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Development, Design and Profit in C21
How developers and society can profit from well designed towns and cities

Addressing health challenges: the role of urban planning and design

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Content

Do we really need to invest into urban design to tackle diseases?
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Case study - Tackling obesity: the role of planning and design…and the costs
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Do we really need to invest into urban design to tackle diseases?

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

The health map: Barton and Grant 2006 developed from a concept by Dahlgren and Whitehead 1991

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

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).

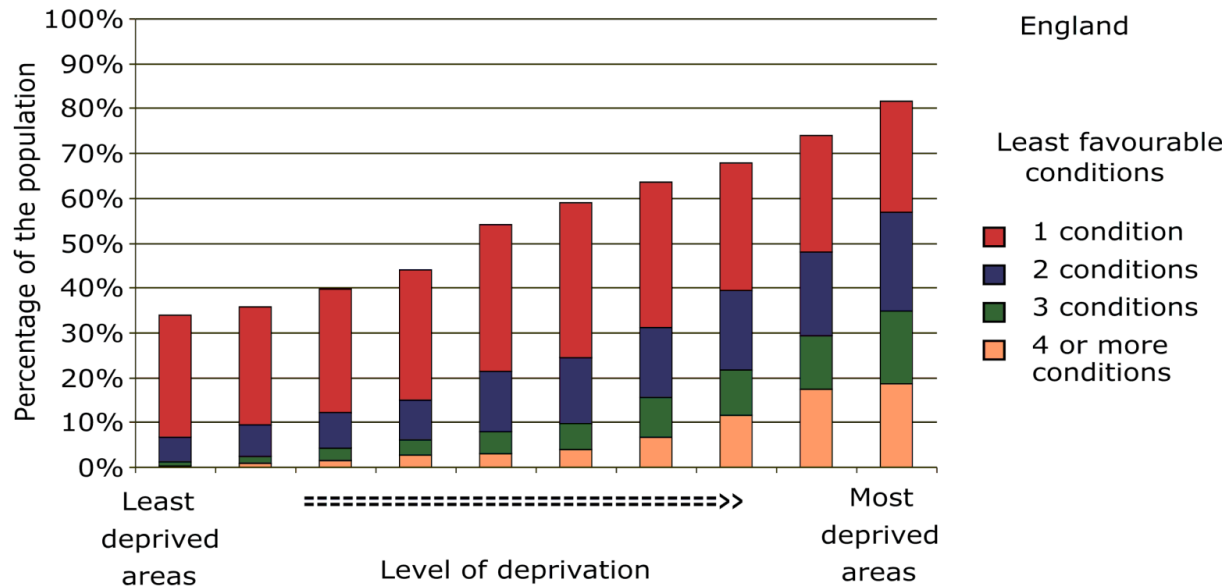Mytton et al. (2012) found a positive association between green space and physical activity levels

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

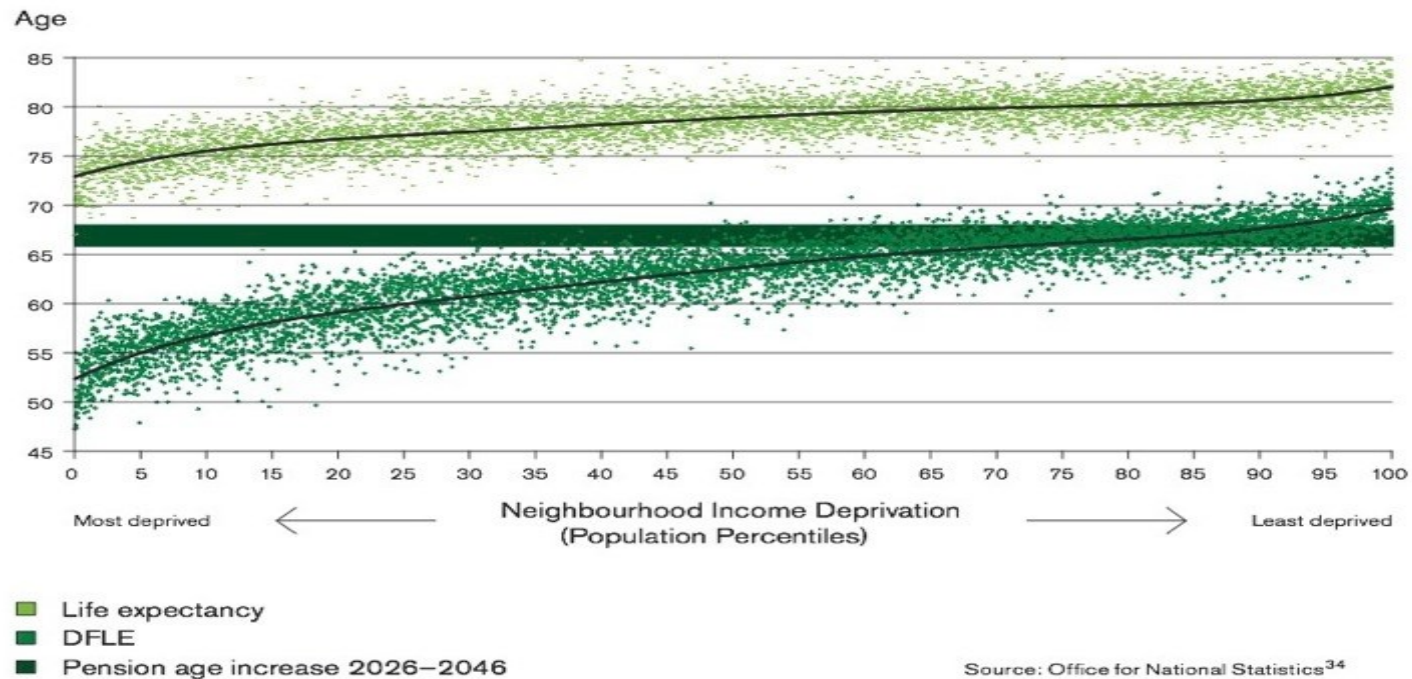# Health inequalities and the built environment

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.

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

Age

Neighbourhood Income Deprivation (Population Percentiles)

Most deprived ← → Least deprived

- Life expectancy
- DFLE
- Pension age increase 2026–2046

Source: Office for National Statistics[34]

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: particulate air pollution/traffic emissions

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)

Health problems with possible links with the built environment

Obesity[35]
Cardiovascular disease[36]
Mental ill health[37]
Increased mortality[38–40]

Depression[2]
Lack of motivation and ineffective learning time (associated with lack of adequate daylight)[3] in school pupils

Asthma[4]
Depression, Cardiovascular disease, Fatigue, Accidents[2,5]
Reduced cognitive performance in children[6,7]

Leisure injuries and home accidents: falls, burns, scalds, and deaths[8]
Obesity
Road accidents[9]
Poorer mental wellbeing[10]
Poor child development[11]

Meningitis, tuberculosis, slow growth and development,[32,33] and wheezing[34] in childhood
Respiratory disease[32] and poor mental wellbeing[10]

Respiratory problems: asthma, rhinitis, alveolitis
Eczema
Depression[12]

Lower physical wellbeing in elderly people[31]
Poorer mental wellbeing[10]

Arthritic problems[2]
Increased mortality in elderly people[13]
Ischaemic heart disease, stroke
Hypothermia
Bronchospasm[12]

Prolonged recovery time from illness[3,27]
Mortality in elderly people, hypertension, overall child development[11,27]
Adverse physical and mental health effects in prisoners,[27] and patients and staff in hospitals[27–30]

Obesity
Cardiovascular disease
Hypertension
Diabetes
Colon cancer
Osteoporosis
Stress, anxiety[14,15]

Reduced physical functional health[25]
Poorer mental wellbeing[10]
Reduced life-expectancy[26]

Some unintended adverse effects: increased mortality due to increased costs[21–23]
Negative self-reported health outcomes in short term,[24] respiratory symptoms[21]

Obesity[11,19]
Increased anxiety[11,20]

Obesity
Hypertension[16]
Stress[17,18]
Road-traffic injuries[18]

Respiratory diseases including asthma, lung cancer, asbestosis,
Eye, nose, and throat irritations[2]
Premature deaths due to effects on respiratory and cardiovascular systems[9]

Central diagram elements:
Physical health · Light · Noise · Social networks · Safety · Space · Design · Humidity · Accessibility · **Built environment** · Temperature · Immediate surroundings · Physical activity · Availability · Maintenance · Locality · Air quality · Housing improvements · Distance · Appearance · Mental health · Social health

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

Tackling obesity:
the role of planning and design…and the costs?

Obesity epidemic: the shape of things to come

The Economist
DECEMBER 13TH–19TH 2003   www.economist.com

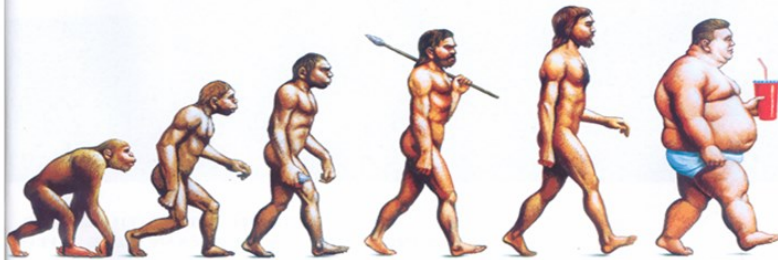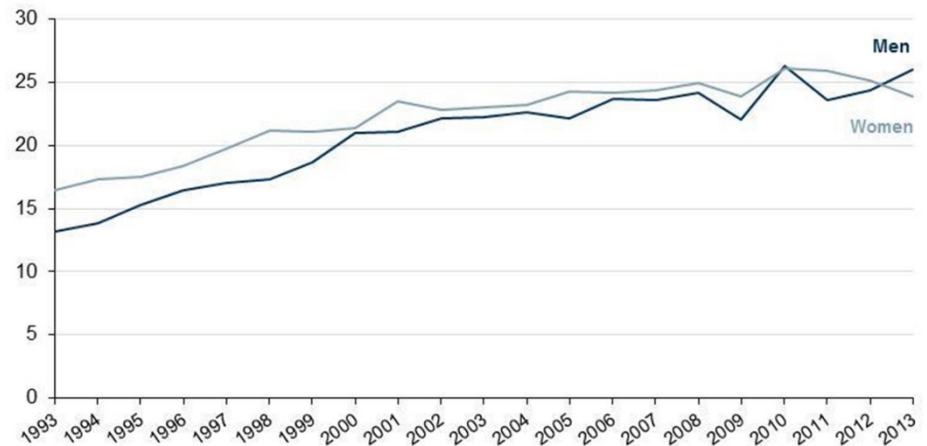**The shape of things to come**

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

Percentages

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

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)

Obesity and the activity environment

http://hdvchpediatricobesity.wikispaces.com/About+child+obesity
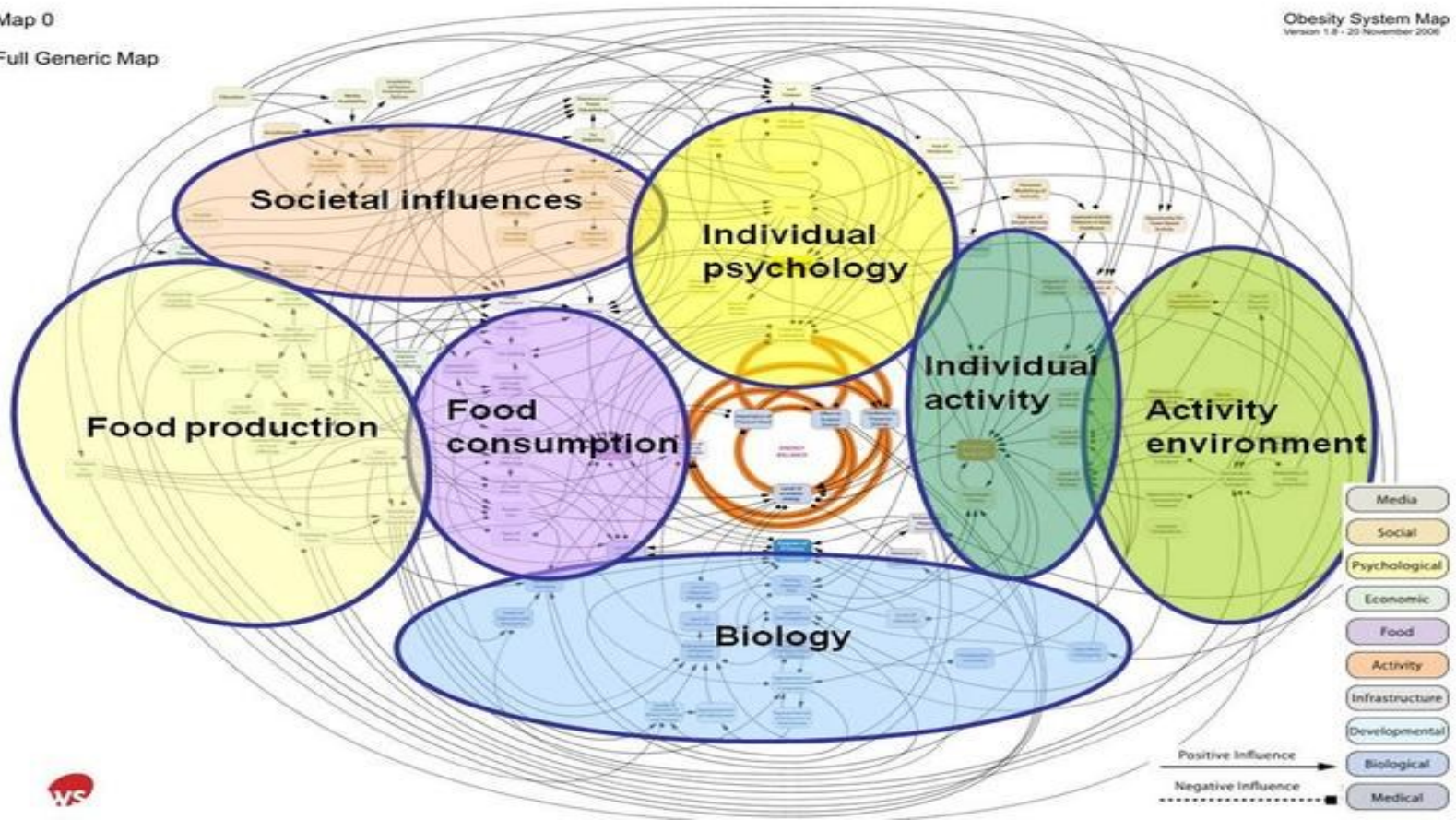
Built environment and physical activity

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

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

- Green spaces, 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)

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

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

B Open spaces, play and recreation

C Food

D Neighbourhood spaces

E Buildings

F Local economy

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 includes adequate private or semi-private outdoor space per dwelling
- Car parking spaces are minimised across the development
- Development includes 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

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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