

# Estimating Resource Consumption using Urban Typologies

David. J. Quinn

Daniel Wiesmann

Juan José Sarralde

# Estimating Resource Consumption using Urban Typologies

David. J. Quinn

Prof. John Fernandez

Massachusetts Institute  
of Technology  
Cambridge, MA  
USA

Daniel Wiesmann

Prof. Paulo Ferrao

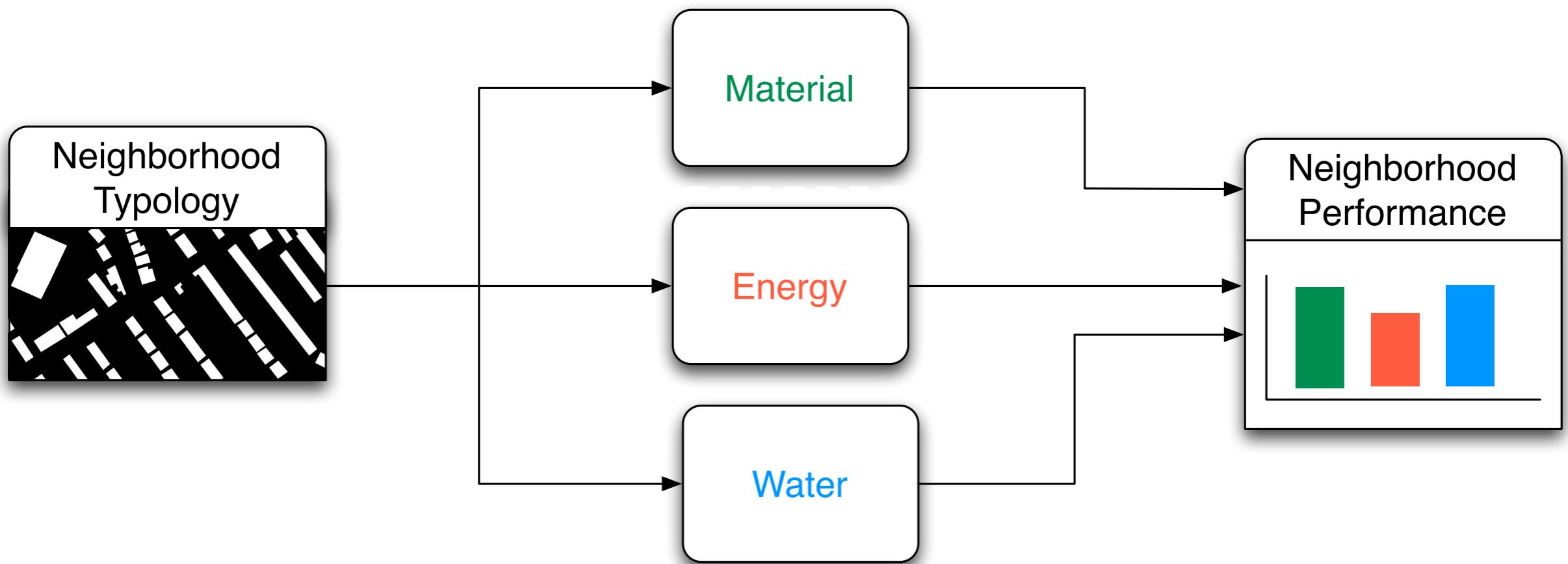
Instituto Superior Técnico  
Lisbon  
Portugal

Juan José Sarralde

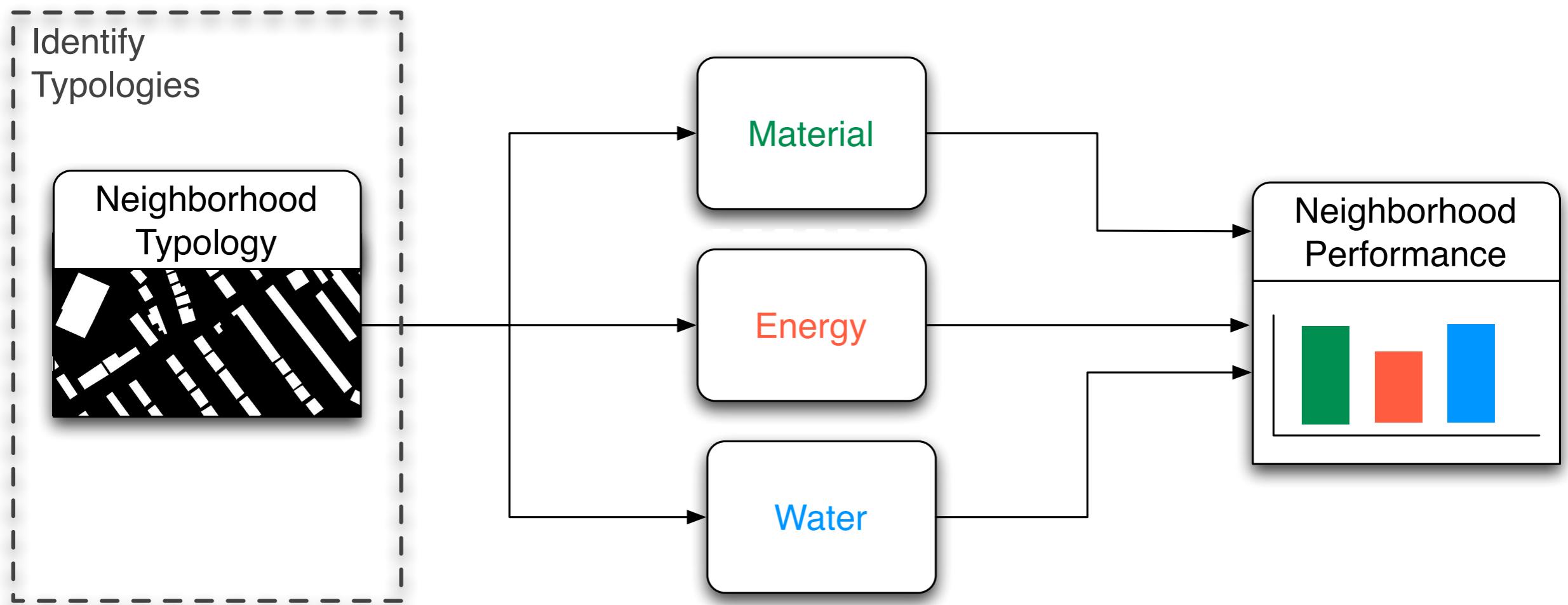
Prof. Koen Steemers

University of Cambridge  
Cambridge  
United Kingdom

# Introduction

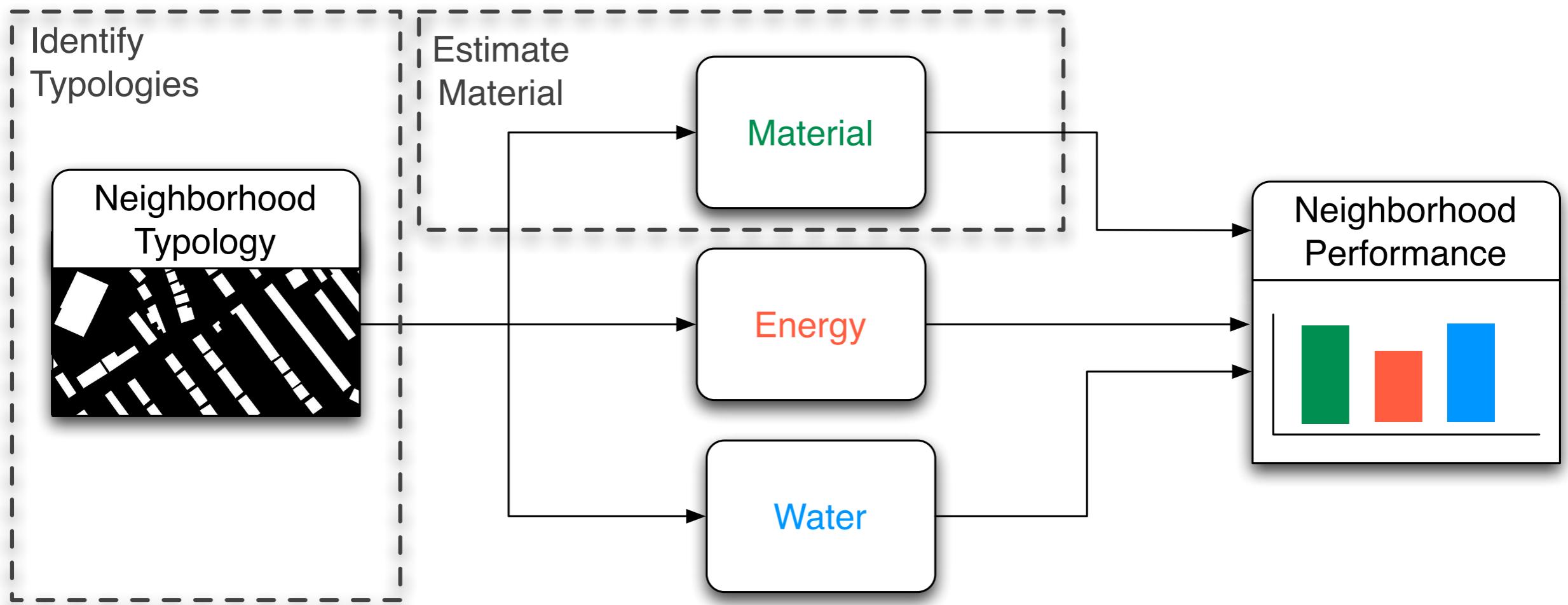


# Objectives



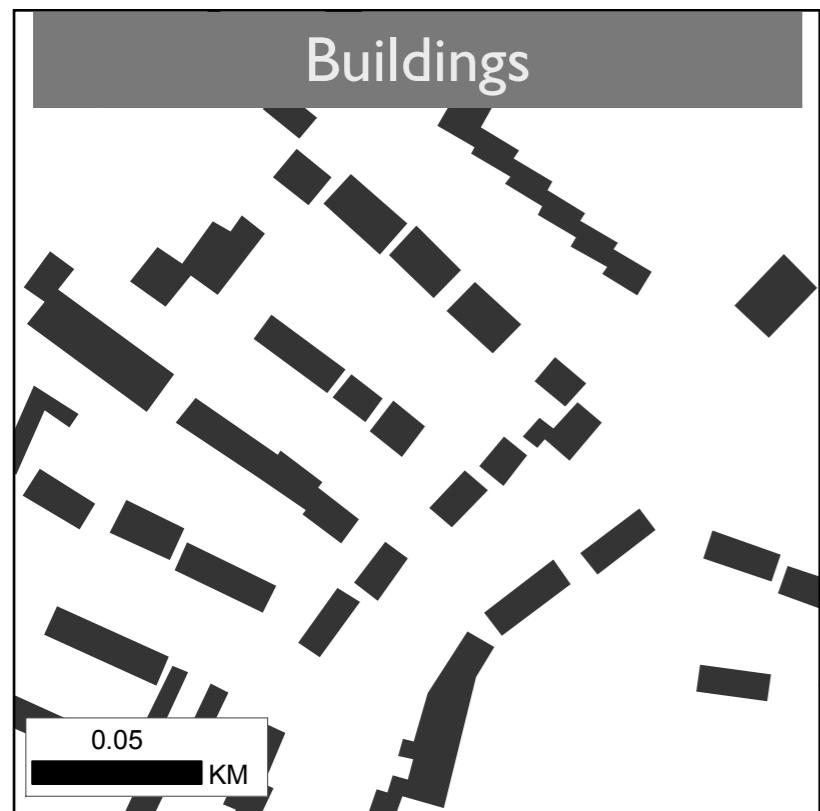
Identify commonalities in the urban form using clustering

# Objectives



Relate these typologies to material and energy use

# Typology Identification



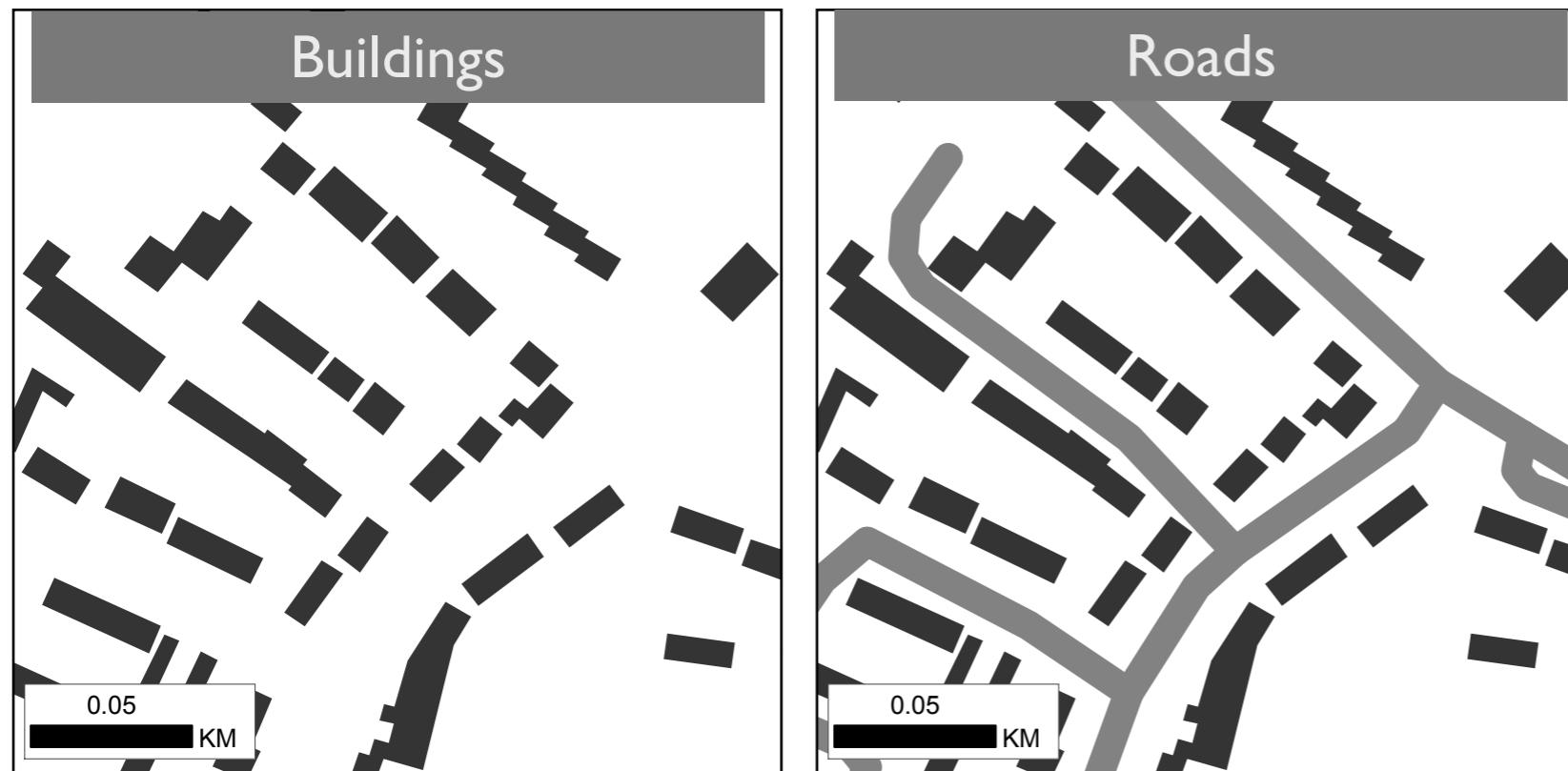
introduction

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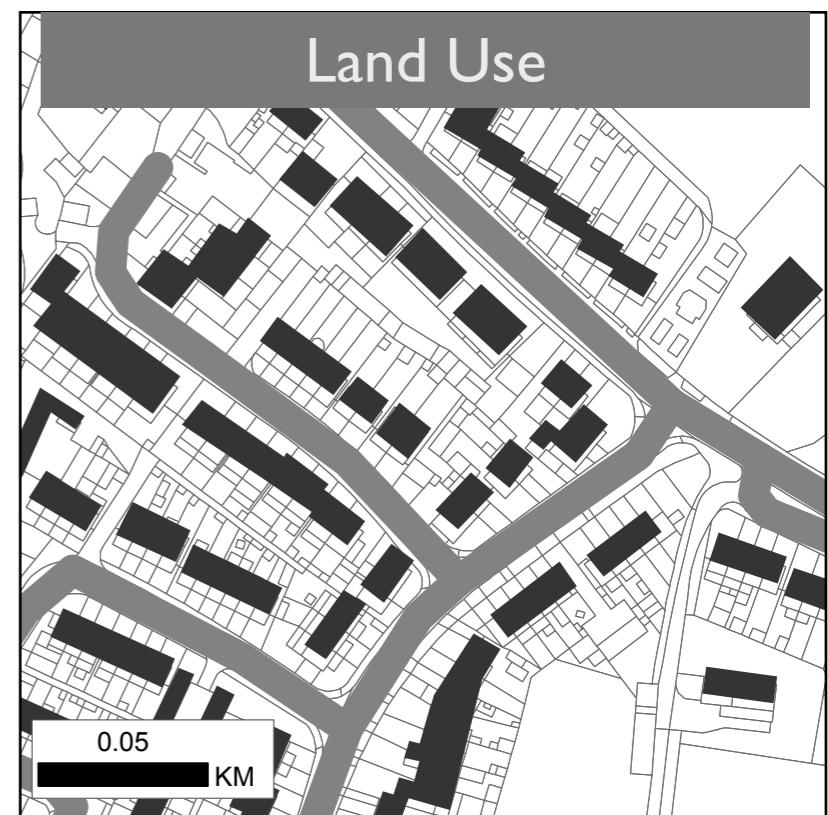
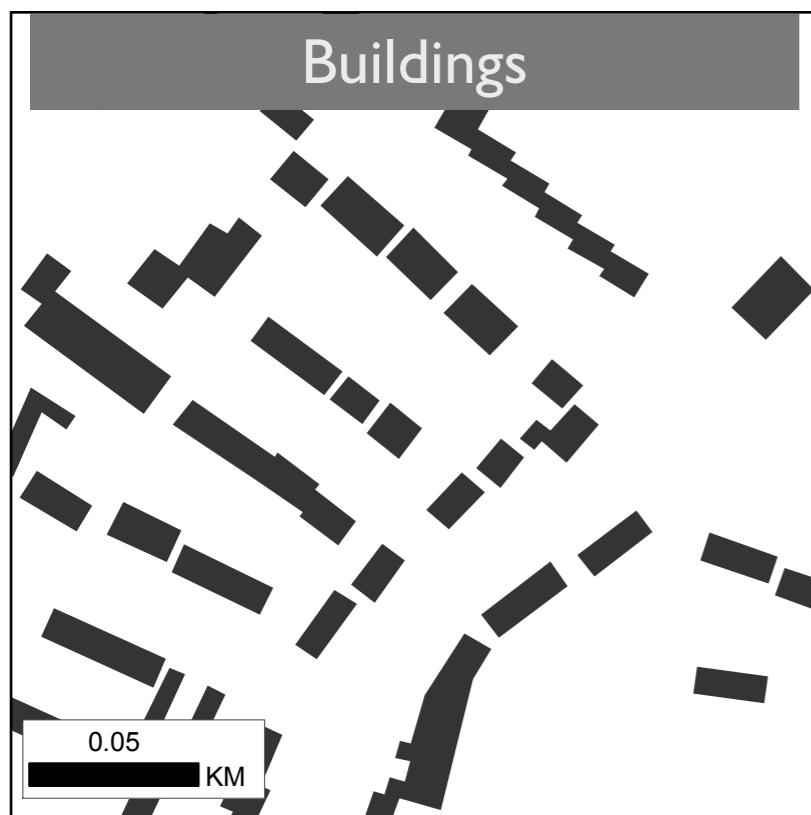
results

conclusions

# Typology Identification



# Typology Identification

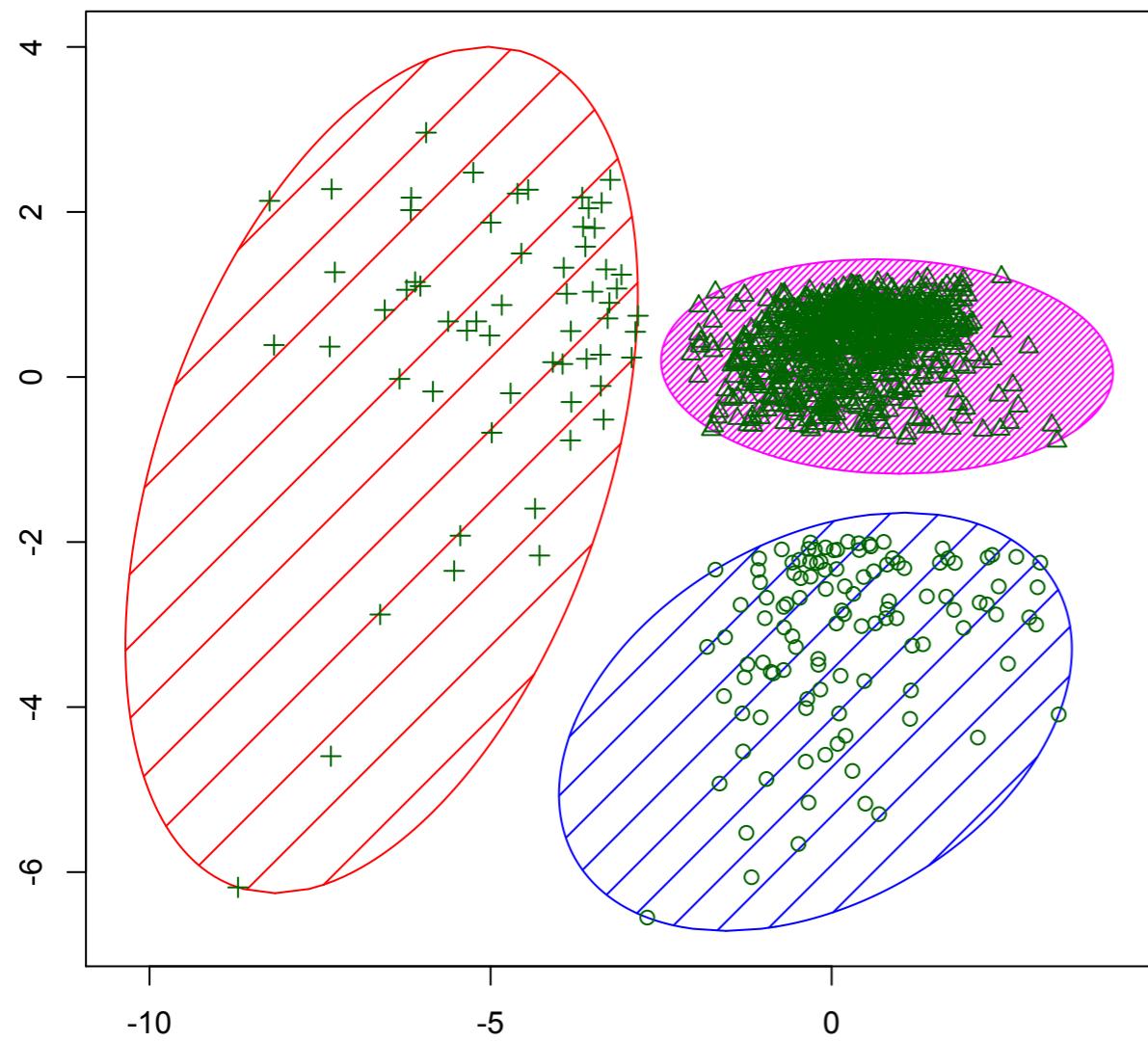


# Clustering Variables

<b>Category</b>	<b>Description</b>
Plot Ratio	Total floor space / Area
Green Space Fraction	Total green space / Area
Built Area Fraction	Total built footprint / Area
Average Building Height	Average height of buildings in Area

Unit of analysis: UK Census area with 1500 people

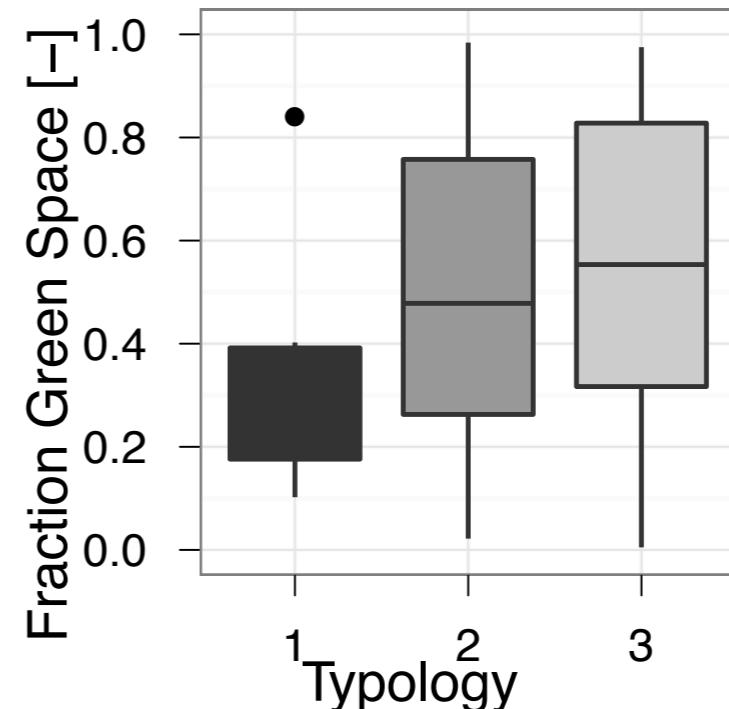
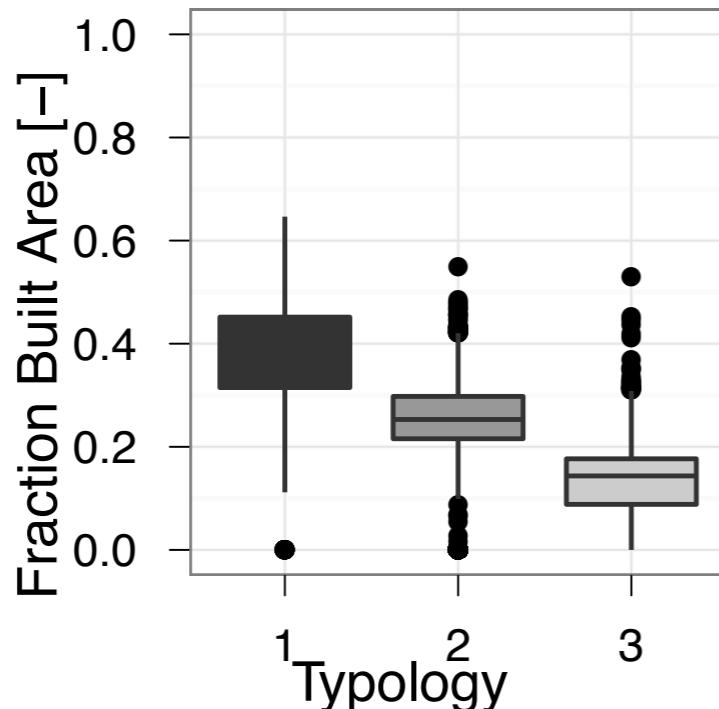
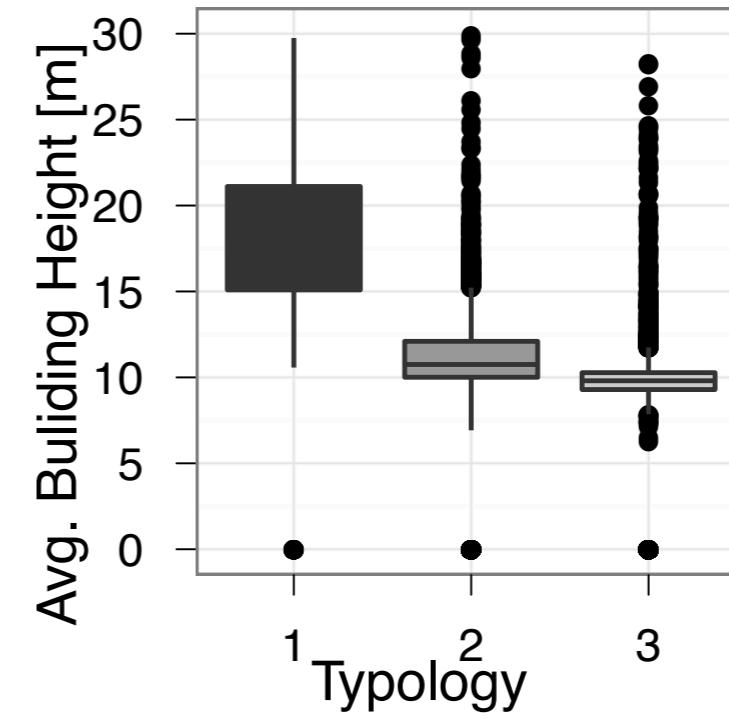
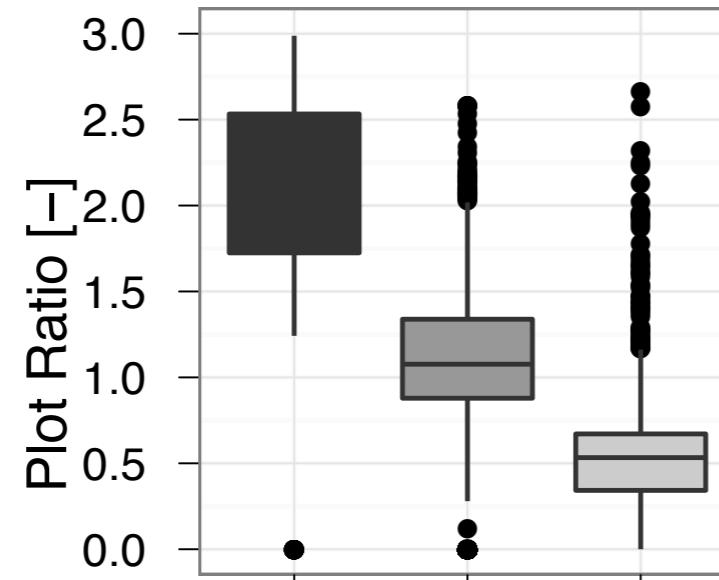
# Clustering Method



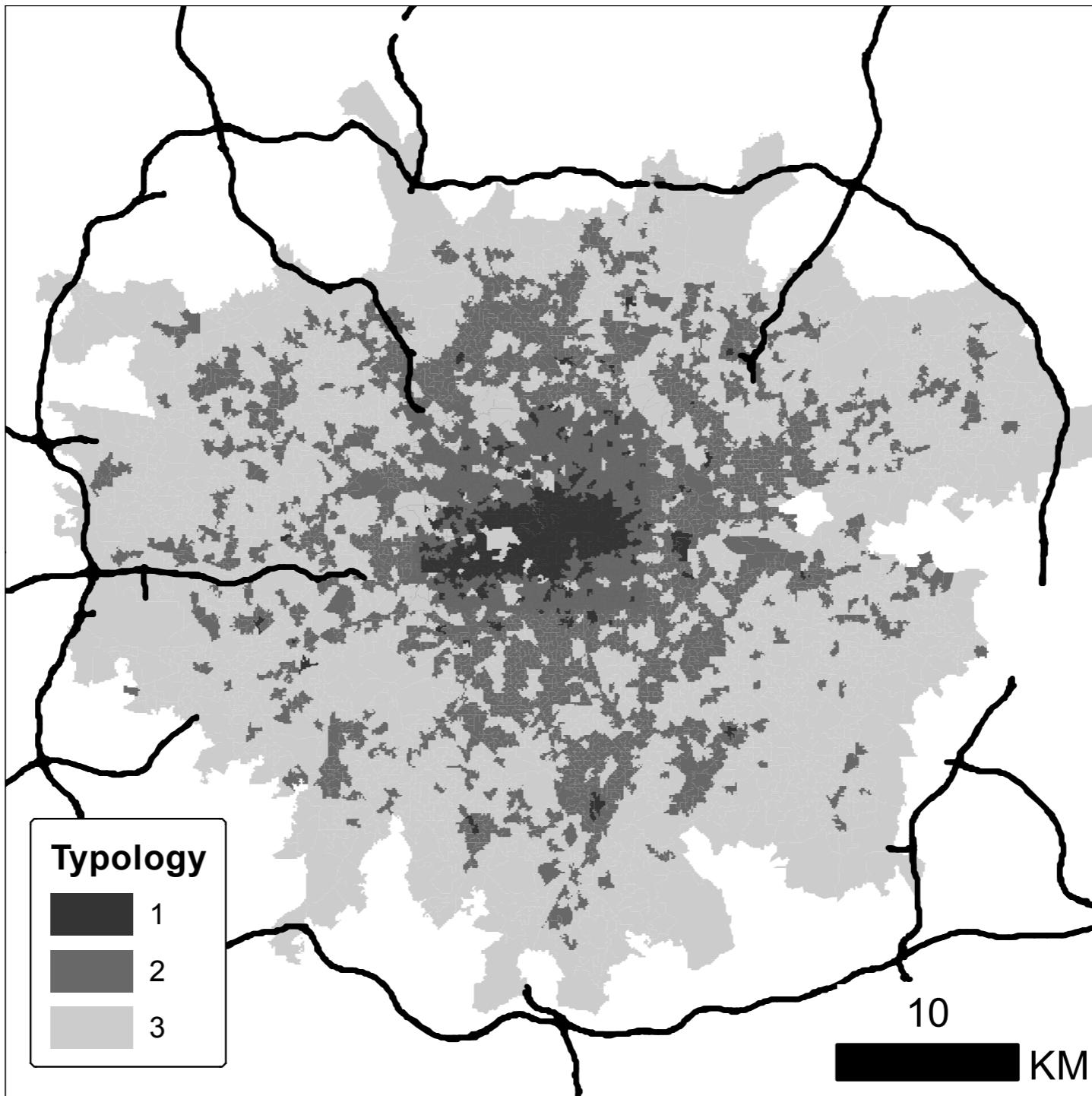
k-means clustering

specify number of groups

# Typologies



# Typologies & their Location



introduction

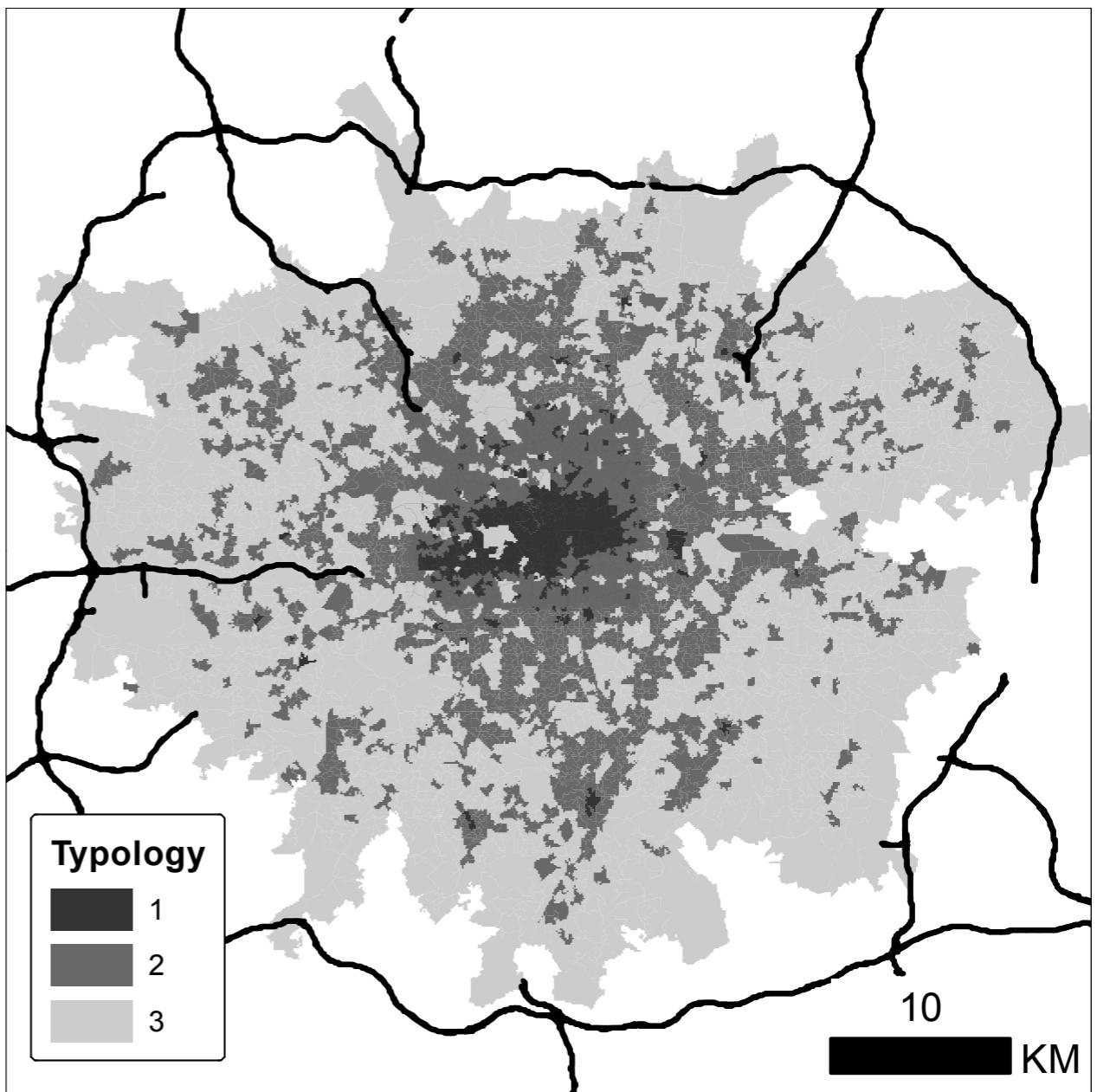
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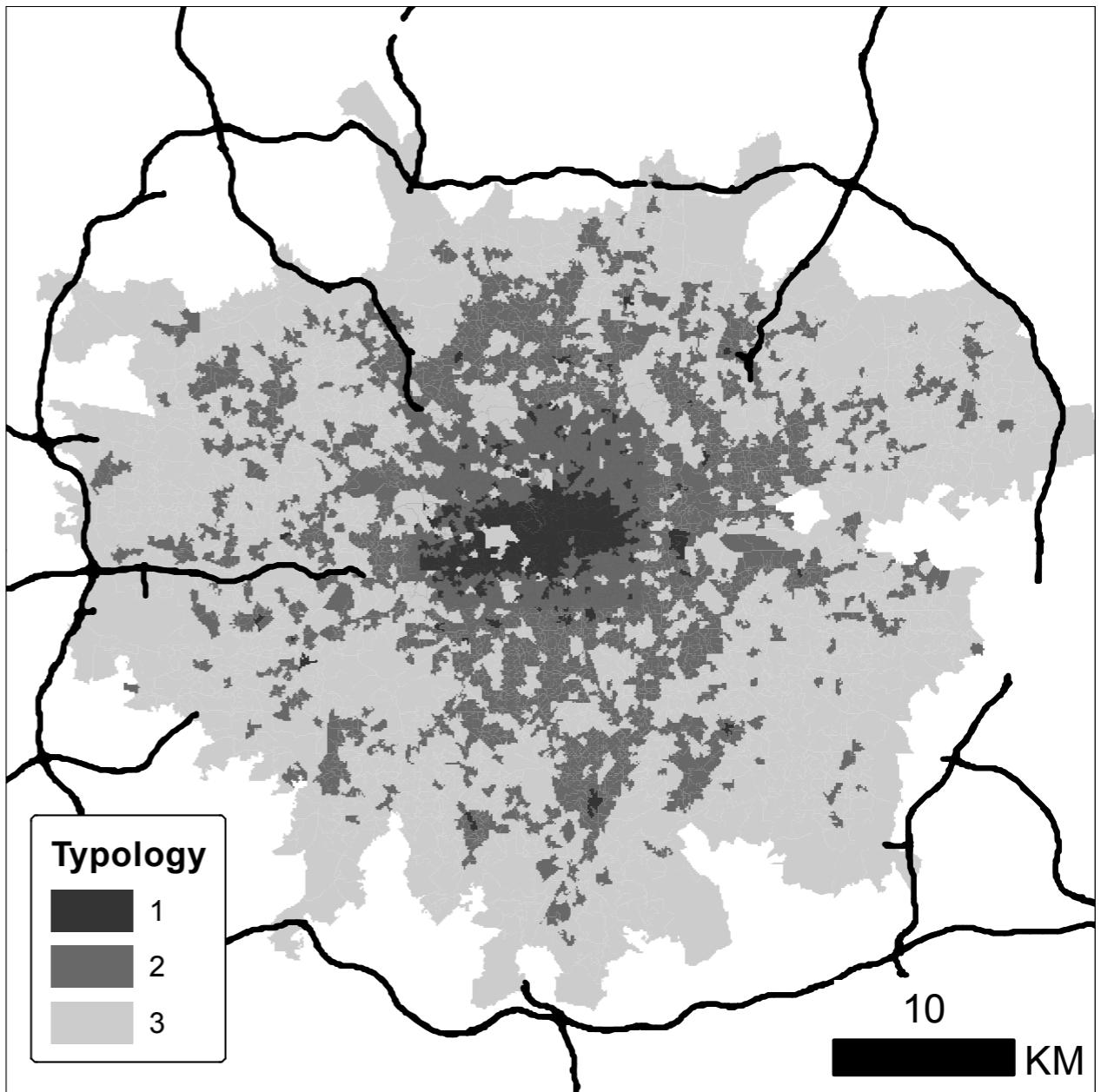


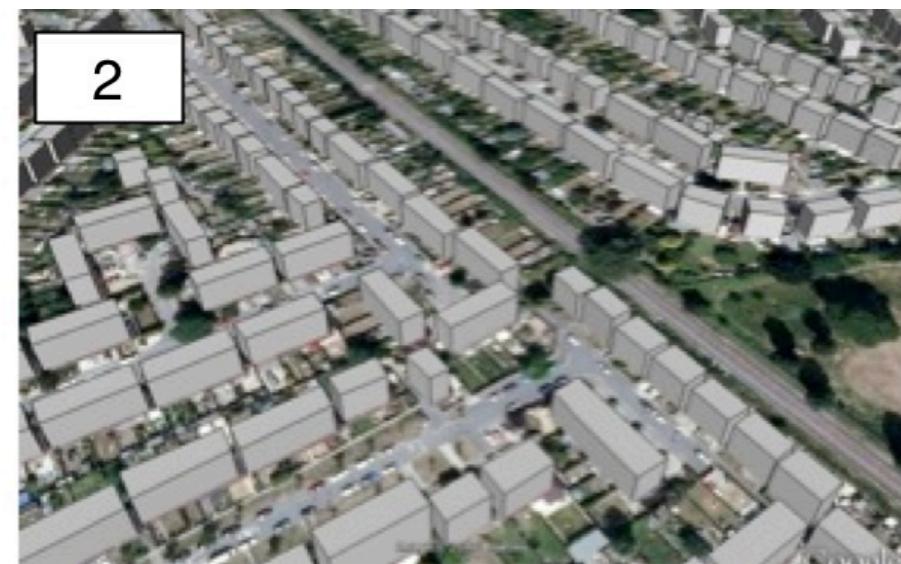
# Typologies & their Location



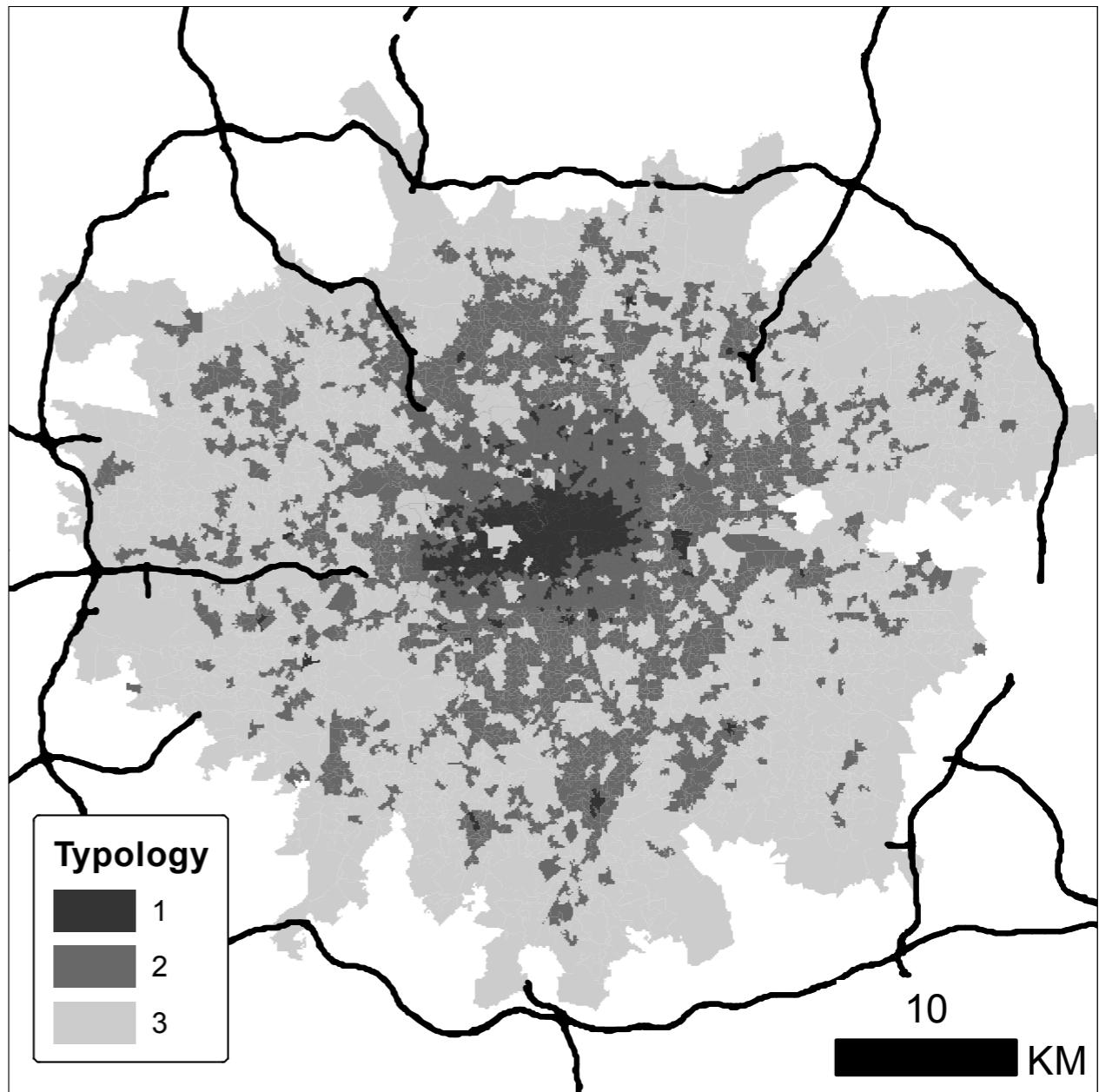


# Typologies & their Location





# Typologies & their Location



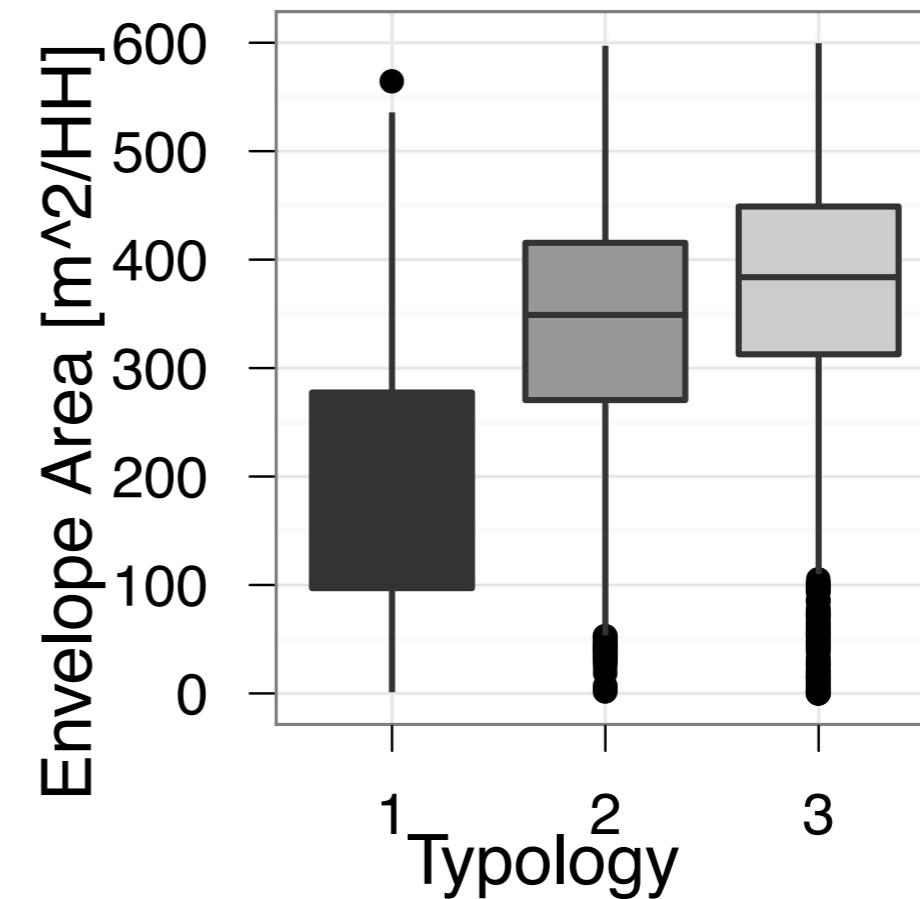
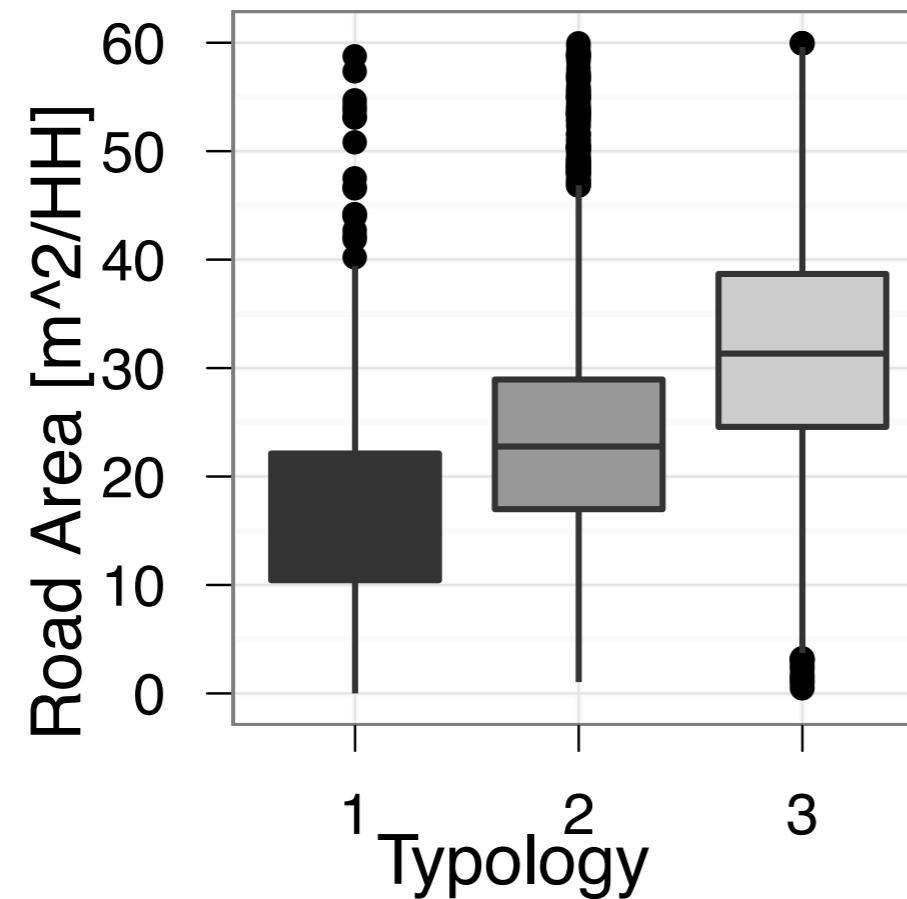
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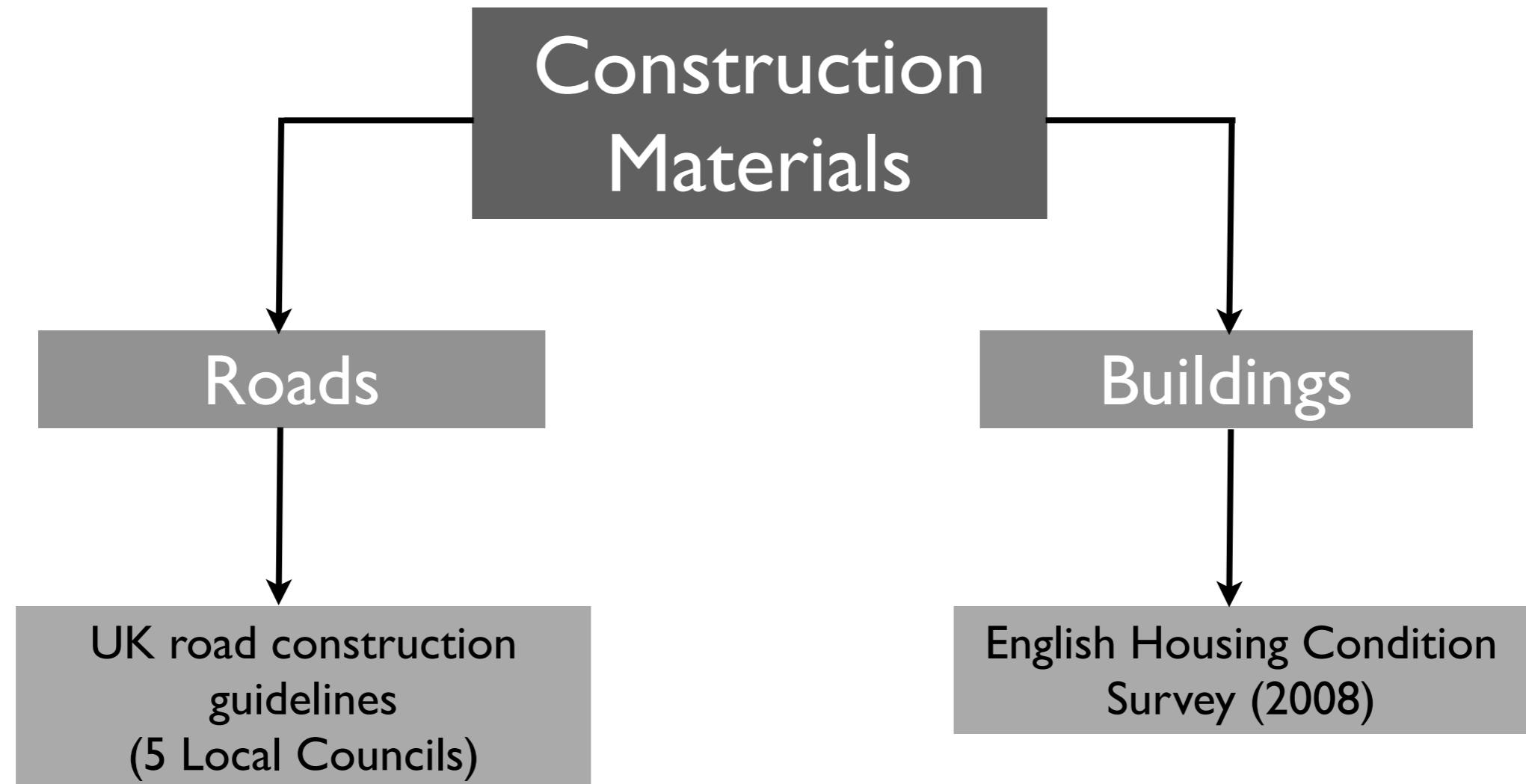
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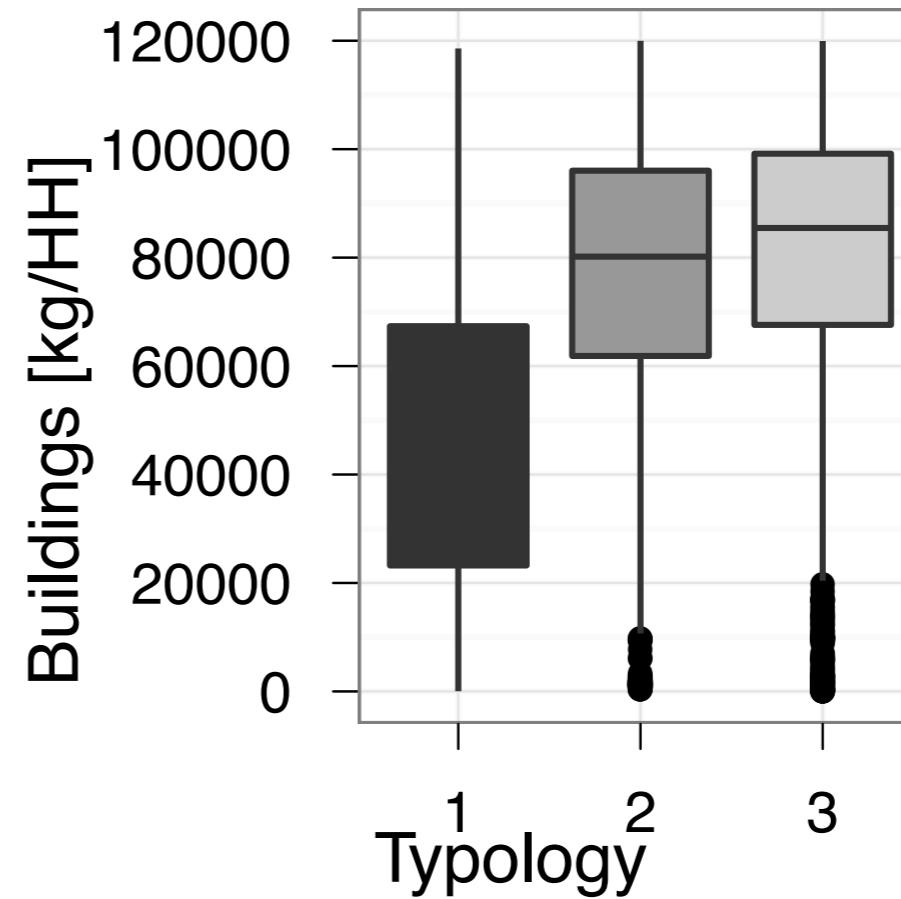
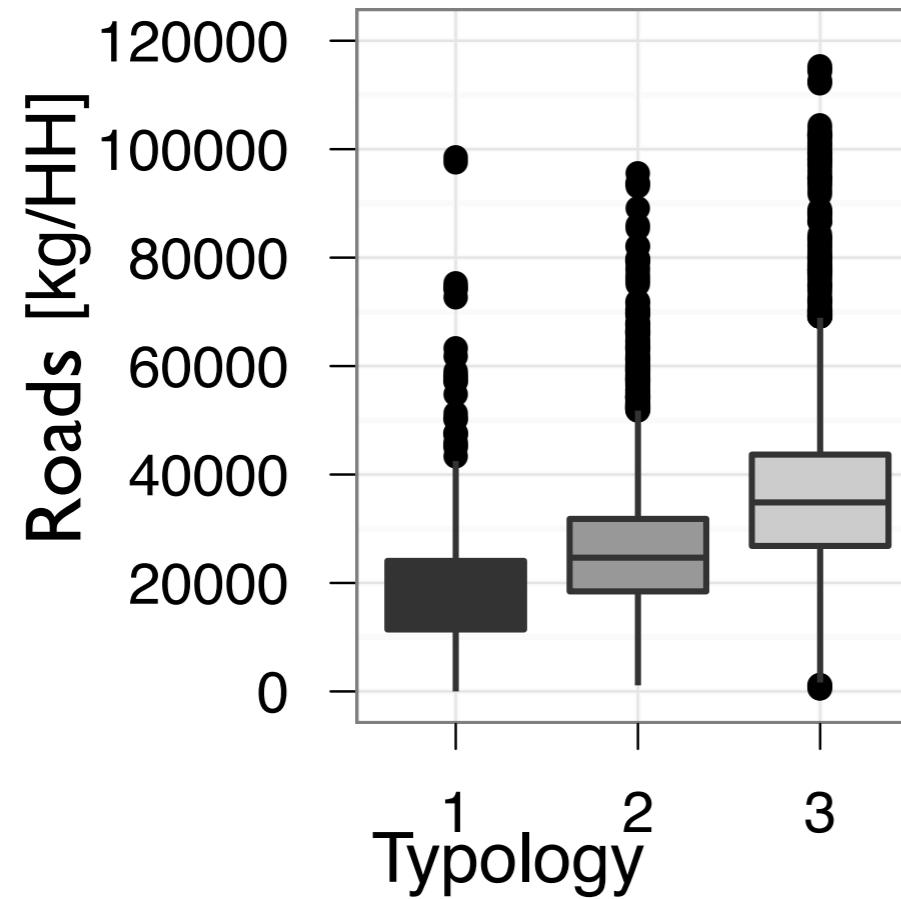
# Geometric Characteristics of Typologies



# Sources for Material Conversion



# Material Resources per Typology



# Conclusions

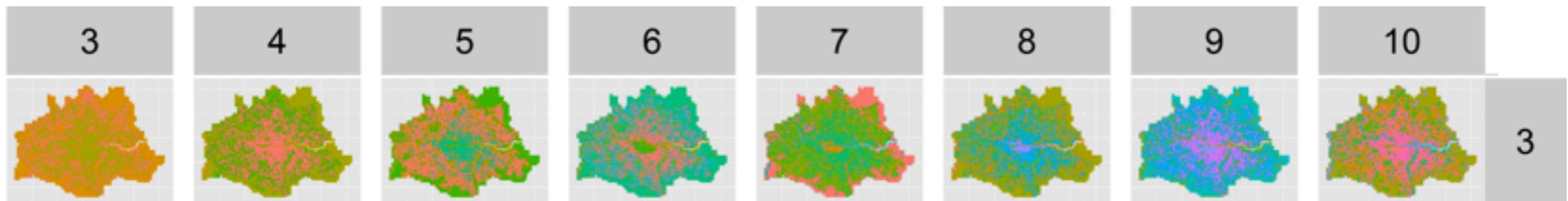
- Repeatable method of identifying patterns in the urban form
- Estimates of material consumption for different typologies

# Conclusions

- Repeatable method of identifying patterns in the urban form
- Estimates of material consumption for different typologies

## Future Research

- Identifying appropriate number of clusters
- Refining scale of measurement



# Questions ?

introduction

methodology

results

conclusions