Creating the environment for active travel

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How the built environment and public space can facilitate healthy living

INFORMATION SHEET FH09

"As public health officials we can have no doubt that the environment within which people live is a key determinant of whether or not they can live a healthy life. Characteristics in the built environment can discourage walking and cycling as a mode of transport for local journeys, thus reducing routine, daily physical activity.

Many great public health interventions have been made not by health professionals but by planners, architects and engineers. Today's unacceptably low levels of population physical activity require us to make routine walking and cycling easier, and roll back the dominance of private motor transport. To achieve this, we need to call on those sectors again. The creation of active living friendly environments should now become a key objective in town and transport planning, as well as in public health.

We should also keep in view that this approach will make a substantial contribution to reducing the global public health impacts of climate change."

Dr Harry Burns,
Chief Medical Officer for Scotland

Introduction

Physical activity is now recognised as an important element of a healthy lifestyle, reducing the risks of ill-health and premature death. The Department of Health, the Scottish Executive and the Welsh Assembly recommend moderate intensity physical activity of at least 30 minutes, or an hour for children, on 'five or more days a week' or 'most days' as the minimum to maintain health. Ideally we should all be taking more than this in order to maximise the health benefits[1][2][3]. The trend, however, is for physical activity levels to decline, associated with labour saving devices and mechanisation, an increase in sedentary leisure activities, and increased use of private cars. This inactivity increases the risks to health from obesity, coronary heart disease, stroke, diabetes, osteoarthritis, some cancers, and mental health problems.

The built environment

The built environment is one of many variables thought to affect physical activity levels. The way it is structured can provide more or fewer opportunities to be physically active, in settings such as home, work, school, in travel, and in leisure[4]. Many public health professionals believe that programmes, to increase daily active travel – walking and cycling – through changes in the

Department of Health | British Heart Foundation | Scottish Executive | healthyliving | Llywodraeth Cynulliad Cymru Welsh Assembly Government | Her Iechyd Cymru Health Challenge Wales

Active Travel works with policy-makers and practitioners to promote walking and cycling as health-enhancing physical activity. Sustrans is the UK's leading sustainable transport charity and works on practical projects to encourage people to walk, cycle and use public transport to benefit health and the environment.

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environment within which people live and work, may be more effective in increasing physical activity levels in the long-term than interventions centred on structured activities such as aerobics. They believe that the ability to sustain an active lifestyle may partially hinge on the characteristics of the built environment in which we live, work and play[5].

The evidence is growing

Research literature in this area is growing rapidly, with the majority of the studies to date from the US and Australia. This research, although not UK based, supports the proposition that certain features and characteristics in urban areas positively influence levels of walking and cycling. These beneficial characteristics include:

- high densities
- a greater mixture of land uses
- a balance between housing and jobs
- pedestrian and cycle friendly site and street design
- grid street networks.

These have all been shown to be associated with increased walking and cycling in urban areas[5].

Neighbourhood design

The design of our neighbourhoods determines the availability and safety of outdoor play and whether our children can walk to school, how we go to work or go shopping, and the accessibility of parks, green spaces and other destinations[6]. The attractiveness of streetscapes is an important factor in encouraging active travel. The more attractive the street is to people, the higher levels of walking are found[7]. Local streets and public parks are the most commonly reported safe and convenient places for walking[8][9]. Green spaces, and their size, attractiveness and proximity are also instrumental in encouraging active travel [10].

Transport

Recent reviews show consistent associations between neighbourhood design and active travel[10][11]. People who live in neighbourhoods with 'traditional' or 'walkable' designs report about 30 minutes more travel by walking each week[12] and more total physical activity[13] including among older residents[14], compared to those who live in less walkable neighbourhoods. Moreover, such environments provide more access and opportunities for children including exploring their local environment on foot and by bicycle[15][16].

This raised level of physical activity in 'walkable' settings does not seem to be due to people who are already active choosing to live in such settings: rather, it seems that the built environment conditions the behaviour of residents by offering increased opportunities to live an active life[17].

Safety

Neighbourhood design is recognised among older adults as promoting (or restricting) activity in later years. Concerns about safety can limit walking, more than distance to a destination, in older adults[18]. Social disorder and poor physical conditions of neighbourhoods can deter physical activity for many residents[19]. Poor lighting, excessive noise, heavy traffic, and lack of public transport have all been associated with loss of physical function in adults over 55 years of age[20].

Obesity

The UK is currently experiencing an epidemic of obesity, with over 22% of men and 23% of women now obese[21]. Since 2000 an association between the built environment and obesity has been

reported through a number of studies in both the US and Australia[22][23]. The amount of time spent in cars appears to be a key factor. US research reports that land use mix has the strongest association with obesity, with more mixed localities being associated with lower likelihood of obesity. People are more likely to be overweight or obese if they live in less walkable areas[24][25]. Each additional kilometre walked per day is associated with a 4.8% reduction in the likelihood of obesity, and each additional hour spent in a car per day with a 6% increase in its likelihood[26].

Specifically, commuting by car to work has been associated with overweight and obesity compared to active travel modes and use of public transport. A significant association between car use and physical inactivity has also been reported[27].

The built environment and social capital

People living in walkable, mixed use neighbourhoods also have higher levels of social capital compared with those living in car-oriented suburbs. Those living in walkable neighbourhoods are more likely to know their neighbours, participate politically, trust others, and to be socially engaged[28]. In contrast, low density urban sprawl is associated with roughly 20% lower community involvement[29].

The impact of the built environment on social capital and social cohesion was illustrated very clearly in a pioneering study from the 1970s. Researchers looked at three streets of very similar design in the same community in San Francisco, differentiated by motor traffic volumes and speeds driven (light, moderate, and heavy traffic). They found that residents of a 'light traffic' street had significantly more friends and acquaintances than either the 'moderate' or 'high traffic' streets (see diagram). While the 'light traffic' street was defined as friendly, with 'everyone knowing each other', the 'moderate' street was reported as less friendly and 'heavy traffic' street as not at all friendly[30].

Traffic calming

Speeds on the 'light traffic' street in the Appleyard study were 15-20mph. Traffic speed may be an important determinant of street activity, and reducing it may make it easier for people to choose active ways of travelling. UK research suggests that 20mph zones in residential areas may increase children's use of streets and that some adults claim to walk or cycle more as a consequence[31][32]. A Glasgow-based study reported that residents claimed to walk 20% more after implementation of a traffic calming scheme, a claim confirmed by pedestrian counts[33].

Changing the built environment

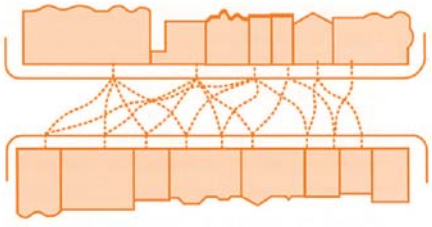
The Commission for Architecture and the Built Environment (CABE), the UK government's advisor on architecture, urban design and public space, notes that pedestrians are often forced to take lengthy diversions from the logical, direct route, discouraging active travel. CABE points out that to encourage people to walk and cycle around their neighbourhoods rather than use their cars, we have to make our streets meet the needs of all users, not just drivers[34].

"We must plan, design and manage a network of streets and connecting spaces . . . We have to create places that are attractive and responsive to the needs of cyclists and pedestrians first – and drivers second." Physical activity and the built environment, CABE, 2006

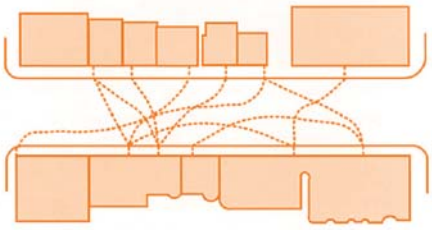
A US Community Guide states that community scale urban design and land use regulations, policies and practices can be effective in increasing

Traffic flow affects social interaction

Light Traffic
3.0 friends per person
6.3 acquaintances



Moderate Traffic
1.3 friends per person
4.1 acquaintances



Heavy Traffic
0.9 friends per person
3.1 acquaintances

Source: Appleyard 1981, Livable Streets, Berkeley

Appleyard's research team used this graphic representation to demonstrate how heavy traffic constrains social interaction

walking and cycling. Creating or renovating playgrounds, forming squares, one-way streets, traffic calming, cycle lanes, improved lighting and enhanced aesthetics lead to an increase in the percentage of people engaging in active travel or other physical activity[35].

Examples of good policy and practice

Good policy paves the way

The Scottish Executive planning policy note 17 is a good example of published policy for the development of activity friendly environments. It states:

- proposals for development should give greater weight to locations able to be well integrated into effective networks for walking, cycling and public transport
- it should not be assumed that cars should have universal freedom of access. Consideration should be given to reallocating road space to increase footway width and construct cycle lanes
- residential areas should be planned in terms of layout, urban design and permeability to and by walking, cycling and public transport to minimise dominance by the car
- cycle routes should concentrate on providing convenient routes to employment centres, schools and other local facilities. Cycle networks should be continuous, with severance by main or distributor roads avoided
- urban areas should be made more attractive and safer for pedestrians.

The Dings home zone – for residents, not car parking

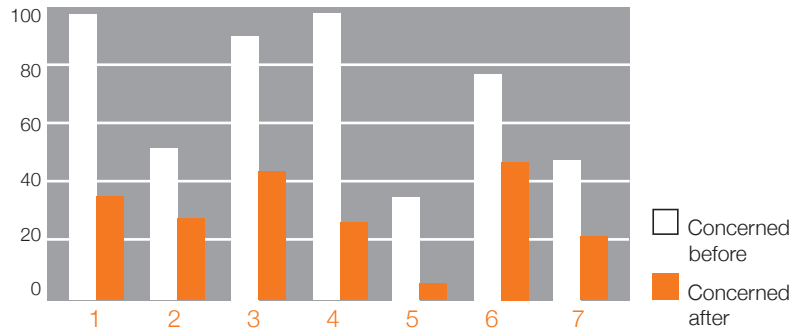
The Dings is a small residential area in central Bristol. Blighted by rat-running and a severe commuter parking problem, it has suffered from acute access problems for emergency vehicles and traffic danger for residents.

Sustrans and Bristol City Council worked with the local community to plan and design a home zone, using principles from Germany, the Netherlands and Switzerland. Sustrans Community Travel Workers supported residents in the design process.

The project aimed to deliver a combination of innovative elements:

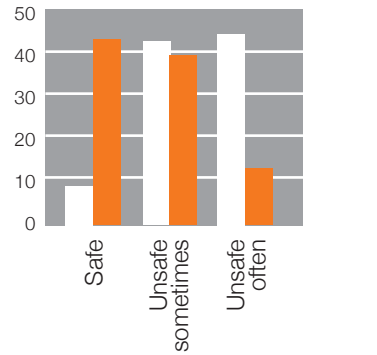
- new cycle / walkway through the site linking to strategic routes
- 'design for uncertainty' to slow drivers in shared use areas
- home zone principles in adjacent new-build developments
- community art programme

Residents of the Dings strongly approved of the intervention



Are you concerned about these issues?

1 Unsafe nuisance parking
2 Fast traffic
3 Unsafe for children to play in the street
4 Poor access for delivery & emergency vehicles
5 Noise from traffic
6 Anti social behaviour and vandalism
7 Lack of personal safety



How safe do you feel your street is?

Source: Sustrans/Bristol University ongoing evaluation surveys

- promotion of non-car travel choices, including cycle training
- Car Share Club as an alternative to car ownership
- provision of safer routes to the adjacent school
- physical activity & health impact research.

Surveys show a high level of resident satisfaction, and observation suggests that residents make more social use of their streets. The parallel physical activity research programme, carried out by Bristol University with funding from the British Heart Foundation will report on physical activity and health outcomes in 2007.

As yet no UK home zones have been implemented on a large enough scale to produce evidence of changes in travel behaviour among adults[36].

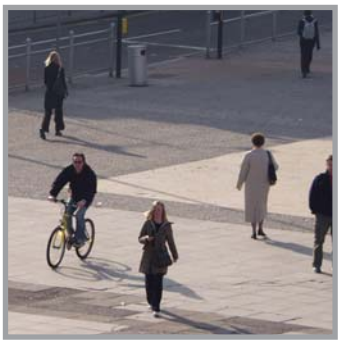
Conclusions and recommendations

The built environment should be designed, created and managed with the encouragement of healthy lifestyles – for all the people who live in or use it – as a central objective. Active travel is a core part of this healthy lifestyle.

A number of features and characteristics of a high-quality built environment contribute to this objective.

- policies, guidance and local strategies in the fields of planning, regeneration, development control and transport should explicitly identify objectives in terms of public health and physical activity
- planning guidance and development strategies should stress the importance of mixed land use in development or regeneration of urban areas
- walking and cycling routes to and from new developments should be direct, convenient and attractive, and should take priority over motor traffic in most situations
- road space should be reallocated from private motor transport to pedestrians and cyclists, with measures such as pavement widening, raised crossings, cycle lanes and advanced stop lines, and default two-way cycling on one-way streets
- measures should be put in place to reduce the dominance of the car in the built environment, such as area-wide 20mph zones, home zones, and re-phasing of light-controlled crossings in favour of pedestrians
- the urban environment should be managed and maintained so as to make it feel safe and attractive for all members of the community, as a place to live an active life, with high-quality policing, street cleaning etc
- all of the above will contribute also to climate change emissions reduction; the linkage should be clearly recognised.

One of the most obvious and immediate ways to encourage active travel in the built environment is to provide safe and attractive walking and cycling routes. Sustrans' National Cycle Network and Safe Routes to Schools programmes work closely with Local Authorities and other partners to develop and enhance routes across the UK. However, much more needs to be done to approach the level of local provision in more advanced countries.



Further information

Active Living By Design
www.activelivingbydesign.org

Commission for Architecture and the Built Environment
www.cabe.org.uk

Dutch Street Design for Children's mobility
http://www.urban.nl/childstreet2005/downloads/Bach-handouts.pdf#search='Urban%20design%20walk%20cycle'

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