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## Trade-Offs between Urban Green Space and Densification: Balancing Outdoor Thermal Comfort, Mobility, and Housing Demand

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## Supplements to article "Trade-offs between urban green space, mobility demands and outdoor thermal comfort in densifying neighbourhoods" (Erlwein and Pauleit)



DWD Station Munich-City, 4th-5th July 2015

**S 1.** Meteorological input variables for the ENVI-met simulation 4<sup>th</sup>-5<sup>th</sup> July 2015.



**S2:** Heat distribution (PET) for each scenario at 2 pm, 5<sup>th</sup> July 2015 represented in stacked barcharts. All percentages refer to the total model area. Labelling of scenarios: O/C = open vs. closed rows, 15/18 m building height, a = one carpark (100% trees), b = 4 carparks (65-53% trees), c = eight carparks (zero trees).



**S3:** Heat distribution (PET) for each scenario at 4 am, 6<sup>th</sup> July 2015 represented in stacked barcharts. All percentages refer to the total model area. Labelling of scenarios: O/C = open/closed rows, 15/18 m building height, a = one carpark (100% trees), b = 4 carparks (65-53% trees), c = eight carparks (zero trees).



**S4.** Simulated PET values 10 am - 4 pm on 5<sup>th</sup> July 2015 for the current situation and the eight densification scenarios (1.4 m height). (O = open rows, C = closed rows, 15/18 = 15/18 m building height, a/b/c = 1/4/8 underground car parks).

scenario	SVF	ΔSVF	T <sub>mrt</sub>	$\Delta T_{mrt}$	Ta	$\Delta T_{a}$	PET	ΔΡΕΤ
SQ	0.24		54.2		39.2		49.8	
O15a	0.22	-0.02	53.5	-0.7	38.9	-0.3	46.7	-0.5
O15b	0.33	0.09	66.2	12	39.2	0	49.3	2.1
015c	0.48	0.24	71.3	17.1	40	0.8	49.8	2.6
C15b	0.28	0.04	65.3	11.1	39.4	0.2	49.2	2.0
C15c	0.41	0.17	70.7	16.5	39.2	0	49.8	2.6
C18c	0.38	0.14	70.7	16.5	39.2	0	49.8	2.6
O18b	0.31	0.07	66	11.8	39.7	0.5	49.2	2.0
O18c	0.46	0.22	71.4	17.2	39.9	0.7	49.8	2.6

**S5.** SVF, average Tmrt, Ta, PET results for all scenarios and their relative difference to the base case on 5<sup>th</sup> July 2015 at 2 pm.

Supplements to Erlwein and Pauleit "Trade-offs between urban green space, mobility demands and outdoor thermal comfort in densifying neighbourhoods"