

CONTENTS

5. Local context: Quantitative baseline assessment

- 5.1 Urban grain
- 5.2 Urban character
- 5.3 Ease of movement: Spatial accessibility

5. Local context **Quantitative baseline assessment**

Approach of the analysis

This report uses advanced quantitative methodologies to cover aspects of urban layout that, according to DETR-CABE, constitute “the basic plan on which all other aspects of the form and uses of a development depend”⁷.

The aim of the analysis is to identify the key structural characteristics and challenges facing Croydon Town Centre and to establish a baseline assessment by looking sequentially at the following spatial variables⁸:

- Urban grain (urban block size, permeability and route choice).
- Urban structure (geometry, connectivity, directness and continuity).
- Accessibility and ease of movement.

In turn, the same methodology will be used to assess the impact of Croydon’s Area Development Framework on those variables.

| Spatial qualities (<i>By Design</i>) | Type of analysis |
|---|---------------------------------|
| Urban grain (block size, permeability, route choice) | Block size analysis - page 47 |
| Urban structure (geometry, connectivity, directness and continuity) | Grid directionality - page 52 |
| Accessibility and ease of movement | Spatial accessibility - page 60 |

The quality of the urban experience

A person’s preference for particular physical environments, as suggested by Kaplan and Kaplan⁹, depends on informational qualities of environments such as:

- Coherence, when environments are easy to organise or structure, when they make sense
- Legibility, when environments suggest that they could be explored extensively without getting lost.
- Complexity, when environments provide enough information to keep one involved with the surroundings.
- Mystery, when environments suggest that, if explored further, new information could be acquired.

This study contributes to an understanding of these qualities through quantitative analysis as well as qualitative evaluation of the juxtaposition of the variables of the urban context.

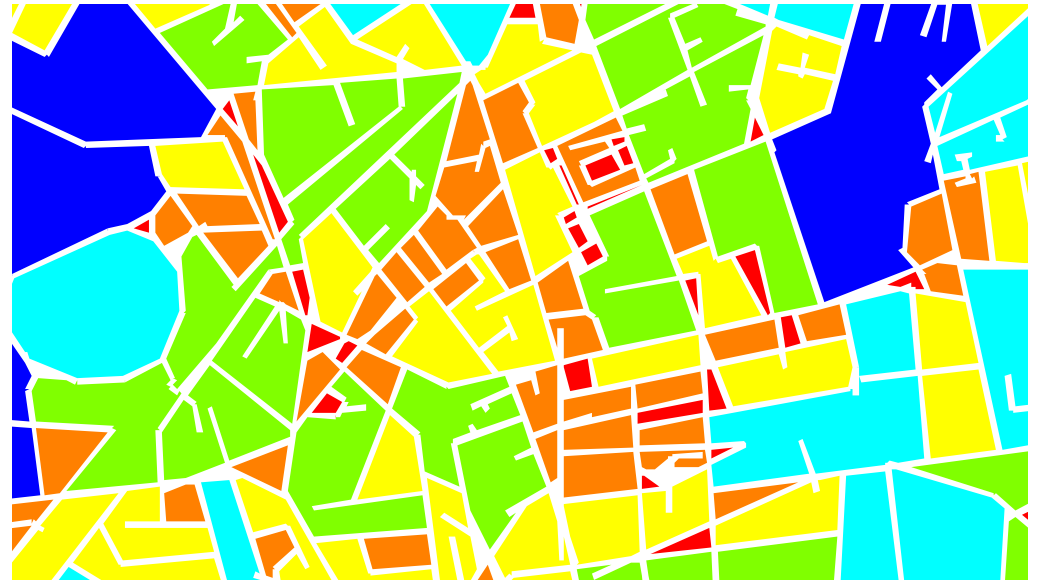
⁷ Other possible factors related to urban layout features and safety were not analysed in the scope of this report, these include: frontage, exposure, ownership and transport service access point location.

Bibliography

⁸ *By Design: Urban Design in the Planning System* DETR, CABE (2000).

⁹ Kaplan and Kaplan in Carmona et al. 2003. *Public Places Urban Spaces: the dimensions of urban design*. Oxford: Architectural Press

Kaplan and Kaplan, 1982, pp.82-7, (see *Public Places Urban Spaces, the dimensions of urban design*, 2003).



CONTENTS

5. Local context: Quantitative baseline assessment

- 5.1 Urban grain
- 5.2 Urban character
- 5.3 Ease of movement: Spatial accessibility

5. Local context **Urban grain**

Introduction

The pattern, arrangement, shape and size of street blocks, plots and their buildings can produce very different results in terms of permeability, connectivity and accessibility. These patterns have a direct influence on route choice preference, ease of movement and legibility within urban environments.

This section analyses Croydon's urban block structure to measure its degree of permeability, which is an important urban design characteristic of good places.

Croydon's urban grid is analysed in the context of another well known area in London, the King's Road, which is known to be a well functioning local centre. Refer to **Appendices 4 and 5** for methodological background.

Permeability, urban block size, and route choice

An important urban design characteristic of good places is their degree of permeability. Too much or too little permeability can result in poor legibility or restricted movement, which can have a negative impact on the quality of safe and easy movement.

Permeability is directly related to the size and layout of urban blocks. The network of continuous public open space that exists between the blocks can be called the "permeability network". Thinking of space in this way highlights how block size, and arrangement, give form to the permeability network. It in turn defines the path of streets, open spaces, and lanes.

Different sized blocks create different types of permeability networks, often referred to as the urban grain. A pattern of many small sized blocks can be said to have a fine urban grain, while patterns of fewer, larger blocks can be said to have a coarse urban grain.

The quality of an area's urban grain directly affects the choice of routes. Finely meshed permeability grids offer many different ways to get from place to place minimising trip length and backtracking.

Urban grain and land uses distribution

Certain kinds of block sizes and arrangements lend themselves better to certain kinds of land uses. Research has found that the grain of streets is usually finer around busy shopping streets, and coarser in more residential areas. This is because smaller blocks maximise the available surface for display and interaction, while minimising journey length. This pattern helps support successful retail, catering, and leisure activities. Such "grid intensification" is an important property of urban centres and sub-centres.

The converse is true for residential areas. These areas tend to have lower movement levels by nature, and increased permeability can often dilute already low movement. The result may be decreased perceptions of safety and increased criminal opportunism.

What is the effect of getting this balance between block size, permeability, and land use wrong? Large blocks in the wrong location reduce permeability and can impede movement, resulting in dead or inactive spaces. Conversely, small blocks in the wrong location can increase unnecessary permeability, further diluting movement activity levels, and possibly even creating social risks. This is often referred to as over-permeability. Over-permeability can have long lasting consequences on public space network management and maintenance costs.

Combining urban grain with appropriate land uses, in the right places, is the key to creating a well functioning urban place.

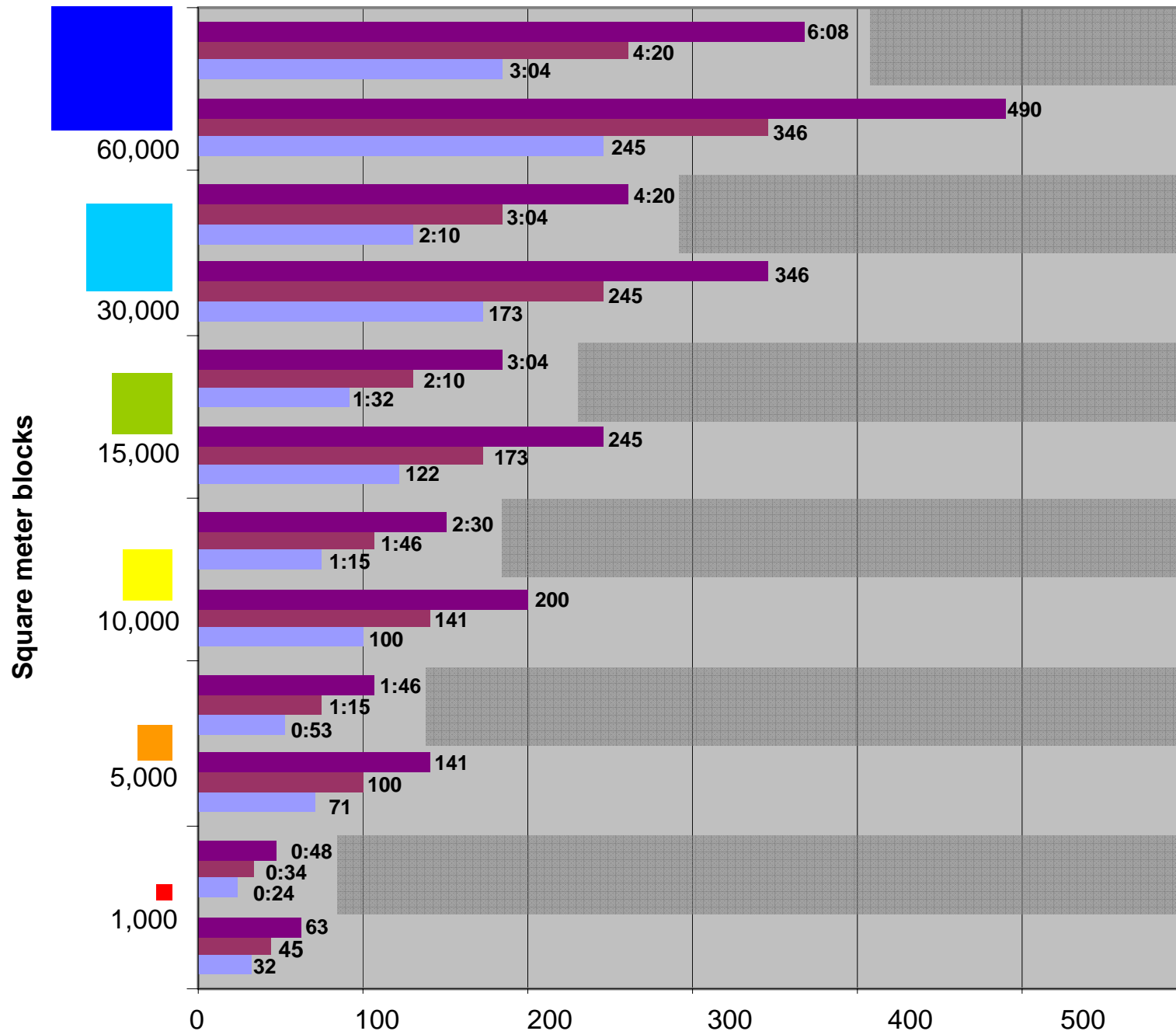
The socio-economic importance of permeability

As well as providing access for movement, the public open space network provides increased opportunities for social, economic, and cultural interaction. Research has found a symbiotic relationship between the urban grain, pedestrian movement, and inter-personal transactions. The more balanced and well structured these factors are, the better the public spaces and associated land uses perform. Getting this balance right is vital to the social, economic, and cultural health of cities.

Methodology

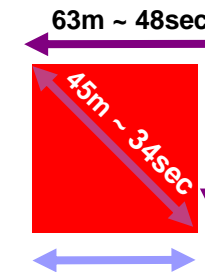
For Croydon Town Centre a constant width, line-based representation of the public space network available to pedestrians, was used to delineate the pattern of blocks and their sizes. The resulting blocks were then coloured according to their area: varying between dark blue for very large blocks, to red for very small ones. This technique created an easily readable map which represent different urban grains, and enables comparison between different types of areas.

5. Local context **Urban grain**



Transport for London – Public Transport Accessibility Level (PTAL) consider walk speed to be 4.8 km/h, or 80 m/min, or 1.33 m/s. Cyclist are considered to be travelling, on average, twice pedestrian speed.

The table on the left shows the relation between block size and walking distance.



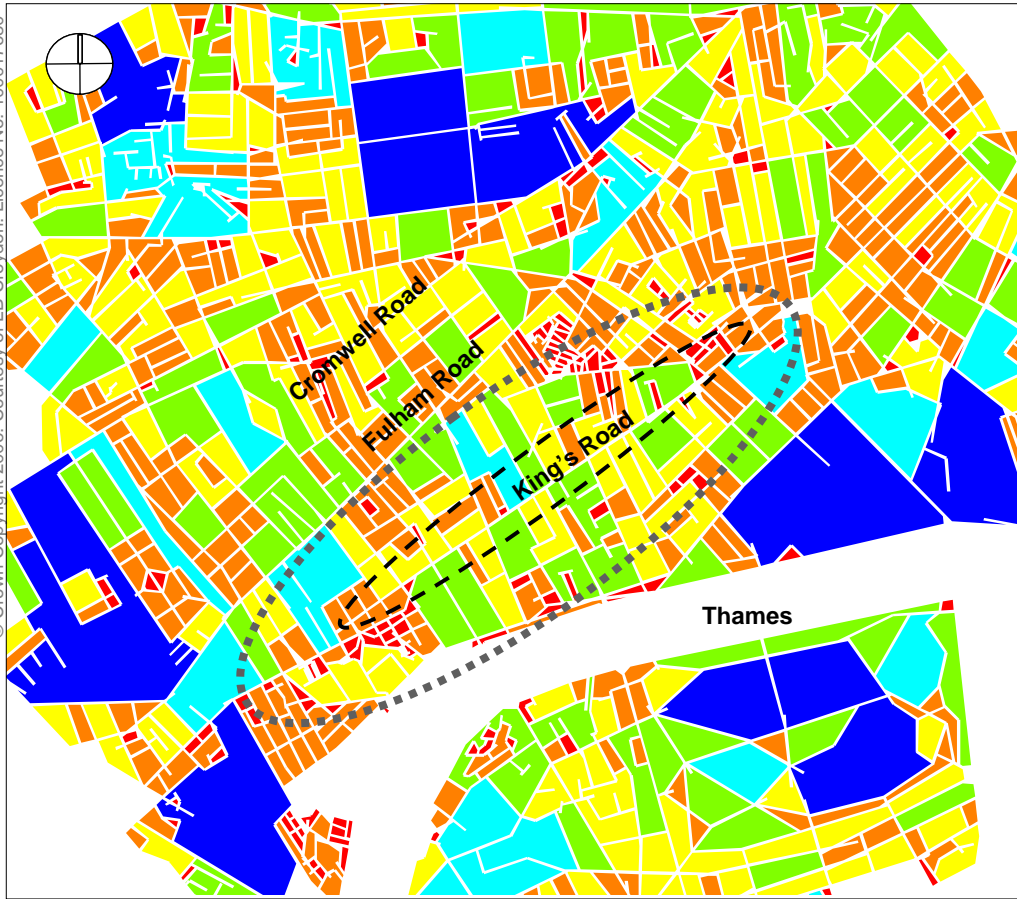
- 32 m x 32 m = 1,000 m²
- 71 m x 71 m = 5,000 m²
- 100 m x 100 m = 10,000 m²
- 122 m x 122 m = 15,000 m²
- 173 m x 173 m = 30,000 m²
- 250 m x 250 m = 60,000 m²

- Demi-perimeter
- Diagonal
- Side

- Metres
- Minutes

5. Local context Urban grain – Town centre comparison King's Road

© Crown Copyright 2006. Courtesy of LB Croydon. Licence No. 100017680



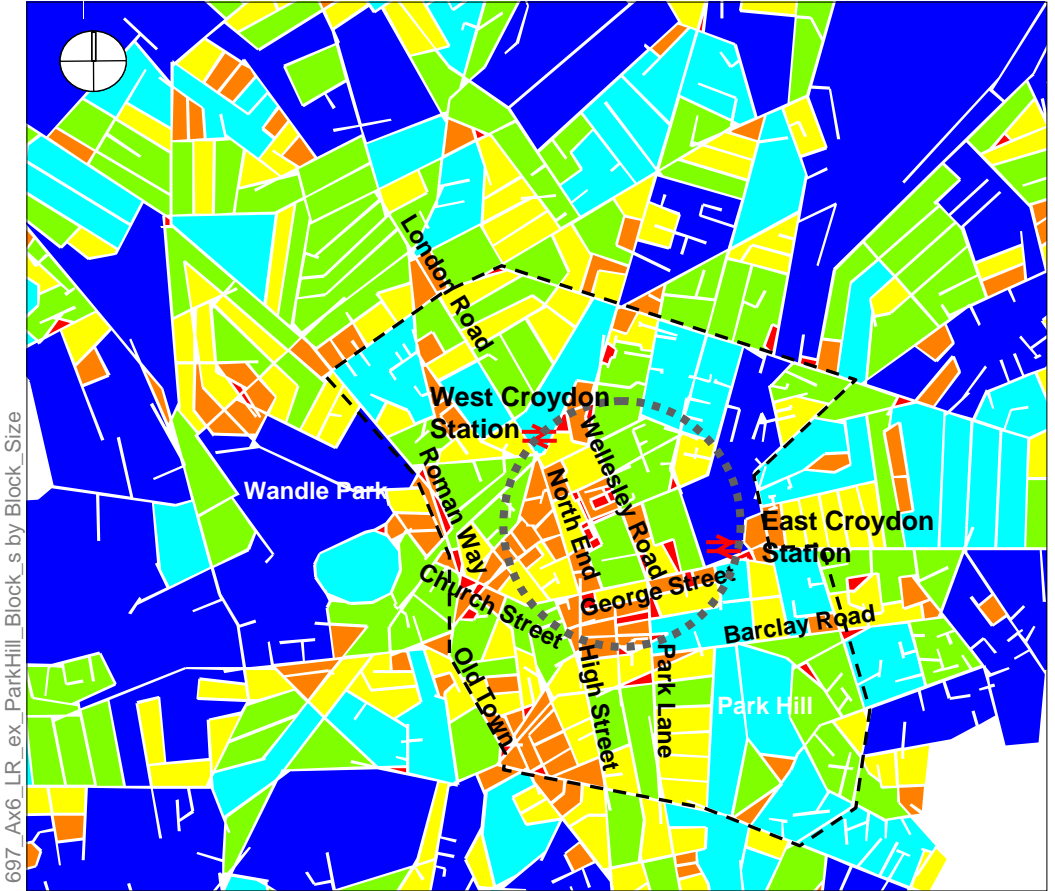
The block size map to the left, highlights King's Road in South Kensington, Central London. The area displayed is on a comparable scale to the following images for Croydon.

The King's Road shows a mixture of fine to fairly coarse blocks. However, their sizes are more regular than in the Croydon Town Centre Area.

Additionally, the larger rectangular blocks along King's Road display their short side to the High Street, increasing permeability from and into the King's Road.

In comparison with the Croydon Town Centre area, this block size pattern provides a good permeability.

The Croydon Town Centre Area has a mixture of fairly coarse block sizes, with a variety of different shapes. In comparison



697_Ay6_LR_ex_ParkHill_Block_s_by_Block_Size

to block sizes in other shopping areas in Central London, block sizes in Croydon Town Centre are very large.

Permeability is better during the day time (left) when the shopping centres on both sides of North End (highlighted by grey dotted circle) are open. The routes through the shopping centre increase permeability by breaking down the large blocks.

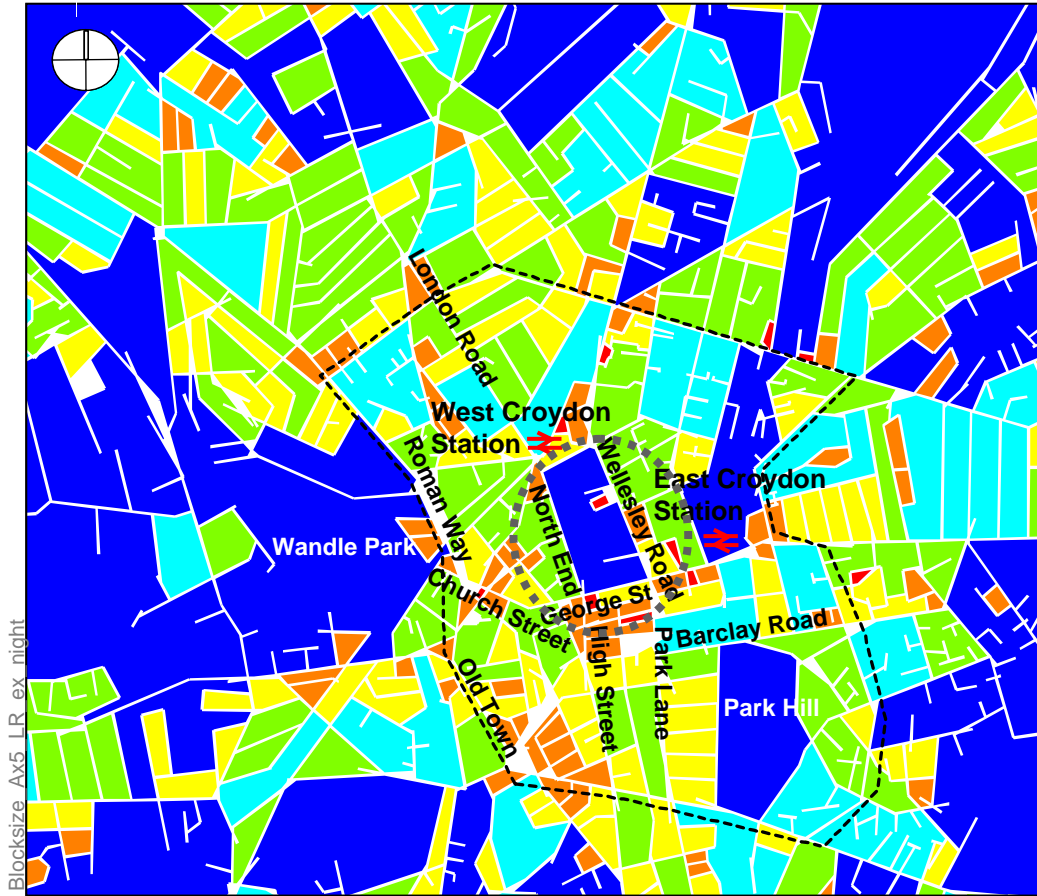
Fine grain (red and orange) is found in the retail core area, around the

crossings of North End and George Street, including some outdoor and indoor shopping spaces as well as the market. A coarser grain (yellow and green) is also found in this area, in the New Town area east of Wellesley Road, and in the Old Town/Civic Quarter south of Church Street.

Larger blocks (in blue) correspond with parks, railway embankments and some residential areas. A coarse grain and low permeability is also visible in the blocks along the railway tracks of both East and West Croydon Stations.

697_kingsroad

5. Local context Urban grain – block size, block shape and permeability (night time)

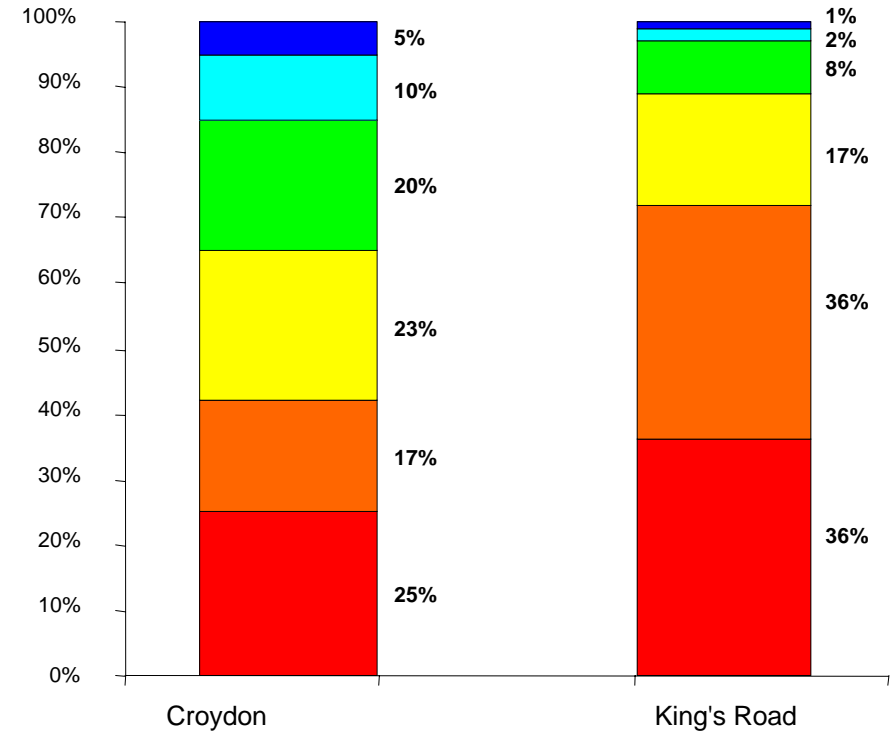


Blocksize Ax5_LR_ex_night

During the night, the permeability around North End decreases even further as the routes through the shopping centres are closed.

comprehensive management strategy in terms of the shopping centres closing times.

There is a need to explore ways of overcoming the problems arising from the lack of permeability by proposing routes that break up large blocks. With regards to the shopping centres, adequate alternative routes need to be provided, which diminish travel distance. These need to be designed in conjunction with a



- Study boundary area (AAP)
- Retail core

- Block size in square metres**
- 200 – 2,000
 - 2,000 – 8,000
 - 8,000 – 16,000
 - 16,000 – 32,000
 - 32,000 – 64,000
 - > 64,000

5. Local context **Urban grain: key findings and recommendations**

Key findings

- In comparison to the spatial logic of centrality in other town centres, Croydon town centre has a coarse block structure
- Permeability in Croydon changes from day to night time, as some routes become inaccessible in the evenings. This is the case for the parks and shopping centres.
- Larger blocks generally correspond to parks, railways, roads infrastructure and some residential areas. These large blocks result in low permeability and can become barriers to movement.
- Fine grain is found in the retail core area, at the intersection of George Street and North End. Small blocks and the resulting high levels of permeability are in line with 'live' centre activities, such as retail and catering.

Recommendations

The study highlights the need to increase the east-west permeability in certain central areas by breaking large blocks that function as barriers to pedestrian movement.

This is of particular urgency in areas dominated by retail and commercial land uses, and blocks constituted by transport interchanges (such as the East Croydon Station).

Identified need for specialist study

There is a need to further assess the impact that Croydon Town Centre's coarse urban grain is having on permeability. To this end, we recommend that a pedestrian movement survey is carried out.

Undertaking observations at different times of the day would also help to identify the effects the nightly closure of the shopping centres is having on pedestrian movement.