

Researching how residents use external

Housing Design

spaces in new developments

For Community Life

About the author

Dinah Bornat is an Architect working in Hackney and a Senior Lecturer at the University of East London.

Dinah studied architecture at the University of Liverpool and University of East London before qualifying as an architect in 1996. She worked at Edward Cullinan Architects before setting up her own practice, Bornat Architects, and then forming ZCD Architects in 2013 with Cordula Weisser and Zoe Smith. She has a MSc in Planning and Urban Regeneration from UCL and is a Fellow of the Royal Society of Arts.

Dinah has taught on the MSc and MArch courses at the University of East London since 2009, co-running design units. In 2014 she initiated a pilot research project with her MArch students, looking at external spaces on six housing estates in Hackney.

As an architect in practice, Dinah has worked on a wide variety of projects; including higher education facilities, schools, art galleries and housing. Through her work she is committed to a high level of design, sustainability and social purpose.

Research provides ZCD Architects with a unique level of knowledge which they use to develop projects, share with clients and offer for collaboration purposes on other initiatives.

Acknowledgements

The following people have been invaluable in supporting the idea behind this research, its development and outputs. Their time and input, as well as their shared beliefs have helped make this project possible.

Thank you to: Maisie Rowe, Jo McCafferty, Clive Turner, Antonio Irranca, Rob Wheway, Farne Conway, Emma Hardy, Rose Marshall, Laura Mark, Jane Briginshaw, Flora Samuel, Ben Shaw, William O'Brien and Helen Richardson-Crespo.

This report is dedicated to Seth Dixon.

First Published: November 2016

For further information please contact Dinah Bornat
db@zcdarchitects.co.uk

ZCD Architects
Studio 107
Netil House
1 Westgate Street
London E8 3RL
020 3095 9762

www.zcdarchitects.co.uk

Photos by author, Affinity Sutton, Graeme Peacock, Hufton and Crow and Tim Crocker

Produced by:



With support from:



Levitt Bernstein
People.Design

Hargrave Foundation

Contents

Foreword
05

Executive summary
06

Introduction
08

Chapter 1:
Background
10

Chapter 2:
Methodology
18

Chapter 3:
Case studies
28

Chapter 4:
Data analysis
112

Chapter 5:
Mapping studies
128

Chapter 6:
Conclusions
132

Appendix:
Bibliography
136



David Montague

Chair of the g15 and
Chief Executive, L&Q

We are in the midst of a housing crisis. In London – and indeed across the country – there is an urgent need to construct new homes. But in the rush to build how much do we look at the spaces around what we are building and think about how they are working for the local communities and for our children?

This report, put together by Dinah Bornat of ZCD Architects and the University of East London, has gathered evidence from ten developments across the UK and considers how people use the external spaces around the places in which they live.

The evidence gathered shows the impact of design on the activities that take place and the power these spaces have to benefit community life from allowing children to play independently outside to reducing loneliness for the elderly.

Children's use of the external environment has reduced dramatically over the last 20 years and this has an enormous impact on their health, wellbeing and independence but also on the liveliness of our streets.

We want to be able to create spaces that feel safe for them and for their parents to let them spend time outdoors, make friends and enjoy exercising – vital for healthy child development and something that has become increasingly lost in today's society.

The report's work in trying to understand how we use public space cannot be ignored. It is a vital manifesto for new planning policy and a cultural shift in our obligations towards people and the new communities we are creating.

As a member of the g15 – a group of London's largest housing associations – I would urge all those providing homes to consider the evidence in this report. We have the capacity to impact change, engage with local communities, and to create environments which will benefit the health and wellbeing of all communities through greater consideration of the public realm around our developments.

Executive summary

This research puts people at the heart of placemaking, by taking time to watch and learn from how they use external spaces in and around the places they live.

It gives value and importance to the activities that take place in outdoor spaces; relaxing, socialising and play, suggesting that these are the very essence of community life. It highlights how important it is to design places where children can play outside safely, for long periods of time, with other children and where there is a chance for them to be able to explore their local environment and travel independently. It suggests that neighbourhoods that support safe play will facilitate wider community use and that if coupled sensitively with the needs of elderly people, will result in tangible health and wellbeing benefits for the whole community. It is a manifesto that calls for new planning policy and a cultural shift in our obligations towards people and the new communities we are creating.

Context

In the last 15 years urban design theories have been discussed and developed in the context of broader sustainability principles. Within this, the public realm is highlighted for the role it can play in providing positive health and wellbeing outcomes, embracing more nuanced social objectives and potentially tackling complex issues such as childhood obesity and loneliness in the elderly population.

At a national level, built environment policy now has at its heart the presumption in favour of sustainable development. So for example in new development, there is a requirement for local authorities to provide quality open spaces as they play an important role in 'facilitating social interaction and creating healthy, inclusive communities.'¹

However, despite an emphasis on developing play strategies for children at regional and local level, most policy overlooks the need for children's unsupervised play and their independent mobility; essential components of healthy child development. In addition, children are let down by poor take up of progressive guidelines such as homezone street principles.

This report addresses this gap in policy and practice by focusing explicitly on how children and communities use space and how this can bring wider benefits, for example tackling loneliness amongst a growing elderly population.

Findings

This report looks specifically at external spaces in residential areas and finds a lack of available evidence about how these spaces are used by people.

By gathering and analysing new data the report presents a number of new findings:

- External spaces in housing schemes are natural places for social activity.
- Children are the dominant users of external spaces.
- There are positive links between play and a wider use by the rest of the community.
- There is positive link between children's independent mobility and their extended use of external spaces.
- Car-free shared open spaces that are directly accessible from dwellings are the most well used. If an open space is separated by a road it will be used far less by residents.
- Shared surface streets often display high levels of anti-social parking; blocking pavements and external spaces that should be used by pedestrians and for social activity.

Report

The report presents data about how people are using external spaces in residential areas on recently completed schemes in England. Inspired by the work of Jan Gehl Architects, it is a study of numbers of people, their activities and the time they spend outside as an indicator of what Gehl calls 'life between buildings'.

It presents new maps that show access to external spaces in relation to dwellings and the streets in between. It reaches the conclusion that the layout of a development may have a significant impact on how well spaces are used.

It incorporates theories of child development, play and children's independent mobility, in part to quantify some of the health and wellbeing concerns that need to be addressed, but fundamentally to highlight the value of children's use of external spaces: both for their own benefit and as the generators of community life.

It reveals the social nature of these spaces, the importance for children and the challenges for other age groups. It also highlights the damage that anti-social parking behaviour can have on otherwise well designed schemes.

Policy recommendations

This report calls for children to be better represented in planning policy at all levels, making explicit their need for unsupervised play to reflect the widely held definition: 'freely chosen, personally directed and intrinsically motivated'.

It suggests that an emphasis needs to be on easy access to good quality outdoor spaces in new developments from pavements to parks; on playing outside safely close to home, as well as formal play space provision. Policy should aim to encourage children's independent mobility, by bike, public transport or on foot.

External spaces should feel safe and friendly for the elderly too, with emphasis on the growing over-80s population.

In addition, a review of parking enforcement laws on private land should make it easier for landowners to prevent anti-social parking that, in turn can prevent other residents moving around safely and enjoying open spaces.

New design guidance

Through offering a set of urban design principles that focus particularly on access to external spaces, this report aims for a new way of thinking about how people use external spaces for social interaction, recreation and play.

Good design guidance should be developed to support new policy objectives, including emerging best practice examples.

Guidance needs to aim for:

External spaces that are well distributed within estates, so that people use them regularly, on a day-to-day basis. Spaces should offer a variety of uses, such as play, gardening, sitting and observing others.

As well as being safe and car-free, these spaces should be located where they are well overlooked, and connected to each other by a strong network of footpaths and pavements.

Developers and designers need to discuss car parking behaviour and aim to design out the opportunities for anti-social parking.

Alongside new policy and guidelines a debate needs to begin about the benefits and challenges of designing, delivering and maintaining external spaces in residential areas. We need to ask:

- Who benefits: Are some people more in need of external spaces than others?
- How do different people value external spaces: for some it might be a peaceful space or a view, for others there is a physical need to let off steam.
- Who is getting left out and how can external spaces support conflicting needs: we need to look at the marginalized teenagers and the elderly and better understand their needs.



Introduction

This report is part observational study and part mapping analysis of external spaces in ten recently completed housing schemes across England.

It begins with a background of existing policy, research and guidelines; looking particularly at children and play in the context of new developments.

Chapter 2: Methodology

The methodology for research is based on Jan Gehl's work and theories about how people use public spaces¹ and developed with reference to research carried out by Mike Biddulph in 2011 into homezone streets and social activity.² Gehl highlights the importance of observing people for extended periods of time and suggests that the 'life between buildings' is a 'product of number and duration of individual events'¹. He reaches conclusions about spaces by observing people, what they are doing and how much time they are spending there.

The field work was carried out over the summer of 2015. Each scheme was visited on two separate days for six hours at a time, gaining a good picture of how people came and went and when they chose to spend longer relaxing, socialising and playing.

Researchers entered data into charts, for each person recording their age, how long they spent in the space, whether they were in a group or alone, the activity they were carrying out and their way of moving through the space; on foot, by bicycle and so on.

The schemes were chosen, with advice from the Homes and Communities Agency (HCA), as representative of recently completed projects with a variety of layouts. Two of the schemes were in inner London and the rest spread across the country. The data was entered into spreadsheets which yielded bar charts similar to those produced by Biddulph.

A mapping technique was developed to describe the particular relationship of the external spaces to each other, to the dwellings and of the front entrances of the homes. The four maps developed are:

- **Shared external spaces**
- **Access from dwellings**
- **Networks**
- **Streets - entrance relationships.**

Chapter 3: Ten case studies

Each case study begins with key facts about the scheme followed by an overview of the development.

The maps are presented and the scheme is ranked accordingly.

The observational data is given a value, based on a comparative percentage with the other schemes for the following categories:

- **Optional and social use of space**
- **How much time is spent outside**
- **Children and young peoples' independent use of space.**

Alongside this, observations were made during visits; looking in particular at car parking as this appeared to be a problem on each of the schemes; cars were often blocking pavements and shared spaces intended to be for residents' use.





Chapter 4: Data analysis

Following on from the case studies is a series of different data comparisons for all of the schemes, presented as a series of themes. Each theme presents a number of findings.

Age group representation

The ages and groupings of people are looked at first, revealing a number of similar findings across the schemes. The data is compared to what may be expected from the Office for National Statistics (ONS) ward demographics.

Activities

Types of activities are then broken down, looking first at people seen briefly, passing through, explaining how density is taken into account (using dwellings per hectare values). Two anomalies are revealed and given possible explanations.

Optional and social activities

Other activities are categorised as hanging out, domestic chores, talking, observing, play and supervision of play. These optional/social activities are compared to the figures for passing through on a graph, for all of the ten schemes.

Time spent outside

Data for time spent outside is weighted, highlighting extended use of space. These figures are compared to the overall social use of space.

Correlation between children and adults

Data for children and adults' social use is presented on a comparative graph.

Children and young peoples' use of space

Finally, having recorded groupings of people, children's unaccompanied use of space is analysed. A graph is created comparing independent mobility (referred to as numbers of unaccompanied children passing through) and play (unaccompanied social use of space).

Chapter 5: Mapping analysis

The ranking from each of the ten case studies is presented in tables, illustrated by selected schemes. An overall mapping score for each scheme is presented on a line graph, comparing it to the value for the total number of people engaging in social activities/density for each scheme.

Chapter 6: Conclusions

The final section reaches conclusions about people's use of external spaces in residential areas, drawn from the data and comparisons. It presents a number of recommendations for further research, policy and guidelines.

1. Gehl, J. (2001). *Life Between Buildings: Using Public Space*.
2. Biddulph, M. (2011) *The impact of innovative designs on activity in residential streets*.

Chapter 1

Background

Background

The context for this report is how the places we live ought to meet our needs from a social, cultural and physical perspective. Focusing specifically on the public realm and open spaces, planning policies give objectives to achieve positive outcomes, fitting within broader sustainability principles.

Research, such as post occupancy evaluation, provides us with the opportunity to reflect on how well new developments are working, but there are gaps. In addition, some aspects of policy, research and evidence are lacking; we highlight children, young people and the elderly in particular focusing on their needs and some of the associated challenges.

Policy context

'Our Towns and Cities: Delivering an Urban Renaissance' published by the government in 2000, looked at how cities could provide new homes on brownfield land, along with improving the quality of the built environment and transport system. From a public realm point of view, it set objectives for improving the condition of streets, making them safer for pedestrians and cyclists and for 'encouraging safe, well designed and managed public open spaces like parks, play areas and recreational spaces.'¹

Over the next few years much attention was given to quantifying and achieving value from capital investment and improvements; with advisors such as CABI publishing documents on streets and green spaces² suggesting they can offer 'lasting economic, social, cultural and environmental benefits.'²

A nuanced approach to health and wellbeing is now widely agreed to be beneficial and incorporates social, physical, mental and cultural needs. The National Planning Policy Framework (NPPF) published in 2012, has a 'presumption in favour of sustainability' and states that new developments should support 'strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being.'³

The NPPF includes the requirement for local authorities to provide high quality open spaces as they play an important role in 'facilitating social interaction and creating healthy, inclusive communities.'⁴

Alongside this, the government's Manual for Streets (MfS) guidance, published in 2007, suggests that we should be achieving 'streets as places for social interaction that are sustainable, inclusive and community focused.'⁵ MfS layouts adopt a shared

surface approach and include traffic calming and other measures to shift the balance to pedestrian and cycle movement over the car.

The UKGBC 2016 report 'Health and Well-being in Homes' reviewed available literature on the subject and revealed that social, physical and mental wellbeing can all be improved if people have access to green space.⁶

Housing Planning Policy Statement 3 (PPS3) has strategic policy objectives to 'create sustainable, inclusive, mixed communities in all areas, both urban and rural.'⁷

It asks for developments to:

- Be well laid out so that all the space is used efficiently, is safe, accessible and user-friendly
- Provide, or enable good access to, community and green and open amenity and recreational space (including play space) as well as private outdoor space such as residential gardens, patios and balconies
- Take a design-led approach to the provision of car parking, that is well integrated with a high quality public realm and streets that are pedestrian, cycle and vehicle friendly.

Research

Thinking about how neighbourhoods can offer social benefits goes back to the 1960s with studies by Jane Jacobs⁸, Donald Appleyard⁹ and William H Whyte¹⁰ in the US. Each focused on public space through watching carefully how people behaved. Appleyard's study revealed how streets with lower traffic density leads to knowing more neighbours, and Jacob's analysis of streets as a space for congregating and forming social ties has formed much of the foundation of contemporary urban thinking.

The architect and urbanist Jan Gehl's work in this area, starting around the same time, has continued to influence the planning and design of public spaces through a better understanding of how and where people choose to use space. In particular, it aims to reduce the emphasis on the car to improve the street for pedestrians and cyclists. Much of his work, as with his predecessor's William H Whyte, focused on commercial and retail areas and the opportunities that streets and squares offer for creating public life.

Less has been studied in relation to public space in residential areas, although Clare Cooper Marcus and Wendy Sarkissian's book, 'Housing as if People Mattered' published in 1986¹¹, is an excellent and thorough analysis of external spaces in housing schemes across the UK and US. It gives specific guidance on how to design external spaces to foster sustainable communities. Their work is now largely forgotten, although the themes of community use and play are just as relevant today as they were then.

Reviews commissioned by government, house builders and housing providers in recent years highlight the importance of external spaces in residential developments but also reveal the conflicts and challenges:

A study by CABE in 2007, interviewing residents about their new homes found that:

- 40% thought that there was not enough public open space in the development
- 48% thought there was not enough play space
- 34% thought the layout of their development was unsafe for children to walk, cycle or play in the streets
- 45% say that they live in the kind of neighbourhood where people mostly go their own way rather than doing things together and trying to help each other.¹²

A report by Social Life, looking at shared outdoor space on four L&Q schemes, concluded that 'People are satisfied with where they live and the outdoor spaces, however they are not being used. In total, 44% said they rarely or never use the spaces.'¹³

The HCA's 'Quality Counts' survey of residents (2013-14) revealed that it was private outdoor space as well as parking that were the most appreciated aspects amongst residents surveyed, but that private outdoor space was also the area that they would most like to be improved.¹⁴

Berkeley Homes commissioned Social Life and the University of Reading to examine people's feelings about their new homes in order to assess and evidence quality of life and strength of community. Within their broader remit of achieving social sustainability and meeting the objectives of the NPPF, they intend it to be used as a tool for reviewing and planning future developments. Berkeley defines social

sustainability as being 'about people's quality of life, now and in the future'.

It goes on to say: 'Social sustainability describes the extent to which a neighbourhood supports individual and collective well-being. It combines design of the physical environment with a focus on how the people who live in and use a space relate to each other and function as a community. It is enhanced by development which provides the right infrastructure to support a strong social and cultural life, opportunities for people to get involved, and scope for the place and the community to evolve.'¹⁵

Within this, the design and maintenance of the spaces in between the dwellings is known to be a major consideration. Housing providers and developers recognise the value in providing good quality external spaces, from the point of residents' wellbeing, community resilience and good asset management.

Children's need for play and mobility

Not surprisingly, policy focusing on children often turns to play for satisfying their physical, social and mental needs.

The definition of play is frequently given as 'freely chosen, personally directed and intrinsically motivated'. Putting it another way; children need to be able to choose when, where and how they play. It is a natural activity, which at times may have some degree of adult involvement, but essentially should be dominated by the child. The benefits are that they can gain the most from learning, socialising and exercise. Within this process children should learn to take risks and to understand the world and the people around them.

An informal All Party Parliamentary Group report highlighted the challenge however: 'Constraints on children's opportunities to play have increased in recent decades, with a proportionate impact on their wellbeing, future life chances and, ultimately, the health of the nation, with social and economic ramifications that are detrimental to society.'¹⁶

In order to provide children with a fit and healthy childhood, the report has a number of recommendations for the built environment. It asks for:

- Timely, straightforward and trustworthy information and advice to be provided to professionals and families about enabling outdoor play and creating an outdoor environment to facilitate it
- Training for professionals such as planners, landscape architects, architects, engineers, housing developers and housing managers to help them develop an understanding of the importance of play in the outdoor environment and how to plan, design and manage for it.

Play and risk

Tim Gill, a writer on childhood and risk believes that 'childhood is becoming undermined by risk aversion.'¹⁷ Taking risks, he explains, is seen to have benefits for children for a number of reasons as they:

- Learn how to manage risk
- Have a natural appetite for risk which needs to be fed
- Gain other benefits (such as physical exercise) from taking risk
- Build character and personality through facing up to adverse circumstances where they know there is the possibility of injury or loss.

Like others, Gill promotes the use of risk/benefit assessments which are becoming more widely used as a tool. The process allows the benefit from an activity to be taken into account when assessing the risk, given a more balanced and less fearful point of view.

Play strategies in policy

In 2006, the Children's Play Council recommended that local authorities produce play strategies in order that play becomes 'part of the strategic policy framework'. It cites the Children Act (2004) that puts a statutory duty on local authorities in England to 'co-operate in their provision for the enjoyment of play and recreation.'¹⁸

Policy now exists at both regional and local level that supports these aims and sets out to create safe streets and good quality open spaces for children to play.

For example in London, the Greater London Authority Supplementary Planning Guidance (SPG) 2012 on play and informal recreation states that streets are able to offer 'incidental spaces for play' and references play streets, where parents close the road and manage traffic in order to allow children to play out. It suggests that the 'playable street' landscaping features could be scattered along 'lightly trafficked, accessible pedestrian and cycle routes.'¹⁹

The SPG itself sets out requirements for the boroughs to undertake audits of their existing play and recreation facilities, and to produce play strategies supported by Local Development Framework (LDF) policies to 'improve access, safety and opportunity for all children and young people'. In order to achieve this, SPG 12 intends to 'address issues of accessibility' and to maintain a broad view of spaces that range from 'parks and open spaces' to 'social housing estates that offer good play opportunities'.

The Mayor of London's Great Outdoors initiative aims to 'upgrade public spaces in London, promoting the wide ranging benefits of open space and setting

out the need to make London a more child-friendly city, including opportunities to make streets safer for children, the creation of new and diverse opportunities for play and places for young people, and the promotion of open space as a cultural resource for London.'²⁰

When we consider play in public spaces, we tend to consider playgrounds, play areas and perhaps 'playable spaces' as contributing to this need. However, formal provision, although vital should not be considered on its own. One study found that 'children spend relatively short amounts of time (less than 15 minutes) in formal outdoor environments'²¹ and in fact, if they do, tend to play closer to home on streets.²² This observation, revealed by a study of 1,300 school children, wearing accelerometers to measure location and levels of activity, has helped underpin a movement to reclaim the street as a place for children to play, as their parents were able to a generation before.

Playing Out, which began in Bristol and is now a national organisation, supports parents in volunteering to steward road closures on a regular basis. Through piloting sessions and working with local authorities to talk through legislation, local streets are able to organise regular road closures which allow children to play outside their homes safely.

Research into children's use of space

The backdrop is that there has been a sharp reduction in children's independent mobility 'with significant consequences for the health and physical, social and mental development of children.'²³ Just how much this has changed in a generation is stark: 'In 1971 eight out of ten children aged seven or eight years went to school on their own. By 1990 this figure had dropped to less than one in ten.'²⁴ Again, in 1971 the average seven-year-old was making trips to their friends or the shops on their own. By 1990 that freedom was being withheld until the age of ten, meaning that in just 19 years children had 'lost' up to three years of freedom of movement.'²⁵

If play is to occur safely, close to home, then the best study that has been carried out, now nearly 20 years ago was by Rob Whewey and Alison Milward's for the Joseph Rowntree Foundation in 1997.²⁶ It stated that an objective should be for children to be able to play within sight of their home. They carried out interviews with parents and children and discovered that the most successful estates for both use by children as well as favoured by parents were ones with:

- Traffic calming, street closure, walls and driveways
- Grassy areas set back from the roads, a footpath network (for pedestrians and cycles) around and through the estate linking into the public open spaces

- Cul-de-sac layouts with a spinal footpath network, and informal play areas.

They suggest that ‘children seek social contact with their friends through their play activity outdoors and to achieve this they need to be able to move around their estate as widely and safely as possible and from an early age (two plus)’.

Conflicts

Barriers for play and for children’s independent mobility are, not surprisingly, most notably with the car. Gill highlights the risk paradox that exists; ‘the more obvious threats to children’s safety – notably that from road traffic – are not treated with anything like the same degree of obsessive control as that applied to other areas where children congregate.’²⁷

In 2013, Mike Biddulph looked at ten recently completed schemes, all outside London, in order to see whether street layout, in particular the use of Manual for Streets (MFS) guidelines, lead to a greater variety of street users and activities.²⁸ He concluded that more social activity was observed on schemes that had embraced the MFS principles. He noted where children were playing and the nature of the play but did not draw out unsupervised play as a particular activity.

It should be noted that local authorities have been slow to adopt recent Manual for Streets guidelines, which intend to replace the more traditional DB32, first published in 1977 and updated in 1996.

Research carried out by URBED on recently completed schemes, with data gathered by Kent County Council, reveals problems with parking behaviour: ‘All but one of the case studies had cars parked where they shouldn’t be, on pavements, verges, front garden lawns and landscape areas. The exception was within a zone where parking controls were in force.’²⁹ The report concludes that narrow streets and schemes with densities over 40 dwellings per hectare (dph) has resulted in popular estates but ones that no longer work for the car. Despite high levels of satisfaction with the area, parking was considered to be a real problem by the residents.

If schemes no longer work for the car, then they will no longer work for people either, which will be likely to have a disproportionate impact on children, the elderly and those who find it more difficult to get around.

Other tensions and conflicts around play are cultural and social, including parental fears, screens and the potential for causing nuisance. The Social Life report by L&Q noted that ‘Even though children were the most regular users of the outdoor spaces... their activities became a common cause of tensions between neighbours’.³⁰

Similarly, Building for Life 12 suggests that play areas in front of homes should be avoided as it could ‘become a source of tension due to potential for noise and nuisance.’³¹

Current guidance

When we look to policy to give guidance in this area, we see provision for play spaces relating to distance from dwellings and acknowledging barriers, which include ‘traffic and roads where speeds are in excess of 20mph’³².

Suggested walking distances are given for under 100m from home for under fives, 400m for five to 11 year olds and 800m for over 12s. No mention is made of the benefit of direct access, without having to cross a road, no matter how safe.

What is referred to as ‘Doorstep’ play is said to be achievable when ‘within sight of known adults’ or ‘100m from home.’³³ Again this could be construed as across a road. Yet what parent would allow their child under five years old to cross a street to play? The presumption seems to be that adult supervision will take place, as it recommends play space for the under fives and 11s should include ‘places for carers to sit and talk’.

A way forward

The context and evidence presented above shows the time is right to look closely at how residential space can offer safe places to play close to home, support independent mobility and contribute to health and wellbeing benefits for the wider community.

The house building industry must help to develop policy and guidelines to reverse the decline in children’s independent mobility. New developments should aim to provide as many homes as possible with easy access to safe spaces that children and young people can play in, meet friends and move around safely on foot or on bike.

It will require a cultural change at every level; taking on anti-social car parking to allow for greater social use of spaces as well as more pedestrian and cycle journeys.

Ongoing research will be essential; the industry needs exemplar schemes, but would also benefit from documenting the design and planning process and reviewing completed schemes over time as communities change.

This report seeks to bring all the issues together and through an emphasis on observational studies, put the focus on people first in residential developments. By examining data it aims to provide balanced evidence about how people use external spaces and offers recommendations that will be useful for those planning, delivering and managing new residential developments.

This objective view is a starting point for a wider debate about the importance of open spaces and streets in residential areas. The discussion should continue and broaden out to the community itself so that the voices of all residents can be heard, young and old alike. In this way we will better serve the communities we are designing for, now and well into the future.

- 1 Office for the Deputy Prime Minister (2000) 'Our towns and cities: The future' ODPM: London.
- 2 CABE (2005) 'Start with the Park' and (2006) 'Paved With Gold. The real value of good street design'.
- 3 Communities and Local Government (2012) National Planning Policy Framework.
- 4 Communities and Local Government (2012) National Planning Policy Framework.
- 5 DfT and DCLG (2007) Manual for Streets.
- 6 UK Green Building Council (2016) 'Health and wellbeing in homes' UKGBC: London.
- 7 Communities and Local Government (2011). 'Planning Policy Statement 3: Housing'. London: HMSO.
8. Jacobs, J. (1961) 'The Death and Life of Great American Cities'. New York: Random House.
9. Appleyard, D. (1981). 'Livable Streets'. Berkeley: University of California Press.
10. Whyte, W. H. (1980). 'The Social Life of Small Urban Spaces'. New York: Project for Public Spaces.
11. Cooper Marcus, C. and Sarkissian, W. (1986). 'Housing as if people mattered: Site Design Guidelines for Medium Density Family Housing'. Berkeley: University of California Press.
- 12 CABE (2007). 'A sense of place. What residents think of their new homes'. London: CABE.
- 13,30 Social life (2015) 'L&Q shared outdoor spaces: what works?' London: Social Life.
- 14 Homes and Communities Agency (2015) 'Quality Counts – feedback from residents' London: HCA.
- 15 Berkeley Group, University of Reading and Social Life (2015) 'Creating Strong Communities' Berkeley Group: Surrey.
- 16 Clark H, et al (2015). 'Play – A Report by the All-Party Parliamentary Group on a Fit and Healthy Childhood' London.
- 17,25,27 Gill, T (2007) 'No Fear: Growing up in a risk averse society'. London: Calouste Gulbenkian Foundation.
- 18 Children's Play Council, (2006), 'Planning for Play: Guidance on the development and implementation of a local play strategy'. London: NCB/ Big Lottery Fund.
- 19 Mayor of London (2012) 'Shaping Neighbourhoods: Play and Informal Recreation'. London: GLA.
- 20 Mayor of London (2009) 'London's Great Outdoors'. London: GLA.
- 21,26 Wheway R., and Millward, A., (1997) 'Child's Play: Facilitating play on housing estates', The Joseph Rowntree Association and Chartered Institute of Housing.
- 22 Page, A.S, Cooper, A.R., Griew, P., Davis, L. & Hillsdon, M. (2009) 'Independent mobility in relation to weekday and weekend physical activity in children aged 10-11 years: The PEACH Project'. University of Bristol: International Journal of Behavioral Nutrition and Physical Activity.
- 23 Shaw, B., Bicket, M., Elliott, B., Fagan-Watson, B., & Mocca, E (2015) 'Children's Independent Mobility: an international comparison and recommendations for action'. London: Policy Studies Institute.
- 24 Hillman, M., Adams, J., & Whitelegg, J., (1990) 'One False Move'. London: Policy Studies Institute.
- 28 Biddulph, M (2011) 'The impact of innovative designs on activity in residential streets'. School of City and Regional Planning, Cardiff University.
- 29 URBED / University of Edinburgh / Design for Homes (2013) 'Space to Park' URBED: Manchester.
- 31 Birkbeck, D. & Kruczkowski, S., (2015). 'Building for Life 12: The sign of a good place to live' CABE at the Design Council, Design for Homes, Home Builders Federation, Nottingham Trent University.
- 32 Play England (2009) 'Tools for evaluating play' NCB: London.
- 33 Mayor of London (2012) 'Shaping Neighbourhoods: Play and informal recreation' London: GLA.



Chapter 2

Methodology

Methodology

TEN SCHEMES

Our list of schemes was developed with advice from the Homes and Communities agency and represents a range of densities, layouts and locations. The list includes award winning projects that have embraced best practice advice and more standard schemes for comparison.

10

This study is a review of the use of external spaces in ten housing schemes across England, all completed within the last 20 years. Each scheme has been studied in the same way and is presented as series of case studies in chapter 3.



In chapters 4 and 5, comparisons are drawn between all of the schemes, using the data and a series of mapped principles to draw some broad conclusions and suggestions for future projects.



Two of the schemes are in London, two are close to London, and the others are spread across the rest of the country. Most schemes have an element of social housing. Several of the schemes use homezone/shared surface principles for street layout.



Each of the schemes has access to green space and/or play areas within or next to the residential area.



Data collection

The methodology for the research builds on a rich tradition of observational analysis and data gathering from William H Whyte through to Jan Gehl. It draws on a similar study, carried out by Mike Biddulph in 2011, which looked at homezones versus traditional street layouts. Whereas Biddulph's study focused on the street and included traffic speed analysis, this research turns its attention to external spaces in general and focuses on numbers of people, their time spent and activities carried out.

Two researchers stood for a minimum of six hours over two separate days. Schemes were surveyed in pairs, from separate positions with a good field of view in all but one scheme, where views were restricted due to layout. Data was gathered at weekends, after school in the evening or during the day in the school summer holiday period. Study days were chosen when the weather was fine. Each scheme yielded 24 hours of data, except Barking Riverside which was studied for 40 hours.

Researchers filled in tables, by hand, recording the following information for each person in their view:

Age group

Pre-school (under 5)
Child (5-12)
Teenager
Adult
Elderly

Time

Time into view
Time out of view

Whether in a group or alone

Activity carried out

Passing through
Hanging out
Domestic chores
Talking
Observing others
Play
Supervision of children playing

Way of moving

On foot
Bicycle
Pushchair
Scooter
Mobility scooter

Notes

Permission was sought from each housing neighbourhood manager, who was able to deal with any resident concerns. If approached the researchers said they were carrying out a traffic study, the intention being not to influence behaviour. Occasionally they were drawn into conversation; where views are expressed they are offered as anecdotal and not representative of residents in general. As residents were not interviewed or photographed there were not seen to be any specific ethical issues. All data is anonymous.

Each individual was assigned one activity. If they took part in a social activity then this took precedent over a non-social activity. Activities were only recorded in external spaces and no record of people in cars or coming and going to cars is made.

Passing through is a social or non-social activity and can include walking the dog. This is what Gehl describes as a 'necessary' activity. A person would be seen briefly moving through the space.

If they stayed longer then they were divided between 'optional' and 'social' activities.

Optional:

- **Hanging out** defined as a solo activity for this study
- **Domestic chores** washing the car, mending a bike, hanging out washing and gardening.

Social:

- **Talking** a social activity carried out in a group (excluding solo mobile phone use)
- **Observing others** a solo activity but nonetheless social
- **Play** a social activity, for the most part we define this as a children's activity
- **Supervision of children playing** an adult activity.

For data analysis pre-school age and school age children numbers are combined. We did not however, include pre-school age in the analysis of unaccompanied use of external spaces.

It was not possible to distinguish between residents and non-residents; this issue is looked at in the case study section when non-resident numbers have been thought to be high in a number of the schemes.

The intention with our research was to develop some useful principles that can be applied to external spaces based on our findings.

We have created maps that categorise all external spaces in a development in relation to people. Rather than focusing on the quality and character of these spaces, the maps are skewed towards how residents are using spaces. They are intended to show how easy spaces are to access from dwellings, how well overlooked they are by homes, how well connected they are to each other as well as the neighbourly connections created by street layouts.

In the following chapter for each of the ten case studies, four types of maps are presented. The maps focus on the layout of all external spaces within the development. The maps seek to visualise the way these spaces are laid out in relationship to each other and to the dwellings. The different types are shown on the following pages:

- Shared external spaces
- Access from dwellings
- Networks
- Streets - entrance relationships.

Each page gives example maps from three of the case studies; they represent the best scoring, middle scoring and lowest scoring schemes — all of which are shown in more detail in the case study section.

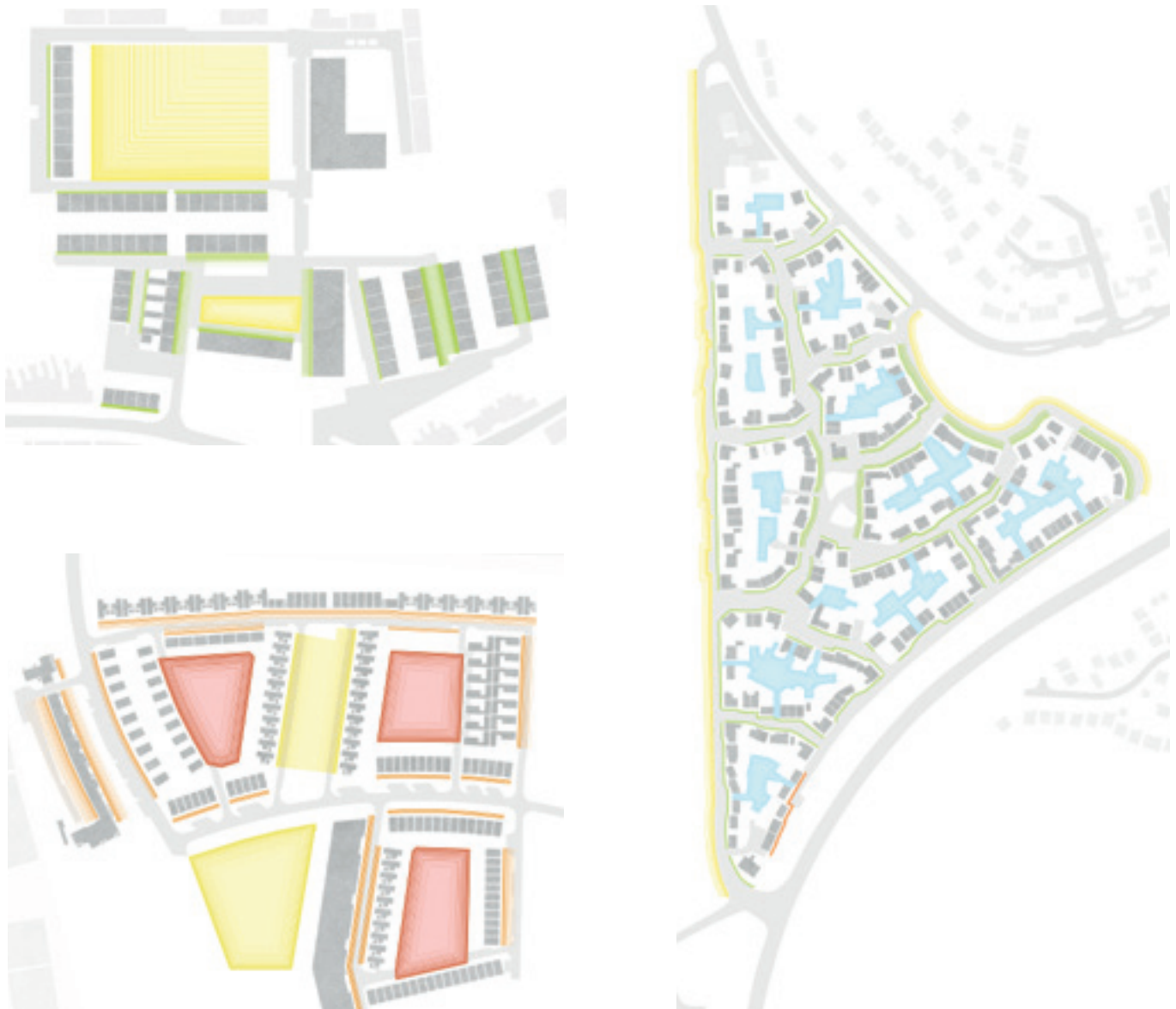
We are led by Rob Whewey and Alison Millward's study from 1997 which found that on the estates where play needs for children were met, they saw:

- Traffic calming, street closure, walls and driveways
- Grassy areas set back from the road
- A footpath network (for pedestrians and cycles) around and through the estate linking into public open spaces
- Cul-de-sac layout with a spinal footpath network and informal play areas.¹

1. Whewey R., and Millward, A., (1997) 'Child's Play: Facilitating play on housing estates', The Joseph Rowntree Association and Chartered Institute of Housing.



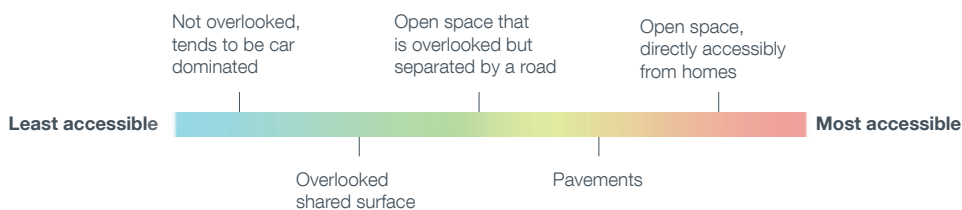


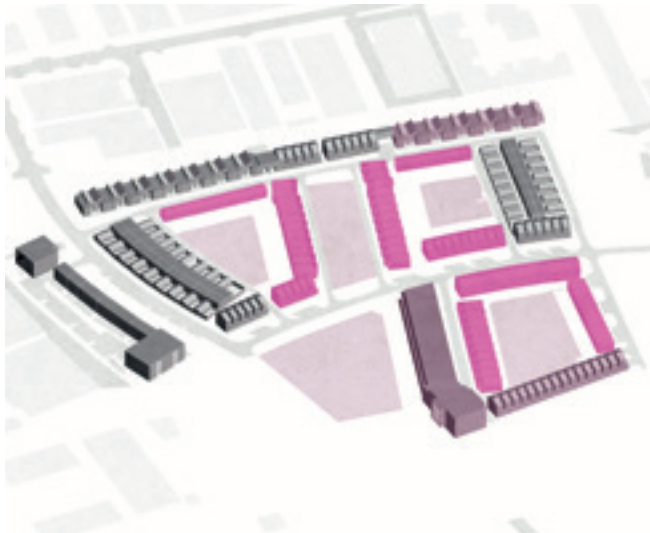
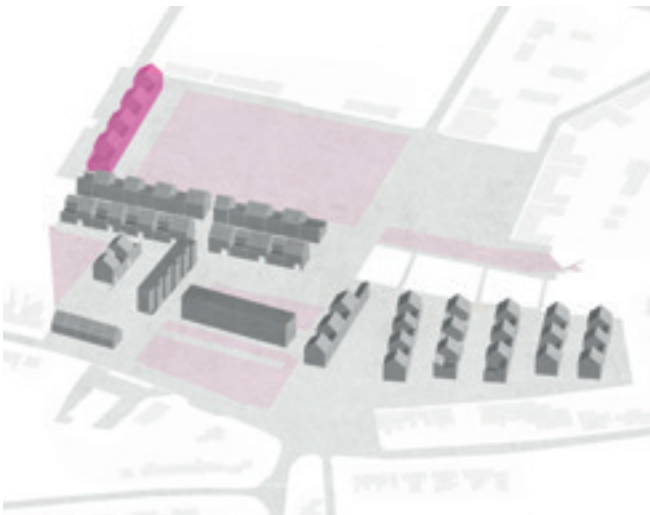


Shared external space rating

Three schemes are shown here showing the types of external space within each development, using the colour gradation below. A warm colour is given to shared spaces that are car-free, well overlooked and directly accessible from dwellings. A cold colour signifies car dominated spaces. The maps rank all external spaces whether grass or hard surface, on a spectrum from red through orange, yellow, green to blue. Dwellings are dark grey and roads are light grey.

We call 'heat maps'. The warmer the map, the more safe and accessible the external spaces.





Access from dwellings

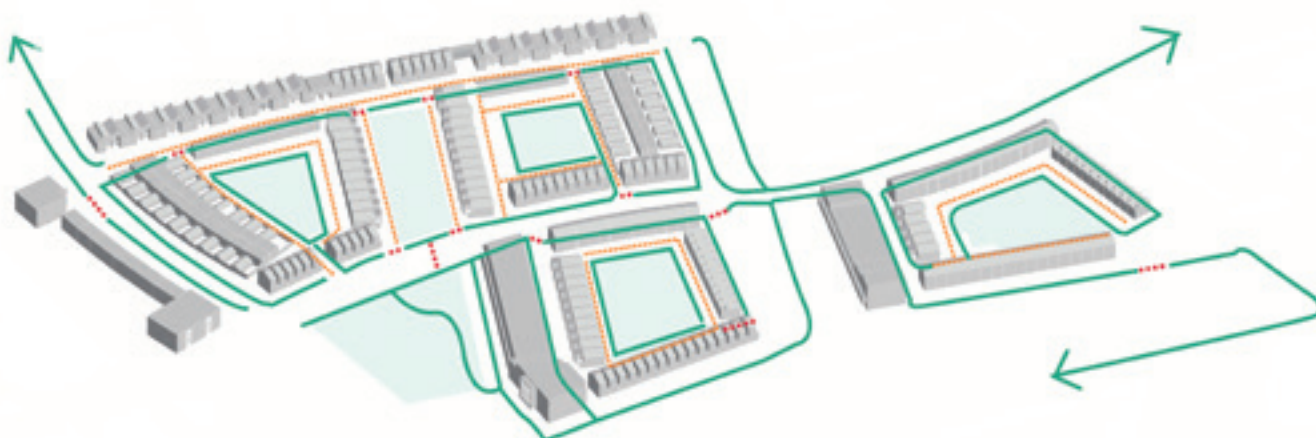
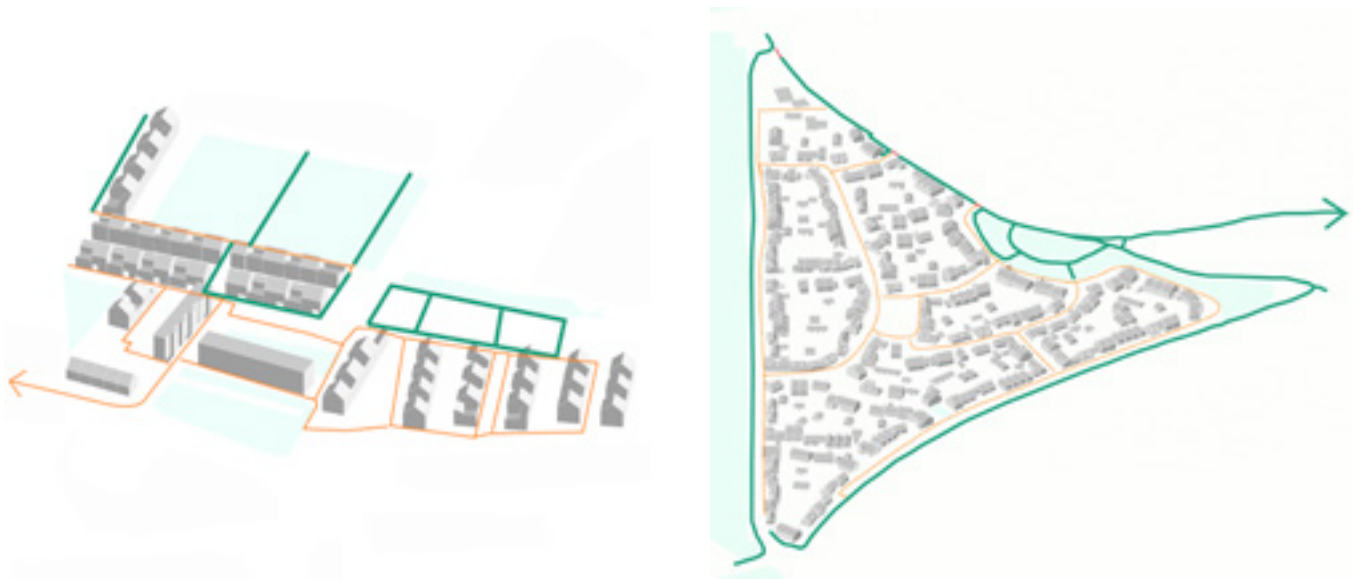
These maps highlight what access is like from each of the dwellings, giving an indicator of the relationship to shared spaces across all of the development. Universal access to car-free shared space is very difficult to achieve, but these maps show the extent to which it occurs on each development.



Dwellings that are able to directly access shared space and have a clear line of sight from the house to the external space are shown as bright pink.



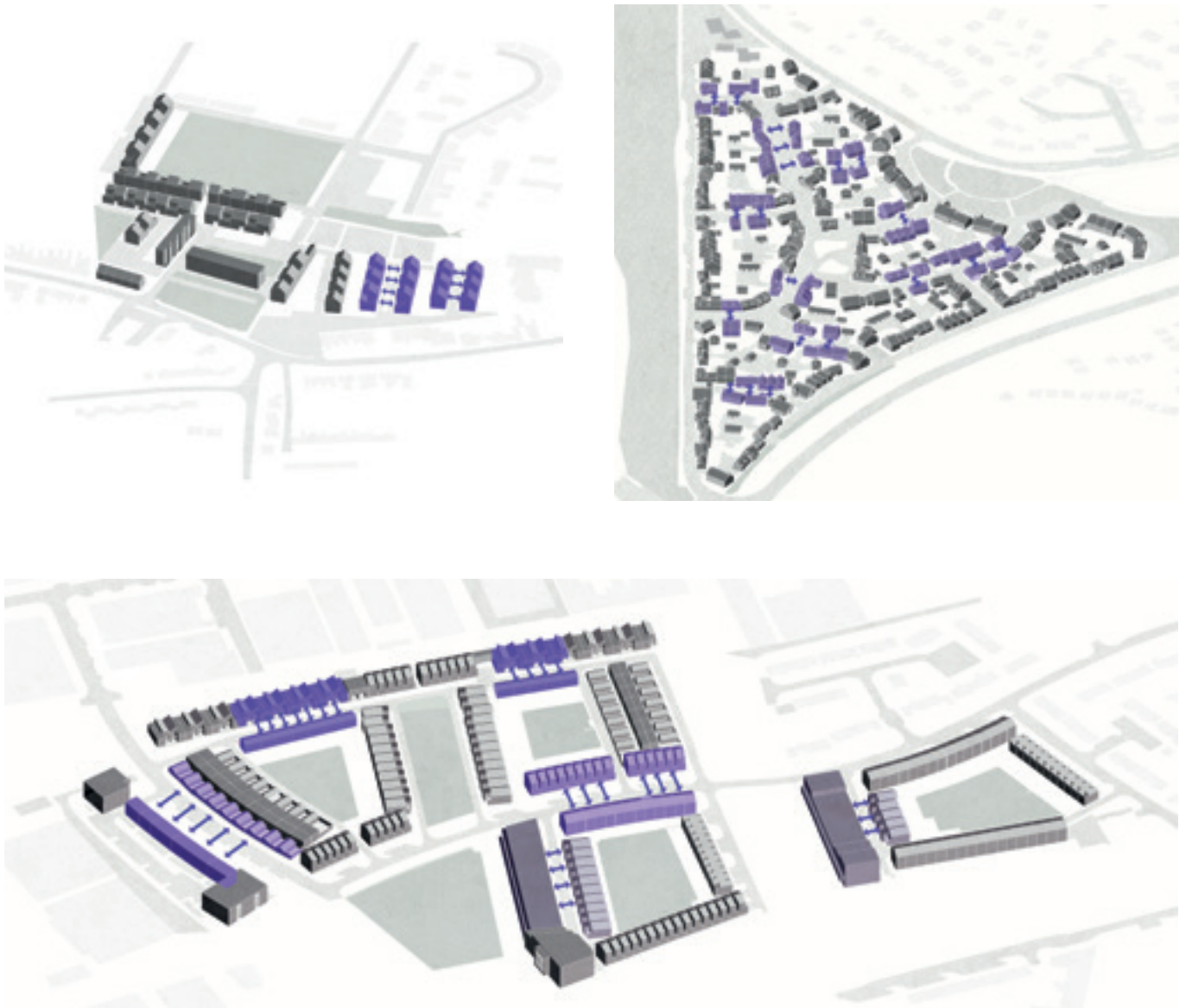
Those that can safely access the space, via a pavement or safe route are shown as dusky pink.



Networks

The network and connections between the shared spaces is crucial to support physical activity, children's independent use and greater social use of spaces. These maps have a 'traffic light' code of green, amber and red to show the type of networks across the development as well as their connections to the wider context.

- Green is a safe, car-free route - this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- Red is a crossing over a road, or close to a road



Streets - entrance relationships

Finally, we highlight the importance of the traditional 'street' form, whereby front doors face each other or are clustered together, as one that fosters social interaction and neighbourliness. It is generally regarded to be poor practice for front doors to face rear gardens or blank façades and these maps allow us to compare the proportion of the development that is laid out to avoid such a relationship.



Social networks across a series of streets

Chapter 3

Case studies

Case studies



01 Barking Riverside
Barking and Dagenham,
London



02 The Americas
Haywards Heath,
West Sussex



03 Market Estate
Islington, London



04 So Stepney
Tower Hamlets, London



05 Lime Tree Square
Street, Somerset



06 Staiths
Gateshead,
Tyne and Wear



07 Derwenthorpe
Yorkshire



08 Allerton Bywater
West Yorkshire



09 Dinnington
South Yorkshire



10 Lawley Village
Shropshire



Barking Riverside

Location: Barking, London

No. of dwellings: 419

Density: 54 dwellings per hectare

Developer: Bellway Homes

Housing Association: Southern Housing Group

Architect: Sheppard Robson

Landscape Architect: Gustafson Porter

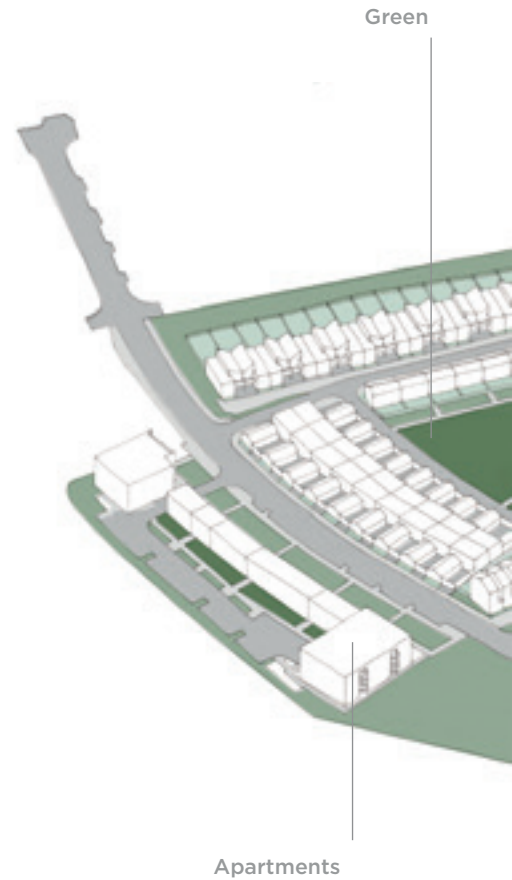
Completion: 2012

Image courtesy of Hufton and Crow



Barking Riverside

Barking Riverside is a large residential development on brownfield land, in the Thames Estuary, east of London.



Access from gardens to Buzzard Mouth Court



Buzzard Mouth Court with houses beyond



Galleons Drive

Buzzard Mouth Court

Drake Close



The first phase, chosen as the study area, was completed in 2008. The layout of this phase is unusual for a suburban development in that most of the houses are grouped around shared greens known as 'Buzzard Mouth Courts'.

The greens are accessible on three sides from rear gardens, via small footbridges over swales that catch surface water run off. In addition to the greens are some pond areas and a large playground. Other swales and shallow ponds are distributed around the scheme.

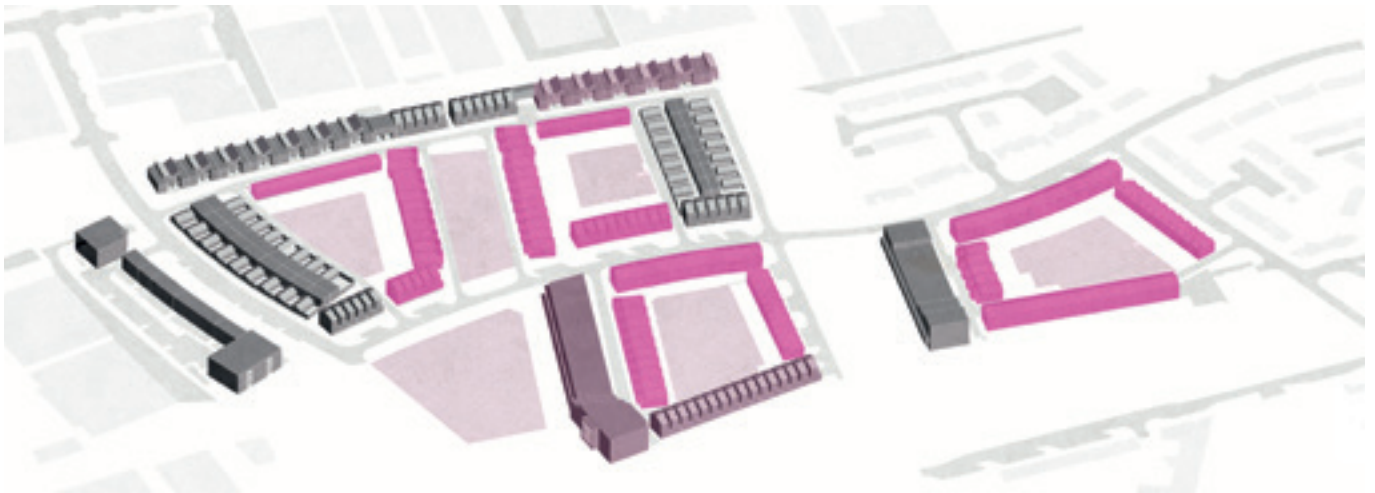
An extensive 'Play, Sport and Recreation' document formed part of the masterplan process. In line with policy from the London Plan 2004 and the GLA 'Children and Young Peoples' Play and Informal Recreation' 2008, the strategy lays out play provision for age groups 0-5, 5-11 and 12-16.

Clear urban design principles were established that considered street alignment, courtyard access, frontages and surveillance. The ultimate intention to provide places to 'meet and play'.

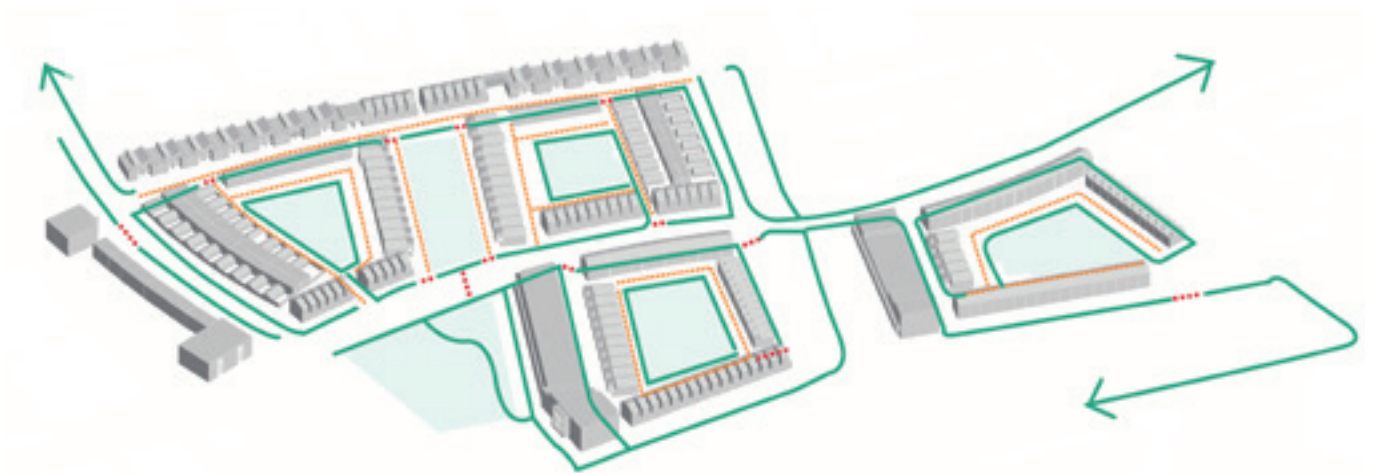
We visited Barking Riverside in February and saw signs of use in the green spaces - areas of worn grass and the odd football left lying around.

In the summer, during the observation period the greens were very well used. On one Sunday afternoon a children's party was held; children and adults stayed outside for the most part of the day. The effect this may have had on the data is discussed later.

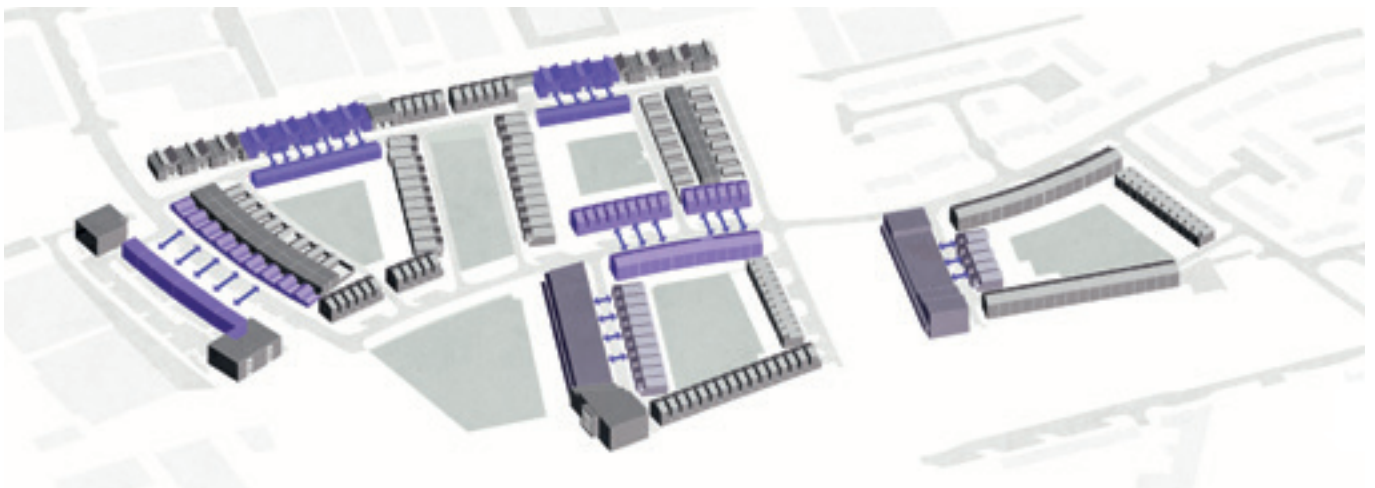
The researchers observed that both playground and green spaces were well used.



- ⬢ Dwellings that are able to directly access shared space and have a clear line of sight from the house
- ⬢ Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route - this could be a pavement, green space or a hard surface
- - - Orange is a shared surface street, where pedestrians and cars share the route
- - - Red is a crossing over a road



- ⬢ Social networks: dwellings facing each other across a street

Barking Riverside: Mapping analysis

Barking Riverside achieves the highest overall score

Our heat map for shared external space shows:

- A good distribution of red spaces across the site — direct access to car-free shared space
- Open spaces distributed well across the site
- Less well accessed playground (yellow).

Access

Very good direct and fairly good indirect access throughout the scheme.

Networks

Good networks of safe pathways and connections.

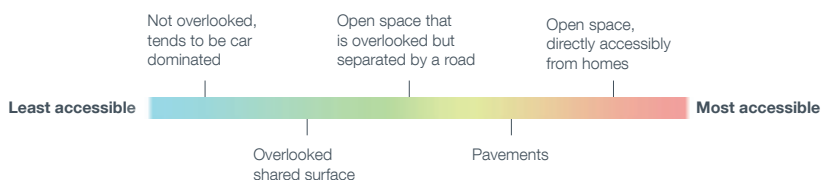
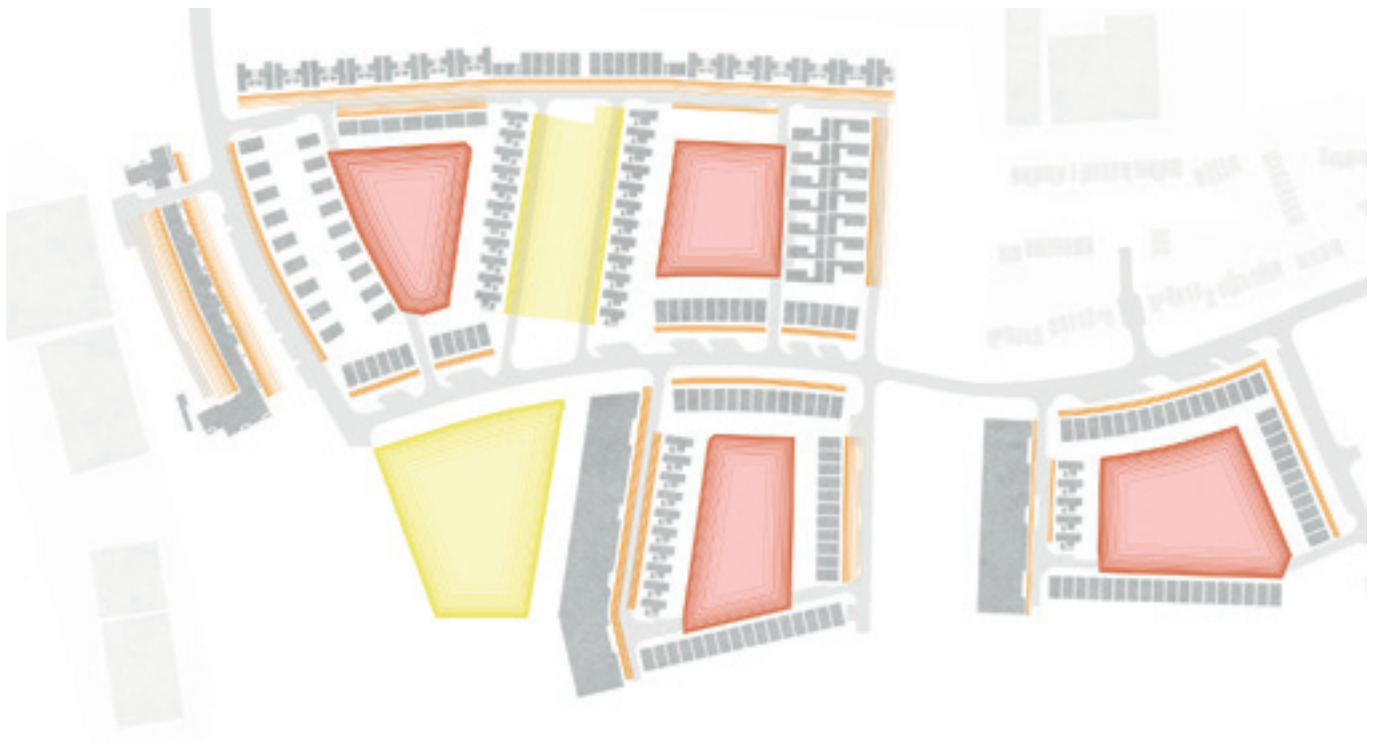
Streets

A number of streets distributed throughout the scheme.

Mapping ranking

Shared external spaces	5
Access from dwellings	3.5
Networks	4
Streets	2
Total	14.5

Shared external spaces



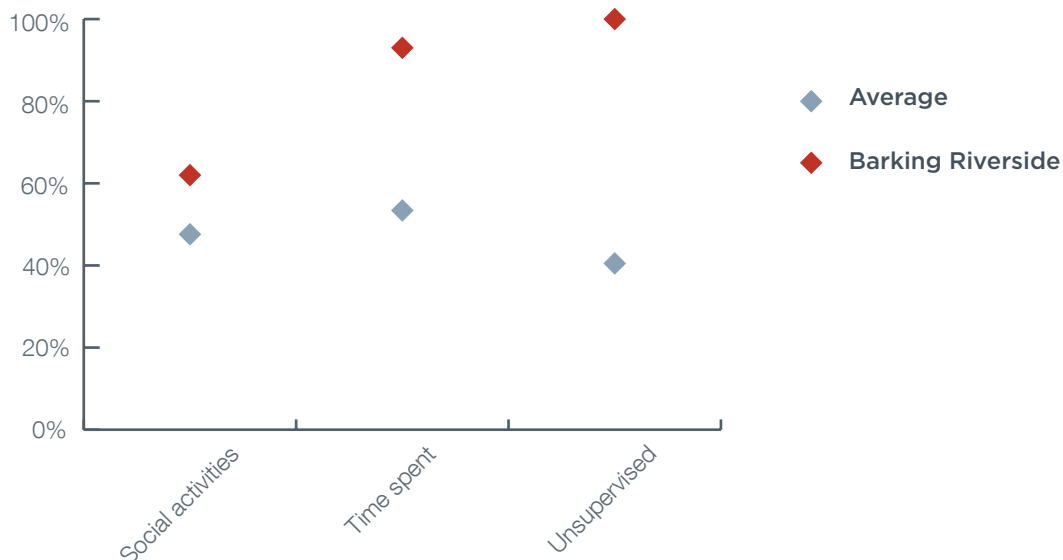
Barking Riverside: Observational data

Barking Riverside scored the best of all the schemes

Note the event taking place on one of the days may have had an effect on the figures. However, data was collected over a greater period, 40 hours rather than 24; it was the first to be studied and the researchers decided to spend more afternoons there than expected. The overall data was factored to take in the extra hours.

- Numbers of people using the spaces was high, with a good number of teenagers and a large number of children
- Extended use of the space was good
- Unsupervised use of the spaces was also very good: in the data a link is seen between higher numbers of children using space unsupervised and the length of time they spend outside.

Comparison between Barking Riverside and other case studies as an average



Most houses do have direct access onto shared spaces and the scheme has indeed created spaces to 'meet and play' as it set out to do. Open spaces are well used by most age groups, although attention should be given to the low number of elderly people using the spaces.





Good use was made of the main playground, which seems well used by children and adults together. However, access to the playground is poor from the adjacent block, which has single aspect apartments raised above ground floor parking. Entrance to the block is from the street on the other side from the playground, making it more difficult for children to safely access it. Note photographs were taken during the day in February, not during the data collection period.

Although the roads are fairly quiet, with speed limits at 20mph, anti-social parking on pavements will reduce the safety of the streets and make movement more dangerous for the young and elderly. With the surfaces of pavement and road often indistinguishable, this may also contribute to the problem.



Our other concern with the scheme is the behaviour of motorists; there were a number of cars parked on the pavement, close to front doors, causing obstructions to pedestrians and damage to tree planting. We observed people needing to use the road to move around; for example a woman walking a child in a pushchair along the centre of the street.



PORTLAND CLOSE 1

The Americas

Location: Haywards Heath, West Sussex

No. of dwellings: 186

Density: 43 dwellings per hectare

Developer: Wilmington Way LLP JV for Linden Homes

Housing Association: Affinity Sutton

Architect: PRP

Landscape Architect: Neil Tully Associates

Completion: 2013

Image courtesy of Affinity Sutton



The Americas

The Americas is a medium sized development of houses and apartments in the town of Haywards Heath, West Sussex.



Playground



Cul-de-sac



Playground



The regeneration of the previous scheme involved demolishing the existing houses on the site, whilst retaining the apartment buildings. Ten households returned to live in the development upon completion.

The houses are arranged in terraces with gardens to the front and rear, a deliberate attempt to redress the previous Radburn style scheme, whereby the back gardens face the street, which had poor privacy and surveillance. Additional parking is provided in rear courts.

A playground near the centre acts as a focal point and is overlooked by surrounding dwellings.

On the day that we visited a number of children were playing outside on bikes and scooters in the cul-de-sac, adults were close by but busy with domestic chores such as unloading the car. A woman visited the playground with a small child.

We noted traffic calming measures, however residents do complain of speeding vehicles along Woodstock Place, the access road into the scheme.

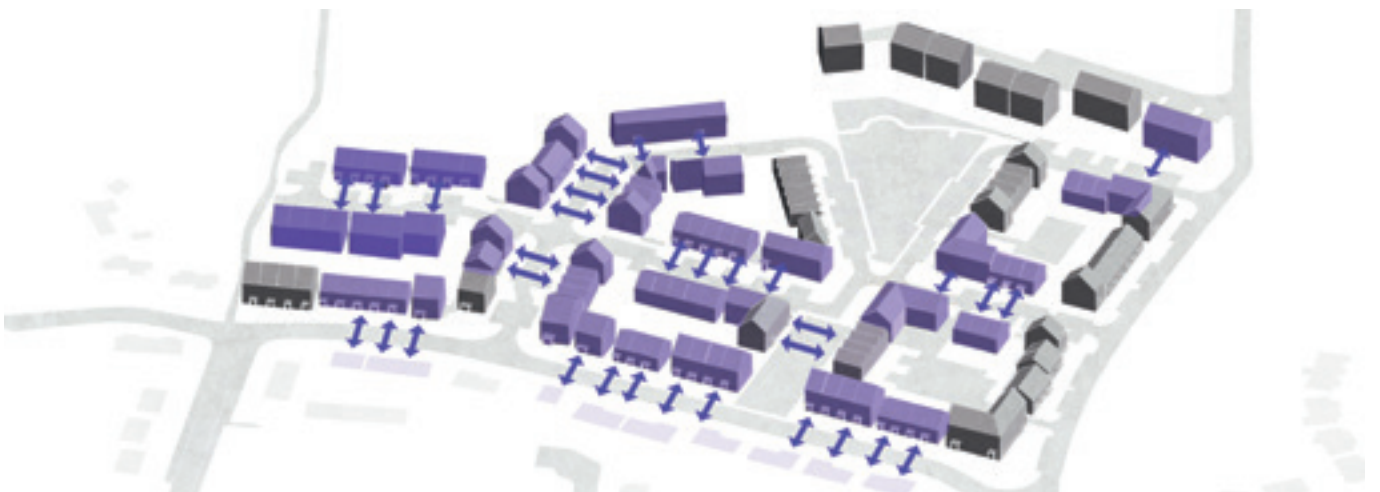
The scheme scored 14 out of 20 in the Building for Life Assessment. It was also given Secured by Design accreditation.



- Dwellings that are able to directly access shared space and have a clear line of sight from the house
- Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route — this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- Red is a crossing over a road



- ⇄ Social networks: dwellings facing each other across a street

The Americas: Mapping analysis

The Americas rank third

Shared external space shows:

- The main external space, a playground, is centrally located, with a smaller space to the south
- The playground is well overlooked, but not directly accessible, other than from an existing row of houses to the north.

Mapping ranking

Shared external spaces	3
Access from dwellings	2.5
Networks	3
Streets	4
Total	12.5

Access

Poor direct and very good indirect access throughout the scheme, linked by pavements.

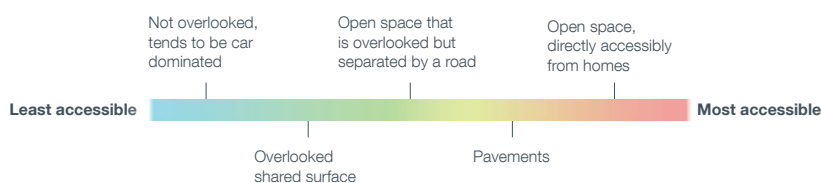
Networks

A fairly good networks of pavements, although it was noted that the speeding cars were driving through from the main access road.

Streets

There are a large number of streets within the scheme, with dwellings facing one and other.

Shared external spaces

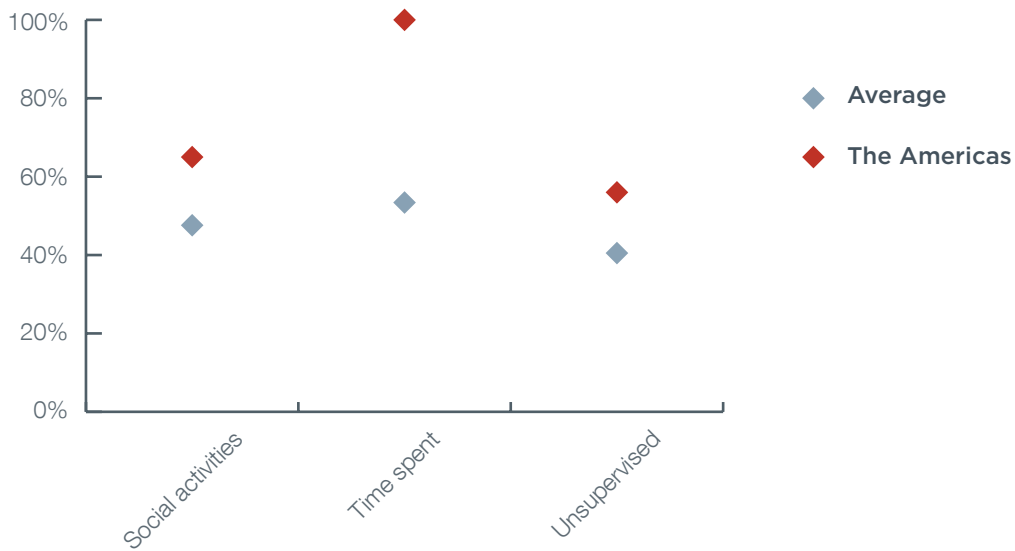


The Americas: Observational data

The Americas ranks second in terms of our data criteria

- The researchers observed that people spent the greatest amount of time outside, compared to other schemes
- It scored well for optional and social use as well
- Children and young people's use of space ranked third.

Comparison between The Americas and other case studies as an average





In terms of spending extended periods outside and for social use the external spaces perform differently. The cul-de-sac is a space close to home and well overlooked by dwellings and entrances, children played here for extended periods of time and there were adults outside observing and socialising - 19 children were seen playing, 16 of these were unaccompanied.

The researchers were positioned in two different places; one stood in view of the cul-de-sac and the other near the playground which is fenced off and separated by a road. Although well used, it was not used for extended periods. Over the two days 65 children were observed playing in the play area and of these, 21 were unaccompanied.



The generous pavement width and verges create a safe network of spaces around the site which seem to be allowing children and young people to move freely around the area.





Market Estate

Location: Islington, London

No. of dwellings: 421

Density: 150 dwellings per hectare

Developer: Higgins Group

Housing association: Southern Housing Group

Architect: HTA Design LLP

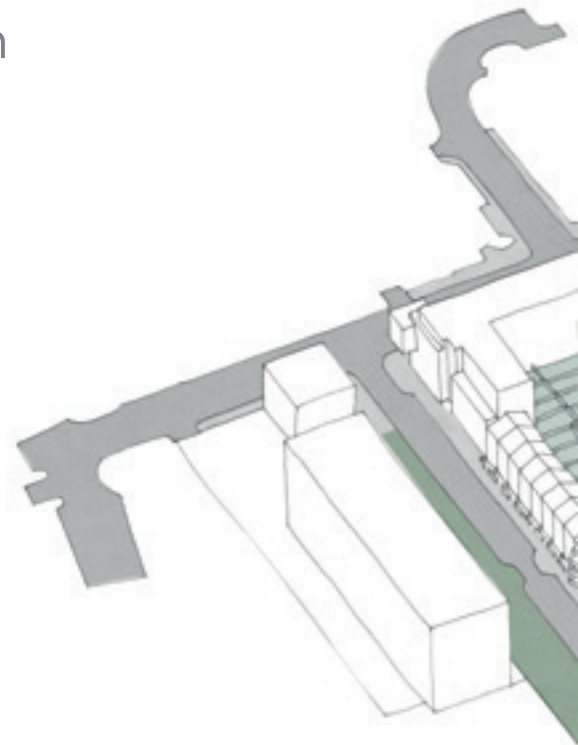
Landscape Architect: Grontmij

Completion: 2014

Image courtesy of Tim Crocker

Market Estate

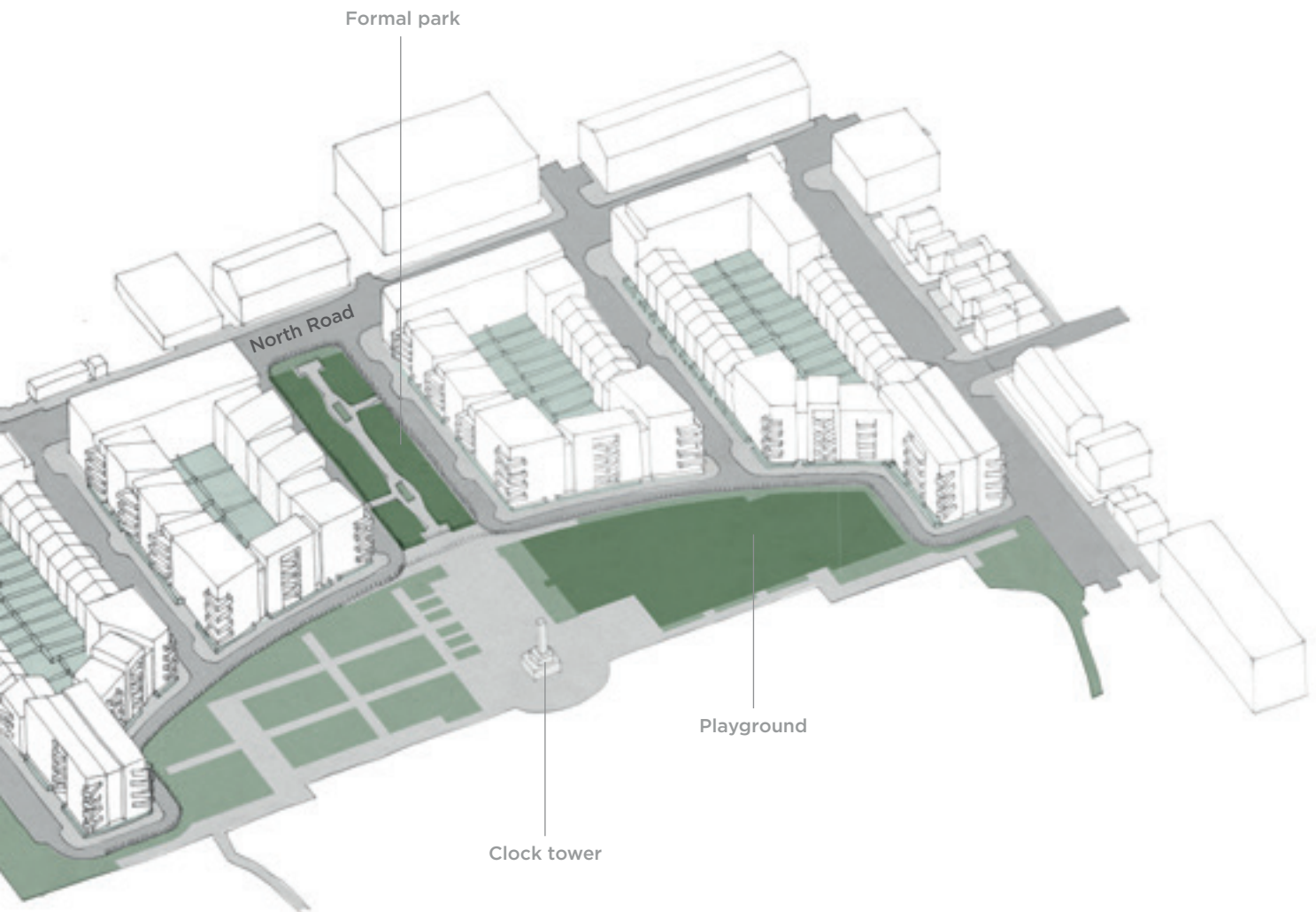
Market Estate is a high density scheme replacing a run-down estate in the London Borough of Islington in London. It is situated to the north of Caledonian Park, historically the site of the Metropolitan Cattle Market whose listed clock tower remains as a centre piece.



Public park



Formal garden



The scheme is laid out with four five storey blocks around a formal garden at the centre. The blocks face on to Caledonian Park to the south. Ground floor apartments each have their own private gardens. Upper floor apartments are accessed from the street via shared lobbies.



Each block is ringed by a pavement and road, separating them from both the park and formal garden. Both park and garden are laid out with formal planting and fences at their perimeters. Access to these shared spaces is through a gate.

Commercial units front onto North Road and the development was able to include space for the former council offices.




A recent review of the scheme by the g15, 'Meeting the challenge of urban renewal'¹ describes the regeneration of the estate as a success reporting significant reductions in anti-social behaviour; the new formal gardens replacing large external spaces which were difficult to police.

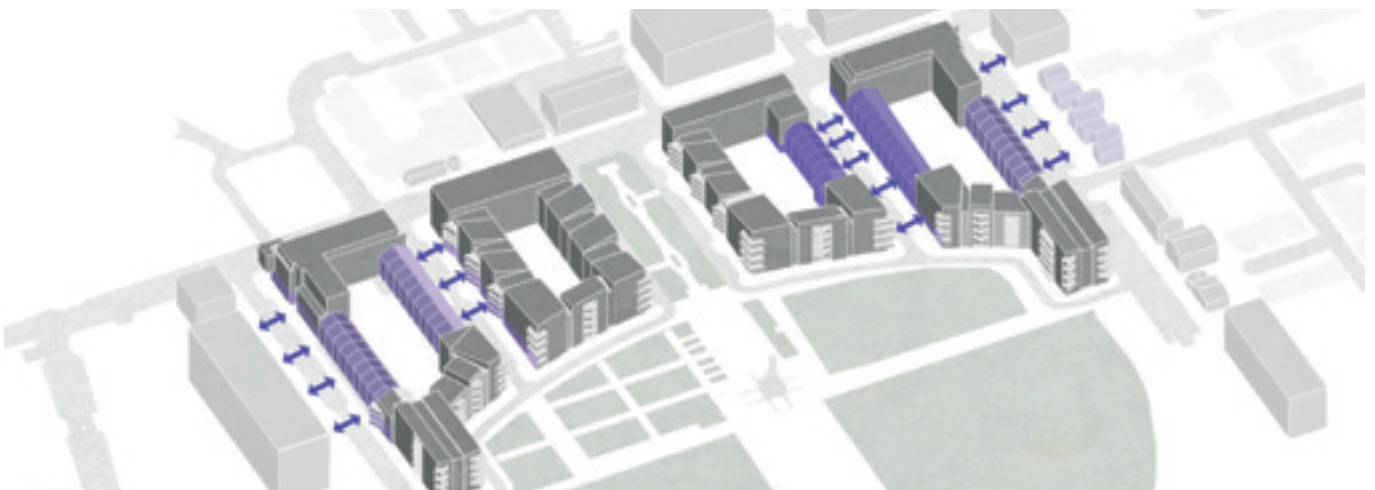
1. Bokaian, R., Sprowles, R., & Warwick, E. (2016). 'Meeting the challenge of urban renewal' g15: London.



-  Dwellings that are able to directly access shared space and have a clear line of sight from the house
-  Dwellings that can safely access the space, via a pavement or safe route



-  Green is a safe, car-free route — this could be a pavement, green space or a hard surface
-  Orange is a shared surface street, where pedestrians and cars share the route
-  Red is a crossing over a road



-  Social networks: dwellings facing each other across a street

Market Estate: Mapping analysis

Market Estate ranks seventh

Shared external space shows:

- The park, which is a large external space to the south and the formal garden are both well overlooked but not directly accessible from the dwellings.

Access

There is no direct or indirect access to external spaces.

Networks

There is no network between blocks.

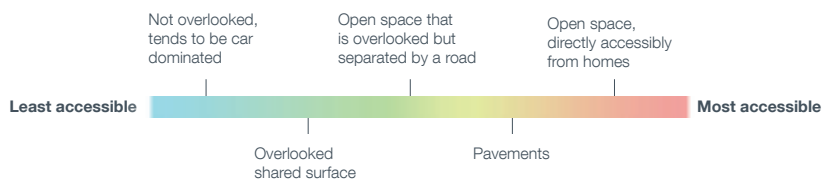
Streets

The arrangement of blocks means that streets are created with dwellings facing one another.

Mapping ranking

Shared external spaces	2
Access from dwellings	0
Networks	1.5
Streets	2
Total	5.5

Shared external spaces

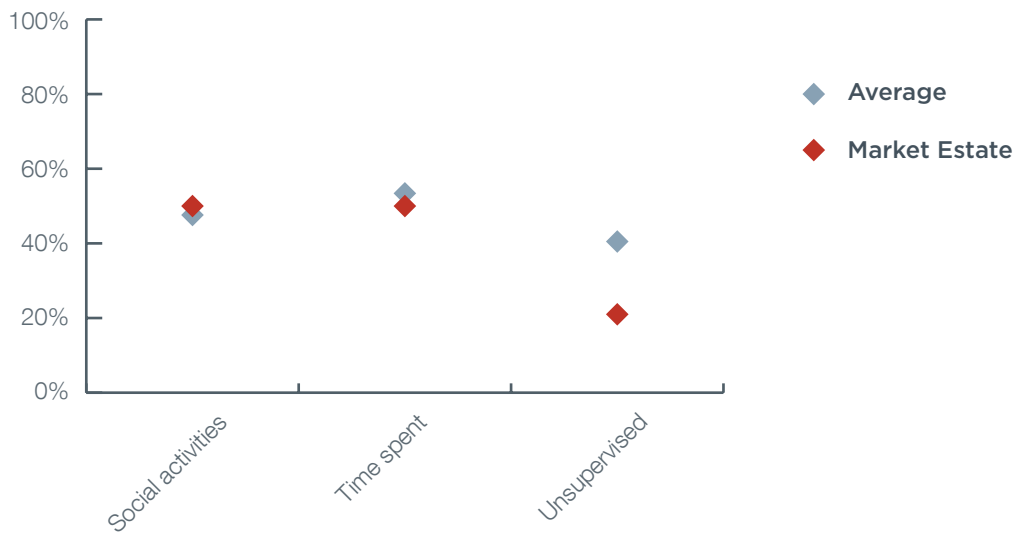


Market Estate: Observational data

Market Estate ranked in fourth place in terms of observational data

- Its scores for optional/social use of space and time spent outside were reasonable
- There was poor independent use of space by children and young people.

Comparison between Market Estate and other case studies as an average





The private road, as with other schemes, suffers from parked cars obstructing the pavements, which will make it difficult for pedestrians to use the space safely.

Our researchers were in view of the formal garden and public park. Both these green areas are separated by a road from the dwellings and further separated by a fence, plus in the case of the park, by a broad planted area. Although a good number of people were observed outside, it is likely that the park is used by residents from a wide area and as a cut through between two main roads.



Children's unsupervised use of external spaces was low. Given that there is an abundance of open space, it is disappointing that it has not been fully considered in relation to the dwellings and is more likely to be acting as a visual amenity and a destination for the wider community.





So Stepney

Location: Tower Hamlets, London

Density: 230 dwellings per hectare

Client: East Thames Housing Group,
First Base, Bellway Homes, Wates Living Space,
Spitalfields Housing Association

Architect: Levitt Bernstein

Landscape Architect: Levitt Bernstein

Completion: 2014

Image courtesy of Tim Crocker

So Stepney

This scheme is part of the regeneration of the existing Ocean Estate in the London Borough of Tower Hamlets in the east of the capital.



Beaufort Gardens



Gated courtyards



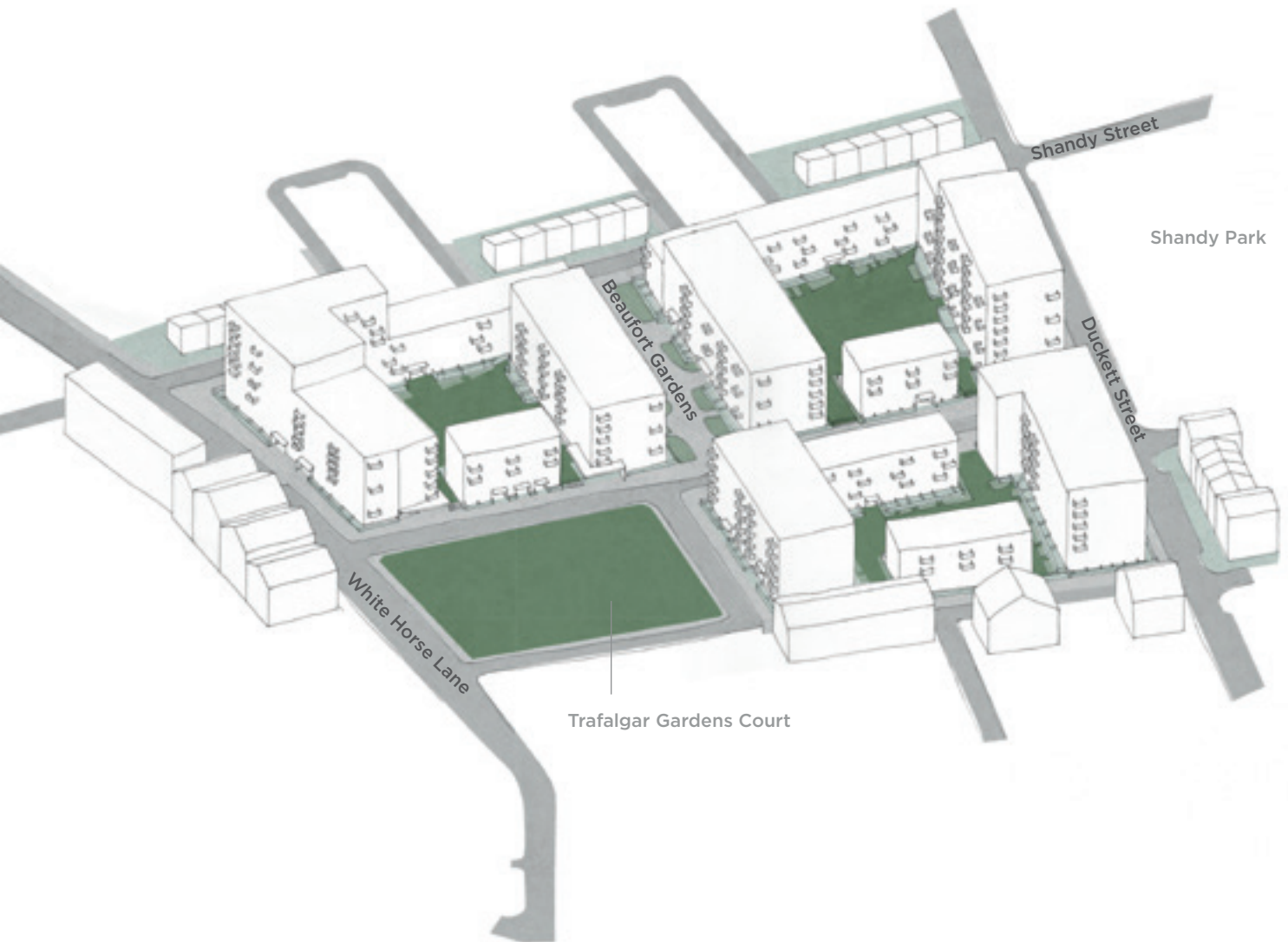
Trafalgar Gardens Court



Duckett Street

Courtyard

Beaufort Gardens





The layout of the scheme is a series of three blocks and private courtyards, adjoining a small local park, Trafalgar Gardens Court. A pedestrianised street, Beaufort Gardens, runs from north to south between two of the blocks.

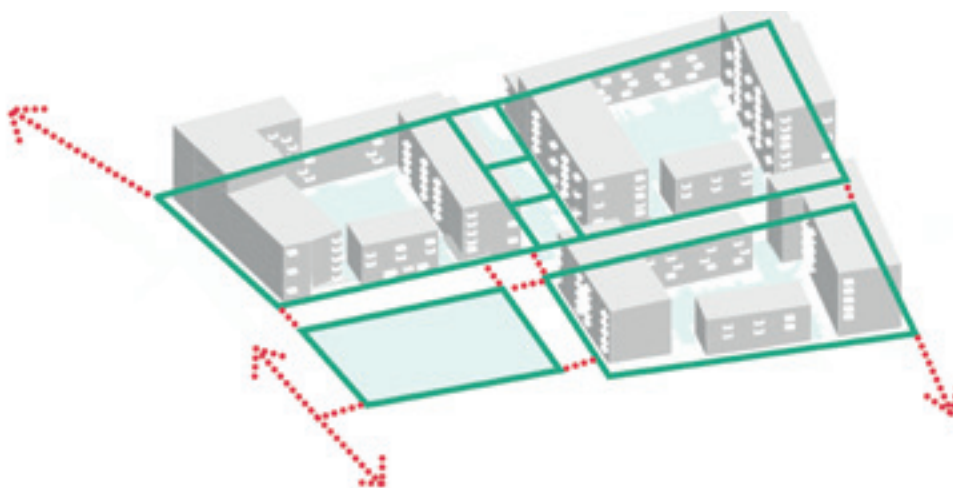
On the ground floor of each of the blocks are two storey maisonettes, each with their own private gardens leading onto a shared courtyard. These dwellings are intended for families with children.




Access to the apartments above is from the street, through shared lobbies which also lead to the courtyard. The layout of the apartments is single aspect, each facing either into or out from the courtyard. Apartments on the upper floors all have their own balcony.

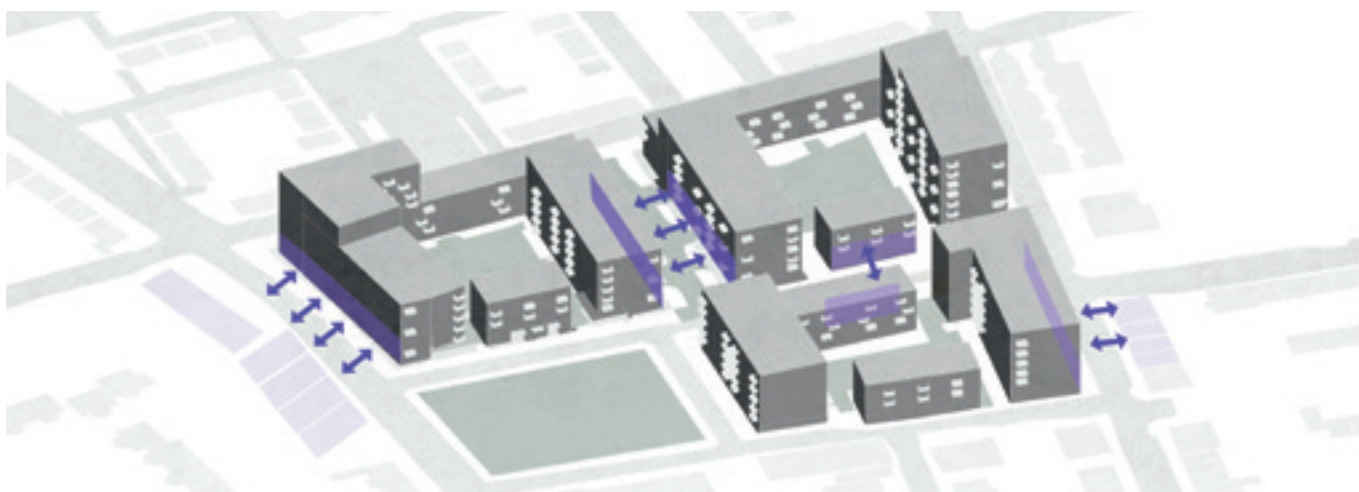
The development has won a number of awards, including the London Construction Awards 2016, Regeneration Project of the Year and London Planning Awards, 2014, Best New Place to Live.



-  Dwellings that are able to directly access shared space and have a clear line of sight from the house
-  Dwellings that can safely access the space, via a pavement or safe route



-  Green is a safe, car-free route — this could be a pavement, green space or a hard surface
-  Orange is a shared surface street, where pedestrians and cars share the route
-  Red is a crossing over a road



-  Social networks: dwellings facing each other across a street

So Stepney: Mapping analysis

So Stepney ranks fourth

Shared external space shows:

- The external courtyards and pedestrian street are all directly accessible from dwellings and well overlooked
- The park (outside the development) is separated by a road.

Access

All dwellings either have either direct or indirect access. However, most are indirect (upper floors and dwellings facing out from the block).

Networks

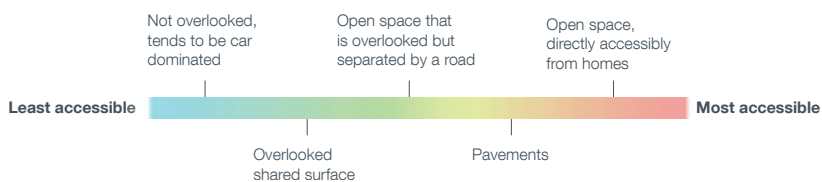
There is a good network of pavements with some roads to cross.

Streets

The block arrangement means that there are fewer front doors facing each other.

Mapping ranking	
Shared external spaces	5
Access from dwellings	1
Networks	3
Streets	2
Total	11

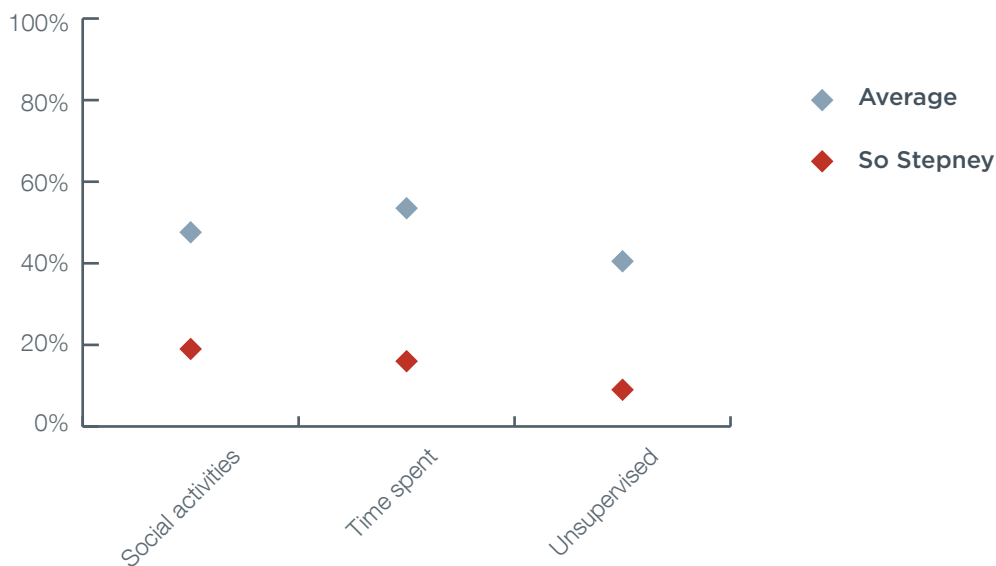
Shared external spaces



So Stepney: Observational data

- So Stepney achieves one of the lowest scores when density is taken into account, in terms of numbers of people using the external spaces for all aspects of use; social/optional, time spent and children and young people's independent use of space.
- Despite this, the way the spaces were used is interesting with children spending time outside for longer periods and the proportion of children playing unaccompanied being high.

Comparison between So Stepney and other case studies as an average





Overall the private courtyard arrangement has the advantage of being well used, in particular by children and for longer periods of time. It also draws out other residents. But its success is mostly limited to residents on the ground floor — further research should be done in this area to look at how courtyards can be easily accessed for all residents.

Parking behaviour was good on adopted roads where cars kept to bays, and poor on private roads. The photograph on the right shows a car parked across a pavement on an unadopted section (to the left of the picture), adjacent to cars parked in bays and policed by a traffic warden.

Parking enforcement is essential in order to maintain the principles of pedestrian and people friendly streets that the development sets out to achieve.



Gated access to the courtyards from the street means no passing through. Access from upper floors is secure, making it more difficult for children to use by themselves.

The researchers were positioned in two of the courtyards, meaning their field of view was limited to these spaces and not the streets on entrances beyond.



Lime Tree Square

Location: Street, Somerset

No. of dwellings: 130 (phase 1)

Density: 40 dwellings per hectare

Developer: Crest Nicholson

Housing association: Knightstone Housing Association

Architect: Feilden Clegg Bradley Studios

Landscape Architect: Grant Associates

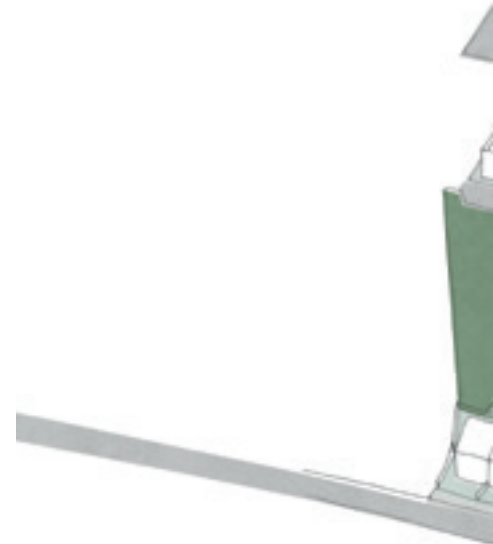
Completion: 2009

Image courtesy of Tim Crocker



Lime Tree Square

Lime Tree Square is a redevelopment of the former Clarks shoe factory on a site in the small town of Street in Somerset.



Streets



Green



Phase 1 of the development was completed in 2009, further phases are underway to the north and east of the site.

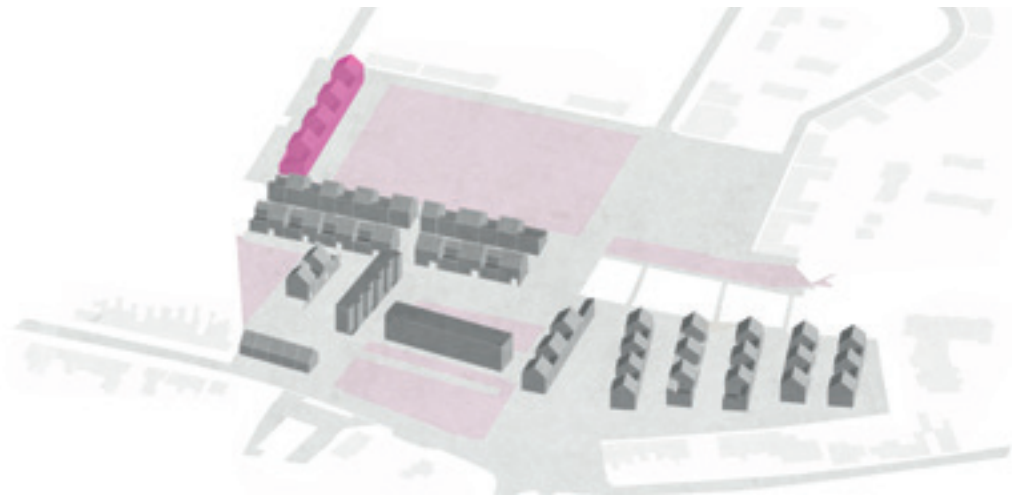
The development is predominantly houses, with a single apartment block on Lime Tree Square. There is a good deal of open and green space within the site; Lime Tree Square in the south, a large green to the north as well as reed-planted water channels with footpaths running through them.

The principles of the development were to provide a traditional street pattern, with shared surface streets and a high proportion of shared public space. The green streets are said to be 'owned' by the houses that front on to them.

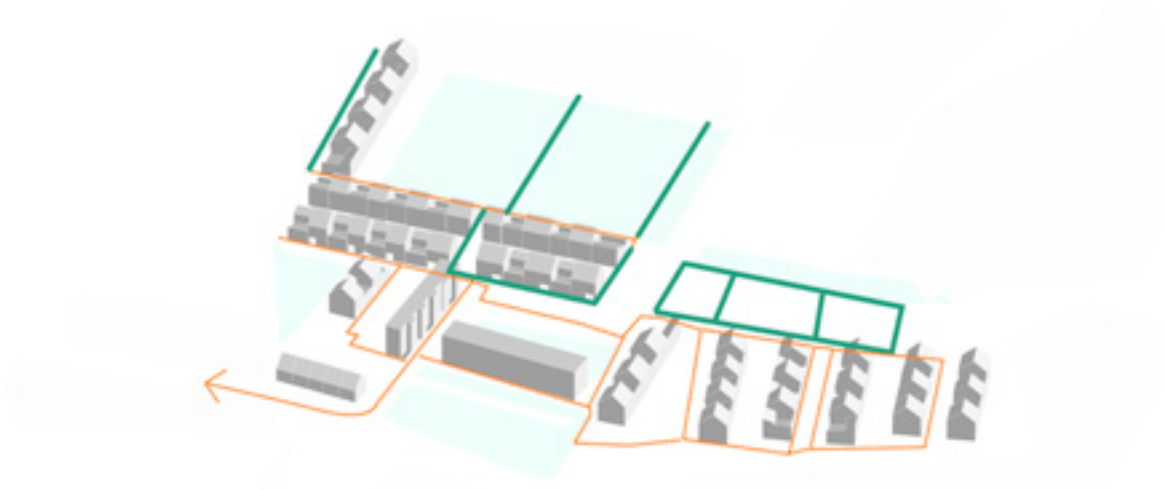
The street layout varies; mainly shared surfaces, there are also several narrow pavements, some too small to walk along or interrupted by tree planting.

This project is one of two also studied by Mike Biddulph in his 2011 study 'Life in their street: The impact of innovative designs on activity in residential streets'. Since then, the second phase has been completed.

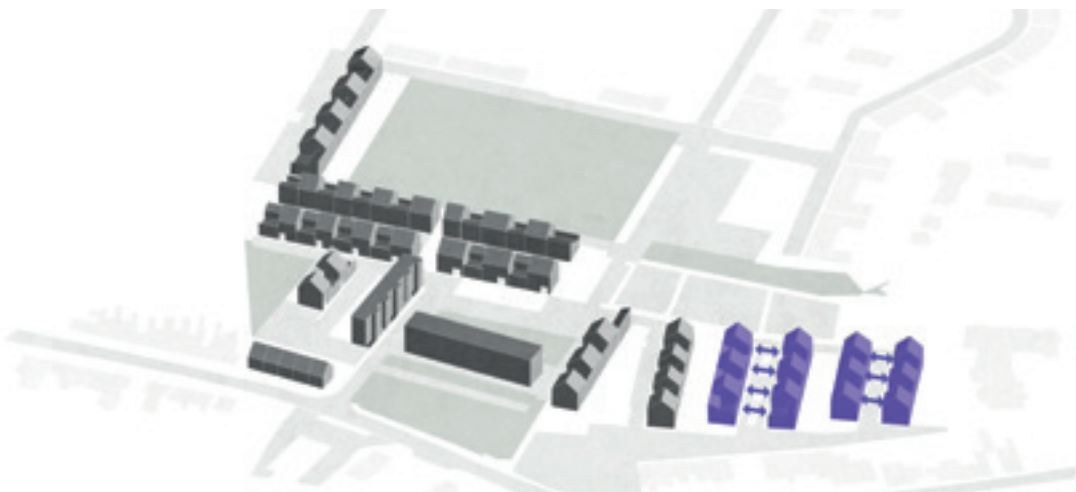
The project was awarded Building for Life Awards: Gold Standard 2009 (19 out of 20)



- 🏠 Dwellings that are able to directly access shared space and have a clear line of sight from the house
- 🏠 Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route — this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- Red is a crossing over a road



- 🏠 Social networks: dwellings facing each other across a street

Lime Tree Square: Mapping analysis

Lime Tree Square ranks fifth

Shared external space shows:

- The main green space is only directly accessible through back gardens along one edge. It is overlooked by dwellings.
- Lime Tree Square (towards the bottom of the map), is also not directly accessible and there were a number of cars parked there.

Mapping ranking

Shared external spaces	2
Access from dwellings	1
Networks	1.5
Streets	2
Total	6.5

Access

One row of dwellings has direct access (through rear gardens with high brick walls) to the main green space.

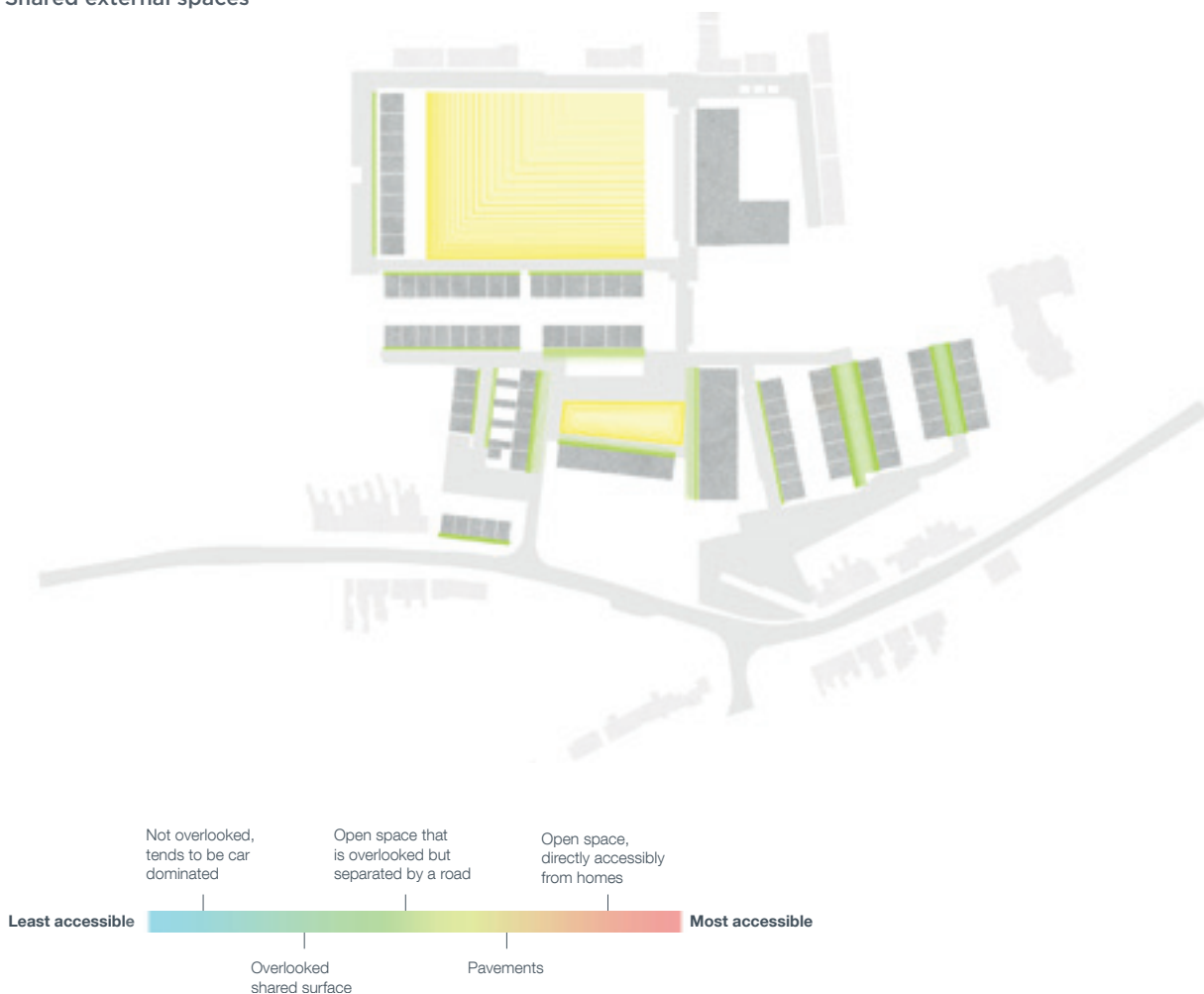
Networks

There are poor networks around the scheme, relying on shared surfaces which are car dominated, and pavements which are too often too narrow or straddled by cars.

Streets

There are a few short streets.

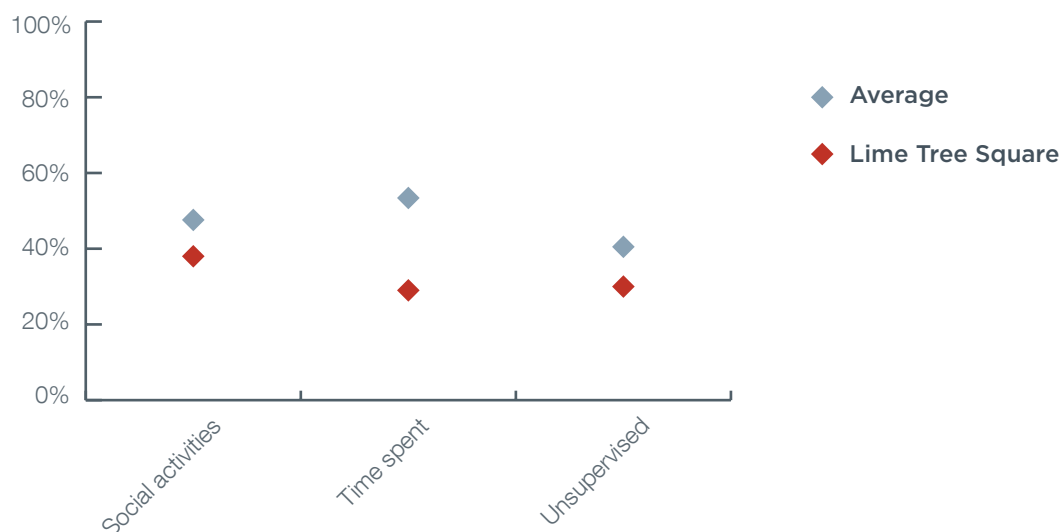
Shared external spaces



Lime Tree Square: Observational data

- Our observational data revealed a rather quiet scheme; ranking fifth, with lower scores than average for each of the criteria. Indeed on the warm sunny Sunday in July when we visited, children could be heard indoors, but only one was seen outside, crossing a street.
- In Biddulph's study, the scheme is described as being 'one of the most straightforward schemes to discuss.' He saw 'children actively play for long periods', going on to say 'The pre-school children tended to play close to their homes. The slightly older children often ride bikes around the estate along circular routes, they played football between the features of the square, and they climbed on and sit at the picnic benches and hung off the bike stands. They used the central space intensively for long periods of time.' He concludes that the 'intense activity' in the square is leading to 'social possibilities for the wider population'.
- This positive picture was encouraging and we anticipated observing similar levels of activity of children and other age groups, but this wasn't the case.

Comparison between Lime Tree Square and other case studies as an average



Lime Tree Square is no longer a place for playing. One of the residents was keen to tell the researchers that the behaviour of motorists has rendered the social spaces unusable.



The generously sized green space is accessible on one side from dwellings with high brick walled gardens. A road runs on two sides with cars parked close to front doors. The fourth side is a swale with high planting, obscuring the view from the pavement and houses on the other side. What could be a village green is therefore a physically isolated space, maintaining visual amenity perhaps, but falling short of its role in fostering a space for residents to meet and play.



Cars are parked close to dwellings on the main square and in other areas, making the scheme potentially unsafe for children and older people, both for moving around and for enjoying the shared spaces.



Safe pavements and footpaths connecting spaces are distinctly lacking in Lime Tree Square, with instances of planting in pavements, or pavements too narrow to use. There are some short stretches of pavement but linkages are unclear and inconsistent. The scheme relies on a shared surface layout which means people often need to walk in the centre of the roads to move around.





Staiths

Location: Gateshead, Tyne and Wear

No. of dwellings: 743

Density: 46 dwellings per hectare

Developer: Taylor Wimpey

Architect: Ian Darby Partnership

Landscape Architect: Glen Kemp

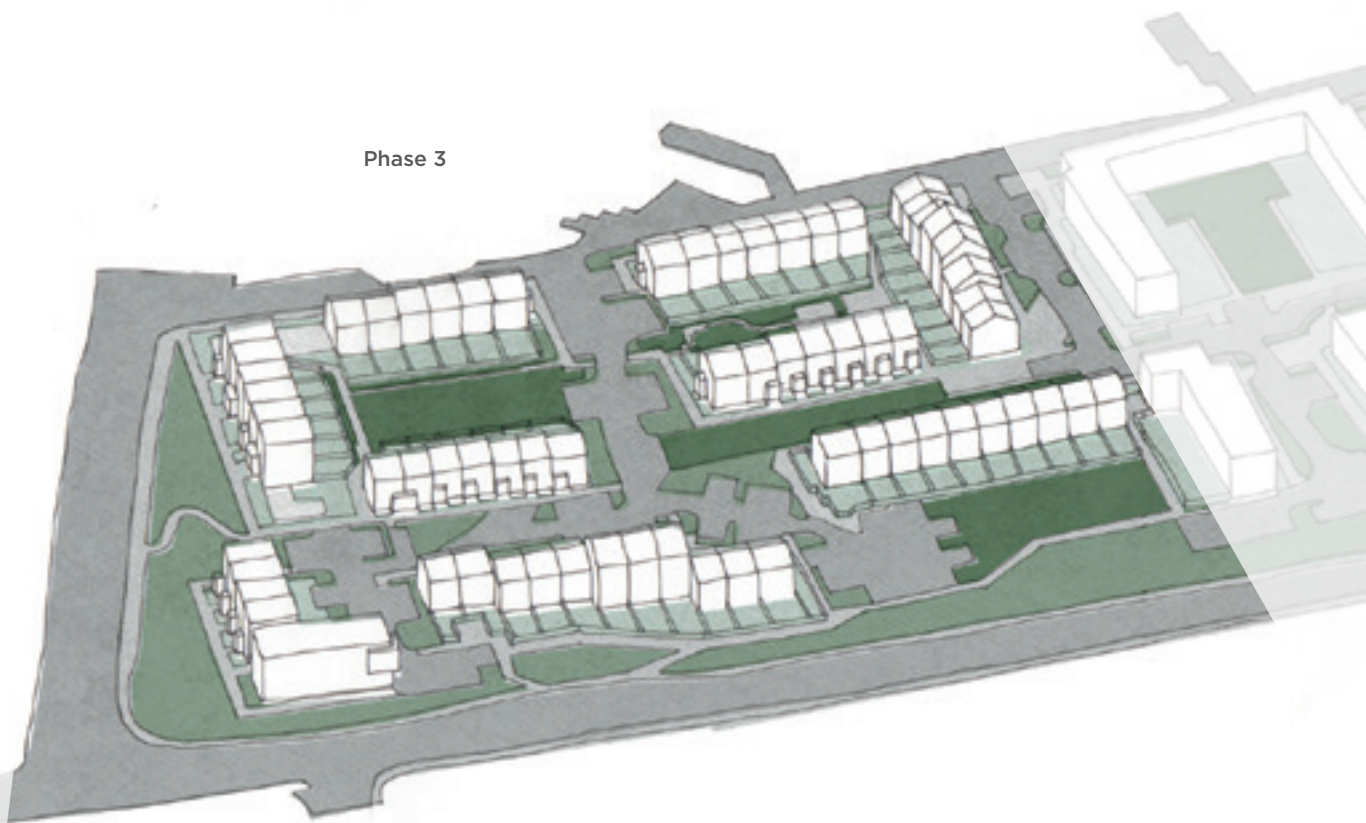
Completion: 2003 and 2016

Image courtesy of Graeme Peacock



Staiths

Staiths South Bank is a large phased development on the banks of the Tyne in Gateshead, Tyne and Wear.

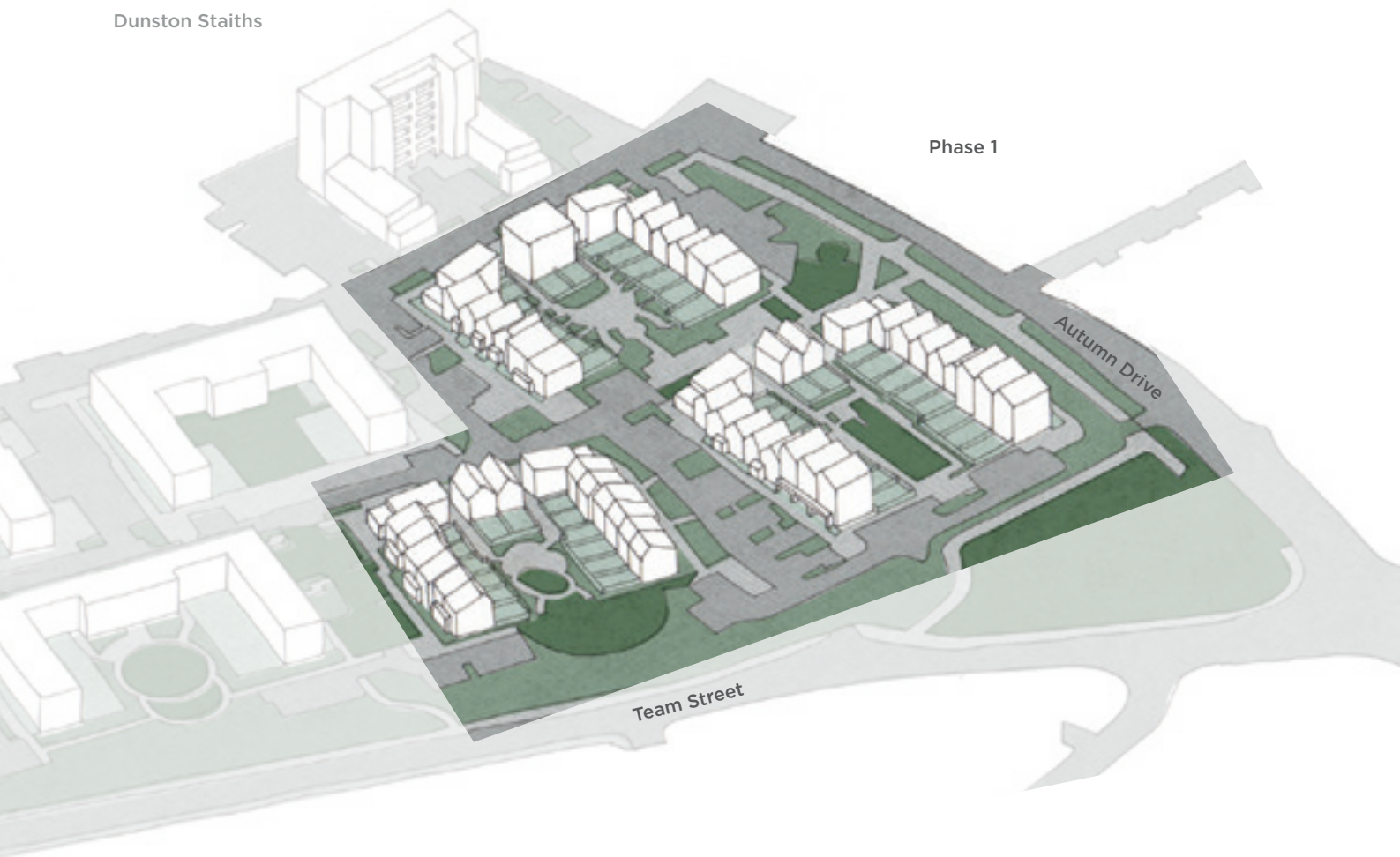


Streets and front gardens



Shared courtyards

Dunston Staiths



The site is a redevelopment of former gasworks and includes the refurbishment of the staiths themselves; built for unloading coal they are said to be the largest wooden structures in Europe.

Phase 1 of the housing development at Staiths came about as a result of Wayne and Geraldine Hemingway's challenge to housebuilders to stop the 'Wimpeyfication of Britain'. Taylor Wimpey employed the Hemingways and architects Ian Darby and Partners, who set out to design a homezone scheme with a choice of layouts for the new residents. The layout of the first phase was a series of houses arranged in horse-shoe shaped blocks around shared courtyards containing barbecues and places to meet and play. The street layout further encouraged the social aspect of the scheme with informal play equipment, benches and wide pavements.

The project was underpinned by a thorough play strategy, with external spaces designed to cater for the different needs of children, teenagers and adults.

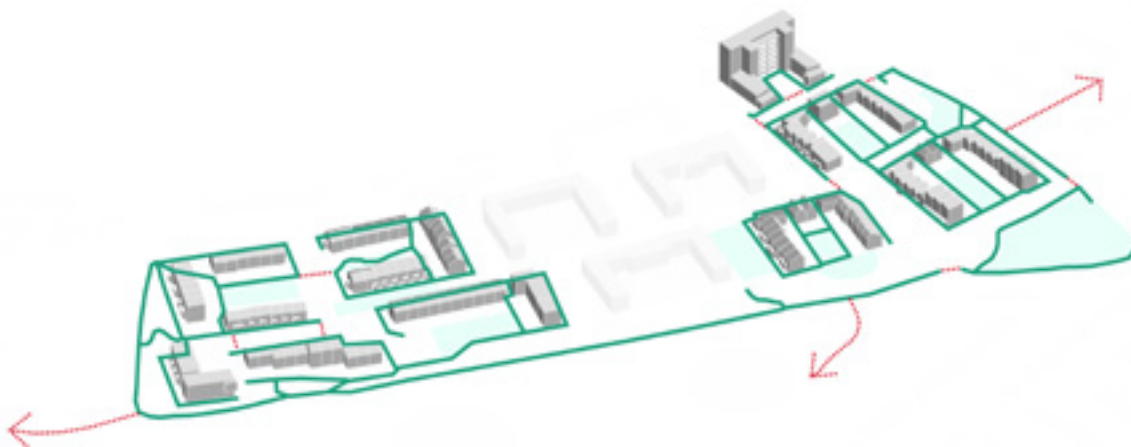
The scheme was the largest homezone at the time and with a philosophy of what Ian Darby Partnership calls 'pedestrian friendly neighbourhoods that enabled children to "adventure in safety".' It was somewhat of a departure for the housebuilder.




The scheme sold out overnight, with new residents attracted by both a design and community point of view, a survey by the Arts Council revealed in 2006. However, the majority of buyers did not have children, which may seem unusual given the objectives. We explain later why this may have affected our field data, but we also note that housing designed for children seems to be attractive for those without children too.

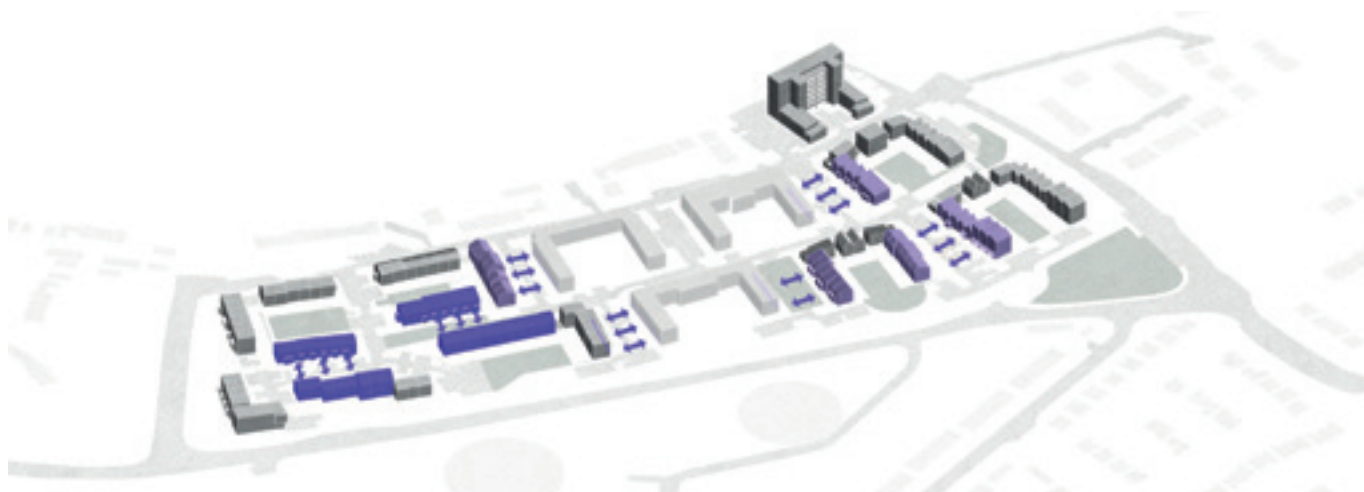
The crash of 2008 halted the next few phases, so that in 2016 it is now only just complete. Ian Darby Partnership and the Hemingways were not employed on the later phases, although the intentions were held onto in terms of masterplanning and layout.



-  Dwellings that are able to directly access shared space and have a clear line of sight from the house
-  Dwellings that can safely access the space, via a pavement or safe route



-  Green is a safe, car-free route — this could be a pavement, green space or a hard surface
-  Orange is a shared surface street, where pedestrians and cars share the route
-  Red is a crossing over a road



-  Social networks: dwellings facing each other across a street

Staiths: Mapping analysis

Staiths ranks second

Shared external space shows:

- A very good distribution of shared spaces throughout the scheme
- Less good space around apartment buildings.

Access

Nearly all dwellings have direct access to shared external spaces.

Networks

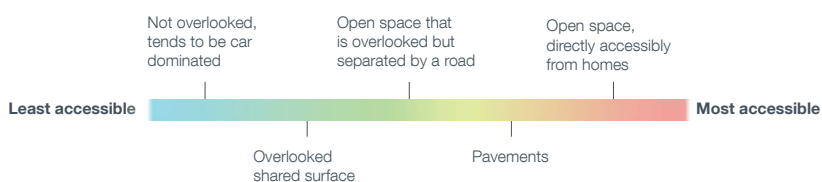
Good networks around the site.

Streets

The block arrangements mean there are fewer streets with entrances facing each other.

Mapping ranking	
Shared external spaces	4
Access from dwellings	4
Networks	3
Streets	3
Total	14

Shared external spaces

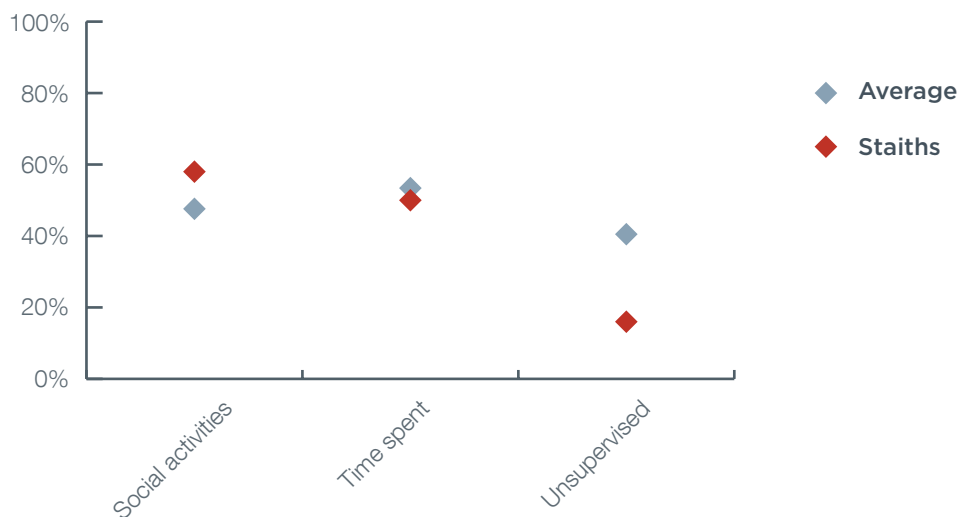


Staiths: Observational data

Staiths scores well for optional/social use of space and time spent outside

- It scores less well for children and young people's independent use of space. This is initially surprising given that the scheme was designed with homezone principles around small shared courtyard gardens, accessed directly from the dwellings.
- It is known that low numbers of families bought into phase 1, but this is not reflected in the ONS ward statistics. Buyer statistics for recent phases are not known. The scheme demonstrates the need to gain accurate demographic data wherever possible, at least for age ranges as relying on ONS statistics may give inaccuracies.

Comparison between Staiths and other case studies as an average





Our researchers were positioned in two locations; the first phase, on the east of the site close to the play area and the more recent phase to the west. The data showed a marked difference between the two locations, with the first phase having far greater numbers of children playing and adults hanging out and socialising.

Although the recent phase appears visually similar, using the same palette of materials as the first, the street layout is more uniform, places to stop, meet or play have not been provided. The roads do not seem to narrow down, to create more intimate neighbourly spaces, as with the first phase.



It may take time to mature, but the communal gardens should offer the social space to meet and play and certainly the low fence heights will help with this.



Derwenthorpe

Location: Yorkshire

No. of dwellings: 64 (phase 1)

Density: 38 dwellings per hectare

Developer: JV between JRF, JRHT and David Wilson Homes

Architect: Studio Partington

Landscape Architect: FIRA

Completed: 2013

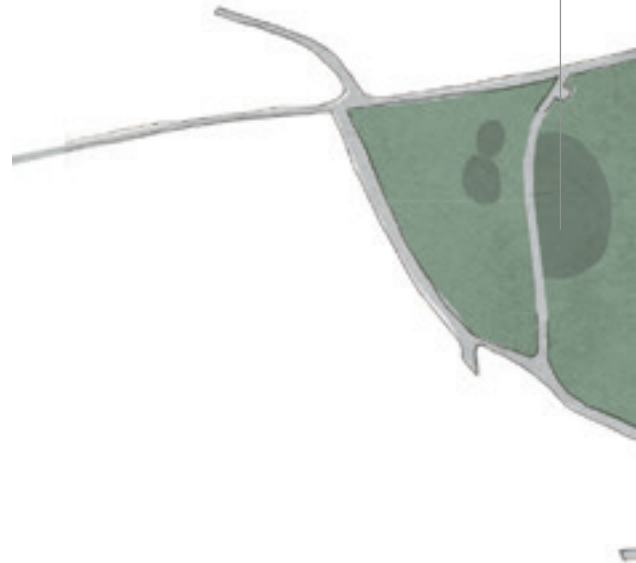
Image courtesy of Tim Crocker



Derwenthorpe

Derwenthorpe is the first phase in a 540 home development, two miles east of the city of York.

Play area



Landscape setting



Shared surface street



The development is a mixed, tenure blind scheme of two, three and four bedroom homes; 40% being for rent and shared ownership and 60% for private sale. It is accessed from the south, along Osbaldwick Street, from neighbouring streets of semi-detached houses with front gardens, wide pavements and grass verges.

The layout of the scheme adopts a homezone principle with shared surfaces intending to prioritise pedestrians and create a 'child friendly environment'. At present the site is surrounded by open space, with future phases under construction to the north. Once completed a third of the overall development will be landscaped, conserving ancient hedgerows and incorporating meadows and wetlands with sustainable

urban drainage system (SUDS) management. Derwent Mews provides access to future phases and also rings the development in a loop, creating a break between the homes and the open spaces. The houses on Derwent Mews have front gardens, there are no pavements.

Derwent Way runs through the development and leads to car parking courts, two of the homes are situated within the courts.

The site is designed to link into pedestrian routes and the Sustrans cycle network.



- Dwellings that are able to directly access shared space and have a clear line of sight from the house
- Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route — this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- Red is a crossing over a road



- Social networks: dwellings facing each other across a street

Derwenthorpe: Mapping analysis

Derwenthorpe ranks equal sixth

Shared external space shows:

- A large amount of green space around the scheme that is not directly accessible from any of the dwellings
- Within the scheme is a small central space, mainly accessible via pavement.

Mapping ranking

Shared external spaces	3
Access from dwellings	0
Networks	1
Streets	2
Total	6

Access

No dwellings are able to directly access shared spaces. A small number are able to access a very small green space which is next to a dwelling.

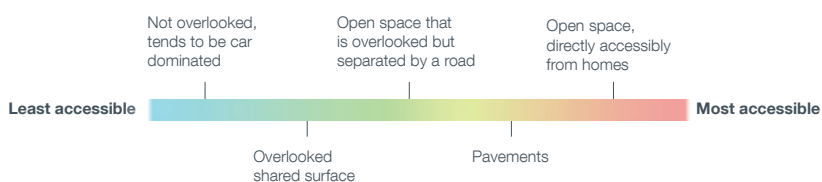
Networks

All networks around the site are via shared surface streets.

Streets

At the centre of the development are two streets across roads and one shared surface street.

Shared external spaces

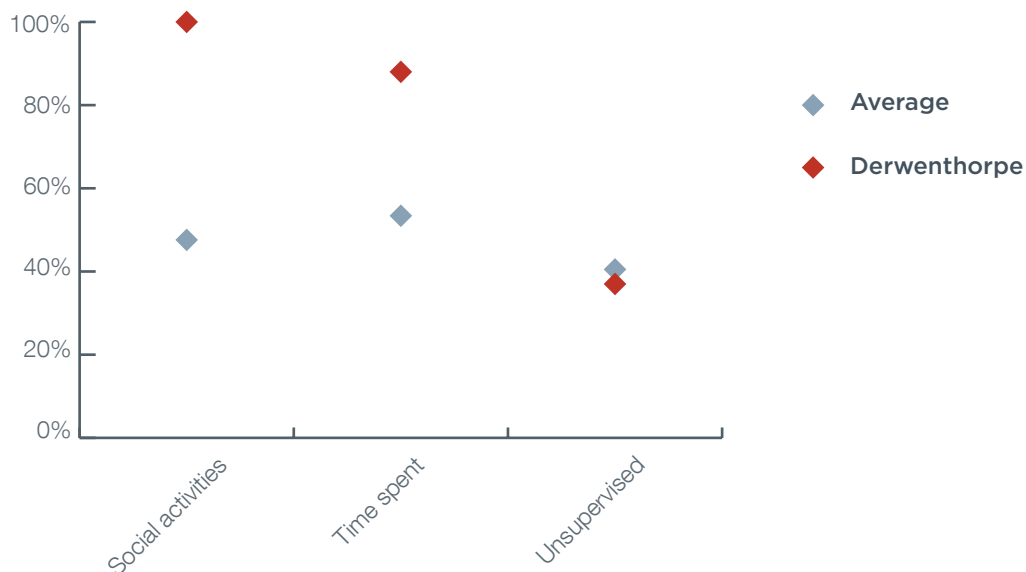


Derwenthorpe: Observational data

Derwenthorpe scores third in the observational data rankings

- It has the highest use of optional/social use, with people spending a good deal of time outside.
- However, it has one of the lowest levels of independent use of space by children and young people. It was conceived with good intentions; easy access to a generously sized, high quality recreational space. The data shows that this space is well used and seems to be attracting people from beyond the nearby area.
- On the days when our researchers visited, a community event was taking place on the green space to the north of the scheme and there were a number of adults taking turns using an 'octocycle' (an eight person bicycle) on the perimeter road.
- Although the scheme is designed as a 'child friendly environment,' it seems evident that this does not extend to children's ability to use the space freely without adults.

Comparison between Derwenthorpe and other case studies as an average





Access within the development is interrupted by cars parked on pavement surfaces.



Derwenthorpe does not have a series of shared spaces connected by a network of safe footpaths or pavements. Whilst the shared surface/homezone layout should be commended for putting pedestrians first, it is not providing a safe environment for children to play outside their homes and to learn how to venture further afield. The very small shared space at the centre of the site is too small and too close to an adjacent dwelling to provide space to socialise and play. The location and fencing of the playground suggests adult supervision is more likely than unaccompanied play.



Surface treatment in front of dwellings and in car courts is often unclear as whether it is for pedestrians or cars.



The open space, with lake and fenced off play area, is separated from the dwellings by a road, Derwent Mews. The road curves away from view, which is likely to reduce traffic speed, but with no pavements does not feel like a safe space to play outside.



Allerton Bywater

Location: West Yorkshire

No. of dwellings: 151

Density: 47 dwellings per hectare

Developer: Barratt Developments

Architect: HTA Design

Landscape Architect: HTA Design

Completed: 2008

Image courtesy of Tim Crocker



Allerton Bywater

Allerton Bywater is a homezone designed scheme, one of the Millennium Villages near Castleford in West Yorkshire.



Beaufort Gardens



Gated courtyards





The scheme was conceived as a Design for Manufacture competition intended to promote modern methods of construction and sustainable community design by the then Office of the Deputy Prime Minister in 2005. This phase was completed in 2008.

The layout is a series of brick paved shared surface streets with two and three storey brick houses, each with their own rear garden. At the centre of the development is Lidgett Square, an open space with a raised planter. There are two open spaces to the north and south. The former across a road containing a play area and the latter overlooked and accessed from adjacent dwellings.

This scheme was studied by Mike Biddulph who saw children playing outside, mostly boys, 'playing on scooters, skateboards or footballs'. Compared to other schemes he studied he saw a 'reasonable proportion' of teenagers hanging out and playing. He saw fewer adults outside than on other schemes. Biddulph's findings correlate with our data, showing that the scheme has maintained a similar level of social use and independent use by children.



- Dwellings that are able to directly access shared space and have a clear line of sight from the house
- Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route — this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- - - Red is a crossing over a road



- Social networks: dwellings facing each other across a street

Allerton Bywater: Mapping analysis

Allerton Bywater ranks equal sixth

Shared external space shows:

- Shared green spaces are on the edge or outside the development
- Within the scheme external spaces are shared surfaces with vehicles.

Mapping ranking

Shared external spaces	2
Access from dwellings	1
Networks	1
Streets	2
Total	6

Access

A small number of dwellings are able to directly access the shared external space at the perimeter.

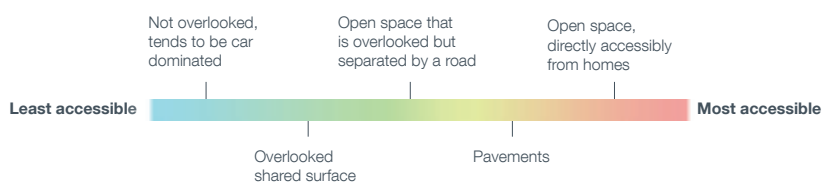
Networks

All networks around the site are via shared surface streets.

Streets

The layout has a low instance of dwellings facing one another.

Shared external spaces

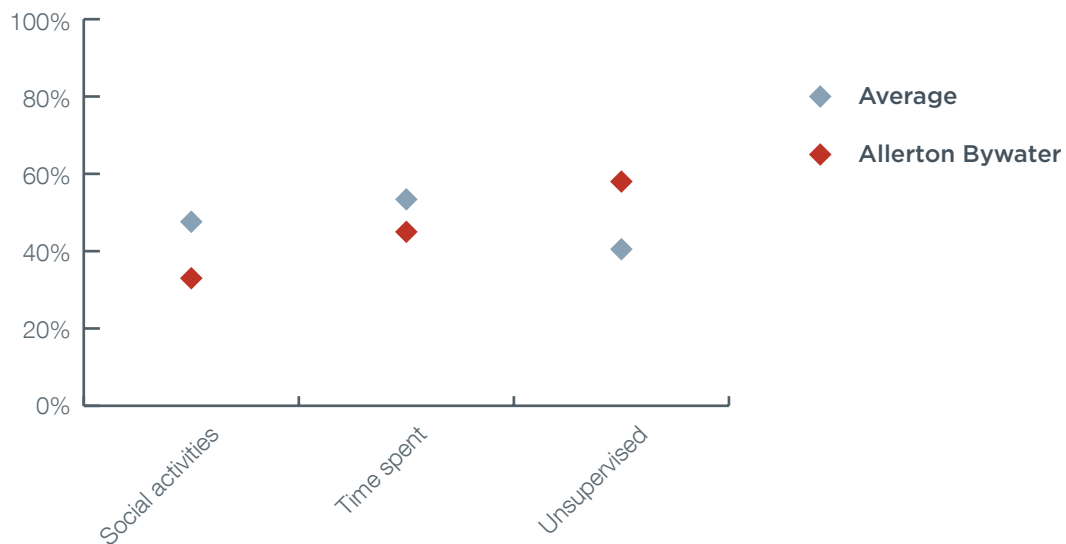


Allerton Bywater: Observational data

Allerton Bywater scores fourth in the data ranking table

- The optional and social use of space and time spent outside is fairly low but children and young people's independent use of space ranks third. This is mainly down to passing through, which is high.
- Allerton Bywater is a shared surface scheme, with open spaces located on the outside of the residential area.
- Allerton Bywater performs similarly to Lime Tree Square in terms of social use of space. Its layout is similar in that open spaces are separated from the dwellings and not easily accessible. Both schemes are rather isolated and therefore residents rely heavily on the car.

Comparison between Allerton Bywater and other case studies as an average





The focal point of the scheme is a car dominated open area with a central planter, Lidgett Square. It is difficult to imagine spending much time in this space and it would certainly feel unsafe to let children play outside here.

Although the main play area to the north is across a road and other open space is on the perimeter of the development, these spaces seem to be fairly readily accessed. In addition, a small cul-de-sac at the north of the site was well used by small children.



Levels of children's independent mobility are good.



Dinnington

Location: South Yorkshire

No. of dwellings: 75

Density: 40 dwellings per hectare

Client: Westleigh Developments

Housing association: Arches Housing Association

Architect: RG & P

Completed: 2013



Dinnington

Dinnington is former colliery town near Rotherham in Nottinghamshire. This development at East Street is to the north of the town centre, on a site previously occupied by terraced houses and a primary school.



View from Doe Quarry Lane



Central green area



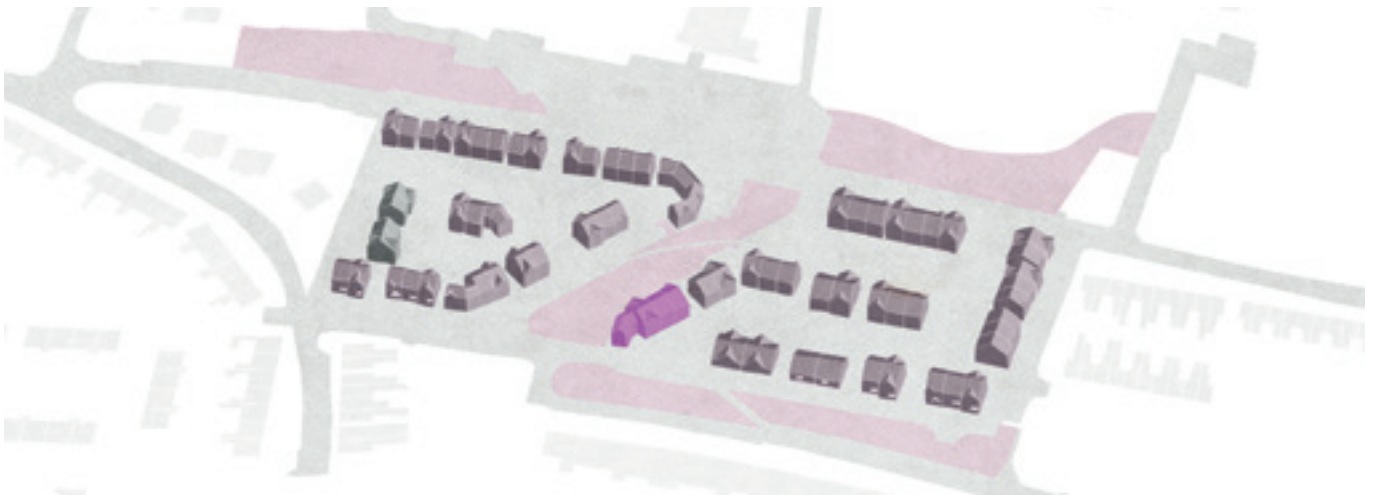
The scheme has a total of 75 dwellings comprising 71 two, three and four bedroom homes and four two bedroom bungalows for market sale and rent.


At the centre of the scheme is a bisecting, partially pedestrianised road with a green area, ringed by knee level fencing and two parking courts.

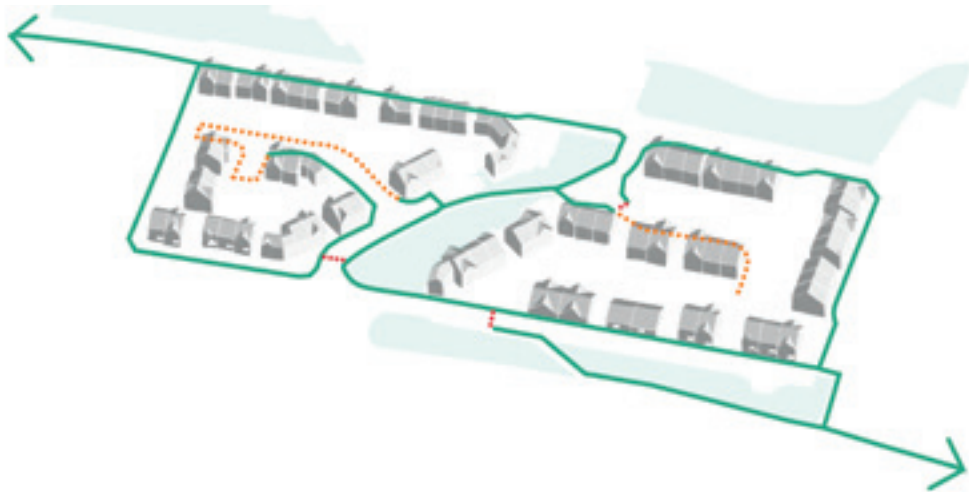
Development at the site, which had previously been occupied by terraced houses and a primary school, is part of the wider regeneration of the area. The planning and highways departments had set out specific requirements for the appearance of the street frontage and car parking provision, the layout is consequently front to back houses with the perimeter streets facing outwards from the site onto the surrounding roads.




Two side roads are cul-de-sacs, terminating in hammerheads with both pavement and shared surfaces.

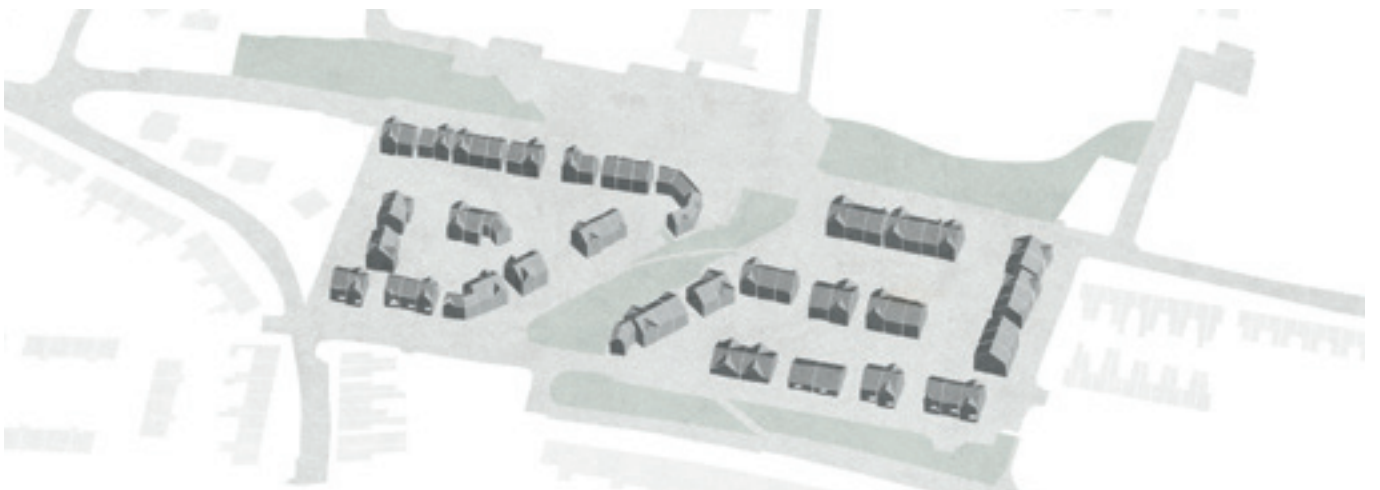
Full Secured by Design accreditation was achieved.



-  Dwellings that are able to directly access shared space and have a clear line of sight from the house
-  Dwellings that can safely access the space, via a pavement or safe route



-  Green is a safe, car-free route — this could be a pavement, green space or a hard surface
-  Orange is a shared surface street, where pedestrians and cars share the route
-  Red is a crossing over a road



-  Social networks: dwellings facing each other across a street

Dinnington: Mapping analysis

Dinnington ranks equal sixth

Shared external space shows:

- A central green space, not directly accessible from most dwellings
- Pavement access to most dwellings.

Access

None of the dwellings are able to directly or indirectly access shared car-free spaces.

Networks

There is a good network across the site from north to south.

Streets

The general front to back arrangement (with south facing gardens) means there are few dwellings facing each other.

Mapping ranking	
Shared external spaces	2
Access from dwellings	1
Networks	3
Streets	0
Total	6

Shared external spaces

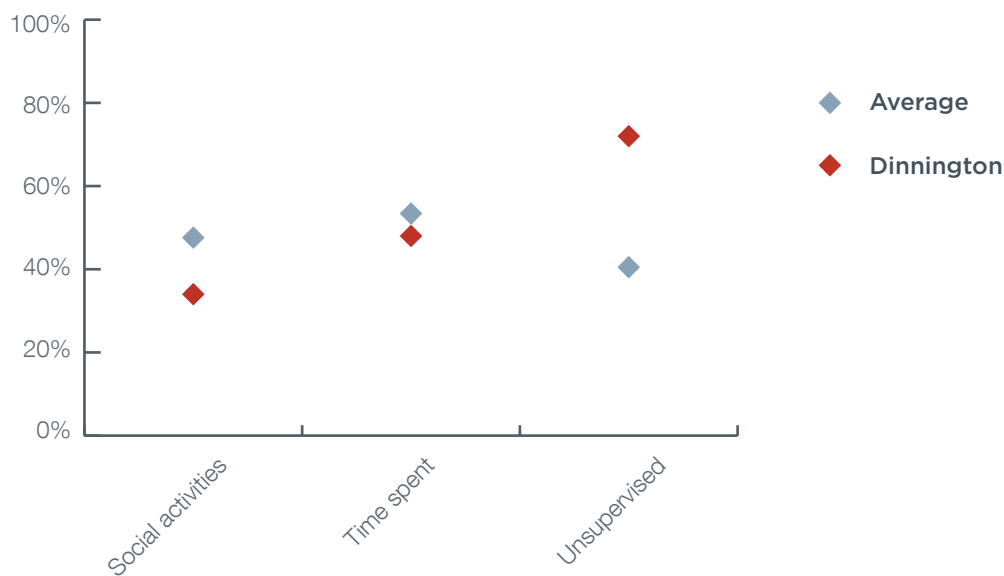


Dinnington: Observational data

The scheme in Dinnington scored seventh and had fairly low levels of optional/social use, time spent outside and children and young people's independent use of space.

- Most children and young people outside were seen passing through, and most of them were unaccompanied.
- Dinnington is representative of many schemes across England and was chosen as an example of what is commonly achieved. The scheme offers little to improve the character of the area or add to the public realm. The central green space is neither an asset for the residents or a visual amenity for those passing through.

Comparison between Dinnington and other case studies as an average





The focus for the scheme is a central open space which appears to have no clear designation. It has knee high barriers on most sides and is not well connected to the dwellings that face it. Improvements to this space, with resident involvement, may lead to better use by the community.



Although there are a number of pavements running across the scheme and car parking behaviour is relatively good, the pavements turn into shared surfaces with cross overs and there are no dwellings facing each other to create opportunities for social interaction. Most of the homes face north to allow south facing gardens, resulting in streets lined with close boarded fencing.



To the south of the scheme are fenced play areas but these are separated by a road and therefore less accessible for young children.



Lawley Village

Location: Shropshire

No. of dwellings: 200

Density: 29 dwellings per hectare

Client: Barratt Developments

Architect: HTA Design

Landscape Architect: HTA Design

Completed: 2010

Image courtesy of Tim Crocker



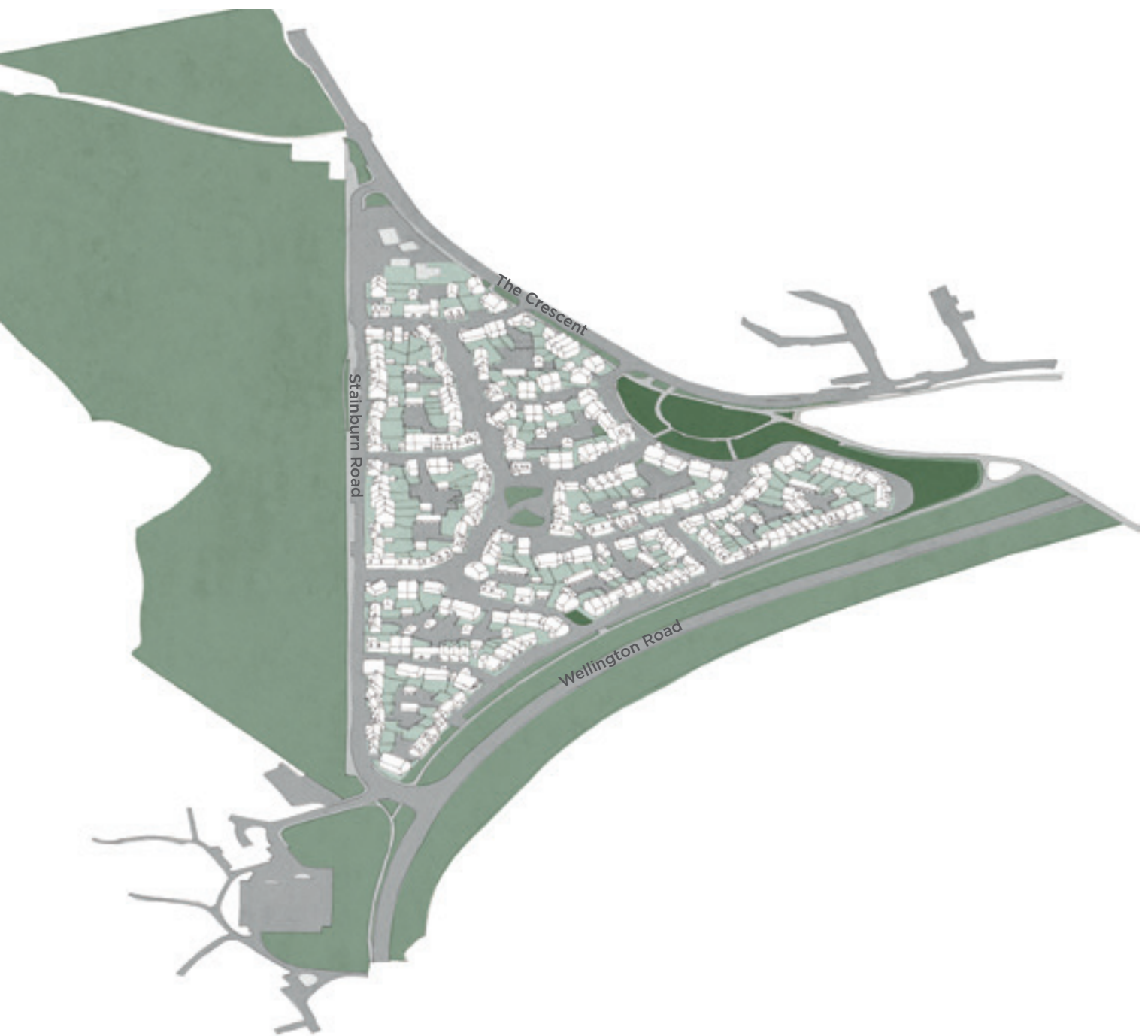
Lawley Village

Lawley Village is one phase of a large development west of Telford, in Shropshire. The scheme was conceived as a joint initiative by the Prince's Foundation, working with English Partnerships, the Borough of Telford and Wrekin and a team lead by EDAW.



Individual houses, shared surface streets





Phase 1B, one of five residential neighbourhoods, is the second phase of the wider 3,300 home development designed by HTA Design for Barratt Homes.

The scheme is laid out with what is described as a homezone shared surface 'grounded in principles of sustainable urban design that encourage walking and cycling'. In reality this is a surface only treatment with detached, semi-detached and terraced houses fronting onto wide streets with rear parking courts. Each house has its own private garden.

At the centre of the scheme is larger open space, with two small green areas. There is no other open space within the scheme itself.

- 🏠 Dwellings that are able to directly access shared space and have a clear line of sight from the house
- 🏠 Dwellings that can safely access the space, via a pavement or safe route



- Green is a safe, car-free route — this could be a pavement, green space or a hard surface
- Orange is a shared surface street, where pedestrians and cars share the route
- Red is a crossing over a road



- 🏠 Social networks: dwellings facing each other across a street



Lawley Village: Mapping analysis

Lawley Village ranks eighth (last)

Shared external space shows:

- There are no car-free external spaces within the development
- External spaces are outside the development and overlooked by a busy road.

Mapping ranking

Shared external spaces	0
Access from dwellings	0
Networks	1
Streets	2
Total	3

Access

None of the dwellings are able to directly access car-free shared space.

Networks

There are no safe networks within the development — movement relies on shared surface streets.

Streets

There are a number of streets within the scheme.

Shared external spaces

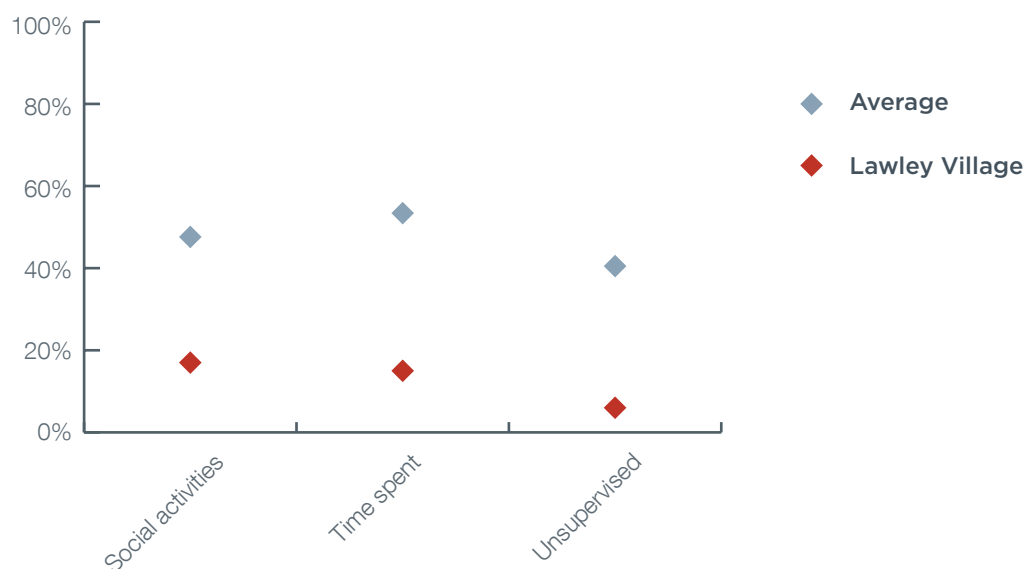


Lawley Village: Observational data

Lawley Village has the lowest level of optional/social use of space and time spent outside

- It has negligible numbers of children and young people’s independent use of space too.
- This scheme demonstrates the need for post occupancy observational work if we are to fully understand whether new developments are meeting sustainability objectives.

Comparison between ‘Lawley Village’ and other case studies as an average





The relationship of house to street is dominated by cars, which are able to park in what appears to be any arrangement. The traditional green in the centre of the development is no more than a visual amenity and navigational device as it is heavily dominated by car parking. The development is large and distances to green space are likely to be too far to be easily accessible.



The shared surface homezone layout may be contributing to reducing traffic speed as it does elsewhere, however it seems to offer no opportunity for social use and play. Statistics show that this area has high car ownership and car dependency. This will no doubt contribute to the poor level of pedestrian usage.

Chapter 4

Data analysis

Data analysis

Data analysis is presented in this chapter from over 240 hours of observation. A number of findings emerge, summarised on these two pages.

The analysis looks for trends and correlations across all of the schemes and highlights aspects found in a selection of the projects, particular to each subject heading.

Who uses the external space?



Children are more likely to spend time outside than adults and elderly people.



Adults are less likely to stay longer in external spaces than children.



Elderly people are less likely to use external spaces both passing through as well as for staying longer.

External spaces are social spaces



In all of the schemes we found that whatever the activity, the greater proportion of people were in groups of three or more.

External spaces need to be designed for people to use together, whether it be walking along the street or finding spaces to dwell; people are more likely to be with others and we need to design spaces that support rather than prevent social use.



Pedestrian and cycle movement



Most people observed in external spaces are passing through from one place to another, either on foot or by bicycle. The number of pedestrians and cyclists varies between the schemes and reflects how safe the streets are to use. Schemes with pavements, where the car is clearly separated from pedestrians, may perform as well or better than shared surface schemes.

Optional and social use



When people pause or stop to spend time in a space then they are enjoying the scheme for their own optional use, or for social reasons. We know that most use is social but what we have also found is that schemes providing good optional and social use tend to be those that are better used by pedestrians and cyclists as well.

How much time is spent?



The amount of time spent outside varies considerably between schemes, in some spaces people were spending up to four hours outside. The more a space is used for social activity, the longer people appear to want to stay there.

Children and adults' social use of space



There is a positive relationship between the number of children using external spaces and the number of adults.

Spaces that are well used by all age groups are used significantly more by children, what we call a 'double positive' from well designed external spaces.

Children are the GENERATORS of community life

'Freely chosen, self directed and intrinsically motivated' play is the key to designing successful communities.

Schemes that allow for this type of unsupervised play for extended periods show better use of external spaces by other age groups.

Unsupervised play is likely to influence children's ability to come and go freely and be independently mobile.

Age group representation

The pie charts to the right show the ratio of age groups for a selection of the schemes. Those chosen represent a range, from the most well used to the least. Looking first at which age groups spend time outside, for short or longer periods, we compare this to ONS ward demographics. It should be noted that ward areas are typically larger than any of the schemes.

Ward data

ONS ward demographics from the 2011 census show who lives in the local ward as defined by the postcode for each scheme.

Passing through

These charts show the proportion of each age group counted as passing through the space.

Staying longer

These charts show the proportion of age groups staying for longer than a moment.



There is a greater proportion of children seen passing through than the ward statistics and yet a greater proportion staying longer.



Generally there is a drop off in the proportion of adults using external spaces for longer periods.



The proportion of elderly people seen both passing through and spending longer outside drops off in all but one of the schemes (Lawley Village).



In all of the schemes we found that the greater proportion of people were in groups, most of these three people or more. This held true for both passing through and social use of space.

Findings

- Children are more likely to spend time outside than adults and elderly people
- Adults are less likely to stay longer in external spaces than children
- Elderly people are less likely to use external spaces both passing through as well as for staying longer
- Most people outside are in groups.

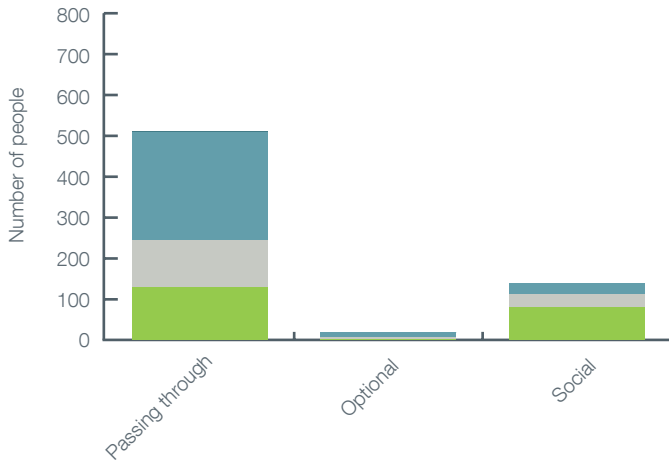


Activities

The activities carried out are divided into categories as devised by Jan Gehl. When someone is seen briefly, for just a moment, in the space then they are recorded as **Passing through**. For longer periods (over three minutes) activities are separated into **Optional** or **Social**. These four selected graphs show the numbers of people recorded for each of the categories over the total period of observation for a selection of the schemes.

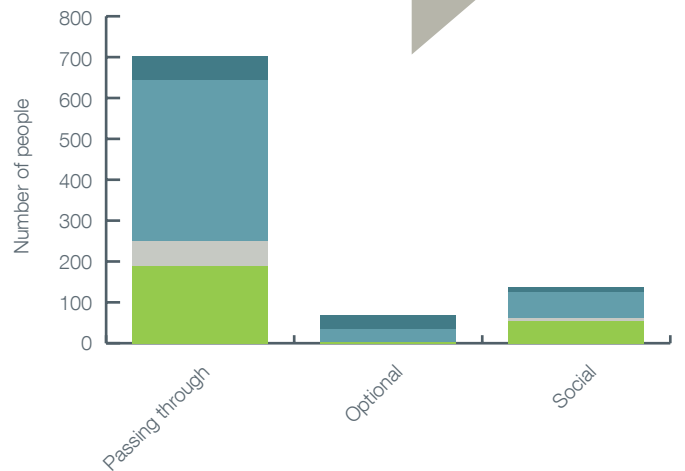
- The elderly
- Adults
- Teenagers
- Children

Barking Riverside

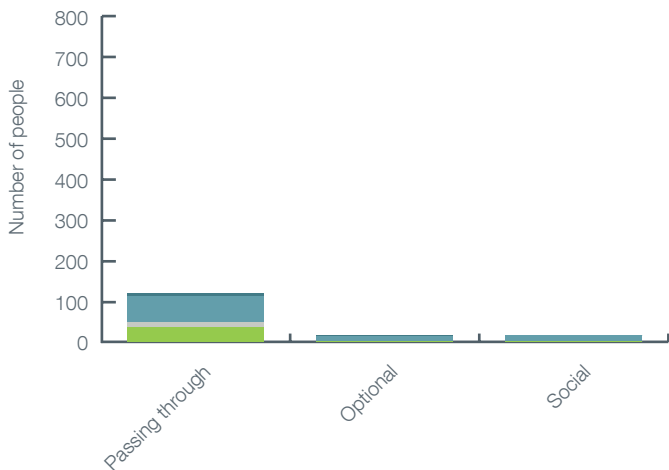


Derwenthorpe has the largest number of people passing through. It is a small scheme, with only 67 dwellings, the first phase of larger development, adjacent to an established suburban area.

Derwenthorpe

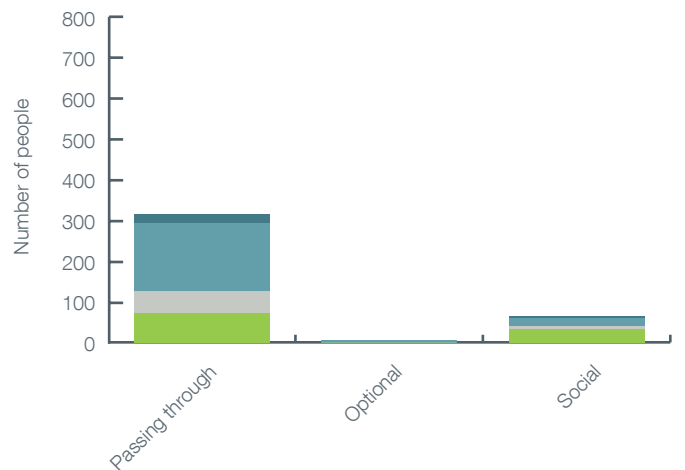


Lawley Village



Lawley Village has by far the greatest car ownership; 93% of households have one car or more. The surrounding area is known for high car usage.

Lime Tree Square



Passing through

In all schemes, the most common activity is passing through. We can speculate that a number of factors may influence the number of people passing through:

- The density of the scheme
- How safe it is to use as a pedestrian or cyclist
- Car ownership
- Whether there is a route through the scheme to another destination.

It would be reasonable to expect higher density schemes to have more people passing through. The graph below therefore takes density, using dwellings per hectare (dph), into account and presents a distribution of the schemes. For example, a total number of people seen passing through at Barking Riverside of 505 is divided by the density of the scheme - 54 dph - to give a value of 9.

The graph, below, shows a wide distribution of values with a closer range in the middle.

At Derwenthorpe the high numbers of people passing through attracts our attention. Our researchers observed an organised event on both of the days, drawing visitors in from outside the development. The open spaces are offering an attractive space for recreational use, which will be beneficial for the wider area.

However, given the low number of dwellings on the scheme itself, the visitor numbers have proportionally inflated our figures. We therefore do not consider the data to be reliable for reflecting how residents are using the external spaces for passing through.

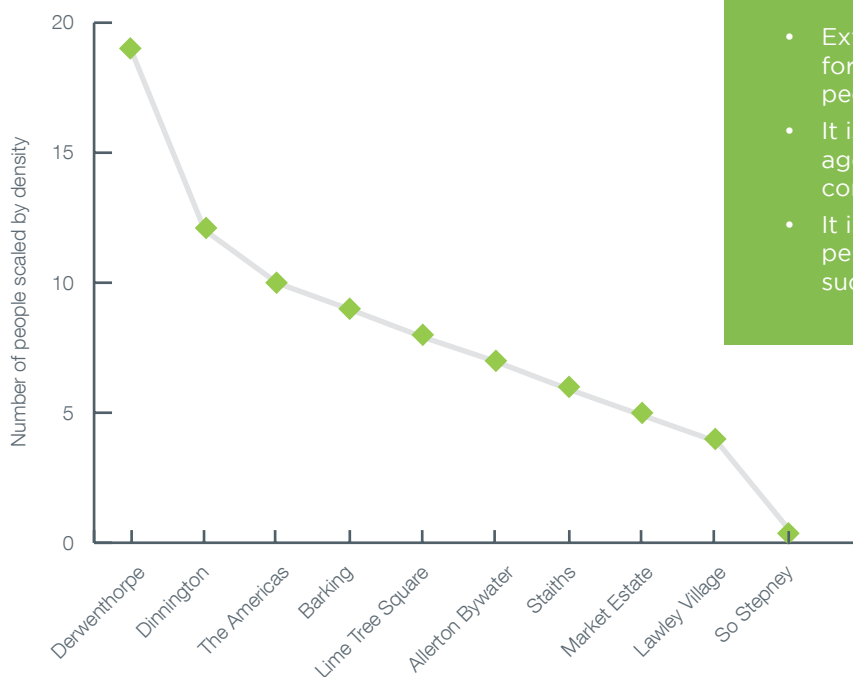
Dinnington, with one of the highest values for passing through, lies next to a busy road with a bus route and is a cut through towards the centre of town.

Dinnington, The Americas and Market Estate are laid out with pavements and the others employ shared surface. From the distribution it is difficult to conclude which is more effective in encouraging pedestrian movement, but it suggests that pavement schemes may perform better.

The So Stepney scheme was viewed from within enclosed courtyards. Main entrances to dwellings were not through these courtyards and so numbers of people passing through were low as would be expected.

The methodology used for this study meant that we did not follow people's routes and were not able to analyse integration into the wider context.

Passing through per scheme scaled by density



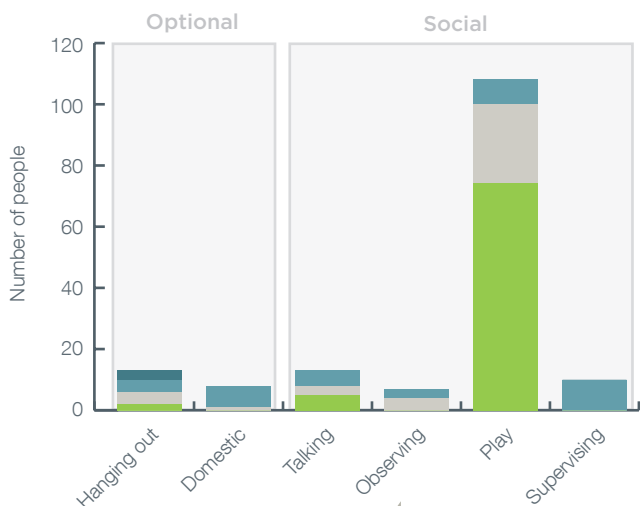
Findings

- Extended observation is a good method for analysing the safety of streets for pedestrians and cyclists.
- It is also able to reveal how well different age groups are using the streets, compared to who lives there.
- It is also a useful tool for analysing the performance of different street layouts such as shared surfaces and pavements.

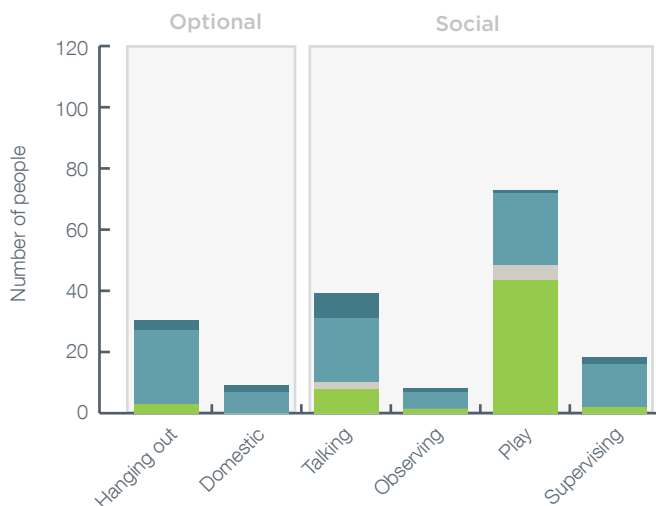
Optional and social activities

- The elderly
- Adults
- Teenagers
- Children

Barking Riverside



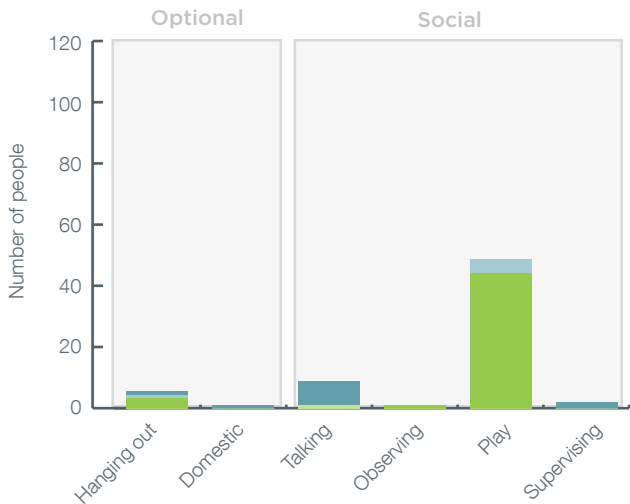
Derwenthorpe



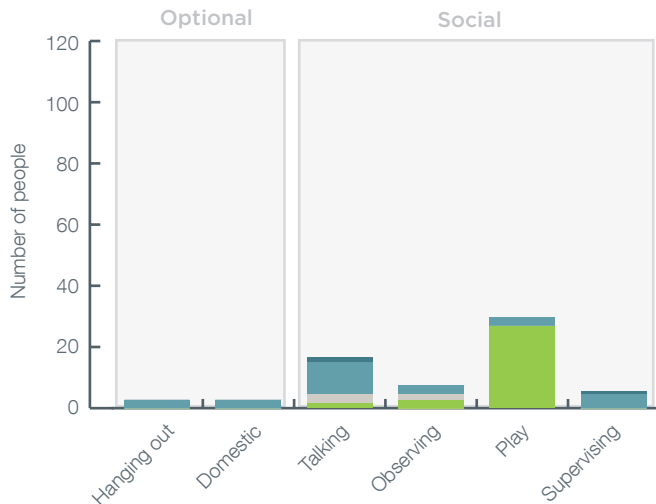
Barking Riverside has the greatest number of children outside. They are mostly playing. Derwenthorpe has the greatest number of adults.

Both Lime Tree Square and Allerton Bywater are designed to homezone standards and have performed well on previous studies (Biddulph 2011). We look in more detail at this in the case studies section of the report.

Allerton Bywater



Lime Tree Square



When we look at the data for people spending time outside, longer than three minutes, we divide their activities into six categories:

Optional:

- Hanging out
- Domestic chores.

Social:

- Talking
- Observing others
- Play
- Supervision of play.

Although some of the schemes are larger than others, we speculate that the field of view of the researchers moderates the figures for optional and social activities, giving comparable data.

Once again density was taken into account; the total number of people engaging in an optional or social activity is divided by the dwellings per hectare for that scheme. Each scheme is then given a percentage based on the highest scoring scheme (in this case Derwenthorpe).

The scatter graph this creates, below, compares optional and social use to passing through. It shows a degree of correlation.

Derwenthorpe ranks the highest for optional and social use. Note however, that it has the highest proportion of adults using the external spaces in proportion to other users. Indeed a significant number of adults were recorded playing, which is unusual, in this case on an 'octagon' cycle making circuits around the perimeter road.

Given the results, and those of passing through, it would be worth returning to Derwenthorpe to repeat the study on completion of all of the phases. With more dwellings and residents, the data may be better at revealing how well external spaces are performing for residents as well as visitors.

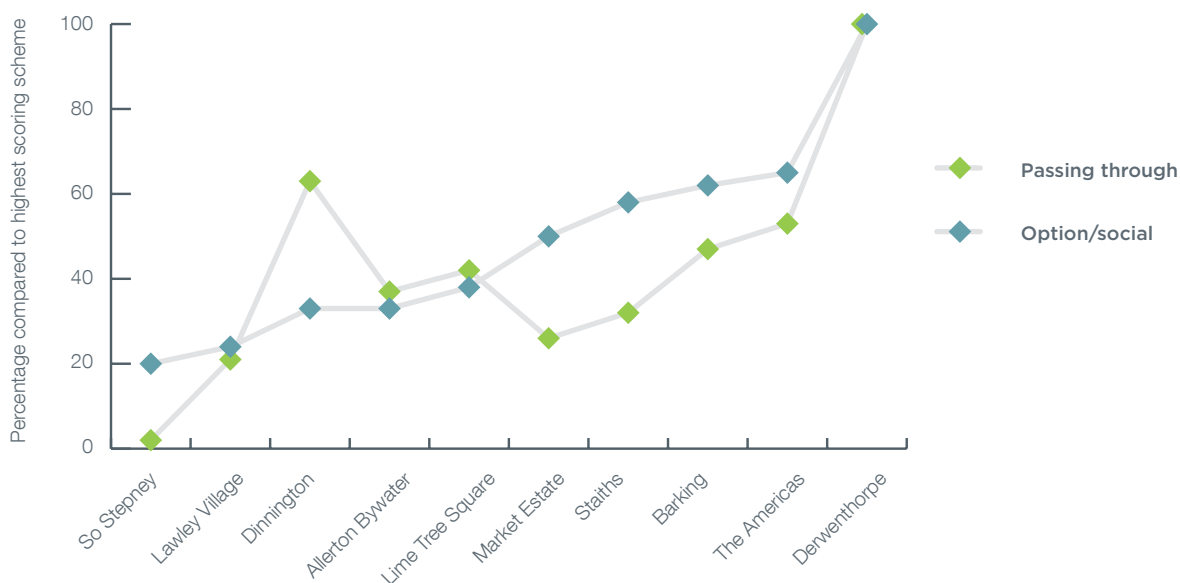
Dinnington has the greatest variant between passing through and optional use on the scatter graph. Again a relatively small scheme for numbers of dwellings, we have noted that it is likely to be used as a cut through by others, inflating the numbers of people passing through.

At So Stepney, although the use of the courtyards was good (with one of the highest numbers of people viewed), it doesn't appear to be well used by all the residents, hence the low numbers when density is taken into account.

Findings

- In all but two of the schemes studied, Derwenthorpe and Lawley Village, children were by far the dominant users of external spaces for optional and social purposes, with play being their main activity.
- Schemes that provide for good optional and social use of space tend to be better used by pedestrians and cyclists as well.

Passing through compared to optional/social activities

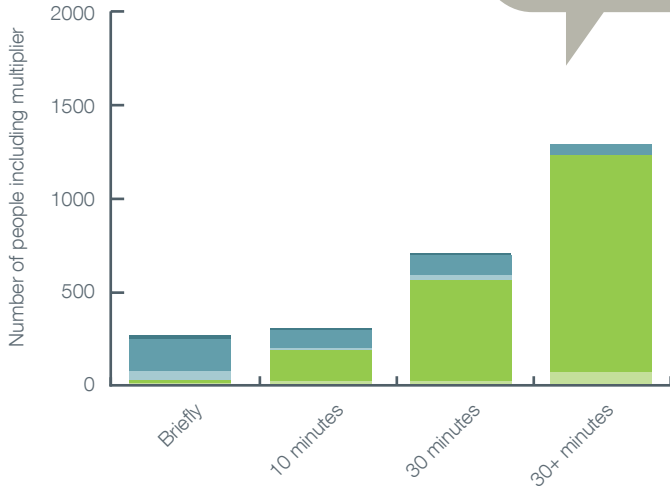


Time spent outside

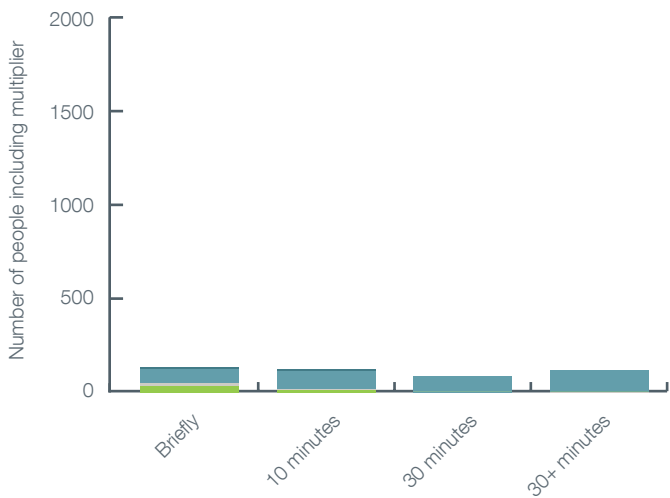
- The elderly
- Adults
- Teenagers
- Children

The number of children seen outside for longer rises over time at Barking Riverside and So Stepney.

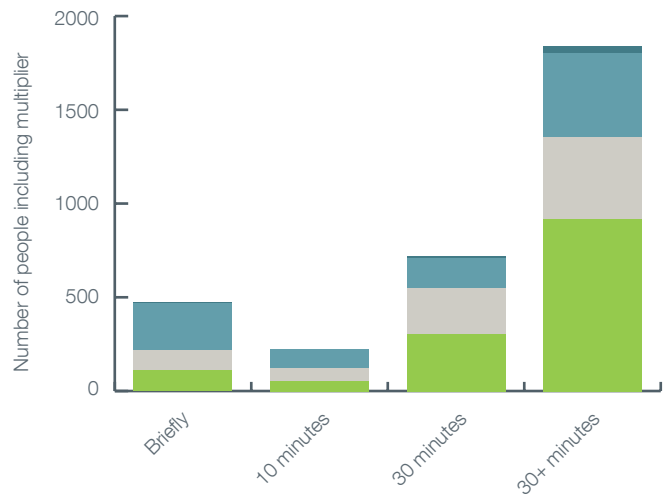
So Stepney



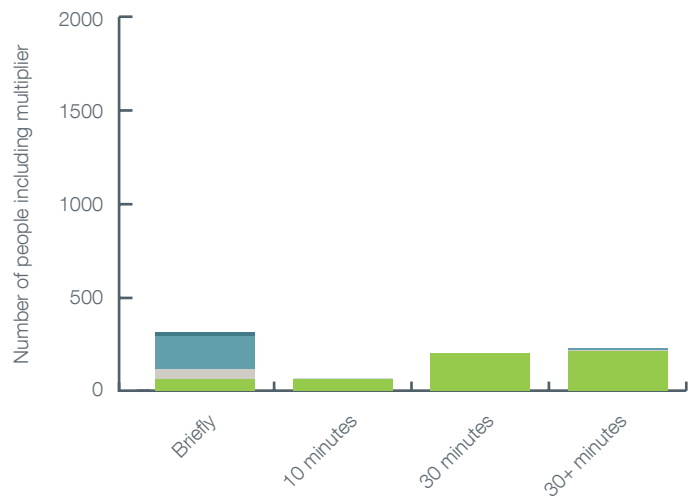
Lawley Village



Barking Riverside



Lime Tree Square



This set of analysis looks at time spent outside. To quote Gehl 'life between buildings...is a product of number and duration of events'. We give weight to time spent outside by multiplying the number of people by the time they spend outside.

As with Biddulph's study we have created time weighted graphs, which better represents total number of people seen in a space, using a multiplier for each period as follows:

- For people passing through, we record this as 'briefly'
- For people spending up to 10 minutes in the space, we multiply this by 5
- For people spending between 10 minutes and 30 minutes in the space, we multiply this by 15
- For people spending more than 30 minutes in the space, we multiply this by 30.

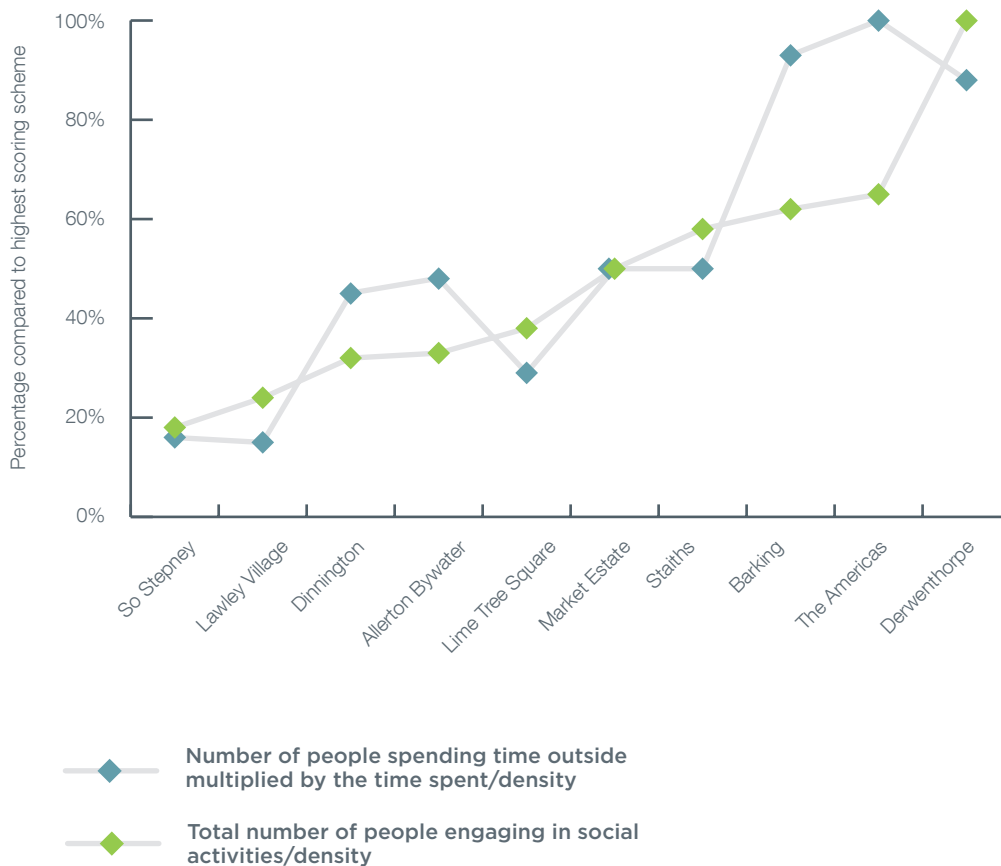
We note that there are instances where people were seen spending very long periods of time outside, for example up to four hours in Barking Riverside.

From the scatter graph below we see a correlation with the social use of space and extended time spent outside. This multiplier weights against pedestrian movement and reflects the importance of social spaces as places to dwell and to be able to stay for extended periods.

Findings

Some schemes show much higher proportions of children spending longer outside than others. Children tend to play outside for long periods of time, and are naturally drawn outside by other children playing too (Gehl, Whewey et al). New developments should capitalise on this and make spaces that can support extended use by children.

Comparing all social activities with time spent outside

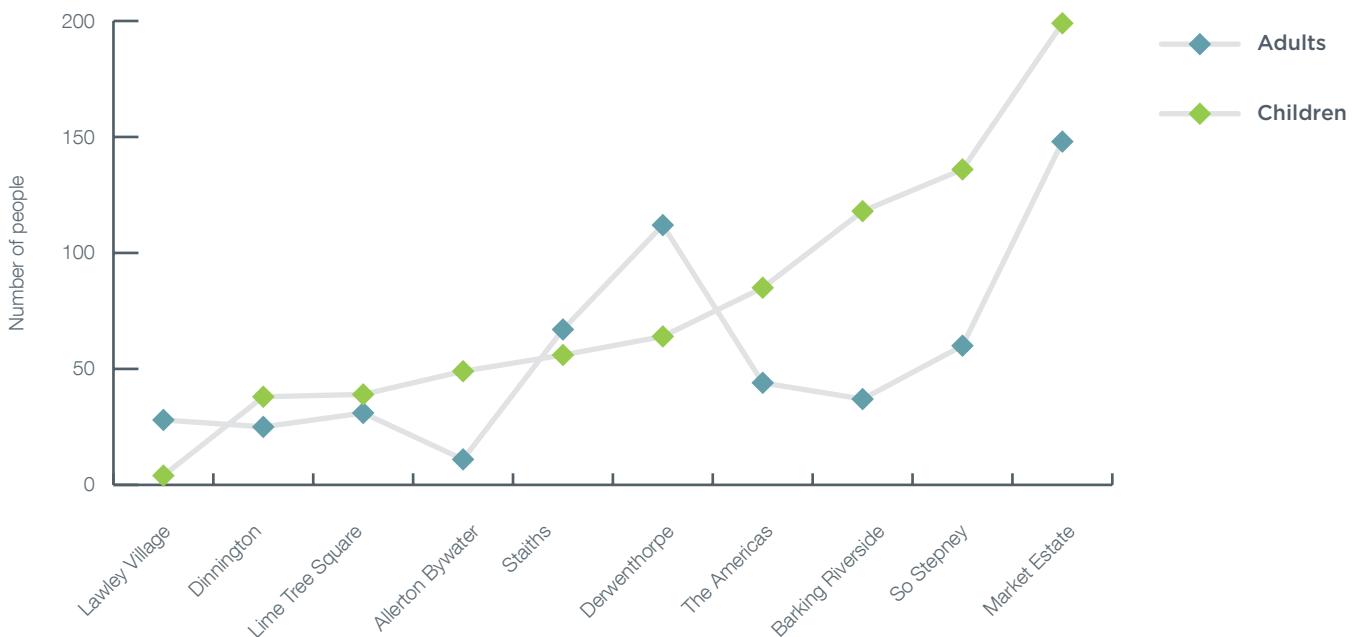


Correlation between children and adults

We were able to use the data to examine the correlation between children and adults' optional and social use of external spaces. For this exercise we grouped pre- school, children and teenagers together as 'children' and adults and the elderly as 'adults'.

From inspection the scatter graph shows a positive correlation for most schemes, although, once again, the number of adults seen outside at Derwenthorpe bucks the trend. The nature of the study, a snapshot over two days, means that statistically irregularities are likely. Notwithstanding this fact, we can see as well that the rate of change for children using the space for longer periods is greater than for adults. In other words, where schemes are better used by adults, they are far better used by children - a sort of 'double positive'.

This data on its own does not tell us whether there is a cause and effect by one age group over another. We look at this question on the next page.



Findings

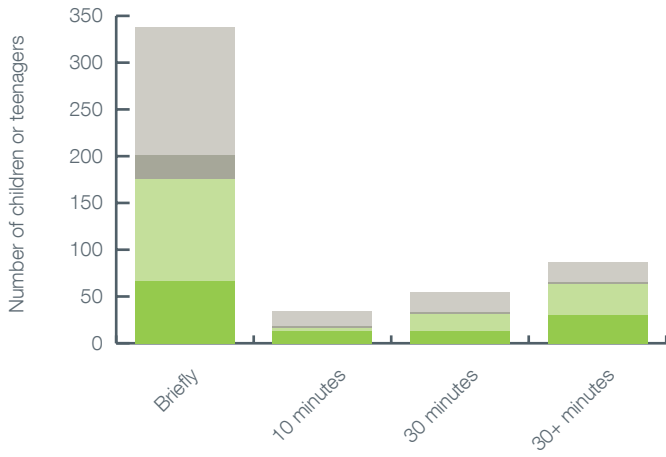
- There is a positive relationship between the number of children using external spaces and the number of adults.
- Spaces that are well used by all age groups are used significantly more by children, suggesting that there is a 'double positive' to be gained in designing spaces for social use.



Children and young people's use of space

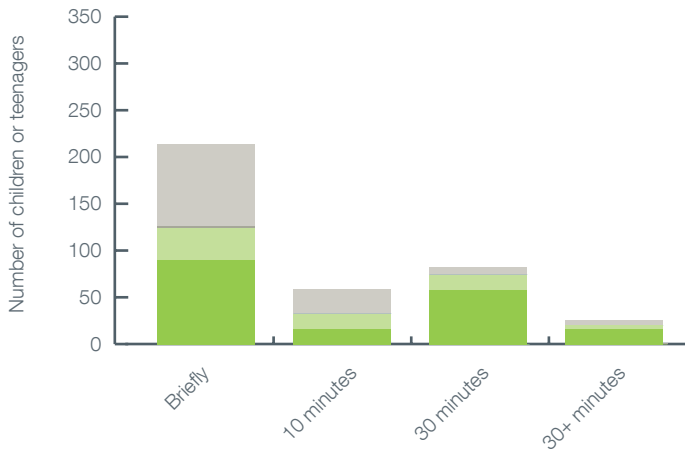
- Unaccompanied teenagers
- Accompanied teenagers
- Unaccompanied children
- Accompanied children

Barking

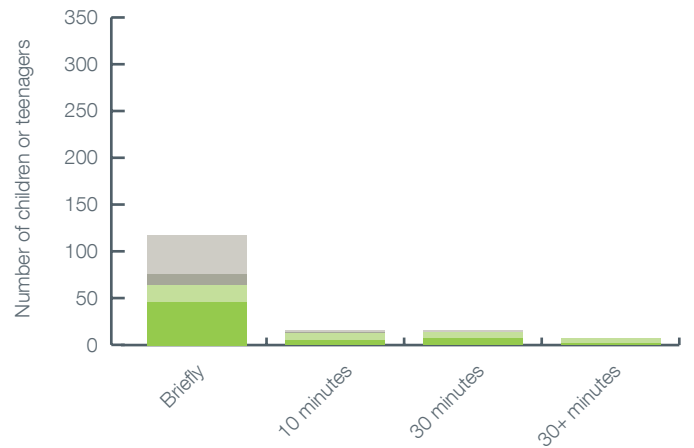


Levels of child supervision are high at Market Estate

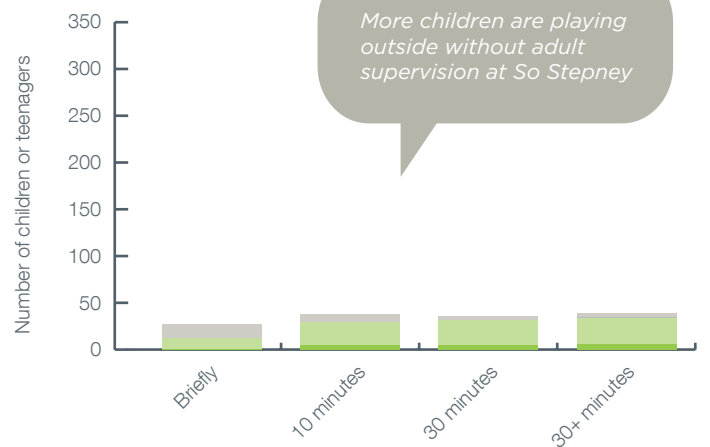
Market Estate



Lime Tree Square



So Stepney



More children are playing outside without adult supervision at So Stepney

Turning to children and young people, we were able to examine the data based on their unaccompanied use of space and their independent mobility.

Analysing children's unaccompanied play follows the definition 'freely chosen, self directed and intrinsically motivated', as it is most likely not to involve an adult. Children passing through, unaccompanied by an adult, we see as independently mobile.

The data for this section does not include pre-school age children, as they are unlikely to be unaccompanied by an adult. The multiplier method is not used as we were focusing on the relationship between accompanied and unaccompanied use, rather than time. The categories for time spent outside are:

- Briefly (passing through)
- 10 mins (up to 10 minutes)
- 30 mins (between 10 and 30 minutes)
- 30 mins+ (over 30 minutes).

On several of the schemes, the number of children outside rises the longer they spend outside, suggesting that children are attracted to places where other children are playing, as suggested by others such as Gehl.

We found too that extended play is more likely to be unsupervised than supervised and that areas with high numbers of children playing outside also record children spending longer outside.

By the same argument, this means children will be less attracted to places where no children are playing. This gives support to Gehl's criticism of poorly designed schemes where 'children would rather stay in and watch television because it is so dull outside'.¹

The scatter graph below makes comparisons between the schemes. Note the particularly low figures for passing through at So Stepney are likely to be caused by the researchers' location in the courtyards.

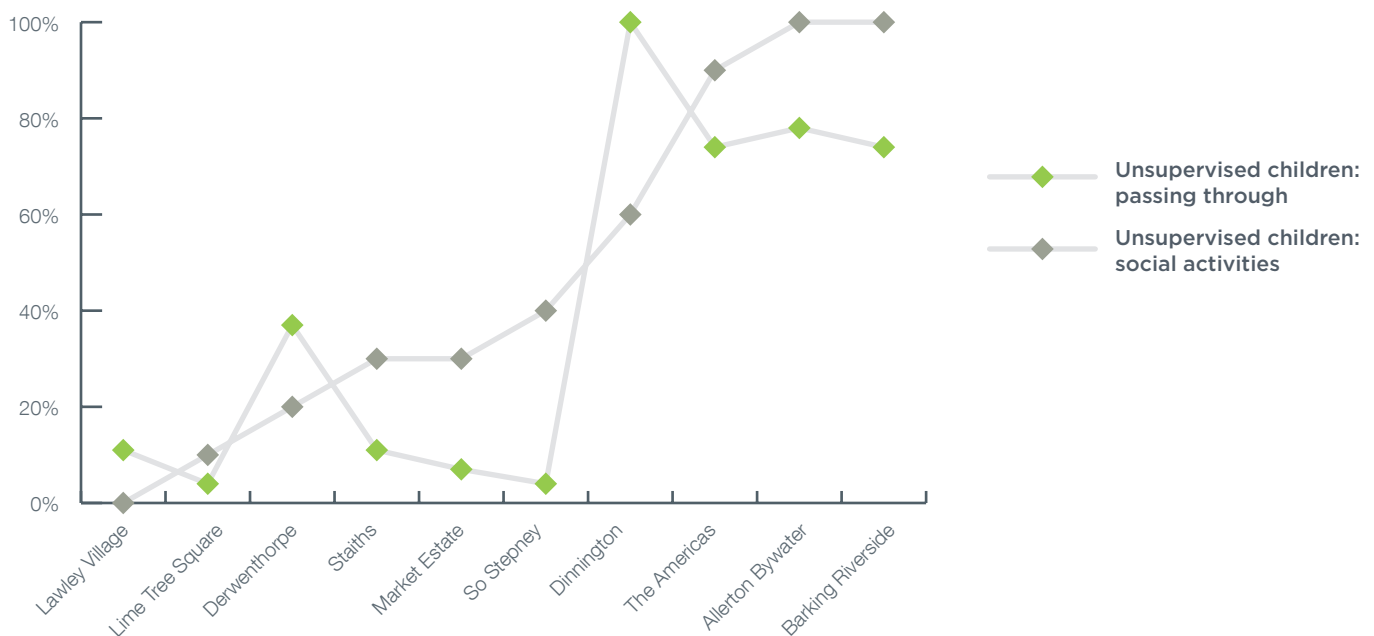
As well as the figures for play alone we see a strong correlation between children's play and their independent mobility, as the scatter graph below shows. The data gives us an insight into how children play and for the most part concurs with other studies, such as the Peach study² and Wheway & Millward's conclusions that children play for longer periods close to home.³

1. Gehl, J. (2001). 'Life Between Buildings: Using Public Space'. Copenhagen: The Danish Architectural Press.
2. Page, A.S, Cooper, A.R., Griew, P., Davis, L. & Hillsdon, M. (2009) 'Independent mobility in relation to weekday and weekend physical activity in children aged 10-11 years: The PEACH Project'. University of Bristol: International Journal of Behavioral Nutrition and Physical Activity.
3. Wheway R., and Millward, A., (1997) 'Child's Play: Facilitating play on housing estates', The Joseph Rowntree Association and Chartered Institute of Housing.

Findings

- Unsupervised play is driven by children and is likely to influence their ability to come and go freely and be independently mobile.
- The same schemes that show extended unsupervised play show better use by adults too. This suggests that children are the GENERATORS of community life.

Graph comparing independent mobility to play



Mapping analysis

Data for social activities, taken from the previous section, is compared to the mapping ranks derived from each of the case studies.

In summary the rankings for each of the scheme are as follows:

Scheme	Shared external space rating (out of 5)
Barking	5
So Stepney	5
Staiths	4
The Americas	3
Derwenthorpe	3
Allerton Bywater	2
Dinnington	2
Lime Tree Square	2
Market Estate	2
Lawley Village	0

Scheme	Access from dwellings (out of 5)
Barking	3.5
Staiths	4
The Americas	2.5
Lime Tree Square	2
Allerton Bywater	1
So Stepney	1
Dinnington	1
Derwenthorpe	0
Lawley Village	0
Market Estate	0

Scheme	Networks (out of 5)
Barking	4
The Americas	3
Dinnington	3
So Stepney	3
Staiths	3
Lime Tree Square	2
Market Estate	1.5
Allerton Bywater	1
Derwenthorpe	1
Lawley Village	1

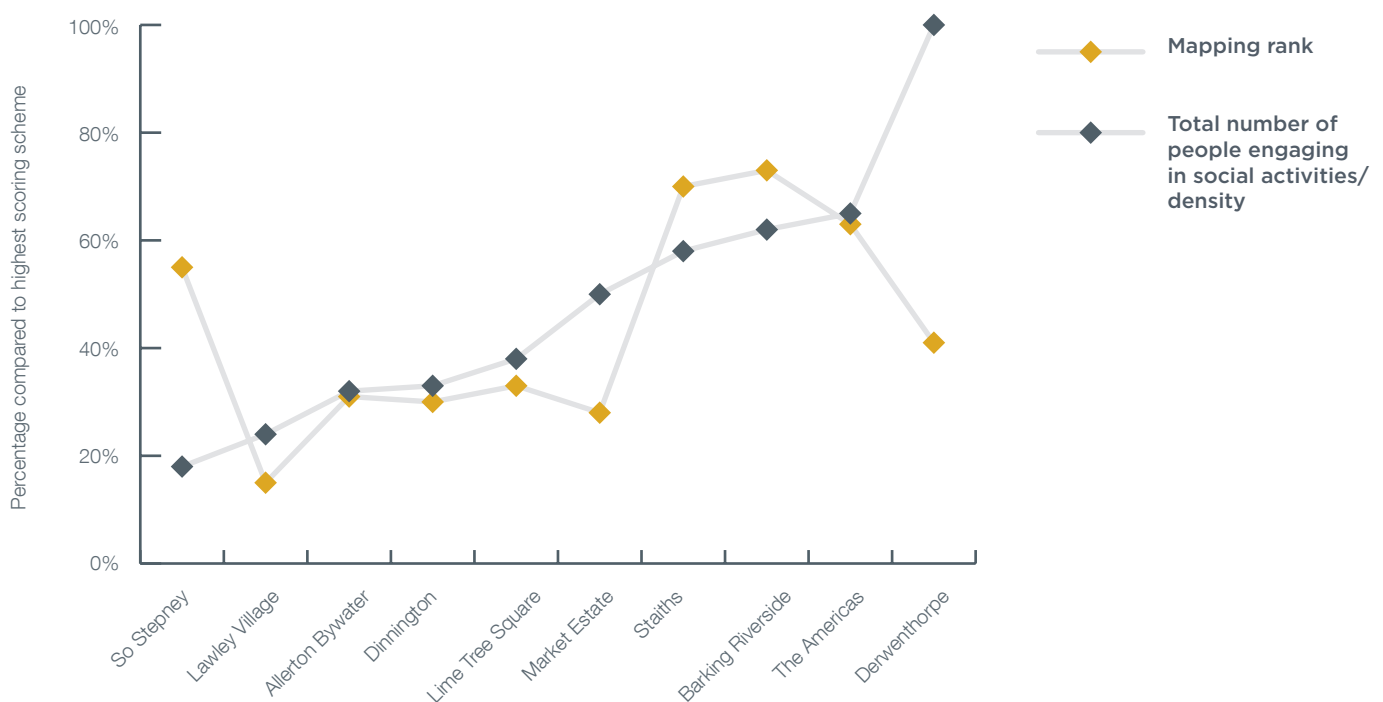
Scheme	Streets (out of 5)
The Americas	4
Staiths	3
Allerton Bywater	2
Barking	2
Derwenthorpe	2
Lawley Village	2
Lime Tree Square	2
Market Estate	2
So Stepney	2
Dinnington	0

The map rank is converted to a percentage and compared to the percentage value for social activities for each of the schemes. Note that the percentage for social activities is factored by the density for each scheme.

This produces the scatter graph below, which by inspection shows a good correlation between the social use of space and the mapping values. We conclude that mapping external spaces in this way gives a very good indication of how well spaces are used by the community.

We believe that this type of analysis is potentially very helpful for designers and developers.

- It can be used in the early masterplanning stages to test layouts by applying the principles to different options
- At consultation stage it is a potentially useful tool for engaging residents; giving value to external spaces and helping to set priorities for all members of the community
- It is a post occupancy technique for new developments as well as a research method for reviewing existing estates and their development potential
- Beyond this, it could be used to augment existing policy and to build a clear set of principles for designers, developers and local authorities to work with.



Chapter 6

Conclusion

Conclusion

Knowledge and evidence about how people use space is a vital resource for design professionals, developers and users themselves.

Within the context of the housing industry, policy expects developments to provide 'quality open spaces' as they play an important role in 'facilitating social interaction and creating healthy, inclusive communities.'¹ However, there is a distinct lack of available data about how people are using these open spaces and factors that affect their use.

This report maintains that there is a lot to be learned from observing residents' behaviour and that by relying on audits and interviews with residents, as is mainly the case in post occupancy evaluations, we are not gathering the full picture. In particular we are missing information about children, their particular needs and their use of outdoor spaces.

The UN Convention enshrines the right of children to play and the Children Act (2004) puts a statutory duty on local authorities in England to 'cooperate in their provision for the enjoyment of play and recreation'. It is recognised however, particularly amongst play professionals that children and young peoples' needs are not being met; children are playing out less and have less freedom of movement than a generation ago.

This report investigates these issues within in the context of children's local neighbourhoods and sets out to begin to answer the call for professionals and housing managers to better understand, plan, design and manage for play.

By examining ten recently completed schemes, it presents a small snapshot of current housing design and principles in England. None of the case studies can be seen as an exemplar, however, the data gathered sets out to unpick some of the issues, from a theoretical base, making comparisons and drawing tentative conclusions about how people use external space in residential areas.

Mapping diagrams begin to visualise these theories and redraw the external landscape from the point of view of accessibility, overlooking and connections.

Conclusions

This report recognises that external spaces are social spaces and values spaces that are well used.

It believes that children are most likely to use these spaces and that they are most in need of safe places to play for extended periods.

We have collected evidence that highlights children can be the generators of community life but that scheme design is critical to enabling children to play this role. It should be noted that the case studies are a very small percentage of recent housebuilding in England and cannot be said to fully representative of all schemes.

The study revealed a number of anomalies and variables that are likely to have influenced the data. Most notably were the event at Derwenthorpe which appeared to attract a large number of visitors, and the field of view at So Stepney, where the researchers were unable to record residents passing through.

Demographic data was available for the local wards. However the Arts Council study of Staiths, Gateshead revealed a different demographic profile. We cannot be sure whether other schemes also diverged from the data, but we do believe that the lower number of families on the scheme will have resulted in less use of the external spaces, as our other observational data suggests.

One question that has arisen in presentations of this research is the extent to which tenure type might influence the data. The research avoids this question, choosing to consider peoples' use of space as a universal need. However there are certainly cultural social pressures that prevent parents from allowing their children to play out.

The strength of the research lies in the fact that it equals or exceeds other studies in length of time spent observing activities. In Mike Biddulph's 'Life in the their Streets' for example, he spent just six hours outside, admittedly augmented by video footage, which may be a useful tool for future studies.

Augmenting the studies with resident opinion and feedback would have further strengthened the study, but this was not possible with the funding available. Should it be possible to carry out this type of research then it would be wise to refer to Rob Whewey's research whereby he interviews adults and children who are spending time outside, as well as using door to door questionnaires and surveys.

Recommendations

While the limitations of the approach need to be noted, the findings provide valuable insights where there is a currently a lack of evidence. We hope the research can be a vital first step towards re-framing the way we think about residential shared space and begins to answer the call for the built environment to take the needs of children seriously and represent them across all policy.

Research work should continue as more evidence will help reach stronger conclusions. It should include:

Bespoke resident surveys and feedback

Questions about external spaces should be carefully framed so as to understand both people's perception and satisfaction levels as well as their expectations about a range of issues, including playing out and children's independent mobility.

Further investigation is needed into the specific needs of teenagers and the elderly

In the case of the latter it would be advantageous to be able to look at the over-80s age group as it this time of life when it becomes more common to live alone, social participation decreases, but support networks become more vital. Appropriate external spaces can bring benefits such as increasing social contact, more contact with nature and exercise.

Teenagers, so often feared, are children and like playing too. They often enjoy playgrounds like play with younger children whom they know. Although they like their own spaces to gather too, they tend to congregate in busy areas in the neighbourhood. As well as listening to their voices we should consider the benefits of young people growing up in communities where they are known to adults, contributing and participating.

High density, inner city schemes need to be studied urgently

There is huge pressure on external spaces in inner city regeneration schemes. In these circumstances, understanding how to get the very best out of these spaces is essential. The architecture should be considered with respect to all shared space; from the street to the front door; looking at entrances, lobbies and circulation.

Security and play

Security solutions, such as gated access to courtyards, should be reviewed if they prevent children from freely accessing spaces designed for their use. Other barriers to play, such as a blanket avoidance of a network of footpaths should also be reconsidered. The challenge will be to layout these spaces whilst achieving security requirements, this may mean reviewing some of the principles of Secure by Design.

Guidelines

New guidelines will help designers and developers understand the issues, what they should be setting out to do and ways of achieving it:

- The emphasis should be on creating as much safe, car-free, shared space as possible.
- These spaces should be within the development. As many dwellings as possible should overlook and have safe direct access to these spaces.
- Open spaces/play spaces separated from dwellings by a road should be avoided.
- Other barriers to access such as fences, railings and informal planting should be considered too.

In addition, existing guidelines should be revisited to highlight the benefits of play. Where policy gives places and spaces for what could be called 'formal' play, to this should be added unaccompanied play as the definition 'freely chosen, self directed and intrinsically motivated'.

The car is the greatest hindrance to safe play yet many highways engineers are still unwilling to accept current Manual for Streets guidance on homezones, choosing to apply the outdated DB32.

Solutions should be found that prevent car drivers from parking anti socially. This will require a significant cultural and psychological shift, as well as a change in legislation and policy.

The merits of pavements should be incorporated into guidelines, as a way of providing safe, car-free space. Pavements that allow for doorstep play are ideal. In medium to large size developments they should also be wide enough for more than one person to walk side by side, for an adult with two small children or a mobility scooter with a pedestrian friend.

Overall, a new approach to residential urban design should be championed: safe places to walk, cycle, exercise, meet and play need to start outside the home and be available to everyone. The aim should be to tie together streets, pavements and open spaces as the physical fabric of community life.

Appendix Bibliography

Bibliography

- Appleyard, D. (1981). 'Livable Streets'. Berkeley: University of California Press.
- Berkeley Group, University of Reading and Social Life (2015) 'Creating Strong Communities' Berkeley Group: Surrey.
- Biddulph, M (2011). 'The impact of innovative designs on activity in residential streets'. School of City and Regional Planning: Cardiff University.
- Birkbeck, D. & Kruczkowski, S., (2015). 'Building for Life 12: The sign of a good place to live' CABE at the Design Council, Design for Homes, Home Builders Federation, Nottingham Trent University.
- Bokaian, R., Sprowles, R., & Warwick, E. (2016). 'Meeting the challenge of urban renewal' G15: London.
- CABE (2005). 'Building for Life: Delivering great places to live'. London: CABE.
- CABE (2003). 'The Value of Public Space - How high quality parks and public spaces create economic, social and environmental value'. London: CABE.
- CABE (2007). 'Paved with Gold. The real value of good street design'. London: CABE.
- CABE (2007). 'A sense of place. What residents think of their new homes'. London: CABE.
- CABE Space (2005). 'Start with the Park'. London: CABE.
- Cabinet Office (2016). 'Completing London's Streets: How the regeneration and intensification of housing estates could increase London's supply of homes and benefit residents'. London: Savills.
- Children's Play Council (2006). 'Planning for Play: Guidance on the development and implementation of a local play strategy'. London: NCB/Big Lottery Fund.
- Clark H. et al (2015). 'Play - A Report by the All-Party Parliamentary Group on a Fit and Healthy Childhood' London.
- Communities and Local Government (2011). 'Planning Policy Statement 3: Housing'. London: HMSO
- Communities and Local Government (2012) National Planning Policy Framework. London: HMSO.
- Cooper Marcus, C. and Sarkissian, W. (1986). 'Housing as if people mattered: Site Design Guidelines for Medium Density Family Housing'. Berkeley: University of California Press.
- Department for Children Schools and Families & Department for Culture Media and Sport (2008). 'Play Strategy' London: HMSO.
- Department of the Environment and Department for Transport (1992). 'Design Bulletin 32: Residential roads and footpaths: Layout considerations'. London: HMSO.
- Department for Transport (2005). 'Attitude to Streetscape and Street Uses'. London: DfT.
- Department for Transport (2007). 'Manual for Streets'. London: Thomas Telford.
- Design Council (2015). 'Active by Design: Designing places for healthy lives'. London: Design Council.
- Damian Carrington (March 25 2016). 'Three-quarters of UK children spend less time outdoors than prison inmates - survey.' The Guardian.
- Hillier, B. (1996). 'Space is the Machine' Cambridge University Press.
- Hillman, M., Adams, J., & Whitelegg, J., (1990) 'One False Move'. London: Policy Studies Institute.
- Homes and Communities Agency (2014). 'Urban Design Lessons: Housing Layout and Neighbourhood Quality'. London: HCA.
- Homes and Communities Agency (2015). 'Quality Counts - feedback from residents' London: HCA.
- Gehl, J. (2001). 'Life Between Buildings: Using Public Space'. Copenhagen: The Danish Architectural Press.
- Gill, T (2007). 'Can I Play Out?: Lessons from London Play's Homezones project'. London Play.
- Gill, T (2007). 'No Fear: Growing up in a risk averse society'. London: Calouste Gulbenkian Foundation.
- Ben Highmore (2013). 'Playgrounds and bombsites Postwar Britain's Ruined Landscapes' Cultural Politics, Volume 9, Issue 3.
- Jacobs, J. (1961). 'The Death and Life of Great American Cities'. New York: Random House.
- Kozlovsky, R., Canniffe, E., (2013). 'Architectures of Childhood: children, modern architecture and reconstruction in postwar England' London: Ashgate.
- Play England (2009) 'Tools for evaluating play' NCB: London.

Mayor of London (2009). 'London's Great Outdoors'. London: GLA.

Mayor of London (2012). 'Shaping Neighbourhoods: Play and Informal Recreation'. London: GLA.

Office for the Deputy Prime Minister (2000). 'Our towns and cities: The future' ODPM: London.

Office for National Statistics (2015) 'Insights into Loneliness, Older People and Well-being'.

Page, A.S, Cooper, A.R., Griew, P., Davis, L. & Hillsdon, M. (2009). 'Independent mobility in relation to weekday and weekend physical activity in children aged 10-11 years: The PEACH Project'. University of Bristol: International Journal of Behavioral Nutrition and Physical Activity.

Paterson, E. (2012). 'House builders approach to residential shared outdoor space in England'. School of the Built and Natural Environment, Northumbria University.

Read, N., Spier, S., & Satellite Architects Ltd. (2013). 'Public Realm in Volume House Building: A Street Primer'. London: Kingston University.

Shaw, B., Bicket, M., Elliott, B., Fagan-Watson, B., & Mocca, E. (2015). 'Children's Independent Mobility: an international comparison and recommendations for action'. London: Policy Studies Institute.

Social Life (2015). 'L&Q shared outdoor spaces: what works?'. London: Social Life.

UK Green Building Council (2016) 'Health and wellbeing in homes' UKGBC: London.

URBED / University of Edinburgh / Design for Homes (2013) 'Space to Park' URBED: Manchester.

Voce, A. (2015) 'Policy for Play'. Bristol: Policy Press.

Wheway R., and Millward, A., (1997) 'Child's Play: Facilitating play on housing estates', The Joseph Rowntree Association and Chartered Institute of Housing.

Whyte, W. H. 1980. 'The Social Life of Small Urban Spaces'. New York: Project for Public Spaces.

