Making spaces for play

On new suburban and town developments

ZCD Architects

NHBC FOUNDATION
Housing research & guidance

This report was prepared in collaboration between ZCD Architects and the NHBC Foundation.

ZCD Architects
ZCD Architects work on a variety of projects across the public and private sectors. They employ a detailed and sensitive approach; from the small-scale infill project to the larger scale master plan and regeneration work. Their extensive research and a dedication to understanding what works for individuals and communities, has put them in an expert position as architects and urban designers, placing people at the heart of development.

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

020 3095 9762
www.zcdarchitects.co.uk

NHBC Foundation
The NHBC Foundation, established in 2006, provides high-quality research and practical guidance to support the house building industry as it addresses the challenges of delivering 21st century new homes. The NHBC Foundation is also involved in a programme of positive engagement with the government, academics, and other key stakeholders, focusing on the current and pressing issues relevant to housebuilding.

NHBC Foundation
NHBC House
Davy Avenue
Knowlhill
Milton Keynes MK5 8FP

0344 633 1000
info@nhbcfoundation.org
www.nhbcfoundation.org

Picture credits

Inside front cover: ZCD Architects

Front cover and page 2 top: Barking Riverside. Hufton + Crow / VIEW.

Page 2 bottom: The Americas. Clarion Housing Group.

Page 4 top: Staiths. Idpartnership-northern. Image: Graeme Peacock.

Page 4 bottom: Lime Tree Square. Feilden Clegg Bradley Studios. Image: Mike Gove.


PORTLAND CLOSE

Foreword

Outdoor play enriches the life of children, improving their health and wellbeing. However, too often play remains an afterthought in our planning process and little is known about how we should design new neighbourhoods to encourage play and the positive social interaction it can generate in communities.

This new pilot study by ZCD Architects, supported by the NHBC Foundation, gives new insights on how the spatial characteristics of neighbourhoods influence the amount of play observed. Significantly it demonstrates a mapping approach that could allow us to predict social outcomes in terms of play at an early point in planning, and steer towards characteristics that are beneficial.

I hope the planning community will be engaged by the key and optimistic finding that with careful neighbourhood design it may be possible to lift some of the constraints that have, in recent decades, been depriving children of their fundamental right to play.

Kate Henderson

Chief Executive
Town and Country Planning Association (TCPA)

Contents

Introduction – why a focus on play?	5
The developments studied	5
Mapping the qualities of external spaces	6
Observing play	9
Analysis	10
Concluding thoughts	12
Further reading	12

Introduction – why a focus on play?

This is a summary of a major report, *Housing design for community life*, prepared by ZCD Architects[1], based on research sponsored by the NHBC Foundation. The work adds to our understanding of the way people use community space on housing developments and explores in particular how design can influence the way space is used for play. The focus on play is significant. Play is the way children learn about the world around them and it is crucial to their development. If children are playing outdoors, the social and community interactions between adults are also likely to be enhanced. The findings presented in this report support a new momentum to deliver child-friendly approaches to neighbourhood, town and city planning which have internationally-acknowledged links with economic success and social integration[2].

The current trend in the UK, however, is for outdoor play (and particularly unsupervised play) to be ever more restricted, with children being deprived of a natural activity that contributes to their learning, socialising, fitness and wellbeing. An All-Party Parliamentary Group (APGG) report in 2015[3] highlights concerns over today's constraints on play and the impact this has, not only on the wellbeing of children, but also the wider effects on society and the economy.

The APGG report challenged current attitudes to play, where police may be called to investigate a wayward football or noisy game, and the stigmatising of younger children who are outdoors playing without supervision and of the parents that allow this to happen. It proposed a series of measures to re-boot our awareness of the importance of play and suggests how we should invest to provide the right environment to foster and encourage it.

This report directly supports the recommendations of the 2015 APPG report. It examines a sample of modern developments in two ways. Firstly, it uses a mapping approach to gauge different physical qualities of the schemes. It then uses observational analysis to determine the patterns of use of the communal spaces by different age groups. What emerges, though only a provisional finding, is that certain design characteristics can have quite a significant effect on the social use of space.

The developments studied

This report includes data from seven housing developments across England (table below) including a number of well-known award-winning schemes. As the images in this report show, they reflect a wide range of modern design. Barking Riverside provides a reference point, providing the best example, from those studied, of how design can impact positively on the social use of external community space. The main report[1] includes details of two high density urban developments and a further lower-density development (which was observed during an atypical social event): these were not included in this summary report.

Allerton Bywater	47 dph	West Yorkshire
Barking Riverside	54 dph	Barking & Dagenham, London
Dinnington	40 dph	South Yorkshire
Lawley Village	29 dph	Shropshire
Lime Tree Square	40 dph	Somerset
Staiths	46 dph	Tyne and Wear
The Americas	43 dph	West Sussex

The housing developments evaluated in this report.

Mapping the qualities of external spaces

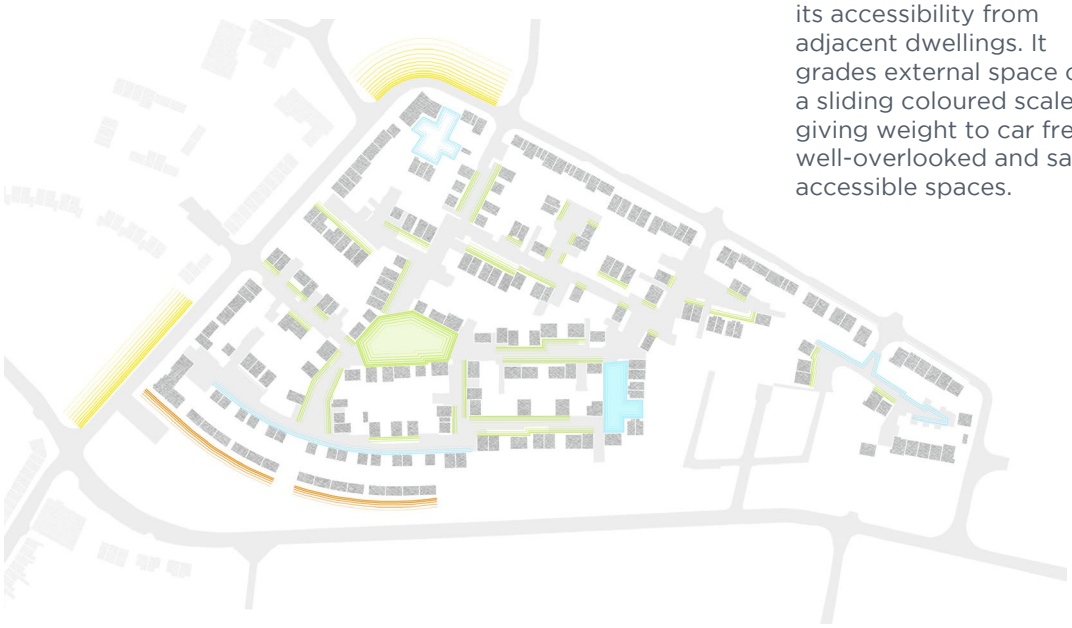
Four different mapping exercises were carried out for each scheme, exploring the following

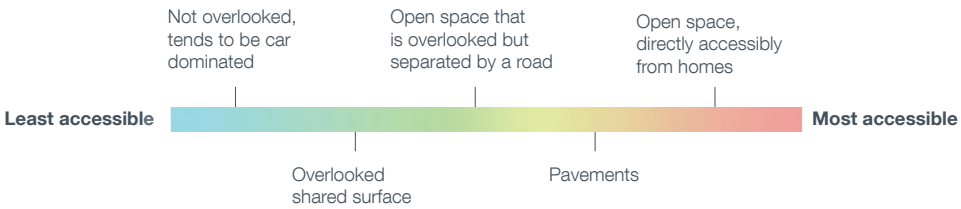
1 Accessible shared external spaces
2 Access to external spaces from homes
3 Networks
4 Street design for social interaction

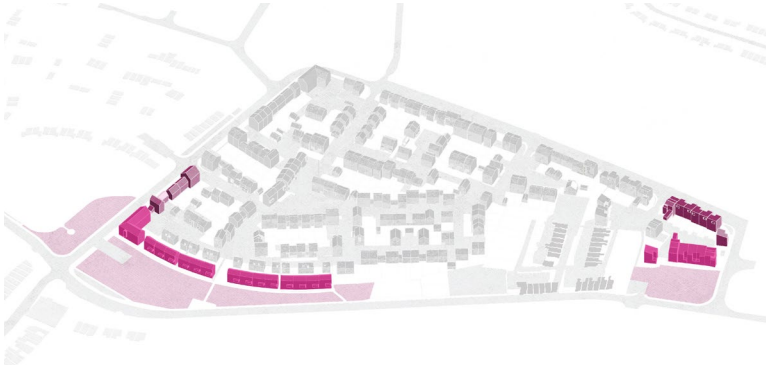
For each mapping exercise, objective criteria (see page 13) were applied to generate a value of between zero and 5. A perfect scheme would achieve an overall score of +20 (5 for each map).

Map 1 Accessible shared external spaces

This mapping identifies the amount of shared space and its accessibility from adjacent dwellings. It grades external space on a sliding coloured scale, giving weight to car free, well-overlooked and safe accessible spaces.







Map 2 Access to external spaces from homes

Here the mapping exercise identifies the proportion of homes that have direct, safe access to shared open space and a clear line of sight between the home and the open space.

Homes with safe, direct access (with clear line of sight) to external space.

Homes with safe but indirect access to external (eg via a pavement).

Map 3 Networks

In this mapping exercise the qualities of networks on the scheme, particularly those connecting spaces, are evaluated

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

Map 4 Street design for social interaction

Records the proportion of homes which align with traditional street arrangements where front doors face others and foster social interaction.

Social networks across a series of streets

Overall ratings from the mapping exercises

The accumulated scores from mapping exercises 1 to 4 are shown in Chart 1 below for four of the developments evaluated. This includes the highest and lowest overall scores identified by the mapping process. It demonstrates that the underlying criteria identify quite significant differences between developments and are sensitive in picking out the better attributes within them. It is notable that even for the developments that have the highest scores, there are aspects that could be improved further. In contrast the lowest scoring development actually fails to register a positive score for two of the mapping exercises, suggesting a very low alignment with beneficial features.

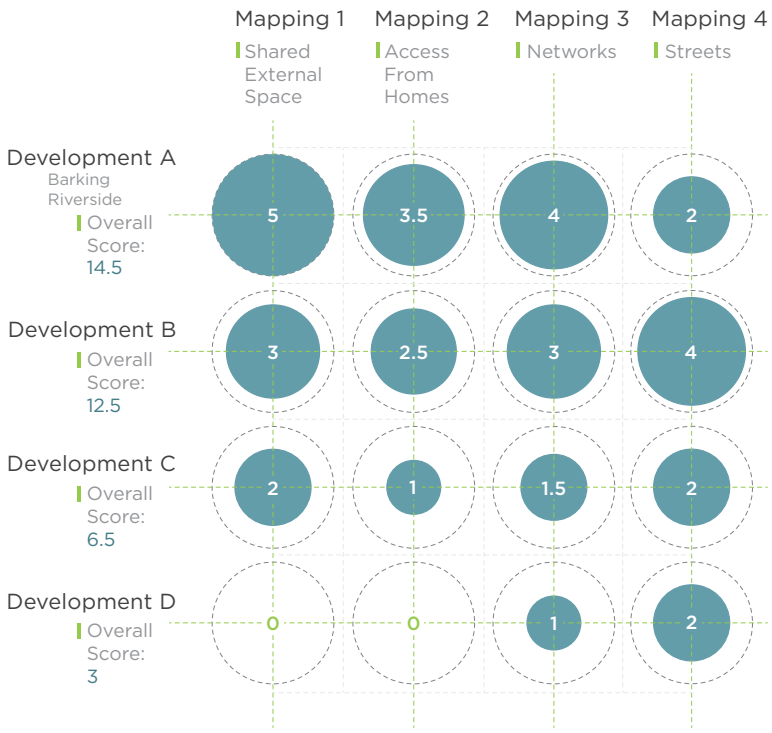


Chart 1 Examples of scores from the mapping process

Observing play

Importance
The mapping exercise just described draws attention to (and scores) the external physical features of housing developments that are anticipated from past work to have a link with improved social outcomes. However for contemporary housing there is little insight on the actual way people use external space. To contribute to evidence-based decision making in the early stages of future housing developments, this study therefore included a separate examination of the patterns of social use on the selected developments.

Approach
This part of the research builds on the observational analysis and data gathering approaches developed by Whyte[4], Gehl[5] and Bidulph[6]. It looks at external spaces in general (including streets, green space and pedestrian connecting routes) and focuses on the numbers of people, the time they spend outdoors and the kinds of activities they undertake.

The developments were observed in summer when the weather was fine and over weekends or evenings after school. In total, a minimum of 24 hours of data were collected for each scheme. Two researchers observed each scheme, from separate positions and with a good field of view. They recorded the following for each person that entered their field of view:

Age group: Pre-school (under 5); Child (5-12); Teenager; Adult; Elderly

Time: length of time when an individual was in view;

Whether in a group or alone

Activity carried out: this was categorised as follows:

Passing through	A person moving briefly through the space	Necessary activity*
Hanging out	Defined as a solo activity for this study	Optional activities*
Domestic chores	Washing a car, hanging out washing, gardening	
Talking	Carried out in a group (not mobile phone use)	Social activities*
Observing others	Regarded as social (even though often solo)	
Play	Children's social activity	
Supervising play	An adult activity	

*categories follow those devised by Gehl[5].

Way of moving: on foot; bicycle; pushchair; scooter; mobility scooter

Where necessary the observers had permission to carry out the study from the relevant housing neighbourhood manager and they made every effort to observe discreetly, and in a way that would not influence the behaviour of people using the spaces.

Analysis

In this section we build a picture of the relationship between the physical qualities of the developments (as scored by the mapping process) and the actual use of external space by people (measured by the observational analysis). Chart 2 shows that the developments that scored well in the mapping exercise have higher observed levels of social use (by all ages) and play (children). These results (and those that follow) have been adjusted to reflect the variation in density across the developments and are presented in a relative way, so development D, for example, records less than 40% of the social activity observed for the development with the highest mapping score. Lower mapping scores have an even more dramatic effect on play (the total of supervised and unsupervised play), with the worst development recording less than 5% of the play observed on the best case.

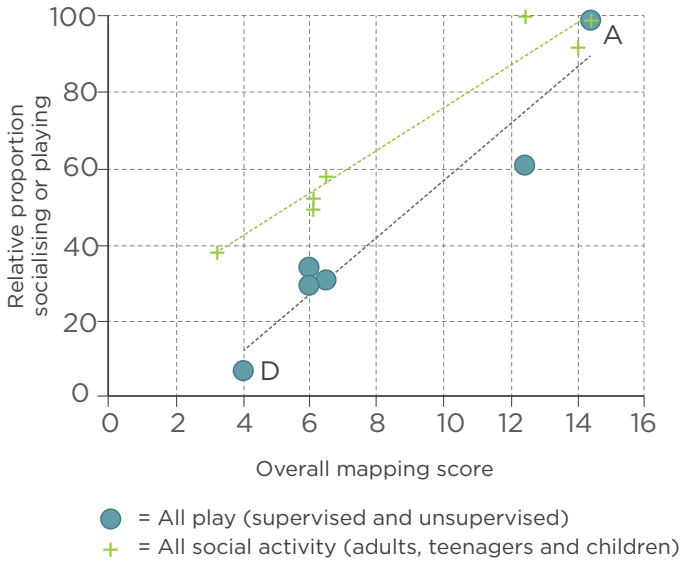


Chart 2 All social activity plotted against mapping scores
(Developments A and D from Chart 1)

A definition of play is that it is 'freely chosen, personally directed and intrinsically motivated'. Hence the measurement of unsupervised play (Chart 3) carries particular weight in the evaluation of children's use of space. Though in this chart there is more variation about the trend line, there is good evidence of a link between the physical qualities of developments and extent to which it is used by children for unsupervised play. An extreme case is development D, on which no unsupervised play was recorded.

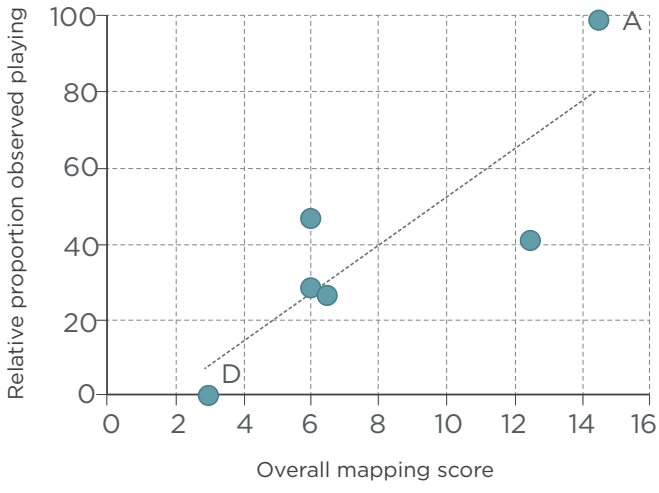


Chart 3 Unsupervised play plotted against mapping scores
(Developments A and D from Chart 1)

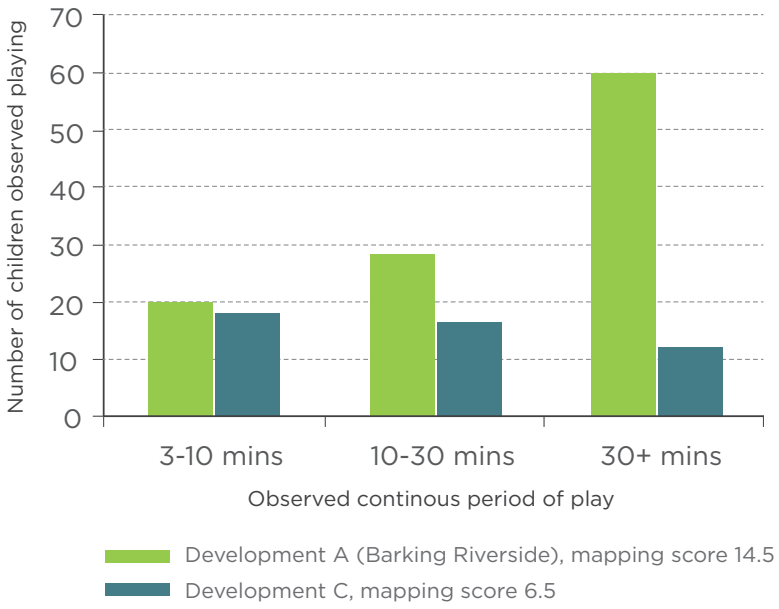


Chart 4 Extended periods of play outdoors can become the norm, as for Barking Riverside.

Traditionally children have liked to play outdoors for long periods and are naturally drawn outside by other children playing. Observational data from this study indicates that it is possible for housing developments to encourage children to stay outside for longer periods (Chart 4). At Barking Riverside some children were observed playing continuously for several hours. However on developments with lower mapping scores (eg development C) the number of children playing showed a tendency to decline for the longer periods of continuous play.

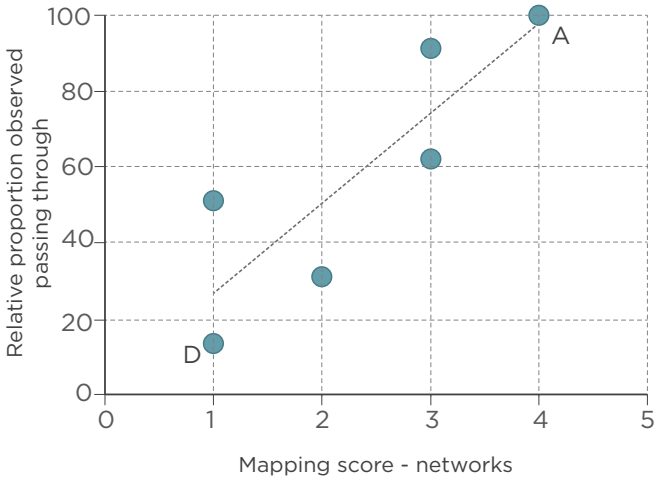


Chart 5 Independent mobility of children and teenagers
(Developments A and D from Chart 1)

For children and teenagers, independent mobility is argued to be a key contributor to their individual development, helping them to understand risk and how to deal with everyday situations. The observational approach in this study allowed an estimate of the children and teenagers passing briefly through a space. In Chart 5 we show the relative numbers of teenagers and children using the space in this way, this time compared with the score for just the networks mapping exercise. Again, higher mapping scores resulted in better outcomes.

Concluding thoughts

- A new mapping approach, with potential application at outline planning or masterplanning, has been demonstrated to enable predictions of social outcomes on modern housing developments.

- Observational analysis shows that overall social use of space by all ages may increase by 50% or more on housing developments that scored highly in the mapping process, compared to the developments that had the lower scores.

- Children's use of space, as measured by the amount of play, is also greatest when key features (access to safe, nearby shared space, connecting networks and street characteristics) are scored highly. No unsupervised play was recorded on the development with the lowest mapping score.

- The development that was observed to have the highest overall mapping score and highest levels of play had the highest density (54 dph). In contrast the development with the lowest mapping score and least social activity and play had the lowest density (29 dph). This suggests that it is the quality of external space (rather than quantity) that governs social outcomes.

- More research is needed to increase the sample of developments studied and to provide a robust data set to verify the approach. Relationships between specific attributes and key activities (eg networks and independent mobility for children) suggest correlations that could be explored in more detail to enable more precise predictions of outcomes.

- The mapping approach set out in this report will be of interest to house builders, architects, landscape designers, planners and policy advisors who are making decisions about future housing proposals and are keen to ensure good social outcomes.

- Observational analysis of the way people use external space, and particularly the way it is used by children for play, could provide a valuable contribution to post occupancy evaluation of housing developments.

Further reading

1 Housing design for community life. Dinah Bornat. ZCD Architects/University of ast London. November 2016. https://www.zcdarchitects.co.uk/housing-design-for-community-life

2 See for example: Child in the city. European network for child friendly cities. www.childinthecity.org

3 Play. A report by the All-Party Parliamentary Group on a fit and healthy childhood. October 2015

4 The social life of small urban spaces. Whyte, W.H. Project for Public Spaces, New York. 1980

5 Life between buildings: using public space. Gehl, J. March 2011

6 The impact of innovative designs on activity in residential streets. Biddulph, M. School of City and Regional Planning, University of Cardiff. 2011.

Scoring criteria for mapping exercises (pages 6/7)

Map 1 Accessible, shared external space

5 Plenty of good-sized red spaces throughout the development
4 Small number and/or small size of red spaces throughout the development
3 Mostly green/orange with a good-sized shared space within the development
2 Mostly blue and green/orange with a small amount of shared external space within development
1 Mostly blue and green/orange, with some external space on the edge of development
0 Blue and green only (vehicle accessible) - no shared external space within or on edge of development

Map 2 Access to external spaces from homes (% with direct access and clear line of sight to open space)

5 90–100% of homes
4 70–90% of homes
3 50–70% of homes
2 30–50% of homes
1 10–30% of homes
0 0–10% of homes

Map 3 Networks

5 A series of safe, networks throughout the development connecting shared spaces
4 A series of routes, reaching the shared spaces, but not well connected throughout the development
3 There are some loops, perhaps around blocks on pavements, but these are poorly linked to each other, some using red connections
2 Closed loops, all connections between the loops are red
1 Most circulation around development is shared surface
0 Very unsafe development – no pavement or shared surface and/or high traffic speeds etc

Map 4 Street design for social interaction (% of homes with visual connection)

5 90–100% of homes
4 70–90% of homes
3 50–70% of homes
2 30–50% of homes
1 10–30% of homes
0 0–10% of homes

ZCD Architects

NHBC FOUNDATION

Housing research & guidance

December 2017