0,42	61,22	0,01	0,90	0,62	0,00	0,00	0,88	1.086,13
Italian cypress	3	5,80	845,74	0,00	0,13	4,66	0,03	0,00	6,59	7.743,15
Japanese persimmon	1	0,56	81,71	0,00	0,40	0,47	0,00	0,00	0,66	1.329,91
Eucalyptus camaldulensis	3	20,67	3.013,40	0,15	22,46	10,33	0,07	0,00	14,59	11.761,67
Common fig	1	0,50	72,39	0,01	0,97	0,36	0,00	0,00	0,50	981,70
English walnut	5	15,18	2.213,01	0,23	33,41	7,10	0,05	0,00	10,02	19.182,14
Bay laurel	1	7,33	1.068,05	0,05	7,64	1,06	0,01	0,00	1,49	2.712,66
Glossy privet	117	31,93	4.653,67	0,97	141,11	32,54	0,23	0,00	45,97	83.130,45
Southern magnolia	24	32,42	4.724,75	0,49	71,90	37,88	0,27	0,00	53,51	52.704,77
White mulberry	24	44,96	6.553,39	0,67	97,94	55,14	0,40	0,00	77,91	45.862,95
Olive	2	6,78	988,11	0,01	1,31	3,54	0,03	0,00	5,00	5.686,73
Oriental spruce	6	16,75	2.441,06	0,02	2,74	14,71	0,11	0,00	20,78	28.266,30
Italian stone pine	9	20,19	2.942,99	0,14	19,73	54,20	0,39	0,00	76,58	30.546,22
Victorian box	3	0,73	106,51	0,03	4,14	0,34	0,00	0,00	0,49	1.457,84
Oriental planetree	15	13,99	2.038,85	0,27	39,66	10,38	0,07	0,00	14,67	35.108,94
Cherry plum	10	3,99	580,99	0,10	14,78	1,44	0,01	0,00	2,04	6.494,43
Holly oak	74	112,90	16.455,04	1,39	202,04	106,52	0,77	0,01	150,49	158.818,82
Babylon weeping willow	4	9,38	1.367,15	0,04	5,52	15,29	0,11	0,00	21,61	5.455,28
California palm	11	3,32	484,12	0,04	6,09	8,35	0,06	0,00	11,79	2.497,59
Aloe yucca	2	2,57	374,05	0,00	0,11	0,71	0,01	0,00	1,00	378,07
Total	336	380,27	55.426,49	4,80	700,00	403,91	2,91	0,03	570,65	551.911,02

Amounts

Type	Heating	Cooling	Total
MBTU	-2,233	N/A	-2,233
MWH	-0,249	2,898	2,649
Carbon Avoided (ton)	-0,079	0,290	0,210

Energy Values (€)

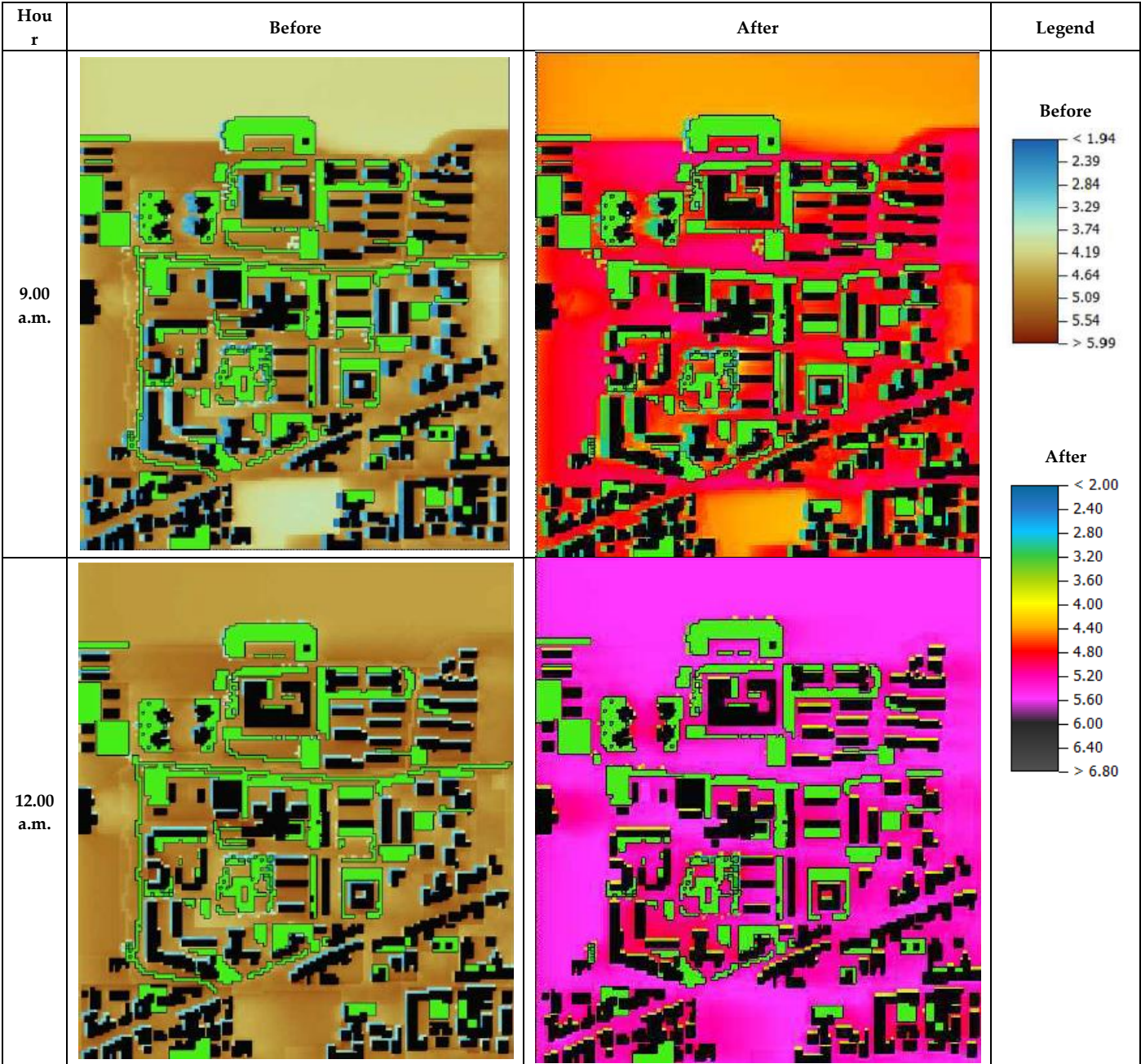
Type	Heating	Cooling	Total
MBTU	-46	N/A	-46
MWH	-53	620	567
Carbon Avoided	-12	42	31

Energy Effects of Trees.

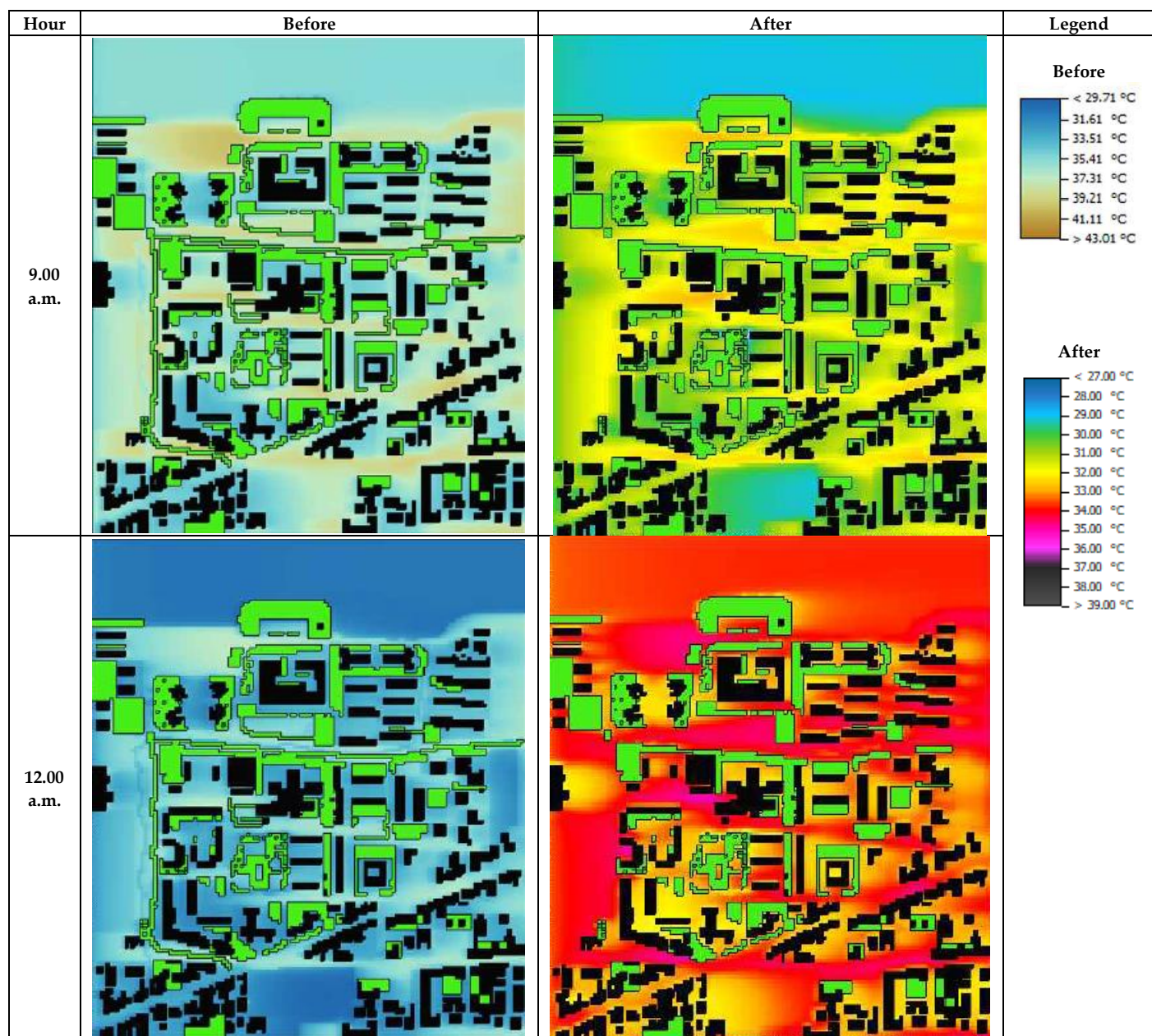
Species Name	Number of Trees	Leaf Area (ac)	Potential Evapotranspiration (gal/yr)	Evaporation (gal/yr)	Transpiration (gal/yr)	Water Intercepted (gal/yr)	Avoided Runoff (gal/yr)	Avoided Runoff Value (€/yr)
Holly oak	74	0,78	89.356,78	10.949,06	31.499,95	10.949,06	106,52	0,77
White mulberry	24	0,40	46.259,00	5.668,21	16.307,17	5.668,21	55,14	0,40
Italian stone pine	9	0,40	45.470,11	5.571,54	16.029,07	5.571,54	54,20	0,39
Southern magnolia	24	0,28	31.773,90	3.893,32	11.200,90	3.893,32	37,88	0,27
Glossy privet	117	0,24	27.298,41	3.344,93	9.623,20	3.344,93	32,54	0,23
Cedar of lebanon	9	0,23	25.806,13	3.162,08	9.097,15	3.162,08	30,76	0,22
Babylon weeping willow	4	0,11	12.829,40	1.572,01	4.522,60	1.572,01	15,29	0,11
Oriental spruce	6	0,11	12.341,48	1.512,23	4.350,60	1.512,23	14,71	0,11
Oriental planetree	15	0,08	8.709,13	1.067,15	3.070,13	1.067,15	10,38	0,07
Eucalyptus camaldulensis	3	0,08	8.664,26	1.061,65	3.054,31	1.061,65	10,33	0,07
California palm	11	0,06	7.001,82	857,95	2.468,27	857,95	8,35	0,06
English walnut	5	0,05	5.952,70	729,40	2.098,44	729,40	7,10	0,05
Boxelder	8	0,04	4.529,38	554,99	1.596,69	554,99	5,40	0,04
Italian cypress	3	0,03	3.913,10	479,48	1.379,44	479,48	4,66	0,03
Olive	2	0,03	2.971,83	364,14	1.047,63	364,14	3,54	0,03
Orange wattle	3	0,02	1.776,49	217,68	626,25	217,68	2,12	0,02
Cherry plum	10	0,01	1.208,48	148,08	426,01	148,08	1,44	0,01
Bay laurel	1	0,01	886,59	108,64	312,54	108,64	1,06	0,01
Aloe yucca	2	0,01	591,75	72,51	208,60	72,51	0,71	0,01
Carob	1	0,00	521,20	63,86	183,73	63,86	0,62	0,00
Japanese persimmon	1	0,00	393,88	48,26	138,85	48,26	0,47	0,00
Common fig	1	0,00	297,88	36,50	105,01	36,50	0,36	0,00
Victorian box	3	0,00	288,87	35,40	101,83	35,40	0,34	0,00
Total	336	2,96	338.842,56	41.519,05	119.448,39	41.519,05	403,91	2,91

Benefits summary of trees by species

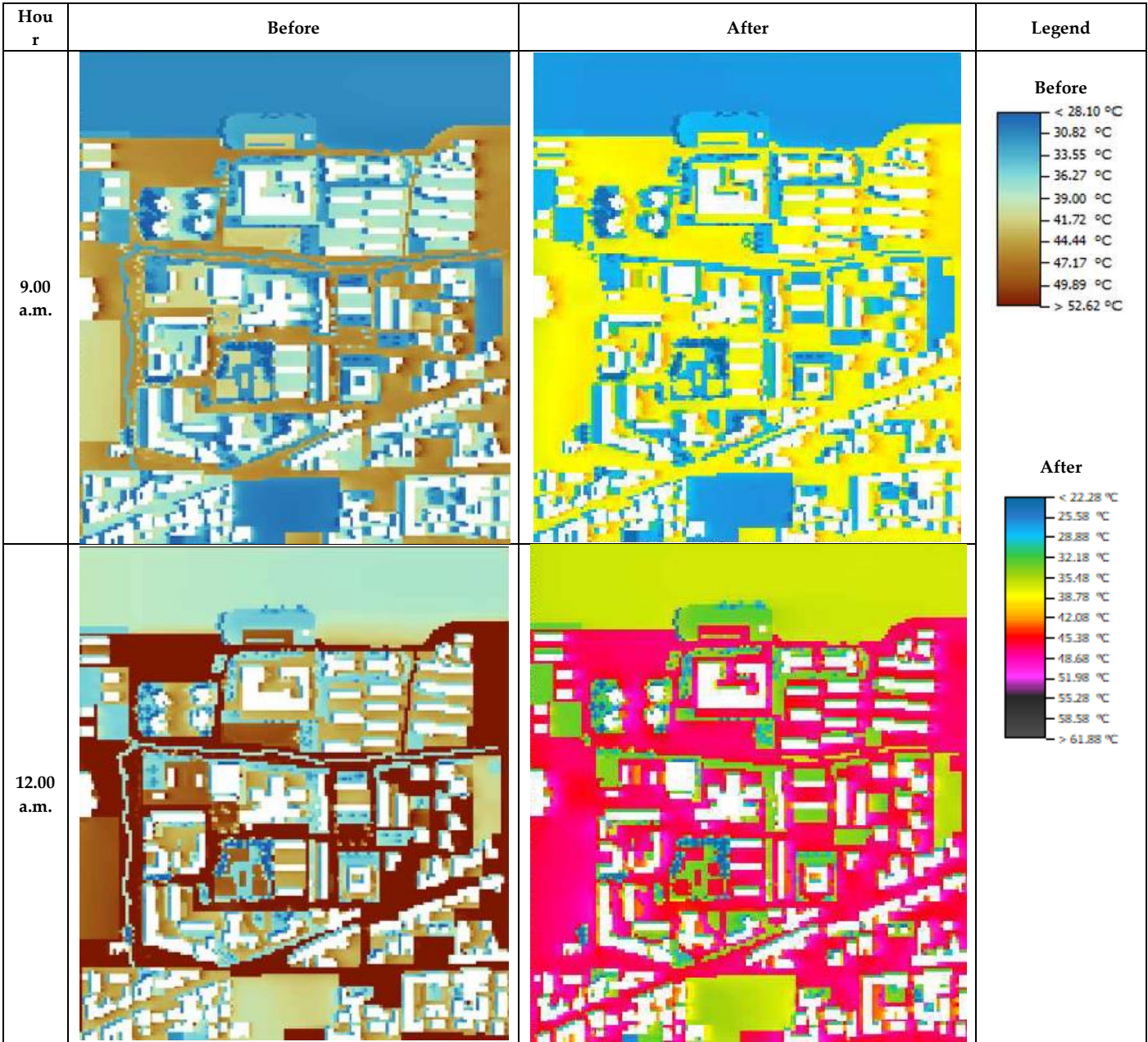
2.2. ENVI-met simulation on case E



PMV results



Potential Temperature results



Surface Temperature results