

# The salutogenic city

In this 'state-of-play' overview, *Clare Cooper Marcus* and *Naomi Sachs* consider the myriad socio-economic and demographic health patterns, and political and organisational responses, relating to the need to design urban environments based on the concept of salutogenesis

The sociologist Aaron Antonovski first coined the term 'salutogenesis' in 1979, combining the Latin words *salus* (health) and *genesis* (origin) to describe a model focused on promoting health rather than curing disease.<sup>1</sup> Today, radical changes in the environment, demographics, technology, and morbidity and mortality are forcing everyone from policy-makers to researchers to designers, on small and large scales, to shift their focus from the old 'pathogenic' paradigm to a salutogenic approach concerned with preventative care. This means addressing health on a much broader physical and temporal scale, and within a more interconnected framework. How does one's entire built environment – from the home, to the workplace, to public space, to the hospital – affect one's health? How can the design of those spaces, and elements within those spaces, contribute to and facilitate health?



Clare Cooper Marcus

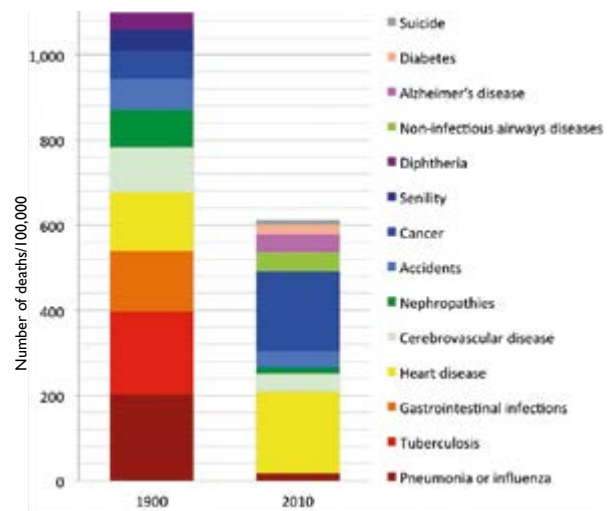
Nurses enjoying a break in a hospital garden, Randall Children's Hospital, Portland, Oregon

## Nature, fitness and diet

Research on the positive health benefits of nature continues to amass, in the United States and abroad, and is becoming recognised not only by environmentalists and landscape architects but also by other designers, policy-makers, public-health officials, and governmental bodies from the local to the federal level.<sup>2,3,4</sup>

Access to 'nearby nature' in the form of parks and green spaces within walking distance of people's neighbourhoods (as opposed to, for example, national forests and parks that usually require driving) has received particular attention. Indeed, the Centers for Disease Control's (CDC) National Center for Environmental Health has added a new standard to its measure of public health: whether people live within a half mile of a park.

'Park prescriptions' is an emerging movement that pairs healthcare and park systems to fight the obesity epidemic; doctors can order exercise in a park as they would medication. In Washington DC, volunteers rated 350 area parks and recorded them into a database for doctors to reference when advising their patients to exercise. In South Carolina, where two-thirds of the population are overweight or obese, a prescription enables people free entry to one of 30 state parks. A study by the RAND Corporation suggests that free equipment encourages people to visit parks more often and enables them to get more exercise when they do. The Trust for Public Land's Fitness Zone programme provides neighbourhood parks with outdoor workout equipment situated near playgrounds so that



In 1900, infectious diseases were the leading cause of death in the US, but chronic illnesses have now taken over. Original source: [www.nejm.org/doi/full/10.1056/NEJMp1113569](http://www.nejm.org/doi/full/10.1056/NEJMp1113569) (Data from the Centers for Disease Control and Prevention)

parents (and grandparents, etc) can work out while their children play.

City investments and public-private partnerships have led to the construction and refurbishment of parks, greenways and other open spaces across the United States. Owing to its tremendous success, the High Line, a 1.5-mile linear park built on an abandoned elevated rail line in New York City, has spurred similar projects elsewhere. The Trust for Public Land has helped acquire 44 segments of abandoned rail lines for conversion to trails and greenways. One example is the Minneapolis Midtown Greenway, which cuts through the city from east to west and generates 1.5 million trips a year; many by people walking or biking to work. "With urban areas, it's hard to find 20, 30 or 40 acres of wide-open space," says EB Boyd. "Finding a rail track is more feasible."<sup>5</sup> Disused riverfronts provide another opportunity. Denver's South Platte River, for instance, has been reinvigorated with more than 100 miles of hiking and biking trails.



The High Line in Manhattan, New York City at West 20th Street, looking downtown (south)

### Pedestrian friendly

In the US and abroad, communities are being made more walkable for people of all ages and abilities. An excellent example is the pioneering work by urban designer Jan Gehl and colleagues in Denmark, promoting the conversion of dozens of inner-city streets in, for example, Copenhagen, Melbourne, London and Moscow into pedestrian-friendly thoroughfares.<sup>6</sup> A temporary project in 2009 to convert New York's Times Square into a pedestrian space proved so popular that it has now become permanent, and 50 other pedestrian plazas have been created by re-purposing streets throughout the five boroughs of New York City.

In the US, the number of people who commute to work by bicycle has increased by about 60% since 2004.<sup>7</sup> This change is due, in part, to municipalities and workplaces creating environments more conducive to cyclists: for example, bike lanes, bike-sharing programmes, bike racks, and places to shower at work. New York City's bike-share programme generated 90,000 sign-ups within the first six months of its launch in 2013. Fifty other American cities have share programmes in place or in the planning stage. A 2010 study in Copenhagen – where as many as one third of all daily commutes are by bicycle – found that cycling resulted in fewer sick days and lowered healthcare costs at a saving of \$1.62 for every mile pedalled.<sup>5</sup>

The past two decades have seen tremendous growth in farmers' markets, community gardens, and urban agriculture (small, local urban farms). People are eager for fresh, local, healthy food (especially fruits, vegetables and meat) that has not been grown with hormones, pesticides, herbicides, or genetically modified seed, and that has not been transported thousands of miles. These venues have a social and community component as well: one study revealed that people have ten times as many conversations at farmers' markets than in a traditional supermarket.<sup>8</sup> Designers and city planners are among the experts working with municipalities to reduce the number of 'food deserts' – urban, often low-income neighbourhoods that lack access to fresh, healthy food. ►

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Top: Three-storey homes at St Francis Square co-op in San Francisco, California face inwards to landscaped courtyards

Bottom: A 'woonerf' (residential precinct) in Tel Aviv, Israel

## ► Policies and political influence

Recent large federal and state initiatives in the US are also signs of positive change and a new focus on salutogenic policy and design.<sup>9</sup> The Centers for Disease Control (CDC) Healthy Community Design Initiative works to improve public health by, for example, improving community-design decisions through tools such as the health impact assessment and educating decision-makers on the health impact of community design.

The US Patient Protection and Affordable Care Act (aka 'Obamacare') has spurred major changes in healthcare delivery and design. As early as 2010, when the ACA was first inaugurated, \$500 million was distributed to states and communities for preventative care, such as smoking cessation, obesity prevention, and fitness. The president's Childhood Obesity Task Force and First Lady Michelle Obama's Let's Move! initiative are two federal programmes aimed at combating childhood obesity.<sup>10</sup>

In November 2013, the American Public Health Association adopted 17 new policy statements, including 'Nature, health and wellness'. The organisation's aim is to promote healthy and active lifestyles and to encourage "land-use decisions that prioritise access to natural areas and green spaces for residents of all ages, abilities and income levels". Furthermore, the policy "calls on public health, medical and other health professionals to raise awareness among patients and the public at large about the health benefits of spending time in nature and of nature-based play and recreation".<sup>11</sup>

The Health Districts Initiative of the Congress for New Urbanism (CNU) uses the CDC's Healthy Community Design Checklist Tool and the CNU Charter for New Urbanism as springboards to facilitate the provision of what they call health districts: livable, walkable neighbourhoods that contain at least one health facility, and where one aim is "to assist hospitals in their efforts to 'do no harm' to their surrounding neighbours".<sup>12</sup>

In 2010, the New York Department of Design and Construction published the Active Design Guidelines, a clearly written and beautifully illustrated manual for architects and urban designers that offers strategies for "creating healthier buildings, streets, and urban spaces, based on the latest academic research and best practices in the field".<sup>13</sup> The Guidelines have become a model that other cities are beginning to follow.

## Sense of community

The design of residential neighbourhoods is a critical element in creating a salutogenic city. It is clear that the low-density, car-oriented suburb is not the best solution. Lack of sidewalks, and long distances to shopping centres, workplaces and schools create a culture almost totally dependent on the car, resulting in limited daily exercise, increased air pollution, and a disconnect from the natural world.

An example of a more healthy solution is medium-density housing with private plus shared outdoor space, the latter providing for children's play within sight and calling distance of home, and a setting where neighbours casually meet, creating opportunities to forge a sense of community.<sup>14</sup> An excellent example is St Francis Square, a 300-unit co-op in San Francisco, California where three-story apartments face inwards on to three landscaped courtyards, each a human-scaled space owing to its dimensions (c.150 x 150 feet) and height-width ratio (1:6). The courtyards are heavily used by children playing (80% of total users), adults walking to shared laundries and parking lots, and teens gathering in the evenings. Such a setting is especially beneficial to children's health. In households where both parents work, there is little time or energy on a weekday for them to walk their

children to a park. Only half the days of the year are school days, making settings for exercise and play close to home especially important.<sup>15,16</sup>

In a comparable community in Petaluma, California, with 29 townhouses clustered around a similar inward-focused site plan, interviews with residents revealed that 71% rated the sense of community as 'strong' or 'very strong', and 50% responded that their children watched less television since they had moved there, as they could see other children playing outside in the shared community spaces.<sup>17</sup> One can assume that the health of children in these and similar communities is likely to be better than those who have to be driven everywhere, and where a small back yard may not be a tempting place to play.

### Shared space

North America has seen a growing acceptance of co-housing since the publication of the books *Co-housing: A contemporary approach to housing ourselves*<sup>18</sup> and *Creating co-housing: Building sustainable communities*.<sup>19</sup> This is a form of clustered housing pioneered in Denmark where a community of anything from ten to 100 households – each with its own kitchen and normal living spaces – not only share some outdoor space but also a commercial-sized kitchen and dining room in a common house where neighbours can cook and eat together as often as they choose. Through a participatory process, the group works closely with the design team. In 120 co-housing communities so far built in North America, all have chosen some form of inward-facing pedestrian site plan to enhance exercise, casual meetings, and child supervision. Parents are far more likely to allow their children (after a certain age) to play outside unattended in these shared spaces than in adjacent streets or nearby parks since two of their prominent fears – traffic and strangers – have been eliminated.

In creating shared space close to home that is healthful to children and adults, the option of that space being green is not always present. Other possibilities include the 'woonerf' (residential precinct in Dutch), the shared back alley, and the cul-de-sac. The move to create safe inner-city streets shared by pedestrians and slow-moving traffic dates from the early 1970s in the Dutch city of Delft. An entry sign to a woonerf warns cars to drive at less than 5 mph; raised planting beds, play spaces, sitting areas, and lack of a distinction between sidewalk and roadway ensure that cars move slowly and carefully. Before-and-after studies of woonerfs record a large increase in the numbers of children playing, and adults socialising, close to home.<sup>20</sup> Guidelines for the construction of woonerfs were adopted in Germany (1976); the UK, Denmark, and Sweden (1977); and France and Japan (1979). No fully developed example exists in the US, principally because the Institute of Traffic Engineers has never endorsed the concept and police and fire departments have opposed it.<sup>21</sup> In 2007, the City of Baltimore, Maryland passed an ordinance that permits residents to vote to have an alley in the middle of their block closed and gated. Many neighbourhoods have chosen to do this, creating an option for those in inner-city settings to reclaim an area for safe play and socialising that was formerly the domain of garbage cans, vermin, and parked cars.<sup>22</sup>

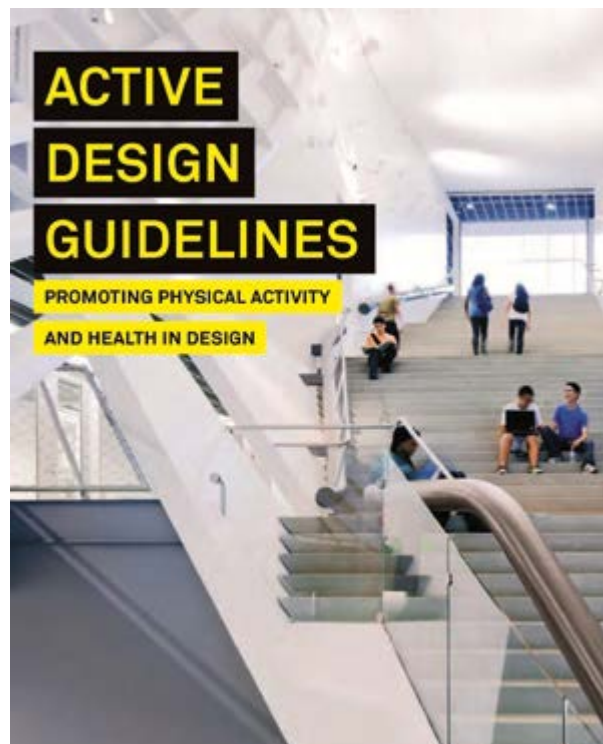
For the past 100 years, many suburban street layouts have included the cul-de-sac. In Village Homes, a 240-unit development in Davis, California, completed in 1981, all dwellings are approached via long cul-de-sacs, ▶



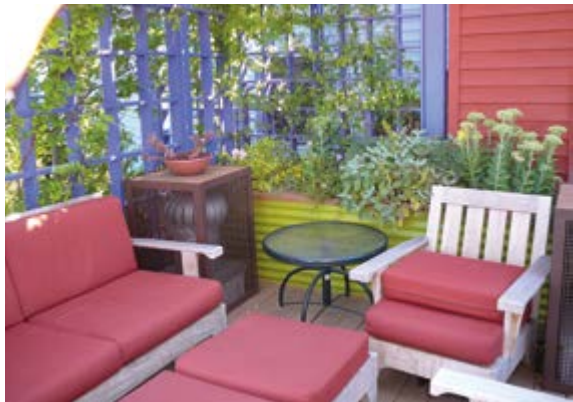
Chris Garcia

A retention pond at a skilled nursing facility provides a wildlife habitat and a cool, nearby social space for residents and visitors. The Pavilion, Jupiter Medical Center, Jupiter, Florida

North America has seen a growing acceptance of co-housing



The New York Department of Design and Construction's Active Design Guidelines provide a model for creating healthier urban spaces



A residence for cancer patients. Before-and-after images of a roof garden designed and built by undergraduate students at the University of Washington under the direction of Professor Daniel Winterbottom

▶ between which are green pedestrian ways leading to a large common green, community garden, and community-owned vineyard.<sup>23</sup> Children roam and play safely throughout the neighbourhood, and residents report having three times as many social contacts and twice as many friends as those living in a nearby conventional subdivision.<sup>24</sup> Foot and bicycle paths link Village Homes with the extensive bicycle network for which the university city of Davis is famous. Although no studies have looked specifically at the health of children living at Village Homes, one could assume that it is better than that of children living in conventional subdivisions, which often lack sidewalks for safe nearby play, and where low densities require that children be driven to school, play-dates, etc. A study of four Northern California towns confirms what we might intuitively expect: children who live on cul-de-sacs play outside more often and more energetically, and their parents are less concerned about traffic than those living on nearby through streets.<sup>25</sup>

A study of 12 UK housing projects found that children's favourite places were those with 'greenery and trees' and that their favourite activity was 'being on the move' – running, cycling, roller-skating, chasing, etc.<sup>26</sup> The study recommends a traffic-calmed cul-de-sac and footpath layout, with children's access to as large an outdoor environment as possible. The conclusion of this and other studies prompts one to ask if we can designate extensive movement corridors for large mammals such as mountain lions – as is happening in the US – can we not regard our children as a precious species and provide for their safe and healthy movement through increasingly hazardous urban environments?

The cul-de-sac has always been popular with home-buyers and, apparently, provides a safer environment for children. Nevertheless, traffic engineers, planners, and some municipalities in the US are lobbying for their elimination in new developments.<sup>27</sup> This move is largely the result of a popular and influential movement in architecture and planning known as 'New Urbanism', which emphasises that all streets are through-streets, most dwellings face directly on to streets, and all green spaces are wholly public rather than shared by a group. While many other tenets of New

Urbanism – for example, walkable neighbourhoods, mixed land use, and mixed housing types – are laudable, rejection of the cul-de-sac and shared landscape space, such as that described above at St Francis Square, suggest that there is little understanding of the health-promoting aspects of such spaces, especially for children.

In 1971, 80% of children aged seven or eight in the UK were permitted to walk or cycle to school alone; by 1990 that figure had dropped to less than 9%. The numbers are similar in the US. Two positive initiatives in the US encouraging children to walk to school, and thus increasing daily exercise, are Safe Routes to School and the Walking Schoolbus. Safe Routes to School encourages parents, where possible, to walk with their children to school and provides information on pedestrian and bicycle safety.<sup>28</sup> The Walking Schoolbus encourages parents to share responsibility for accompanying groups of children to school, and to choose a route where sidewalks are wide enough and where it's easy to cross streets.<sup>29</sup>

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### The role of schools

Although the idea of school gardens in the US goes back 100 years or more, a resurgence of the green schoolyards movement occurred in the first decade of the 21st century with the realisation that many children had no idea from where their food came, and that unhealthy diets and lack of exercise were resulting in rising rates of childhood obesity and type 2 diabetes. In his book *Last child in the woods* Richard Louv coined the term 'nature deficit disorder' to describe the inordinate amount of time children spend looking at 'screens', and the diminishing time they spend exposed to nature.<sup>30</sup>

An increasing number of US children are being diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and are treated with daily doses of a psychotropic drug. Studies, however, are beginning to show a statistically significant association between access to nature – even a view to greenery through the window – and improved attention functioning. University of Illinois research indicates that children's ADHD symptoms improve after spending even as little as 20 minutes in natural settings.<sup>31</sup> This provides growing support for a movement to 'green the schoolyard', converting asphalt school grounds into gardens, and designing curricula around these green spaces.<sup>32</sup> Perhaps most famous of the green schoolyards is the Edible Schoolyard at King Middle School in Berkeley, California, where children at all grades spend time in the extensive garden, learn to cook healthy dishes in an adjacent kitchen, and serve them in the school cafeteria.<sup>33</sup> The resultant environment may well be helpful to children with ADHD, as well as to those with other disorders – for example, children diagnosed with autism spectrum disorder (ASD). The number of US children diagnosed with ASD has risen alarmingly from 1 in 150 in 2000, to 1 in 68 in 2014. Many autistic children are hyper-sensitive to sensory input (light, noise, glare, etc), all commonly experienced on a typical asphalt schoolyard. Some research indicates that naturalistic settings are more calming for people on the spectrum;<sup>34</sup> hence, there is a pressing need for green, quiet spaces where a child can retreat to be alone and feel less 'invaded'.



Scott Shigley

At the Gary Comer Youth Center in Chicago, children grow, harvest and cook herbs and vegetables from the rooftop garden. Designer: Hoerr Schaudt Landscape Architects

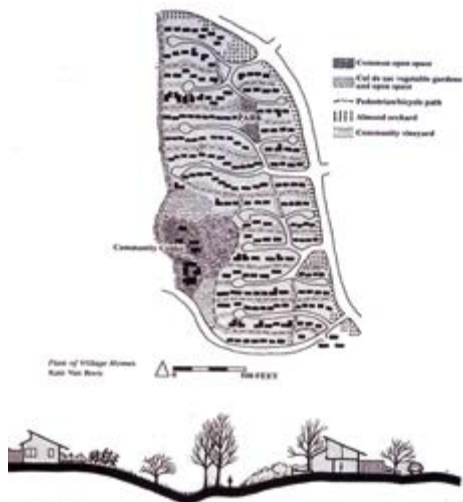
## The so-called 'grey tsunami' is prompting an urgent need to embrace universal design

### Environments for the elderly

In 2010, almost 40 million US adults were 65 and older; it is predicted that by 2050 that figure will have reached almost 90 million. This is the so-called 'grey tsunami', which is prompting an urgent need for cities, neighbourhoods and homes to embrace universal design: one that is accessible to all people, regardless of age or ability, and on all scales. While there is growing emphasis on the appropriate design of senior residential facilities and their open space, most people want to stay in their own homes as they age. A study by the American Association of Retired Persons (AARP) found that 90% of those over 45 wanted to remain living in their own home.<sup>35</sup> In other parts of the world, it has been traditional for younger family members to move in with ageing relatives (or vice versa) to take care of them, but with the spread of Western values and changing demographics, residential facilities for seniors are beginning to appear in China, Japan and the Middle East.

The CDC defines ageing in place as "the ability to live in one's own home and community safely, independently and comfortably, regardless of age, income or ability level".<sup>36</sup> A number of initiatives has emerged to support ageing in place. The Village model started with Beacon Hill Village, established in Boston in 2001. For an annual fee, members can call on vetted vendors to provide home healthcare and house modifications to promote safety. Volunteers provide help with transportation, shopping and household chores. Programmed social activities create a sense of community. As of 2010, there were 50 fully operational villages with paid administrative staff, and more than 150 in the developmental stage.

Naturally Occurring Retirement Communities (NORCS) are neighbourhoods not specifically designed for older adults but where at least 50% of the residents are age 60 or older. Neighbours are connected with preventative health and social services, leisure activities, and so forth. ▶



Site plan of Village Homes in Davis, California



Susan Rodiek

Whether ageing in place or in a senior-care facility, people want to stay involved in outdoor activities, including gardening

## There is a burgeoning interest in community gardens, both in senior facilities and in the community at large

- ▶ Almost 100 NORC programmes have sprung up across the US, generally financed by a mix of local, state and federal dollars, and funds from foundations.<sup>37</sup>

Co-housing for seniors is a growing movement as older people seek a setting with people of their own age and interests – something more intimate than a commercial retirement community. Groups of elders who want to stay in a particular town or neighbourhood band together to buy land and work with an architect to create their own elder-friendly community. In Davis, California, for example, 12 individuals who knew each other from their Unitarian Universalist Church created their own community, Glacier Circle, by buying land and building eight homes, a common house for shared meals together, and an apartment for a skilled nurse to live in and provide care for the residents.<sup>38</sup>

Many cities have assisted ageing residents by making their infrastructure more elder-friendly by, for example: providing safe sidewalks and kerb cuts at all intersections for the use of those using wheelchairs or walkers; providing seating at bus stops; and increasing the time allowed for street crossing at traffic lights. Mixed land uses, where shops and other services are within walking distance or easily served by public transport, encourage older people to stay living in their own homes. As people age, muscles lose their strength, joints may become arthritic, and balance may be compromised. Daily exercise is essential and is made more attractive and feasible in such walkable neighbourhoods. It should be noted that – as is often the case with universal design – all of these design enhancements benefit all members of the population, not just the frail elderly.

There is a burgeoning interest in community gardens, both in senior facilities and in the community at large. Many senior facilities have waiting lists for planting beds, which not only provide food but also offer exercise, as well as opportunities to socialise and connect with others, and a general sense of engagement with the world. A study in Alameda, California found that volunteer retirees who did environmental work were half as likely to show depressive symptoms after 20 years, while people who did other forms of volunteering only had their risk lowered by 10%.<sup>39</sup>

### Healthcare facilities

As evidence-based design (EBD) gains traction, so do concepts such as wellness programmes and patient-, family- and even community-centred care. Many facilities are beginning to adopt this salutogenic approach, such as permitting access to their grounds and gardens to the wider community. The McLaren Health Care Village's

four-acre Garden of Healing and Renewal in Clarkston, Michigan was designed as both a healing garden and a public park to serve patients, visitors, staff and the community at large. Funding came primarily from McLaren Health Care Corporation, which also maintains the park. The designers, Professional Engineering Associates, took advantage of the existing wetlands, woodlands, stream and pond, connecting them with a series of pathways and creating small, intimate spaces and larger public gathering spaces. The park appeals to a wide range of groups who use it for exercise, socialising, meeting and relaxing.<sup>40</sup>

An increasing number of healthcare facilities are adopting programmes similar to that implemented by Kaiser Permanente more than two decades ago: community-centred wellness programmes that focus on prevention and healthy living through education, exercise and nutrition. In 2003, Kaiser began holding farmers' markets at their Oakland, California hospital. By 2009, they had more than 30 farmers' markets at medical facilities in four states, and locally grown fruits and vegetables were being used in 23 Kaiser kitchens.<sup>41</sup> Healthcare Without Harm, an international coalition of healthcare organisations, reports that more than 100 US hospitals hold farmers' markets, or even have their own farms, on their grounds; for example, Goodyear Cancer Hospital in Goodyear, Arizona makes use of a 25-acre plot adjacent to the hospital to grow organic fruit and vegetables for the hospital. Patients are invited to harvest the produce, which they can then take back to the hospital to prepare and eat.

'Medical homes' are a relatively new concept in the US, wherein an integrated team provides comprehensive, continuous and coordinated medical and social care for patients of all ages. The Martin Luther King Jr Medical Center Campus in Los Angeles, California is a medical home that incorporates walking and bicycle paths, and community parks and gardens. Gensler principal (Chicago) Sarah Bader says: "It's a holistic approach to healthcare... Instead of focusing on one disease, medical homes focus on the whole body: live healthy, eat healthy, educate healthy... You have to look at a hospital not as an island in the city but how it touches the entire space around it."<sup>42</sup>

## Conclusion

Changes in morbidity and mortality, along with a growing awareness of looming environmental crises, such as global warming, are forcing changes in how health is addressed.

Individuals, non-profit organisations, communities, and government entities are adopting policies and design strategies that follow the salutogenic approach – preventative care on a small and large scale, from the private home to the public park; from the school to the hospital; and from pedestrian pathways to bicycle trails. All of these, when thoughtfully interconnected, comprise the salutogenic city.

## Authors

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## References

The references to this article can be found in the online version: [www.worldhealthdesign.com/Urban-health-The-salutogenic-city](http://www.worldhealthdesign.com/Urban-health-The-salutogenic-city)



Vegetables for sale at Ballard Sunday Farmers' Market, Ballard, Seattle

Joe Mabai