Supporting Information (SI)

For

Assessment of Long-term Impacts of PM_{10} and $PM_{2.5}$ Particles from Construction Works on Surrounding Areas

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S1. Particle mass concentrations

Figures S1 and S2 show the average PM_{10} and $PM_{2.5}$ during the activity and non-activity periods at the CS_1, CS_2 and CS_3, respectively (Tables S1- S4).

S2. Variation of PM_{10} and $PM_{2.5}$ during different years

In order to understand the variability in concentrations during individual years, we plotted Figures S3 and S4 that present the annual mean PM_{10} concentrations obtained from monitoring stations (MS_1 to MS_9) around the CS_1. These annual mean concentrations of PM_{10} and $PM_{2.5}$ ranged from 10 to 80 μg m^{-3} (Figure S3) and 5 to 55 μg m^{-3} (Figure S4), respectively.

Figure S3 also shows PM_{10} values at 6 monitoring stations during 5 years (2009-2013) of measurements around the CS_2. The annual mean PM_{10} concentrations obtained from monitoring stations (MS_{10} to MS_{15}) around the CS_2 ranged from 5 to 62 μg m^{-3}. Moreover Figure S3 shows PM_{10} values during 2011 and 2012 at MS_{16} and MS_{17} around the CS_3. The annual mean PM_{10} concentrations were found to be in the 6 to 90 μg m^{-3} range with the mean of 28.90 and 32.99 μg m^{-3} at MS_{16} and MS_{17}, respectively. Moreover, Figure S5 presents a total number of exceedences over the EU limit value at the individual monitoring stations.

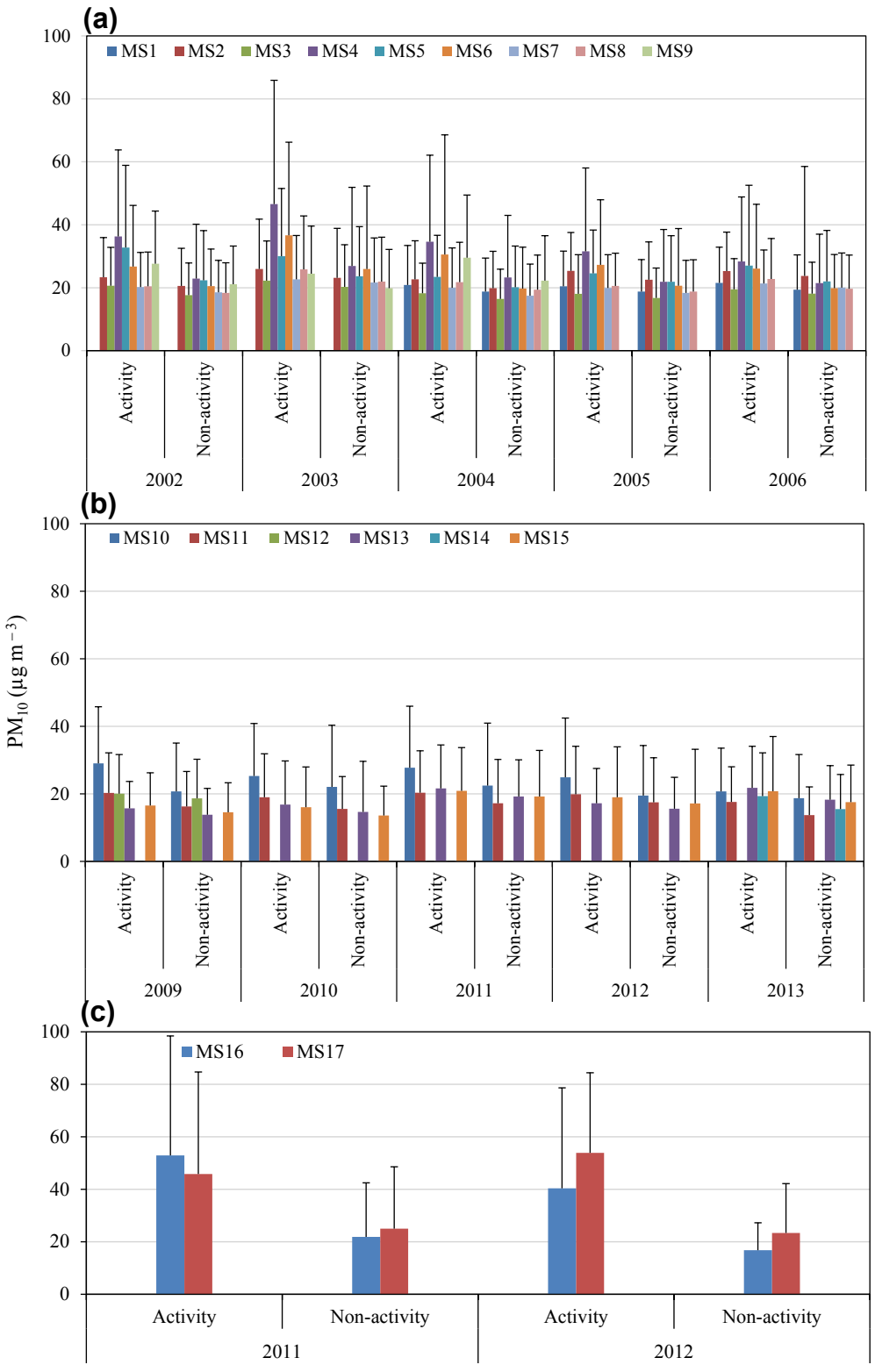

Figure S1. The average concentrations of PM_{10} (17 monitoring stations) during the working and non-working periods at the (a) CS_1, (b) CS_2, and (c) CS_3.

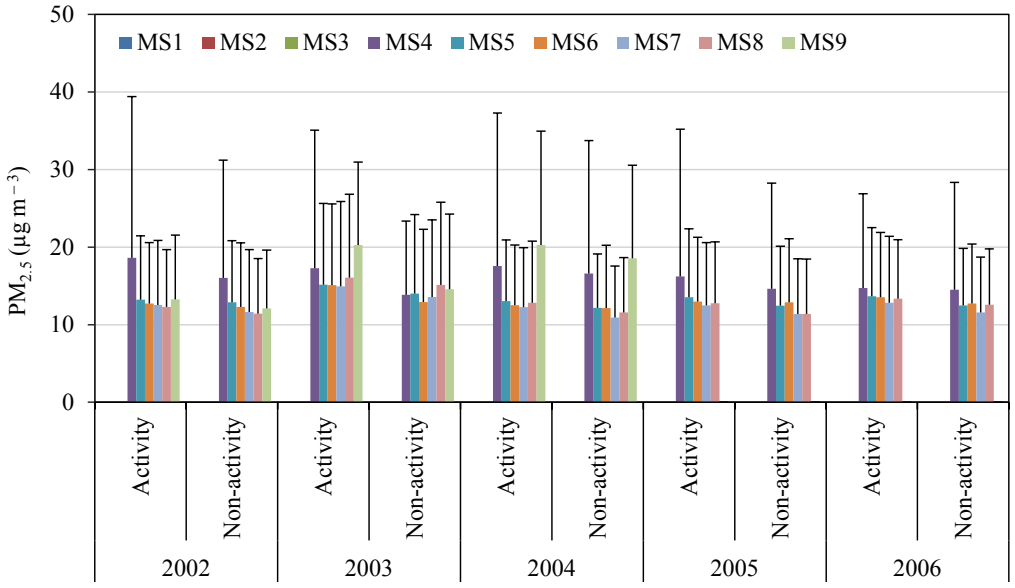

Figure S2. The average concentrations of $PM_{2.5}$ (monitoring stations) during the working and non-working periods at CS_1.

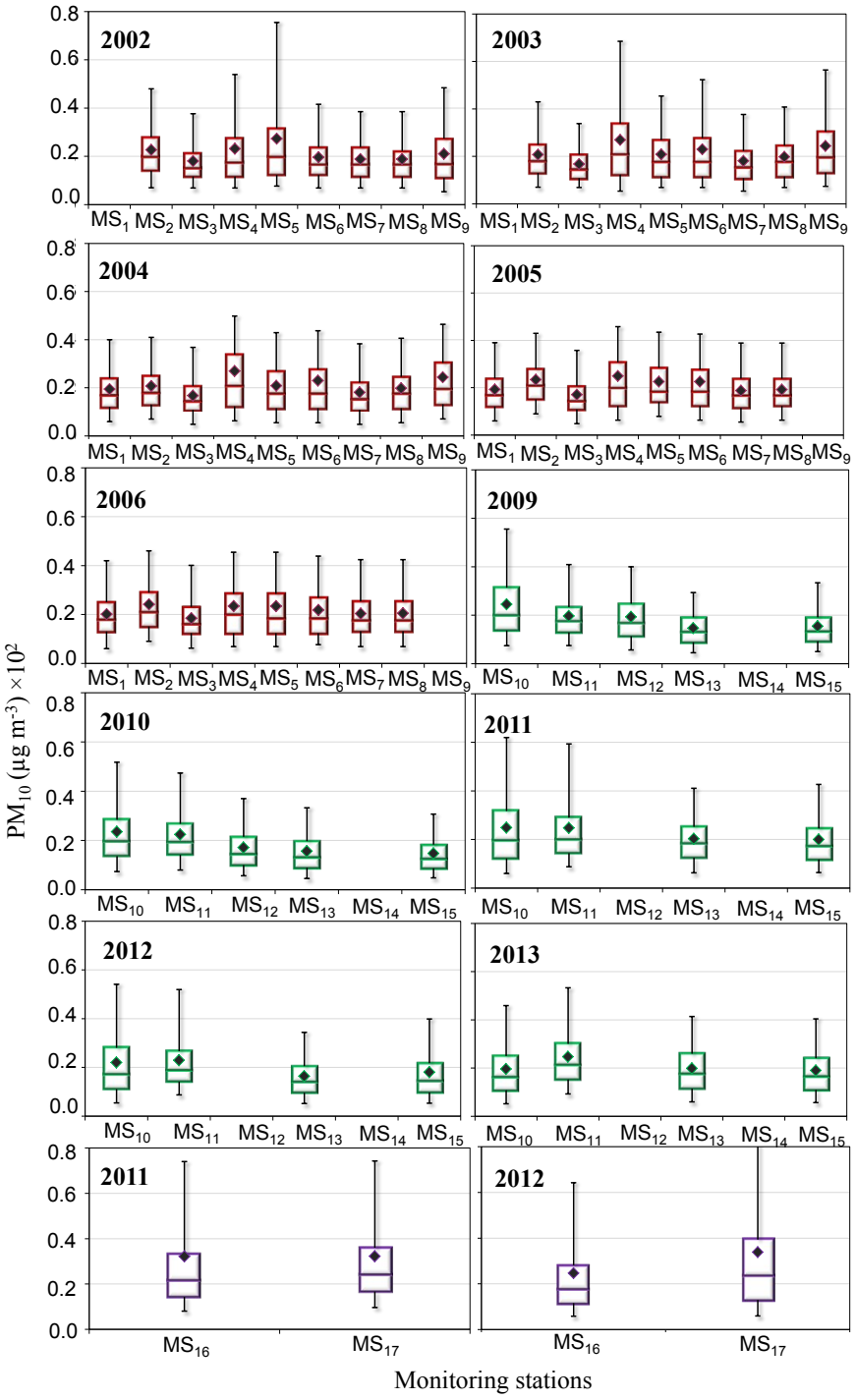

Figure S3. The Box and whiskers plots showing mean, upper, middle, and lower lines of "boxes" indicated seventy-fifth, fiftieth, and twenty-fifth percentiles of PM_{10} values during the activity and non-activity periods at the monitoring stations at CS_1(red colour), CS_2(green colour), and CS_3(violet colour).

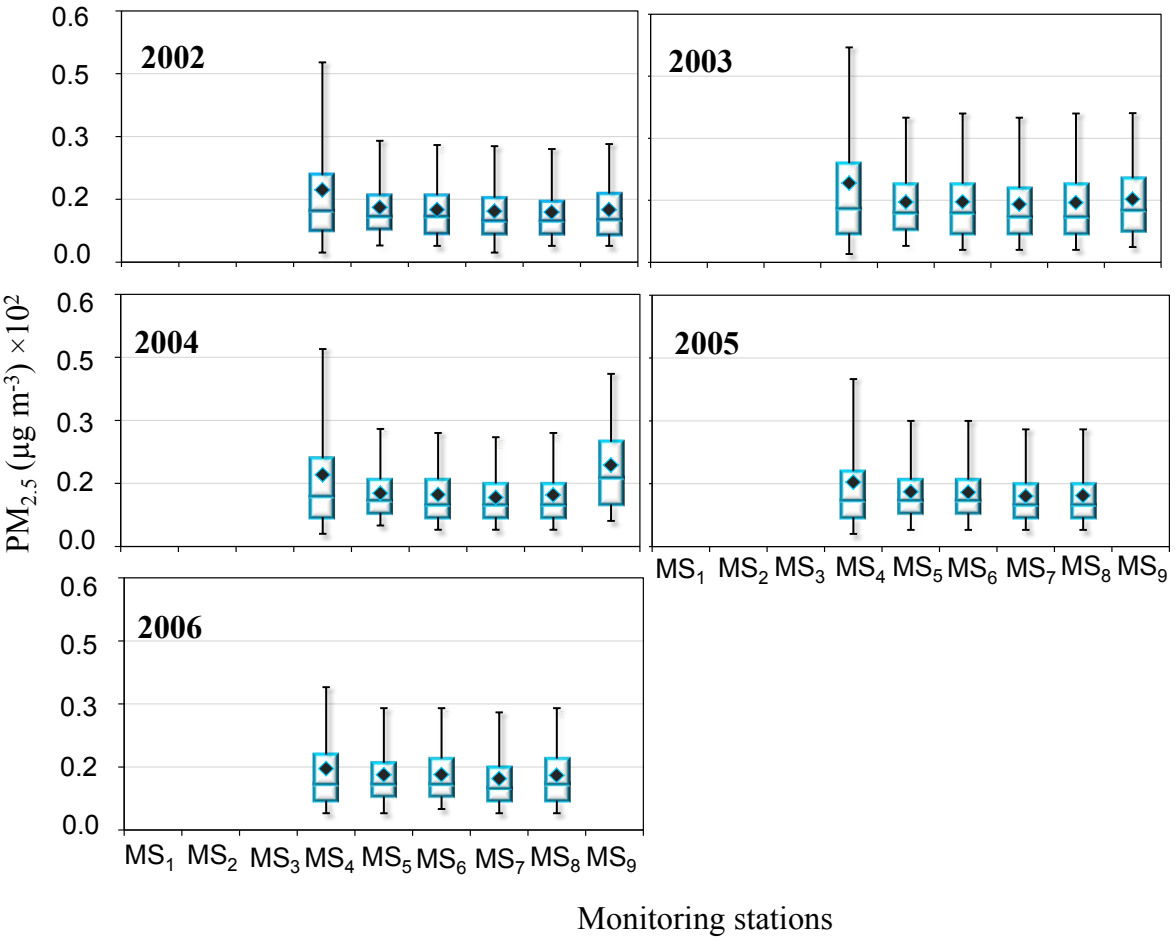

Figure S4. The Box and whiskers plots showing mean, upper, middle, and lower lines of "boxes" indicated seventy-fifth, fiftieth, and twenty-fifth percentiles of $PM_{2.5}$ values during the activity and non-activity periods at the monitoring stations at CS_1.

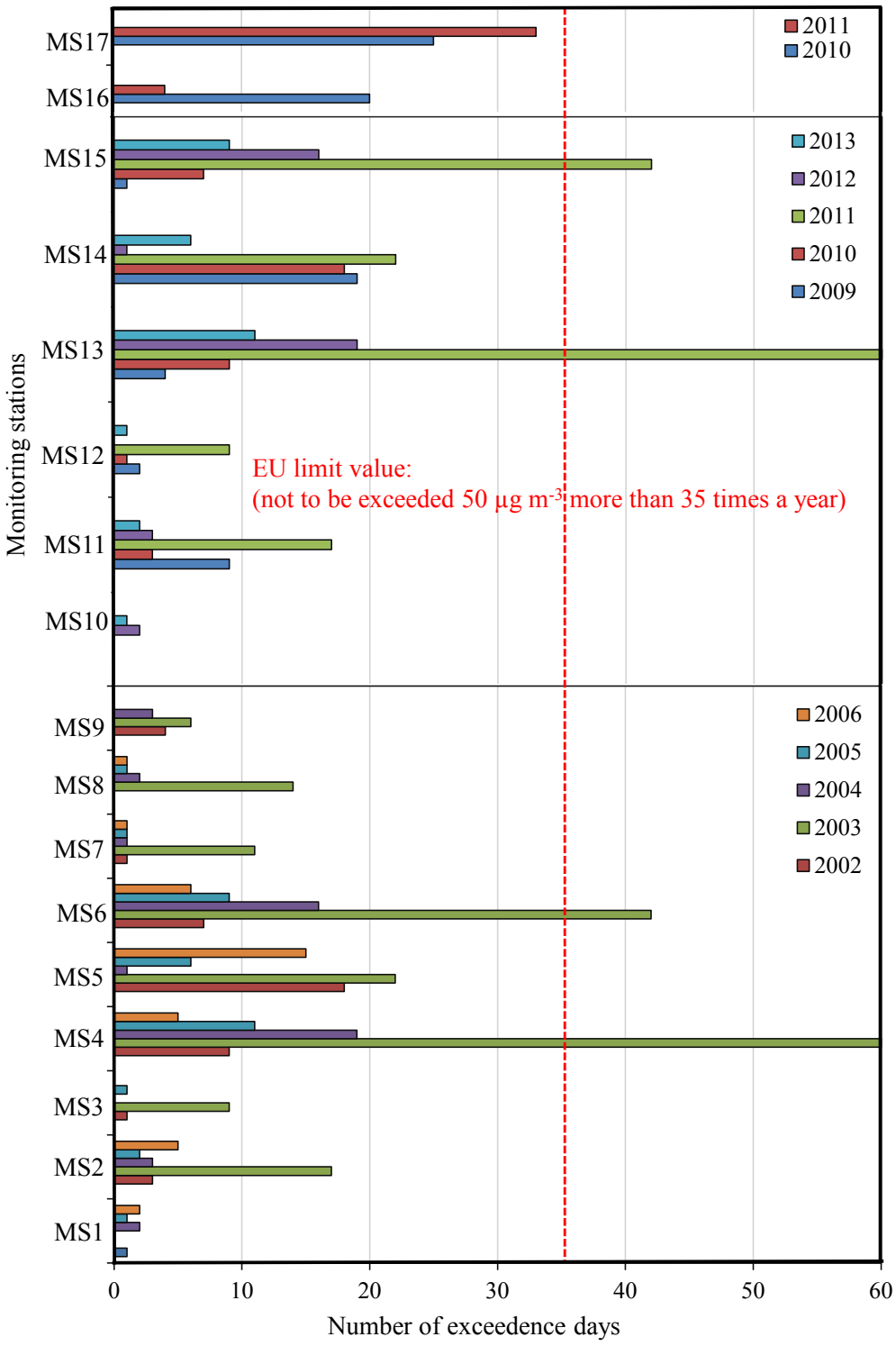

Figure S5. Total numbers of exceedences over the EU limit value at the individual monitoring stations.

Table S1. The concentrations of PM_{10} during the working and non-working periods at the CS_2; ± refers to standard deviation and "–" to the unavailability of data.

		Monitoring stations					
Year	PM_{10}	MS_{10}	MS_{11}	MS_{12}	MS_{13}	MS_{14}	MS_{15}
2009	Working	29.006±16.77	20.30±11.82	20.05±11.60	15.69±8.01	_	16.57±9.67
	Non-working	20.72±14.30	16.26±10.35	18.64±11.58	13.81±7.79	_	14.52±8.77
2010	Working	25.31±15.51	18.97±12.89	_	16.84±12.89	_	16.05±11.90
	Non-working	22.06±18.27	15.57±9.57	_	14.64±14.97	_	13.57±8.71
2011	Working	27.74±18.23	20.35±12.43	_	21.59±12.89	_	20.91±12.81
	Non-working	22.46±18.46	17.22±12.95	_	19.22±10.88	_	19.20±13.68
2012	Working	24.92±17.53	19.88±14.22	_	17.22±10.27	_	18.98±14.93
	Non-working	19.48±14.82	17.48±13.19	_	15.62±9.28	_	17.16±16.05
2013	Working	20.71±12.82	17.60±10.39	_	21.75±12.36	19.36±12.76	20.77±16.22
	Non-working	18.72±12.90	13.68±8.40	_	18.30±10.04	15.50±10.21	17.54±10.97
Overall	Working	25.54±3.18	19.42±1.15	20.056±0.00	18.36±2.84	19.36±0.00	18.66±2.27
Overall	Non-working	20.69±1.60	16.04±0.33	18.64±0.00	16.32±2.33	15.50±0.00	16.40±2.30

Table S2. The concentrations of PM_{10} during the working and non-working periods at the CS_3; ± refers to standard deviation.

		Monitoring stations	
Year	PM_{10}	MS_{16}	MS_{17}
2011	Working	29.006±16.77	20.30±11.82
	Non-working	20.72±14.30	16.26±10.35
2012	Working	25.31±15.51	18.97±12.89
	Non-working	22.06±18.27	15.57±9.57
Overall	Working	46.62±8.82	49.84±5.66
Overall	Non-working	19.30±3.62	24.16±1.11

Table S3. The concentrations of PM_{10} during the working and non-working periods at the CS_1; ± refers to standard deviation and "–" to the unavailability of data.

		Monitoring stations								
Year	PM_{10}	MS_1	MS_2	MS_3	MS_4	MS_5	MS_6	$M S_7$	M S8	M S9
2002	Working	_	23.34±12.60	20.64±12.19	36.29±27.47	32.74±26.12	26.71±19.46	20.19±11.04	20.45±10.89	27.64±16.69
	Non-working	_	20.54±11.95	17.65±10.20	22.89±17.30	22.37±15.79	20.51±11.78	18.56±10.11	18.38±9.53	21.08±12.14
2003	Working	_	25.98±15.82	22.23±12.60	46.56±39.31	30.04±21.49	36.67±29.53	22.67±13.91	25.81±16.99	24.46±15.09
	Non-working	_	23.16±15.68	20.28±13.37	26.90±24.96	23.61±15.80	25.95±26.33	21.65±14.15	21.94±14.09	19.83±12.33
2004	Working	20.84±12.57	22.66±12.25	18.22±9.59	34.62±27.47	23.46±13.20	30.56±37.97	19.96±12.64	21.74±12.69	29.56±19.90
	Non-working	18.78±10.60	19.85±11.72	16.42±9.45	23.27±19.70	20.15±13.08	19.73±13.13	17.48±10.02	19.38±10.96	22.25±14.26
2005	Working	20.42±11.17	25.34±12.22	18.07±12.42	31.54±26.51	24.58±13.74	27.28±20.65	19.94±10.55	20.54±10.41	_
	Non-working	18.78±10.15	22.51±12.05	16.76±9.47	21.88±16.62	21.89±14.61	20.62±18.16	18.37±10.32	18.78±10.06	_
2006	Working	21.54±11.35	25.27±12.37	19.49±9.76	28.32±20.52	27.03±25.51	26.07±20.45	21.33±10.65	22.78±12.87	_
	Non-working	19.37±11.06	23.76±34.76	18.15±9.95	21.44±15.53	21.99±16.22	19.85±10.67	20.01±11.02	19.65±10.68	_
Overall	Working	20.93±0.56	24.52±1.43	19.73±1.74	35.47±6.90	27.56±3.83	29.46±4.38	20.82±1.18	22.26±2.43	27.22±2.57
Overall	Non-working	18.98±0.34	21.92±1.69	17.85±1.52	23.27±2.15	22.00±1.23	21.33±2.61	19.21±1.63	19.63±1.38	21.06±1.21

Table S4. The concentrations of $PM_{2.5}$ during the working and non-working periods at the CS_1; ± refers to standard deviation and "–" to the unavailability of data.

		Monitoring stations								
Year	$PM_{2.5}$	MS_1	MS_2	MS_3	MS_4	MS_5	MS_6	MS_7	MS8	MS9
2002	Working	_	_	_	18.60±20.81	13.22±8.23	12.72±7.87	12.55±8.29	12.30±7.39	13.27±8.26
	Non-working	_	_	_	16.04±15.15	12.89±7.95	12.30±8.24	11.62.30±8.06	11.42±7.08	12.09±7.53
2003	Working	_	_	_	17.28±17.77	15.16±10.48	15.09±10.47	14.95±10.91	16.06±10.76	20.27±10.66
	Non-working	_	_	_	13.84±9.50	14.00±10.19	12.90±9.38	13.57±9.94	15.12±10.66	14.56±9.71
2004	Working	_	_	_	17.57±19.70	13.05±7.87	12.51±7.76	12.26±7.64	12.81±7.95	20.27±14.65
	Non-working	_	_	_	16.59±17.13	12.16±6.95	12.14±8.09	10.93±6.63	11.58±7.07	18.55±11.92
2005	Working	_	_	_	16.21±18.96	13.55±8.80	12.98±8.27	12.49±8.08	12.75±7.92	_
	Non-working	_	_	_	14.62±13.63	12.44±7.66	12.88±8.19	11.38±7.09	11.40±7.05	_
2006	Working	_	_	_	14.71±12.16	13.67±8.84	13.53±8.35	12.80±8.59	13.33±7.60	_
	Non-working	_	_	_	14.50±13.82	12.47±7.34	12.73±7.65	11.57±7.13	12.55±7.21	_
Overall average	Working	_	_	_	16.88±1.47	13.73±0.83	13.37±1.03	13.01±1.10	13.45±1.50	17.94±2.90
Overall average	Non-working	_	_	_	15.12±1.14	12.79±0.72	12.59±0.347	11.81±1.01	12.41±1.58	15.06±3.26