The DemoLand project

Urban Analytics *in the wild*

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Background

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Context

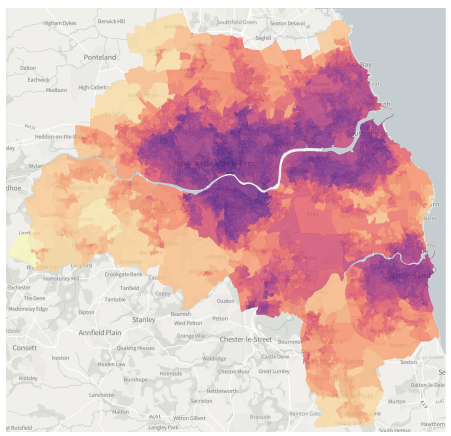
- Newcastle City Council
- Local Spatial Plan
- Policy needs, challenges

Goals

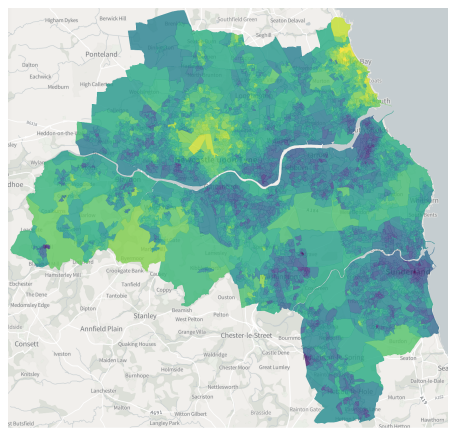
- Quantify competing aspects of land use in a given urban environment through key indicators (*baseline*)
- Build bespoke scenarios under changes that affect the distribution of such land use (*scenarios*)
- Present outputs in an interactive visualisation tool

Baseline

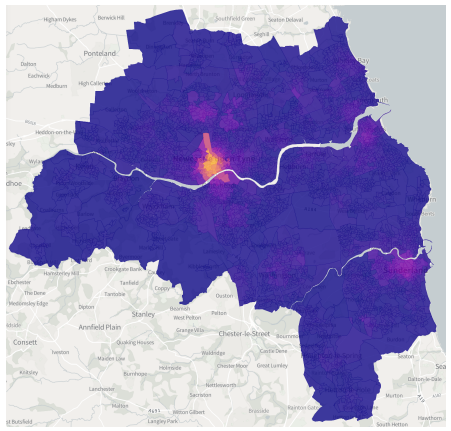
Indicators



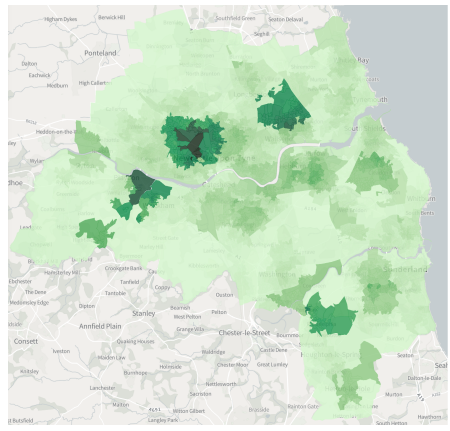
Air Quality



House Prices



Job Acessibility



Green Space Accessibility

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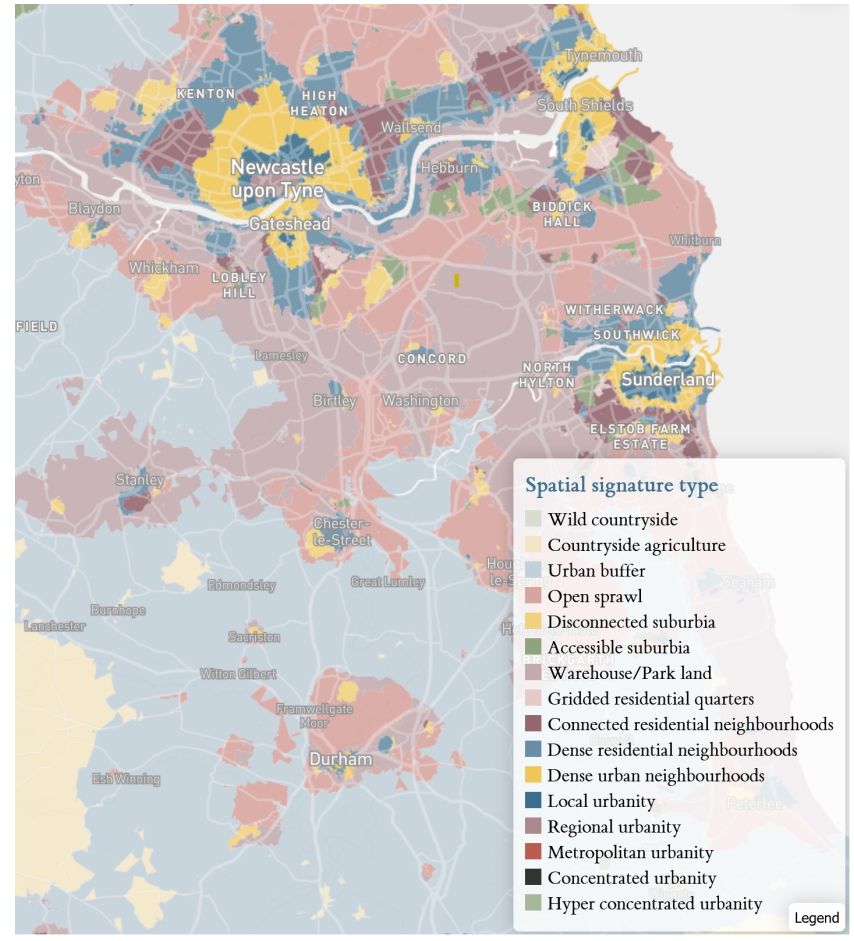
Land Use - Spatial Signatures

Characterisation of space based on form and function designed to understand urban environments

UrbanGrammarAI.xyz



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Land Use <–> Indicators

Accessibility scores

- Employment
- Green space

Predictive models

- Air quality
- House prices

What if scenarios

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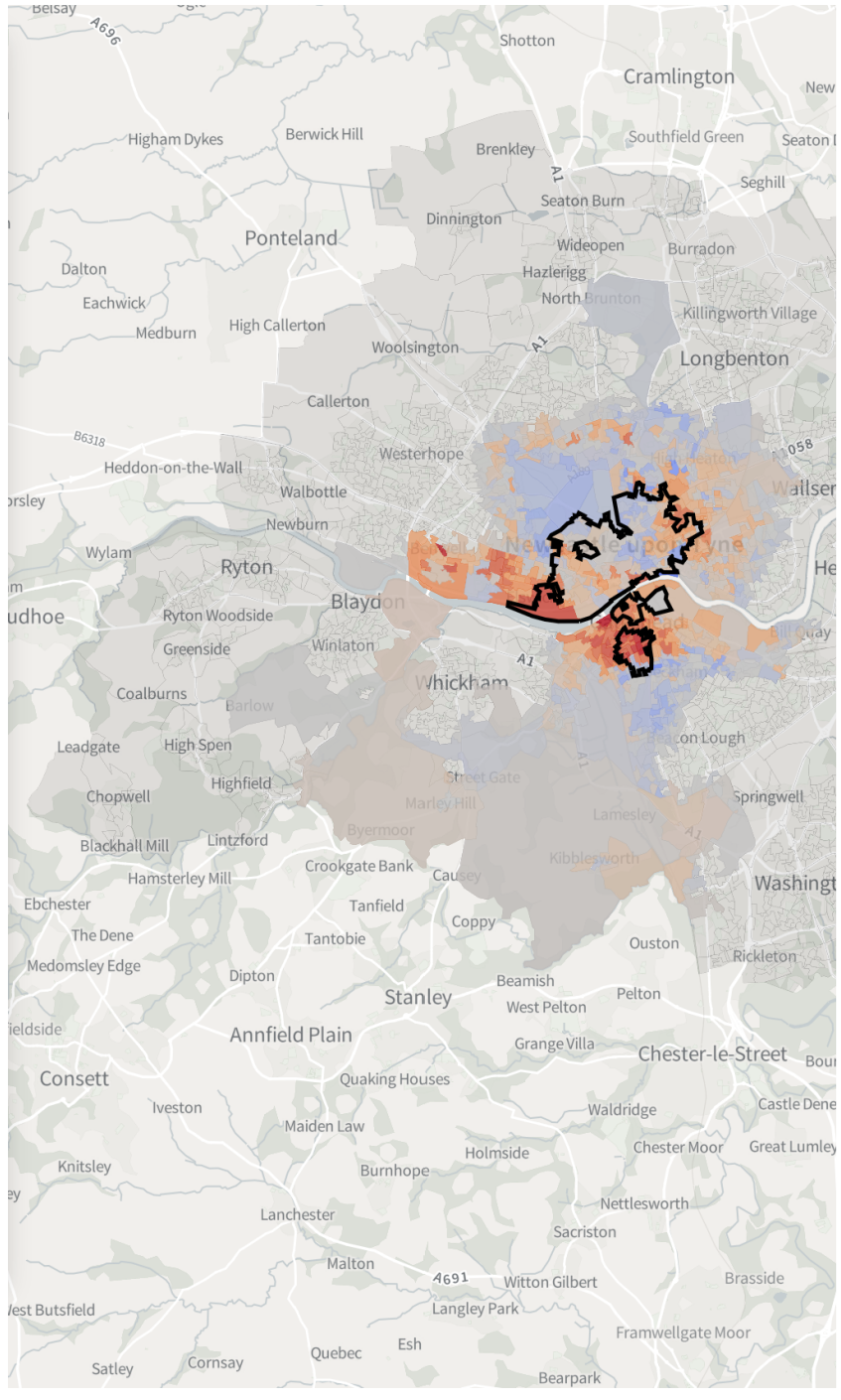
> Exploring the effect of changing the baseline land use on the indicators of interest

Baseline

The world as it is

Scenarios

The world as it *could* be



Co-produced scenarios

- Residential development
  - Low density (**1**)
  - Mid-density compact (**2**)
- Inner-city densification (**3**)
- Brownfield redevelopment (**4**, **5**)
  - Dense neighborhoods (**4**)
  - Parks (**5**)
- Combinations (**6**, **7**)

Interactive tool

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Demo [URL]

Play time - Activity I

- [10min] Explore the set scenarios on your own
- [10min] Think of a new scenario you would like to explore
  - Why is it relevant?
  - What changes would it contain?
  - What effects would you expect?

Play time - Activity II

New version! [URL]

- [15min] Implement your scenario (use the spatial signature descriptions for help
- [10min] Explore the changes when compared to the baseline
  - Are they in line with your expectations?
  - What is unexpected?
  - Why do you think this is?

“Behind the scenes…”

Urban Data Science and all that jazz…

- Policy relevance
- Data, data, data
- Models, spatial analysis, machine learning
- Co-production

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