Impact of urban design on social capital: lessons from a case study in Braunstone

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The research was carried out by Andrew Price, Simon Austin, Primali Paranagamage and Fahmida Khandokar of Loughborough University.
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Introduction

Many urban centres are still blighted by crime and poverty; poorly designed development can have negative effects on the health, welfare and economic prospects of communities. The design, scale, quality and distribution of structures within the built environment are key determinants of the environmental, social and economic wellbeing of urban areas and the quality of life of their inhabitants.

Sustainable urban development requires a new way of doing things – a way which reduces environmental impact while at the same time promote widespread economic and social progress.

Fundamental to social progress and wellbeing is the Social capital of a community, referred to as the social bonds and norms or the ‘glue that holds societies together’. The design and form of cities, neighbourhoods and individual buildings have significant implications on social capital as they can affect the way people interact and bond with each other and the sense of community.
1.1 Our aims

We explored the association between Social Capital and the built environment through theoretical and empirical studies. This case study explored the impacts of the built environment on Social Capital and community health in Braunstone; an area located on the outskirts of Leicester that has undergone a major regeneration programme. A valuable asset in any regeneration project is the community that has evolved over years of residence with their own networks, bonds and ties, in other words its social capital; a useful resource which contributes to health and other beneficial outcomes.

There is renewed interest in how to improve the quality of the environment in a way that promotes healthy and active life-styles and social equalities. It is recognised that the physical environment can contribute to improve social capital and healthy lifestyles, but how can urban neighbourhoods be designed with this objective in mind?

If urban development is to be sustainable, it is important to understand how development initiatives have impacted on these issues. The Braunstone case study specifically looked at forms of proxies that could be made use of in sustainability assessment such as 'walkability' and improvement to facilities that helps build social capital. The key research findings are summarised in this report.
1.2 Our Sponsors

One of the key drivers of the Sustainable Urban Environment (SUE) programme launched by the Engineering and Physical Sciences Research Council (EPSRC) is to improve the quality of life of UK citizens. This initiative supported over 400 researchers to investigate different aspects of planning and delivery of Sustainable Urban Environments. More details can be found at www.epsrc.ac.uk

The SUE-MOT (Sustainable Urban Environment: Metrics, models and Toolkits) project aimed to encourage key decision-makers to systematically assess the sustainability of urban developments by facilitating decision-making at every stage of the development process. The project comprised eight work packages that investigated different aspects of the problem. More details of the SUE-MOT project and work packages can be found at www.sue-mot.org

HaCIRIC’s (Health and Care Infrastructure Research and Innovation Centre) focus is on the underlying built and technical infrastructure for health and social care, and the interaction between this infrastructure and change and innovation in care services. The centre’s purpose is to deliver research findings which will be instrumental in ensuring that healthcare investment achieves its full potential by improving the way infrastructure is planned, delivered and managed. More details of HACIRIC can be found at www.haciric.org

The Loughborough University Innovative Manufacturing and Construction Research Centre (IMCRC) is one of sixteen UK based Innovative Manufacturing Research Centres (IMRCs) funded by the UK Engineering and Physical Sciences Research Council (EPSRC). The purpose of the IMRCs is to provide a focal point for research excellence, to actively collaborate with UK businesses and facilitate knowledge transfer and exploitation of research results. More details can be found www.lboro.ac.uk/eng/research/imcrc
1.3 Further work

Information was initially gathered as part of the ‘social capital’ work package of the Sue-mot project that addressed a pressing void in available tools to address social sustainability aspects of urban development. This work package identified the urban design attributes that help social capital to evolve, thus informing visions for sustainable urban development.

Sustainability means thinking in terms of whole systems, with all their interconnections, consequences and feedback loops. The models and tools must help decision makers understand the complexity of the problems and develop solutions which take account of the effects of change on social structures, values and the environment. The data were subsequently analysed and used to support the “Modelling complex environments for 2050” project which investigated modelling and complexity issues associated with sustainable urban environments. This work has subsequently informed work and further development of modelling and simulation of healthcare infrastructure planning.

The completed research has been published in several conferences and academic papers. Further details on the research and findings are available in the internal research report of this study from Loughborough University and www.sue-mot.org.
## Context

We identified key urban design attributes that encourage social capital which in return results in better health outcomes. These are:

- **Connectivity** (movement structure, mixed use, local facilities);
- **Safety** (natural surveillance, access and footpaths, ownership);
- **Character** (context, public space, personalisation); and
- **Diversity** (life cycle needs, mixed tenure, life style needs)\(^3\).

We further detailed key aspects of walkable neighbourhoods that provide incentives for people to walk to their destinations. These are:

- **Function** (condition and continuation of sidewalks);
- **Aesthetics** landscape, surrounding view);
- **Safety** (pedestrian crossing, fear of crime);
- **Comfort** (shade trees, benches);
- **Urban design** (street connectivity);
- **Access to services** (location of services, access to public transport); and
- **Management** (cleanliness)\(^4\).
2.2 The area

The Braunstone New Deal for Communities (BNDC) is a residential area comprising nearly 5000 properties with a population of 15000. Around 74 per cent of the residential properties are owned by Leicester City Council. Braunstone Park is situated in the heart of Braunstone geographically dividing the area into two distinct parts, North and South Braunstone. Poor connectivity and limited direct pedestrian routes between these two neighbourhoods have deterred walking between the two. Braunstone is also known to have previously suffered from lack of services with closures of existing services worsening the situation. Accessing services within the local and surrounding areas by public transport was also seen as a problem by the residents.

A £49.5 million community-led regeneration scheme, 'A New Deal for Braunstone' was implemented over the period 2002 to 2009 to improve the quality of life of the local residents, such as: community development and inclusion; crime and community safety; education and family learning; health and wellbeing; housing and environment; and employability and enterprise. The following projects aimed to generate local interest and maximise community involvement. These are:

- Community minibus service: a low cost, door to door service.
- Community clean-up project: undertaken by several local clean-up groups.
- Highway spinney: voluntary work within the Spinney and improvements to public safety and ease of access.
- Braunstone bonfire and carnival: a range of physical and recreational activities for local residents.
- The feeling good project: support for mental health problems by enabling more involvement.
- Sports Action Zone Consultation: community consultation on local sporting

6 Hayes P and Rogers A, 2001, Urban Regeneration and Mental Health, Health Variations 7, ESRC.
The research

The overall aim of the research was to explore the interrelationship between urban design and social capital and community health. We sought to shed some light on the following questions:

- Have the building of new facilities affected social capital of the Braunstone community?

- Does the walkability of the neighbourhood affect social capital and community health of the area?
3.1 Approach

A combination of subjective and objective measures were used to investigate key attributes of the demographic characteristics, walking environment, use of leisure facilities, social capital and community health and wellbeing. This information was analysed together with literature on social capital theory and urban design to identify how social capital in Braunstone could be affected by the building of facilities such as the Brite Centre and Braunstone Leisure Centre and the walkability of the area.

A questionnaire survey captured the use of the facilities and their physical features, perceptions of local residents of these facilities and the walking environment. Information was also collected on respondents' socio-economic background, frequency of visiting places for social interaction and participation in social activities, trust and sense of belonging within the community.

One hundred and thirty nine responses were collected from residents living inside and outside the BNDC area. Two workshops were conducted each with ten local residents with a range of ages to further understand the local issues revealed by the questionnaire survey.

A detailed site survey recorded the state of the walking environment and also assessed the reliability of the data collected through the questionnaire survey.

Records of activities on a typical day in the Brite Centre and Braunstone Leisure Centre noted the time and type of activity. Qualitative observations were also made regarding the nature of users, what they did at the centres, when and with whom. This was supplemented by user data of the Leisure Centre provided by the Leicester City Council.

Spatial data, such as land-use pattern, street connectivity, bus-stops, public transport routes and location of the key services (used for social interactions) were collected from secondary sources. The relative street connectivity of the neighbourhoods was compared considering the density of cul-de-sac streets within each neighbourhood.

A proximity analysis was conducted using a Geographical Information System (GIS) to assess the accessibility to the key services of the neighbourhoods by walking (Considering 10 minutes walking distance - 400m) and public transport.

The potential of the two venues for social interaction were explored through Space Syntax analysis, supplemented by on-site observations.
3.2 Key findings

There are four key findings emerging from this research. Those suggest that responding to needs at a finer grain rather than at a neighbourhood level is a vital requirement in developing neighbourhoods for high social capital. These findings are not mutually exclusive but closely relate to each other.

Overall, Braunstone is typical of many disadvantaged areas, with persistent socio-economic problems exacerbated by poor physical settings. Local facilities and neighbourhood walkability provides good incentives for longer term residency, and facilitates interaction thus helping social capital to evolve and grow.

i) Responding to needs of groups

The design of neighbourhoods such as Braunstone should be fine tuned to the particular needs of specific groups for better social capital and health outcomes. Patterns of socialising vary at a fine grain and therefore the physical design of facilities and neighbourhoods needs to cater for this variation.

If growth of social capital is to be encouraged through better use of facilities, there would need to be responsive interventions to the emergent needs of groups such as:

- the elderly (who like to socialise rather than engage in physical activity);
- the youth (who did not use the facilities for socialising);
- those with low incomes (who found that activities did not cater for their needs); and
- families with children (who had concerns of anti social behaviour).

For those groups with an incentive to walk (those without cars for example), the decision is mainly influenced by the incentive to walk safely, whereas for others (e.g. with cars) the decision to walk depends on the experience of comfort and convenience. A poor walking environment and lack of access to services affects walking behaviour and social interactions of those with limited affordability. Such different expectations need to be taken into account in deciding the priorities.

"I am a pensioner I go there every three weeks, have a cup of tea, cake and spend time. They pick us up, it is one social outing for a long time. We look forward to that. We spend about one and half hours there. There are lot of disabled people. The two ladies on the bus and in the centre are friends now. We go on a journey round the estate, everybody knows where everyone lives. They talk about all sort of things, naughty things as well. There was a smaller one that was closed down. It is friendly, if you react with them they react with you." (workshop attendee)

ii) Responding to local patterns of use

The local facilities were used in different ways by Braunstone and non-Braunstone residents. The arrangement and positioning of spaces in facilities have added to the ambience needed for the different forms of bonding, bridging and networking that takes place.

For Braunstone residents, they were mainly social hubs to meet friends and family as much as they were places of skills enhancements, especially for longer term residents. In places such as in Braunstone, where strong bonding capital exists, local facilities and services can play a significant role to foster this asset. Communities with such a high level of bonding social capital can play a significant role in fostering health and wellbeing by influencing individual behaviour and choices to adopt a healthy lifestyle, and also contribute to improve mental health and wellbeing by providing social support and care.

For non-Braunstone residents, facilities were places for physical leisure activity in addition to skills enhancement. The participation of outsiders could contribute positively to counteract the stigma and isolation from Leicester City that Braunstone suffers. Such links encourage the growth of bridging and linking social capital, which is important if steps towards a mixed tenure approach are to be promoted.
iii) Responding to localities

Some significant improvements have taken place in recent years to improve the Braunstone neighbourhood. The differences apparent by geographical location suggest that levels of participation in social activities and sense of belonging with the area were higher in the North Braunstone area than in the South. On the other hand, the average level of trust on others was higher among the respondents living in the South.

Considering perceptions of the walking environment, area connectivity, access to services by walking and public transport, the relative walkability of the North is slightly higher than the South. Personal security concerns, cleanliness (state of the garden, litter on the street) condition of pavements, street lighting and lack of pedestrian crossings also have a negative impact on the quality of the walking environment.

There is evidence to suggest that improving walking links with public transport services and interchanges has a significant impact on improving the quality of life of a place. Distance of service and time to access services by walking, which were cited as the main barriers to walking, are closely related to each other and may affect the travel patterns of socio-economic groups in different ways. For example, it may increase the dependency on public transport among people with a higher dependency on walking (e.g., elderly, those with poor health status) and increase the use of motor vehicles for accessing services among people with access to motor vehicles. The existing bus route map of the area suggests that accessing the services by public transport may still remain difficult, especially for those living in the South.

However, considering a combination of factors such as low car ownership, relatively poor public transport and low average household income, it appears that better access to services in the North have contributed to the higher level of social interactions within that area.

iv) Improving perceptions

People choose to stay longer in an area where they think it has its own distinguished identity, a good indicator of the potential to develop social capital. Results suggest that there is a better sense of belonging to the Braunstone neighbourhood with its improved appearance. This is a positive sign that could encourage people to take longer term residency in the area. Although the physical appearance of the area has improved, there is a lower ‘sense of pride’ to be a resident of Braunstone, which could be associated to the still prevalent ‘stigma’. This also influences the individual’s decision on local participation and networking. Therefore, negative feelings associated with being a resident of Braunstone, needs to be carefully tackled if the estate is to better integrate with Leicester City for longer term sustainability.

On average, the local residents held positive perceptions of the overall walking environment, especially with respect to the improvements which had taken place. The respondents also had similar perceptions of the walking environment, where surrounding view, landscaping, shade from trees and design of the streets were considered as the best features. The perceived differences were that street connectivity was an issue for the respondents living in the North and outside of the area, while continuity and condition of sidewalks were important issues for those living in the South. These different perceptions of the local residents may have been influenced by local conditions in their specific areas.

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**Notes**

8. Commission for Architecture and the Built Environment 2001, Better places to live by design, a companion guide to Planning and Policy Guidance 3, CABE.

"We need more activities in the Braunstone Park where older people could watch the younger generation in their activities." (Workshop attendee)

"Braunstone has certainly improved. People are a lot friendlier. I lived in sheltered housing in Braunstone for two years. I have been meeting people in Braunstone, people are lovely. Facilities for older people are a little bit...min." (Workshop attendee)

"The Leisure Centre is a really good place and very popular. It is for more younger people. It has done a lot for the estate." (Workshop attendee)

"Our friends are in Braunstone, we meet them in Bute Centre, Leisure Centre, park etc. The City Council's customer service is there, I use that quite a lot. I also have an allotment, a very nice little social hub." (Workshop attendee)
3.3 Research Conclusions

Considering the evidence, it is clear that the regeneration initiatives have helped to improve the quality of life, health and wellbeing of the Braunstone area.

People living in deprived areas often experience a number of socio-economic problems, which may have a long-term impact on their outlook towards life, perceptions of others and on the surrounding environment. If lack of trust persists between different communities and the implementing agencies, local people are likely to be more resistant to change. Initiatives to improve communication between local people and agencies help to identify constraints that may hinder the progress of the regeneration process. If regeneration initiatives are to be sustainable, collaborative efforts between the implementing agencies and the community are essential to the design effective interventions that help sustain active and healthy lifestyles.

However, it is clear that facilities and buildings can provide opportunities for social interaction that encourage people to reside in an area in the longer term, thus encouraging social capital to evolve. As such, facilities and buildings provide a mediating role in developing social capital in a community. Several of our indicators and proxies suggest facilities and therefore buildings such as the Brite Centre and Leisure Centre have contributed to social interaction and encouraged people to stay in the area for the longer term.

The new facilities have contributed to bringing more types of uses into close proximity for the people of Braunstone and provided for a range of lifestyles and needs across the lifecycle, but a more fine tuned response addressing needs of specific groups could increase levels of participation.
The importance of improving connections beyond the neighbourhood was clear in retaining people for longer term residency and to develop social capital that improves well being. The social division between the two communities living in the North and South was considered as a major problem for the area. A combination of factors, such as poor accessibility by walking and public transport, absence of a "Central Hub"/"Cultural Heart" and socio-economic circumstances may have contributed to the lack of social solidarity of the area as a whole.

Although the level of crime has significantly reduced in recent years, concerns about safety remain. The presence of new facilities has not affected the pressing issue of safety in the eyes of the respondents. It is appreciated that the nature of activities housed in buildings may prevent 'active frontages' for natural surveillance, as recommended by urban design guidance. However, this is an important consideration worthy of attention in contexts such as in Braunstone, as it is known that urban design has an influence on the safety of a place.

Respondents living in the South of BNDC and outside the BNDC area felt that lack of security was the main barrier to walking. Such concerns of personal security may contribute to poorer health outcomes and mental-health illnesses (fear, anxiety) and is likely to have a negative impact on people's walking behaviour. Evidence suggests that the presence of over-grown trees, litter, graffiti, quiet environment and congregation of young people on streets can contribute to the fear of crime.
Information collected from the residents

The focus group interviews and survey questionnaire collected information on the following topics.

- The nature of use of the Braunstone Leisure and Brite Centres,
- Views on the contribution to social capital,
- User's perceptions on the social and physical walking environment of the Braunstone New Deal for Communities (BNDC) area and
- Their participation in social activities.

A summary of key issues discussed

1. Background information

- address
- age-group
- gender
- ethnic group
- employment status
- household income
- family status
- area of residency and length
- future plans for residency
- access to a car
- perceived general health.

2. Walkability

- How often the following places are visited for social interaction
  - library or cultural centres
  - leisure centres
  - Braunstone Leisure Centre
  - Brite Centre
  - community centre
  - church
  - local pub
  - corner shop
  - local park
  - local school
  - workplace
  - child-care facility
  - friends and family.
- Places accessed by walking and time spent walking
- Satisfaction with the overall walking environment of the Braunstone area.
- Perception of improvements to walking environment of Braunstone.
- Key barriers to walking in the Braunstone area
  - distance from home
  - safety concerns
  - poor walking environment
  - lack of time
- Positive and negative features of the walking environment of their neighbourhood
  - pedestrian comfort and condition of routes
  - aesthetics
  - maintenance
  - pedestrian safety, connectivity etc
- Desired improvements to the walking environment of their neighbourhood
3. Use of the Brite and Braunstone Leisure Centres

- Frequency of use the Brite Centre and Braunstone Leisure Centres.
- How time is spent in the Centres, activities usually taken part in.
  - exercising
  - swimming
  - attending classes
  - meeting friends and family
  - using the cafe
  - socialising with others
  - watching sports
  - reading and study
  - using internet
  - searching for local information
  - business meetings
- Location of facilities visited before
- Desired activities in Brite and Leisure Centre for socialising, sport and leisure, developing knowledge, quiet relaxation.
- Times of using the facilities.
- Constraints to using these facilities
  - time
  - membership fees
  - inadequate activities
  - inadequate ancillary facilities
  - accessibility and location
  - indoor environment
  - nature of other users
  - safety issues
- What have the Braunstone Leisure and Brite Centres brought to the community of Braunstone
  - facilities provided
  - opportunity for social interaction
  - linking Braunstone with the wider area
  - improving the quality of the neighbourhood
  - making Braunstone a better place to live
  - contributing to feelings of belonging etc

4. Social capital

- Whether suggestive of better neighbourhood interaction
- Satisfaction with the location of Centres
- Perception of the buildings of the Brite and Braunstone Leisure centres.
  - general appearance
  - materials and finishes
  - landscaping
  - furniture and fittings

- The extent to which they feel part of the community
- Feelings of trust on the people from their neighbourhood
- Unpaid help they had given any unpaid help to any friends, neighbours, community groups, clubs or organisations.
- Nature of casual meetings with the people from the community while walking
- Importance of socialising with family, friends and neighbours
- Importance of local meeting places to build local network.
About us

Andrew Price is Professor of Project Management, Director of Postgraduate Studies with over 30 years design, construction and industry-focused research experience. Co-Director and Principal investigator from Loughborough for HaCiRIC, a £15M Research Centre. He has been the principal/co-investigator on 24 completed research projects and has supervised 41 graduated PhD/EngDoc students from 25 countries.

Simon Austin is Professor of Structural Engineering. He is founder director of Adept Management, a specialist management consultancy to leading companies in construction and other sectors. He has undertaken industry-focused research for over 25 years into design processes, modelling, integrated working and management techniques, information management, process re-engineering, value management and structural materials and their design.

Primali Paranagamage is an Architect who had worked in academia and industry on a wide range of projects. After her doctoral thesis in housing at UCL, Bartlett School of Architecture and Planning, she worked as a Research Fellow at the University of Westminster, London investigating into the current UK housing policy. She works as a Research Associate in Loughborough University.

Fahmida Khandokar is a graduate Urban Planner. Following her graduation she worked as a researcher at the Centre for Hydrology, Micrometeorology and Climate change, National University of Ireland. Prior to joining Loughborough University as a Research Associate, she worked as a Planning Officer in the Environmental Directorate of the Lancashire County Council.
"The access is the problem. If not for the bus I won't be able to go there. There is a lot goes on there. When I do go, it is a day out because I buy a bus pass for the day."

"I don't go the leisure centre. I objected to it because they pulled down the school. I went there for swimming but that did not work out. They needed a big one in the centre for all people of Leicester. It is in the wrong place."

"I have been the same house for 42 years in Braunstone. I was 21 when I came here. We used to work for firms. Every firm had their own social activities, netball cubs, own big swimming pool, dancing activities, Quakers activities and night time dinners. Have a shower and go out, absolutely fantastic."

(quotes from workshop attendees)