

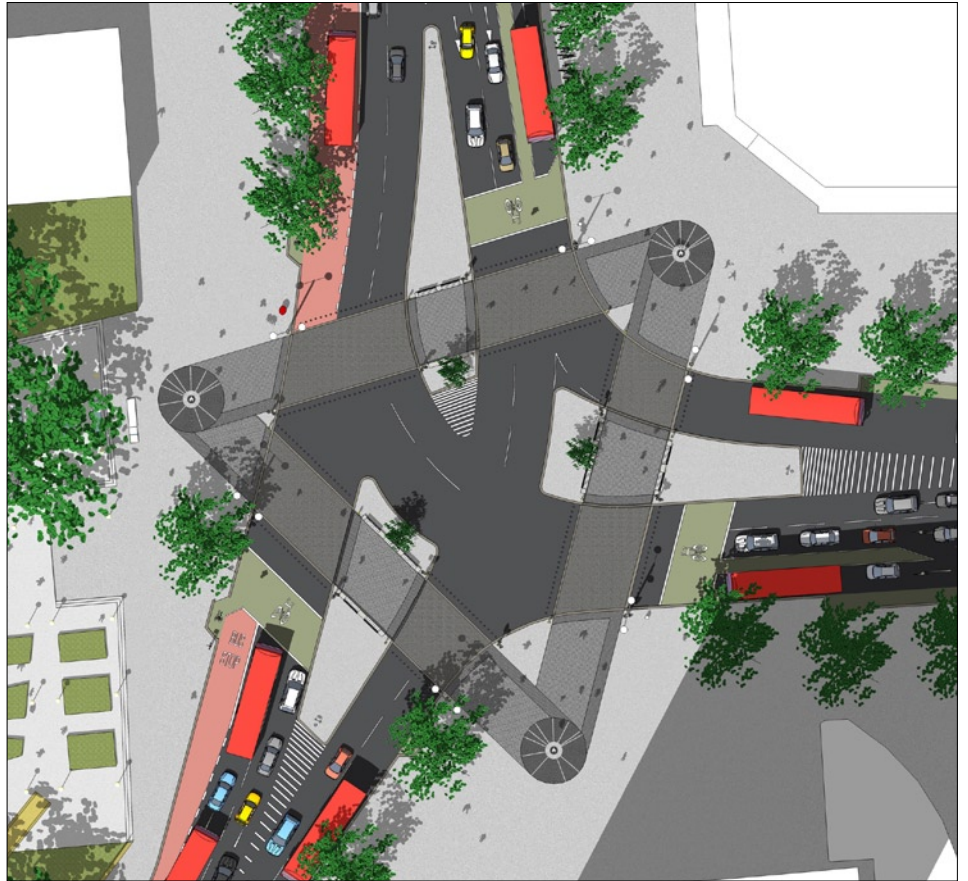
Elephant & Castle Southern Crossing

POLICY OBJECTIVES

- Overcoming social exclusion.
- Improving pedestrian safety.
- Growing a local movement economy.
- Enhancing the public realm.

SERVICES

- Urban design vision.
- Design options generation.
- Spatial severance analysis.
- Pedestrian forecast modelling.
- Stakeholder negotiations.
- Detailed design development.
- 3D visualisation.



Using new pedestrian modelling methodologies, Space Syntax has developed an innovative design solution for a major junction in central London.

The proposal

The Southern Crossing at the Elephant and Castle in central London replaces the existing network of unpopular subways with three safe, convenient and comfortable surface crossings.

Working in partnership with transport consultants JMP, Space Syntax has created a design for this important junction, which is emblematic of the further public realm – focused regeneration of the area. Each of the three sides of the crossing is aligned with strategic pedestrian desire lines, ensuring that the design provides convenient connections across the wider area. The simplicity of the form is carried through into the detailed design of the landscaping and the location of seating, signage and lighting.

Regeneration context

Space Syntax has acted as specialist design advisor for the regeneration of the Elephant and Castle since 2001. Our evidence-based approach, with its focus on the design of the public realm, has assisted the London Borough of Southwark and its consultant team including Foster and Partners/Make (masterplanning), Tibbalds (planning & urban design) and JMP (transport) - in generating proposals for the comprehensive redevelopment of one of London's most blighted urban centres.

Site analysis

Learning from precedents and identifying the features that influence pedestrian behaviour.



A



B

Front page

The triangular form provides a strong sense of design identity.

A, B, C

The existing, poorly-used subway system deters pedestrians from moving across the area, suppressing pedestrian demand and rising fears about pedestrian safety.



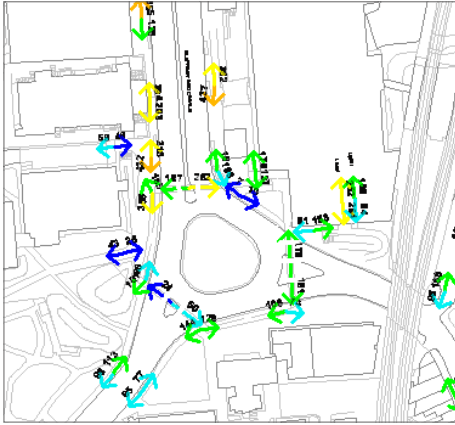
C

The current design of the Southern Roundabout is characterised by the hostile layout of the subway network, which inhibits pedestrian access and exacerbates severance between communities. Initial highways design work by Space Syntax and JMP established the principle that these subways should be removed and replaced with at-grade crossings.

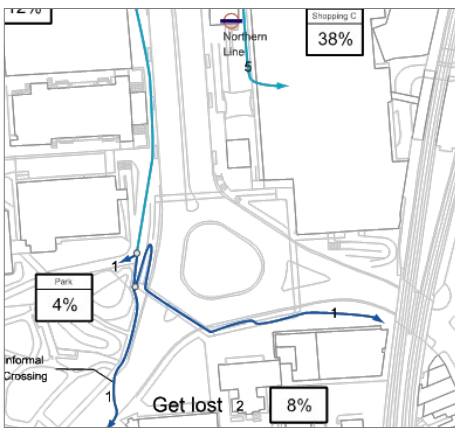
In order to understand the behaviour of pedestrians at the new crossings, careful research was conducted on numerous case studies throughout central London. The studies revealed that straight crossings which are located on pedestrians' natural desire lines were used more frequently and more safely. Staggered crossings and those offset from pedestrians' natural paths of movement were less well-used with greater numbers of pedestrians crossing outside the formal crossing and during the red pedestrian signal phase. Additionally, straight crossings aligned with desire lines were on average 40% shorter than staggered ones.

Pedestrian movement survey

Creating an evidence-base to understand existing conditions and develop the design brief.



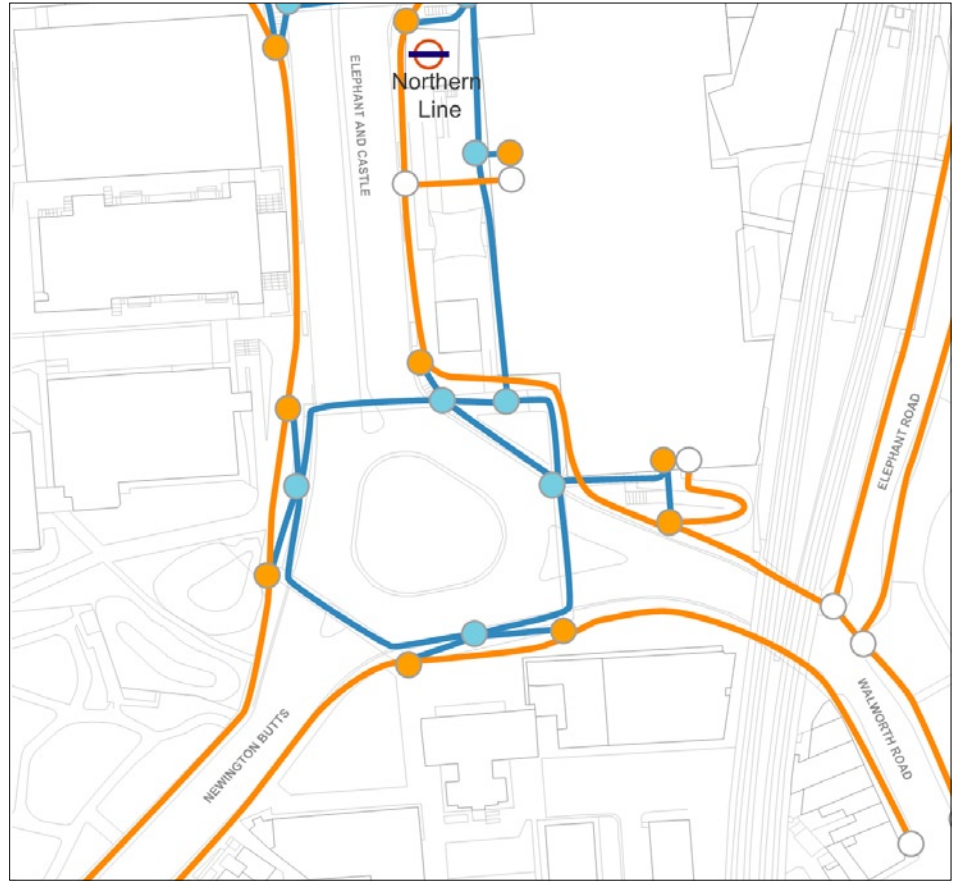
D



E

D
Pedestrian movement survey: pedestrian volume.

E, F
Pedestrian movement survey: pedestrian route-choice preference.



F

The findings of the London-wide case studies were reinforced by conducting a detailed survey of current pedestrian behaviour at the Elephant and Castle. This involved measuring both the volume of flows as well as the route-choice preferences of pedestrians arriving at the junction from different directions.

The evidence generated by the research led the design team to challenge conventional crossing design standards. Through extensive consultation with Transport for London, this evidence has been presented, discussed and agreed to support the case for straightening the crossings at the Southern Crossing and avoiding what would otherwise have been a traditional, staggered solution.

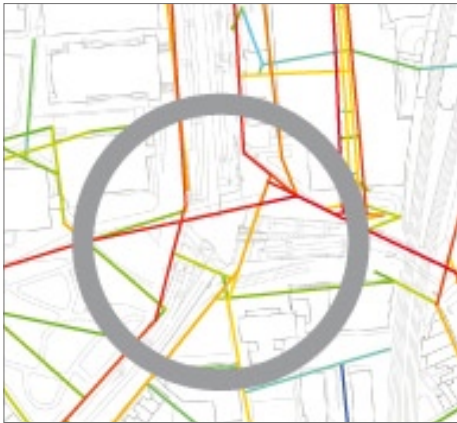
The straightening of the crossings has itself presented design opportunities to create more than a pedestrian crossing – hence the ambition to see the Southern Crossing as a place in the wider urban fabric and, consequently, the quest to find a coherent overall form.

Design options appraisal

Employing a pedestrian forecast model to generate, optimise and negotiate design proposals.



G



H



I

G, H, I, J

Design evaluation exercise: using a pedestrian forecast model to test design options.

G

Staggered crossing: the least effective.

H

Straight crossing: improved accessibility.



J

A pedestrian forecast model was constructed to assess pedestrian demand at the crossing. The different design options for the layout were tested before the triangular layout was established as being the most effective in terms of its spatial accessibility and, therefore, pedestrian demand. Using the pedestrian model, a total of 13 million annual pedestrian crossings have been forecast - equal to the forecast number of vehicles through the junction.

I

Adjusted straight crossing - highest levels of accessibility.

J

Adjusted straight crossing set into the development framework - the most effective option overall.

The triangular shape creates three separate crossing points: the Elephant and Castle crossing is forecast to have the highest movement levels at a projected 4.8 million pedestrians a year; the Walworth Road crossing is next with 4.2 million, and the Newington Butts crossing is forecast to cater for 3.8 million pedestrians a year.

In meeting this demand, capacity at the crossings has been evaluated. The widths of crossings and the areas of the central islands have been designed to accommodate projected numbers at Level of Service A, the highest pedestrian standards for pedestrians.



L

Back page

Detail of one of the three wayfinding medallions, which provide pedestrians with directions to key local and large-scale destinations.

K

Aerial view from the east showing the redesigned St. Mary's Churchyard in the background.

L

Eye-level view of a central island, providing a landscaped place for people to rest.



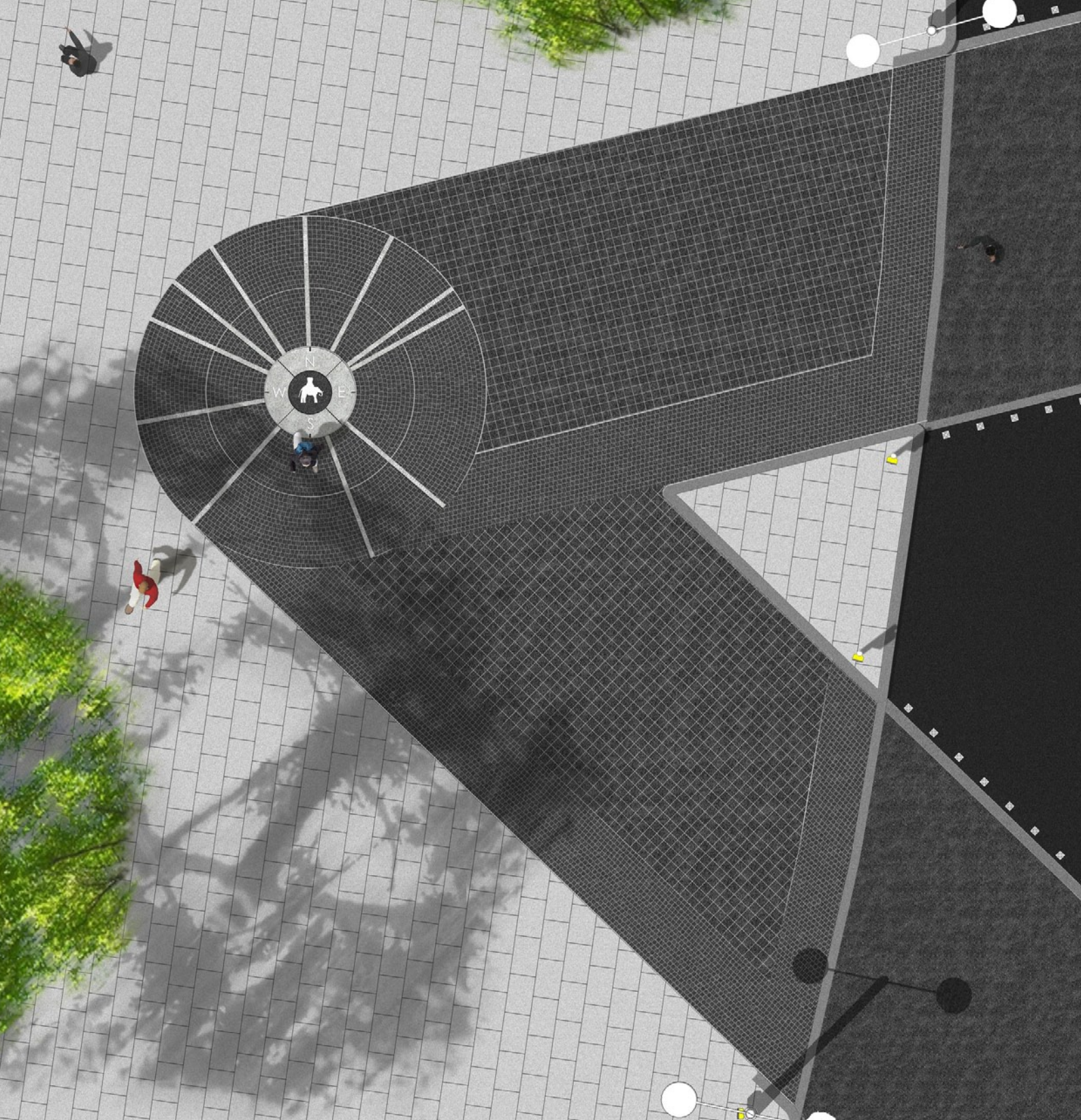
K

Detailed design

The overall triangular layout of the crossing is not only the most suitable shape to align with pedestrian routes but it also creates a strong sense of identity through its form and detailed design.

The local authority is on track to realise its aspirations for the area and the design has gained public support.

The palette of materials draws on precedents found elsewhere in London and has been selected to provide a subtle backdrop to foreground projects such as the redesigned St. Mary's Churchyard by Martha Schwartz and Partners.



Space Syntax

create space : create value



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