Supplementary Materials

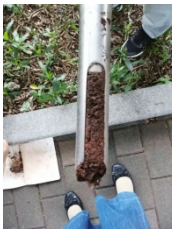
A public park

A pocket park

A typical soil sample in residential green space

A plot of residential green space

A plot of roadside greenbelt



A soil sample in roadside greenbelt

Figure S1. Some photos of the urban green spaces and soil samples

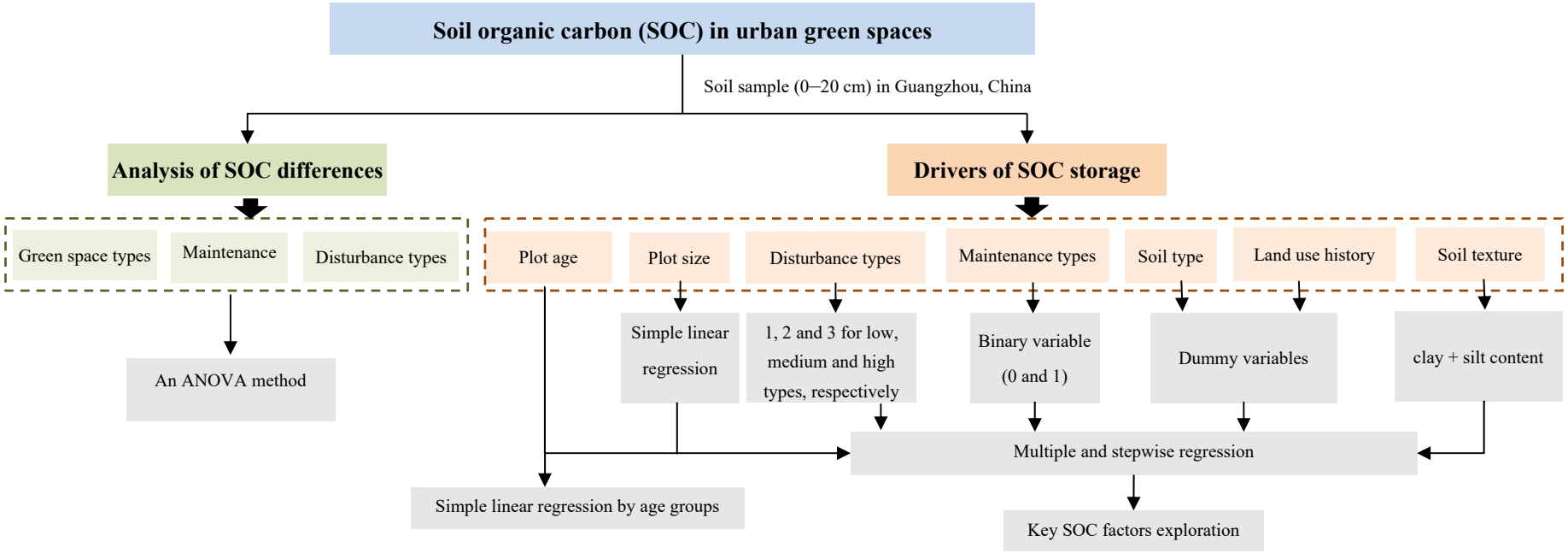


Figure S2. The methodology flowchart

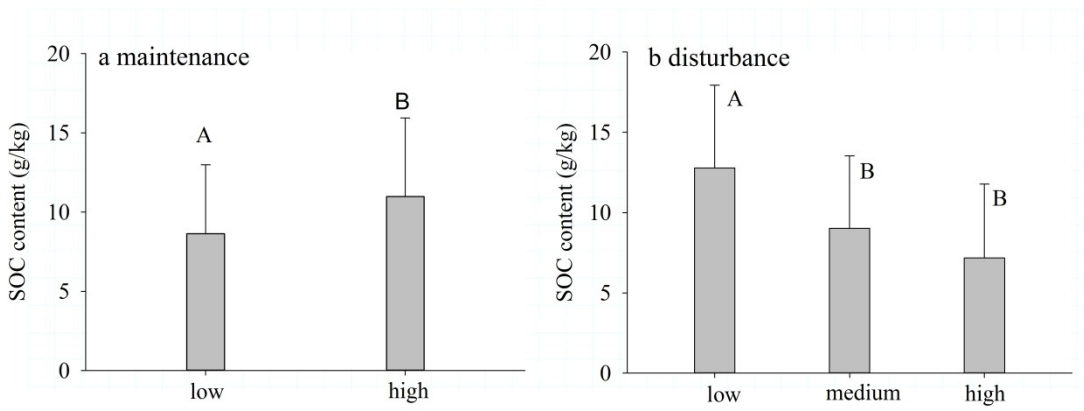


Figure S3. Differences in SOC content (g/kg) between (a) maintenance and (b) disturbance intensity types. Columns with different letters represent a significant difference at $p \leq 0.05$

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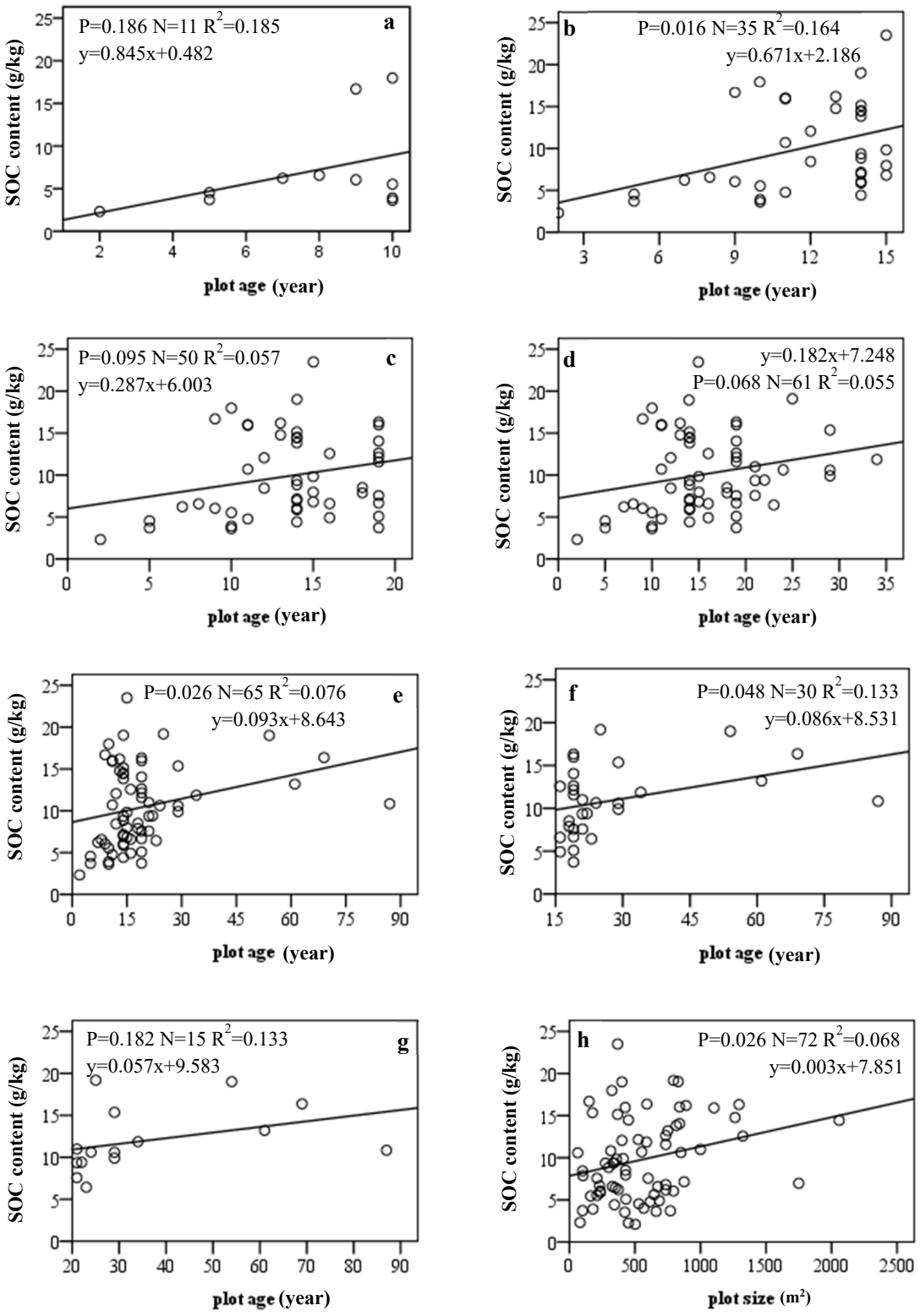

Figure S4. Relationship of SOC content (g/kg) to plot age (2–101 years) at age groups: 2–10 years (a), 2–15 years (b), 2–20 years (c), 2–35 years (d) and 2–87 years (e), 16–87 years (f), 21–87 years (g) and to plot size (63-2058 m^2) (h). Plots with older age but obviously lower SOC content were removed as abnormal values. A total of 1, 4, 7, 7 and 7 outliers were removed from the 2–20 years (c), 2–35 years (d), 2–87 years (e), 16–87 years (f) and 21–87 years (g), respectively. The outliers removed from the former age group were also removed from the latter age group.

Table S1. Regression analysis of SOC content (g/kg) across all sampled plots

Method	Variable name	Partial regression coefficients	P value
Enter	Plot size	0.003	0.069*
	Maintenance	1.659	0.159
Enter	Plot size	0.003	0.045**
	Disturbance	-2.925	0.004***
Enter	Plot size	0.003	0.054*
	Maintenance	0.065	0.960
	Disturbance	-2.897	0.012**
Enter	Plot size	0.003	0.046**
	Maintenance	-0.301	0.824
	Disturbance	-3.172	0.009***
	Plot age	0.028	0.371
Stepwise	Entered variables		
	Constant	13.489	0.000***
	Plot size	0.003	0.045**
	Disturbance	-2.925	0.004***
	Removed variables		
	Maintenance	0.031	0.812
	Plot age	0.097	0.382
	Land use history		
	Developed land (the reference category)		
	Paddy field (rice)	0.116	0.295
	Irrigated field	-0.043	0.698
	Forest land	0.212	0.059*
	Water	-0.050	0.653
	Soil type		
	Soil in the developed land (the reference category)		
	Latosolic red soil developed from red sandy shale (shrubberies)	-0.198	0.074*
	Vegetable soil	0.077	0.489
	Latosolic red soil developed from granite	0.100	0.372
	Fertile paddy soil developed from granite river-ocean sediments	-0.030	0.790
	Latosolic red soil developed from red sandy shale (farming)	-0.143	0.200
	Alluvial soil in river terrace and broad valley	0.078	0.493
	Clay + silt content	0.062	0.596

N=72. *, ** and *** indicate statistical significance at $\alpha \leq 0.10$, $\alpha \leq 0.05$ and $\alpha \leq 0.01$, respectively. N=72. The Adjusted R^2 of the stepwise regression model was 0.151 and no collinearity in this model. For the variable of soil type, the alluvial soil in the river terrace was grouped in the alluvial soil in broad valley due to sample numbers less than three.

Table S2. Stepwise regression analysis of SOC stock (kg/cm^2) to plot size, maintenance, disturbance, plot age and soil texture across all sampled plots

Entered or removed	Variable name	Partial regression coefficients	P value
Entered variables	Constant	3.559	0.000***
	Plot size	0.001	0.045**
	Disturbance	-0.772	0.004***
Removed variables	Plot age	0.097	0.382
	maintenance	0.031	0.812
	Clay content	0.088	0.432
	Silt content	0.080	0.480

Adjusted R^2 was 0.175. We assumed that the pocket park had a similar clay and silt content as green space in commercial districts. Values of the new residential and industrial district were not considered since we only had one plot less than two years old.