

## 4. Facilitate positive behaviour and health

### 4.1 Design to promote activity, indoors and outdoors, to encourage physical health of occupants

#### State of health

Diets inextricably link human health with environmental health and sustainability. In order to feed a future population of ten billion people a healthy, sustainable diet whilst also operating within planetary boundaries requires the transformation of eating habits, improving food production and reducing food waste.<sup>1</sup>

Human relationships with food, and the impact on our collective and individual health must also be examined. Obesity is the most prevalent major public health crisis relating to food consumption; the WHO reported that in 2016, 1.9 billion adults were overweight<sup>5</sup>, of whom approximately one third were obese. The incidence of obesity almost tripled between 1975 and 2016<sup>5</sup>, and now equates to around 13% of the world's adult population, and continues to rise.

“The time that children and adults spend sedentary has... a population-wide, ubiquitous influence on health outcomes”; (Owen et al, 2013)<sup>2</sup>

Physical inactivity and sedentary behaviours are risk factors for other non-communicable diseases such as cardiovascular diseases, diabetes, musculoskeletal disorders and some cancers. Physical inactivity is estimated to cause more than 5 million premature deaths annually across the globe, representing 9% of all deaths<sup>3</sup>. The built environment is one of the many complex factors that influence people's activity levels and lifestyles, and consequently physical health. Research has found that low levels of neighbourhood walkability were positively associated with more sedentary lifestyles<sup>4</sup>.

#### Outcomes

Buildings and local community play a supportive role in the healthy lifestyle of occupants, including reduction of obesity, by designing the space to encourage regular physical activity, reducing barriers to accessibility, availability and affordability.

#### Strategies across the lifecycle:

##### Design:

- Centrally located, visible and aesthetically pleasing stairwells within buildings and indoor public areas
- Access to end of trip facilities to promote physical activity before, during and after work (including walking/riding to work, eg. bicycle parking, changing facilities)
- Access to public transport to reduce personal car use
- Urban master-planning prioritising safer street design, to encourage heightened personal activity and exercise levels, eg. connected neighbourhoods with pedestrian footpaths, access to public exercise grounds such as sports fields, outdoor gyms, cycle paths, central cycle parking, etc

##### Operation:

- Active workspaces in office buildings (eg. standing or treadmill desks)
- Access to end of trip facilities to promote physical activity before, during and after work (including walking/riding to work, eg. bicycle parking, changing facilities)

#### Benchmarks

Urban planning should consider the principles of the Bloomberg Partnership for Healthy Cities and World Health Organization's Healthy Cities Network.

The World Health Organisation recommends that adults should do at least 150 minutes of moderate-intensity aerobic physical activity per week<sup>7</sup>.

### More information

- BCO Wellness Matters. Roadmap: 'Outside' <http://www.bco.org.uk/HealthWellbeing/WellnessMatters.aspx>
- Bloomberg. Partnership for Healthy Cities. <https://partnershipforhealthycities.bloomberg.org/>
- Beam Plus New Buildings V2.0 'Health and Wellbeing': [https://www.hkgbc.org.hk/eng/beam-plus/file/BEAMPlus\\_New\\_Buildings\\_v2\\_0.pdf](https://www.hkgbc.org.hk/eng/beam-plus/file/BEAMPlus_New_Buildings_v2_0.pdf)
- Beam Plus Neighbourhood V1.0 'Site Aspects': <https://www.beamsociety.org.hk/files/Manual/BEAMPlusNDManualWithCorrigendumNo1.pdf>
- BREEAM International New Construction Standard 'Hea 06 Accessibility', 'Tra 01 Public transport accessibility', 'Tra 02 Proximity to amenities' and 'Tra 03 Alternative modes of transport': <https://www.breeam.com/discover/technical-standards/>
- BREEAM International In-Use Standard 'Tra 01 Alternative modes of transport', 'Tra 02 Proximity to public transport', 'Tra 03 Proximity to amenities' and 'Tra 04 Pedestrian and cyclist safety': <https://www.breeam.com/discover/technical-standards/>
- CABR & CSUS. Green Building Research Centre, Healthy Building Evaluation Standard 'Fitness' Chapter <http://healthybuilding.gbonline.org/>, plus Zeng Yu, Xiao Yan. The chapter on fitness interpretation of "Healthy Building Evaluation Standard". Construction Technology, 2018, 49(06): 655-657
- Centers for Disease Control and Prevention 2014 Facts about Physical Activity. <https://www.cdc.gov/physicalactivity/data/facts.htm>
- DGNB 'Liveable and Fit for the Future' <https://www.dgnb.de/en/council/publications/index.php>
- Green Building Council of Australia Green Star - Design & As Built 'Transport': <https://new.gbca.org.au/green-star/rating-system/design-and-built/>
- Green Building Council of Australia Green Star – Communities 'Liveability': <https://new.gbca.org.au/green-star/rating-system/communities/>
- IGBC Green Interiors Rating Tool: 'Occupant Wellbeing Facilities' <https://igbc.in/igbc/redirectHtml.htm?redVal=showgreeninteriorsnosign#GreenHomes>
- Public Health England & Local Government Association - Building the foundations: Tackling obesity through planning and development. Available here: <https://www.local.gov.uk/sites/default/files/documents/building-foundations-tack-f8d.pdf>
- Urban Land Institute. 2015. 'Building Healthy Places Toolkit' <https://bhptoolkit.uli.org/>
- USGBC 2018 Built for Health Podcast Available at: <https://www.usgbc.org/articles/learn-about-physical-fitness-our-third-%E2%80%9Cbuilt-health%E2%80%9D-podcast>
- World Health Organization. Healthy Cities. <https://www.who.int/healthpromotion/healthy-cities/en/#:~:text=Definition,developing%20to%20their%20maximum%20potential.%E2%80%9D>
- World Health Organization. 2015. Physical Activity. <http://www.who.int/mediacentre/factsheets/fs385/en/>
- World Health Organization. 2019A multilevel governance approach to preventing and managing noncommunicable diseases: the role of cities and urban settings. <https://www.euro.who.int/en/health-topics/environment-and-health/urban-health/publications/2019/a-multilevel-governance-approach-to-preventing-and-managing-noncommunicable-diseases-the-role-of-cities-and-urban-settings-2019>

## **4.2 Encourage beneficial lifestyle practices for occupants, including nutrition, hydration and social connectivity**

### **State of health**

#### *Nourishment:*

Nourishment is essential to good health. A growing body of population-based epidemiological evidence has shown the importance of nourishment in preventing and controlling noncommunicable diseases as well preventable chronic diseases<sup>5</sup>. At the same time, changes in the production and distribution of food have meant highly processed and sugar rich foods are in greater supply. The World Health Organisation estimates that globally, most people do not consume the recommended daily amount of fruit and vegetables, and that this is leading to over 5.2 million deaths each year<sup>6</sup>.

'Food Deserts' are regions that have lessened access to healthy food, broadly due to socio-economic factors such as income or location. People who live in regions categorised as 'food deserts' are recognised as being at higher risk of diet-related conditions, such as obesity, diabetes, and cardiovascular disease<sup>7</sup>. Sustainable urban planning, and operational building policies to support local communities, can be helpful factors in addressing this socio-economic health issue.

#### *Hydration:*

Hydration is of fundamental importance to health and wellbeing as without water humans can survive only for days<sup>8</sup>. Water comprises from 75% body weight in infants to 55% in elderly and is essential for cellular homeostasis and life<sup>9</sup>. Within the built environment our priority must be to maintain a safe and sustainable supply of clean water, as outlined in Principle 1.2, consumed in necessary quantities to maintain human health and maximise wellbeing.

#### *Social connectivity:*

The WHO has demonstrated the link between social interaction and health.<sup>10</sup> Social connection improves physical health and psychological well-being, whereas loneliness is associated with a 26% increase in the risk of premature mortality<sup>11</sup>. Studies have suggested that strong social connections leads to a 50% increased chance of longevity and people who feel more connected to others have lower rates of anxiety and depression<sup>12</sup>. Our buildings and communities can be designed in a way that fosters social interaction<sup>13</sup>.

Wider lifestyle factors that can reduce the risk of non-communicable diseases and can be implemented at regional policy level are outlined through the Partnership for Healthy Cities principles.

### **Outcomes**

The built environment actively contributes to the improvement of nutrition, hydration and social connectivity of building occupants and people in the local community where possible, by supporting healthy food choices and hydration practices and providing infrastructure for positive social engagement.

### **Strategies across the lifecycle:**

#### **Design:**

- Communal dining facilities and scheduled meal breaks in workplaces to foster interaction
- Urban planning to foster inclusiveness and social engagement with central, shared areas
- Infrastructure to ensure clean water provision (see Principle 1.2)

#### **Operation:**

- The promotion and provision of healthy food options (fruit, vegetable, whole grains)
- Provision of food preparation areas (refrigeration, heating, storage and utensils)
- Onsite production of food
- Buildings operating in less developed communities strive to address food deserts by increasing availability of healthy food to low-income population
- Provision of fresh clean water and encouraging hydration

### **Benchmarks**

Universal benchmarks for building and urban design specialists to encourage nutrition, hydration and social connectivity on site are not widely available. Practitioners are encouraged to incorporate strategies into projects on a bespoke basis, following local examples where possible.

### **More information**

- BCO Wellness Matters. Roadmap: 'Feel' and 'Nourish' <http://www.bco.org.uk/HealthWellbeing/WellnessMatters.aspx>
- Beam Plus New Buildings V2.0 'Sustainable Site, Integrated Design and Construction Management': [https://www.hkgbc.org.hk/eng/beam-plus/file/BEAMPlus\\_New\\_Buildings\\_v2\\_0.pdf](https://www.hkgbc.org.hk/eng/beam-plus/file/BEAMPlus_New_Buildings_v2_0.pdf)
- Bloomberg. Partnership for Healthy Cities. <https://partnershipforhealthycities.bloomberg.org/>
- BREEAM International New Construction Standard 'Hea 09 Water quality': <https://www.breeam.com/discover/technical-standards/>
- BREEAM International In-Use Standard 'Hea 11 Provision of rest areas', 'Hea 13 Drinking water provision' and 'Hea 19 Drinking water management': <https://www.breeam.com/discover/technical-standards/>
- DGNB 'Liveable and Fit for the Future' <https://www.dgnb.de/en/council/publications/index.php>
- Green Building Council of Australia Green Star – Communities 'Liveability': <https://new.gbca.org.au/green-star/rating-system/communities/>
- IGBC 'Health and Wellbeing Rating: Fitness and Nutritional Choices' <https://igbc.in/igbc/redirectHtml.htm?redVal=showHealthWellBiengnosign#Resources>
- Psychology Today - Connect to Thrive - <https://www.psychologytoday.com/us/blog/feeling-it/201208/connect-thrive>
- Urban Land Institute. 2015. 'Building Healthy Places Toolkit' <https://bhptoolkit.uli.org/>
- U.S. Department of Health and Human Services, Access to Health Services | Healthy People 2020. Available at: <https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services>. Accessed 05/02/2020.
- WELL Standard Nourishment Available at: <https://v2.wellcertified.com/v/en/nourishment>
- World Health Organization. Diet, nutrition and the prevention of chronic diseases-Report of the joint WHO/FAO expert consultation. 2003. <http://www.who.int/dietphysicalactivity/publications/trs916/intro/en/>. Accessed 05/03/2020
- World Health Organization. The World Health Report: Reducing Risks, Promoting Healthy Life. 2002. <https://www.who.int/whr/2002/en/> Accessed 05/03/2020
- National Council for Behavioural Health - *How important is social connectivity to health?* - <https://www.thenationalcouncil.org/BH365/2016/12/22/important-social-connectivity-health/>

## References

---

- <sup>1</sup> The EAT-Lancet Commission on Food, Planet, Health. <https://eatforum.org/eat-lancet-commission/>
- <sup>2</sup> *Sedentary behaviour and health: mapping environmental and social contexts to underpin chronic disease prevention*. Available here: <https://pdfs.semanticscholar.org/4e66/5b7751555abf113349a7504284c61fbb0591.pdf>
- <sup>3</sup> Marmot & Ucci. 2015. 'Sitting less, moving more: the indoor built environment as a tool for change' Available here: <https://www.tandfonline.com/doi/full/10.1080/09613218.2015.1069081?scroll=top&needAccess=true>
- <sup>4</sup> *Sedentary behaviour and health: mapping environmental and social contexts to underpin chronic disease prevention*. Available here: <https://pdfs.semanticscholar.org/4e66/5b7751555abf113349a7504284c61fbb0591.pdf>
- <sup>5</sup> WHO 2002 Diet, nutrition and the prevention of chronic diseases, Report of the joint WHO/FAO expert consultation, WHO Technical Report Series, No. 916 (TRS 916) Available at: <https://www.who.int/dietphysicalactivity/publications/trs916/intro/en/> Accessed 05/03/2020
- <sup>7</sup> WHO *Global Strategy on Diet, Physical Activity and Health*. Available here: [https://www.who.int/dietphysicalactivity/factsheet\\_adults/en/](https://www.who.int/dietphysicalactivity/factsheet_adults/en/)
- <sup>7</sup> Medical News Today, 2020. 'What are Food Deserts?' <https://www.medicalnewstoday.com/articles/what-are-food-deserts>
- <sup>8</sup> Popin, D'Anci and Rosenberg. 2011. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2908954/>
- <sup>9</sup> Nicolaidis S. Physiology of thirst. In: Arnaud MJ, editor. *Hydration Throughout Life*. Montrouge: John Libbey Eurotext; 1998. p. 247
- <sup>10</sup> World Health Organization. 2017. About social determinants of health. Available at: [http://www.who.int/social\\_determinants/sdh\\_definition/en/](http://www.who.int/social_determinants/sdh_definition/en/). Published 2017. Accessed 05/03/2020.
- <sup>11</sup> Cacioppo and Cacioppo. 2018 'The growing problem of loneliness' *The Lancet*: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)30142-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)30142-9/fulltext)
- <sup>12</sup> Psychology Today <https://www.psychologytoday.com/us/blog/feeling-it/201208/connect-thrive>
- <sup>13</sup> Garrin JM. The Power of Workplace Wellness: A Theoretical Model for Social Change Agency. *J Soc Chang*. 2014;6(1):109-117. doi:10.5590/JOSC.2014.06.1.08.