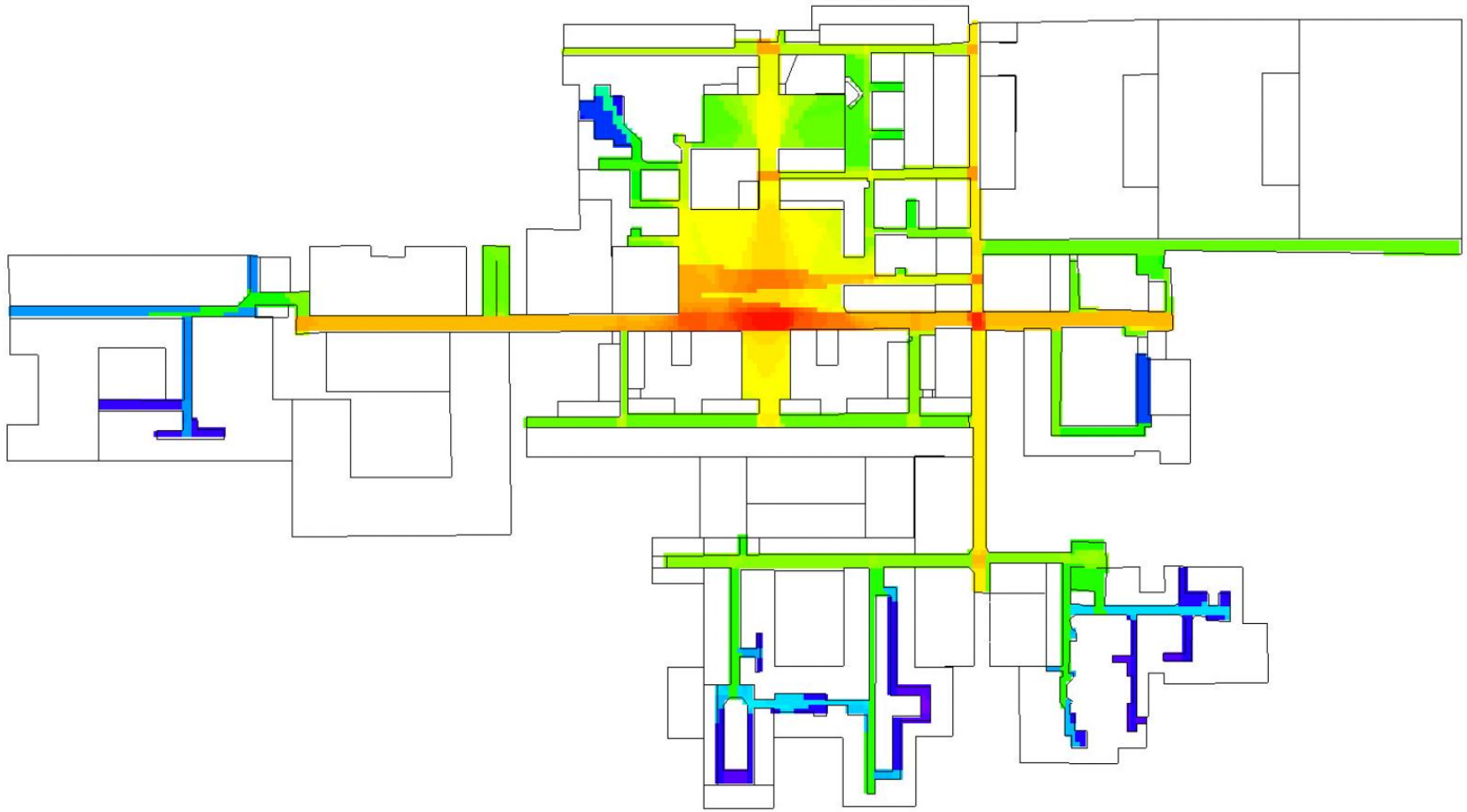
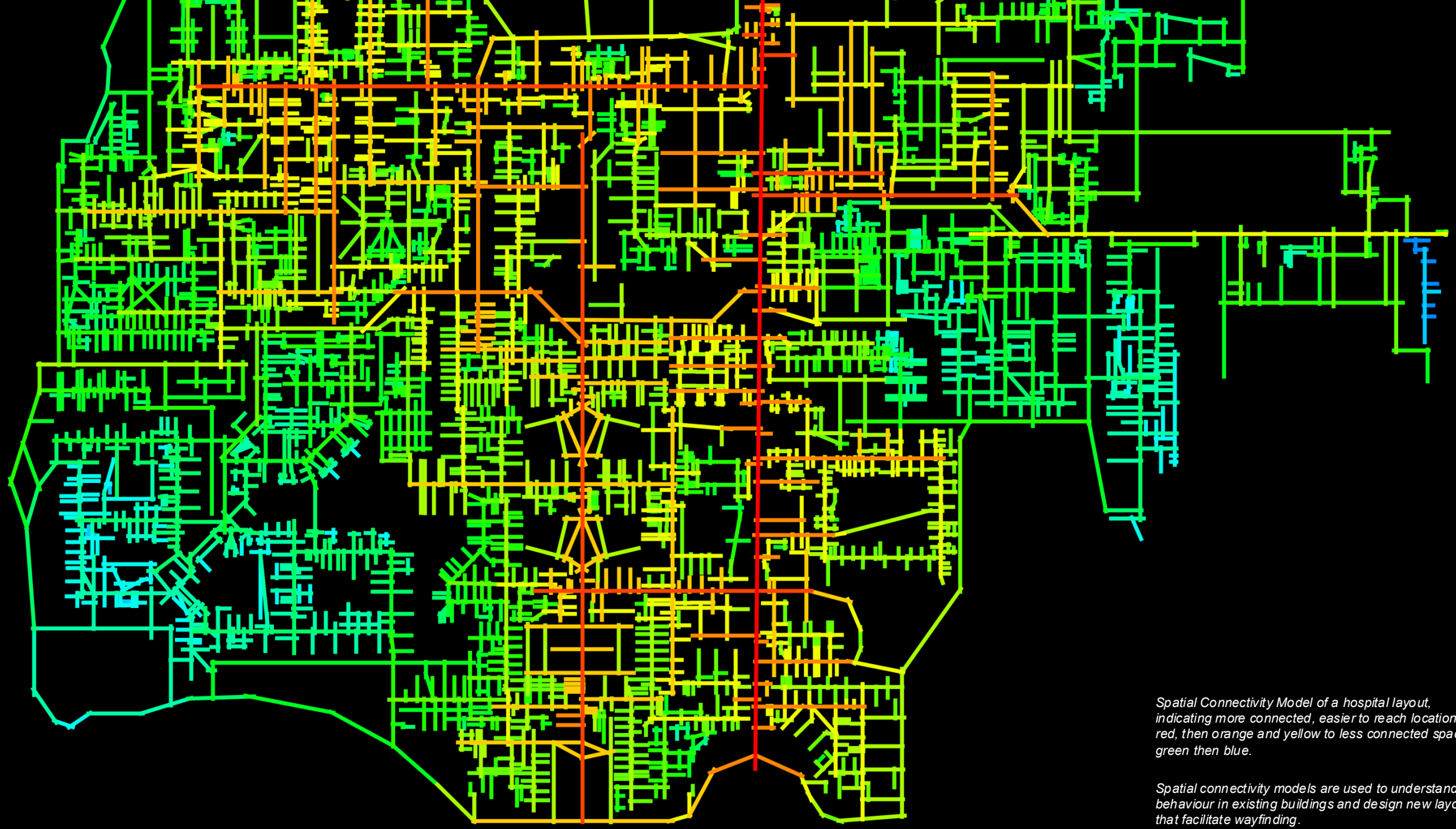


Integrated health

Space Syntax



Spatial Connectivity Model of a hospital layout, indicating more connected, easier to reach locations in red, then orange and yellow to less connected spaces in green then blue.

Spatial connectivity models are used to understand user behaviour in existing buildings and design new layouts that facilitate wayfinding.

Space Syntax © 2026

Integrated health

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Our ‘spatial intelligence’ approach	7
Our services & products	8
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Cities & regions	22
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Place is a key part of the health equation

Health is shaped by the environments in which we live, work, move and receive care.

The way buildings are laid out shapes the way people move through them: how easily they find where they need to be and how often they get lost and confused.

The way cities are planned affects how healthcare is accessed and delivered. It also influences everyday activities – walking, driving and social interaction - that underpin physical and mental health outcomes.

Space Syntax brings an understanding of these relationships into the planning and design of healthcare environments at every scale.

Building on decades of academic research and professional practice, we work across scales to improve the delivery and experience of care to create places that support health and wellbeing,

By making the relationship between people, place and health both visible and measurable, we provide a stronger evidence base for design, planning & policy decisions.



Warneford Park Mental Health Campus Oxford, UK © Eric Parry Architects.

The challenge | Integrated health

Healthcare is complex, multi-faceted & siloed

Changing demographics, lifestyles and evolving health needs are reshaping the demands placed on healthcare services.

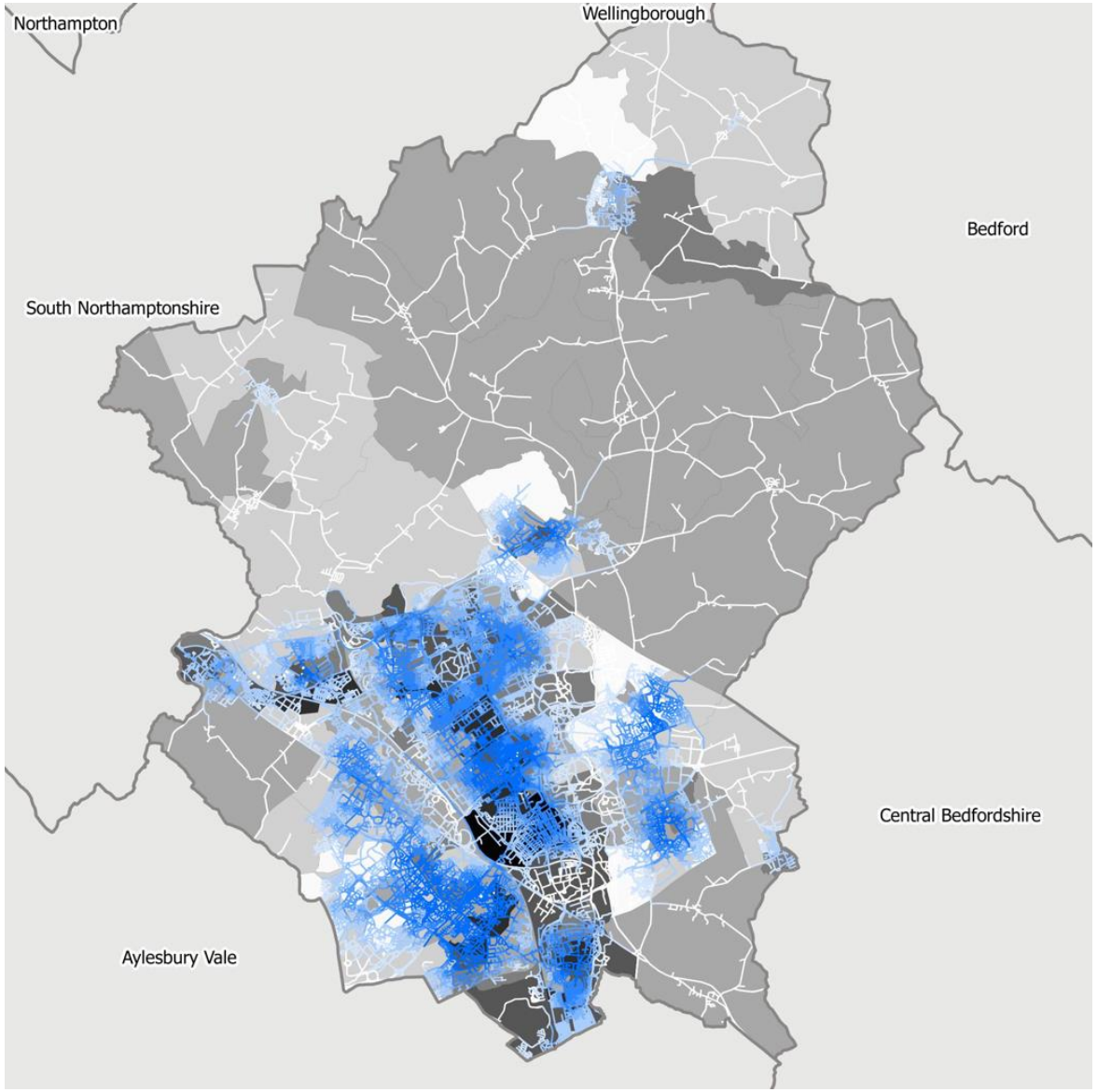
Meeting these needs is not only a question of providing effective care, but also of creating the conditions that support health in everyday life:

- opportunities to be active
- access to green space
- connections to essential services
- awareness of the wider community
- social interactions in public spaces.

People's everyday experiences are shaped by multiple stakeholders across healthcare, planning, transport & the built environment. Yet decisions are often made separately, despite their combined influence on health. This can make it difficult to understand how individual decisions interact, where interventions can have wider benefits, or where unintended consequences may emerge.

These conditions are also unevenly distributed across places and populations.

A more integrated perspective can therefore help us understand not only how places support health, but who has access to those opportunities and where spatial decisions can contribute to more equitable outcomes.



Combined place and demographic risk analysis in Milton Keynes, UK.

Our ‘spatial intelligence’ approach | Integrated health

Evidence-based

Understanding how place shapes health

Our approach connects physical & spatial conditions with human activity, experience and longer-term outcomes.

From the layout and operation of healthcare environments to accessibility, mobility and patterns of activity across neighbourhoods and cities, we examine and quantify how place influences the way people move, behave and access opportunities.

By bringing together evidence across these different scales, we move beyond describing what is happening to understand why patterns occur and which aspects of place may be contributing to them.

Through measurement, comparison and validation, we can identify inequalities, assess performance, target interventions and test the potential implications of change.

Turning complex data into actionable evidence helps connect spatial decisions to measurable outcomes, strengthening the evidence base for design, planning and policy that supports health.

Multi-scale

Connecting health from the building to the city

Our approach considers health across the multiple scales at which people experience & interact with the built environment.

From healthcare buildings to their surrounding communities, and from neighbourhoods to cities and regions, each scale reveals a different part of the relationship between place and health.

Looking across scales allows us to connect the performance and accessibility of healthcare with the wider spatial conditions that influence everyday activity, mobility and opportunities for healthier lives.

Crucially, these scales are not independent. Decisions made at one scale can create opportunities or constraints at another.

By connecting across scales, we build a more complete understanding of how planning and design decisions work together, supporting an integrated approach to care, access, prevention and health equity.

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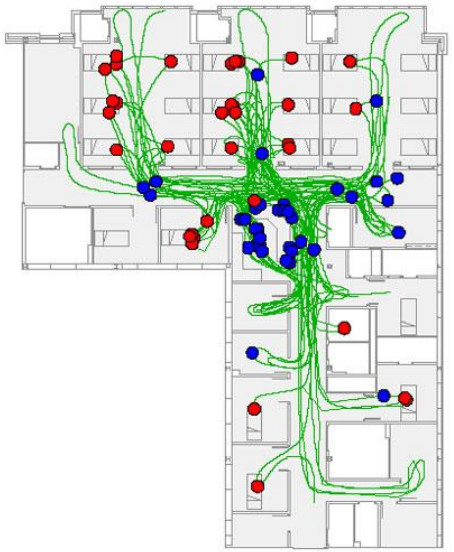
Our services & products | Integrated health

We support clients across the design, planning & policy process, using evidence to understand existing conditions, shape interventions & anticipate their impacts.

01 Appraisal & benchmarking

Understand current performance & identify opportunities for change

We analyse & benchmark spatial conditions, activity & outcomes to identify strengths, inequalities, opportunities & priorities for intervention.



02 Strategic planning & design

Turn evidence into better-informed spatial decisions

We develop & test strategies & options, helping clients understand where & how to intervene to support better health outcomes.



03 Performance forecasting

Understand the potential impact of change

We use predictive modelling & scenario testing to compare alternatives, anticipate outcomes & support policy, investment and decision-making.



Integrated health | **Buildings & estates**

Introduction | Buildings & estates

Creating environments that support better care, operational performance & user experience.

Our focus

- Separation and interaction of patient, visitor and staff routes
- Visibility, oversight and blind spots
- Adjacencies between critical clinical functions
- Continuity of patient journeys from arrival to discharge
- Capacity and pressure under peak conditions
- User experience and comfort

Value

- Reducing risk of operational failure
- Improving safety, supervision & efficiency
- Supporting smoother patient journeys & staff workflows
- Enabling evidence-based redesign without disrupting care
- Improving quality of experience of all users.



Triage and major reception area in the A&E department at St Thomas' Hospital London, UK © ADP Architects.

Buildings & estates | Selected projects

St Thomas A&E | Guy's & St Thomas' NHS

Emergency Department improvements

Evaluation of Emergency Department Layout & Performance & recommendations for improving the experience of patients, staff & visitors.



Bristol Southmead Hospital | University of Manchester

Hospital layout & circulation study

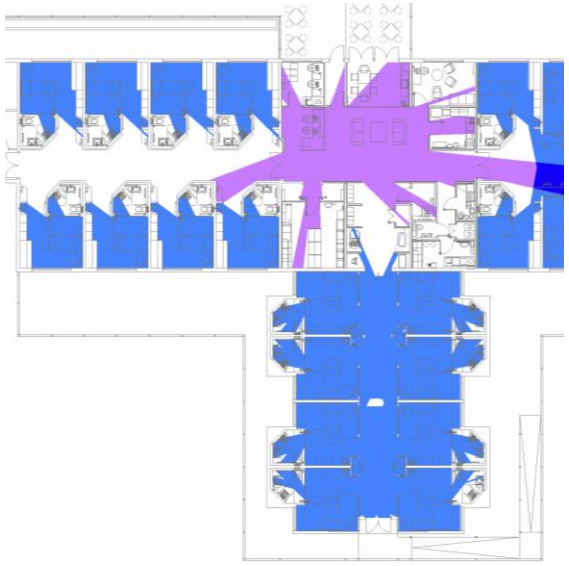
Creation of design principles & spatial models to develop & test emerging proposals that encourage interaction & innovation.



Hillingdon Hospital Pilot | The National Patient Safety Agency

Ward layout study

Evaluation of ward layout for delivery of care, focussing on the impact of 100% single room accommodation in hospital wards.



Hospital, China | Beijing Institute of Architectural Design

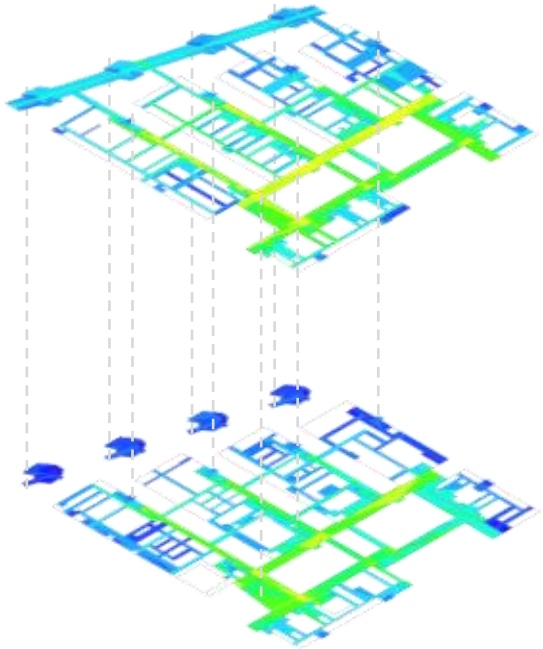
Hospital layout optimisation study

Development and testing of a Circulation Model to evaluate & optimise the proposed hospital layout, enhancing spatial accessibility, wayfinding & overall user experience.

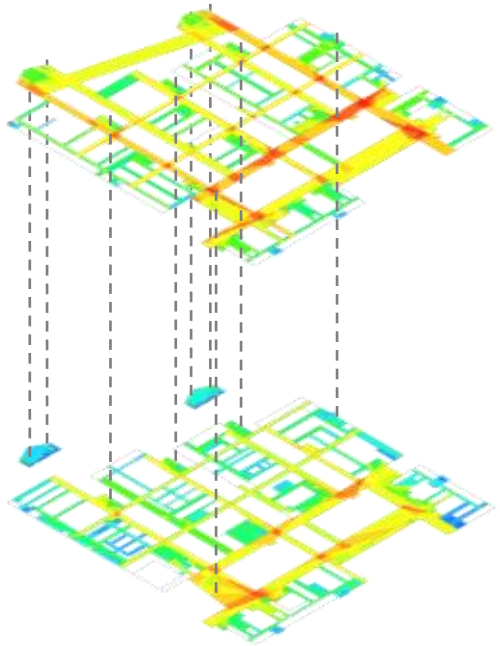


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Case study | **Hospital** China



A. *Spatial accessibility of the proposed layout.*



B. *Spatial accessibility of the optimised layout.*

Optimisation of horizontal & vertical circulation design to improve wayfinding & user experience in a major new hospital.

Client
University Hospital

Year
2020

Role
Strategic design advisor

Team
Beijing Institute of Architectural Design

Key Features
Spatial analysis
Proposed option testing

The opportunity

Space Syntax was asked to undertake a rapid, high-level review of the proposed designs with the aim of identifying opportunities to improve the horizontal and vertical circulation of staff, patients and visitors.

Our contribution

We constructed a Hospital Circulation Model of the two main floors of the hospital, measuring levels of Spatial Accessibility in order to provide an initial indication of likely flow densities. The modelling also identified pinch points where over-crowding was likely, as well as spatial 'dislocations': places where the spatial layout was overly complex and therefore likely to lead to poor wayfinding.

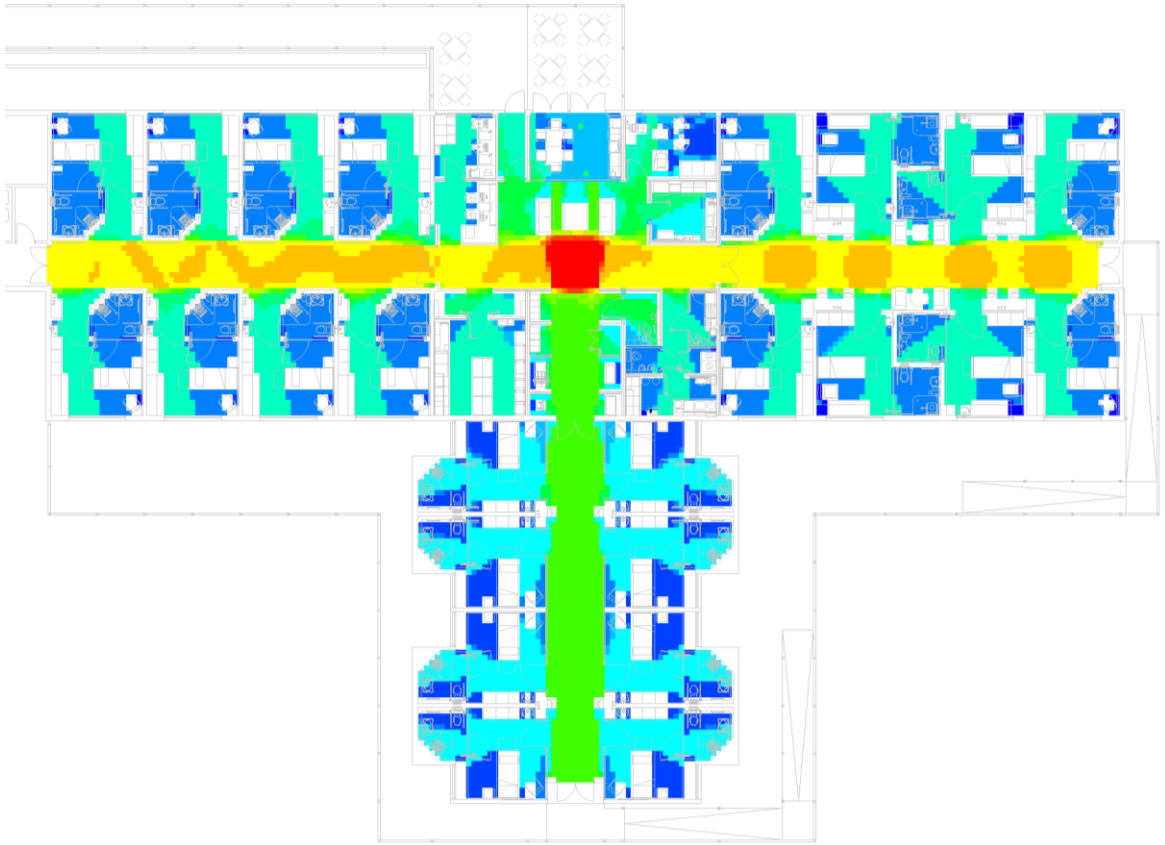
Based on the results of this analysis, we identified a series of design amendments to the spatial layout of the building as well as the location of vertical circulation points. The Hospital Circulation Model was used to test each amendment individually and in combination, using a scoring system to rank different scenarios.

The outcome

Undertaken in just over a week, our work delivered critical insights at a key point in the design process, targeting realistic amendments to the designs and illustrating the benefits of these for overall hospital performance.

Space Syntax © 2026

Case study | **Hillingdon Hospital** London, UK



An evaluation of ward layout on the delivery of care.

The opportunity

Space Syntax was commissioned by the Department of Health and the National Patient Safety Agency to join an interdisciplinary research team investigating the impact of 100% single room accommodation in hospital wards on patient care and specifically to evaluate the effect of spatial layout and room configuration on staff working practices.

Built as a temporary structure in the car park of Hillingdon Hospital, the Bevan Ward research project offered a unique opportunity to test examples of best practice in ward design. The 24 bed T shaped ward has three ensuite 8-bed clusters that share a central support zone with reception, kitchen and social areas. Each of the three wings has been designed to test different room configurations based on the location of ensuite facilities: standardised, courtyard and outboard.

Client
Department of Health National Patient Safety Agency

Year
2010

Role
Spatial Strategy & Circulation Consultant

Team
York Health Economics Consortium

Key Features
Baseline study
Post-occupancy surveys

Space Syntax © 2026

Case study | **Hillingdon Hospital** London, UK

Our contribution

The analytic process included:

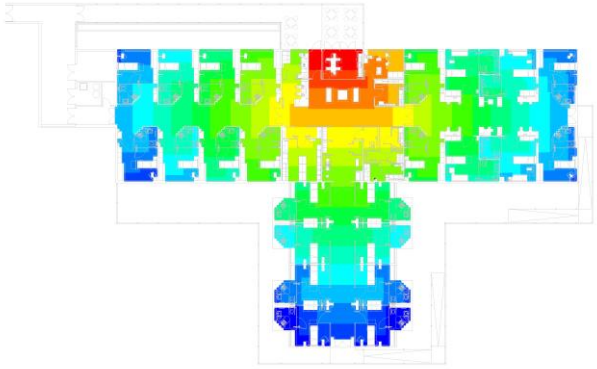
- observation of occupation and interaction patterns of patients, visitors and staff;
- nurses' travel paths and interaction patterns;
- spatial accessibility analysis;
- room and bed-head visibility;
- walking distances;
- natural surveillance & visual field analysis; and
- structured interviews and questionnaires with key members of staff.

In order to establish a comparative baseline, the first part of the research used four existing wards of various configurations and accommodation types as a case study. These case studies included two wards within Hillingdon hospital, one of which was then relocated to the newly built Bevan ward.

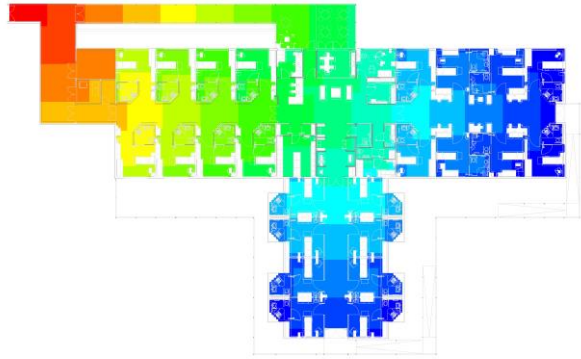
The second stage applied the same methodology to the Bevan ward, with two observations studies. The first undertaken in February 2009, a month after the Bevan ward was commissioned as a working ward, with a second follow-up on site surveys in December 2009 and January 2010.

The outcome

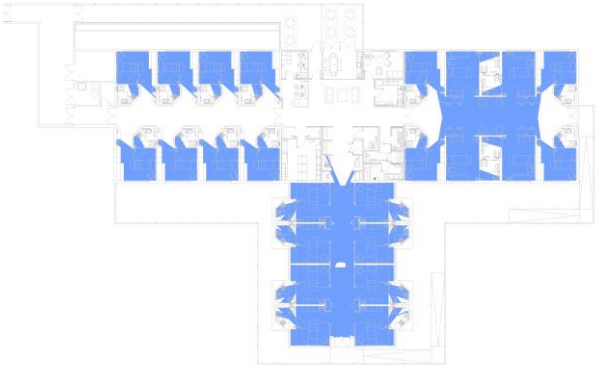
Single-room accommodation is likely to provide a better patient experience than that offered in multi-bed wards as long as key conditions are achieved. These refer firstly to the design of the layout and secondly to the fundamental requirement for staff to adapt their practices to the new layout. The success of the Bevan ward was only possible after the charge nurse re organised certain routines that, while successful in multi-bed bays, were inefficient in a single-room environment.



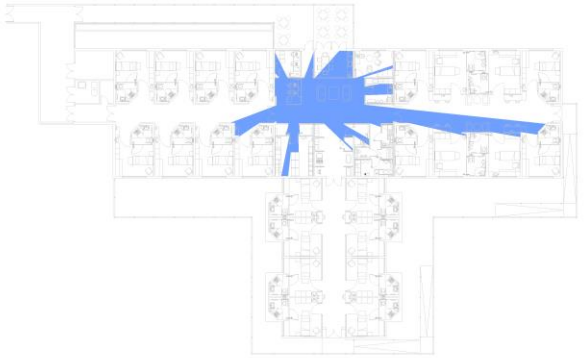
A. *Spatial accessibility model of the pilot ward highlighting the intersection of corridors as a strategic location. Visitor entrance & the reception are located adjacent to this strategic point (previous page).*



B. *Walking distance from the visitor entrance for the pilot ward.*



C. *Walking distance from the staff entrance for the pilot ward, demonstrating a deeper structure compared from the one from the visitor entrance.*

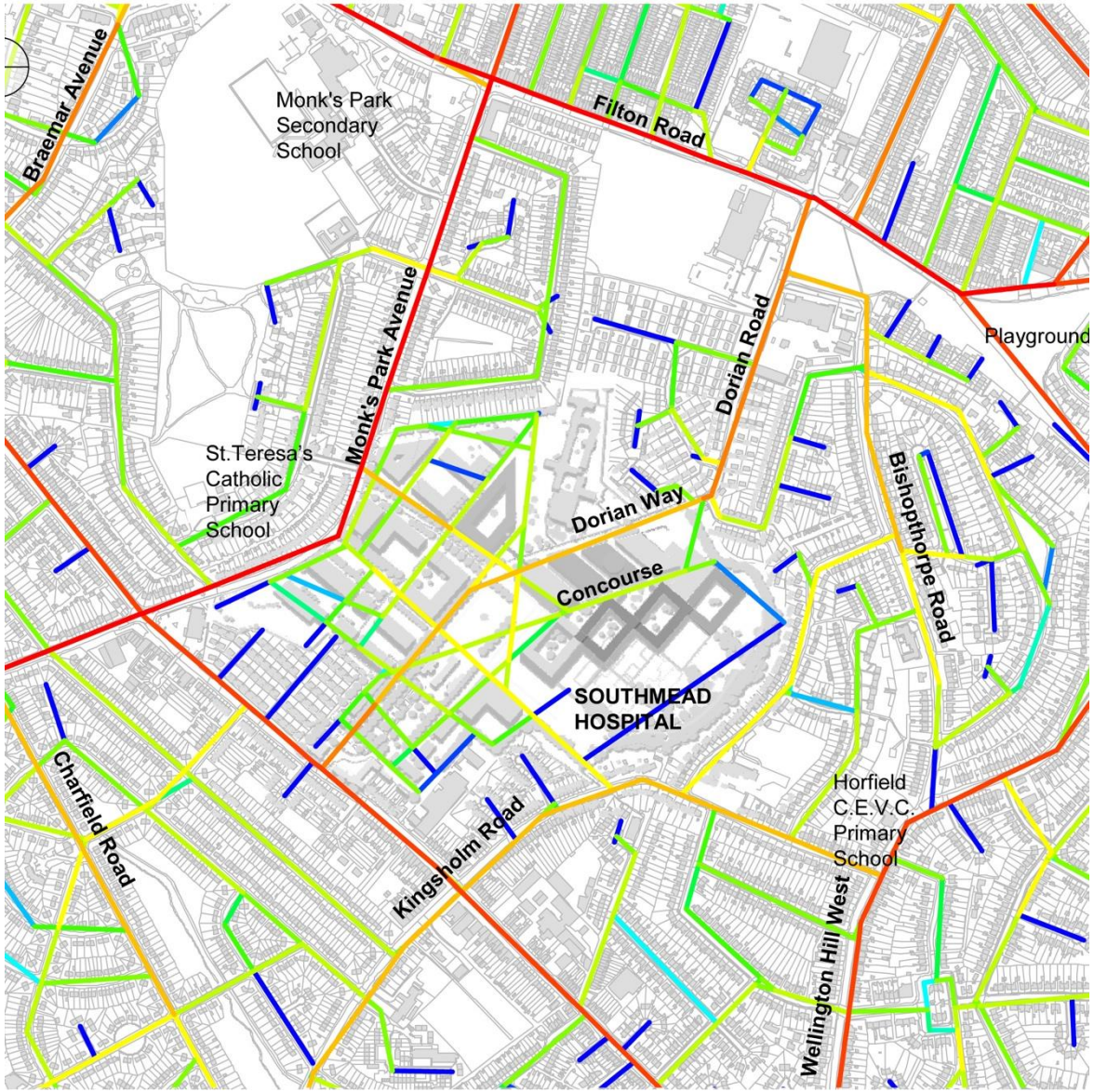


D. *Visibility from each bedroom (patient's bed head), showing the different spatial properties between the three clusters.*

E. *Visibility from the main reception, which is limited to the support zone & does not stretch into each bedroom cluster.*

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Case study | **Southmead Hospital** Bristol, UK



Evidence-based planning & design for the redevelopment of a major hospital campus.

The opportunity

Space Syntax was commissioned by the Skanska Innisfree PFI Consortium to provide strategic planning and design services for the redevelopment of Southmead Hospital in Bristol. Working with NGM Architects, we provided an evidence-based baseline study of the existing hospital and its urban context, which we then used in the development of a building layout, circulation and public realm strategy.

Client
Skanska Innisfree PFI consortium

Year
2007

Team
NGM Architects

Key Features
Urban baseline study
Proposed option testing

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Case study | **Southmead Hospital** Bristol, UK

Our contribution

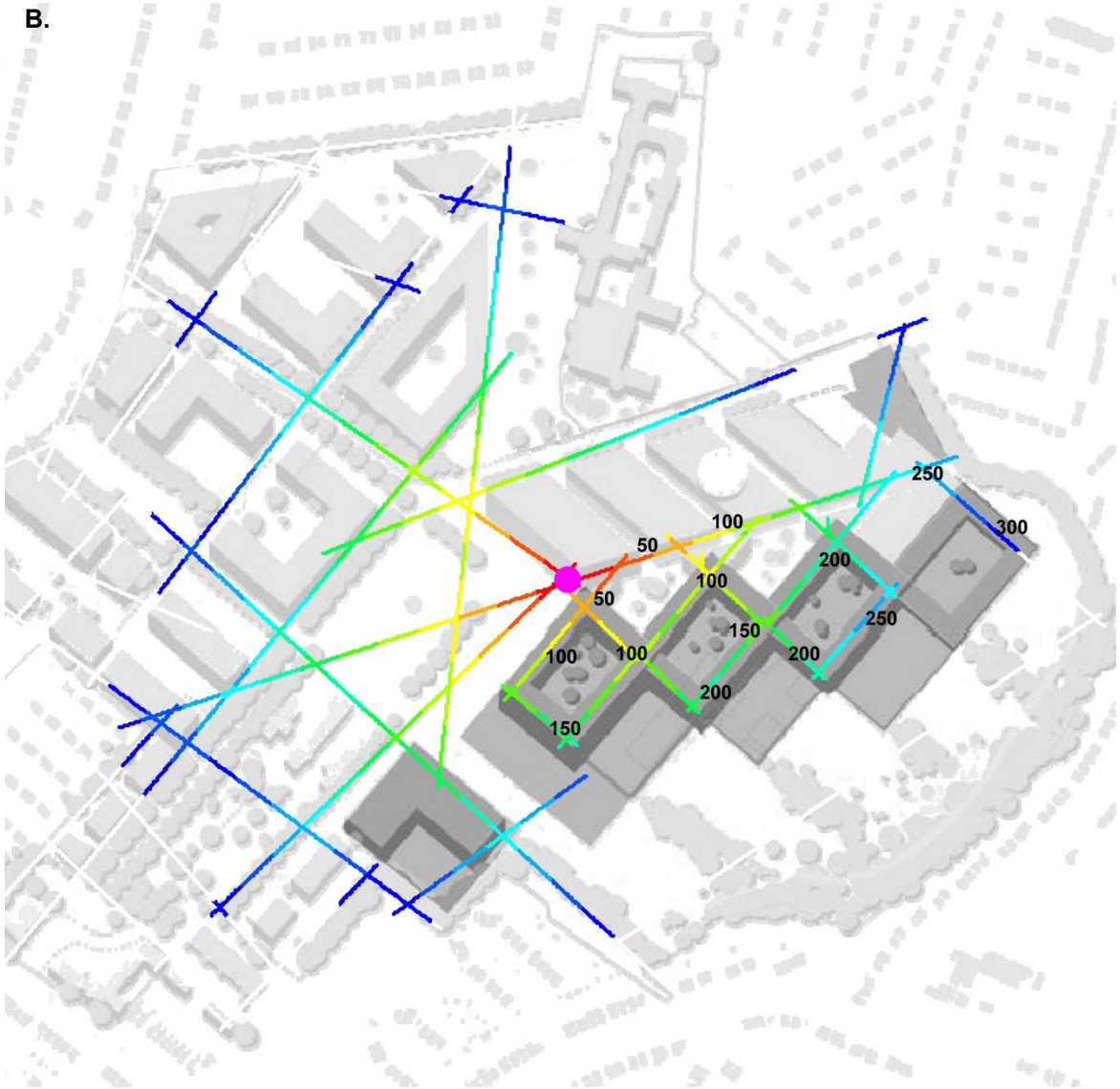
We employed evidence-based methodologies including the following:

- observations of pedestrian flows, user routes and stationary activities;
- wayfinding studies;
- visibility analysis of public spaces;
- spatial accessibility analysis;
- option testing and evaluation; and
- evidence-based design advice.

The outcome

Our work informed the key issues regarding main access to the hospital campus, internal circulation and the locations of key functions. Based on the baseline study and the design assessment of the proposed scheme and the two public sector comparators, we proposed design strategy options.

B.



A. *Spatial accessibility model of the area with the proposed scheme revealing the route hierarchy that the scheme will create (previous page).*

B. *Walking distance analysis for the proposed scheme from the entrance.*

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Integrated health | **Streets & public spaces**

Integrated health | **Streets & public spaces**

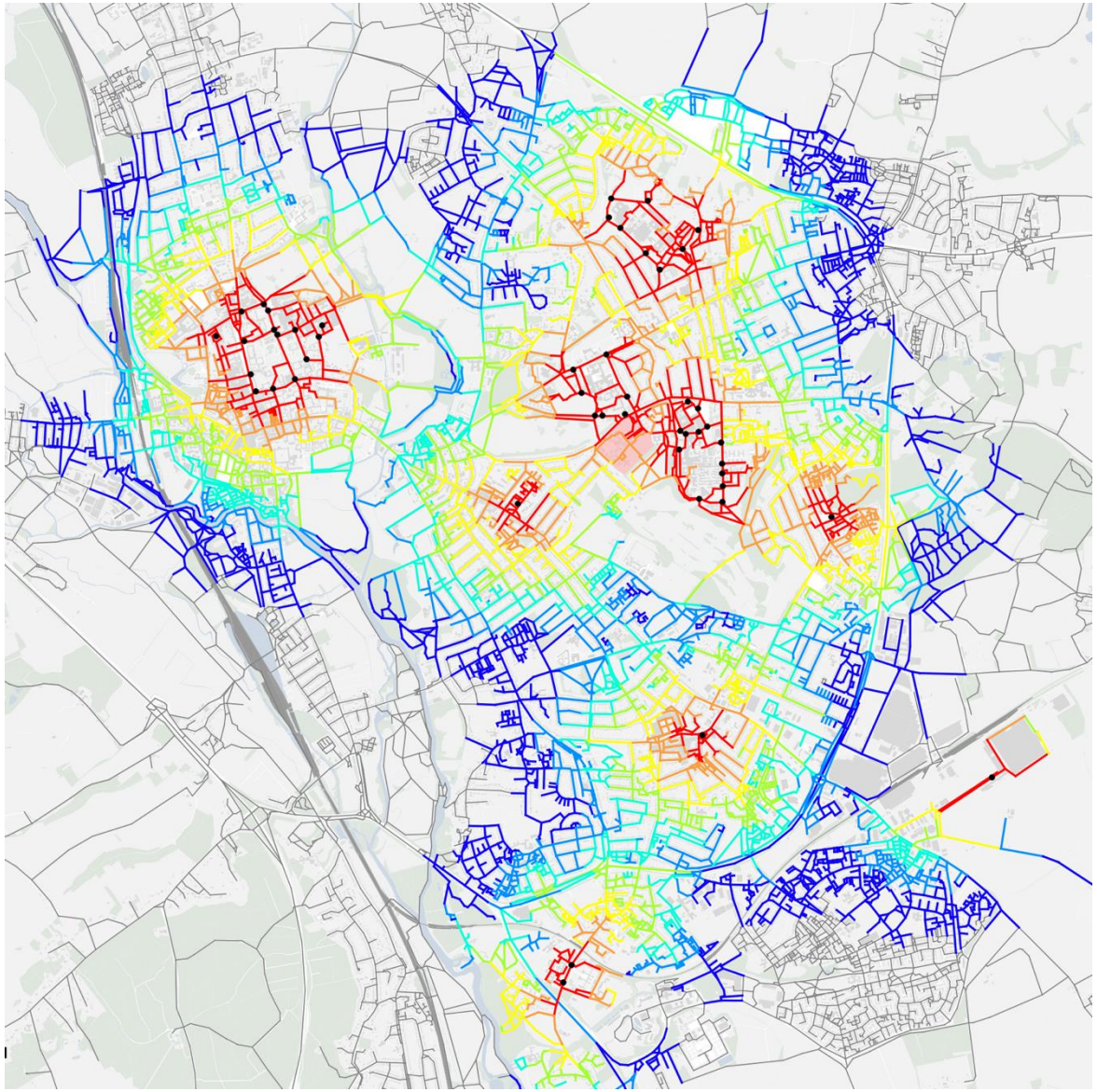
Shaping streets, public spaces and local environments to support healthier patterns of everyday life.

Our focus

- Site layout, spatial connectivity & asset location
- Walking, cycling & patterns of active movement
- Access to healthcare, green space & everyday services
- Public space use, social interaction & wellbeing
- Safety, comfort & environmental conditions.

Value

- Connecting public realm design with health & wellbeing
- Improving access to care, services & amenities
- Supporting active travel & social interaction
- Addressing spatial & environmental inequalities
- Testing & forecasting the impact of spatial change.



Metric catchment analysis for the existing facilities network around Warneford Park Mental Health Campus in Oxford, UK.

Streets & public spaces | Selected projects

Warneford Park Mental Health Campus | Oxford NHS Foundation Trust

Creation of a centre for mental health on the existing Warneford Hospital site

Evaluation of Emergency Department Layout and Performance and recommendations for improving the experience of patients, staff and visitors.



Dublin St Vincents Hospital Fairview | s

Redevelopment of mental health hospital site

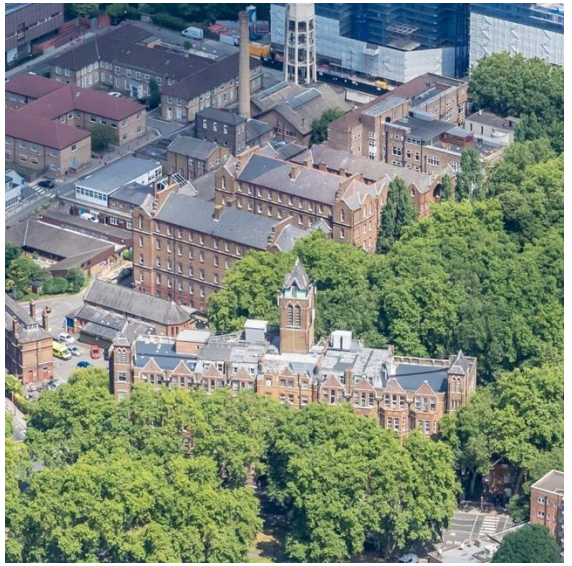
Development of spatial strategies integrating a new mental health with historic buildings, new urban parks, and over 800 new homes.



St Pancras Hospital Urban Plan | Argent LLP (London (North))

Creation of a mixed-use neighbourhood

Transforming a historic Camden hospital site into a vibrant new destination, balancing mental health care, homes, workspace, heritage, and public realm within the Camden Knowledge Quarter.



Thamesmead | Peabody (London (South East))

Understanding the usage of green and blue infrastructure

Evaluation of spatial structure and usage patterns of the public realm network across the neighbourhood and recommendations for improving pedestrian connectivity and walkability in the context of future urban redevelopment plans.



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Case study | **Warneford Park Mental Health Campus** Oxford, UK



Design of a world-class mental health hospital, workplace and teaching campus, providing patients, students & visitors with a high-quality user experience.

Client
Oxford NHS Foundation Trust
University of Oxford

Year
2024

Role
Urban Design & Consultant

Team
Eric Parry Architects

Key Features
Urban baseline study
Design evaluation

The opportunity

The project presents an opportunity to integrate hospital, research and teaching facilities for mental healthcare within a unique site in Headington, Oxford.

The vision is to shape the public realm of the hospital so that it supports the different building functions and their specific requirements, while offering patients, students, staff, and visitors a coherent, welcoming and high-quality user experience. The aspiration is to create a world-class mental health hospital, workplace, and teaching campus.

This will involve the redevelopment of existing buildings and creation of new ones, as well as enhancing connectivity and visual relationships between buildings and open spaces to create a cohesive, functional and engaging environment.

Space Syntax © 2026

Case study | **Warneford Park Mental Health Campus** Oxford, UK

Our contribution

Space Syntax conducted spatial analysis and modelling to develop a clear understanding of the site's opportunities and constraints. This informed the public realm designs through option modelling and tailored public realm guidance.

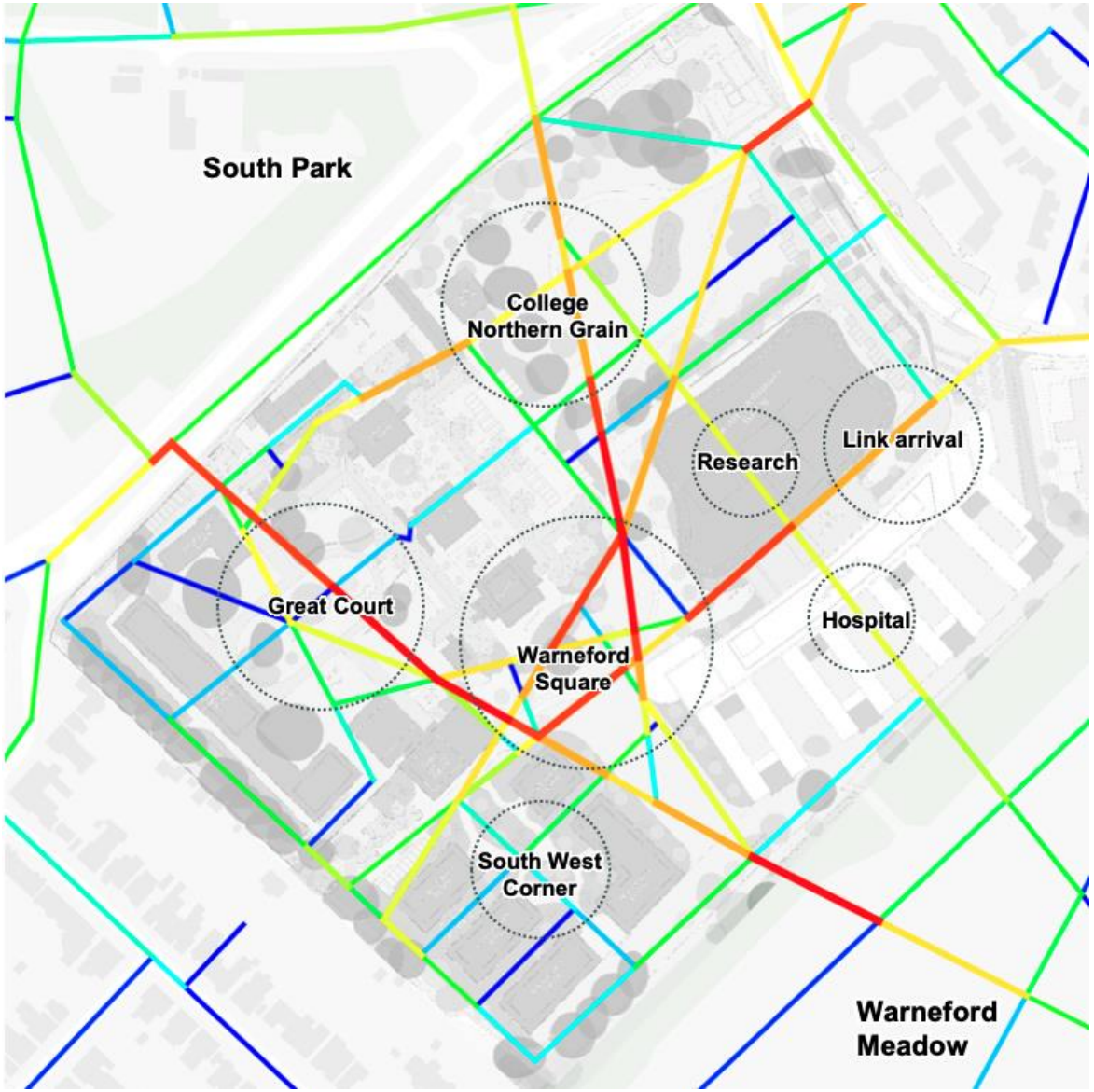
The analysis identified opportunities to enhance wayfinding and create more coherent pathways, improving ease of navigation and reducing the potential for disorientation within the site.

The outcome

The proposed design strategy integrates seamlessly into the local network, providing access from multiple directions. This strategic positioning maximises the site's walkability and unlocks its connectivity potential with nearby institutions and the broader urban context.

The north-south route linking Warneford Road and the Meadow creates a strategic green pedestrian corridor, activating the square and surrounding public spaces. Additional access via Warneford Lane reinforces this north-south connection, while movement through the Link Building remains key to overall movement.

The design establishes a clear hierarchy of routes, with prominent north-south and east-west axes that organise internal movement and support intuitive navigation throughout the site.



A. *Open green space with existing grade II-listed building and new hospital and research buildings (previous page).*

B. *Route hierarchy within the hospital considering short trips only.*

Space Syntax © 2026

Integrated health | **Cities & regions**

Integrated health | **Cities & regions**

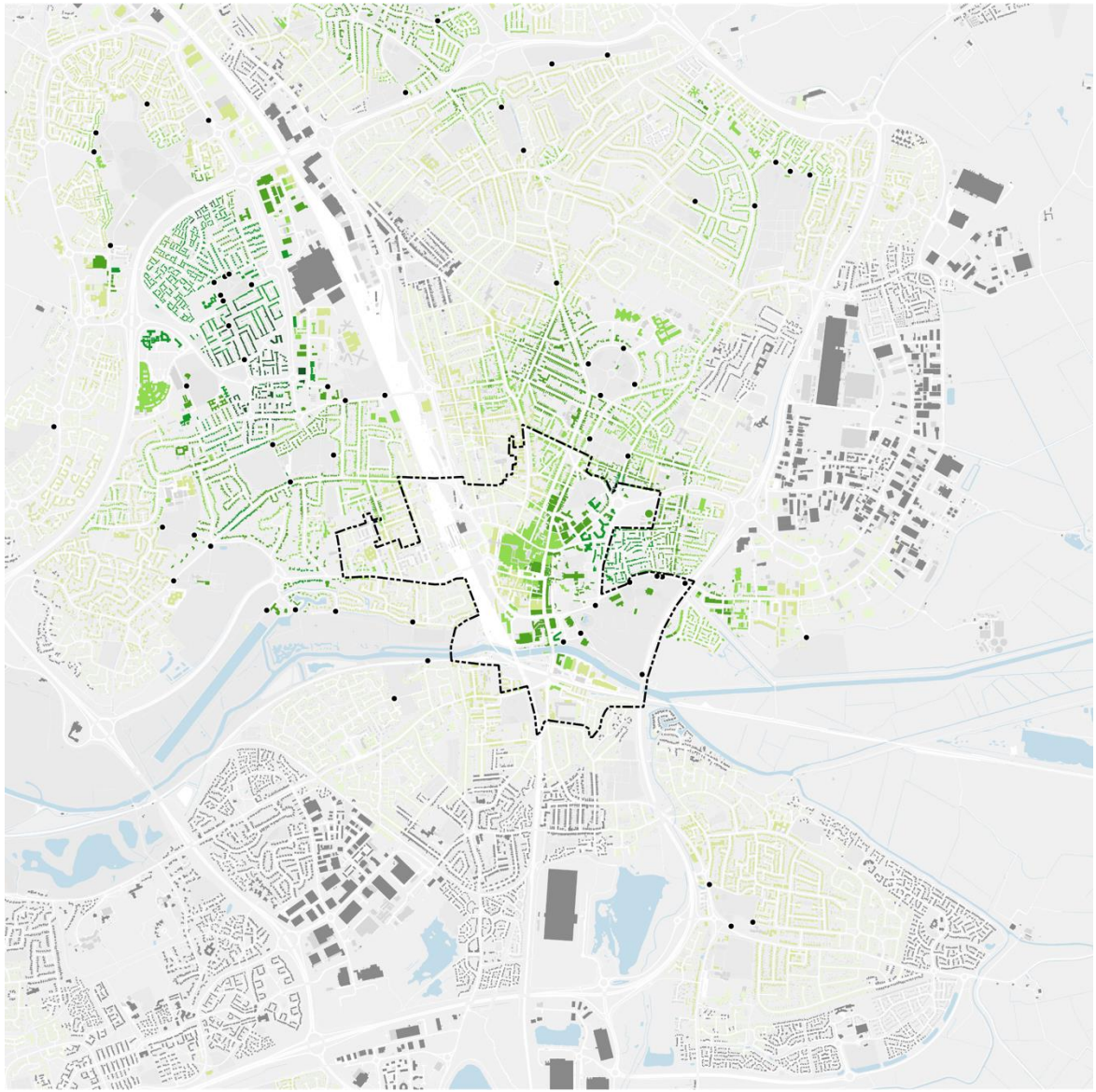
Using spatial evidence to shape healthier, more accessible & equitable cities and regions.

Our focus

- Spatial structure & accessibility across scales
- How urban form shapes movement & travel behaviour
- Interactions between spatial networks, land use & transport
- Access to services, opportunities & key destinations
- Spatial patterns of population, activity & environmental exposure.

Value

- An evidence base for strategic planning & policy
- Comparing performance across places & populations
- Priorities for growth, infrastructure & investment
- Better coordination of land use & transport strategies
- Evidence of how future scenarios could perform.



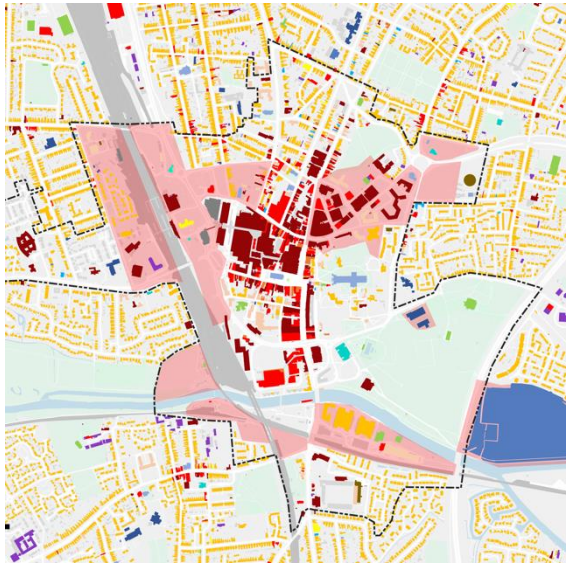
Access to large green spaces in Peterborough, UK.

Cities & regions | Selected projects

Peterborough City Centre | Peterborough City Council

Understanding spatial access to health infrastructure throughout the city

Supporting the Local Plan, we analysed accessibility to healthcare, green and open spaces, community facilities and other key services. This provided evidence on inequalities in access and how planning interventions can support population wellbeing.



Cranbook New Town | East Devon District Council

Understanding how urban conditions relate to health outcomes

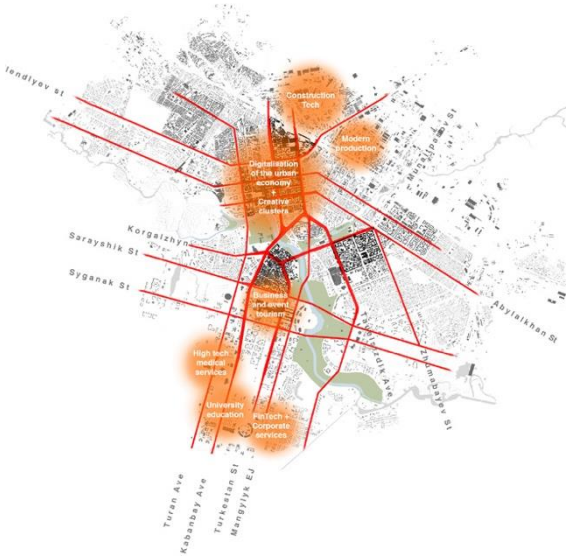
Working with planners, transport & public health teams, we linked Exeter's health outcomes to urban characteristics, informing proposal testing & design recommendations for the emerging Cranbrook Healthy New Town.



Astana 2030 Urban Plan | Astana Genplan

Creating a liveable, sustainable & healthy city

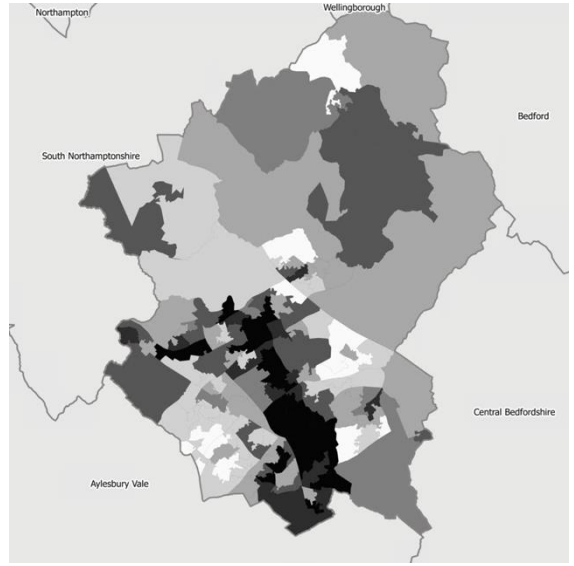
The Astana 2030 Urban Plan applied advanced modelling & analysis to develop a set of coordinated strategies & plans that would enable the city to become measurably more liveable, sustainable and healthy.



Tombolo Milton Keynes | Innovate UK

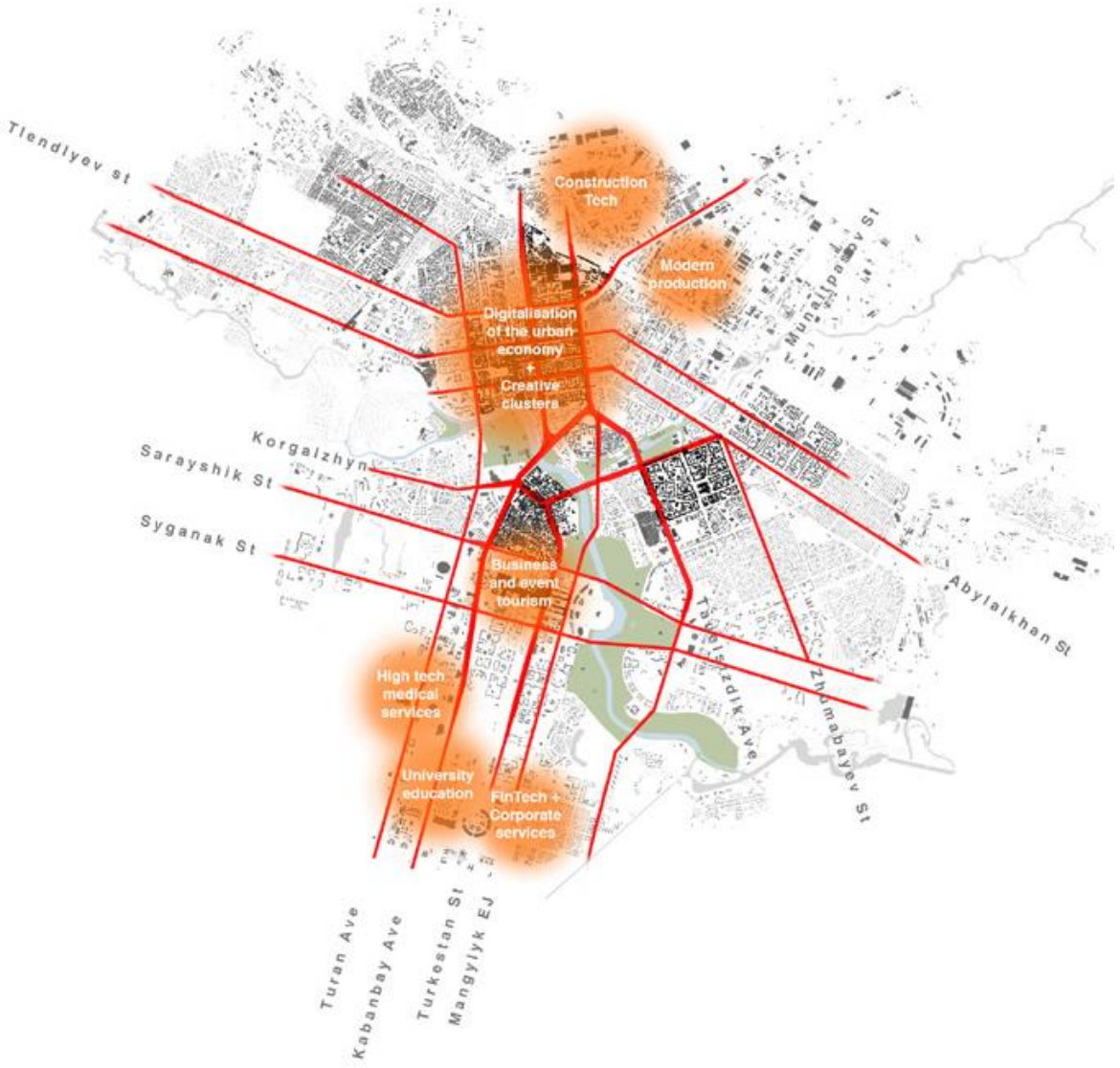
Measuring overlaps between car dependence & social isolation

Through combining Integrated Urban Models with census data, we were able to provide the city with spatial intelligence on how place risk, such as car dependence, & demographic risk, such as likelihood of social isolation, overlap at the same time.



Space Syntax © 2026

Case study | **2030 Urban Plan** Astana, Kazakhstan



An award-winning urban plan, created using a 'data-driven design' approach, to improve & intensify the capital city of Kazakhstan.

Client
Astana GenPlan

Year
2018-20

Role
Lead Designer

Team
Expedition Engineering
Gustafson Porter + Bowman
MIC-HUB

Key Features
Strategic Design
Urban Baselining
Option Testing
Generative Reference Plan

The opportunity
Capital of Kazakhstan since 1994, Nur-Sultan has a population of around 1m people, forecast to increase by 60% by 2030. The city is located in the centre of Kazakhstan and experiences an extreme climate with temperatures ranging from -30°C in winter to +30°C in summer.

Having won an international design competition in 2018, Space Syntax led an international, multi-disciplinary design team to apply a unique, outcomes-focused and evidence-based approach to the creation of a plan for the development of Nur-Sultan, the capital city of Kazakhstan.

The design process involved the use of Space Syntax Integrated Urban Models to address a series of key questions:

- what should Nur-Sultan be like in 2030 in terms of Liveability, Sustainability and Health objectives?
- what is it like now?
- how should its physical and spatial infrastructure change to meet these objectives?
- how are these changes likely to work?

Space Syntax © 2026

Case study | **2030 Urban Plan** Astana, Kazakhstan

Our contribution

The 2030 Urban Plan creates a comprehensive set of proposals for the physical development of the city, enabling it to deliver a future vision, shaped by local stakeholders, of becoming a liveable, sustainable and healthy city.

The proposals cover three scales: city-wide strategies, opportunity area plans and local, tactical interventions. City-wide strategies use forecasts of population and employment growth to improve and intensify the city in key areas before extending it.

In considering how to accommodate growth, a series of Opportunity Area Plans were developed. Detailed proposals for these areas were created with the intention that they also provide the opportunity to introduce new models of development into the city, including private-led redevelopment, public-private regeneration, and public-led improvement.

A series of local, tactical interventions were proposed across the city. To help the city to efficiently deliver these, Space Syntax created a bespoke GIS Plugin, allowing city users to access advanced analytic tools, to ultimately deploy improvements at scale across the city.

The outcome

The 2030 urban plan demonstrates how the three key objectives can be delivered through a targeted set of development proposals, with scenario modelling showing that:

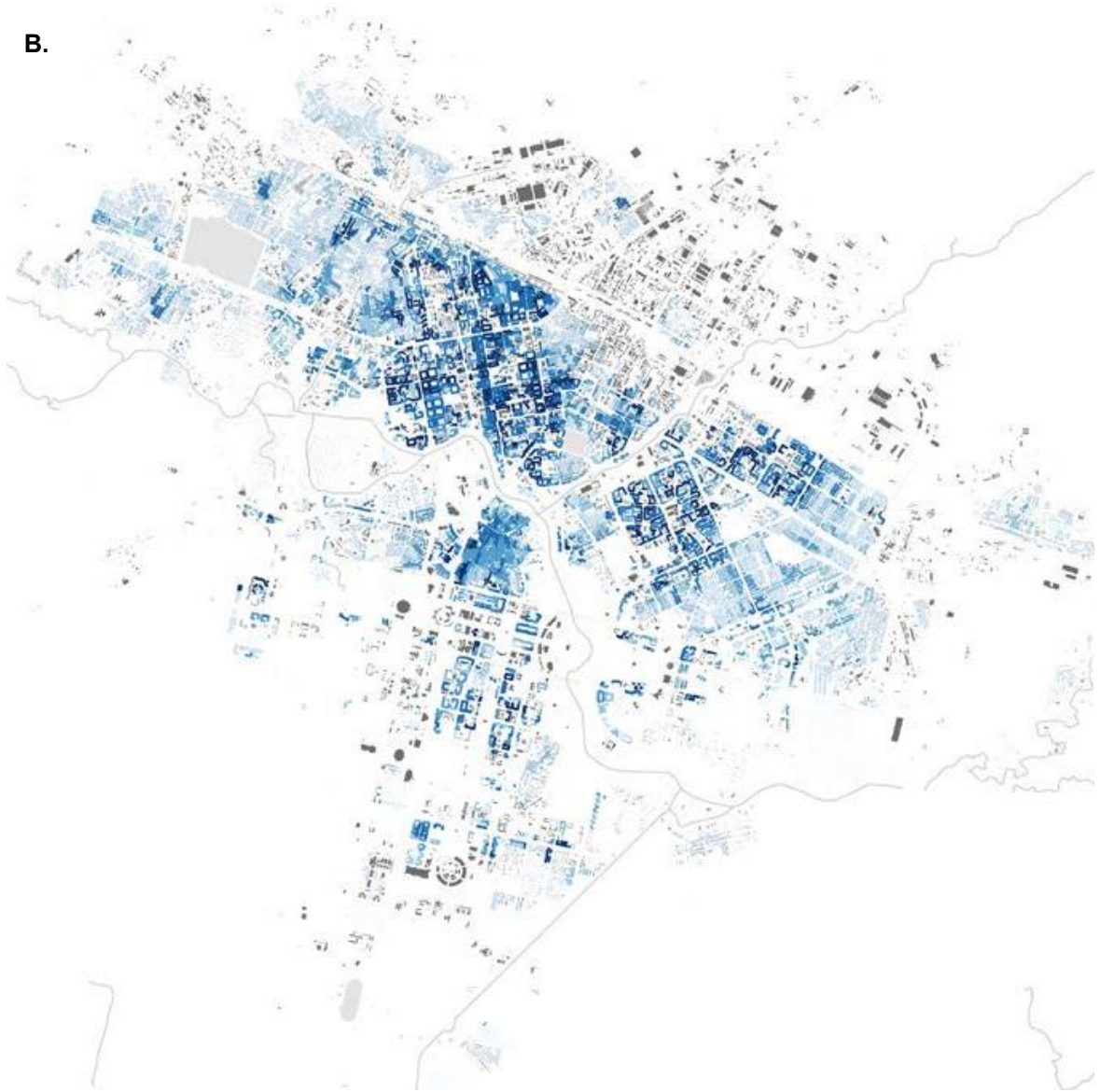
- liveability is improved by enabling 20% more residents to walk to key services such as education & health facilities, by activating parks & the public realm as a series of vibrant social spaces, & by using urban form & massing to create a sheltered & comfortable environment at street level.
- sustainability is improved through the development of policy roadmaps that enable the city to reach its emission & re-cycling rates, & through the application of technologies such as renewable energy generation & SUDS to opportunity areas.
- the city creates the conditions to enable healthy lifestyle by supporting daily activity, reducing average car-dependence by 10%, with some parts of the city now offering access to equal amounts of employment by active & public transport as by car.

The Nur-Sultan 2030 Urban Plan draws on Space experience, incorporating principles of spatial planning & design that have been demonstrated through practice to deliver the liveable, sustainable & healthy outcomes of the project brief.

A. *Spatial strategy to accommodate economic growth in clusters (previous page).*

B. *Car dependency analysis of proposed urban plan. Average car dependency decreased by 10% while in some places there is no advantage to car ownership.*

B.



Integrated health | **Digital**

Space Syntax © 2026

Digital | Introduction

Turning ‘spatial intelligence’ into practical tools for healthier places.

Our focus

- Digital models connecting place, behaviour & health outcomes
- Integration of spatial, behavioural, demographic & health data
- Metrics & KPIs to measure the conditions that shape health
- Predictive modelling to test how change could influence outcomes
- Bespoke tools for exploring, comparing & prioritising interventions.

Value

- Making the relationship between place & health measurable
- Identifying inequalities & priorities for intervention
- Comparing places, populations & future scenarios
- Exploring the potential health implications of spatial change
- Embedding evidence-based health decision-making within organisations.



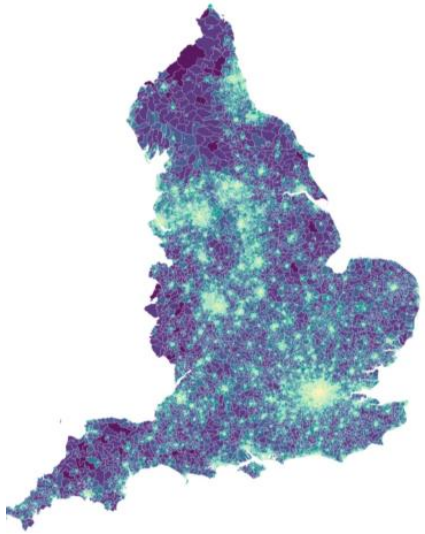
Walkability Index for Poundbury, UK.

Digital | Selected tools

Net-Zero Spatial Planning Tool | Innovate UK

Measuring the carbon impacts of housing allocation

NzSPT helps Local Authority Planners understand housing allocation carbon impacts by allowing users to test & compare housing scenarios & the transport, operational & embodied carbon they are likely to create.



CityZen Explorer | Newton Fund

Tool to understand how liveable the city is for elderly residents & how city authorities can target improvements

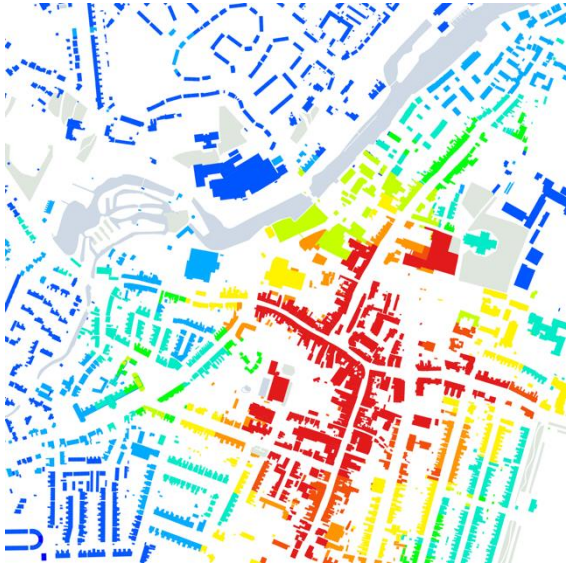
CityZen Explorer is a tool to help improve the quality of life for older people by identifying how different parts of the city support social interaction, physical activity & access to key services.



Space Syntax Walkability Index | Innovate UK

Analytic measure to understand how built environment conditions combine where people walk more

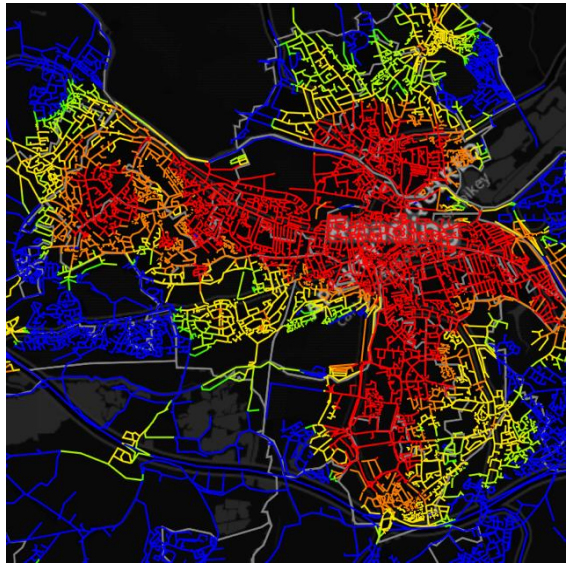
The Walkability Index benchmarks existing places & new proposals, assessing how easily they support everyday walking & unlock its social, economic and environmental benefits.



Healthy Environment Risk Explorer (HERE Tool) | ADEPT

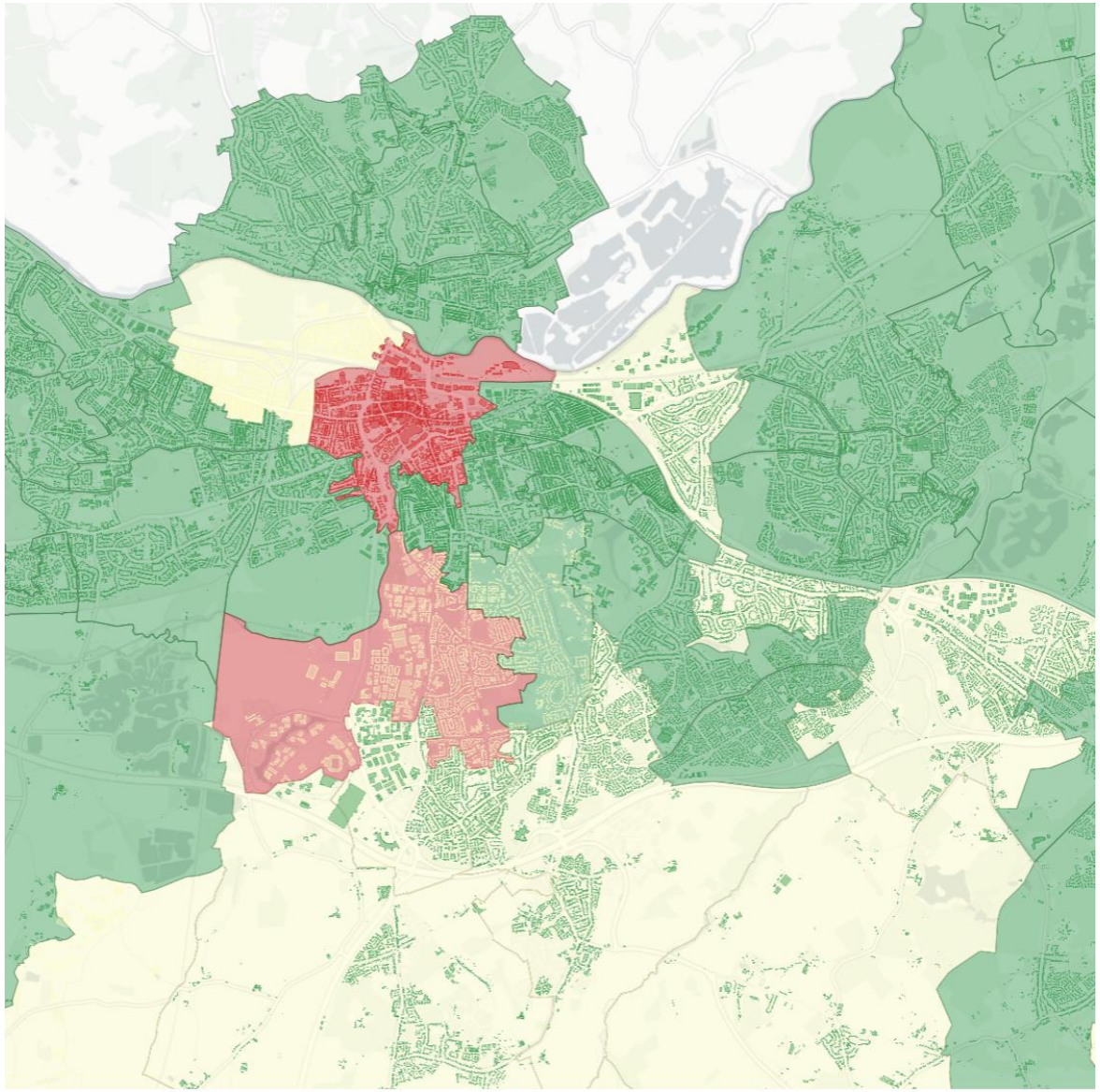
Identifying relationships between health outcomes and urban form

HERE identifies overlaps between risk exposure, transport activity & characteristics of place, enabling public health teams to apply systems thinking and develop targeted strategies to improve health outcomes.



Space Syntax © 2026

Case study | **Healthy Environment Risk Explorer (HERE)** UK



HERE helps users better understand the links between built environment design & health outcomes so that targeted actions can be made to address them.

Client
ADEPT

Year
2021

Role
Locational analytics

Team
Space Syntax

Key Features
Integrated Urban Modelling

The opportunity

Local Authority partners across the Thames Valley wanted to better understand the spatial distribution of health outcomes (including Child Obesity, Adult Obesity and Respiratory Illnesses), and how this related to socio-economic and built environment conditions.

Our contribution

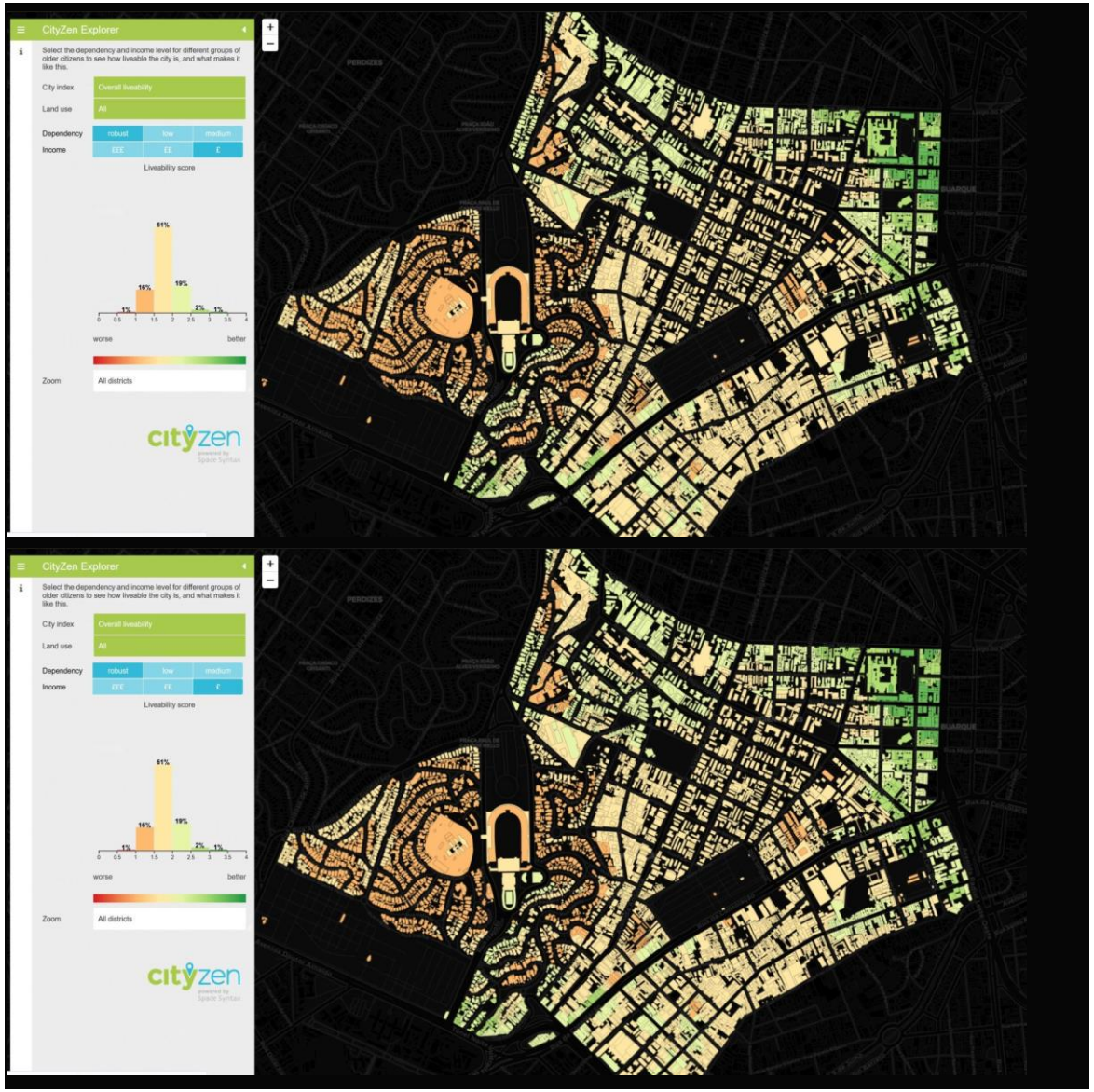
We developed three separate multi-variate models to interrogate which conditions are consistently present in areas with worse health outcomes. By linking health data with integrated urban models, census data, and mobility data, we were able to identify where the environment created higher risk of particular outcomes. The models and contributing datasets are accessible through a web-based interface that is visually structured to guide practitioners through a set of questions to better understand what factors may be contributing, and where these create higher risks. The model, interface and datasets are all scalable across the whole of the UK.

The outcome

HERE makes it possible to identify where interventions ranging from behaviour change campaigns, to public transport upgrade, to physical intervention could be most suitable. Using mobility data and spatial network analysis, the origins and destinations of trips, as well as the routes people were most likely to follow, could be identified, and this then made it possible to try to change the behaviour of people commuting from these.

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Case study | **CityZen Explorer** UK



A tool to improve the quality of life of older people living in urban areas.

Year
2018 - 2020

Role
Lead designer

Team
Avatr
CPqD
Future Cities Catapult
Medlogic

Key Features
Urban Liveability analysis
Integrated Urban Modelling

The opportunity

Space Syntax has created the CityZen Explorer to visualise how liveable a city is for older residents of different health and income levels. The aims of the CityZen Explorer are to help decision-makers see the city through the eyes of others, to understand which parts of the city are more liveable, and to explain why this is.

Our contribution

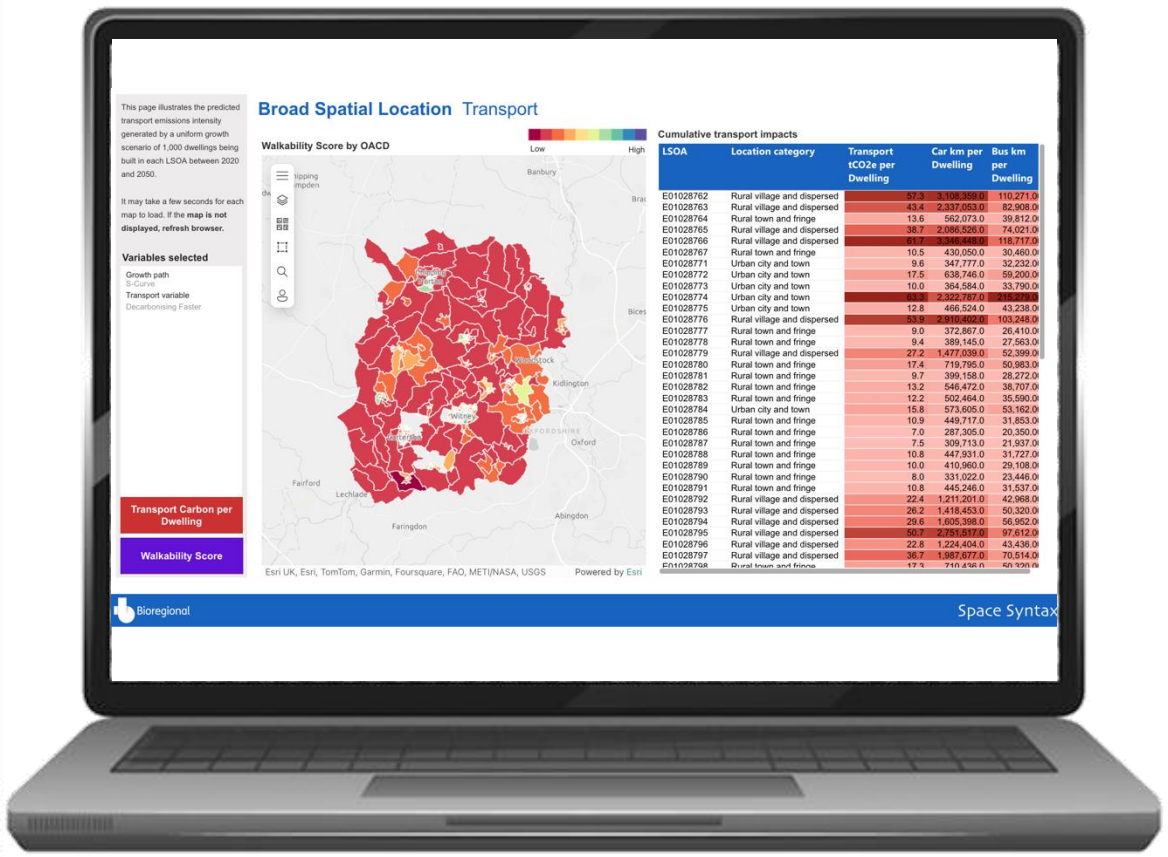
The CityZen Explorer uses an Integrated Urban Model (IUM), created by Space Syntax, which combines data on movement networks (pedestrian routes, street networks and public transport), land use and density. Custom IUM analysis was developed to enable city decision makers to understand how well the city works for each persona group, using indices which measure how the city provides opportunities for physical activity, social interaction, access to health care facilities and public transport within the mobility and cost constraints of each persona.

The outcome

The visualization of data on a map interface enable city decision makers to access the insight of the IUM without the need for technical training. The CityZen Explorer can be used to identify existing higher risk areas, visualise how different areas of risk emerge as demographic and/or socio-economic characteristics change, to see which facilities and services are missing.

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Case study | **Net-Zero Spatial Planning Tool** UK



A web-based tool, developed in collaboration with Bioregional, & funded by Innovate UK, to help Local Authorities understand the carbon emissions associated with allocating new housing.

Client
Innovate UK

Year
2024

Role
Predictive locational analytics

Team
Space Syntax
Bioregional

Key Features
Mode Share Forecast
Transport Carbon Forecast

The opportunity

The UK needs to deliver significant numbers of new homes, but this needs to be balanced against the carbon emitted during their construction and daily operation. Space Syntax developed a Transport model which allowed locations to be compared in terms of the carbon released as a result of residents' daily travel patterns.

Our contribution

We developed mode share models that predict the number of journeys, and distance travelled, by all modes of transport, for all purposes. Across England and Wales, (LSOA) census boundaries were categorised into one of four groups, based on how integrated they are in a larger settlement, and how embedded they are in a wider region. A Mode Share model was produced for each area type, combining characteristics of Location, Population, Walkability, Public Transport access, Socio-Economic and Demographic characteristics. Mode Shares were turned into distances travelled by extracting unique average commute distances for every census area in the country which then used DfT datasets to calculate emissions.

The outcome

Our models were integrated in a web-based dashboard allowing multiple scenarios to be compared against each other, as well as individual scenarios to be interrogated by Local Authorities themselves.

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