



**GLOBAL WELLNESS
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**RESETTING THE WORLD
WITH WELLNESS:**

Healthy Built Environments for Healthy People

APRIL 29, 2020



GLOBAL WELLNESS INSTITUTE WHITE PAPER SERIES

RESETTING THE WORLD WITH WELLNESS:

Healthy Built Environments for Healthy People

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GLOBAL WELLNESS INSTITUTE WHITE PAPER SERIES:

Resetting the World with Wellness

The Global Wellness Institute (GWI) is honored to participate in the Health and Wellness taskforce and working group that will assist the Vatican in crafting an integral response to the aftermath of COVID-19. Health and Wellness is a key pillar of response in this initiative, along with Ecology, Economy, and Security. In these difficult times, wellness can offer a vision for the future and can provide a roadmap for healing and growth. This series of white papers builds on GWI's comprehensive understanding of wellness as a concept and in practice; integrates facts, data, and best practices; employs interdisciplinary thinking; and recommends strategies that can help the world reset with a proactive wellness-based mindset. The series will propose a wellness reset for the world in a number of areas, including the built environment, workplace, mental wellness, and more.

About the Global Wellness Institute

The Global Wellness Institute (GWI), a 501(c)(3) non-profit organization, is considered the leading global research and educational resource for the global wellness industry and is known for introducing major industry initiatives and regional events that bring together leaders and visionaries to chart the future. GWI positively impacts global health and wellness by advocating for both public institutions and businesses that are working to help prevent disease, reduce stress, and enhance overall quality of life. Its mission is to empower wellness worldwide.

About the Authors

This white paper was prepared by Ophelia Yeung and Katherine Johnston, Senior Research Fellows at the Global Wellness Institute. Together, they have four decades of experience leading research and strategy development for businesses, universities, research institutions, and multilateral and government organizations under the auspices of SRI International, a Silicon Valley-based technology and innovation company. Since 2008, Ms. Yeung and Ms. Johnston have worked with the team at what has become the Global Wellness Institute to pioneer groundbreaking research on the global wellness economy.

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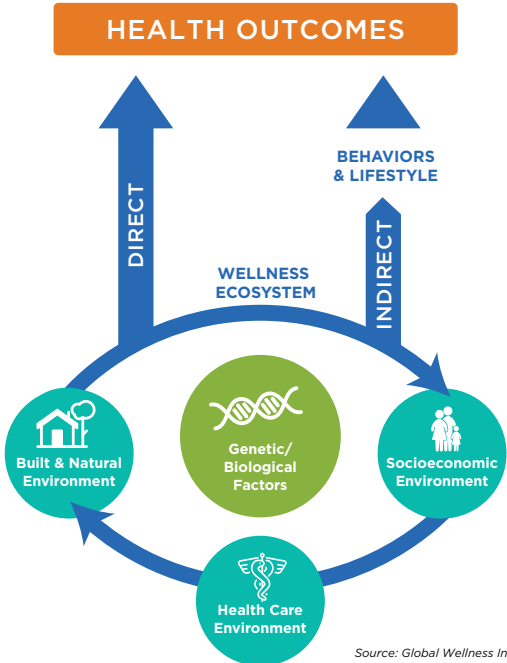
Our homes and communities represent our most important investment in our health.

In an unprecedented global public health response to stop the spread of COVID-19, half of the world’s population is now living (or has lived) in some form of lockdown in their homes and immediate neighborhoods. Our homes may be our castles to defend against the pandemic, but they have also become our prisons, where we must remain with our families and roommates, or alone. Our homes may normally be sanctuaries where we can relax, sleep, or entertain, but now they have also become our primary places of work, study, play, exercise, creativity, and caring for others. COVID-19 is forcing us to see our homes and neighborhoods in a new light. Where we live has an outsized influence on our wellness in all dimensions (physical, mental, social, emotional, spiritual, and environmental – see Appendix), affecting our preparedness and resilience to face today’s challenges and beyond.

The concept that our built environment influences our health is not new. In the last two centuries, our urban planning, infrastructure, and building design were shaped by the imperative to control the infectious disease epidemics that accompanied urbanization and higher-density living during the Industrial Revolution.ⁱ New York City, now an epicenter of the COVID-19 outbreak, was plagued by repeated epidemics of cholera, tuberculosis, and yellow fever in the 19th century, when exponential population growth led to haphazard development, overcrowded tenements, pest infestations, waste-filled streets, and contaminated water supplies (i.e., a hotbed for infectious disease). Then, as now, the poor were exposed to the highest risks of illness and death. By the mid-20th century, infectious disease was brought under control through deliberate environmental design changes, and not by medicine (most antibiotics were not yet invented). Key strategies in New York included improving street sanitation and sewage systems; building a new aqueduct to deliver clean water; banning the construction of dark, airless buildings; mandating building setbacks from streets to increase the flow of light and fresh air; and creating Central Park as the “working man’s lungs.”ⁱⁱ

While infectious disease is no longer the primary cause of death globally, our homes, buildings, neighborhoods, and cities continue to play an enormous role in our health outcomes and longevity.ⁱⁱⁱ Recent research on the determinants of health indicates that external and environmental factors may be responsible for up to 80-90% of our disease risks and health outcomes.^{iv} Those who are very young, elderly, disabled, or poor are particularly vulnerable to these external factors.^v In the United States, the neighborhood or county where we live can predict our life expectancy and manner of death^{vi}, and these differences persist even after adjusting for socioeconomic and demographic factors.^{vii}

Up to **80-90%** of our health outcomes depend upon the external and environmental factors in our wellness ecosystem



Source: Global Wellness Institute

A complex web of external factors (access to healthcare, socioeconomic factors, and our natural and built environments) form a “**wellness ecosystem**” that can augment or mitigate our genetic disposition for disease. **Our wellness ecosystem has a *direct* effect on our health by transmitting communicable and environmental diseases. It also *indirectly* affects our health by influencing our behaviors and lifestyles.** It can make healthy habits easy, convenient, and the “default” option – or not.

Our indoor and outdoor environments threaten our health.

Buildings can spread disease. COVID-19 has brought renewed attention to the role that buildings play in spreading communicable disease. Key transmission pathways include air transfer, high-touch surfaces, and occupant density and activity. These concerns are heightened in high-risk environments (e.g. hospitals), and high-density and shared spaces where we spend many hours or interact with many people (workplaces, schools, retail centers). Prevention measures in buildings may include windows that open to improve airflow, better ventilation systems and humidity management, and advanced antimicrobial coatings and surfaces. Spatial reconfiguration and having enough space to spread out people in homes, workplaces, schools, and shops – as well as in high-traffic areas like elevators, corridors, bathrooms, and cafeterias – may be a luxury in high-cost cities, but these features and amenities may no longer be a luxury from a public health perspective in a post COVID-19 world.^{viii}

Indoor air can make us sick. The World Health Organization identified indoor air quality and “sick building syndrome” as a health major concern over 30 years ago, and indoor air pollution can be 2-5 times worse than outdoors.^{ix} In lower income countries, the use of coal, kerosene, and biomass fuels for cooking and heating causes nearly 4 million premature deaths every year.^x In buildings around the world, people are exposed to harmful substances such as polyvinyl chloride (PVC) and phthalates, flame retardants, volatile organic compounds (VOCs), antimicrobials, bisphenol A (BPA), and nanomaterials, which are embedded in modern construction techniques, materials, and products. Sick buildings can also result from mold and fungus infestation. These issues do not receive adequate attention during normal times, but they could be deadly or cause serious health problems during extended lockdowns, when more people are confined to their homes and in indoor environments.

Poor outdoor environments are a major health risk. Air, water, soil, and food pollution have reached an epic scale, threatening human health as well as planetary health. Pollution is the largest environmental cause of disease and was responsible for 9 million avoidable premature deaths worldwide in 2015, with over 90% occurring in low- and middle-income countries.^{xi} Air pollution causes the majority of these deaths by increasing the incidences of asthma, lung cancer, heart disease, stroke, and other chronic diseases.^{xii} A recent Harvard University study found that higher rates of air pollution are correlated with higher COVID-19 deaths in the United States.^{xiii}

The built environment shapes our behaviors and lifestyles.

Make movement the default option in our daily lives. Our modern built environment is often described as obesogenic because it encourages sedentary behavior (e.g., driving over walking, taking elevators instead of stairs, etc.). In congested and sprawling urban areas, urban planning increasingly prioritizes vehicular flow over people – e.g., widening of roads, stripping of sidewalks, and high-speed roadways that are unfriendly to pedestrians and cyclists. To plan for reopening after the COVID-19 lockdown, cities will have to change the way people commute and reduce reliance on crowded public transit. Milan is beginning to reconfigure 22 miles of local streets by adding bike lanes, widening sidewalks, and lowering speed limits.^{xiv} Other major European cities, such as Paris, Berlin, Brussels, and Budapest, are making similar plans. Some of these conversions were already planned for the longer-term; COVID-19 creates an opportunity and urgency to reorient transit planning to embed more walking and cycling into daily life, with the simultaneous benefits of reducing the risks of transmitting infectious disease, encouraging active transit to reduce the risks of chronic disease, and reducing pollution.

Provide free and accessible spaces for active recreation. As modern life becomes ever more sedentary, people who want to stay active and healthy have to find time to do so in their leisure and recreation time. The private gym, health club, and fitness industry has been growing rapidly, but these facilities are only affordable and accessible to those who live in wealthier, developed countries and urban areas, and they serve less than 4% of the world's population.^{xv} Needless to say, these private indoor facilities are mostly closed during the COVID-19 lockdown. Public spaces and outdoor recreational amenities that enable physical activity are more important as ever. While people may not be able to use public swimming pools, athletic fields, and playgrounds until physical distancing requirements are relaxed, they can still exercise in parks, jogging/biking paths, hiking trails, and public squares and plazas. However, these recreational spaces need to be free and close to home. Numerous studies have shown that proximity to parks is associated with higher levels of physical activity, especially for seniors, children, and disadvantaged populations.^{xvi} The wellness benefits of recreational infrastructure extend beyond just exercise; they also support social connections and enhance mental well-being.

Use nature's power to improve mental, emotional, and physical well-being. Green spaces and contact with nature are essential for our mental, emotional, psychological, and physical well-being. Positive impacts include buffering/reduction of noise and air pollution; increased physical activity; improvements in cognitive abilities, productivity, attention, mood, and healing; as well as reduction of aggression, violence, and negative feelings.^{xvii} During the current lockdown, many people are cut off from nature, especially in large cities. Indoor natural elements such as potted plants, pictures of nature, and views of the outdoors can also have positive impacts on healing, stress, mood, and cognitive functioning.^{xviii} In a post COVID-19 world, there are opportunities to incorporate biophilic design into buildings, neighborhoods, and cities;^{xix} leverage ecological assets such as rivers, lakes, and riparian habitats to create greenways and multi-use trails in urban environments; and increase access to nature close-to-home by investing in street trees, pocket parks, and community gardens.^{xx}

Create environments that promote better sleep, rest, and stress reduction. Sleep is a cornerstone of good health, yet it is constantly compromised by issues in our built environment, including artificial lighting that disrupts circadian rhythms, a lack of natural light indoors, poor

temperature control, and noise pollution.^{xxi} When we are awake, it is often difficult to find mental respite, with a constant background of artificial sounds, lights, and distractions from traffic, airplanes, and machinery; heating and cooling systems; digital displays; and electronic noise. Architects, engineers, and urban planners can play an important role in designing built environments that encourage sleep and rest, through measures such as soundproofing and noise reduction in buildings, use of circadian lighting, urban traffic control, etc.

Design spaces that encourage prosocial behavior and a sense of community. Loneliness and social isolation are on the rise everywhere, while social trust is on the decline, and our built environment plays a major role in the fraying of communities.^{xxii} Across the world, neighborhoods and homes are increasingly segregated by income, class, race, and life stage, while our car-centric infrastructure has reduced public spaces and chances for spontaneous social encounters with neighbors. Homogenous modernist buildings, “cookie cutter” housing, and retail and entertainment districts that look alike from Shanghai to Rio de Janeiro encourage mass consumption over community, authenticity, culture, spiritual life, and connection. Yet, trust in our neighbors and strong communities are more important than ever. During times of crisis, they may be our only means of help and are vital to our survival. Neighborhoods and cities can be designed to encourage connection and community. Features such as public plazas and parks, sidewalks, mixed-use spaces, higher density, housing diversity, vernacular architecture, etc., can encourage pedestrian and street activities, public gatherings, and spontaneous meeting of neighbors. Studies show that walkability and attractive public spaces can increase trust and civic engagement.^{xxiii} Social trust – in our neighbors, local officials, and governments – is essential during the current crisis as well as in the new world that we need to rebuild after COVID-19.

Underpin healthy behaviors with good digital infrastructure. Technology is generally no substitute for face-to-face social connection, time in nature, and exercise and recreation in real physical spaces – but in the current crisis it is playing an outsized role in allowing us to engage in all of these activities virtually and remotely. Reliable, high-speed Internet underpins our ability to work or school from home, connect with friends and family via video calls, use streaming/on-demand exercise programs, shop for food online, and even visit a doctor or therapist via telehealth and teletherapy platforms. One recent study has shown that the digital divide is a key factor in compliance with stay-at-home directives during COVID-19, and those with high-speed Internet at home are better able to support these critical public health efforts.^{xxiv} Broadband Internet infrastructure is most lacking in the rural, lower-income, and marginalized communities that are already facing higher risks of economic and social distress during the current crisis.^{xxv} In short, the COVID-19 response shows that inequitable access to digital infrastructure also translates into inequitable access to wellness.

We must start to build our homes and communities on a strong wellness foundation.

Our homes and communities are essential foundations to build healthy lives, because the built environment directly and indirectly impacts our wellness. Our homes typically represent our most important personal investment and one of our largest expenditures (about 20% of all global consumer spending, or more than \$8 trillion each year).^{xxvi} Globally, over 11% of GDP (or nearly \$9 trillion in 2015) is spent on infrastructure and real estate that can shape our health.^{xxvii} Therefore, it is only logical that what we build should also be an investment that enhances rather than

reduces our wellness. As public and environmental health expert, Richard Jackson, reminds us, “the built environment is the embodiment of what we love, our imagination, and our will. It is what we value and reflects what and whom we care about.”^{xxiii}

Empower communities to lead the movement for a healthy built environment.

Our infrastructure, buildings, and homes are mostly planned and regulated at the community level. City and local officials are typically responsible for key decisions on configuration of neighborhoods; design of streets and sidewalks; zoning and location of homes, schools, workplaces, public services, and commerce; provision of recreational infrastructure and public spaces; protection of green space; and public and active transit options. The decision drivers for these costly infrastructure projects usually include economic projections, cost effectiveness, demographic models, transportation efficiency, and general quality of life – but human health is rarely considered beyond basic safety issues (e.g., preventing fires or motor vehicle accidents). Most people do not understand the enormous health impacts of our built environment: how it influences our behaviors on a day-to-day basis (e.g., our daily movements and physical activity, whether we know and see our neighbors, our contact with nature, and our trust in our community), and how it contributes to disease and premature death. Citizens, consumers, and community leaders all need to be educated about the important linkages between wellness and the built environment, because they can lead the movement toward better policies, zoning, planning, and investment decisions that will reflect our most important health and wellness priorities.

Business are key partners in building healthy places.

We need to reframe our concept of the professions, businesses, and industries that are part of our wellness and public health landscape. Urban planners, real estate developers, architects, designers, transportation planners, and the construction and building materials industries all shape the built environment that determines our health outcomes, but we do not currently think about these fields as being health-related at all. Collectively, we must shift our thinking: buildings and infrastructure are as important as immunizations; pocket parks, paths, and plants are as beneficial as prescriptions; friends and neighbors are more important than Fitbits. The professionals and industries involved in shaping our built environment and our related health behaviors should be approached as key partners for building healthy homes and communities. With wellness real estate emerging as a highly promising niche in the global real estate market, there is a strong business case for private sector partners to engage in this movement.^{xxix}

Governments can mitigate global health crises by investing in wellness-enhancing environments.

Despite ample evidence that our built environment contributes to chronic disease, mental unwellness, social disconnection, and premature death, these issues have not received adequate attention from governments. We spend trillions of dollars every year on “sick care,” and these expenditures are rising at an unsustainable pace around the world, largely trying to fix the health and wellness problems that are enabled by our living environments. Meanwhile, only 4% of global health expenditures are spent on public health, risk reduction, and prevention.^{xxx} This

lop-sided public investment calculus needs to change. Smart policies and investments in our built environment can prevent disease and improve public health and well-being. Governments can support scientific research on the health impacts of building materials and design, and must update and enforce regulations and guidelines for infrastructure, building design, construction practices, and materials in order to prioritize human health concerns. Over a century ago, governments introduced building codes, sanitation standards, and fire safety ordinances as public health measures to prevent accidental deaths/injuries and the spread of infectious diseases; today, new regulations will be needed to mitigate the spread of COVID-19 and other future epidemics. In particular, governments need to prioritize healthy design and amenities in public and affordable housing projects and marginalized communities, in order to bring the benefits of wellness-enhancing built environments to the most vulnerable and at-risk populations.

Appendix: What Is Wellness?

Wellness is a modern word with ancient roots. The key tenets of wellness as both preventive and holistic can be traced back to ancient civilizations from the East (India, China) to the West (Greece, Rome). In 19th century Europe and the United States, a variety of intellectual, religious, and medical movements developed in parallel with conventional medicine. With their focus on holistic and natural approaches, self-healing, and preventive care, these movements have provided a firm foundation for wellness today. Wellness-focused and holistic modalities have gained more visibility since the 1960s/1970s under the writings and thought leadership of an informal network of U.S. physicians and thinkers (such as Halbert Dunn, Jack Travis, Don Ardell, Bill Hettler, and others). As these have evolved, proliferated, and gone mainstream, they have informed the healthy-living, self-help, self-care, fitness, nutrition, diet, and spirituality practices that have become a flourishing wellness movement in the 21st century.

The Global Wellness Institute (GWI) defines wellness as: ***the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health.***

There are two important aspects to this definition. First, wellness is not a passive or static state, but rather an “active pursuit” that is associated with intentions, choices, and actions as we work toward an optimal state of health and well-being. Second, wellness is linked to holistic health – that is, it extends beyond physical health and incorporates many different dimensions that should work in harmony (see figure).

Wellness is an individual pursuit – we have self-responsibility for our own choices, behaviors, and lifestyles – but it is also significantly influenced by the physical, social, and cultural environments in which we live.

Wellness is often confused with terms like health, well-being, and happiness. While there are common elements among them, wellness is distinguished by not referring to a static state of being (i.e., being happy, in good health, or a state of well-being). Rather, wellness is associated with an active process of being aware and making choices that lead toward an outcome of optimal holistic health and well-being.



Wellness Is Multidimensional

Physical: Nourishing a healthy body through exercise, nutrition, sleep, etc.

Mental: Engaging the world with the intellectual mind.

Emotional: Being aware of, accepting, and expressing our feelings, and understanding the feelings of others.

Spiritual: Searching for meaning and higher purpose in human existence.

Social: Connecting and engaging with others and our communities in meaningful ways.

Environmental: Fostering positive interrelationships between planetary health and human actions, choices, and wellbeing.

Endnotes

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