Supplementary Document

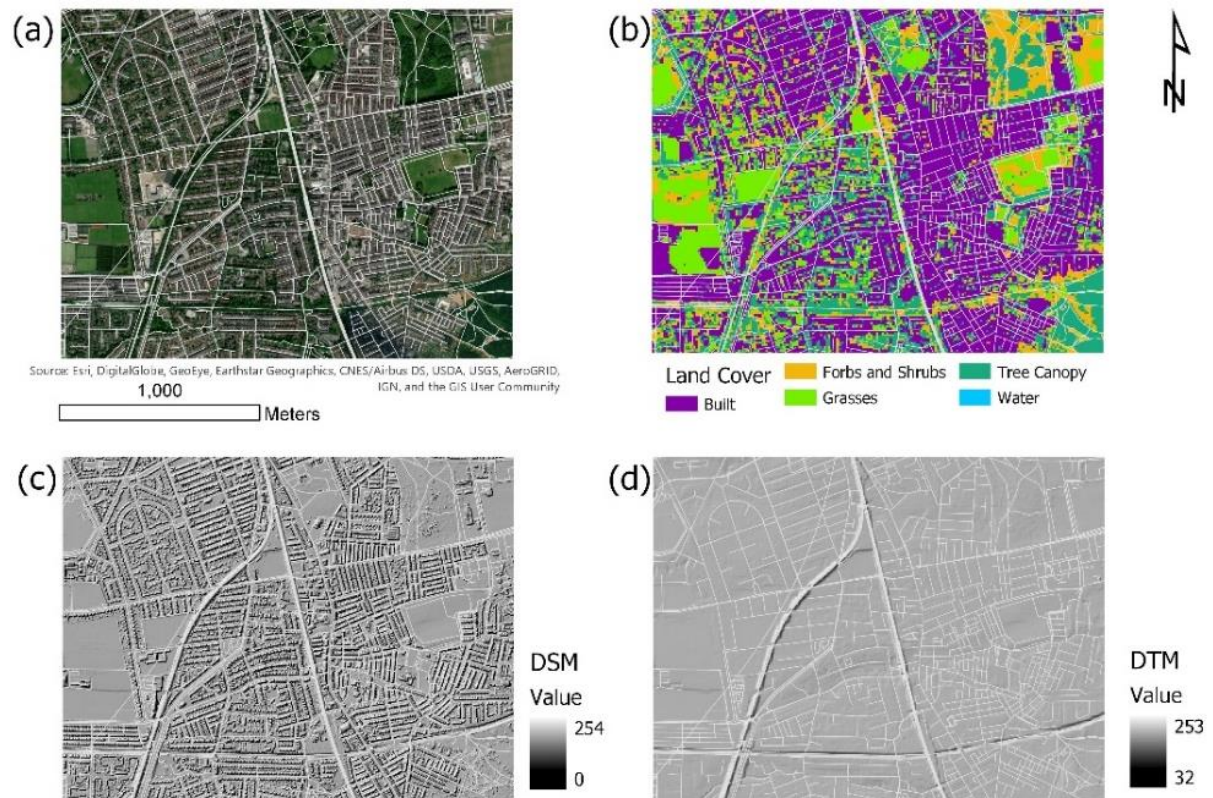## Contents

Supplementary Figures

Figure S1: Examples of (a) High-resolution satellite image within the study area (Source: ESRI, 2020); (b) Land cover data (Source: Dennis et al., 2018); (c) Digital surface model; (d) Digital terrain model. Overlaid with OpenStreetMap road network dataset.
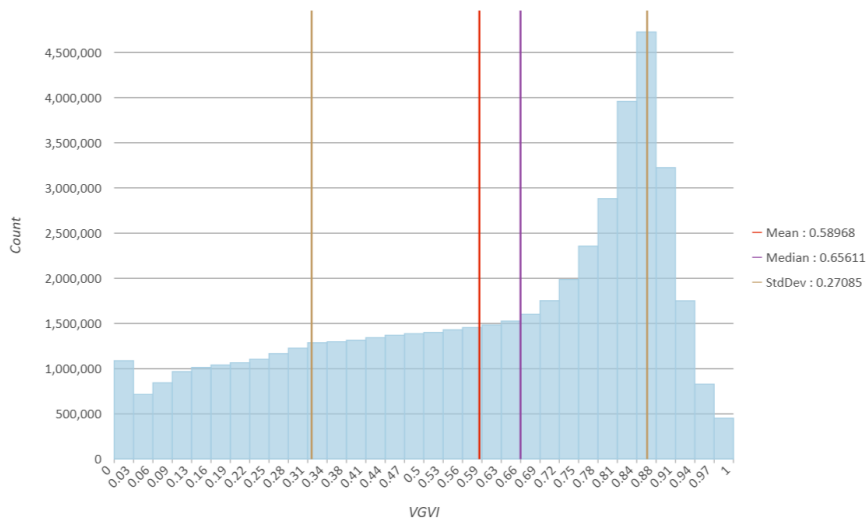
Figure S2: Viewshed greenness visibility index value distribution for Greater Manchester.
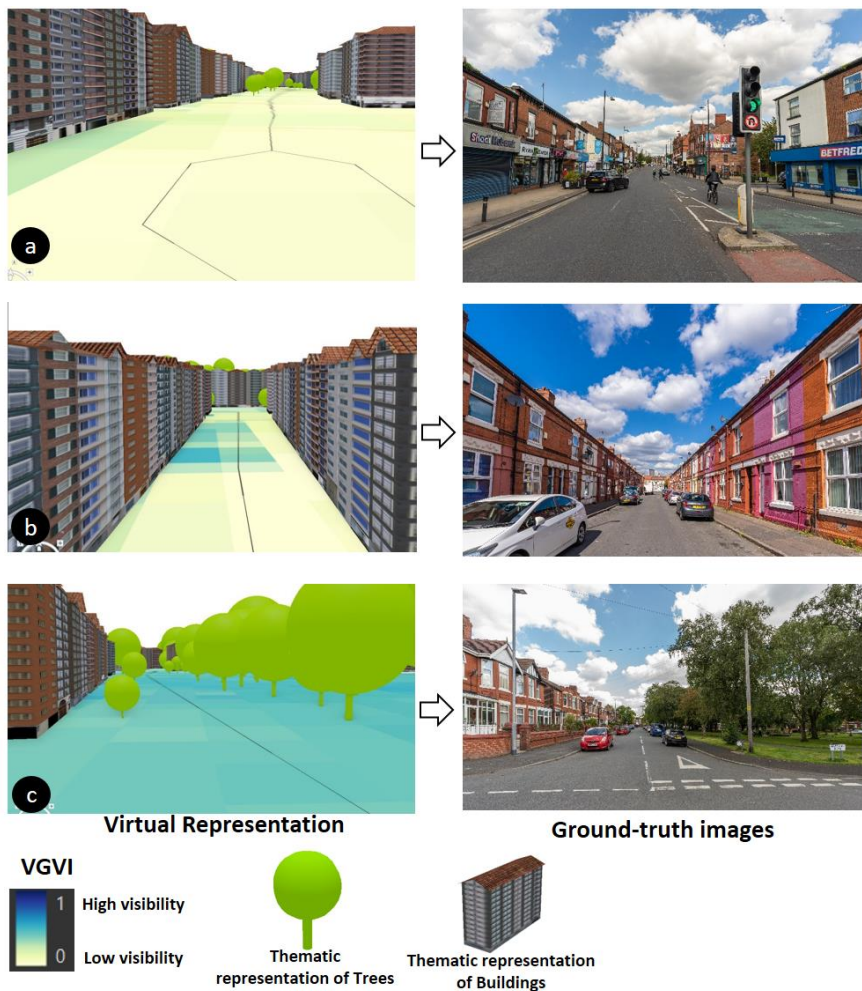
Figure S3: Ground truth validation of VGVI modelled values, comparing in virtual environment. High VGVI values correspond to greater greenness, and low VGVI values indicates low greenness in ground truth photos. Ground-truth photos taken by the lead author.
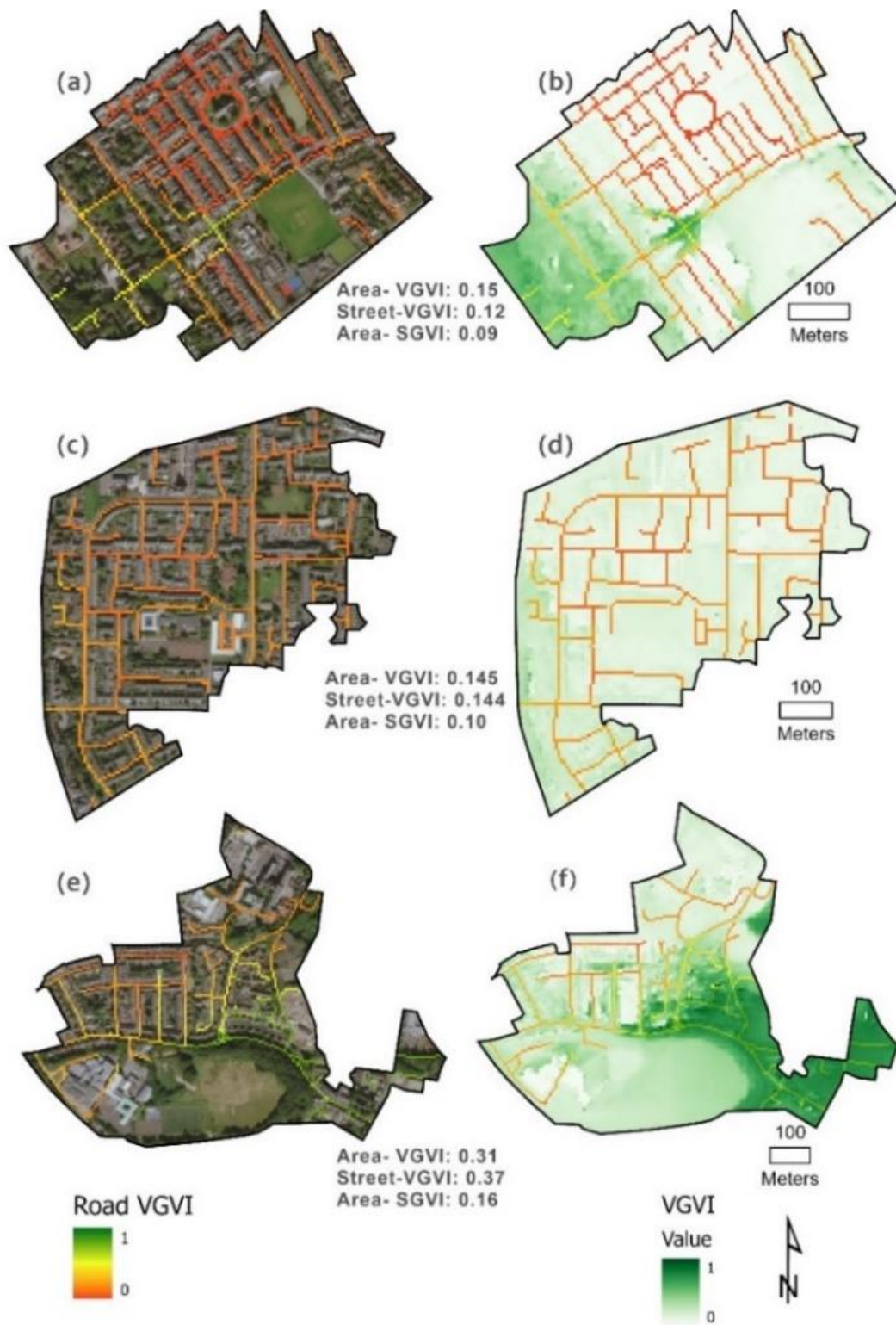
Figure S4: Examples of studied neighbourhoods with different morphological patterns and varying greenness visibility values.

Supplementary Tables

Table S1: Pearson's correlation coefficients between mean neighbourhood scale greenness visibility for street-only locations, and entire neighbourhoods.

		Mean VGVI at Neighbourhood	Mean street-only VGVI at Neighbourhood	Mean SGVI at Neighbourhood
Mean VGVI at Neighbourhood	Pearson Correlation	1	**0.937**[**]	0.434
	Sig. (2-tailed)		0.000	0.106
	N		15	15
Mean street-only VGVI at Neighbourhood	Pearson Correlation		1	**0.572**[*]
	Sig. (2-tailed)			0.026
	N			15
Mean SGVI at Neighbourhood	Pearson Correlation			1

**correlations are significant at the 0.01 level. *correlations are significant at the 0.05 level; (2-tailed).

Table S2: Difference between neighbourhood street-only and total greenness visibility.

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Mean VGVI at Neighbourhood - Mean street-only VGVI	.036	.061	.01589	.00191	.07009	2.265	14	.040

Table S3: Correlations between neighbourhood dwelling numbers and neighbourhood average greenness visibility measurements.

		Mean VGVI at Neighbourhood	**Mean street-only VGVI**
Number of Dwellings	Pearson Correlation	-.653[**]	-.589[*]
	Sig. (2-tailed)	.008	.021
	N	15	15

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).