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# Study Report

## Quantification of the Outdoor Thermal Comfort Process: Simulation & Calculation data

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The study aims to quantify the outdoor thermal comfort in arid climate by calculating PET index. This report contains all the dataset 'tables' used throughout the study's process: simulations and calculation data, following several steps. All the data are verified and strongly attached from the first stage to the last results. Although, the study methodology had followed several recent types of research in the same field, were published and chosen as references for urban climate researches. We should indicate that the report represents only the data and results; furthermore, it is not containing the deep interpretation's form of the research.

## Validation data

Measurement  
versus simulation

Simulation is done with ENVI-met  
4.4.4 on the basis of CSV data file  
(WMO 605265)

Old  
neighbourhood  
(S1)

**Table 1.** Old neighbourhood (S1) (07.28-29.2018)

Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)			Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)		
		1	2	3	1	2	3			1	2	3	1	2	3
07.28.2018	00:00	30.7	31	30.7	30.3	30.3	30.4	07.29.2018	00:00	34.3	33.7	33.7	32.8	32.7	32.8
	01:00	30.7	30.9	30.5	30.3	30.3	30.5		01:00	33.3	32.8	32.3	32.6	32.7	32.7
	02:00	30.5	30.8	30.4	30.3	30.1	30.5		02:00	32	31.9	30.8	31.7	31.7	31.7
	03:00	30.4	30.4	30.4	29.3	29.3	29.6		03:00	31.2	31.3	30	30.8	30.7	30.8
	04:00	30.4	30.2	30.2	29.3	29.1	29.5		04:00	30.6	30.8	29.4	29.8	29.9	29.9
	05:00	30.3	30.1	28.9	28.3	28.3	28.5		05:00	30.1	30.5	29	28.5	28.6	28.5
	06:00	28	28.8	27.3	26.5	26.5	26.4		06:00	29.8	28.7	28.7	28.3	28.4	28.3
	07:00	29	30.2	30.2	28.2	28.2	28.4		07:00	29.7	30.2	28.6	29	29.2	29
	08:00	30.5	30.9	30.9	31.1	30.8	31.3		08:00	30.7	30.9	29.5	30.7	30.9	30.7
	09:00	32.6	32.1	32.1	33.1	32.8	33.1		09:00	32.2	32.1	31	33	33	33.1
	10:00	34.2	33.6	33.6	34.2	34	34.5		10:00	34	33.4	32.6	34.3	34.4	34.4
	11:00	36	35.1	35.1	36.1	36.1	36.4		11:00	35.4	34.8	34.4	36.3	36.3	36.5
	12:00	37.6	36.6	36.6	38.1	38.1	38.4		12:00	37.6	36.1	36.1	37.4	37.1	37.4
	13:00	39.1	37.9	37.9	39.2	38.9	39.5		13:00	39.3	37.3	37.7	38.4	38.1	38.4
	14:00	40.4	39	39	40.4	40.1	40.4		14:00	40.7	38.4	39	39.2	39.1	39.4
	15:00	41.4	39.9	39.9	41.2	40.8	41.2		15:00	41.7	39.1	39.8	40.3	40.2	40.3
	16:00	42	40.4	40.4	40.4	40.1	40.3		16:00	42.4	39.6	40.6	41.3	41.3	41.6
	17:00	42.2	40.6	40.6	41.4	41.4	41.5		17:00	42.6	39.8	40.8	41.5	41.3	41.5
	18:00	41.3	39.8	39.8	40.5	40.2	40.7		18:00	41.7	41.2	41.9	42.5	42.6	42.6
	19:00	40.2	38.9	38.9	40.6	40.5	40.6		19:00	40.5	40.9	40.9	41.6	41.6	41.7
	20:00	39.1	37.8	37.8	37.7	37.6	37.6		20:00	39.2	39.6	40.2	40.7	40.7	40.7
	21:00	37.4	36.7	36.7	36.7	36.5	36.6		21:00	37.9	38.6	39.2	38.8	38.7	38.8
	22:00	36.6	35.7	35.7	34.7	34.6	34.7		22:00	36.5	37.9	37.2	37	37.7	37.8
	23:00	35.4	34.6	34.64	34.7	34.5	34.6		23:00	35.3	35	35.2	34.9	34.8	34.9

## Validation data

Measurement  
versus simulation

Simulation is done with ENVI-met  
4.4.4 on the basis of CSV data file  
(WMO 605265)

Individual  
Housing  
neighbourhood  
(S2)

**Table 2.** Individual Housing neighbourhood (S2) (07.25-26.2018)

Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)			Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)		
		4	5	6	4	5	6			4	5	6	4	5	6
07.25.2018	00:00	33.1	32.4	31.5	32	31	32.5	07.26.2018	00:00	32.3	32.6	32	32.1	32.1	32.5
	01:00	32	31.8	30.8	31.6	30.6	32.1		01:00	32	32	31.8	32.1	32.1	32.5
	02:00	31.5	31.3	30.3	30.6	29.6	31.1		02:00	31.7	31.5	31.2	30.3	30.1	30.7
	03:00	31	31	29.9	28.7	28.6	29.5		03:00	31.5	31.1	30.7	30.2	30.1	30.5
	04:00	30.7	30.8	29.7	28.7	29.2	29.5		04:00	31.3	30.9	30.5	28.6	28.2	28.8
	05:00	30.4	30.7	29.6	28	27.8	28.5		05:00	31.3	30.8	30.4	28.5	28.3	28.6
	06:00	30.2	31.4	30.4	27.1	26.6	27.4		06:00	32.1	31.56	31.3	29.5	29.2	29.5
	07:00	30.2	32.5	31.6	27.8	27.7	28.5		07:00	33.2	32.8	32.6	30.4	30.2	30.5
	08:00	31.1	33.8	33	29.1	28.7	29.2		08:00	34.6	34.2	34.2	32.3	32.1	32.6
	09:00	32.6	35.1	34.5	31.1	30.7	31.2		09:00	36	35.6	35.9	33.4	33.4	32.6
	10:00	34.3	36.4	36	31.1	30.7	31.3		10:00	37.1	37.1	37.5	33.6	33.6	33.6
	11:00	35.9	37.6	37.3	33	32.6	33.3		11:00	38	38.4	39	35.5	35.5	33.7
	12:00	37.4	38.6	38.4	34	33.8	34.4		12:00	38.6	39.5	40.3	35.5	35.4	35.7
	13:00	38.5	39.3	39.3	35.9	35.7	36.3		13:00	38.8	40.3	41.2	36.5	36.3	36.7
	14:00	39.2	39.8	39.8	37.1	36.6	37.5		14:00	37.7	40.8	41.8	37.5	37.2	37.7
	15:00	39.5	40	40	37	36.8	37.5		15:00	37.1	41	42	38.4	38.1	37.7
	16:00	38.9	39.3	39.2	37.5	37.4	37.8		16:00	36.4	40.3	41.2	38.4	38.1	38.7
	17:00	38.2	38.5	38.3	37.5	37.5	37.7		17:00	35.8	39.3	40.1	39.4	39.4	39.7
	18:00	37.4	36.6	37.2	37.4	37.4	37.8		18:00	35.1	37.3	38.9	38.7	38.6	38.9
	19:00	36.6	35.6	36.2	37.1	37.2	37.6		19:00	34.5	36.2	37.7	38.7	38.6	38.8
	20:00	35.7	34.7	35.1	35.3	35.2	35.6		20:00	33.8	35.2	36.6	36.8	36.7	36.9
	21:00	34.9	33.9	34.1	34.3	34.2	34.6		21:00	33.3	34.3	35.4	35.7	35.5	35.7
	22:00	34.1	33.1	33.1	33	33.1	33.5		22:00	32.8	33.4	34.3	33.8	33.6	33.8
	23:00	33.4	32.8	32.3	32.8	32.9	33.4		23:00	32.1	33.1	33.3	31.8	31.7	31.8

# Validation data

Measurement  
versus simulation

Simulation is done with ENVI-met  
4.4.4 on the basis of CSV data file  
(WMO 605265)

Multifamily  
Housing  
neighbourhood  
(S3)

**Table 3.** Multifamily Housing neighbourhood (S3) (07.15-16.2014)

Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)			Date	Time	Measured air Temperature (T <sub>a</sub> ) - (°C)			Simulated air Temperature (T <sub>a</sub> ) - (°C)		
		7	8	9	7	8	9			7	8	9	7	8	9
07.15.2014	00:00	31	30.6	30.8	33	32	32.9	07.16.2014	00:00	29.2	29.2	32	32.8	32.8	32.8
	01:00	30.3	29.8	30.1	32.6	31.8	32.6		01:00	27.4	27.4	31.8	30.8	30.9	30.9
	02:00	29.8	29.3	29.5	32.7	31.5	31.7		02:00	27.3	27.2	31.2	29.9	29.9	29.8
	03:00	29.3	28.8	29	31.5	31.7	31.5		03:00	27.4	27.4	30.7	28.9	28.9	28.9
	04:00	29.1	28.6	28.8	28.7	28.4	28.6		04:00	27.1	27.1	30.5	27.8	27.9	27.9
	05:00	29	28.5	28.7	27.5	27.3	27.4		05:00	27	27.2	30.4	26.9	26.8	26.9
	06:00	29.8	29.3	29.6	26.4	26.3	26.8		06:00	29.9	29.9	31.3	26.8	26.8	26.8
	07:00	31.1	30.7	30.9	28.1	28	28.7		07:00	29.3	29.3	32.6	26.7	26.7	26.8
	08:00	32.6	32.3	32.6	29.2	28.8	29.6		08:00	30.9	30.9	34.2	28.5	28.6	28.6
	09:00	34.2	33.9	34.3	30.1	29.6	30.4		09:00	32.7	32.7	35.9	28.7	28.7	28.7
	10:00	35.8	35.5	35.9	31.9	31.4	32.7		10:00	34.4	34	37.5	29.5	29.5	29.5
	11:00	37.2	36.9	37.4	32.8	32.3	33.4		11:00	35.9	36.1	39	30.9	30.9	31.6
	12:00	38.4	38.2	38.6	34.5	34.5	34.5		12:00	37.2	37.2	40.3	31.8	31.8	32.5
	13:00	39.2	39.1	39.6	37	35.7	36.3		13:00	38.2	38	41.2	33.7	33.4	33.5
	14:00	39.8	39.7	40.2	37.7	36.8	37.4		14:00	38.8	38.8	41.8	35.8	35.7	35.7
	15:00	40	39.9	40.4	38.7	38.1	38.4		15:00	39	39	42	36.6	36.3	36.6
	16:00	39.2	39.1	39.5	39.8	39.1	39.4		16:00	38.1	38.2	41.2	37.8	37.7	37.7
	17:00	38.2	38	38.7	40.7	40.1	40.3		17:00	37	37.1	40.1	37.1	37.1	36.9
	18:00	37.1	36.9	37.3	40.7	40.4	40.4		18:00	35.8	35.8	38.9	37.9	37.8	37.8
	19:00	35.9	35.7	36.1	39.7	39.7	39.5		19:00	34.6	34.5	37.7	37.2	37.1	36.9
	20:00	34.8	34.5	34.9	38.8	38.7	38.6		20:00	33.4	33.4	36.6	36.1	36	36
	21:00	33.8	33.4	33.8	34.8	35	35		21:00	32.2	32.2	35.42	34.4	34.2	34.2
	22:00	32.7	32.4	32.7	34.8	34.8	34.7		22:00	31.1	30.9	34.35	33.3	33.1	33.1
	23:00	31.8	31.4	31.7	33.8	33.8	33.7		23:00	30.1	30	33.37	31.4	31.3	31.3



## Simulation data

TMY 2

Simulation is done with ENVI-met  
4.4.4 on the basis of Epw file  
(Meteonorm 7.2)

1986

**Table 4.** Old Tolga neighbourhood (S1) (07.15.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.15.1986	00:00	27.4	27.4	27.8	27.9	28.7	27.9	0.42	0.42	0.42	12.9	12.9	12.9
	01:00	26.7	26.4	26.5	29.8	30.4	29.8	0.33	0.33	0.33	12.6	12.5	12.5
	02:00	25.5	25.4	25.4	35.1	35.1	35.1	0.24	0.24	0.24	12.1	12.1	12.1
	03:00	24.9	24.8	24.8	37.4	37.8	37.8	0.16	0.16	0.16	11.7	11.7	11.7
	04:00	24.3	24.2	24.3	39.1	39.9	39.5	0.14	0.14	0.14	11.4	11.4	11.4
	05:00	24.1	24	24	41.1	41.1	41.1	0.18	0	0	11.1	11.1	11.1
	06:00	23.9	23.1	23.5	45.6	47.2	46.1	0.15	0.1	0.15	10.9	10.9	10.9
	07:00	24.1	23.8	24.3	41.2	41.2	41.2	0.1	0	0.13	16.4	16.4	16.4
	08:00	26.3	26.1	26.2	34.2	34.2	34.2	0.17	0.12	0.17	24.2	24.2	24.2
	09:00	28.3	28.1	28	29.4	29.4	29.8	0.16	0.16	0.16	31	31	31
	10:00	30.3	30.1	30.3	23.3	24	23.3	0.28	0.28	0.28	35.7	35.7	35.7
	11:00	32.1	31.9	32.1	19.5	20.3	19.5	0.32	0.22	0.22	38.9	38.9	38.9
	12:00	33.4	33.6	33.7	20.9	18.4	18.4	0.26	0.26	0.26	48.9	48.9	48.9
	13:00	34.1	34.6	34.8	21.9	19	19	0.36	0.36	0.36	48.9	48.9	48.9
	14:00	35.2	35.8	35.8	19.8	17.4	18.6	0.32	0.32	0.32	53.4	53.4	53.4
	15:00	35.3	35.6	35.9	18.2	15.9	17	0.53	0.53	0.53	43.6	43.6	43.6
	16:00	35.8	36.1	36.1	16.3	16.3	16.3	0.59	0.59	0.59	43.6	43.6	43.6
	17:00	34.7	35.3	35.6	19.4	15.9	15.9	0.49	0.49	0.49	40.8	40.8	40.8
	18:00	34.6	34.6	34.6	17.2	17.2	17.2	0.42	0.42	0.42	36.9	36.9	36.9
	19:00	33.3	33.6	33.2	19	17.7	19	0.32	0.32	0.32	31.8	31.8	31.8
20:00	32.1	32.3	32.3	20.8	20.8	20.8	0.33	0.33	0.33	23.1	22.6	22.6	
21:00	30.7	30.9	31.1	24	24	24	0.28	0.28	0.28	18.9	18.6	18.6	
22:00	29.6	29.5	29.6	30.5	29.9	29.3	0.35	0.35	0.24	17.3	17.2	17.2	
23:00	28.5	28.4	28.4	32.9	32.3	32.3	0.22	0.22	0.22	16.2	16.1	16.1	

**Table 5.** Old Tolga neighbourhood (S1) (07.16.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.16.1986	00:00	27.6	27.8	27.9	34.3	33.3	33.3	0.32	0.32	0.32	15.3	15.3	15.1
	01:00	26.7	26.9	27.6	37.3	34.1	34.1	0.43	0.43	0.43	14.5	14.4	14.4
	02:00	27	26.8	27.2	35.3	36	34.6	0.36	0.36	0.36	14	13.9	13.9
	03:00	26.8	26.8	26.9	36.1	36.9	36.1	0.59	0.59	0.59	13.6	13.5	13.5
	04:00	26.5	26.3	26.7	34.9	33.9	33.9	0.35	0.35	0.35	13.3	13.2	13.3
	05:00	25.7	25.9	26.3	38.5	36.7	35.8	0.3	0.3	0.3	13	12.9	12.9
	06:00	25.7	26.1	26.4	38.4	36.2	36.2	0.5	0.5	0.5	12.9	12.8	12.8
	07:00	27.2	27	27.3	32.7	33.4	32.7	0.59	0.59	0.59	17.9	17.9	17.9
	08:00	28.9	28.6	28.9	27.4	27.4	27.4	0.62	0.62	0.62	25.1	25.1	25.1
	09:00	30.8	30.5	30.8	23.5	23.5	23.5	0.84	0.84	0.84	31.2	31.2	31.2
	10:00	32.7	32.4	32.7	17.9	18.8	17.9	1.28	0.86	0.86	35.5	35.5	35.5
	11:00	34.5	34.2	34.5	14.9	15.7	14.9	0.87	0.87	0.87	39	39	39
	12:00	35.8	35.8	36	12.9	12.2	12.2	1.4	1.4	1.4	48.4	48.4	48.4
	13:00	36.9	36.9	37.2	10.7	10.7	11.4	1.24	1.24	1.24	48.2	48.2	48.2
	14:00	37.9	37.9	38.1	10	10	10	1.41	1.41	1.41	52.7	52.7	52.7
	15:00	38.2	38.5	38.5	8.8	8.3	8.3	1.46	1.46	1.46	45.2	45.2	45.2
	16:00	38.5	38.5	38.7	7.9	8.5	7.9	1	1	1	44.4	44.4	44.4
	17:00	38.2	38.2	38.6	8.8	8.8	8.8	1.2	1.2	1.2	40.7	40.7	40.7
	18:00	37	37.4	37.8	9.8	9	9	1.13	1.13	1.13	36.4	36.4	36.4
	19:00	35.7	36.2	36.7	11.2	10.2	10.2	0.96	0.96	0.96	33.3	33.3	33.3
20:00	35.1	35.1	35.4	10.6	11.3	10.6	0.87	0.87	0.87	23.1	23.1	22.5	
21:00	34	34	34.3	13.1	13.6	14.2	0.61	0.61	0.61	19.6	19.6	19.2	
22:00	33.1	33.1	33.3	14.8	14.8	14.8	0.35	0.35	0.35	18.2	18.2	17.9	
23:00	32	31.8	32	14.9	15.4	15.8	0.32	0.32	0.32	17.2	17.2	17.2	

**Table 6.** Old Tolga neighbourhood (S1) (07.17-18.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.17.1986	00:00	30.2	30.8	31.1	18.1	16.4	16.4	0.44	0.44	0.44	16.3	16.3	16.1
	01:00	29.3	29.3	30.2	21	19.7	17	0.53	0.53	0.53	15.6	15.6	15.4
	02:00	29.2	29.4	29.7	18.6	19.4	18.6	0.51	0.51	0.51	14.9	14.9	14.7
	03:00	28.6	28.6	28.8	17.8	19.1	17.8	0.33	0.33	0.33	14.4	14.4	14.3
	04:00	28.2	27.9	28.2	18.8	19.5	18.8	0.26	0.26	0.26	14	14	13.9
	05:00	27.7	27.6	27.9	19.8	19.8	19.4	0.13	0.13	0.13	13.7	13.7	13.6
	06:00	27.8	27.5	27.5	19.4	19.8	19.6	0.12	0	0	13.6	13.5	13.5
	07:00	28.4	28.4	28.4	19.2	19.2	19.4	0	0	0	18.6	18.6	18.6
	08:00	29.9	29.8	29.8	18.4	18.7	19.2	0	0	0	26	26	26
	09:00	32	31.9	31.9	15.9	16.5	16.5	0.45	0.3	0.3	32.6	32.6	32.6
	10:00	33.9	33.9	33.8	13.4	14.4	13.4	0.26	0.26	0.26	37.5	37.5	37.5
	11:00	35.6	35.6	35.8	12.6	14.8	12.6	0.38	0.38	0.38	41	41	41
	12:00	37.1	37.1	37.4	11.6	13.8	11.6	0.41	0.41	0.41	50.6	50.6	50.6
	13:00	37.9	37.9	38.2	11.6	12.5	11.6	0.67	0.67	0.67	49.8	49.8	49.8
	14:00	38.8	38.8	38.8	11.2	12.1	11.2	0.71	0.71	0.71	53.9	53.9	53.9
	15:00	37.7	38	39	13.8	11.3	10.5	1.01	1.01	1.01	45.6	45.6	45.6
	16:00	38.9	39.3	38.9	11.8	11	11.8	0.76	0.76	0.76	44.9	44.9	44.9
	17:00	39	39	39.4	12.1	12.1	12.1	0.78	0.78	0.78	42.1	42.1	42.1
	18:00	38.2	38.2	38.6	11.8	12.6	11.8	0.79	0.79	0.79	37.4	37.4	37.4
	19:00	37.2	37.4	37.6	13	12.6	12.6	0.24	0.24	0.24	34.6	34.6	32.3
	20:00	35.7	35.8	35.9	14.2	13.3	13.3	0.17	0.17	0.17	24.9	24.9	24.4
	21:00	34.5	34.5	34.7	17.6	17.2	17.2	0.2	0.2	0.2	21.4	21.4	21
	22:00	33.2	33.2	33.1	19.6	19.3	20.1	0.19	0.13	0.13	19.8	19.8	19.6
23:00	32.1	32.1	32.3	21.2	21.2	21.4	0	0	0	18.7	18.7	18.6	
07.18.1986	00:00	31.1	31.1	31.3	24.3	24.3	24.9	0.13	0.13	0.13	17.9	17.9	17.8

**Table 7.** Individual Housing neighbourhood (S2) (07.15.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.15.1986	00:00	25.6	25.1	26	41.2	44.1	40.3	0.61	0.81	0.42	13.2	13.2	13.4
	01:00	24.9	24.7	25.1	44.9	48	45.9	0.17	0.49	0.33	12.8	12.8	13.1
	02:00	24	23.5	24.2	49.5	52	50.3	0.13	0	0.24	12.3	12.3	12.6
	03:00	23.5	23.2	23.6	50.7	51.5	49.2	0.17	0	0.25	11.7	11.7	12.3
	04:00	22.3	22.6	22.9	53.8	51.9	51.9	0.28	0	0.34	11.3	11.3	12
	05:00	22.4	22.2	22.5	52.4	53.2	51.7	0	0.38	0.28	11	11	11.4
	06:00	22	22.1	22.4	50.9	49.7	49.1	0.21	0	0.16	11	11	11.3
	07:00	22.3	22.9	22.3	49.7	50.7	48.7	0	0.3	0.15	15.6	15.6	22.2
	08:00	24.2	24.4	24.6	40.9	40.1	40.9	0.19	0.14	0.14	23.1	23.1	35
	09:00	26.2	26.2	26.5	33.6	32.6	34.5	0.22	0.16	0.22	43.8	43.8	41.4
	10:00	27.9	27.7	28.3	26.9	31.1	29.7	0.13	0.83	0.37	47.7	47.7	43
	11:00	29.7	29.4	30	26.1	27.6	26.2	0.11	0.64	0.22	49.1	49.1	43
	12:00	31.6	31.3	31.8	20.1	25	23.8	0.75	0.15	0.51	47.5	47.5	42.5
	13:00	32.4	32.4	32.7	18.8	21.9	20.3	1.2	0.47	1.2	39.8	47.7	43
	14:00	33	33.3	33.5	21.4	19.3	20.3	0.81	0.99	0.81	42.6	42.6	49.7
	15:00	33.2	33.4	33.6	22	19.2	18.3	1.17	1.44	0.89	42.6	42.6	48.9
	16:00	33.5	33	33.7	18.9	21.5	22.8	1.51	0.69	1.24	42.6	58.1	47.7
	17:00	33.8	33.3	33.5	19	21.5	21.5	1.12	0.92	0.72	57.7	40.4	46.2
	18:00	32.7	31.9	32.7	20.8	24.7	21.7	0.77	0.42	0.42	53.6	36.7	39.5
	19:00	31.5	31.2	31.3	26.5	25.6	24.8	0.7	1.22	0.87	31.2	31.2	31.2
20:00	29.8	29.7	30	27.6	28.4	27.6	0.83	0.39	0.68	22.6	22.2	20.2	
21:00	28.6	28.4	28.7	32.4	33.1	31.8	0.56	0.31	0.43	17.1	18.3	17.2	
22:00	27.1	27.3	28	33.8	34.8	32.8	0.13	0.76	0.23	15.8	17.1	16.3	
23:00	26	26.2	26.7	38.1	39.2	37.1	0.11	0.7	0.21	15.6	15.8	15.4	

**Table 8.** Individual Housing neighbourhood (S2) (07.16.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.16.1986	00:00	25.7	25.4	25.4	37.8	39.5	38.7	0.82	0.29	0.42	14.8	14.8	14.6
	01:00	25.2	25	25.4	40.7	41.8	39.7	1.02	0.45	0.59	14	14	14.8
	02:00	24.8	24.5	25.1	43.2	45.9	42.5	0.45	0.59	0.3	13.6	13.6	13.9
	03:00	24.5	24.2	24.8	43.8	45.4	43.8	0.86	1.11	0.61	13.4	13.4	14.3
	04:00	24.4	24	24.5	44.4	46.1	45.3	0.41	0.16	0.28	13	13	13.3
	05:00	23.7	23.9	24.3	46	46.9	46	0.38	0.49	0.27	12.6	12.6	13.2
	06:00	23.8	23.6	24.2	44.7	45.7	43.6	1	0.23	0.42	12.5	12.5	13
	07:00	25.1	24.5	25.3	41.6	42.6	44.8	0.3	1.63	0.57	17.3	17.3	22.9
	08:00	26.6	26	26.7	39.1	42.5	39.1	0.56	0.82	0.56	24.4	24.4	35.2
	09:00	28.3	27.6	28.5	33.3	36.4	34.3	1.1	0.42	0.76	43.2	43.2	45.3
	10:00	30.4	29.6	30.6	25.4	30.6	25.4	0.45	0.84	0.45	47.3	47.3	49.5
	11:00	32.5	30.9	32	21	25.3	22.1	0.45	1.62	0.84	48.4	48.4	50.3
	12:00	33.4	32.9	33.6	20.2	21.6	20.9	3.13	0.7	1.31	46.9	46.9	49.9
	13:00	34.9	33.6	34.7	17.3	20.4	18.9	1.2	1.75	1.2	40.2	47.8	49.3
	14:00	35.5	34.8	35.7	16.9	18.7	17.5	1.94	0.72	1.33	42.2	42.2	52.2
	15:00	36.1	35.4	36.1	16.5	18.3	17.7	2.02	0.76	1.39	43.2	43.2	54.9
	16:00	36.2	34.6	36.5	16.1	20.8	17	0.5	1.41	0.96	56.7	42.7	59.1
	17:00	36	35	36.4	17.3	21.1	18.3	1.07	0.57	1.07	53.5	39.7	60
	18:00	35.3	34.9	35.6	20	22.1	19	1.81	0.91	0.91	53.5	35.9	56.4
	19:00	34.1	33.3	34.5	20.4	22.7	21.6	1.19	0.41	0.8	30.5	30.5	30.5
	20:00	33.1	31.8	32.7	21.9	26.2	23.6	0.44	1.22	0.83	22.6	22.6	20.4
	21:00	30.9	30.6	31.6	30.2	31.2	29.2	1.64	1.35	1.05	19.7	19.7	17.9
	22:00	31.2	30.5	30.9	27.1	29.3	28.4	0.19	0.19	0.36	18.1	18.1	17.2
23:00	29.2	29.4	29.7	32	31.2	29.6	0.59	0.74	0.45	17.2	17.2	16.4	

**Table 9.** Individual Housing neighbourhood (S2) (07.17-18.1986)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.17.1986	00:00	28.4	27.9	28.9	35.3	38.1	36.2	1.15	0.79	0.79	16.5	16.5	16
	01:00	27.6	27.8	28.3	36.1	38	36.1	0.75	1.48	1	16.1	16.1	15.3
	02:00	27.1	26.4	27.3	41.2	44.2	41.9	0.71	0.91	0.71	15.5	15.5	15
	03:00	26.3	26.1	26.8	44.2	45.2	43.2	0.16	1.06	0.46	15.1	14.6	14.8
	04:00	25.7	25.9	26.4	48	47.1	45.3	0.51	0.75	0.51	14.6	14.6	14.4
	05:00	25.5	25.5	26	51.4	50.8	50.2	0.37	0	0.37	14.2	14.2	14.5
	06:00	25.8	25.7	26.1	48	48.7	48.7	0.33	0.26	0.39	13.9	13.9	14.2
	07:00	26.5	26.1	26.7	45.1	46.6	45.9	0.25	0.3	0.3	18.4	18.4	24.2
	08:00	27.8	27.5	28.3	40.3	41.9	40.3	0.15	0.37	0.23	25.4	25.4	34.5
	09:00	29.3	29.7	30	38.4	37.1	36.5	0.62	0.48	0.75	44.8	44.8	46.9
	10:00	31.7	31.4	32	31.3	32.9	31.3	0.24	0.71	0.24	48.9	48.9	51.1
	11:00	33.5	32.8	33.7	25.4	29.4	27.4	0.45	0.81	0.45	49	49	52.7
	12:00	35.1	34.2	35.2	23.5	27.3	24.5	0.39	0.58	0.39	49.6	51.2	52.8
	13:00	35.8	35	36	21.6	25.4	23.5	1.24	0.94	0.65	42.5	50.1	53.2
	14:00	36.8	35.7	36.8	20.1	23.7	21	1.02	0.71	0.71	44.1	44.1	54.1
	15:00	36.9	36.6	37.1	19.3	20.3	18.3	1.79	2.16	1.41	44.5	44.5	58.1
	16:00	36.1	37	37.2	22	18	18.8	2.01	1.03	1.52	58.4	43.6	51
	17:00	36.7	35.7	36.4	19.8	23.7	20.8	1.93	0.92	1.26	58.6	41.3	49.9
	18:00	36.2	35.1	36.4	20.3	24.5	21.1	1.09	0.75	0.41	53.6	36.9	48
	19:00	35.4	35.2	35.5	18.9	19.9	19.4	0.1	0.63	0.28	32.2	32.2	32.2
	20:00	34	33.8	34.2	22.8	23.3	22.8	0	0.3	0.15	24.3	24.3	22.3
	21:00	32.6	32.9	32.8	28.4	27.8	28.4	0.69	0.31	0.44	21.1	21.1	20
	22:00	31.7	31.5	32.1	27.6	28.1	28.2	0.26	0.49	0.18	19.6	19.6	19.6
23:00	30.1	30.8	31.1	32.4	31.7	31.1	0.12	0.28	0	18.6	18.6	18.1	
07.18.1986	00:00	29.7	29.5	30.1	34	35.3	35.3	0.17	0.49	0.25	17.9	17.9	17.4

**Table 10.** Multifamily Housing neighbourhood (S3) (07.15.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.15.1986	00:00	26.1	25.9	25.5	40.2	40.2	41.9	0.71	0.36	1.07	13.6	13.5	13.5
	01:00	25.2	25	24.5	44.5	45.4	48.1	0.29	0.29	0.84	13.1	13.1	13.1
	02:00	24.4	24.2	23.9	49.3	49.3	50	0.37	0.19	0.37	12.6	12.6	12.6
	03:00	23.5	23.3	23.2	50.5	51.2	51.2	0.22	0.22	0.32	12.2	12.2	12.2
	04:00	22.5	22.8	22.9	53	52.5	52	0.26	0.44	0.18	11.9	11.9	11.9
	05:00	22.5	22.4	22.3	51.6	52	52	0.17	0.44	0.38	11.6	11.4	11.6
	06:00	22.1	22.3	22.4	50.4	49.9	49.5	0.17	0.17	0.12	11.4	11.2	11.2
	07:00	22.8	22.7	23	48.2	48.2	48.2	0	0.26	0.26	15.6	15.6	15.6
	08:00	24.7	24.5	24.5	40.2	41	40.6	0.15	0.15	0.29	23.5	23.5	23.5
	09:00	26.5	26.4	26.2	32.9	33.6	33.6	0.21	0.21	0.42	30	30	30
	10:00	28.2	28.3	28.4	27.7	27.7	30	0.42	0.8	1	46.7	34.2	34.2
	11:00	30	30.2	30.2	24.5	23.2	25.9	0.24	0.47	0.92	47.8	36.8	36.8
	12:00	31.1	31.5	31.9	25.3	22.6	21.3	0.53	0.53	0.35	45.2	48.1	48.1
	13:00	31.8	32.7	33.5	23.4	21.8	20.2	0.81	0.81	0.41	48.7	48.7	48.7
	14:00	33.4	34.3	34	24.5	21.7	20.3	0.77	1.02	1.02	49.1	52.6	42.1
	15:00	33.7	34	33.4	22.7	21.6	20.4	0.44	1.7	1.7	50.8	41.1	41.1
	16:00	33.7	34	34	20.3	19	19	0.72	0.37	1.06	55.5	41	41
	17:00	32.9	33.8	33.8	23.5	20.9	20.9	0.8	0.8	0.54	39.4	39.4	39.4
	18:00	32.4	32.8	32.4	23	20.9	24	0.52	0.52	0.77	36.1	36.1	36.1
	19:00	31.2	31.4	31.6	28.1	27.2	26.4	0.6	1.19	1.19	31	31	31
20:00	30.4	30.2	30.2	26.3	27.2	27.2	0.19	0.38	0.56	21.8	22.2	22.2	
21:00	29.3	29	28.8	30.6	31.4	32.2	0.17	0.32	0.48	17.7	18.3	18.6	
22:00	27.6	28.1	28	34.5	33	33	0.21	0.42	0.62	16.7	16.9	16.9	
23:00	26.8	27.2	27	38.2	36.5	36.5	0.23	0.23	0.69	15.7	15.9	15.9	



**Table 11.** Multifamily Housing neighbourhood (S3) (07.16.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.16.1986	00:00	26.4	26.1	25.9	36.3	37.2	37.2	0.17	0.17	0.34	15	15	15
	01:00	25.8	25.4	25.1	39.7	40.8	40.8	0.23	0.23	0.44	14.2	14.4	14.4
	02:00	25.4	25.2	24.8	42.9	42.9	45.5	0.23	0.23	0.65	14	14	14
	03:00	25.3	24.9	24.6	41.7	42.6	45.4	0.4	0.4	1.17	13.4	13.6	13.6
	04:00	25	25	24.8	43.7	43.7	43.7	0.21	0.21	0.21	13.3	13.4	13.3
	05:00	24.4	24.4	24.6	46.3	45.2	44.2	0.16	0.31	0.31	12.9	13.1	12.9
	06:00	24.3	24.1	23.9	44.9	43.8	44.9	0.27	0.27	0.27	12.9	12.9	12.8
	07:00	25.3	25.5	24.9	41.7	41.7	43.9	0.45	0.87	1.73	17.4	17.4	17.4
	08:00	27.1	27.1	26.4	38.7	38.7	40.7	0.47	0.47	0.47	24.4	24.4	24.4
	09:00	28.7	28.4	28.2	33.6	33.6	34.7	0.54	0.54	0.54	30	30	30
	10:00	30.8	30.6	29.9	25.5	26.5	29.6	0.58	0.58	1.14	46.6	34.4	34.4
	11:00	32.2	32.5	31.7	21.9	21.9	25	0.6	0.6	1.77	47.6	36.7	36.7
	12:00	33.6	33.6	33.8	21.1	20.3	20.3	0.79	0.79	0.79	46.3	38.7	47.9
	13:00	34.9	35.2	34.6	17.6	17.6	19.5	0.67	0.67	0.67	48.9	48.9	48.9
	14:00	35.8	36.2	36	17.6	16.3	16.9	0.74	0.74	0.74	51.6	51.6	51.6
	15:00	36.3	36.8	36.5	16.8	16.3	16.3	0.75	0.75	0.75	54.8	54.8	41.1
	16:00	36.5	36.5	35.4	18.2	17.2	20.1	1.07	0.55	1.07	54.4	40.7	40.7
	17:00	36.4	36.7	36	18.3	18.3	19.2	0.65	0.65	0.65	54.4	39.1	39.1
	18:00	35.2	35.8	35.5	20.9	19.3	19.3	0.63	0.63	0.63	54.1	35.7	35.7
	19:00	34.5	34.9	34.9	21.1	20.1	20.1	0.54	0.54	0.54	30.7	30.7	30.7
20:00	33	33	32.3	23.9	23.9	25.8	1.02	1.02	1.02	21.3	21.8	22.8	
21:00	31.4	32	31.4	29.7	26.9	27.8	0.58	0.58	1.13	18.4	19.1	19.5	
22:00	30.9	31.4	31.1	28.7	27.2	28	0.24	0.47	0.47	17.6	17.8	18.1	
23:00	29.7	29.9	30.2	31.2	29.6	29.6	0.26	0.26	0.73	16.7	17.1	17.3	

**Table 12.** Multifamily Housing neighbourhood (S3) (07.17-18.1986)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.17.1986	00:00	29.1	28.5	28.8	35.7	36.7	36.7	0.51	0.51	0.26	16.4	16.6	16.6
	01:00	27.8	28.4	28.2	38.8	36.4	35.7	0.42	0.82	1.22	15.7	16	16
	02:00	27.5	27.7	26.7	40.8	40.8	44.3	0.29	0.58	1.14	15.3	15.5	15.5
	03:00	26.2	27.2	26.7	43.5	42.4	44.6	0.52	0.52	1.26	14.9	15.1	15.1
	04:00	26.2	26.7	26.5	45.8	44.7	45.8	0.3	0.3	1.12	14.6	14.6	14.8
	05:00	25.9	26.2	26.2	50.4	49.5	49.5	0.28	0.41	0.41	14.2	14.5	14.5
	06:00	25.7	26.1	26.1	49.5	48	48	0.27	0.63	0	14.1	14.1	14.1
	07:00	26.5	26.8	26.8	46.6	45.5	45.5	0.23	0.53	0	18.4	18.4	18.4
	08:00	28	28.2	27.9	41.6	40.5	40.5	0.15	0.5	0	25.8	25.8	25.8
	09:00	29.9	30.3	30.3	37.8	35.9	36.5	0.24	0.24	0.71	31.8	31.8	31.8
	10:00	32	32.2	32.2	30.5	30.5	31.4	0.3	0.3	0.88	48.2	36.6	36.6
	11:00	33.6	33.6	33.6	25.9	27	28.2	0.35	0.35	1.03	49.9	39.4	39.4
	12:00	35.2	35.4	35.2	22.9	24	25.1	0.37	0.37	0.72	50.4	50.4	50.4
	13:00	35.8	36.4	36.9	23.2	22.1	23.2	0.5	0.5	0.99	49.6	49.6	49.6
	14:00	36.9	37.2	36.6	19.7	19.7	20.7	0.52	0.52	1.03	53.3	53.3	53.3
	15:00	36.4	37.6	37.3	22.9	19.4	18.5	0.64	0.64	1.9	56.4	42.5	42.5
	16:00	37.1	37.3	37.3	20.6	18.8	18.8	0.66	0.66	1.31	55.4	41.4	41.4
	17:00	37.5	37.5	37.2	19.1	19.1	20.2	0.47	0.47	1.39	55.6	40.4	40.4
	18:00	36.7	36.7	35.7	19.7	20.7	22.6	0.5	0.5	0.98	36.4	36.4	36.4
	19:00	35.7	35.8	35.8	19.4	19.4	19.4	0.22	0.43	0.64	32	32	32
	20:00	34.1	34.4	34.1	23.1	22.4	22.8	0.22	0.29	0.43	22.9	23.9	24.3
	21:00	32.5	33	33.2	28.9	27.8	27.2	0.17	0.33	0.48	20.4	21	21.3
	22:00	31.5	31.9	32.1	28.5	27.7	27.2	0.12	0.12	0.45	19.1	19.5	19.7
23:00	30.6	30.9	30.9	31.7	31	30.6	0	0.25	0.12	18.5	18.6	18.6	
07.18.1986	00:00	29.8	30	30	34.7	33.7	33.7	0.12	0.12	0.33	17.7	17.9	17.9

## Simulation data

TMY 3

Simulation is done with ENVI-met  
4.4.4 on the basis of Epw file  
(Meteonorm 7.2)

2001

**Table 13.** Old Tolga neighbourhood (S1) (07.15.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.15.2001	00:00	27.6	27.6	27.6	27.9	28.7	27.7	0.42	0.42	0.42	12.9	12.9	12.9
	01:00	26.7	26.5	26.5	29.8	30.4	29.8	0.33	0.33	0.33	12.6	12.5	12.5
	02:00	25.7	25.5	25.5	35.1	35.1	35.1	0.24	0.24	0.24	12.1	12.1	12.1
	03:00	24.9	24.9	24.9	37.4	37.8	37.8	0.16	0.16	0.16	11.7	11.7	11.7
	04:00	24.4	24.3	24.3	39.1	39.1	39.5	0.14	0.14	0.14	11.4	11.4	11.4
	05:00	24.1	24.1	24.1	41.1	41.1	41.1	0	0	0	11.1	11.1	11.1
	06:00	23.9	23.3	23.3	45.6	47.2	46.1	0.15	0.1	0.15	10.9	10.9	10.9
	07:00	24.1	24.1	24.3	41.2	41.2	40.6	0.1	0	0	16.4	16.4	16.4
	08:00	26.3	26.3	26.2	34.2	33.9	34.2	0.17	0.12	0.17	24.2	24.2	24.2
	09:00	28.3	28.3	28.1	29.4	29.4	29.8	0.16	0.16	0.16	31	31	31
	10:00	30.4	30	30.3	23.3	24.7	23.3	0.28	0.28	0.28	35.7	35.7	35.7
	11:00	32.3	31.9	32.1	19.5	20.3	19.5	0.22	0.22	0.22	38.9	38.9	38.9
	12:00	33.7	33.6	33.7	18.4	18.4	18.4	0.26	0.26	0.26	48.9	48.9	48.9
	13:00	34.4	34.8	34.8	21.9	18.9	18.9	0.36	0.36	0.36	48.9	48.9	48.9
	14:00	35.6	36	36	19.8	17.4	17.4	0.32	0.32	0.32	53.4	53.4	53.4
	15:00	35.6	35.9	35.9	17	15.9	17	0.53	0.53	0.53	56.5	43.6	43.6
	16:00	36.1	36.1	36.1	16.3	16.3	16.3	0.59	0.59	0.59	43.6	43.6	43.6
	17:00	35	35.6	35.6	18.3	15.9	15.9	0.49	0.49	0.49	40.8	40.8	40.8
	18:00	34.8	34.8	34.8	17.2	17.2	17.2	0.42	0.42	0.42	36.9	36.9	36.9
	19:00	33.5	33.8	33.3	18.3	17.7	19.6	0.32	0.32	0.32	31.8	31.8	31.8
	20:00	32.1	32.3	32.3	20.8	20.8	20.8	0.33	0.33	0.33	22.6	23.1	22.6
	21:00	30.9	31.1	31.1	24	24	24	0.28	0.28	0.28	18.9	18.9	18.6
	22:00	29.6	29.6	29.7	29.9	29.9	29.3	0.35	0.24	0.24	17.3	17.3	17.2
23:00	28.5	28.5	28.5	32.3	32.3	32.3	0.22	0.22	0.22	16.2	16.2	16.1	

**Table 14.** Old Tolga neighbourhood (S1) (07.16.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.16.2001	00:00	27.8	27.9	28.2	35.2	33.3	33.3	0.32	0.32	0.32	15.3	15.3	15.1
	01:00	26.9	27.6	27.6	36.2	34.1	34.1	0.43	0.43	0.43	14.5	14.5	14.5
	02:00	27.2	27	27.3	35.3	36	34.6	0.36	0.36	0.36	13.9	14	13.9
	03:00	26.9	26.8	26.9	36.1	37.8	36.1	0.59	0.59	0.59	13.6	13.6	13.5
	04:00	26.5	26.5	26.7	34.9	33.9	33.9	0.35	0.35	0.35	13.3	13.3	13.2
	05:00	25.9	26.3	26.5	38.5	35.8	35.8	0.3	0.3	0.3	13	13	12.9
	06:00	25.9	26.4	26.4	38.4	36.2	36.2	0.5	0.5	0.5	12.8	12.8	12.8
	07:00	27.3	27.2	27.3	32.7	34.8	32.7	0.59	0.59	0.59	17.9	17.9	17.9
	08:00	29.1	28.9	29.1	27.4	27.4	27.4	0.62	0.62	0.62	25.1	25.1	25.1
	09:00	30.8	30.8	30.8	23.5	23.5	23.5	0.84	0.84	0.84	31.2	31.8	31.8
	10:00	32.7	32.4	32.7	17.9	17.9	17.9	0.86	0.86	0.86	35.5	35.5	35.5
	11:00	34.5	34.2	34.5	14.9	15.7	14.9	1.28	0.87	0.87	39	39	39
	12:00	36	36	36	12.9	12.2	12.2	1.4	1.4	1.4	48.4	48.4	48.4
	13:00	37.2	36.9	37.2	10.7	11.4	10.7	1.24	1.24	1.24	48.2	48.2	49.5
	14:00	38.2	38.2	38.2	8.5	9.1	8.5	1.41	1.41	1.41	52.7	52.7	52.7
	15:00	38.8	38.8	38.8	8.3	8.3	8.3	1.46	1.46	1.46	45.2	45.2	45.2
	16:00	38.9	38.9	38.9	7.9	8.5	7.9	1	1	1	44.4	44.4	44.4
	17:00	38.6	38.6	38.6	8.8	8.8	8.8	1.2	1.2	1.2	40.7	40.7	40.7
	18:00	37.4	37.8	37.8	9	9	9	1.13	1.13	1.13	36.4	36.4	36.4
	19:00	36.2	36.7	36.7	10.2	10.2	10.2	0.96	0.96	0.96	33.3	33.3	33.3
20:00	35.4	35.1	35.4	10.6	11.9	10.6	0.87	0.87	0.87	23.1	23.1	22.5	
21:00	34.3	34.3	34.3	13.1	14.2	13.6	0.61	0.61	0.61	19.6	19.6	19.2	
22:00	33.3	33.3	33.3	14.8	14.8	14.8	0.35	0.35	0.51	18.2	18.2	18.2	
23:00	32.2	31.8	32.2	15.4	15.4	15.4	0.32	0.32	0.32	17.2	17.2	17.2	

**Table 15.** Old Tolga neighbourhood (S1) (07.17-18.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.17.2001	00:00	30.5	31.4	31.4	18.1	16.4	16.4	0.44	0.44	0.64	16.3	16.3	16.3
	01:00	29.7	29.7	30.4	20.9	19	17	0.53	0.53	0.53	15.6	15.6	15.4
	02:00	29.4	29.4	29.7	18.6	18.6	18.6	0.51	0.51	0.51	14.9	14.9	14.7
	03:00	28.8	28.6	29	17.8	19.8	17.8	0.33	0.33	0.33	14.4	14.4	14.3
	04:00	28.4	28.2	28.4	18.8	19.5	18.8	0.26	0.26	0.26	14	14	13.1
	05:00	27.9	27.9	28	19.8	19.8	19.4	0.13	0.13	0.13	13.7	13.7	13.6
	06:00	27.9	27.8	27.8	19.4	19.6	19.6	0	0	0	13.6	13.6	13.5
	07:00	28.5	28.5	28.5	19.2	19.2	19.4	0	0	0	18.6	18.6	18.6
	08:00	30	29.9	29.9	18.4	18.7	19.2	0	0	0	26	26	26
	09:00	32.1	31.9	32	15.9	16.5	16.5	0.45	0.3	0.45	32.6	32.6	32.6
	10:00	34	34	34	13.4	13.9	13.4	0.26	0.26	0.26	37.5	37.5	37.5
	11:00	35.8	35.6	35.6	12.6	13.3	12.6	0.38	0.38	0.38	41	41	41
	12:00	37.4	37.1	37.4	11.6	13.8	11.6	0.41	0.41	0.41	50.6	50.6	50.6
	13:00	38.2	38.2	38.2	11.6	12.5	11.6	0.67	0.67	0.67	49.8	49.8	49.8
	14:00	39.1	39.1	39.1	11.2	12.1	11.2	0.71	0.71	0.71	55.3	55.3	55.3
	15:00	38	39	39.4	14.6	11.3	10.5	1.01	1.01	1.01	45.6	45.6	45.6
	16:00	39.3	39.6	39.3	11.8	10.9	11.8	0.76	0.76	0.76	44.9	44.9	44.9
	17:00	39.4	39.4	39.4	12.1	12.1	12.1	0.78	0.78	0.78	42.1	42.1	42.1
	18:00	38.6	38.6	38.6	11.8	12.6	11.8	0.79	0.79	0.79	37.4	37.4	37.4
	19:00	37.4	37.6	37.6	13	12.6	12.6	0.24	0.24	0.24	34.6	32.3	32.3
	20:00	35.8	35.9	35.9	14.2	13.3	13.3	0.17	0.17	0.17	24.9	24.9	24.4
	21:00	34.7	34.7	34.7	17.6	17.2	17.2	0.2	0.2	0.2	21.4	21.4	21.4
	22:00	33.4	33.4	33.4	19.6	19.3	20.1	0.13	0.13	0.13	19.8	19.8	19.8
23:00	32.3	32.3	32.3	21.2	20.9	21.4	0	0	0	18.7	18.7	18.7	
07.18.2001	00:00	31.5	31.5	31.3	24.3	24	24.9	0.13	0.13	0.13	17.9	17.9	17.8

**Table 16.** Individual Housing neighbourhood (S2) (07.15.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.15.2001	00:00	26.9	26.4	27.4	30.1	32.9	30.1	0.81	0.81	0.42	13.6	13.6	13.8
	01:00	26.5	26	26.8	31.1	33.3	31.1	0.33	0.48	0.17	13.3	13.3	13.8
	02:00	25.7	25.1	25.7	35.5	37.2	35.5	0.24	0.24	0.24	12.8	12.8	13.7
	03:00	25	24.8	25.3	38.1	37.3	38.8	0.25	0.17	0.25	12.2	12.4	12.9
	04:00	23.9	24.2	24.6	41.9	39.9	39.9	0.35	0.22	0.35	11.9	11.9	13.4
	05:00	24.2	24	24.2	42.1	43	42.1	0	0.44	0.24	11.7	11.7	13
	06:00	23.7	23.7	24.1	46.4	45.8	45.2	0.22	0	0.16	11.7	11.7	13.1
	07:00	24	24.2	24.7	41	41	40	0	0.41	0.16	16.4	16.4	17.4
	08:00	26	26.1	26.5	35.5	34.7	33.8	0.19	0.25	0.19	23.9	23.9	35.6
	09:00	27.9	27.9	28.3	31.1	30.2	30.2	0.29	0.29	0.22	44.4	44.4	42.1
	10:00	29.7	29.7	30.2	24.6	27.3	25.9	0.25	0.83	0.37	48.4	48.4	43.8
	11:00	31.4	31.1	31.9	21.9	24.5	21.9	0.22	0.63	0.22	49.9	49.9	43.9
	12:00	33.3	33.1	33.6	19.3	23.8	21.6	0.74	0.27	0.51	48.4	48.4	50
	13:00	34.2	34.2	34.5	20.4	23.3	20.4	1.35	0.76	0.76	40.9	48.7	50.3
	14:00	34.9	35.1	35.3	21.1	19.1	20.1	0.99	1.17	0.99	43.7	43.7	54.2
	15:00	35.2	35.4	35.6	19.8	17.2	17.2	1.45	1.73	0.89	43.6	43.6	56
	16:00	35.3	34.7	35.6	17.3	22.2	18.5	1.79	0.96	1.51	59	43.6	61.6
	17:00	35.6	35.1	35.4	17.2	19.6	17.2	1.32	0.92	0.72	58.5	41.1	61.4
	18:00	34.5	34.1	34.5	17.9	21.5	18.8	0.94	0.59	0.42	54.4	37.6	57.3
	19:00	33.3	33.1	33.4	21.4	19.7	19.7	0.88	1.39	0.88	32.1	32.1	32.1
20:00	31.7	31.5	31.8	22.6	23.3	23.3	0.83	0.68	0.68	23.4	23.4	21.4	
21:00	30.4	30.2	30.5	26.2	26.8	26.8	0.68	0.43	0.56	19.5	19.5	18.7	
22:00	28.9	29.1	29.9	30.7	31.7	30.7	0.23	0.87	0.34	17.9	17.9	17.4	
23:00	27.8	28.3	28.8	34	34	33	0.21	0.8	0.31	17	16.9	16.5	

**Table 17.** Individual Housing neighbourhood (S2) (07.16.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.16.2001	00:00	27.5	27.2	27.7	35.5	37.2	35.5	1.08	0.42	0.55	16.1	16.1	15.9
	01:00	26.9	26.7	27.2	37.3	38.4	36.2	1.16	0.59	0.59	15.3	15.4	15.6
	02:00	26.8	26.5	27.2	36.7	38.8	36.7	0.59	0.74	0.45	14.8	15	15.4
	03:00	26.3	26.1	26.6	39.1	41.5	38.3	1.11	1.11	0.86	14.6	14.6	15
	04:00	26.2	25.9	26.4	35.4	35.4	36.2	0.54	0.28	0.28	14.1	14.1	14.7
	05:00	25.5	25.9	26.1	38.6	38.6	37.6	0.49	0.6	0.39	13.8	13.8	14.7
	06:00	25.7	25.7	25.9	39.3	41.2	38.2	1.19	0.42	0.61	13.7	13.7	14.5
	07:00	26.8	26.6	27.1	36.1	38.4	35	0.57	1.9	0.83	18.3	18.3	24.5
	08:00	28.3	27.9	28.5	28.9	32.3	29.7	0.82	0.82	0.56	25.2	25.2	35.6
	09:00	30	29.7	30.3	25.5	28.6	25.5	1.45	0.76	1.1	43.6	43.6	41.5
	10:00	32.4	31.4	32.4	19.1	23.1	20.1	0.84	1.22	0.84	47.7	47.7	43.5
	11:00	34.1	33.1	34.4	16.5	21.6	17.5	0.84	2.01	0.84	49	49	47.2
	12:00	35.1	34.6	35.4	14.3	15.6	14.9	2.52	1.31	1.91	49	49	50.5
	13:00	36.5	35.6	36.5	13	15.2	13	1.75	1.75	1.2	41	48.5	51.4
	14:00	37.2	36.9	37.4	13	13	13	2.55	1.33	1.33	42.9	42.9	54.3
	15:00	37.8	37.3	38.1	12.5	12.5	12.5	2.65	1.39	1.39	43.7	43.7	57.3
	16:00	38.3	37.2	38.3	13.5	13.5	13.5	0.96	1.87	0.96	57.3	43.2	59.7
	17:00	38	36.8	38	13.4	13.4	13.4	1.58	1.07	1.07	57.4	39.4	60.4
	18:00	36.8	36.4	37.3	13	13	13	2.26	0.91	1.36	53.7	35.3	56.7
	19:00	36.2	35.7	36.2	13	13	13	1.59	0.8	0.8	32.5	32.5	29.9
20:00	35	33.9	34.7	13	15.4	13	0.83	1.61	0.83	23.1	23.1	20.2	
21:00	32.4	32.8	33.6	18.4	17.5	15.7	1.94	1.64	1.35	20	20	18.3	
22:00	33.2	32.4	32.9	15.7	17.1	16.4	0.36	0.36	0.54	18.7	18.7	17.7	
23:00	30.8	31.4	31.9	19.2	17.7	17	0.74	0.74	0.45	17.8	17.8	16.9	



**Table 18.** Individual Housing neighbourhood (S2) (07.17-18.2001)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.17.2001	00:00	30.2	29.6	30.5	18.9	21.5	18.9	1.32	0.61	0.97	17.1	17.1	16.1
	01:00	29.7	29.7	30.3	18.4	20.2	18.4	0.76	1.72	0.76	16.5	16.5	15.5
	02:00	28.8	28.1	29	20.4	20.4	23.2	0.91	1.1	0.71	15.8	15.8	14.9
	03:00	28.2	27.9	28.8	21.4	21.4	20.4	0.31	1.21	0.61	15.2	15.2	14.6
	04:00	27.6	28.2	27.9	22.9	22	21.1	0.52	0.88	0.52	14.8	14.8	14.2
	05:00	27.4	27.4	27.8	21.9	20.7	21.3	0.51	0.15	0.44	14.4	14.4	14
	06:00	27.7	27.5	27.7	20.2	20.8	20.8	0.39	0.39	0.39	14.3	14.3	14
	07:00	28.4	28.2	28.4	20.1	20.9	20.9	0.29	0.38	0.29	18.8	18.8	24.6
	08:00	29.7	29.4	29.9	19.5	20.3	19.5	0.2	0.43	0.2	25.9	25.9	34.4
	09:00	31.3	31.7	32	18.6	17.4	18	0.73	0.6	0.6	44.6	44.6	42.6
	10:00	33.4	33.2	33.8	16.2	16.2	15.5	0.35	0.81	0.24	48.9	48.9	51
	11:00	34.9	34.4	35.2	14.7	17.4	14.7	0.64	0.99	0.64	49.2	49.2	52.8
	12:00	36.5	35.6	36.7	12.9	16.6	14.7	0.58	0.77	0.39	49.9	49.9	52.9
	13:00	37.4	36.2	37.6	13.2	17.6	14.1	1.53	0.94	0.94	43.2	49.2	52.2
	14:00	38.1	36.9	38.4	12.8	16.1	13.6	1.33	1.02	1.02	44.8	44.8	56.3
	15:00	38.6	38.3	38.9	12.6	12.6	12.6	2.16	2.54	1.41	45	45	58.6
	16:00	37.9	38.7	38.9	15.3	13	13.8	2.5	1.52	1.52	59	44.1	61.5
	17:00	38.4	37.5	38.4	14.4	17.1	14.4	2.27	1.26	1.6	59.1	41.3	62.1
	18:00	37.9	36.9	37.6	13.1	16.1	13.1	1.43	1.09	1.09	54.1	36.6	57
	19:00	37.2	37	37.2	13	13	13	0.19	0.71	0.36	32.4	32.4	32.4
	20:00	35.9	35.7	36.1	13.6	13.6	14.1	0	0.37	0.22	25.2	25.2	23.1
	21:00	34.2	34.4	34.4	19.3	17.7	18.8	0.69	0.44	0.56	22	22	20.4
	22:00	32.8	33.1	33.6	20.3	20.3	20.9	0.26	0.64	0.26	20.5	20.5	19.6
23:00	31.4	32.1	32.6	22	20.8	21.4	0.17	0.34	0	19.5	19.5	18.7	
07.18.2001	00:00	30.6	31.1	31.3	25.3	25.3	25.9	0.25	0.56	0.25	18.7	18.7	18.2

**Table 19.** Multifamily Housing neighbourhood (S3) (07.15.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.15.2001	00:00	27.8	27.6	27.1	28.1	29	30.8	0.36	0.36	0.71	13.7	13.8	13.8
	01:00	26.9	26.7	26.2	29.7	29.7	32.4	0.29	0.29	0.56	13.3	13.5	13.5
	02:00	26.2	26	25.8	34.4	34.4	35.1	0.19	0.19	0.19	13	13	13
	03:00	25.1	24.9	24.9	37.7	38.4	38.4	0.11	0.22	0.11	12.8	12.8	12.8
	04:00	24.3	24.4	24.6	40.6	40.1	39.6	0.18	0.27	0	12.3	12.3	12.3
	05:00	24.2	24.1	24.1	41.2	41.2	41.2	0.17	0.4	0.34	12.1	12	12.1
	06:00	23.8	24	24.1	45.7	45.3	44.9	0.12	0.12	0	12	12	12
	07:00	24.6	24.6	24.6	39.3	39.3	39.3	0	0.22	0.22	16.5	16.5	16.5
	08:00	26.6	26.3	26.3	33.7	34.5	34.1	0	0.14	0.28	24.3	24.3	24.3
	09:00	28.3	28.2	28.1	29.4	29.9	29.9	0.11	0.11	0.31	43.2	30.8	30.8
	10:00	30.1	30.2	30.1	23.9	23.9	26	0.22	0.41	0.8	45.5	35.1	35.1
	11:00	31.7	31.9	31.9	21.7	20.5	22.9	0.24	0.24	0.7	48.7	37.8	37.8
	12:00	33	33.5	33.7	21.8	20.6	19.4	0.35	0.18	0.18	50.6	40.1	49.1
	13:00	33.9	34.8	35.4	23.2	21.7	20.3	0.4	0.4	0.21	49.8	49.8	49.8
	14:00	35.2	35.9	35.9	23	20.4	19.1	0.52	1.02	1.02	53.6	53.6	53.6
	15:00	35.2	35.5	35.2	19.7	18.6	17.5	0.44	1.7	1.28	59	59	41.9
	16:00	35.9	35.9	35.9	16.1	16.1	16.1	0.72	0.72	0.72	62.2	41.9	41.9
	17:00	34.7	35.7	35.7	19.2	16.8	16.8	0.54	0.54	0.54	55.7	40.3	40.3
	18:00	34.3	34.7	34.3	19.1	17.1	20	0.26	0.26	0.51	37	37	37
	19:00	32.8	33.2	33.2	22.1	21.3	20.4	0.31	0.89	1.18	31.9	31.9	31.9
20:00	32.3	32	32	20.7	21.5	22.3	0.19	0.38	0.56	22.1	23.4	23.4	
21:00	31.3	30.9	30.7	23.1	24.6	25.3	0.17	0.32	0.48	18.9	19.5	19.8	
22:00	29.6	30.1	29.7	30.3	28.9	28.9	0.21	0.42	0.62	17.7	18.1	18.1	
23:00	28.8	29.2	29	32.9	31.4	31.4	0.24	0.24	0.7	16.9	17	17	

**Table 20.** Multifamily Housing neighbourhood (S3) (07.16.2001)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.16.2001	00:00	28.4	28	27.8	33.3	34.2	34.2	0.17	0.17	0.33	16.2	16	16.2
	01:00	27.6	27.1	27.1	35.2	36.2	36.2	0.23	0.23	0.23	15.3	15.5	15.5
	02:00	27.2	27.2	26.6	35.6	35.6	38.1	0.23	0.44	0.65	14.9	15.1	15.1
	03:00	27.2	26.7	26.3	36.2	37.1	39.9	0.4	0.79	1.17	14.6	14.7	14.7
	04:00	26.9	26.9	26.8	33.9	33.9	33.9	0.21	0.21	0.21	14.3	14.3	14.4
	05:00	26.3	26.3	26.3	37.9	36.9	35.9	0.31	0.31	0.31	14	14.2	14.2
	06:00	26.1	26.1	25.9	38.5	37.4	37.4	0.27	0.27	0.27	13.9	14	13.9
	07:00	27.1	27.3	26.6	34	34	36.3	0.45	0.87	1.73	18.6	18.6	18.6
	08:00	28.9	28.9	28.4	28.5	27.5	30.5	0.47	0.47	0.47	24.9	24.9	24.9
	09:00	30.5	30.5	30.2	24.8	24.8	25.9	0.54	0.54	0.54	40.8	30.5	30.5
	10:00	32.7	32.7	32.4	18.1	19.1	23.1	0.58	0.58	1.14	47.2	34.8	34.8
	11:00	34	34.4	33.4	16.3	16.3	19.2	0.6	0.6	1.77	48.3	37.3	37.3
	12:00	35.4	35.6	35.4	14.4	13.7	13.7	0.79	0.79	0.79	48.4	39.2	48.4
	13:00	36.7	37	36	12	12	13.6	0.67	0.67	0.67	49.6	49.6	49.6
	14:00	37.4	38	37.7	10.2	10	10	0.74	0.74	0.74	52	53.9	53.9
	15:00	38.1	38.4	38.1	10	10	10	0.75	0.75	0.75	57.7	57.7	43.6
	16:00	38.2	38.2	37	10.3	10.3	12.1	1.07	0.55	1.07	57.6	40.9	40.9
	17:00	38.1	38.5	38.1	10	10	10.8	0.65	0.65	0.65	54.8	39.2	39.2
	18:00	37.1	37.4	37.4	11	10.3	10	0.63	0.63	0.63	54.4	35.7	35.7
	19:00	36.3	36.7	36.7	11	10.1	10.1	0.54	0.54	0.54	30.7	30.7	33.3
20:00	34.6	34.6	33.8	12.7	12.7	14.4	0.52	0.52	1.02	21.7	22.9	23.4	
21:00	33	33.7	33.3	17.1	14.6	15.4	0.58	0.58	1.13	18.9	19.7	20.1	
22:00	32.9	33.2	32.9	16.5	15.1	15.8	0.24	0.24	0.47	18	18.3	18.8	
23:00	31.4	31.9	31.9	17.1	16.3	16.3	0.26	0.26	0.73	17.2	17.8	17.8	

**Table 21.** Multifamily Housing neighbourhood (S3) (07.17-18.2001)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.17.2001	00:00	30.7	30.4	30.4	18.4	18.4	18.4	0.51	0.51	0.26	16.6	17	17
	01:00	29.3	30.1	30.4	20.9	18.7	17.9	0.42	0.82	1.22	15.8	16.5	16.5
	02:00	29.5	29.5	28.2	19.4	18.6	22.9	0.29	0.58	1.14	15.4	15.8	15.8
	03:00	28.5	28.8	28.5	19.6	18.5	20.6	0.53	0.53	1.27	14.9	15.3	15.3
	04:00	28.4	28.7	28.1	20.6	19.5	20.6	0.3	0.3	1.13	14.5	14.8	15
	05:00	27.8	27.9	28.1	20.7	19.9	19.5	0.28	0.42	0.28	14.2	14.6	14.6
	06:00	27.6	27.9	27.9	21.4	19.9	19.5	0.18	0.61	0	14.2	14.4	14.4
	07:00	28.3	28.3	28.3	20.8	19.6	19.6	0.15	0.59	0	19	19	19
	08:00	29.7	29.9	29.7	19.6	18.8	18.8	0	0	0	25.7	25.7	25.7
	09:00	31.6	32.1	32.1	17.3	16.1	16.7	0.24	0.24	0.69	42	31.8	31.8
	10:00	33.8	34	34	13.8	13.8	14.6	0.3	0.3	0.88	48.6	37	37
	11:00	35.5	35.3	35.3	13.3	14.4	15.5	0.35	0.35	1.03	50.3	39.5	39.5
	12:00	36.9	37.1	36.9	12.1	13.1	14.1	0.37	0.37	0.72	52.3	52.3	52.3
	13:00	37.8	38.1	38.1	13.8	12.8	14.9	0.5	0.5	1	51.5	51.5	51.5
	14:00	38.6	38.9	38.6	12.4	12.4	13.4	0.52	0.52	1.03	55.6	55.6	55.6
	15:00	38	39.4	39.4	14.9	11.7	10.9	0.65	1.27	1.9	56.9	56.9	42.7
	16:00	38.7	39.1	39.1	13.9	12.4	12.4	0.66	1.95	1.3	61.8	41.6	41.6
	17:00	39.3	39.3	38.9	12	12	13	0.47	0.47	0.93	59.2	40.7	40.7
	18:00	38.5	38.5	37.4	11.9	11.9	14.5	0.5	0.5	0.98	54.6	36.7	36.7
	19:00	37.5	37.7	37.7	12.4	12.4	12.4	0.22	0.43	0.64	32.4	32.4	32.4
	20:00	35.9	36.2	36.2	13.8	13.5	13.5	0.22	0.29	0.43	23.8	24.8	25.3
	21:00	34.3	34.3	35	19	18.5	17.5	0.17	0.48	0.48	21	21.9	21.9
	22:00	33.5	33.9	33.9	20.4	19.7	20.4	0.12	0.45	0.45	20	20.4	20.4
23:00	32.5	32.7	32.8	20.9	20.6	20.3	0	0.25	0.12	19.1	19.6	19.6	
07.18.2001	00:00	31.6	31.8	32.1	25.2	24.3	23.9	0.12	0.12	0.33	18.5	18.7	18.7

## Simulation data

TMY x

Simulation is done with ENVI-met  
4.4.4 on the basis of Epw file  
([climate.onebuilding.org](http://climate.onebuilding.org))

2016

**Table 22.** Old Tolga neighbourhood (S1) (07.15.2016)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.15.2016	00:00	33.7	33.5	33.7	15.7	16.2	15.7	0.51	0.51	0.51	16	16	16
	01:00	32.9	32.1	32.7	17.2	17.8	17.8	0.86	0.86	0.86	16.2	16.2	16.2
	02:00	32.2	31.8	32	18.9	21.1	19.5	0.67	0.67	0.67	16.2	16.2	16.2
	03:00	32.1	31.5	32.1	19.2	20.1	19.2	0.46	0.46	0.46	16.3	16.3	16.3
	04:00	30.6	30.2	30.4	21.7	22.2	21.7	0.17	0.17	0.17	15.3	15.3	15.3
	05:00	29.3	29.7	29.9	27.2	26	24.9	0.95	0.95	0.95	15.4	15.4	15.4
	06:00	29.9	30.2	30.5	24.8	24	24	0.62	0.62	0.62	20.6	20.6	20.6
	07:00	31.1	31.1	31.1	24.8	24.8	24.8	0.72	0.72	0.72	31.1	31.1	31.1
	08:00	32.2	32.5	32.5	26.9	25.8	25.8	1	1	1	39.4	39.4	39.4
	09:00	34.7	34.8	34.7	24.6	24.4	24.4	1.25	1.25	1.25	46.8	46.8	46.8
	10:00	36.4	36.1	35.9	20.9	21.4	21.4	0.94	0.94	0.94	51.7	51.7	51.7
	11:00	38.7	38.4	38.2	15.8	16.1	17.3	0.7	0.7	0.7	55.8	55.8	55.8
	12:00	41.1	40.6	40.2	15.3	15.3	15.7	0.51	0.51	0.51	62	62	63.6
	13:00	42.6	42.3	41.7	14.8	14.8	15.3	0.47	0.47	0.47	63	64.7	64.7
	14:00	45.2	44.8	45.5	15.8	13.5	15.8	0.29	0.29	0.29	69.1	69.1	69.1
	15:00	44.5	44.9	44.7	10.9	10.9	10.8	0.78	0.78	0.78	57.9	57.9	57.9
	16:00	45.6	45.6	45.6	9.1	9.1	9	0.56	0.56	0.56	55.9	55.9	55.9
	17:00	44.9	44.9	45	8.4	8.3	8.3	0.57	0.57	0.57	51	51	51
	18:00	45.5	45.5	45.4	7.8	7.7	7.8	0.31	0.31	0.31	43	43	43
	19:00	43.5	43.8	43.6	8.8	8.6	8.7	0.65	0.65	0.65	34.4	34.4	34.2
20:00	41.3	41.1	41.3	8.4	8.4	8.3	1.05	1.05	1.05	30.4	30.4	30.4	
21:00	40.3	40.3	40.4	9.5	9.6	9.5	1.11	1.11	1.11	28.7	28.7	28.7	
22:00	37.7	37.8	37.8	12.6	12.5	12.5	0.91	0.91	0.91	26.9	26.9	26.9	
23:00	36.3	36.3	36.3	15.1	15.1	15	0.65	0.65	0.65	25.2	25.2	25.2	

**Table 23.** Old Tolga neighbourhood (S1) (07.16.2016)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.16.2016	00:00	35.3	35.2	35.3	16.3	16.3	16.2	0.51	0.51	0.51	23.9	23.9	23.9
	01:00	35.4	35.3	35.4	19.3	19.4	19.3	0.4	0.4	0.4	22.7	22.7	22.7
	02:00	32	32.2	32.2	23.6	23	23	1.09	0.74	0.74	21.3	21.2	21.2
	03:00	31.3	31.4	31.3	21.4	21.1	21.4	0.55	0.55	0.55	19.9	19.9	19.9
	04:00	30.1	30.2	30.1	25.5	25.1	25.3	0.4	0.4	0.4	19	19	19
	05:00	30.9	30.9	31	30.9	30.9	30.5	0.3	0.3	0.3	19	19	19
	06:00	28.3	28.3	28.3	36.2	36.2	36.2	0	0	0	21	21	21
	07:00	29.4	29.4	29.4	36.8	36.6	36.6	0.38	0.28	0.49	31.4	31.4	31.4
	08:00	31.6	31.6	31.6	31.2	30.8	30.8	0.4	0.4	0.4	39.9	39.9	39.9
	09:00	33.1	33.1	33.2	26.6	26.1	26.2	0.5	0.5	0.5	46.3	46.3	46.3
	10:00	35	34.8	35.2	22.3	22.3	21.9	0.45	0.45	0.45	52.9	52.9	52.9
	11:00	36.4	36.4	36.4	19.7	19.4	19.7	0.86	0.86	0.86	55.5	55.5	55.5
	12:00	39.1	39.5	39.4	14.1	14.6	14.1	1.24	1.24	1.24	61.5	61.5	61.5
	13:00	40.1	40.6	40.5	11.6	12.5	12.5	1.03	1.03	1.03	60.9	60.9	60.9
	14:00	41.2	41.6	41.4	10.4	10.7	10.4	1.22	1.22	1.22	62.4	62.4	62.4
	15:00	41.2	41.4	41.3	9.8	9.8	9.8	1.04	1.04	1.04	55.2	55.2	55.2
	16:00	41.6	41.6	41.6	7.9	7.9	7.9	1.85	1.85	1.85	51	51	51
	17:00	41.7	41.7	41.7	8	8	8	1.77	1.77	1.77	44.7	44.7	44.7
	18:00	40.6	40.6	40.6	8.8	8.7	8.7	1.62	1.62	1.62	36.8	36.8	36.8
	19:00	39.8	39.8	39.8	9.5	9.5	9.5	1.24	1.24	1.24	30	30	30
20:00	37.4	37.3	37.4	12.1	12.2	12.1	0.8	0.8	0.8	26.2	26.2	26.2	
21:00	36.4	36.3	36.4	13.7	13.7	13.7	0.91	0.91	0.91	24.8	24.8	24.8	
22:00	34.5	34.5	34.5	15.8	15.9	15.8	0.5	0.5	0.5	23.2	23.2	23.2	
23:00	32.2	32.2	32.2	18.5	18.5	18.5	0.53	0.53	0.53	21	21	21	

**Table 24.** Old Tolga neighbourhood (S1) (07.17-18.2016)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		1	2	3	1	2	3	1	2	3	1	2	3
07.17.2016	00:00	30.1	30.3	30.2	22.3	21.9	22	0.35	0.35	0.35	19.5	19.5	19.5
	01:00	28.4	28.5	28.5	26.8	26.5	26.5	0.71	0.48	0.48	18.5	18.4	18.4
	02:00	27.3	27.4	27.3	28.9	28.8	29.2	0.45	0.45	0.45	17.3	17.3	17.3
	03:00	27.1	27.1	27.1	29.3	29.3	29.2	0	0	0	15.8	15.8	15.8
	04:00	27.4	27.4	27.5	30.7	30.4	30.4	0.62	0.62	0.62	16.4	16.4	16.4
	05:00	27.2	27.3	27.3	30.9	30.4	30.4	0.6	0.6	0.6	16.4	16.4	16.4
	06:00	26.3	26.4	26.4	38.9	38.2	38.2	0.49	0.49	0.49	20.7	20.7	20.7
	07:00	27.8	27.8	27.8	41.5	41.3	41.3	0.71	0.71	0.71	31.4	31.4	31.4
	08:00	28.8	28.8	28.8	42.8	42.5	42.8	1.19	1.19	1.19	39.7	39.7	39.7
	09:00	30.3	30.1	30	38.2	38.6	38.9	1.08	1.08	1.08	46.3	46.3	46.3
	10:00	32.1	31.9	31.9	31.2	32.1	32.5	0.44	0.44	0.44	50.8	50.8	50.8
	11:00	34.9	35.3	34.6	25.8	26.2	27.4	0.49	0.49	0.49	55.8	55.8	55.8
	12:00	34.6	34.6	34.6	26.4	26.4	26.4	0.74	0.74	0.74	63.7	63.7	63.7
	13:00	35.1	35.1	35.1	24.9	24.5	24.9	0.8	0.8	0.8	60.5	61.9	61.9
	14:00	36.5	36.2	36.7	21.9	22.5	21.9	0.81	0.81	0.81	64.5	64.5	64.5
	15:00	35.8	36.5	36.2	22.9	22.1	22.4	0.98	0.98	0.98	51.8	51.8	51.8
	16:00	37.1	36.8	36.9	20.8	21	21	0.71	0.71	0.71	49.8	49.8	49.8
	17:00	36.3	36.2	36.3	21.4	21.5	21.4	0.69	0.69	0.69	43.8	43.8	43.8
	18:00	35.8	35.8	35.8	21.9	21.9	21.9	0.77	0.77	0.77	35.2	35.2	35.2
	19:00	35.5	35.5	35.4	21.9	21.7	21.8	0.59	0.59	0.59	28	28	28
	20:00	34.2	34.3	34.3	22.8	22.6	22.7	0.43	0.43	0.43	24.5	24.5	24.5
	21:00	32.2	32.2	32.3	27.2	27.1	26.9	0.35	0.35	0.35	22.6	22.5	22.5
	22:00	32	31.9	32	27.5	27.5	27.5	0.28	0.28	0.28	21.3	21.3	21.3
23:00	31.1	31.1	31.2	28.3	28.1	27.9	0.39	0.39	0.39	20.5	20.5	20.5	
07.18.2016	00:00	30.2	30.1	30.3	30.1	30.2	29.9	0.28	0.28	0.41	19.3	19.3	19.3



**Table 25.** Individual Housing neighbourhood (S2) (07.15.2016)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.15.2016	00:00	31.9	32.5	33.1	19.1	18	16.4	1.22	1	0.79	17.5	17.5	18
	01:00	30.8	31.1	32.3	21.6	22.3	18.8	1.5	1.14	0.78	17.6	17.6	18.1
	02:00	30.9	30.7	31.9	21.5	22.7	19.7	0.32	0.32	0.6	17.5	17.5	18.5
	03:00	31.5	30.9	31.8	20	22.6	20	0.24	0.24	0.46	17.6	17.6	18.5
	04:00	30.6	30.4	30.8	21.7	22	21.5	0.34	0.34	0.26	16.3	16.3	17.1
	05:00	29.3	29.1	30	26.4	25.7	24.5	1.14	2.13	1.14	16.7	16.7	17.7
	06:00	29.7	28.7	30	22.5	28.5	25.5	1.88	0.88	1.38	21.8	21.8	23.1
	07:00	30.4	30	30.9	26.3	28.4	26.3	1.65	0.7	1.02	30.8	30.8	38.4
	08:00	31.8	31.8	32.3	27.6	28.1	27	2.6	0.77	1.13	39.3	39.3	42.4
	09:00	34.3	34.2	34.5	25.9	26.6	25.6	3.04	0.91	1.34	63.6	46.3	57.8
	10:00	35.9	36	36.3	21.7	21.7	21.7	1.33	0.67	0.67	59.8	49.9	59.8
	11:00	38.6	37.8	38.3	16.1	17.1	16.4	0.3	1.05	0.8	58.7	54.1	63.3
	12:00	40.6	40.3	40.6	14.2	14.5	14.7	0.2	0.56	0.74	58.6	56.6	65
	13:00	41.9	41.5	41.9	12.6	13.2	12.9	0.35	0.51	0.83	55.7	62.1	66.4
	14:00	44.3	43.1	43.9	12	12.5	12.3	1.57	0.31	1.06	57.2	57.2	65.9
	15:00	44.6	44.3	44.6	10.4	10.5	10.4	2.08	0.38	1.4	55	55	63.3
	16:00	45.8	45.3	45.6	10	10	10	1.18	0.9	0.61	65.9	55.4	61.7
	17:00	45.3	44.8	45.2	10	10	10	0.83	1.35	0.31	59.1	50.7	55.8
	18:00	45.2	45.4	45.6	10	10	10	0.34	0.34	0.17	46.1	42.1	44.2
	19:00	43.4	43.8	43.5	10	10	10	0.66	1.57	0.36	34.7	34.7	35.2
20:00	40.9	40.8	41.3	8.7	8.7	8.4	1.63	2	0.87	31.4	31.4	34.1	
21:00	40.1	39.6	40.2	9.8	10.3	9.8	2.8	1.19	1.72	30	30	32.7	
22:00	37.5	37.3	37.7	12.7	13	12.6	2.34	0.81	0.81	28.2	28.2	31	
23:00	36.2	35.9	36.3	15.2	15.7	15.3	0.33	0.93	0.63	26.1	26.1	29.2	

**Table 26.** Individual Housing neighbourhood (S2) (07.16.2016)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>R</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.16.2016	00:00	34.8	34.9	35.1	16.7	16.8	16.5	0.78	1.78	0.53	25	25	27.6
	01:00	35.3	34.9	35.4	19.4	20.1	19.3	0.21	0.4	0.21	23.6	23.6	26.7
	02:00	32	32.1	32.3	22.7	23.2	22.5	0.41	2.61	0.78	22.5	22.5	25.4
	03:00	30.8	31.2	31.5	22.4	21.4	21.2	1.64	0.37	1	21.2	21.2	24.1
	04:00	29.9	30.3	30.5	25.7	24.9	24.5	0.45	1.08	0.24	20.4	20.4	23
	05:00	30.7	30.9	31.1	30.8	30.6	30.4	0.5	0.62	0.5	20.6	20.6	23.4
	06:00	28	28.1	28.2	37.2	36.5	36.5	0	0	0.25	22	22	24.7
	07:00	28.7	29.1	29.5	38.3	37.9	37.2	0.14	1.1	0.4	30.7	30.7	42.8
	08:00	31.3	31.4	31.8	32.9	31.3	32.3	1	0.44	0.64	39	39	49
	09:00	32.7	32.8	33.2	27.2	27.4	26.7	0.85	1.37	0.32	57.7	45.3	55.2
	10:00	35.3	35.1	35.3	22.4	22.4	21.9	1	1	0.51	56.1	51.1	61.1
	11:00	36.7	36.5	36.9	18.7	19.3	18.9	1.84	0.75	0.75	58.3	51.6	62.7
	12:00	39.4	39.5	39.5	13.5	13.5	13.6	1.59	2.1	0.6	57.7	53.6	63.7
	13:00	40.5	40.9	40.7	10.7	10.9	10.8	1.26	1.7	0.85	54	58	63.8
	14:00	41.5	41.3	41.6	10	10.1	10	1.5	2	1	54.8	54.8	64.7
	15:00	41.3	41.5	41.6	10	10	10	0.46	1.32	0.89	54	54	63
	16:00	41.6	41.5	41.7	7.9	7.9	7.9	3.8	2.1	2.1	56.5	49.9	58.1
	17:00	41.7	41.7	41.7	7.9	7.9	7.9	2.4	1.5	1.5	51.4	44.9	51.4
	18:00	40.6	40.6	40.6	8.7	8.7	8.7	1	1.89	1.89	39.4	36.8	40.3
	19:00	39.7	39.7	39.8	9.5	9.5	9.5	1.47	0.82	0.82	31.1	31.1	33.5
20:00	37.1	37.1	37.3	12.3	12.4	12.1	0.4	1.13	0.77	27.4	27.4	29.5	
21:00	36.2	36.1	36.4	13.8	14.1	13.8	0.45	0.88	0.88	26	26	28.7	
22:00	34.1	33.9	34.3	16.3	16.6	16.2	1.33	0.6	0.82	24.4	24.4	27	
23:00	32.1	31.9	32.3	19	18.8	18.6	0.81	0.63	0.81	22.2	22.2	24.6	

**Table 27.** Individual Housing neighbourhood (S2) (07.17-18.2016)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		4	5	6	4	5	6	4	5	6	4	5	6
07.17.2016	00:00	30.1	30.2	30.4	22.5	22.2	21.8	0.52	1.31	0.68	20.8	20.8	23.1
	01:00	28.4	28.4	28.7	26.5	26.6	26.1	0.32	2.2	0.63	19.9	19.9	22.1
	02:00	27.2	27.4	27.5	29.8	28.8	28.6	0.82	0.42	0.42	18.3	18.3	20.8
	03:00	26.9	26.9	27.1	29.7	29.7	29.4	0.2	0.2	0.32	17.2	17.2	19.1
	04:00	27.2	27	27.4	31.2	32	31	1.6	1	1.34	17.8	17.8	20.8
	05:00	27.2	27.1	27.4	31.2	31.7	30.9	1.1	0.3	0.8	17.7	17.7	20.7
	06:00	26.3	26.3	26.5	39	39	38.3	1.5	0.6	0.6	21.6	21.6	22.7
	07:00	27.7	27.7	27.9	42	42.2	41.9	2.2	0.33	0.62	30.6	30.6	37.6
	08:00	28.8	28.8	28.9	43.2	43.4	43	1.9	1.8	1	38.6	38.6	43.9
	09:00	30.1	30.3	30.3	38.7	38.7	38.7	0.8	1.2	0.8	62.6	45.4	56.8
	10:00	33.1	31.8	32	30.8	32.9	32.5	0.3	1.1	1.1	65.5	48.9	60
	11:00	35.6	34.5	34.9	24.4	26.3	25.8	0.3	1	0.5	63.3	53.4	60.8
	12:00	34.8	34.1	34.5	25.7	26.7	26.2	2.3	0.4	1.15	60.1	54	64.2
	13:00	35.4	35.4	35.1	24.2	24.2	24.6	2.5	0.45	1.27	53.3	59.1	63
	14:00	36.6	36.3	36.3	22	22.6	22.3	1.19	1.96	0.81	53.6	53.6	61.8
	15:00	36.6	36.1	36.1	22.2	22.5	22.5	1.49	0.84	0.51	51.2	51.2	55.4
	16:00	37.7	37.3	37.5	20.4	20.7	20.7	0.74	1.06	0.42	62.4	49.8	54
	17:00	37	36.5	36.6	21.3	21.4	21.3	0.75	1.06	0.43	54.4	44.4	49.4
	18:00	36.1	35.8	35.8	21.9	22.2	22.2	0.75	1.83	0.39	39.6	35.5	40.4
	19:00	35.4	35.4	35.5	21.9	21.9	21.8	0.35	1.29	0.35	28.2	28.2	29.7
	20:00	34.1	34.3	34.4	23	22.7	22.6	0.27	1.05	0.53	26.4	25.3	27.4
	21:00	32.1	32.3	32.4	27.3	27	26.9	0.38	0.56	0.56	23.4	23.4	25.9
	22:00	31.8	32.2	32.3	27.7	27	26.9	0.31	0.17	0.45	22.3	22.3	25.2
23:00	31	31.1	31.3	28.4	28.1	27.9	0.41	0.59	0.41	21.7	21.7	24.1	
07.18.2016	00:00	30.1	29.9	30.4	30.8	31.2	30.3	0.45	1.06	0.75	20.4	20.4	22.7

**Table 28.** Multifamily Housing neighbourhood (S3) (07.15.2016)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.15.2016	00:00	33.1	33.3	33.3	17	16.5	17	0.9	1.34	0.9	17.4	17.1	17.1
	01:00	31.8	32.5	31.8	19.3	18.5	20.1	1.38	2.04	2.04	17.5	17.2	17.2
	02:00	31.8	32.1	31.3	20	19.3	21.4	1.23	1.23	2.43	17.4	17.4	17.4
	03:00	31.8	31.8	31.5	20.1	20.1	20.9	1.04	1.04	2.05	17.6	17.3	17.3
	04:00	29.8	30.4	30.4	23.8	22.5	22.5	0.51	0.51	0.51	16.7	16.4	16.4
	05:00	29.7	29.5	29.7	25.4	25.4	25.4	1.16	1.16	2.29	16.7	16.7	16.7
	06:00	30.5	29.9	29.2	24.1	24.8	26.3	0.67	1	1.33	21.4	21.4	21.4
	07:00	31.3	31.1	30.7	24.8	24.8	26.1	0.86	1.28	1.71	31.8	31.8	31.8
	08:00	32.2	32.2	32.2	26.7	26.7	26.7	1.03	1.03	1.03	39.2	39.2	39.2
	09:00	34.5	34.5	34.6	24.9	25.1	24.9	1.25	1.25	1.25	46.3	46.3	46.3
	10:00	35.8	36.1	36.1	22.6	21.5	21.5	1.46	0.98	0.98	61.8	49.6	49.6
	11:00	38.2	38.4	38.4	17.5	16.1	16.1	1.49	1.49	1.49	63.6	54.9	53.1
	12:00	40.2	40.6	40.4	15.2	14.4	14.4	1.54	1.16	0.78	64.1	62.6	62.6
	13:00	42.3	42.3	42.1	13	12.4	12.6	1.42	1.07	0.71	65.9	65.9	65.9
	14:00	44.9	44.9	44.1	11.7	11.4	11.7	0.92	1.22	0.62	68.8	68.8	60.9
	15:00	44.9	44.6	44.2	10.1	10.2	10.3	1.23	0.82	0.82	68.8	68.8	57.9
	16:00	46.2	45.9	45.7	8.8	8.8	9	0.7	1.05	0.7	66.6	55.9	55.9
	17:00	45.3	45.2	45	8.3	8.3	8.3	0.86	0.86	0.86	57.2	50.7	50.7
	18:00	45.5	45.4	45.4	7.7	7.8	7.8	0.48	0.48	0.48	46.8	42.9	42.9
	19:00	43.8	43.7	43.7	8.7	8.7	8.7	1.08	1.08	1.61	35	35	35
20:00	41.2	41.5	41.3	8.3	8.1	8.3	1.11	1.11	2.2	31.3	31.3	31.3	
21:00	40.3	40.3	40.2	9.6	9.7	9.7	1.35	1.35	2.03	30.5	30.5	30.1	
22:00	37.7	37.7	37.7	12.7	12.6	12.6	1.52	1.02	1.02	28.4	28.4	28.1	
23:00	36.2	36.3	36.1	15.3	15.1	15.3	1.18	1.18	1.18	26.5	26.5	26.5	

**Table 29.** Multifamily Housing neighbourhood (S3) (07.16.2016)

Date	Time	Air Temperature (Ta) - (°C)			Relative Humidity (Hr) - (%)			Air Velocity (Va) - (m/s)			Mean Radiant Temperature (Tmrt) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.16.2016	00:00	35.2	35.3	35.2	16.4	16.3	16.4	1.06	1.06	1.58	25.4	25.4	25.4
	01:00	35.6	35.6	35.3	19.1	19	19.6	0.54	0.54	0.54	24.1	24.1	24.1
	02:00	32.3	32.5	32.5	22.9	22.5	22.5	1.35	1.35	2.65	22.6	22.6	22.6
	03:00	31.1	31.4	31.5	21.7	21.1	20.9	0.86	0.86	0.86	21.6	21.6	21.6
	04:00	30.4	30.5	30.5	24.9	24.6	24.7	0.76	0.76	0.76	20.3	20.6	20.3
	05:00	31.1	31.1	31	29.8	30.4	30.4	0.67	0.67	0.67	20.6	20.6	20.4
	06:00	28.2	28.3	28.4	36.6	36.3	36	0.16	0.16	0.47	22.3	21.9	21.9
	07:00	29.4	29.7	29.4	36.5	36	36.2	0.53	0.53	0.78	31.1	31.1	31.1
	08:00	31.5	31.7	31.7	31.9	31	30.8	0.49	0.49	0.72	39.5	39.5	39.5
	09:00	33.4	33.3	33.2	26.9	26.2	26.2	0.81	1.19	1.58	45.5	45.5	45.5
	10:00	35.8	35.5	35.3	22.5	21.7	21.7	0.77	1.14	1.14	60.9	50.8	50.8
	11:00	36.9	36.7	36.5	19.2	18.9	18.9	0.91	1.8	0.91	63.6	55.1	53.5
	12:00	39.7	39.3	39.6	13.6	13.5	13.3	1.53	1.53	3.01	62.6	62.6	62.6
	13:00	40.6	40.2	40.8	10.9	10.9	10.6	1.29	1.29	2.52	63.4	62.1	60.8
	14:00	41.6	41.3	41.6	10	10	9.9	1.53	1.53	3.02	63.2	63.2	61.9
	15:00	41.5	41.4	41.5	9.5	9.5	9.5	1.47	1.47	2.9	61.8	61.8	54.4
	16:00	41.6	41.6	41.6	7.9	7.9	7.9	2.03	3.03	3.03	57.2	50.3	50.3
	17:00	41.7	41.7	41.7	7.9	7.9	7.9	1.99	1.99	4.93	50.3	44.4	44.4
	18:00	40.6	40.6	40.6	8.7	8.7	8.7	1.82	1.82	4.53	37	37	37
	19:00	39.7	39.8	39.8	9.5	9.5	9.5	1.45	1.45	2.88	31.2	31.2	31.2
20:00	37.3	37.3	37.3	12.1	12.2	12.2	0.83	1.62	2.02	27.2	27.2	27.7	
21:00	36.4	36.3	36.4	13.8	13.8	13.8	1.22	1.22	3.65	25.9	26.4	25.9	
22:00	34.4	34.4	34.4	16.1	16.1	16.1	1.08	1.08	1.08	24.4	24.4	24.4	
23:00	31.9	32.2	32.3	19	18.7	18.4	0.73	1.22	0.49	22.3	22.7	22.7	

**Table 30.** Multifamily Housing neighbourhood (S3) (07.17-18.2016)

Date	Time	Air Temperature (T <sub>a</sub> ) - (°C)			Relative Humidity (H <sub>r</sub> ) - (%)			Air Velocity (V <sub>a</sub> ) - (m/s)			Mean Radiant Temperature (T <sub>mrt</sub> ) - (°C)		
		7	8	9	7	8	9	7	8	9	7	8	9
07.17.2016	00:00	30.3	30.3	30.4	22	22	21.8	0.43	1.64	1.04	20.7	20.7	20.7
	01:00	28.6	28.8	28.7	26.3	25.9	26.1	0.96	0.96	1.91	19.8	19.8	19.8
	02:00	27.3	27.5	27.6	29.1	28.8	28.6	0.73	0.73	0.73	18.6	18.6	18.6
	03:00	27.2	27.1	26.9	29.3	29.5	29.5	0.15	0.15	0.36	17	17	17
	04:00	27.6	27.5	27.4	30.4	30.7	30.7	0.78	0.78	1.17	18.1	18.1	17.8
	05:00	27.5	27.5	27.4	30.3	30.3	30.5	0.71	0.71	0.71	18	18	17.7
	06:00	26.4	26.5	26.5	38.5	38.1	38.1	0.76	0.76	0.51	20.9	20.9	20.9
	07:00	27.8	27.8	27.8	41.5	41.5	41.5	0.82	0.82	0.82	31.1	31.1	31.1
	08:00	28.8	28.9	28.9	43.2	42.9	42.6	1.25	1.25	1.85	38.9	38.9	38.9
	09:00	30.1	30.3	30.3	39	38.3	38.2	1.13	1.13	1.68	45	45	45
	10:00	32.1	31.8	31.8	32.2	32.2	32.2	1.54	2.05	1.54	64.5	49.5	49.5
	11:00	35.4	34.8	34.5	25.3	25.7	26.1	1.04	1.56	1.56	64.9	53.1	53.1
	12:00	35.1	34.5	33.6	25.3	26.1	27.3	1.27	0.85	0.85	63.1	63.1	63.1
	13:00	35.7	35.4	34.9	23.5	24.2	24.9	1.41	0.94	0.94	61.7	61.7	61.7
	14:00	37.4	37.1	36.8	21.3	21.6	21.6	1.14	1.14	1.7	63	63	63
	15:00	36.4	35.9	36.4	22.2	22.8	22.2	0.89	0.89	1.76	63.8	63.8	52
	16:00	38	38	37.6	19.8	20	20.5	0.89	0.89	1.33	61.4	49.8	49.8
	17:00	36.9	36.9	36.6	21.2	20.9	21.3	0.9	0.9	1.34	53	43.6	43.6
	18:00	35.8	35.9	35.9	22	21.8	21.9	1.23	1.23	1.82	38.1	35.8	35.1
	19:00	35.5	35.7	35.6	21.7	21.5	21.6	1.1	1.65	1.65	28.2	28.5	28.5
20:00	34.5	34.5	34.5	22.5	22.3	22.3	0.97	0.97	0.97	25.3	25.3	25.3	
21:00	32.4	32.6	32.5	26.6	26.5	26.6	0.9	0.9	0.9	23.5	23.8	23.8	
22:00	32.3	32.3	32.2	26.9	26.9	27	0.72	0.72	0.72	22.8	22.8	22.8	
23:00	31.4	31.4	31.4	27.7	27.5	27.5	0.89	0.89	0.89	22.1	22.1	22.1	
07.18.2016	00:00	30.5	30.4	30.2	29.7	29.9	30.4	0.43	0.64	1.27	20.9	20.9	20.9

## PET index calculation

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Calculation is done with RayMan Pro 3.1  
Beta on the basis of simulated data

TMY 2

TMY 3

TMY x

Table 31. PET index values through the three sites during July 15<sup>th</sup> 1986

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.15.1986	00:00	20.2	20.2	20.5	19.2	18.8	19.7	19.7	19.7	19.1
	01:00	19.7	19.4	19.5	19	18.6	19.1	19.2	19.1	18.4
	02:00	18.8	18.8	18.8	18.4	18.6	18.5	18.5	18.5	18.1
	03:00	18.4	18.3	18.3	17.8	18.1	18	17.9	17.8	17.6
	04:00	17.9	17.9	18	17.1	17.6	17.3	17.1	17.1	17.5
	05:00	17.7	17.9	17.9	17.4	17.4	17.9	17.1	17.1	17.3
	06:00	17.6	17.2	17.4	17.5	17.2	17.9	17	17.2	17.1
	07:00	20.3	20.7	20.3	19.8	18.8	22	20	18.7	18.9
	08:00	25	25	24.9	23.2	23.6	29.9	23.9	23.8	23.3
	09:00	29.5	29.4	29.3	34.9	35.4	33.8	27.8	27.8	26.9
	10:00	32.6	32.5	32.6	38.7	35.1	34.9	36.5	29.4	29.2
	11:00	35.1	35.3	35.4	40.6	37.7	36.5	39.1	32.6	31.9
	12:00	41.4	41.5	41.6	38.1	40.1	36.4	37.2	38.9	39.8
	13:00	41.5	41.8	41.9	34.5	39.5	36.2	38.7	39.4	40.9
	14:00	44.8	45.1	45.1	36.7	36.7	40.4	40.2	42.1	37.1
	15:00	39.2	39.3	39.6	36.5	36.4	40	42.1	36.2	35.6
	16:00	39.4	39.6	39.6	36.4	44.6	39.1	43.7	37.3	36.5
	17:00	37.5	37.8	38	43.9	35.9	38.9	35.3	35.9	36.2
	18:00	35.5	35.5	35.5	41.9	33.8	35.6	33.7	33.9	33.5
	19:00	32.3	32.5	32.3	30.8	30.2	30.4	30.5	30.3	30.5
	20:00	27.5	27.4	27.4	27.1	25.7	25.1	26	26	26
	21:00	24.8	24.8	24.9	22.9	23.3	23	23.5	23.6	23.6
	22:00	23.6	23.4	23.5	21.4	21.8	22.1	22.1	22.4	22.3
23:00	22.4	22.3	22.3	20.8	20.5	21	21.2	21.5	21.2	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

Table 32. PET index values through the three sites during July 15<sup>th</sup> 2001

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.15.2001	00:00	20.3	20.4	20.3	20.1	19.8	20.6	20.8	20.7	20.3
	01:00	19.7	19.5	19.5	19.8	19.5	20.3	20.1	20	19.7
	02:00	18.9	18.8	18.8	19.2	18.9	19.6	19.6	19.5	19.4
	03:00	18.4	18.4	18.4	18.6	18.6	19.1	19	18.8	18.9
	04:00	18	17.9	18	17.8	18	18.8	18.3	18.3	18.8
	05:00	18	18	18	18.4	17.7	18.5	18.2	17.9	18
	06:00	17.6	17.3	17.3	17.8	18.2	18.7	18.1	18.2	18.5
	07:00	20.3	20.9	20.9	20.8	19.6	20.9	21.1	20.3	20.3
	08:00	25	25.1	24.9	24.6	24.5	30.8	26	25.1	24.7
	09:00	29.5	29.5	29.4	35.8	35.8	35.1	36.5	29.5	28.8
	10:00	32.6	32.4	32.6	39.2	37	36.4	37.9	31.9	31.2
	11:00	35.5	35.3	35.4	41.1	39.3	38	40.5	34.6	33.9
	12:00	41.6	41.5	41.6	39.8	41	41.4	41.8	36.9	42
	13:00	41.7	41.9	41.9	36.5	40.6	41.6	41.8	42.4	43.2
	14:00	45	45.2	45.2	38.5	38.5	43.7	44.3	43.8	43.8
	15:00	46	39.5	39.6	38.4	38.4	44.9	47.5	45	37.7
	16:00	39.6	39.6	39.6	44.6	38.4	46.5	48.7	38.6	38.6
	17:00	37.6	38	38	45.4	37.6	47.9	45	37.8	37.8
	18:00	35.6	35.6	35.6	43.2	35.5	46.2	35.5	35.7	35.4
	19:00	32.4	32.6	32.3	32.3	32	32.4	32.1	32.2	32.1
	20:00	27.3	27.7	27.4	27.6	27.4	26.8	27.1	27.7	27.7
	21:00	24.9	25.1	24.9	25.1	24.9	24.8	25	25.2	25.3
	22:00	23.6	23.5	23.5	23.4	23.5	23.8	23.7	24.2	24
23:00	22.4	22.4	22.3	22.4	22.5	22.7	22.9	23.2	23.1	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

Table 33. PET index values through the three sites during July 15<sup>th</sup> 2016

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.15.2016	00:00	25.7	25.6	25.7	25.6	26	26.5	26.4	26.8	26.4
	01:00	25.7	25.1	25.6	24.8	25	25.9	25.6	26.5	25.8
	02:00	25	24.7	24.9	24.3	24.2	25.6	25.5	25.8	25.4
	03:00	24.7	24.3	24.7	24.6	24.3	25.4	25.5	25.4	25.5
	04:00	23	22.7	22.8	23.6	23.5	24	23.4	23.7	23.7
	05:00	22.7	23	23.2	23.2	22.9	24.1	23.5	23.3	23.6
	06:00	25.1	25.3	25.5	25.1	24.6	26	25.9	25.4	24.7
	07:00	30.3	30.3	30.3	29	29.5	33	30.7	30.3	29.6
	08:00	34.5	34.8	34.8	33	34.5	35.8	34.4	34.4	34.4
	09:00	39.6	39.7	39.6	44.3	39.4	44.2	39.2	39.2	39.3
	10:00	43.4	43.2	43	46.3	42.6	48	46.9	42.2	42.2
	11:00	47.4	47.2	47	49.7	45.5	50.8	49.7	45.9	45.2
	12:00	52.6	52.3	52.9	51	49	53.4	51.6	51.6	51.9
	13:00	54.1	54.9	54.5	49.7	52.8	54.9	54.3	54.6	55
	14:00	59.5	59.2	59.7	52	51.3	55.8	58.2	57.9	53.7
	15:00	52.3	52.6	52.5	51.4	50.7	54.9	57.9	58	52.1
	16:00	52	52	51.9	57.2	51.7	55	58	52.4	52.1
	17:00	49	49	49	53.5	49.5	51.6	52.5	49.3	49.2
	18:00	44.8	44.8	44.7	46.4	44.5	45.1	47.1	45.1	45.1
	19:00	40.4	40.6	40.4	40.6	42.5	40	41.8	41.7	42.5
	20:00	37.9	37.8	37.9	38.7	39	39.1	38.3	38.5	39.6
	21:00	36.6	36.6	36.7	38.5	36.6	38.7	37.6	37.6	38
	22:00	33.6	33.7	33.7	35	33.7	35.1	34.7	34.3	34.2
23:00	31.5	31.5	31.5	31.3	31.9	33.2	32.5	32.6	32.4	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				



**Table 34.** PET index values through the three sites during July 16<sup>th</sup> 1986

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.16.1986	00:00	21.5	21.6	21.6	19.7	19.9	19.7	20.7	20.5	20.2
	01:00	20.5	20.6	21.1	19	19.2	19.7	20	19.8	19.4
	02:00	20.5	20.3	20.6	19	18.7	19.4	19.7	19.6	19
	03:00	20.2	20.1	20.2	18.4	18.1	19.1	19.2	19.1	18.5
	04:00	19.9	19.7	20	18.5	18.6	18.8	19.2	19.2	19.1
	05:00	19.3	19.4	19.6	17.9	18	18.7	18.8	18.7	18.7
	06:00	19.2	19.4	19.6	17.6	18	18.4	18.5	18.4	18.3
	07:00	22.1	22	22.2	20.8	19.2	22.9	20.8	20.5	19.5
	08:00	26.2	26	26.2	24.5	23.7	29.4	25	25	24.5
	09:00	30	29.8	30	32.9	34.4	34.9	28.4	28.2	28.1
	10:00	33	33	33.2	38.1	36.4	39.4	37.6	31.6	30.4
	11:00	36.1	35.9	36.1	40	36.4	39.6	39	33.9	32.3
	12:00	40.8	40.8	41	36.9	38.9	39.8	38.9	35.4	39.8
	13:00	41.8	41.8	42	36.8	38.4	40.6	41.3	41.5	41.1
	14:00	44.4	44.4	44.6	37.9	38	42.6	43.1	43.4	43.3
	15:00	41.5	41.7	41.7	38.8	38.8	44.1	45.1	45.4	38.7
	16:00	41.4	41.4	41.6	46.5	37.6	47	44.6	38.6	37.6
	17:00	39.6	39.6	40	43.7	37.1	47.2	45.2	38	37.5
	18:00	36.9	37.2	37.5	42.3	35.2	45.1	44.3	35.8	35.6
	19:00	34.5	34.9	35.3	32.3	31.8	32.7	32.6	32.9	32.9
	20:00	29.9	29.9	29.9	28.1	27.5	27.2	28	28.2	28
	21:00	27.5	27.5	27.6	25.8	25.5	25.7	25.4	26.1	26
	22:00	25.9	25.9	25.9	24.7	24.4	24.4	24.4	25	25
23:00	24.7	24.6	24.8	23.3	23.5	23.3	23.3	23.6	24.1	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

**Table 35.** PET index values through the three sites during July 16<sup>th</sup> 2001

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.16.2001	00:00	21.6	21.6	21.8	21.5	21.5	21.7	22.3	22	22
	01:00	20.6	21.1	21.1	20.7	20.8	21.2	21.5	21.3	21.3
	02:00	20.6	20.5	20.7	20.6	20.4	21.2	21.1	21.1	20.6
	03:00	20.2	20.2	20.2	20	19.9	20.5	20.9	20.5	20
	04:00	19.9	19.9	20	19.9	19.9	20.5	20.6	20.6	20.6
	05:00	19.5	19.7	19.8	19.4	19.6	20.2	20.1	20.2	20.2
	06:00	19.3	19.6	19.6	19.3	19.6	19.9	20	20	19.8
	07:00	22.2	22.1	22.2	22	21.1	24.5	22.4	22.3	21.2
	08:00	26.4	26.2	26.4	25.7	25.4	30.7	26.3	26.3	26
	09:00	30	30.3	30.3	33.8	34.9	33.7	34.6	29.8	29.6
	10:00	33.2	33	33.2	38.6	37.1	36.6	39.1	33.2	32.6
	11:00	35.9	35.9	36.1	40.4	38.2	39.8	40.5	35.4	34.1
	12:00	41	41	41	39.7	40.2	41	41.1	37.1	41.1
	13:00	42	41.8	42.6	38.4	40.5	42.9	42.8	43	42.3
	14:00	44.7	44.7	44.7	39.6	39.5	44.9	44.3	45.7	45.5
	15:00	42	42	42	40.5	40.2	46.7	47.7	47.9	40.8
	16:00	41.7	41.8	41.7	47.4	39.8	48.6	47.3	39.6	38.8
	17:00	40	40	40	46.5	38	48.5	46.4	39.1	38.8
	18:00	37.2	37.5	37.5	43.3	36	45.8	45.5	36.7	36.7
	19:00	34.9	35.3	35.3	34.9	34.2	33.5	33.7	33.9	35.1
	20:00	30.2	30	29.9	29.9	29.5	28.5	28.6	29.1	29.2
	21:00	27.7	27.7	27.5	27.2	27.5	27.5	26.5	27.3	27.6
	22:00	26	26	26.3	26.2	25.7	25.9	25.5	25.8	26.2
23:00	24.9	24.6	24.9	24.6	25	24.8	24.3	24.9	25.4	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

**Table 36.** PET index values through the three sites during July 16<sup>th</sup> 2016

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.16.2016	00:00	30.1	30	30.1	30.5	31.2	31.6	31.2	31.3	31.5
	01:00	29.6	29.5	29.6	29.5	29.6	31	30.5	30.5	30.3
	02:00	27.1	27.1	27.1	27.3	27.8	28.8	27.9	28.1	28.3
	03:00	25.8	25.8	25.8	26	26.1	27.7	26.4	26.6	26.7
	04:00	24.6	24.6	24.6	25	25.3	26.6	25.4	25.6	25.4
	05:00	25.1	25.1	25.2	25.8	26	27.2	26.1	26.1	26
	06:00	24.9	24.9	24.9	25.3	25.3	26.2	25.2	25	24.8
	07:00	29.9	30.1	29.7	29.7	28.4	35.5	29.5	29.7	29.2
	08:00	35.3	35.3	35.3	33.8	34.7	39.4	34.9	35	34.6
	09:00	39.2	39.2	39.3	43.8	37.2	44.7	38.5	37.9	37.4
	10:00	44	43.9	44.1	44.6	42.1	48.5	47.9	42.1	41.9
	11:00	45.4	45.4	45.4	45.6	43.7	49.6	49.7	44.3	44.4
	12:00	49.7	50.1	50	47.9	46	52.3	50.4	50.1	49.3
	13:00	50.4	50.8	50.8	47.3	49.3	52.6	51.7	50.8	50
	14:00	51.8	52.1	52	48.4	48.2	53.5	52.2	52	51.1
	15:00	48.5	48.6	48.6	48.3	48.1	52.7	51.5	51.4	48.1
	16:00	46.9	46.9	46.9	48.9	46.4	49.8	49.4	46.8	46.8
	17:00	44.5	44.5	44.5	47.2	44.4	47.1	46.7	44.5	45.4
	18:00	40.4	40.4	40.4	41	40.6	41.8	40.6	40.6	41.9
	19:00	36.8	36.8	36.8	37.4	36.6	37.7	37.4	37.5	38.6
	20:00	32.9	32.8	32.9	32.6	33.5	34.1	33.3	34	34.5
	21:00	31.7	31.7	31.7	31.5	31.9	33.2	32.5	32.6	33.7
	22:00	29.2	29.2	29.2	30	29.4	30.9	30.2	30.2	30.2
23:00	26.8	26.8	26.8	27.3	27.1	28.4	27.2	27.7	27.5	
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

**Table 37.** PET index values through the three sites during July 17<sup>th</sup> 1986

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.17.1986	00:00	23.3	23.7	23.9	22.4	22.1	22.7	23	22.7	22.8
	01:00	22.5	22.5	23	21.7	21.7	22	21.8	22.3	22.1
	02:00	22.1	22.3	22.4	21.2	20.6	21.2	21.5	21.7	20.7
	03:00	21.4	21.4	21.5	20.8	20	20.8	20.4	21.2	20.5
	04:00	21	20.8	20.9	20	19.9	20.4	20.5	20.8	20.3
	05:00	20.5	20.5	20.6	19.8	20.4	20.3	20.2	20.4	20.4
	06:00	20.5	20.2	20.2	19.9	19.9	20.2	20	20	20.5
	07:00	23.3	23.3	23.3	22.4	22	25.1	22.4	22.3	23
	08:00	27.9	27.9	27.9	26.6	25.9	31.2	26.9	26.4	27.5
	09:00	31.7	31.8	31.8	35.7	36.4	36.8	30.7	30.9	30.3
	10:00	35.4	35.5	35.4	40.8	38.9	42.2	40.3	34.3	33.6
	11:00	38.1	38.2	38.2	41	39.7	43.1	41.9	36.4	35.7
	12:00	44	44	44.1	42.5	42.3	44.3	43	43.2	42.3
	13:00	43.7	43.7	43.9	38.6	41.7	44.4	42.7	43.1	42.8
	14:00	46.4	46.4	46.4	40.2	39.6	45.3	45.2	45.5	44.2
	15:00	41.5	41.6	42.4	40.2	39.8	46.4	46.3	40.2	39.8
	16:00	42.1	42.3	42.1	45	40.1	43.2	46.2	39.5	39.4
	17:00	40.9	40.9	41.2	45.7	38.3	42.3	46.9	39.2	39
	18:00	38.2	38.2	38.5	44	35.9	42.4	36.7	36.8	36.1
	19:00	35.8	35.9	34.9	33.6	33.8	33.9	33.8	34	34.2
	20:00	30.1	30.1	29.9	28.5	29.2	28.2	28.6	29.3	29.5
	21:00	27.9	27.9	27.8	27.5	27.3	26.9	26.5	27.3	27.8
	22:00	26.5	26.3	26.2	25.8	25.9	25.9	25.3	25.7	26.3
23:00	24.8	24.8	24.8	24.4	24.9	24.3	24.3	24.9	24.8	
07.18.1986	00:00	24.4	24.4	24.5	23.9	23.9	24	23.8	24	24.2
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

**Table 38.** PET index values through the three sites during July 17<sup>th</sup> 2001

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.17.2001	00:00	23.6	24.1	24.3	24	23.4	23.8	23.9	23.8	23.6
	01:00	22.8	22.8	23.2	23.2	23.4	23.3	22.6	23.6	23.9
	02:00	22.3	22.3	22.4	22.3	21.6	22.1	22.4	22.7	21.8
	03:00	21.5	21.5	21.6	21.6	21.3	21.8	21.6	22	21.8
	04:00	21.1	21	20.7	21	21.4	21	21.4	21.7	21.4
	05:00	20.6	20.6	20.6	20.7	20.7	20.8	20.8	21.1	21.2
	06:00	20.4	20.4	20.4	20.8	20.7	20.7	20.7	21	20.9
	07:00	23.3	23.3	23.3	23.2	23.1	25.9	23.4	23.1	23.5
	08:00	28	27.9	27.9	27.4	27	31.8	27.7	27.8	27.7
	09:00	31.8	31.8	31.7	36.5	37	36.3	36.6	31.6	31.3
	10:00	35.5	35.5	35.5	41	39.7	42.8	41.2	35.2	34.8
	11:00	38.2	38.1	38.1	41.4	40.5	43.4	43	37.2	36.9
	12:00	44.1	44	44.1	42.9	42.1	45.1	44.9	45	44.3
	13:00	43.9	44	43.9	40.1	42	44.5	44.8	45	44.5
	14:00	47.3	47.3	47.3	41.4	40.5	46.9	47.4	47.6	46.8
	15:00	41.7	42.4	42.7	41.9	41.5	48	47.5	47.7	41.7
	16:00	42.4	42.6	42.4	46.5	41.6	49.2	50.5	41	40.9
	17:00	41.2	41.2	41.2	47.1	39.5	49	49.9	40.3	40.3
	18:00	38.5	38.5	38.5	45.1	37	46.5	46.8	37.9	37.4
	19:00	35.9	34.9	34.9	34.6	35.1	34.9	34.8	35.3	35.5
	20:00	30.2	30.2	29.9	29.5	30.6	29.6	29.8	30.6	31.1
	21:00	28	28	28	28.8	28.6	28.2	27.6	28.6	29
	22:00	26.4	26.4	26.4	26.7	27.4	26.8	26.6	27.7	27.7
23:00	24.8	24.8	24.8	25.4	25.9	24.9	25.1	26.2	26	
07.18.2001	00:00	24.6	24.6	24.5	24.7	25.2	24.9	25	25.1	25.7
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

**Table 39.** PET index values through the three sites during July 17<sup>th</sup> 2016

Date	Time	PET- S1			PET- S2			PET- S3		
		1	2	3	4	5	6	7	8	9
07.17.2016	00:00	24.7	24.8	24.7	25.3	25.3	26.4	25.3	25.4	25.5
	01:00	23.1	23.2	23.2	23.8	23.2	24.8	23.7	23.8	23.5
	02:00	21.9	22	21.9	22.1	22.5	23.6	22.3	22.5	22.5
	03:00	21.5	21.5	21.5	21.8	21.8	22.7	22	21.9	21.6
	04:00	21.6	21.6	21.7	21.6	21.7	22.9	22.3	22.3	21.9
	05:00	21.5	21.5	21.5	21.7	22.1	23.2	22.3	22.3	22.1
	06:00	22.8	22.8	22.8	22.1	23	23.6	22.6	22.7	23
	07:00	28.2	28.2	28.2	26.1	28.6	31.3	27.9	27.9	27.9
	08:00	31.8	31.8	31.8	30.4	30.5	34.1	31.4	31.4	30.7
	09:00	36.1	35.9	35.8	44.8	35.5	41.9	35.3	35.4	34.5
	10:00	41.2	41.1	41.1	50.9	38.4	43.8	44.9	37.3	37.9
	11:00	45.4	45.7	45.3	50.9	42.8	48.2	49	42.1	41.8
	12:00	48.7	48.7	48.7	44.2	44.3	47.7	47.4	48	47.3
	13:00	47.2	47.9	47.9	42.1	47.7	47.3	46.9	47.6	47.3
	14:00	50.2	50	50.4	44.2	43.2	48.6	49.4	49.2	48
	15:00	43	43.5	43.3	42.9	43.1	45.9	49.6	49.2	42.8
	16:00	43.3	43.1	43.2	50.1	43.2	46.2	49.5	43.8	43.2
	17:00	39.9	39.8	39.9	45.5	40.1	43.2	44.5	40.2	39.7
	18:00	35.6	35.6	35.6	37.8	35.9	38.1	36.9	36	35.8
	19:00	32.2	32.2	32.2	32	32.7	32.8	32.7	33.2	33.1
	20:00	29.7	29.7	29.7	30.3	30.5	31.2	30.7	30.7	30.7
	21:00	27.5	27.5	27.5	27.8	28.1	29.2	28.3	28.6	28.5
	22:00	26.8	26.7	26.8	27.1	27.2	28.8	27.9	27.9	27.8
23:00	25.9	25.9	26	26.4	26.5	27.6	26.9	26.9	26.9	
07.18.2016	00:00	24.8	24.7	24.9	25.3	25.1	26.4	25.7	25.7	25.5
Thermal comfort stress level		17- 26	26 - 28	28 - 37	37- 42	> 42				
		Neutral	Slightly warm	Warm	Hot	Very hot				
		No thermal stress	Slight heat stress	Moderate heat stress	Strong heat stress	Extreme heat stress				

