Briefing for Design Commission Evidence Session 2: Health and Wellbeing // 20th October, 2-3:30 pm, Room 1-02, Millbank House

Addressing health challenges: the role of urban planning and design

Dr Laurence Carmichael
WHO Collaborating Centre for Healthy Urban Environments
Centre for Sustainable Planning and Environments
University of the West of England, Bristol
Laurence.carmichael@uwe.ac.uk

UWE BRISTOL University of the West of England

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Content

- **Concepts**

1. Definition of health
2. The built environment as a determinant of health and health equity: direct and behavioural impacts

- **Evidence base**

1. Health problems with possible links with the built environment
2. Inequalities and built environment

- **Case study: tackling obesity: *Have we got the right national and local planning policies and processes, design guidance and partnerships in place to tackle obesity?***

1. The obesity epidemic and its costs
2. Urban planning and design for healthy weight environments…and viability?
3. A few examples of local authorities promoting healthy living environments

- **Finally: a few issues to consider for policy-making health and built environment**

1. Evidence base
2. Delivery mechanisms
3. Politics

The impact of the built environment on health and wellbeing

Concepts

What is health?

WHO definition of Health:

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity

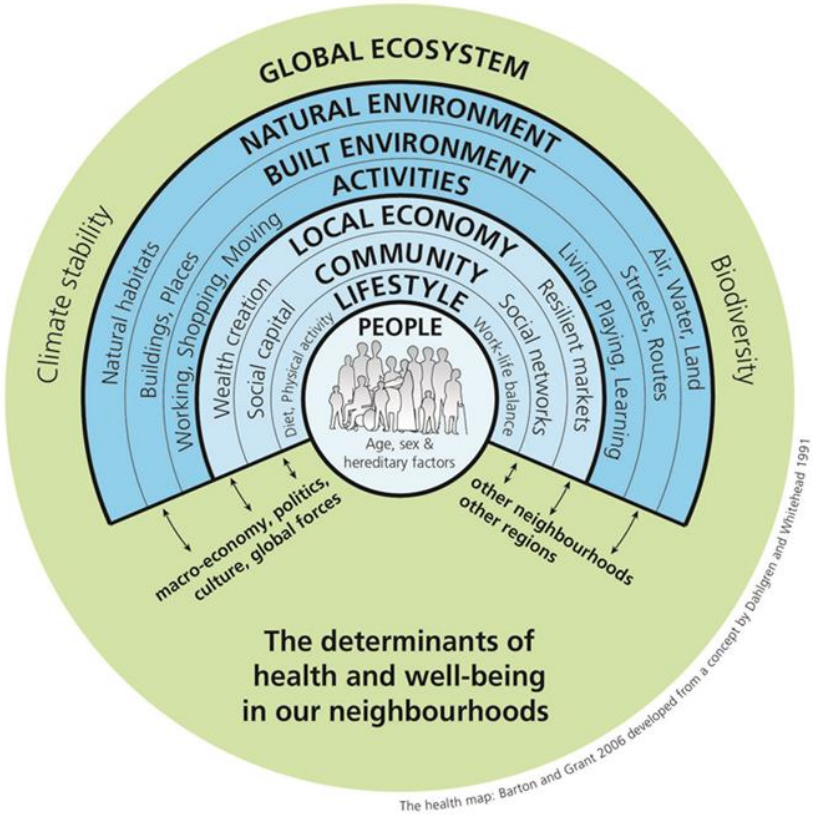
Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946.

What factors influence our health?
The broader determinants of health

Social/ecological theory to health: maps the relationship between the individual, their environment and disease.

Dahlgren and Whitehead (1991)

What role does the built environment play in influencing health and wellbeing?



Physical and social characteristics of neighbourhoods are factors of health

Physical and mental health:
perception of local area
social connections
physical activity

Environmental health:
air quality, water, noise

Safety, security:
Traffic safety

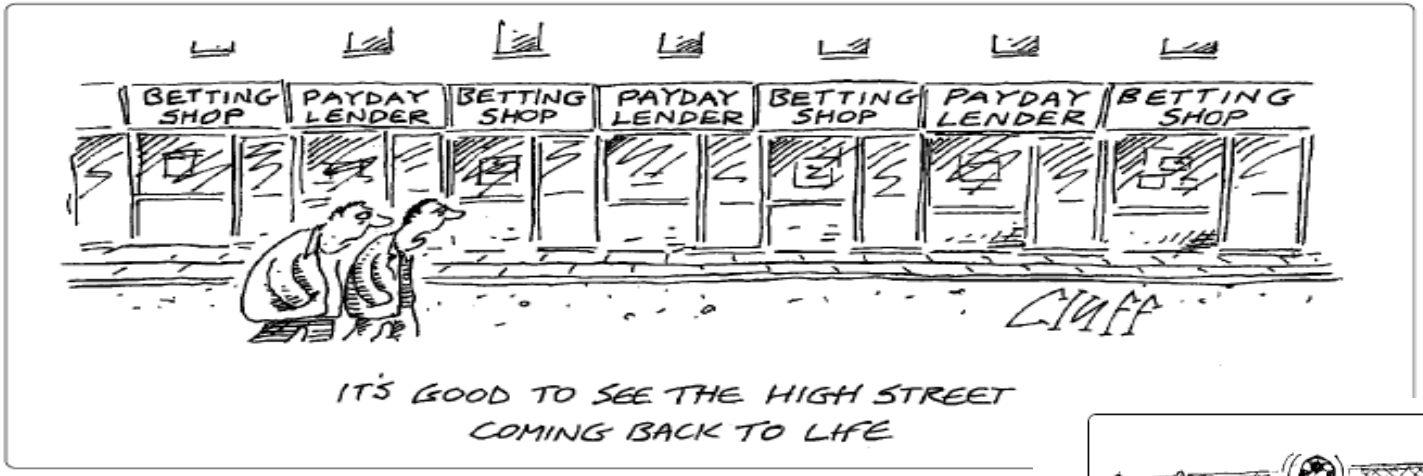
Health equity:
Access to green space, fresh food

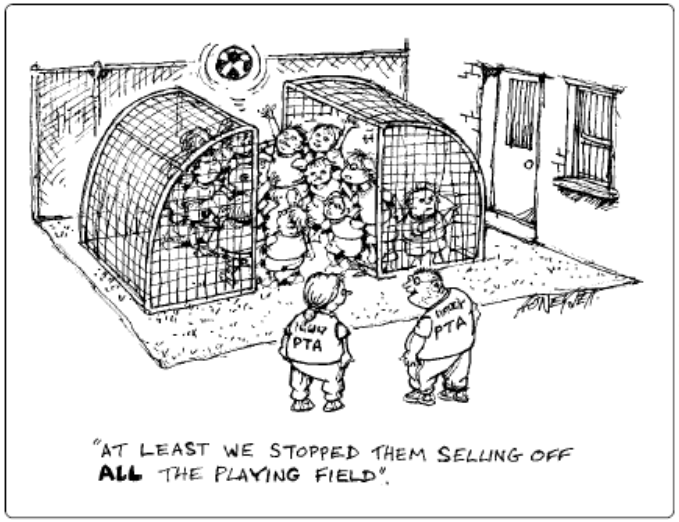
Role of the built environment in influencing health
Pre WWII

- Gains in life expectancy in 19th/20th centuries owed much to environmental public health measures:
  - provision of clean water, food, and air
  - healthier housing
  - safer workplaces

Role of the built environment in influencing health
Post WWII

Post WWII: urbanisation, prosperity, increase in car affordability, road programmes, suburbanisation, out of town shopping centre, office work…





Role of the built environment in influencing health
Post WWII

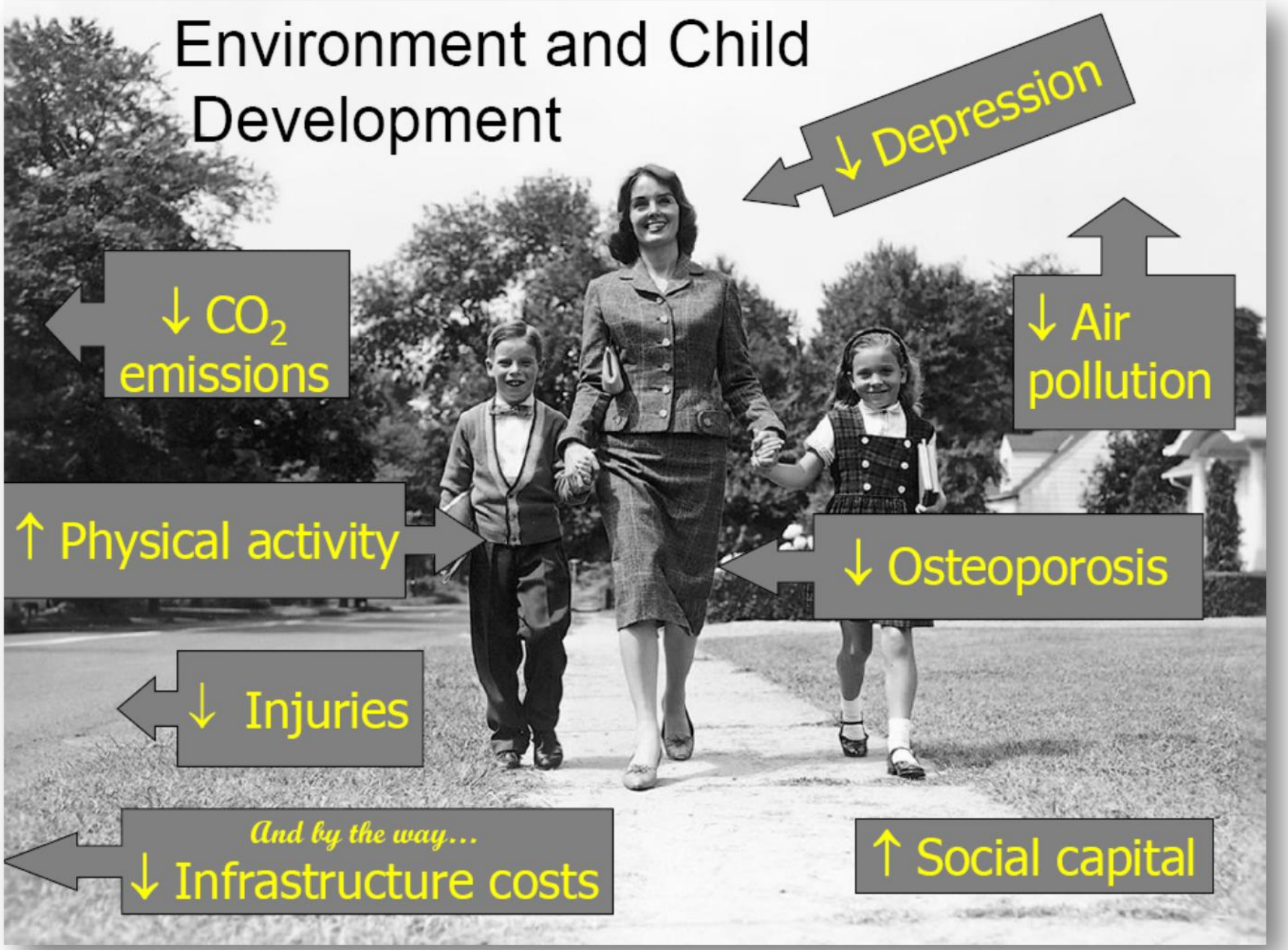
In parallel: change in diet and increase in chronic diseases

Although the causes of these changes are complex—where people live, how they get around, how much they eat and are physically active all contribute to the epidemics of obesity and chronic diseases

(Barton, 2009; Jackson, Dannenberg and Frumkin, 2013)

The impact of the built environment on health and wellbeing

Evidence Base


Environment and Child Development
↓ Depression
↓ CO_2 emissions
↓ Air pollution
↑ Physical activity
↓ Osteoporosis
↓ Injuries
And by the way…
↓ Infrastructure costs
↑ Social capital

Public health evidence on the impact of the built environment on health: Pre WWII - focus on infectious diseases

- 19th century epidemiological studies:

  - Eg Dr John Snow established link between cases of cholera and the use of a particular well in Soho =>well's pump handle removed, preventing its use and the further spread of the disease among the community.

  - Link between overcrowding, lack of safe water and food and inadequate sanitation led to disease and epidemics spreading

=>Response from built environment professions/authorities: advances in housing, hygiene, water and sewerage systems leading to reducing in infectious diseases

Public health evidence on the impact of the built environment on health

Post WWII: focus on behavioural factors, chronic diseases

Public health now concerned by individual behaviour:

coronary heart disease, diabetes, stroke and cancers are linked to a range of factors, in particular smoking, diet, physical inactivity and alcohol = factors linked to individual but also to wider determinants of health

Individual risk factors to burden of diseases and illness in UK

Smoking 12%

high body-mass 9%

physical inactivity, alcohol and poor diet (5% each)

(The Lancet, 2013)

Health challenges in UK today and the link to healthy environments

Not anymore scurvy, cholera and polio

The rise of non communicable diseases:

- Tobacco, cancers and heart disease: smoke-free workplaces
- Type II diabetes: changes in diet, physical activity
- Obesity and heart disease: changes in diet, physical activity
- Cardio-vascular and respiratory diseases: reducing particulate air pollution/traffic emissions…but also behavioural adaptation needed

And the trends towards:

- Ageing: adaptation of our built environment
- Dementia: Adaptation of homes and *designing Dementia-Friendly Neighbourhoods: Helping People with Dementia to Get Out and About* (Mitchell and Burton, 2010)

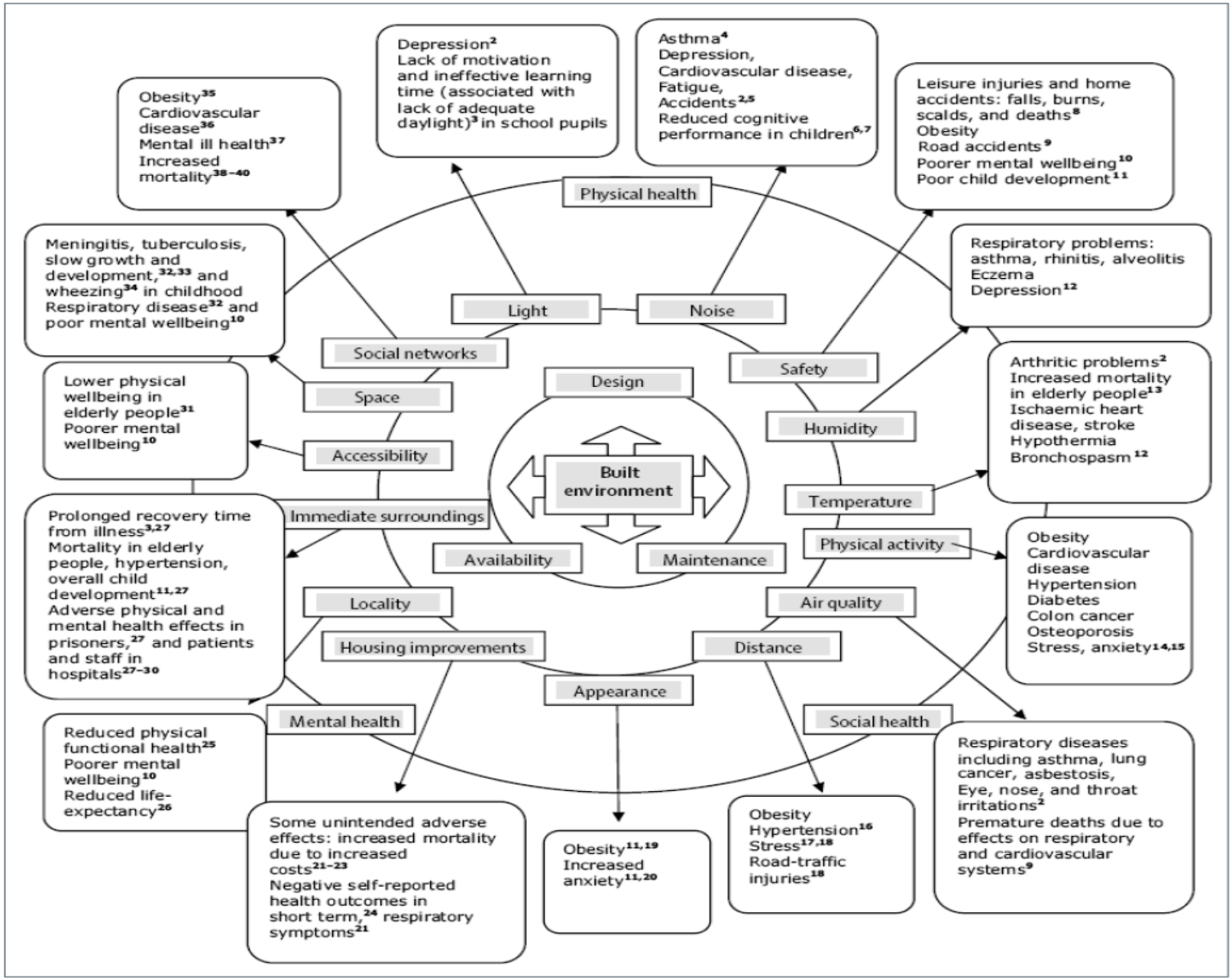
Road traffic noise is ***associated*** with increased cardiovascular morbidity and mortality and all-cause mortality in London Halonen et al.. (2015)…**Walking quieter routes to work can avoid peaks in air pollution (**European Respiratory Society's International Congress, 2015).

Mytton et al. (2012) found a positive association between green space and physical activity levels

Ward-Thompson et al. (2012) showed that more green space is ***linked to*** less stress in deprived communities. *Evidence is particularly strong for positive associations between experience of natural environments and mental health*.

Researchers reported that changing and improving park signs **can increase physical** activity by seven to 12 percent. (Photo : Eduardo Munoz/Reuters)
http://www.counselheal.com/articles/7242/20131018/study-finds-better-park-signs-can-increase-exercise.htm#ixzz3lEroJ32c

Health problems with possible links with the built environment



Webfigure: **Built environment and health**
Map showing health problems investigated for possible links with built environment. Developed from diagram showing how built environment affects health.[1]

Source: Rao, Prasad, Tissera and Adshead. The Lancet online 13 Sept 2007

Obesity epidemic and the role of the activity environment

Obesity increases risk of developing coronary heart disease, stroke, type 2 diabetes, and some types of cancers

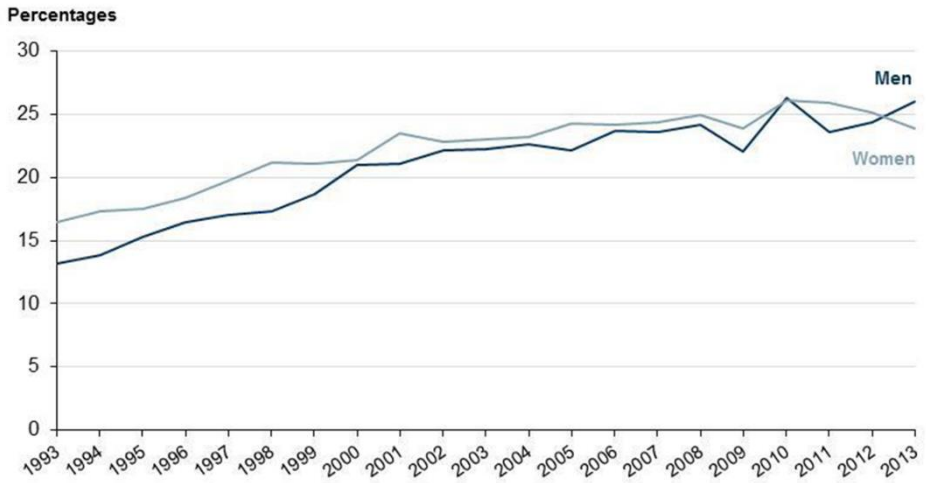
26% of UK adults are now obese, 3x increase since 1980

Activity environment as a factor

http://www.noo.org.uk/NOO_about_obesity/child_obesity

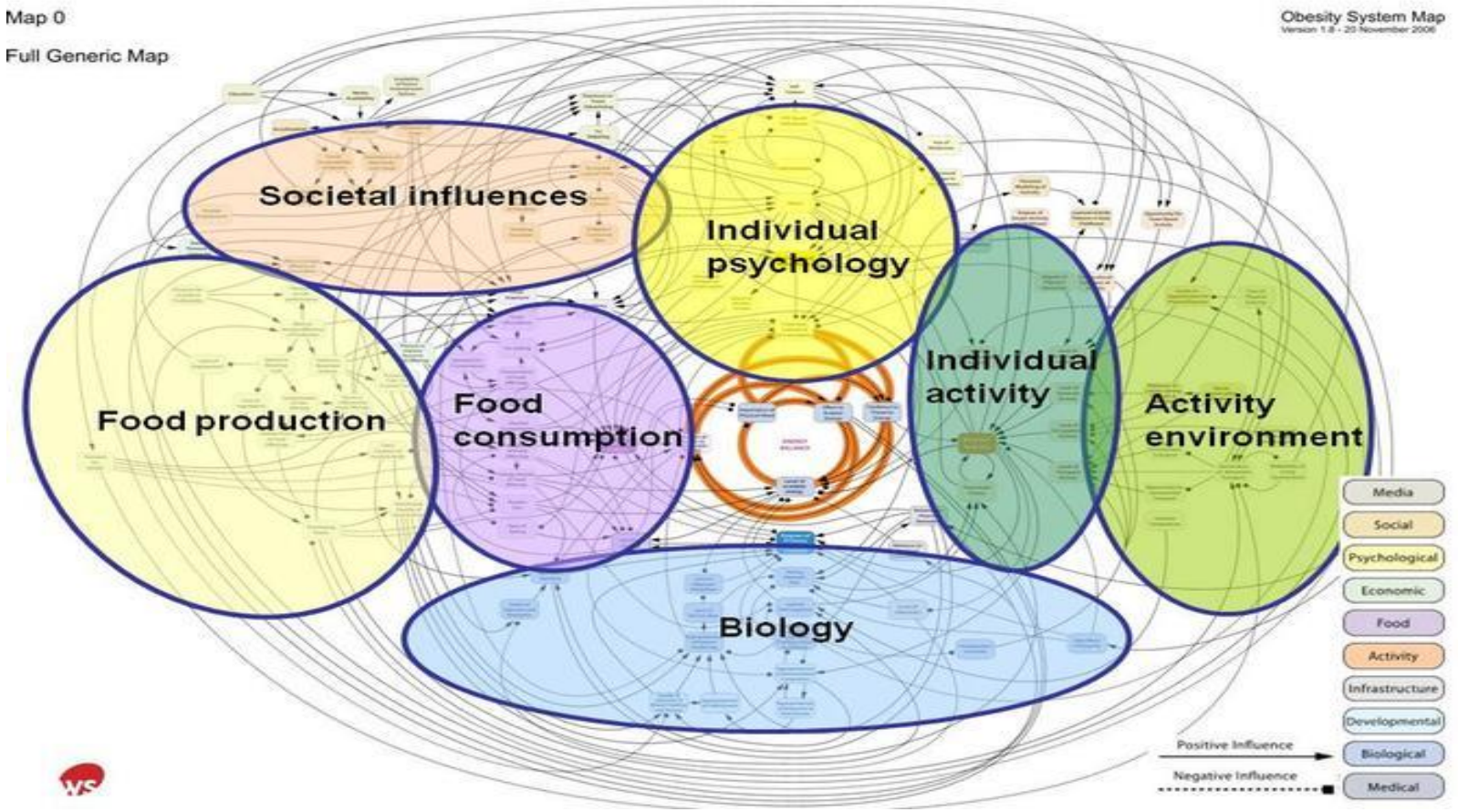
http://www.nhs.uk/Conditions/Obesity/Pages/Introduction.aspx

Figure 2.3 - Obesity prevalence of adults (16+) in England 1993 to 2013



Source: Health Survey for England 2014. Health and Social Care Information Centre

The obesity system



http://hdvchpediatricobesity.wikispaces.com/About+child+obesity

Built environment and physical activity

- Physical activity = lifestyle factor for long-term health and to tackle obesity.
- people who regularly use active transport gain health benefits
- Regular physical activity helps prevent chronic diseases e.g. walking to work was associated with overall higher levels of physical activity in young and middle-aged adults

Characteristics of neighbourhood design can influence **individual behaviour** and take up of physical activity, for instance:

- High connectivity
- mixed neighbourhoods
- Land use mixture
- public transport, pedestrian facilities or proximity
- Parks, signage
- Neighbourhood aesthetics used to design in walking and cycling in our daily lives

(Saelens, Sallis and Frank, 2003; Booth, Pinkston and Carlos Poston, 2005; Warburton Nicol and Bredin 2006; Lake and Townshend, 2006; Andersen, Wedderkopp, Pucher, Buehler, Bassett and Dannenberg, 2010; Kristensen, Moller, Froberg, and Cooper, 2011; Rhodes and Nasuti, 2011; de Nazelle et al., 2011; DoH, 2011; Mytton, Townsend, Rutter and Foster, 2012; Audrey, Procter and Cooper, 2014; White et al., 2013)


Sainsbury's
ENTRANCE
B&Q
WAREHOUSE

Built environment and physical activity

- Supportive built environment is **not enough** on its own to ensure physical activity but it does facilitate it

- But note: an unsupportive built environment is an **effective deterrent** of physical activity and exacerbates social exclusion

Source: (TRB, 2005)

Inactivity 'kills more than obesity'
http://www.bbc.co.uk/news/health-30812439

Characteristics of the built environment with a proven impact on mental health

- Type of housing /Over-crowding
- Noise /Indoor air quality
- Lack of personal control and of social support
- Perception of crime
- Badly maintained green spaces/access to green spaces, to amenities
- Deterioration of the aesthetics of neighbourhoods
- Lighting, green parks and road crossing/traffic density
- Provision of community centres, good public transport, recreational centre, affordable housing, grocery stores

The poor and ethnic minorities will suffer more than others => health impact of multiple environmental risk exposure must be considered when developing policies and interventions

(Evans, 2003; Phillips, Siu, Yeh and Cheng, 2005; Galea, Ahern, Rudenstine, Wallace and Zlahov, 2005; Guite, Clark and Ackrill, 2006; Guite et al., 2006; Maas, Verheij, Groenewegen, de Vries and Spreeuw enberg, 2006; Nielsen & Hansen, 2007; O'Campo et al., 2009; Kihal-Talantikite, Padilla, Lalloué, Gelormini, Zmirou-Navier and Deguen, 2013; White, Alcock, Wheeler and Depledge , 2013)

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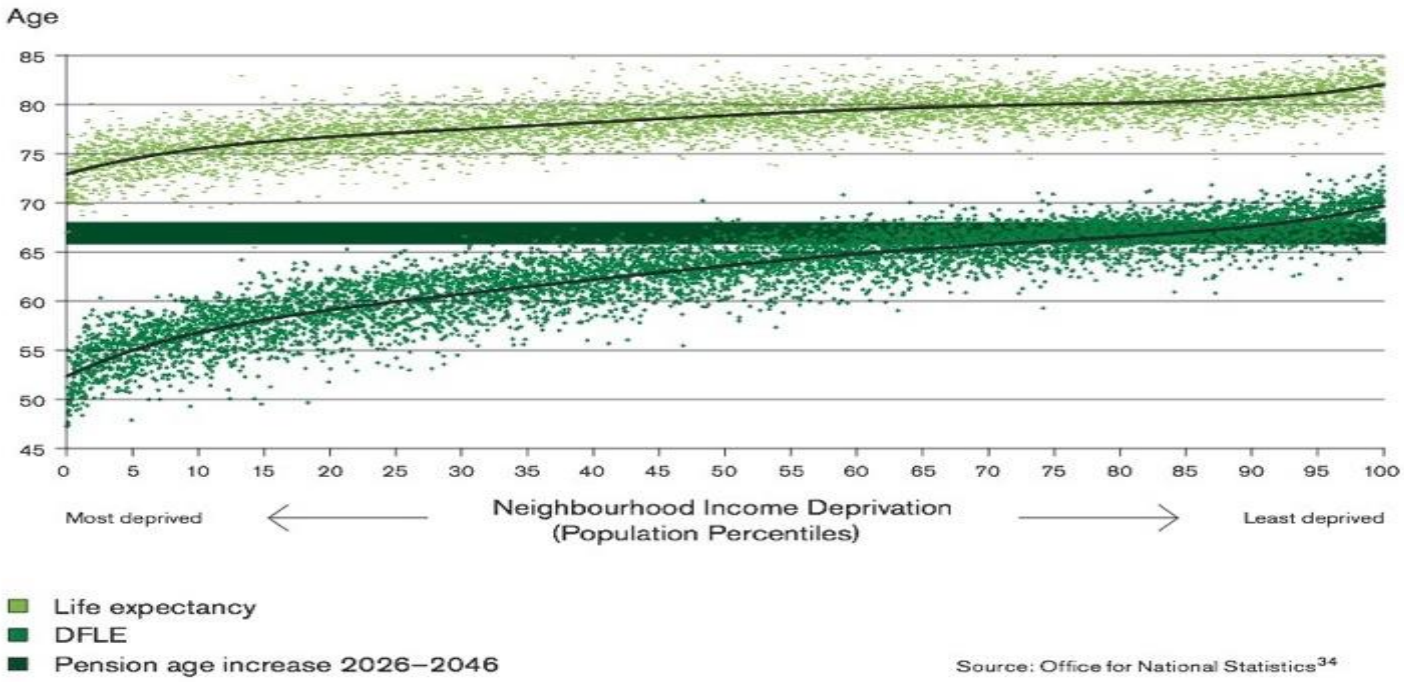
Health inequalities and the built environment

Figure 1.1 Life expectancy and disability-free life expectancy (DFLE) at birth, persons by neighbourhood income level, England, 1999–2003

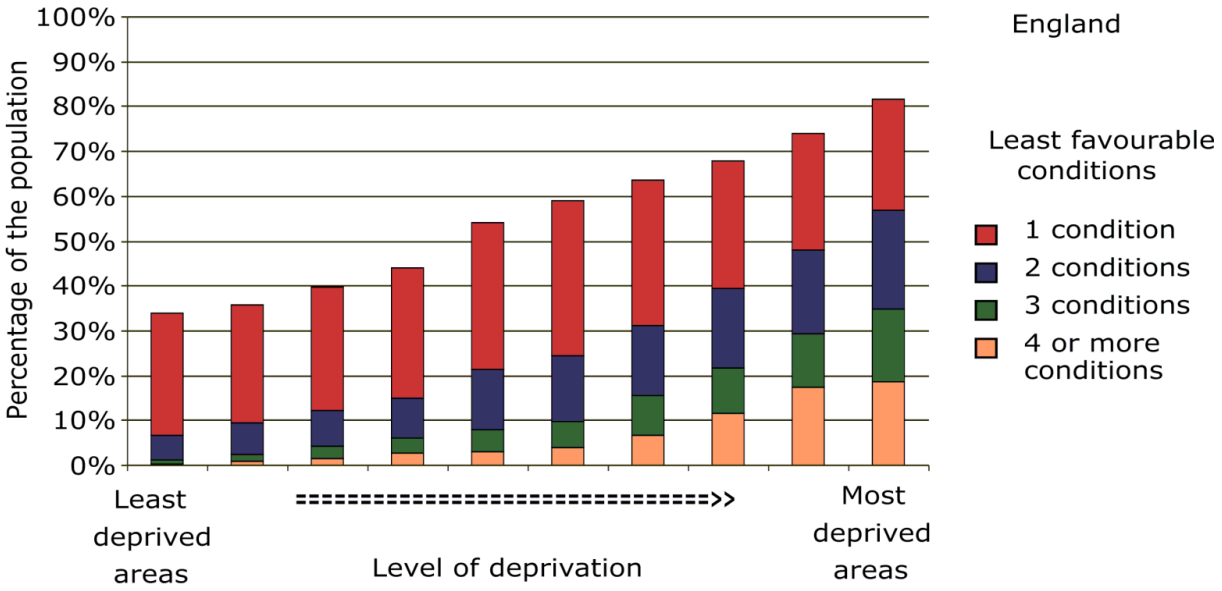


Source: Office for National Statistics[34]

People living in areas of deprivation are more likely to be exposed to a variety of adverse conditions which affect health including:

Air pollution, flooding, noise pollution, road traffic, hazardous waste sites, places that feel unsafe, scarcity of green spaces, unsafe transport, fewer activities for healthy activities.

Health inequalities and the built environment



Note: Level of deprivation is determined by the Index of Multiple of Deprivation. Eleven environmental conditions or characteristics have been included: river water quality, air quality, green space, habitat favourable to biodiversity, flood risk, litter, housing conditions, road accidents, and presence of 'regulated sites' (e.g. waste management, industrial, or landfill sites, or sewage treatment works). For each of these conditions the population living in areas with, in relative terms, the 10 per cent least favourable conditions have been determined. Data range mainly from 2005 to 2008.

Source: Defra, Environment Agency, CLG

20% of most affluent neighbourhoods in England have 5 times the amount of greenspace than the most deprived 10% neighbourhoods.

Impact of housing on health inequalities

Buildings where people live have an impact on their physical and mental wellbeing.

Housing factors: residential location, dwelling types and **design**, quality of construction and ongoing maintenance, internal features, crowding, feeling secure in one's home, affordability.

Inequalities from housing design: fuel poverty from limited income and poor energy efficiency.

At risk populations: poorest quintiles of households, older people, children, those with long-term illnesses, those who spend their days at home.

Health effects: mortality, hospital admissions, poor mental health, respiratory problems, slow physical growth and cognitive development.

Life expectancy of a homeless woman in England is 47 (average; 77).

35% of the poorest quintile of households experience fuel poverty.

Sources: The Institute of Health Equity, 2013; Crew, 2007; Crisis, 2011; Healy, 2003; Liddell and Morris, 2010; Harker and Shelter, 2006

Impact of greenspace on health

Research shows the direct benefits of greenspace to physical and mental health.

Greenspace factors: levels of greenspace, contact with nature, access/proximity.

Inequalities from low level/reduced access to greenspace: 20% of most affluent neighbourhoods in England have 5 times the amount of greenspace than the most deprived 10% neighbourhoods.

Health effects: there is evidence of preventive, physical, mental and social benefits of engagement with the natural environment for people suffering from mental illness and dementia. Less greenspace in a living environment is associated with greater risk of anxiety, depression, feeling of loneliness and perceived shortage of social support.

Contact with nature is linked with improved mood, and reduced stress and anxiety

Sources: CABE, 2010a; Croucher et al., 2007; Pretty et al., 2007; Clark at al., 2013; Maas et al., 2009; CABE, 2010b.

Other characteristics of the built environment associated with health impact and health inequalities

For instance:

- Housing: overcrowding
- Transport: active travel, public transport, car traffic
- Accessibility of healthy food options

Case study: tackling obesity

Have we got the right national and local planning policies and processes, design guidance and partnerships in place to tackle obesity?

Costs of obesity

Calculating the future costs of elevated BMI (£ billion /year)	2007	2015	2025	2050
Total cost to the NHS of stroke, heart disease, diabetes and related diseases	17.4	19.5	21.5	22.9
NHS costs attributable to elevated BMI	4.2	6.3	8.3	9.7
Wider costs of elevated BMI (through lower productivity, etc)	16	27	37	50

Source: Foresight report on Tackling Obesity, 2007

Local Authority costs

- Care of house-bound residents suffering from obesity related illnesses (eg arthritis, heart disease, diabetes) and those requiring help towards walking aids and home adaptations may be considerable - and likely to increase in line with national predictions for obesity prevalence.

- PHE (work in progress, 2014) suggests that local authorities spend an estimated extra £352 million per year on providing formal care for severely obese people compared to healthy weight people.

  Public Health England (online www.noo.org.uk/LA/impact/economic)

Urban planning policy to promote healthy weight environments

- Section 8 of the National Planning Policy Framework (NPPF) includes creating healthy communities.

- Joint Health and Wellbeing Strategies and obesity strategies provide evidence on obesity to planners.

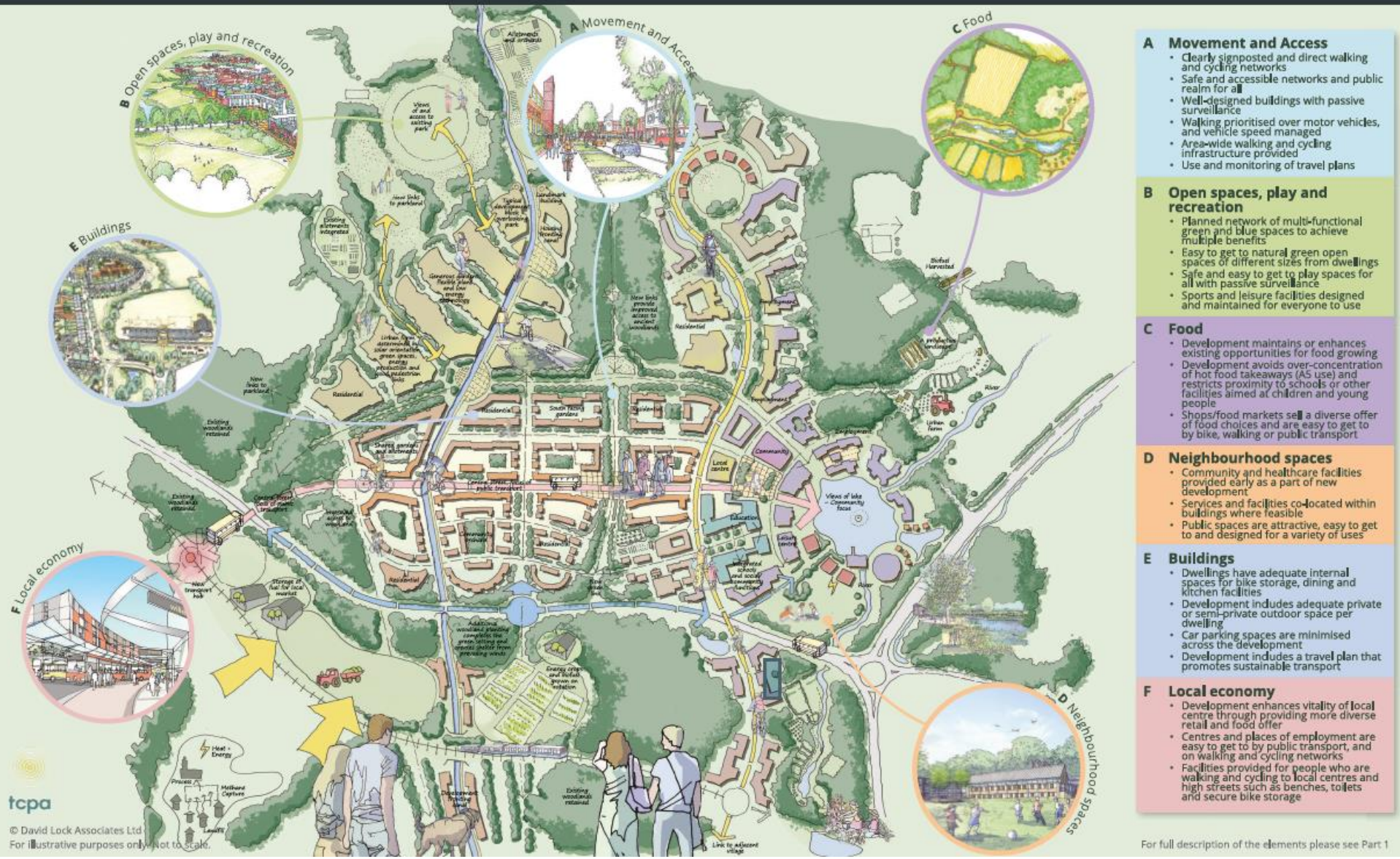
- Obesity evidence can be used to strengthen the argument for achieving a range of existing planning policy objectives (sustainable transport, climate change adaptation/mitigation, sustainable design, local economic growth and better-designed places).

But: no national planning policy guidance focusing specifically on reducing obesity and creating healthy weight environments.

Guidance in the field: e.g. Planning Healthy Weight Environments, TCPA

Planning Healthy-Weight Environments

Components of a healthy weight environment: an illustration



A Movement and Access

- Clearly signposted and direct walking and cycling networks
- Safe and accessible networks and public realm for all
- Well-designed buildings with passive surveillance
- Walking prioritised over motor vehicles, and vehicle speed managed
- Area-wide walking and cycling infrastructure provided
- Use and monitoring of travel plans

B Open spaces, play and recreation

- Planned network of multi-functional green and blue spaces to achieve multiple benefits
- Easy to get to natural green open spaces of different sizes from dwellings
- Safe and easy to get to play spaces for all with passive surveillance
- Sports and leisure facilities designed and maintained for everyone to use

C Food

- Development maintains or enhances existing opportunities for food growing
- Development avoids over-concentration of hot food takeaways (A5 use) and restricts proximity to schools or other facilities aimed at children and young people
- Shops/food markets sell a diverse offer of food choices and are easy to get to by bike, walking or public transport

D Neighbourhood spaces

- Community and healthcare facilities provided early as a part of new development
- Services and facilities co-located within buildings where feasible
- Public spaces are attractive, easy to get to and designed for a variety of uses

E Buildings

- Dwellings have adequate internal spaces for bike storage, dining and kitchen facilities
- Development indudes adequate private or semi-private outdoor space per dwelling
- Car parking spaces are minimised across the development
- Development indudes a travel plan that promotes sustainable transport

F Local economy

- Development enhances vitality of local centre through providing more diverse retail and food offer
- Centres and places of employment are easy to get to by public transport, and on walking and cycling networks
- Facilities provided for people who are walking and cycling to local centres and high streets such as benches, toilets and secure bike storage

tcpa

For full description of the elements please see Part 1

Themes of a healthy weight environment: a role for all stakeholders in development process

Design, access, maintenance to promote healthy behaviours and living

- **Movement and access**: Walking and cycling environments; local transport services.
- **Open spaces, recreation and play**: Open spaces; natural environment; leisure and recreational spaces; play spaces.
- **Food**: Food retail, food growing; access.
- **Neighbourhood spaces**: Community and social infrastructure; public spaces.
- **Building design**: Homes; other buildings.
- **Local economy**: Town centres and high streets; job opportunities and access.

Other useful guidance

- *Steps to healthy planning: proposals for action* Spatial planning & health group. 2011 www.spahg.org.uk/?page_id=194
- *Active design: promoting opportunities for sport and physical activity through good design* Sport England. 2007 www.sportengland.org/facilitiesplanning/planning-for-sport/planningtools-and-guidance/active-design/
- *Spatial Planning for Health: A guide to embedding the Joint Strategic Needs Assessment in spatial planning* Town & Country Planning Association. 2012. www.tcpa.org.uk/data/files/spatial_planning_for_health.pdf
- Faculty of Public Health Briefing Statement on 'Built Environment and Physical Activity' www.fph.org.uk/uploads/briefing%20statement%20-%20built%20environment%20and%20physical%20activity.pdf
- NICE Guidance (all available at www.nice.org.uk)
  - NG7 - Maintaining a healthy weight and preventing excess weight gain among adults and children
  - PH8 - Physical activity and the environment
  - PH41 - Walking and cycling: local measures to promote walking and cycling as forms of travel or recreation
  - PH17 - Promoting physical activity for children and young people
  - PH42 - Obesity: working with local communities

Partnership: public health support of planning

	Local (Spatial) Plan development	Development management
Role of local public health teams	Work with planners to advise on drafting of Local Plans and policies on how to maximise health gain (for example promote active travel; access to green space; etc). Work with local NHS to ensure NHS infrastructure requirements are identified Ensure that appropriate references are made in plans from other statutory local (health) strategies – Joint Health and Wellbeing Strategy Undertake a Health Impact Assessment on the emerging policies and plan Support planners to prepare for/present evidence at an examination in public	Work with planners (and developers) – especially at pre-application stage to influence emerging masterplan designs to ensure key local health issues are addressed, and outline requirements for section 106/CIL to support health and health infrastructure requirements Assess or prepare a Health Impact Assessment Support local planners in any planning appeals which may arise
Public Health England (PHE)	Work with local public health teams to advise and support (usually at PHE Centre level and only if requested) Provide national guidance and support (for example Obesity and the Environment briefings)	Work with local public health teams to advise and support (usually at PHE Centre level and only if requested)

Fig. 1 An overview of public health involvement in planning

Source: Public Health England's Healthy People, Healthy Places programme

Partnership with the private sector? The dilemma for developers and land owners…and local authorities: ensuring viability and deliverability

Key issue: ability for developers and land owners to receive 'competitive returns' from their development as they "suffer" the cumulative burden of national and local design standards and policies (NPPF, para. 173-174).

Could a healthy-weight environment create more economically thriving spaces that add value to schemes, as well as fulfilling national and local health policies? TCPA refers to evidence but more empirical work needed

- Retailers report an increase in trade of up to 40% when places are made more attractive for walking.
- Places that are easier and more attractive to walk around (designed for so-called 'walkability') do better commercially (with an 80% increase in retail sales) and have higher housing values.
  (BUT be careful – could contribute to inequalities!)

A few examples of local authorities promoting healthy living environments

- Sandwell and West Midlands Healthy Urban Group – Partnership working
- Bristol protocol - HIA process
- Plymotion - Integrated transport/active travel
- Waltham Forest – Healthy eating
- Torbay – Greenspace Strategy
- Let's Walk Bedminster - Community project

Conclusion
healthy planning and design: a few issues to consider

Evidence base

- Methodological challenges to ensure robustness of the evidence
- Change research priorities to challenge medical paradigms
- Engage stakeholders in research (Wellcome Trust project)
- Address the economics of healthy planning and design
- Generalisability vs local evidence to inform local plans, planning decisions
- Translate the evidence so it can be material consideration in planning decisions

Delivery mechanisms for spatial planning

- NPPF needs to give planning for health a higher priority
- Develop integrated policy-making across professions/across strategies at local level
- Local plan: address the issue of viability (long term impact of new development on health)
- Consider Health impact assessment in other forms of assessments

Politics

- Public health seen as left of centre/health diplomacy needed
- Leadership at local level
- Understand the co-benefit of health agenda (transport, housing, education, sustainable development)

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