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Build Well to Live Well: The Future

JUNE 2025

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EMPOWERING WELLNESS WORLDWIDE

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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.

www.globalwellnessinstitute.org

About the Authors

Build Well to Live Well: The Future was prepared by Katherine Johnston and Ophelia Yeung. As GWI's principal researchers, they have defined and measured the size of the global wellness economy and its sectors over the last eighteen years. They were assisted in this effort by Tonia Callender and Joanne Hopkins. Together, this team brings many decades of experience conducting research, impact assessments, and strategy development for countries, regions, industry consortia, companies, and non-profit institutions around the world.

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Wellness Real Estate Resources

Wellness Real Estate Market Size Data

Updated market size data for the wellness real estate sector (global, regional, and country-level numbers) are published each year in GWI's ***Global Wellness Economy Monitor***. For the latest data, see: https://globalwellnessinstitute.org/industry-research/the-global-wellness-economy/.

Wellness Real Estate In-Depth Analysis

GWI's 2025 ***Build Well to Live Well*** is a two-part series:

- ***Build Well to Live Well: The Future*** (this volume).
- ***Build Well to Live Well: Case Studies*** (forthcoming).

GWI's first report on Wellness Real Estate, ***Build Well to Live Well***, was published in 2018. See: https://globalwellnessinstitute.org/industry-research/wellness-real-estate-communities-research/.

GWI's 2020 White Paper, ***Resetting the World With Wellness: Healthy Built Environments for Healthy People***, describes how our unhealthy built environment can cause both chronic and infectious diseases like COVID-19, and it elaborates on the roles that communities, businesses and governments can play in building healthier homes and communities for healthier people. See: https://globalwellnessinstitute.org/industry-research/resetting-the-world-with-wellness/.

Wellness Policy Toolkits

GWI's ***Wellness Policy Series*** is a compilation of nine reports, which aim to define wellness policy, articulate why it is needed, and provide a framework and set of strategies for implementing wellness policies across many domains of wellness. For more information, see: https://globalwellnessinstitute.org/wellness-policy-series/.

- Three policy toolkits have already been released, and each one addresses some aspects of the built environment: ***Physical Activity Toolkit*** (2023), ***Wellness In Tourism Toolkit*** (2024), and ***Mental Wellness Toolkit*** (2024).
- A policy toolkit on ***Wellness in the Built Environment*** will be released in the future.

GWI Initiatives

GWI hosts two industry-led initiatives related to wellness real estate and the built environment. These are led by industry thought leaders and release their own white papers, trend reports, webinars, and other resources. For more information, see:

- **Wellness Communities & Real Estate Initiative:** https://globalwellnessinstitute.org/initiatives/wellness-communities-real-estate-initiative/
- **Wellness Architecture & Design Initiative:** https://globalwellnessinstitute.org/initiatives/wellness-architecture-design-initiative/

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Report Highlights

Build Well to Live Well: The Future is a deep-dive exploration of the wellness real estate market. It aims to support the industry and its stakeholders to prepare for a future where wellness real estate can be implemented on any scale (from a single home to an entire neighborhood), can meet the needs of diverse residents/occupants, and can be delivered at many price points. This report is a full update of GWI's pioneering 2018 wellness real estate report.

Updated market size and growth projections.

We estimate that wellness real estate reached a global market size of $548.4 in 2024, which is 17.9% larger than in 2023. Wellness real estate now represents about 3.3% of global annual construction output. The wellness real estate market has grown by 19.5% annually over the five-year period from 2019-2024, as compared to a 5.5% average annual growth rate for overall construction. We project 15.2% annual growth over the next five years, with the market increasing to a projected $1,114.0 billion by 2029.

What are some important shifts over the last decade?

Wellness real estate is a fast-moving and dynamic market. It is expanding into every real estate asset class and into every region of the world – from North America, Europe, and Australia to Asia, the Gulf countries, and some parts of Latin America (Brazil, Mexico). In the residential space, wellness real estate is spreading from the luxury market into affordable housing, student housing, senior living, and more. Projects are increasingly embracing a multidimensional concept of wellness, incorporating new knowledge on how both the built and natural environments affect our social, mental, and physical health and well-being. Wellness real estate is no longer the domain of one-off "passion projects" and is increasingly undertaken by larger, professional development companies, some of which are adopting a "wellness lens" for their entire portfolio. Green building and healthy building are increasingly overlapping, and green certifications have broadened to incorporate criteria on human health and social sustainability. The growth of ESG investing, alongside the expansion of wellness building certifications like WELL and Fitwel, have helped to fuel the explosive growth of this market.

Why does wellness real estate matter?

The built environment is the next frontier and the greatest future opportunity for wellness. Our built environments have a profound influence on our health and well-being (an impact that is often negative), and these impacts have become more obvious since the COVID-19 pandemic. The rise of wellness as a dominant consumer value is driving trillions of dollars of spending across every product and service category, with the wellness economy estimated by GWI at $6.3 trillion in 2023. Worldwide, nearly 15% of GDP (or over $16.5 trillion in 2024) is spent on construction every year, building our workplaces, homes, schools, hospitals, roads, and infrastructure. Housing is one of the largest household expenditures worldwide (representing about 20% of all global consumer spending, or $12 trillion in 2024) in addition to being our biggest financial investment. It is only logical that what we build should also be an investment in our health and well-being.

What Is Wellness Real Estate and How Do You Build it?

The Global Wellness Institute defines wellness real estate as:

Built environments proactively designed, built, and operated to support the holistic health of occupants, visitors, and the community.

Six Dimensions of Wellness Real Estate

Wellness real estate projects must be designed and built in a manner that facilitates and optimizes their occupants' health and well-being across multiple dimensions of wellness. Many different design features, infrastructure, amenities, and services can be used to support each dimension.

Physical

- Movement & exercise
- Food & nutrition
- Prevention & healthcare
- Environmental exposures & comfort
- Mobility & accessibility
- Safety & Security

Mental & Spiritual

- Nature
- Rest, solace, & sleep
- Spiritual traditions, purpose, & meaning
- Beauty, awe, & delight
- Designed to reduce daily friction
- Work-life balance & lifelong learning

Social

- Prosocial design
- Diverse & integrated housing
- Spaces for socializing & connecting
- Tech-based connectivity

Financial & Economic

- Affordability & equity
- Lower transit costs
- Access to education
- Access to employment
- Entrepreneurial support

Environmental

- Building technologies & methods
- Earth-friendly & climate adaptive
- Energy practices
- Water & waste practices
- Biodiversity

Civic & Community

- Local history, heritage, & culture
- Inclusion & diversity
- Openness & public services
- Engagement, participation, & governance
- Regeneration & renewal

Source: Global Wellness Institute

Six Guiding Principles for Wellness Real Estate

We outline six key principles that can be used to guide the development of wellness real estate from the ground up. These principles encourage developers and builders to think holistically about how health and wellness can be addressed and supported across every aspect of the development process.

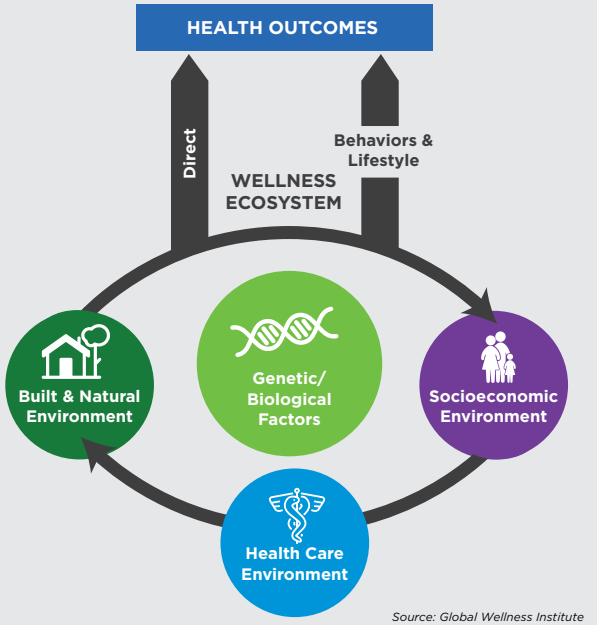
1. **From small to large scale:** Wellness can be incorporated into any size, scale, and type of building or project, and at any price point.
2. **From intentional to multidimensional:** Wellness real estate should be intentional, starting at the early stage of the planning process; it should use a multidimensional and holistic approach.
3. **From "do no harm" to optimizing wellness:** Our built environments should not be unhealthy or unsafe; they can also leave us feeling better than before we entered them.
4. **From passive to active wellness:** Our built environments can affect our health simply by existing within a space; they can also encourage the proactive behaviors that drive wellness.
5. **From infrastructure to operations:** Wellness should be embedded in the infrastructure and not just an amenity; it should also be activated through ongoing operations and programming.
6. **From "me" to "we":** Apart from catering to individual wellness needs, wellness real estate recognizes that connections and community are central to our well-being.

The Wellness Case.

The built environment is an essential foundation for building healthy lives. At its best, wellness real estate can minimize the environmental impacts on our health, support healthier behaviors and lifestyles, and improve access to wellness infrastructure for the most vulnerable populations. Occupants of wellness real estate projects have reported many positive impacts, including: more physical activity, better sleep, lower rates of chronic disease, reduced hospital admissions, reduced symptoms of asthma, reduced sick days at work, lower crime rates, more time spent in nature, improved self-reported well-being, better memory and cognitive function, more interactions with neighbors, and a greater sense of belonging and connection.

The Wellness Ecosystem

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



Source: Global Wellness Institute

The Business Case.

Wellness real estate not only improves its occupants' health and well-being, but is also good for the bottom line. Developers, investors, owners, consumers, and occupants have demonstrated a strong interest in wellness real estate and the willingness to pay for it. Wellness-focused residential properties can command a price premium of 10-25% (for properties positioned at the middle and upper ends of the market), while commercial buildings have demonstrated a 4.4-7.7% rental premium per square foot. For most developers and companies, the motivation for and value of investing in wellness real estate comes not from short-term financial payoffs, but rather from the intangible, longer-term market value of "doing the right thing" for occupants/users. Many other economic benefits have been documented by wellness real estate projects, including: faster sales, longer leasing terms, lower turnover, higher tenant/resident satisfaction, and higher asset values. In commercial real estate, wellness features support higher employee productivity and performance; reduced absenteeism and presenteeism; and improved retention and recruitment.

Innovating the Future of Wellness Real Estate.

There are many unmet needs across the world, which present important opportunities for ongoing development in the wellness real estate market. With new thinking, creativity, and innovations in addressing these global, macro-level challenges and themes, wellness real estate can provide wider benefits to more people and meet the needs of the future.

- **Climate adaptation and resilience.**
- **Earth-friendly and sustainable living.**
- **Innovations to improve the construction process and home supply.**
- **Healthy homes for the non-rich.**
- **Wellness-centric urban regeneration.**
- **From healthcare clusters to healthy communities.**
- **Improving healthspans and thriving in aging.**
- **Diversifying co-living models.**
- **Building healthier food environments.**
- **Embracing the benefits of nature.**
- **Improving sensory environments with neuroarchitecture and the arts.**
- **Infusing wellness into travel and tourism infrastructure.**

Introduction

In 2018, the Global Wellness Institute (GWI) released *Build Well to Live Well*[1], a pioneering report that provided a unifying framework for defining wellness real estate, as well as the first-ever quantification of this market by regions and countries. Since then, wellness real estate has become the fastest growing sector within the $6.3 trillion global wellness economy.[2] The COVID-19 pandemic has given this sector a powerful boost. Finally, people have a greater awareness of the importance of indoor air, outdoor recreation, social connections, access to nature, stress management, sleep, and many other aspects of daily living that are shaped by our built environments. Demand for wellness real estate is rapidly accelerating, as consumers seek out healthy places to live, to raise their families, and to age with a longer healthspan. Businesses and employers are increasingly interested in spaces where their workers and occupants can be the most productive, engaged, and happy.

As a result, the wellness real estate industry has grown significantly, innovating and pioneering many design and technology innovations. Even governments are supporting these efforts, seeing that wellness real estate aligns with their public policy objectives of building healthy, sustainable, vibrant, and resilient cities and communities. Standards, guidelines, certification systems, and consultants have proliferated to facilitate these efforts. **The confluence of these developments means that wellness real estate is poised to go from niche to mainstream**. At the same time, **many needs have yet to be addressed in the current market**, including our rapidly changing demographics (aging populations, single person and shrinking households), our rising climate risks (wildfires, storms, floods, droughts, rising temperatures),

our challenging economic realities (housing shortages, lack of affordability), and our increasing social disconnection (manifesting in civic disengagement). There is still a broad misconception that wellness real estate is the domain of luxury homes or hospitality-adjacent properties, or that it must include the latest "hot" amenities. While these misunderstandings persist, the sector will continue to encounter missed opportunities and unrealized potential.

This updated *Build Well to Live Well* report aims to support the industry and its stakeholders to prepare for the future of wellness real estate – **where it can be implemented on any scale (from a single home to an entire neighborhood), can meet the needs of diverse residents/occupants, and can be delivered at many price points.** After a decade of rapid growth, there are now numerous examples of wellness real estate projects done well, as well as plenty of projects that just amount to "well-washing" or a mindless check-the-box exercise. It is time to look at what we have learned and to update and articulate the guiding principles behind wellness real estate, so that more projects can embrace it and realize its potential. **We need all stakeholders to understand what wellness real estate is, why we need more of it, how to build and operate it, and the best way to communicate its business case and its health benefits.** These stakeholders include consumers, investors, financiers, developers, designers, architects, building industry professionals, educators, and policymakers. We hope that this report enables readers to become more informed advocates, practitioners, and users of wellness real estate.

What is and is not in this report.

Build Well to Live Well is a two-part series:

Build Well to Live Well: The Future (this volume) is a full update and refresh of our original 2018 report, exploring the state of the wellness real estate market both now (in 2025) and into the future. The report covers the following topics:

- **Chapter 1: Why Does Wellness Real Estate Matter?** Makes the case for why we need wellness real estate.
- **Chapter 2: What Is Wellness Real Estate and How Do You Build it?** Provides a concise definition and a conceptual framework for how to envision, plan, design, and execute wellness real estate.
- **Chapter 3: The Business Case.** Presents the explosive growth of the wellness real estate market globally; illustrates with metrics why wellness real estate makes financial sense for developers, investors, and businesses.
- **Chapter 4: The Wellness Case.** Articulates the tangible health and well-being benefits that wellness real estate brings to its residents/occupants, to communities, and to society.
- **Chapter 5: Innovating the Future of Wellness Real Estate.** Explores the most pressing macro trends and market needs for the future, and how wellness real estate can address them.

Build Well to Live Well: Case Studies (a companion report to this volume) presents a collection of in-depth case studies, which illustrate a wide range of wellness real estate projects across different regions, different types and sizes of properties, and different target markets. We hope that these case studies will spark creative thinking about the many ways in which wellness real estate can be envisioned and built.

In this report you will not find checklists or criteria to "qualify" what is or is not wellness real estate. As noted in *Chapter 2*, many certifications and rating systems already exist for this purpose. Importantly, there are many pathways to wellness real estate. We aim to provide a rigorous framework for understanding, conceptualizing, planning, designing, developing, and operating wellness real estate, so that it can be done intentionally, thoughtfully, and holistically. There is ample room within this framework for customization, creativity, and improvisation, so that each project can address its own specific site characteristics and the unique wellness needs and priorities of its target occupants and users.

As a fully updated version, ***Build Well to Live Well: The Future*** is meant to replace our original 2018 report. The major new addition in 2025 is the companion volume with in-depth case studies. Some sections of the 2018 report no longer appear in this updated report (e.g., the chapter on regional trends, the detailed pipeline list, and some of the appendices). For readers who would like to consult those resources, we invite you to refer to the 2018 *Build Well to Live Well* report.

This report is mainly written for private sector stakeholders interested in wellness real estate (developers, builders, investors, businesses, etc.), and it focuses on the opportunities in this rapidly growing sector of the building and real estate industry. Public policy also plays an essential role in shaping the built environments that underlie wellness real estate: zoning, building codes, public transit, sidewalks, street trees, parks and recreation infrastructure, air quality, water supply, and more. The many public policy domains that underpin wellness in the built environment will be explored in the forthcoming *GWI Wellness Policy Toolkit: Wellness in the Built Environment*, which is part of the *Wellness Policy Series* launched by GWI in 2022.[3]

Endnotes

[1] Yeung, O., and Johnston, K. (2018). *Build Well to Live Well*. Miami, FL: Global Wellness Institute. https://globalwellnessinstitute.org/industry-research/wellness-real-estate-communities-research/.

[2] GWI wellness economy estimates as of 2023. See: Johnston, K., Yeung, O., et al (2024). *Global Wellness Economy Monitor 2024*. Miami, FL: Global Wellness Institute. https://globalwellnessinstitute.org/industry-research/2024-global-wellness-economy-monitor/.

[3] For more information on GWI's wellness policy series, see: https://globalwellnessinstitute.org/wellness-policy-series/.

CHAPTER 1

Why Does Wellness Real Estate Matter?

Investment in real estate should be an investment in wellness.

The concept that the built environment influences our health is not new. Our modern building, infrastructure, and urban planning approaches have been shaped by the imperative to address safety, sanitation, and infectious disease, since the early days of urbanization. One hundred years ago, outbreaks of cholera, tuberculosis, and yellow fever were brought under control through deliberate environmental design changes that addressed haphazard development, overcrowded tenements, pest infestations, waste-filled streets, and contaminated water supplies. As a result, infectious disease is no longer the primary cause of death around the world, instead replaced by chronic disease. According to the World Health Organization, noncommunicable diseases accounted for 75% of all non-pandemic-related deaths globally in 2021, and 80% of these premature deaths were due to just four chronic conditions (heart disease, cancer, respiratory disease, and diabetes).[1] The medical, economic, social, and human costs associated with these chronic diseases have escalated to a level that is unsustainable. Many of these chronic conditions are caused or aggravated by our living environments and our lifestyles (e.g., physical activity, diet, stress, loneliness) – factors that are inextricably linked to the built environment.

The COVID-19 pandemic brought a profound shift in how we look at the places and spaces where we live, work, and play. It reminded us, in the starkest way, how environmental factors like poor ventilation can literally spread a deadly disease. Long periods of lockdowns, working and studying from home, social distancing, and related mental distress have awakened modern populations to the built environment features that are so vital to our personal and societal health and well-being, such as:

- Good ventilation and healthy indoor air.
- Quiet spaces to work, study, think, and rest.
- Natural light and views of nature when we are indoors.
- Spaces that enable restful sleep.
- Access to outdoor recreation and exercise facilities.
- Proximity to nature for respite and mental wellness.
- Walkability and access to public transit.
- Safe public spaces for social interactions and community.
- Access to fresh and healthy foods.

Wellness real estate matters because the built environment is the next frontier and greatest future opportunity for wellness. As an industry, wellness real estate sits at the nexus of several massive spending categories. Market studies across all regions of the world have found that health and wellness continue to rise as a dominant consumer value, driving decisions across every product and service category. This shift is driving trillions of dollars in consumer spending on wellness services, products, and experiences every year. As individuals, our homes typically represent our most important personal investment. Whether we rent or own our homes, housing is one of our largest household expenditures, representing about 20% of all global consumer spending, or more than $12 trillion in 2024.[2] Worldwide, nearly 15% of GDP (or over $16.5 trillion in 2024) is spent on construction every year[3] – building our workplaces, homes, schools, hospitals, streets, highways, and all the other places where we live our lives. Therefore, it is only logical that what we build should also be an investment in our health and well-being.

Our unhealthy built environments have a negative impact across every dimension of wellness.

The last hundred years have brought great advances in technology, construction, city planning, and infrastructure. Advances in engineering and materials science allow us to build ever taller, safer, cheaper, and more modern structures and ever denser cities. Sophisticated automobiles and vast highway systems now take us anywhere we want to go. Our homes are replete with comforts and conveniences, from air conditioning and automatic dishwashers to televisions, on-demand video, and smart-home automation. These advances have brought great benefits, but they have also inflicted significant costs. Today, our greatest health risks are our sedentary lifestyles, lack of physical activity, poor diet, stress, social isolation, alienation, inequality, polluted environment, climate change, and uneven access to healthcare.

Research has shown that up to 80-90% of our disease risks, health outcomes, and longevity depend on environmental and lifestyle factors rather than our genes (*see Chapter 4*). Our health and well-being are intimately tied to where we live and how we live. And yet, when we look around, so much is unwell in our community environments. The ways our homes, offices, and neighborhoods have been planned, designed, and built over the last century have been reinforcing lifestyles that make us sick, stressed, alienated, and unhappy. As described below and in *Figure 1.1*, our built environments have negative impacts on our behaviors, lifestyles, and health outcomes across every dimension of wellness – and these extend from the individual and family level to our communities and society as a whole.

Physical Unwellness

An unhealthy built environment can make us physically sick. The global rise of asthma, lung cancer, cardiopulmonary disease, and other chronic conditions has been traced directly to air pollution. Indoor air can be just as dangerous as outdoor, as the COVID-19 pandemic has tragically demonstrated. Potential harm extends to poor water quality, as well as toxic building materials and sick building syndrome. Our physical health is also shaped by the design of our living environments, which all too often discourage us from healthy behaviors. Indoors, most modern buildings have been designed for efficiency over movement, placing elevators prominently in lobbies while hiding narrow and dark stairways. In cities, urban sprawl, congestion, a lack of investment in public transit, and auto-centric zoning/planning policies that separate homes from daily activities (work, school, friends, recreation, shopping, etc.) create car dependency and encourage sedentary lifestyles. In many countries, fewer children are walking or biking to school. Millions of people around the world do not have access to parks or sports/recreational facilities near their homes. A growing number of people (especially the urban poor) now live in "food deserts" where grocery stores and outlets selling fresh healthy foods are scarce or nonexistent, and "food swamps" where fast-food and packaged/convenience foods are everywhere.

Mental & Spiritual Unwellness

Mental well-being is on the decline across the world, triggered by multiple stressors: a lack of space and time; pressures from work, school, family, money, and relationships; social media and digital overload; economic insecurities; and sometimes, physical safety. With the continued decline in church attendance and increasing secularization, the human need for a sense of belonging and greater purpose is also in crisis. Our built environments often aggravate these stressors and dampen our resilience. In sprawling cities, many working people suffer from long and difficult commutes, which increase their stress while robbing them of time for family and friends, rest, exercise, and leisure. In congested urban areas, the noise from traffic, construction, and other people can make it difficult to find mental respite. Sound pollution, light pollution, and constant digital stimulation can raise our stress levels, affect our sleep, and bring negative physical health impacts. Nature, green and open spaces, recreational spaces, and places for quiet contemplation are often scarce for city dwellers, especially in marginalized neighborhoods.

Social Unwellness

Humans are social beings, and yet more people are living alone than ever – with fewer and later marriages, declining birthrates, higher divorce rates, and longer lifespans. Although the evidence to support a global "loneliness epidemic" is mixed, many populations around the world feel they are losing their social support and connection with others. For decades, our cities and communities have been designed in a way that encourages social isolation for people of all ages, by erasing public spaces, walkability, transit options, and chances for spontaneous and casual connections with neighbors and strangers. Car-dependent lifestyles, traffic, and long commutes are associated with fewer social connections and lower social trust for working adults. Children who depend upon their busy parents to drive them to every social activity may have few chances to see their peers outside of school. Seniors living in neighborhoods that are unwalkable and that lack public transit suffer reduced mobility and greater isolation. Inside our homes, the proliferation of social media and technology encourages our retreat into private quarters and away from community life and in-person social encounters.

Civic & Community Unwellness

The participation and engagement of citizens in civic activities and public life are in decline, eroding the health and strength of communities. Around the world, these changes are evident in the declining rates of voting, volunteering, participating in local organizations, and staying informed about public issues. Civic wellness is important because it encourages collaboration among community members and participation in community decision making, and it helps to build a more supportive and resilient society. Alarmingly, research points to a worldwide decline in social capital, with decreasing trust in governments, institutions, fellow citizens, neighbors, and strangers. In some regions, zoning laws and fine-grained market segmentation of new housing (by type, size, price, etc.) have increasingly segregated people by income, social class, race, and stage of life (e.g., urban professionals, families with young children, seniors). Meanwhile, the rise of social media further divides people by their opinions, interests, and political parties, making them less tolerant of others who are unlike themselves. 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, and spiritual life. In so many places, we have lost the neighborhoods that once provided us with a sense of community and encouraged active participation in civic life.

Environmental Unwellness

Environmental degradation is a major threat to human health and well-being. Air, water, soil, and food pollution have reached an epic scale and show no signs of abating. Pollution is the largest environmental cause of disease and is responsible for nine million avoidable premature deaths every year, corresponding to one in six deaths worldwide.[4] Our carbon-dependent built environments and lifestyles are leading to global climate change and increased risks of natural disaster, already bringing catastrophic events to regions around the world. Extreme heat, destructive storms, droughts, floods, and wildfires are becoming impossible to ignore and are a major threat to our comfort, safety, and financial investments in our homes, workplaces, and neighborhoods. The construction and building sector is a major part of the problem; it is by far the largest emitter of greenhouse gases and accounts for 37% of total carbon emissions globally.[5]

Economic & Financial Unwellness

Well-being begins with meeting the basic human needs of food, shelter, and safety. On an individual level, there is no wellness without secure housing and a certain degree of financial and personal security. On a community level, economic wellness means opportunities for employment and entrepreneurship, and pathways for local people to access them. Unfortunately, income and wealth inequality has grown rapidly in recent decades, with the pandemic delivering an extra economic shock to many regions. Homes have become increasingly unaffordable all around the world, and the rise of Airbnb and short-term rentals has created extra housing pressures in many popular cities, driving out existing residents. In the United States, nearly half of the 42.5 million renter households are "cost-burdened," meaning that they spend more than 30% of their incomes on housing.[6] Land use and zoning restrictions that limit density or exclude affordable housing can further exacerbate shortages. Car-centric neighborhoods that lack walkability and adequate public transit can add the burden of car ownership for residents, on top of other financial pressures.

Figure 1.1

The Costs of Our Unwell Built Environment Are Staggering

Physical

- Physical inactivity will lead to **500 million** new cases of preventable non-communicable diseases globally by 2030.
- **6.7 million** premature deaths annually are associated in indoor and outdoor air pollution.
- **39 million** Americans live in neighborhoods with inadequate food access.

Mental & Spiritual

- More than **one-third** of adults globally experienced worry or stress the previous day.
- People living in Asian cities have less than **15%** exposure to green space (on a scale of 0-100%).
- **20-50%** of European city residents are exposed to noise levels considered harmful to health.
- **99%** of Americans and Europeans live under sky glow light pollution.

Social

- **24%** of the global population feels "very" or "fairly" lonely.
- **One in four** older adults globally experience social isolation.
- **330 million** adults globally will go as long as two weeks without speaking with a family member or friend.
- The number of single person households is projected to reach **580 million** by 2030, or **1 in 4** households globally.

Civic & Community

- Only **63%** of people trust their neighbors.
- Only **41%** of people trust their government leaders.
- **65%** of people say the lack of civility and respect is the worst they have ever seen.
- **One in five** Americans live in communities with no access to public or private community gathering spaces.

Environmental

- There were **26.8 million** displacements due to weather-related disasters in 2023.
- Climate change is expected to cause **250,000** additional deaths every year from 2030-2050.
- More than **1.7 billion** people globally use a drinking water source contaminated with feces.
- The construction and building sector accounts for **37%** of total carbon emissions globally.

Economic & Financial

- **100 million** people worldwide are homeless.
- **One in four** people live in conditions harmful to their health, safety, and prosperity.
- Childhood poverty is linked to chronic disease in adulthood.
- Nearly **half** of American renter households are cost-burdened, spending more than **30%** of their incomes on rent.

Data aggregated by the Global Wellness Institute; see the list of sources at the end of this chapter.

Many movements – past and present – have sought to create better places to live.

The human desire to create better places to live is not new. Since the 19th century (and even earlier), dozens of planning, building, and design movements have attempted to address problems in our homes and communities or to create places that address specific lifestyle needs and interests (*see Figure 1.2*). Aspects of these movements have informed and shaped the myriad styles of wellness real estate that have emerged in the 21st century.

Intentional communities bring together like-minded people to create a lifestyle and community around shared beliefs and values, often religious, social, or political.[7] These have been in existence for centuries, dating from the oldest religious communities (e.g., monasteries, ashrams, Shaker villages, Hutterite colonies) to the 19th and 20th century attempts to create social, political, and alternative communities and utopian societies (e.g., ecovillages, socialist and egalitarian communes like Germany's *Kommuja*, or agricultural cooperatives like Israel's *kibbutzim*). More recently, there is growing interest – among both younger and older generations – in cohousing and cooperative living arrangements that address rising living costs, environmental/resource concerns, social isolation, and other travails of modern life. Newer models of co-living target digital nomads and remote workers, a shift that has accelerated since the pandemic. While intentional communities often involve purpose-built living spaces, they are less about the physical real estate and more focused on sharing resources, responsibilities, and interests; creating a community of peers; and/or creating a holistic way of life.

For hundreds of years, people have created **wellness getaways and resorts** as places to visit for rest and recuperation. From the ancient Roman bath complexes, to the flourishing 18th-and 19th century European spa towns and sanatoria, to the thriving modern-day *onsen* and hot springs resorts of Japan and China, many of these resorts and communities were built around unique natural and environmental features (e.g., thermal/mineral waters, therapeutic muds/caves, unique climatic conditions) as well as local healing traditions. The growth of modern destination spas and wellness resorts since the mid-20th century is tapping into our intensifying need to get away from everyday stress and unhealthy daily lifestyles. A growing number of resorts are adding residences for people who want to access their amenities and programs more frequently than just on vacation. These offerings tend to be small-scale and focus on the luxury, second-home buyer – but their growth (alongside the growth of wellness tourism/getaways in general) signals the rising demand for integrating wellness and recreational amenities and resources more into our daily lives.

While early examples of city planning can be found around the world, Sir Ebenezer Howard is credited with introducing the modern concept of **planned communities** in England at the turn of the 20th century. Responding to the ills of the industrialized cities of the time (poverty, overcrowded slums and tenements, lack of sanitation, lack of nature, etc.), Howard's Garden City concept, alongside Daniel Burnham's City Beautiful movement, gave way to the modern urban planning discipline; the development of zoning and building codes; 20th century experiments in urban renewal (e.g., Le Corbusier's modernist Radiant City concept, Robert Moses' urban infrastructure projects); the post-WWII New Towns movement; and the proliferation of modern, planned, low-density, car-dependent residential suburbs.[8] Today, we see the development of sophisticated suburban and exurban master-planned communities with extensive amenities, many of which are designed to attract residents looking for specific lifestyle features (e.g., golf communities, family-friendly and gated communities) or cater to specific demographic groups (e.g., age-restricted and retirement communities). Some of these historical planning concepts persist today, especially in the United Kingdom, with government investments in new "Garden Villages" and "Garden Communities" over the last decade.[9]

Suburbanization, planned communities, and urban planning in the 20th century have been blamed for many of the unhealthy features of our modern living environments. Yet, these movements have also germinated promising new approaches for building better places. Inspired by influential urban thinkers and activists like Lewis Mumford, Jane Jacobs, William Whyte, Jan Gehl, and others,[10] **New Urbanism** emerged in the 1980s and 1990s from a group of developers and architects who sought to reinvent traditional city design for the modern era and revive the lost art of placemaking. New Urbanism and its many offshoots (sustainable urbanism, landscape urbanism, tactical/lean urbanism, missing middle housing, etc.) espouse a return to more compact, connected, livable communities that are characterized by walkability, transit-oriented development (TOD), mixed-use, diversity (of buildings, functions, price points, etc.), "traditional neighborhood design" (TND), vibrant public spaces, and human-centered and environmental approaches to planning. From the first fully New Urbanist town of Seaside, Florida, in 1981, there are now thousands of New Urbanist communities and projects worldwide (both new builds and redevelopment/infill), which offer important approaches and lessons learned on how to build healthier and happier places to live.[11]

Many other **design-driven movements** have emerged among architects, designers, and planners in response to the shortcomings of today's living environments. Most focus on the building, project, or property scale and address targeted issues or populations – for example, the need to encourage physical activity (active design[12]); the need for people to reconnect with nature (biophilic design[13]); the desire for spiritual connections and harmony (feng shui, vastu shastra, sacred geometry); the need to address the physical/built environment challenges for persons with disabilities (universal/barrier-free/inclusive design[14]); and the need to address the physical challenges of aging (trans-/multi-generational design[15]). These design movements provide an important toolbox of concepts and approaches that can be used together to work toward a more holistic concept of healthier building that simultaneously meets our physical needs and encourages mental well-being.

The **green/sustainable building movement** has gone from niche to mainstream over the last 30-40 years, stimulating a host of new technologies, tools, and approaches that address how buildings are designed and constructed, what materials are used, energy efficiency, independence from fossil fuels, reduction of emissions and waste, and better management of natural resources (land, water, etc.).[16] Many tools, standards, and rating/certification systems provide concrete, science-based guidance on how to reduce the environmental impacts of our built environment (e.g., LEED, BREEAM, Energy Star, DGNB, Passive House, and many others; *see Chapter 2*). More stringent environmental standards are slowly being adopted into building codes in countries around the world. Meanwhile, newer models are shifting from the "do no harm" mentality toward living, regenerative, and adaptive buildings that seek to restore and improve the natural environment (e.g., Living Building Challenge). Environmentalism is also bringing new approaches in community and city design, from the development of ecovillages and eco-cities, to community-level standards such as One Planet Living and LEED-ND.

Related to environmentalism, the grassroots **food movement** reflects our growing awareness of what and how we eat, where our food is sourced, and how it is produced. It has important consequences for both wellness and the built environment – for example, the deep connections among farming practices, land use, and environmental and health impacts; concerns about "food deserts," food insecurity, and food equity; as well as the rapidly rising interest in organic and local foods, slow food, farm-to-table, and the social side of food and eating. We now see these trends infused into real estate development, neighborhood/community design, and urban planning in the proliferation of backyard, urban, and community gardens; community-sponsored agriculture programs; farmer's markets, food halls, and public markets; and even the development of food and agriculture-focused agrihoods and agro-communities.[17]

We must not forget the role of government in shaping where and how we live. A variety of city and regional-level **public policy and planning movements** are applying new tactics, technologies, programs, and policies to respond to the many challenges of today's living environments. Most regions have policies to promote affordable and/or public housing for those living below the average local income. Many local governments have launched public-private initiatives to address chronic disease and improve health outcomes, and there are many iterations of healthy city initiatives, such as the WHO's regional Healthy Cities Networks, Alliance for Healthy Cities, Blue Zone communities, Bloomberg's Partnership for Healthy Cities, or NHS England's Healthy New Towns. Many regions are focusing on building city resilience in the face of economic, climate, and terrorism threats (e.g., Resilient Cities Network). Many cities are harnessing technology to improve resource and infrastructure efficiency, mitigate risks, and deliver better services (e.g., smart cities, conscious cities). Additionally, many jurisdictions are adopting new zoning and land-use policies to allow for more diverse and smaller housing types, as well as the design of complete communities (in areas of previously single-use zoning), enabling the integration of housing, work, retail, healthcare, and other services. These movements are making great strides in addressing public health risks, rationalizing planning, instilling civic pride, building social capital, and creating better-functioning neighborhoods and cities.

The ever-accelerating rate of **technological innovation** has brought ever-increasing levels of comfort, convenience, health, and connectivity to our homes and neighborhoods. In the early-/mid-20th century, the rise of modern sanitation, electricity, and central heating/cooling improved public health and safety, while the proliferation of new household appliances (e.g., electric vacuum, refrigerator, washing machine, etc.) freed us from the drudgery of domestic chores. Simultaneously, the rise of automobiles and highways brought a revolution in individual mobility and convenience, enabled suburbanization and sprawl, and has transformed the way we build our homes and cities over the last hundred years. The Information Age has brought intense, 24/7 connectivity, changing our concept of "community" and blurring the lines between physical and virtual connection. One hundred years ago, advances in industrial materials and engineering brought the modern skyscraper. Today, we are just beginning to understand how the synthetic and natural materials, light, sound, and other features in our built environment affect our personal and planetary health. Modern materials and building sciences are now giving rise to newer health-enhancing and earth-friendly materials, systems, and furnishings for our homes (e.g., paint that cleans the air, lighting that changes our mood and fosters sleep). The current wave of technological adoption – smart homes, robotics, self-driving cars, artificial intelligence, augmented reality, virtual reality, and much more – will continue to transform the very nature of our built environment, how we live in physical and virtual spaces, and how we connect with other people.

We cannot talk about wellness real estate without crediting the **modern wellness movement**. The core of wellness is a holistic, multidimensional, and proactive approach to health and well-being. While the concepts and practices underlying wellness date back thousands of years, these "alternative" approaches were largely sidelined in developed and Westernized societies with the advent of allopathic medicine. Starting in the 1960s/1970s, the modern wellness movement has reintroduced and popularized the understanding that our health is holistic and multidimensional (physical, mental, social, spiritual, etc.). The wellness movement has brought many traditional/indigenous practices to the Western world (e.g., meditation, yoga, Traditional Chinese Medicine, herbal supplements), as well as revived these practices in their originating countries. The concept of mind-body connection and the mental dimension of wellness have received increased attention since the COVID-19 pandemic. The wellness movement has brought attention to the pervasiveness of stress and social isolation, the need to build social connections, and the importance of finding purpose and meaning. It has also brought nature to the forefront – not only from an environmental or sustainability perspective, but also as an important force for mental wellness, healing, and even spirituality.

Figure 1.2

Many Movements Have Paved the Way for the Future of Building Better Places to Live

WELLNESS GETAWAYS

Started: Pre-1900s
Tapping into natural, local, and authentic traditions to build places that are rejuvenating and healing.

- VACATION & SECOND HOMES
- SPA TOWNS
- DESTINATION SPAS
- HEALTH RESORTS

INTENTIONAL COMMUNITIES

Started: Pre-1900s
Building community around shared resources, interests, and values to create a holistic way of life.

- UTOPIAN
- SOCIAL/POLITICAL
- RELIGIOUS/SPIRITUAL
- COMMUNES
- COHOUSING/CO-LIVING

POLICY & PLANNING MOVEMENTS

Started: Early-1900s
Using public policy to address major social, economic, and health issues that affect how and where we live.

- PUBLIC HEALTH
- HEALTHY CITIES
- RESILIENT CITIES
- SMART/DIGITAL CITIES
- AFFORDABLE/SOCIAL HOUSING

PLANNED COMMUNITIES

Started: Early-1900s
Consciously and intentionally planning communities that offer a better lifestyle and appeal to specific interests.

- CITY BEAUTIFUL
- GARDEN CITIES
- NEW TOWNS
- URBAN PLANNING
- MASTER-PLANNED COMMUNITIES
- GOLF COMMUNITIES
- RETIREMENT COMMUNITIES

MODERN WELLNESS MOVEMENT

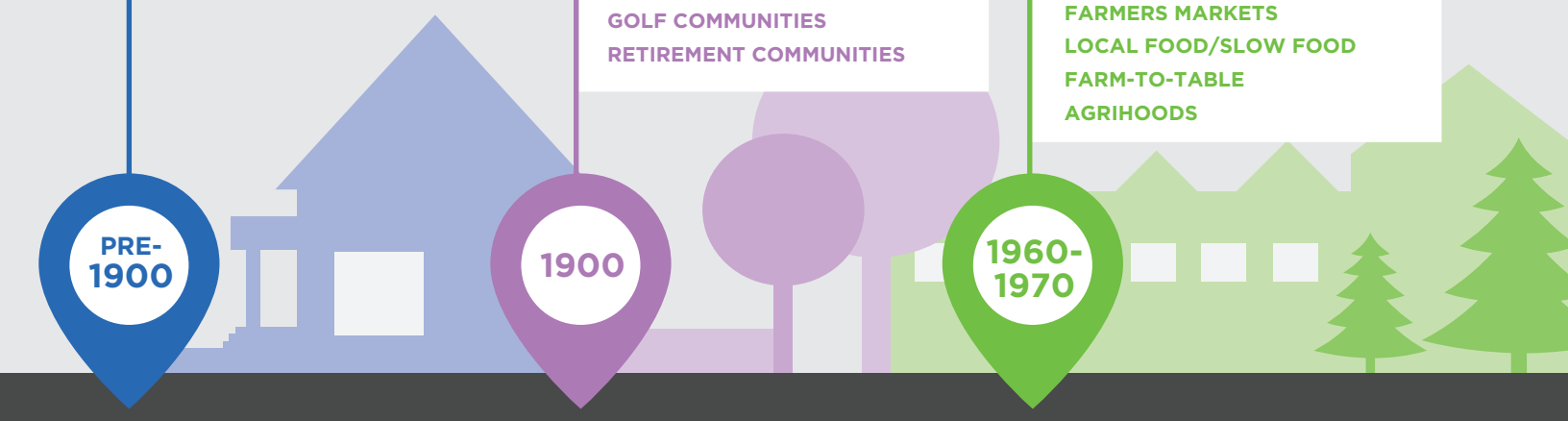
Started: 1960s
Reintroducing the concept of health as holistic, mult-dimensional, and proactive.

- SELF-CARE
- PREVENTION
- TRADITIONAL/INDIGENOUS MODALITIES
- MIND-BODY PRACTICES
- MENTAL WELLNESS
- SPIRITUALITY
- NATURE

FOOD MOVEMENT

Started: 1970s
Addressing land use, agricultural practices, and how/what we eat through community design.

- COMMUNITY GARDENS
- URBAN FARMS
- COMMUNITY-SPONSORED AGRICULTURE
- FARMERS MARKETS
- LOCAL FOOD/SLOW FOOD
- FARM-TO-TABLE
- AGRIHOODS



DESIGN MOVEMENTS

Started: 1980s
Designing buildings and projects to address targeted needs and populations.

- VASTU/FENG SHUI
- UNIVERSAL/INCLUSIVE DESIGN
- TRANS-/MULTI-GENERATIONAL DESIGN
- BIOPHILIC DESIGN
- ACTIVE DESIGN

NEW-URBANISM

Started: 1980s
Reinventing compact, traditional, walkable community design and placemaking for the modern era.

- PLACEMAKING
- MIXED-USE
- TRANSIT-ORIENTED
- SMART GROWTH
- TRADITIONAL NEIGHBORHOOD DESIGN
- FORM-BASED CODES

TECHNOLOGY & INNOVATION

Started: 1990s
Using new technologies to enhance our living environments and create virtual communities.

- MOBILE DEVICES
- SOCIAL MEDIA
- SENSORS
- SMART HOMES
- ARTIFICIAL INTELLIGENCE
- AUGMENTED REALITY
- MATERIALS SCIENCE

GREEN/SUSTAINABLE BUILDING

Started: 1990s
Building in a responsible, sustainable, resource-efficient way to minimize harm to the planet.

- ENVIRONMENTAL JUSTICE
- ENERGY STAR
- LEED/BREEAM/ETC.
- REGENERATIVE/LIVING BUILDINGS
- ECOVILLAGES/ECO-CITIES
- CLIMATE ADAPTIVE & RESILIENT

WELLNESS REAL ESTATE, ARCHITECTURE, & DESIGN

Started: 2000s
Putting human health and well-being at the center of our built environments.

- INTENTIONAL & MULTIDIMENSIONAL
- PEOPLE FIRST DESIGN
- CONNECTION & COMMUNITY
- GROWING WELLNESS CASE
- FITWEL/WELL/ETC.

MASS MARKET WELLNESS

Started: 2010s
Mainstreaming of wellness as a dominant value and mass consumer adoption; proliferation of wellness products and services.

- WELLNESS AS A LIFESTYLE
- PERSONALIZED & INDIVIDUALIZED WELLNESS
- WELLNESS TECH
- CLEAN & GREEN PRODUCTS
- BIOHACKING
- LONGEVITY
- EMPLOYEE WELL-BEING & ESG
- HAPPINESS & WELL-BEING

1980

1990

2000-2010

Source: Global Wellness Institute

Over the last decade, we have witnessed the explosion of **mass market wellness**. Wellness has pervaded the global marketplace, driven by personal agency; experimentation with ancient and new modalities; and a desire for choice, convenience, customization, privacy, and access. By GWI's own estimates, wellness is a $6.3 trillion global market as of 2023.[18] In the consumer sphere, wellness is no longer an episodic event or something people do on vacation; it has become a dominant lifestyle value, increasingly driving decision making on all levels. This dynamic movement has stimulated countless new business innovations, products and services, and investments – ranging from self-care, complementary modalities, and prevention, to wellness tech, biohacking, and longevity. Many of these are being incorporated into our homes and built environments (e.g., wearables, sensors, human centric lighting, sound products, fitness tech/products, sleep tech/products, infrared devices, home saunas, etc.). Spilling over into the corporate world, there is increasing recognition of employee wellness as a business imperative – to address burnout, increase productivity, control healthcare costs, and improve recruitment and retention, as well as to address Environmental, Social, and Governance (ESG) frameworks and investor expectations. In parallel with the mainstreaming of wellness, a happiness and well-being movement has spun out of the positive psychology field and has permeated both government policymaking and popular culture, fueled by the media, influencers, and celebrities.

Wellness real estate can draw upon the best of these movements to create holistic, healthful, and nourishing environments for all of us.

In the 1990s and early-2000s, real estate developers and builders started to experiment with different ways to build wellness-enhancing homes and communities. These projects, mostly located in the United States, were primarily small-scale "passion projects" launched by individuals or families who were concerned about the human and environmental impacts of the rampant building that occurred in the U.S. real estate boom during this time period. The earliest wellness real estate developments included a variety of approaches addressing different needs and interests, for example:

- Agrihoods, such as Prairie Crossing, Illinois (1992); Agritopia, Arizona (2000); and Serenbe, Georgia (2004).
- Healthy/outdoor living concepts in Pacific Pines, Australia (1993); Ladera Ranch, California (1998); Hidden Springs, Idaho (1998); Blackwood Park, Australia (1998); Harmony, Florida (2002); and Rancho Sahuarita, Arizona (2002).
- Projects inspired by the growing sustainability and New Urbanist movements, such as Bois Franc, Canada (1993); Poundbury, United Kingdom (1993); l'On Village, South Carolina (1999); Civano, Arizona (1999); BedZED, United Kingdom (2002); and Harvest Lakes, Australia (2002).
- Early attempts at connecting a residential component with a destination spa or wellness-focused hospitality brand, such as Canyon Ranch Living in Tucson (1983).
- Innovative concepts in active, social, and healthy senior living, such as The Villages, Florida (1992); Lassell Village, Massachusetts (2000); and continuing care retirement communities (1980s/1990s).
- Internationally, some early developments were part of the ecovillage movement, such as Crystal Waters Ecovillage, Australia (1987); IDEAL Society Ecovillage, Canada (1993); and EcoVillage Ithaca, New York (1996).

Many of these early, experimental projects saw their growth and sales delayed or stalled with the burst of the U.S. housing bubble (2007-2008), only to pick up and accelerate with the recovery of the global housing market in the post-recessionary period. In 2017, GWI estimated that there were over 740 residential and mixed-use wellness real estate projects built, partially built, or in development, across 34 countries. Since then, the wellness real estate market has exploded – especially in the post-pandemic period – and the number of projects is now in the thousands (no longer countable).

Today's **wellness real estate, architecture, and design movement** represents an important shift in focus that explicitly puts human health at the center of the conception, design, construction, and operation of our built environments. This movement has drawn from many past movements (as described above), integrating their best features through a multidimensional and holistic wellness lens. At the same time, new building/design standards focused on human health are spilling over from the commercial real estate space into the residential and hospitality sectors. As we look to the future, we can expect to see more creative blending of various elements from different movements, learning from recent past experiences and projects, smarter adaptions of human and planetary wellness features, and a mainstreaming of wellness real estate that will benefit an increasingly broader population.

There have been major shifts in wellness real estate over the last decade.

Wellness real estate is a fast-moving and dynamic market. Over the last 8-10 years, there have been several major shifts and developments in the wellness real estate market worldwide. Here is what we have noted:

- Healthy building concepts have expanded into every real estate asset class, from residential, mixed-use, and hospitality, to commercial, healthcare, education, and industrial.
- Development of wellness real estate is expanding geographically around the world. While this market started and continues to be concentrated in North America, Europe, and Australia, in the post-pandemic era we are seeing a rapid proliferation of new projects in the Gulf countries, Asia (China, Japan, Singapore, Taiwan, India), and some parts of Latin America (Brazil, Mexico).
- Wellness real estate projects are increasingly embracing a multidimensional concept of wellness. While earlier projects tended to emphasize the physical aspects of our health (e.g., exercise, walking, air quality, sick building syndrome), the last decade has brought a growing understanding of how the built environment affects our social and mental wellness, alongside a growing embrace of biophilia and nature.
- In the residential space, wellness real estate is spreading from the luxury market into affordable housing, student housing, senior living, and more.
- Wellness real estate is no longer just the domain of individual developers pursuing one-off "passion projects." These projects are now increasingly undertaken by larger, professional development companies with multiple properties, who are increasingly using a "wellness lens" for the conception, infrastructure, development, and operations of these communities.
- Since the pandemic, many of the largest homebuilders in the United States have launched healthy home packages and upgrades for homebuyers, alongside smart-home and energy efficiency options (e.g., air filtration, water filtration, antimicrobial surfaces, low-VOC paints, etc.) – but this trend is not yet prevalent in other parts of the world.

- The launch and expansion of wellness building certifications – WELL in 2014 and Fitwel in 2016 – has helped to fuel the explosive growth of this market, for both certified and non-certified properties. In particular, the introduction of "at scale" certification programs by both Fitwel and WELL has supported the rapid growth of healthy building in the commercial space, with large and multinational corporations pursuing wellness certifications across their entire portfolio of properties.
- Green building and healthy building are increasingly overlapping, and more projects and developers see them as complementary or even inseparable. The expansion of green certifications into health and social well-being strategies has encouraged this shift over the last 10 years.
- The rise of impact investing, socially responsible investing, and Environmental, Social, and Governance (ESG) reporting has encouraged many companies to invest in healthy building practices as a strategy for addressing their health and social impacts.

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CHAPTER 2

What Is Wellness Real Estate and How Do You Build It?

What is wellness real estate?

The Global Wellness Institute defines wellness real estate as: ***Built environments proactively designed, built, and operated to support the holistic health of occupants, visitors, and the community.***

How can wellness real estate address the many different dimensions of wellness?

Wellness is multidimensional, encompassing the physical, social, mental, environmental, and other dimensions. All aspects of a person – mind, body, and spirit – need to work in harmony to be truly "well." Likewise, wellness real estate projects must be designed and built in a manner that facilitates and optimizes their occupants' health and well-being across these multiple dimensions of wellness.

The following pages elaborate on how six different dimensions of wellness can be supported and enhanced via wellness real estate (*see Figure 2.1*). For each dimension, we provide examples of the many different design features, infrastructure, facilities, amenities, and services that may be used to support occupants' and users' health and well-being in that area. **Keep in mind that these lists are illustrative but not exhaustive. They are not intended to be a "checklist," and one would not expect to find all of these components in any specific project.** The purpose of these tables is to provide concrete examples of each dimension of wellness within the context of the built environment, as well as to spark creative thinking among planners, designers, developers, and policymakers. Every wellness real estate project will be different, with different combinations of wellness-supporting "ingredients" combined and brought to life in unique ways, depending on the specific characteristics and needs of the target occupants, the location, the local culture, and so on.

Figure 2.1

Six Dimensions of Wellness Real Estate

Physical

- Movement & exercise
- Food & nutrition
- Prevention & healthcare
- Environmental exposures & comfort
- Mobility & accessibility
- Safety & security

Mental & Spiritual

- Nature
- Rest, solace, & sleep
- Spiritual traditions, purpose, & meaning
- Beauty, awe, & delight
- Designed to reduce daily friction
- Work-life balance & lifelong learning

Social

- Prosocial design
- Diverse & integrated housing
- Spaces for socializing & connecting
- Tech-based connectivity

Financial & Economic

- Affordability & equity
- Lower transit costs
- Access to education
- Access to employment
- Entrepreneurial support

Environmental

- Building technologies & methods
- Earth-friendly & climate adaptive
- Energy practices
- Water & waste practices
- Biodiversity

Civic & Community

- Local history, heritage, & culture
- Inclusion & diversity
- Openness & public services
- Engagement, participation, & governance
- Regeneration & renewal

Source: Global Wellness Institute

Sample Strategies

Physical Wellness

Active design features and recreational facilities/services to encourage physical activity during both leisure and daily life:

- Higher density and mixed-use zoning in neighborhoods/cities; putting homes, offices, schools, retail, etc. in close and walkable proximity (e.g., traditional neighborhood design, complete communities).
- Infrastructure to support active transit, including walking and biking (e.g., complete streets, pedestrian-friendly design, sidewalks, biking/walking paths, bike lanes, bike sharing/storage, access to public transit).
- Multi-use trails or pathways, hiking trails, greenways.
- Parks, playgrounds, outdoor recreation facilities (e.g., sports courts/fields, boating, etc.).
- Accessible bodies of water (lakes, rivers, ponds, etc.) and wooded/green areas.
- On-site fitness/exercise and sports/recreation facilities, equipment, and programming (e.g., fitness centers, free outdoor gyms, exercise classes, sports leagues, etc.).
- Open, accessible, and attractive stairways in buildings (with good signage, natural light, etc.).

Access to healthy and nourishing foods:

- Full-service grocery stores, food co-ops, and outlets selling fresh/healthy foods within the community (or walkable).
- On-site organic farms, farmers markets/farmstands, community-sponsored agriculture, micro food processing enterprises, farm-to-table restaurants.
- Food-growing and gardening spaces (e.g., edible landscaping, community garden plots, in-kitchen gardening facilities).
- Water fountains and water filling stations.

Access to preventive health/wellness services and medical care:

- On-site preventive health clinics, medical facilities, and/or educational programming.
- On-site wellness services (e.g., spa, massage services, acupuncture, longevity clinic, sauna/bathing, cold plunge, etc.).
- Tech-based health sensors and monitoring (e.g., smart toilets and mirrors to detect disease, smart floors to detect falls).

Environment and materials reduce unhealthy exposures and enhance comfort:

- Healthy and non-toxic building materials, fixtures, furnishings, and cleaning products (e.g., low-VOC, natural materials, etc.).
- Healthy water quality (e.g., filtration/purification as needed, flow rates, temperature, etc.) with ongoing testing/monitoring.
- Healthy air quality supported by sensors and continuous monitoring.
- Access to fresh air and good ventilation (e.g., windows that open, air circulation rates).
- Localized/personalized HVAC controls to optimize individual thermal comfort, humidity, etc.
- Non-smoking policies.
- Measures to reduce spread of pathogens and viruses (e.g., antimicrobial surfaces, air exchange rates, air purification, ventilation).

Mobility and accessibility for people of all physical abilities and ages:

- Universal/inclusive/barrier-free design and ergonomic design approaches.
- Ramps, no-step entryways, wider doorways/hallways, and other design features to facilitate mobility for those with disabilities.
- Single-level floor plans, open floor plans, and flexible/adaptable interiors for housing.
- Assistive technologies and design features to support aging-in-place and those with disabilities.

Safety and security for all:

- Clear wayfinding signage and lighting in neighborhoods and buildings.
- Pedestrian safety measures (e.g., traffic calming design, crosswalks, streetlights, etc.).
- Fire safety measures (alarms, sprinklers, evacuation routes), carbon monoxide monitoring, etc. in buildings.
- Wildfire mitigation strategies, flood mitigation measures, hurricane-proof buildings, etc. as appropriate for the region.

Sample Strategies

Mental & Spiritual Wellness

Connections to nature:

- Biophilic design (e.g., use of natural materials, biomorphic design, indoor plants/greenery, living walls, etc.).
- On-site or easy access to outdoor green spaces (e.g., street trees, landscaping, pocket parks, rooftop gardens, community gardens, wildlands and wetlands, nature reserves, etc.).
- Natural/outdoor views in buildings; scenic vistas outdoors.
- Water features and water views.
- Pet parks and pet-friendly design, amenities, and policies.

Support for rest, solace, and sleep:

- Human-centric lighting and natural daylight in buildings; dark sky lighting outdoors.
- Soundproofing, noise control, and natural/curated soundscapes both indoors and outdoors.
- Meditative spaces and quiet/relaxation spaces.
- Mood-enhancing and calming colors.
- Mind-body programming and facilities (e.g., yoga, breathwork, meditation, sound healing).

Connections to spiritual traditions, purpose, and meaning:

- Spiritual institutions within the community (or walkable).
- Multi-faith spaces or prayer rooms.
- Facilities and programming to support hobbies, interests, and volunteering (e.g., maker spaces, community centers/programming, community-based clubs, etc.).

Connections to beauty, awe, and delight:

- Placemaking; aesthetic elements in design and architecture; beauty and quality of spaces.
- Public art and monuments.

Reducing daily friction by design:

- Design that improves convenience and eases daily household tasks (e.g., functionality of closets, built-ins, storage, kitchen, laundry, etc.).
- Flexible and multifunctional spaces in residential units (e.g., rooms serving multiple purposes for remote work, rest, exercise).
- Universal and inclusive design.

Support for work-life balance and lifelong learning:

- Coworking spaces.
- Schools and learning opportunities located within the community.
- Libraries; book exchange facilities.

Sample Strategies

Social Wellness

Deploying prosocial design approaches:

- The scale and situation of homes relative to others should connect residents to each other and to the public realm (e.g., heights, setbacks, garage and doorway positioning, etc.).
- Street-facing porches, balconies, large/bay windows, open facades, outdoor living spaces to create "semi-public spaces" and "eyes on the street" (i.e., not fronting buildings with garages, parking lots, or blank walls).
- Attractive/open common areas, corridors, lobbies, and social spaces inside buildings.
- Connectivity, flow, and walkability of street design (e.g., grids over cul-de-sacs, shorter blocks, connections between neighborhoods).
- Public spaces and sidewalks have benches, good lighting, attractive design/landscaping, safety features, and good maintenance to encourage use.
- Mixed-use zoning and higher-density neighborhoods to bring home, work, and play closer together.

Designing communities to allow people of diverse ages, incomes, and backgrounds to live there:

- Variety of housing styles, sizes, and price points to encourage social diversity (e.g., mixed ages, incomes, races).
- Minimizing segregation by price point, income level, or size/type of housing (e.g., single-family versus multi-family).
- Age-restricted/senior living mixed with family housing, student housing, and other styles of housing; using shared amenities across these different populations.
- Residential units designed or adaptable for multi-generational living (e.g., in-law suites, granny flats, ADUs, micro-units, etc.).

Providing spaces for socializing and building connections:

- Variety of shared public spaces and social gathering spaces: public plazas/squares, car-free/pedestrianized zones, green spaces, pocket parks, roof decks, etc.
- Variety of community facilities and amenities: playgrounds, gyms, recreational/sports facilities, community centers, meeting spaces, outdoor cafes, picnic/BBQ/cooking areas, pet parks, community gardens, etc.
- Community programming, festivals/events, special interest clubs, etc. to activate public spaces.

Using technology to facilitate connections:

- High-speed Internet connectivity accessible to everyone in the community.
- Tech-based platforms for connecting (e.g., community/neighborhood apps, intranet, etc.).

Sample Strategies

Civic & Community Wellness

Respectful of local history, heritage, and culture:

- Unique character and sense of place.
- Culturally relevant design and architecture.
- Use of local materials, local artists and artisans, etc.
- Cultural and arts venues, programming, and events within the community.

Design and operations support inclusion and diversity:

- Design for neurodiversity (e.g., sensory zones, multi-sensory experiences, respite areas, diverse textures/colors/materials, diverse seating and working options, etc.).
- Gender-neutral facilities.
- Operation that creates a welcoming culture and atmosphere for everyone, especially traditionally marginalized groups.

Community openness and public services:

- Not an exclusive, gated community.
- The site is well-connected to other neighborhoods and regions via street networks, transit, walking/biking paths, etc.
- The site/building/development is fully/partially open to the public, and/or it provides services, amenities, and programming/events that serve the wider community.
- Outdoor and public spaces, amenities, parks, etc. are open to everyone.

Community engagement, participation, and governance:

- Community engagement and local participation in the design and planning process.
- Participatory and shared governance structures and forums.
- Community intranet, apps, or online platforms for ongoing communications, education, and engagement.
- The site/building/development supports and embraces diversity by design.
- Residents/occupants are encouraged to engage with and care about the wider community and people outside the development (via events, educational programming, volunteer activities, etc.).

Community regeneration and renewal:

- The site/building/development is part of an urban infill, regeneration, or redevelopment project that will benefit the wider community.

Sample Strategies

Environmental Wellness

Sustainable building technologies and methods:

- Use of sustainable offsite and modular construction methods.
- Methods to reduce and reuse waste during the construction process.
- Natural, non-toxic, sustainable, renewable, recycled, low embodied carbon, locally sourced, and/or highly durable building materials, furnishings, and fixtures (that are good for the health of both people and planet).
- Adaptive reuse of buildings, reclaimed materials/parts, etc.

Earth-friendly and climate adaptive design:

- Careful site selection, analysis, and building placement/design to account for climate risks.
- Net-zero architecture; bioclimatic architecture; circular and regenerative design; smart city and sustainable city design.
- Green roofs for stormwater management, temperature regulation/insulation, etc.
- Indoor plants, green walls, etc. for improving air quality.
- High-tech solutions, sensors, etc. for ongoing environmental monitoring and management.
- Public transit, pedestrian- and bike-friendly infrastructure, and electric vehicle charging.
- Urban farming, local/organic food production.

Use efficient, sustainable, renewable energy practices:

- Sustainable and renewable energy sources (solar, air-/ground-source, district energy, etc.); smart HVAC systems; net-zero energy strategies; reduce or eliminate use of fossil fuels.
- Well-designed building envelopes that reduce heat loss and energy usage.
- Energy efficient lighting, appliances, equipment, etc.
- Passive design strategies; integrated passive and mechanical systems for heating/cooling; design for natural heat management and solar gain (e.g., materials with natural insulating properties like wood, strategic window placement, shading elements, etc.).

Manage, conserve, and recycle water and waste:

- Water management and conservation (e.g., low flow fixtures, greywater recycling, rainwater harvesting, stormwater runoff management, tech-based monitoring, wetland restoration, etc.).
- Energy recovery/waste-to-energy plants.
- Recycling and composting facilities/programs for occupants and users.

Support biodiversity:

- Maintain and expand public and private green spaces (e.g., parks, greenways, street trees, community gardens, rooftop gardens, etc.).
- Use native and drought-tolerant plants in landscaping.
- Create protected natural areas and wildlife corridors; plant new wildlife habitats and install shelters (e.g., birdhouses, bat boxes, beehives, etc.).
- Wildlife-friendly building materials and design (e.g., bird- and bee-friendly bricks, window treatments to reduce bird collisions, wildlife tunnels in curbs/fences, etc.).
- Dark sky lighting; reduction of noise and light pollution.

Sample Strategies

Economic & Financial Wellness

Affordability & equity:

- Housing product diversity and a mix of price points that are not segregated from each other.
- Affordable and attainable housing options (sales and/or rentals, for households of different sizes).
- High-quality and long-lasting materials and design.
- Energy-reducing/saving technology and design.
- Smart-home technology for cost savings.

Reducing the transportation cost burden:

- Walkability and bike friendly design and infrastructure.
- Public transit and other transit options that will reduce the need for car ownership.

Access to education:

- Schools within the community (or walkable).
- Continuing education, training, job/workforce programming, and lifelong learning opportunities.
- Financial literacy programming.

Access to employment:

- Higher density and mixed-use zoning in neighborhoods/cities – putting homes, offices, schools, retail, in close and walkable proximity (e.g., traditional neighborhood design, complete communities).
- Job opportunities available in the community, as well as housing options that are affordable for those who work in the community.
- High-speed Internet connectivity accessible to everyone in the community.
- Coworking spaces.
- Live-work units and flexible spaces in residential units for remote work.
- Project's construction, materials procurement, and ongoing operations prioritize local sources and employment generation.

Entrepreneurial support:

- Business incubator, mentoring programs, and financing assistance.
- Concessional leasing rates for small/local businesses.

Guiding principles for creating wellness real estate.

Consumer interest in all things related to wellness has exploded and gone mainstream in recent decades. In response, companies across the economy have latched onto the word "wellness" as a marketing buzzword for every product or service imaginable – from supplements and beauty products, to candles and water bottles, to pet food and cleaning products. The real estate sector is not immune to this phenomenon. While awareness is growing, especially in the post-pandemic era, few consumers or developers/builders have a well-developed understanding of what wellness means within the context of the built environment. Simply rebranding real estate projects as "wellness real estate" or a "wellness community" by highlighting a few features or amenities does not make them so.

A hallmark of the best wellness real estate projects is that they are designed and built with intention. Below, we outline six key principles that can be used to guide the development of wellness real estate from the ground up. These principles encourage developers and builders to think holistically about how health and wellness can be addressed and supported across every aspect of the development process – from the design, infrastructure, and bricks and mortar, to the ongoing amenities and operations – in order to bring positive health benefits and a total well-being experience to their residents, occupants, users, and visitors.

PRINCIPLE 1: From specialized to diversified

Wellness-enhancing approaches can be incorporated into any size, scale, or type of building or real estate project.

All sizes and scales of building: Wellness can be infused into any scale of real estate project, from single **buildings** (e.g., a one-family home, an office building), to **neighborhood**-scale developments (e.g., large housing developments/estates, office parks or corporate campuses), to **community**-scale projects (e.g., city districts or very large mixed-use developments).

All real estate property types, asset classes, and price points: There are many different types of real estate projects, and wellness can be incorporated into any and all of them. Currently, wellness real estate is most commonly seen in **residential** projects (single family, condos/apartments/multifamily, senior living, student housing, co-living) and **commercial** projects (offices, hotels/hospitality, retail, healthcare, mixed-use), as well as in **special purpose and leisure** projects (schools, universities, sports facilities, etc.).

Both new builds and renovations: While media coverage and discussions of wellness real estate tend to focus on newly built projects (and this report also primarily uses new builds as examples and case studies), there are vast opportunities for incorporating healthier features into all types of renovation and conversion projects. Most people live, work, and play in buildings that are not new, so it is critical to focus on the renovation market in order to expand access and scale up the benefits of wellness real estate. All of the definitions, principles, and concepts discussed in this report can be applied to both new construction and renovations.

PRINCIPLE 2: From intentional to multidimensional

Wellness real estate should be proactive and intentional.

There is no shortage of building projects around the world that add a few spa-like luxury amenities and market themselves as "wellness." This is an exceptionally limited view of wellness real estate and can sometimes be construed as "well-washing." In GWI's definition, effective wellness real estate projects will start with intention from the very beginning of their planning process – considering what are the most important health and wellness needs of their users/occupants and how can these be addressed via bricks and mortar, infrastructure, design, amenities, and operational approaches. A "cookie-cutter" approach or "one-size-fits-all" package of amenities is generally not the most effective approach. While some healthy features may be of value in every project (e.g., cleaner air, biophilic elements, prosocial design), the infrastructure and amenities can and should be tailored to the unique demographics, culture, and geography of the project and its occupants.

Wellness real estate uses a holistic and multidimensional approach.

Just as wellness is multidimensional, wellness real estate must also use a holistic and multidimensional approach to health and well-being. Simply adding a fitness area and a swimming pool for physical exercise is not enough. In GWI's definition, effective wellness real estate projects will incorporate design features, amenities, policies, and programming that address many or all of the dimensions of wellness (physical, mental/spiritual, social, civic/community, environmental, and economic/financial), recognizing that each project may have different emphases and approaches to serve its target population.

PRINCIPLE 3: From "do no harm" to optimizing wellness

Our built environments should not be unhealthy or unsafe.

Innumerable aspects of our buildings and infrastructure put our lives and health at risk. Around the world, laws, regulations, and building standards are not keeping up with the growing scientific evidence of the many health hazards in our built environments, while basic safety standards all too often go unenforced. At a minimum, wellness real estate must protect us from harmful elements both indoors and outdoors. This includes: reducing or filtering out contaminants in our air and water, avoiding building materials and furnishings that emit toxic chemicals, and ensuring structural and operational safety (from building collapse, fire, flood, airborne pathogens, etc.). This "do no harm" mentality should extend from human health to planetary health, because our growing climate crisis is linked to many intensifying risks – from rising temperatures and extreme weather events (wildfires, hurricanes), to pollution and water shortages.

They can also leave us feeling better than before we entered them.

Wellness real estate can do so much more than just not harm us; it should also enhance our wellness. There is a rapidly growing understanding of how our built environments can be designed to improve our health behaviors and optimize our well-being across many aspects. For example, our mood, sleep quality, cognitive function, and productivity can be influenced by exposure to different types of light (e.g., maximizing natural light indoors, circadian lighting, dark sky lighting, measures to reduce light pollution). Exposure to nature (biophilic design) and the neuroaesthetics of our environments can influence our mental well-being. Active design approaches can encourage us to get more movement in our daily lives, while prosocial design can encourage individual connections and build social capital. The best wellness real estate will leave us feeling better than we did when we first walked into the door. It will allow us to live and work in a way that is not just net-zero, but net-positive for our physical, mental, and social well-being.

PRINCIPLE 4: From passive to active wellness

Our built environments can affect our health simply by existing within a space.

Many aspects of our built environments have a passive influence on our health and well-being – that is, just by being within a space, our physical and mental health can be affected for the better or for the worse. For example, air quality, water quality, lighting, sound, and thermal comfort are all environmental factors that have an important effect on how we feel within a space and can sometimes even make us sick – often without us even noticing their impacts on us. Likewise, natural and biophilic elements within a space can bring many benefits without us having to "do" anything other than be around them. These kinds of passive design features are mostly baked into the infrastructure or the bricks and mortar of a building or space. Therefore, wellness real estate needs to consider these passive features from the very beginning of the design process, so that they can be embedded from the ground up.

They should also encourage the proactive behaviors and habits that drive wellness.

A core element of wellness is that it is an "active pursuit." We are all active participants in taking charge of our own health, and our built environments are a critical factor that can enable (or discourage) us to do so. Wellness real estate can deploy nudge architecture to foster healthy choices and behaviors – for example, designing prominent and attractive stairways that encourage us to walk rather than use the elevator; or creating inviting, well-lit, and safe public spaces that encourage us to get outside, use them, and interact with other people. Wellness real estate can provide amenities that make it easy and convenient to be active – for example, on-site fitness, community gardens, or dog parks. And, in underserved communities, wellness real estate can fill gaps by providing access to active lifestyle features that the local population would not otherwise have access to (e.g., free outdoor gyms, parks and green space, walking/biking trails). It is through active engagement and participation that wellness real estate will facilitate health and well-being for its occupants over the long-term.

PRINCIPLE 5: From infrastructure to operations

Wellness should be embedded in the infrastructure, not just an amenity.

Far too many developers/builders continue to view wellness real estate as amenity-driven, often adding a suite of spa-like luxury facilities (a cold plunge, an infrared sauna, a massage room, a meditation space) and marketing their project as "wellness." This kind of approach is superficial and will have limited impact on occupants' health and well-being. In true wellness real estate, wellness is not just an amenity, but rather is intentionally embedded in the design and infrastructure of the project. There are many ways to put wellness at the very core of a project: a site design that maximizes connections and movement (e.g., walkability, street grids, transit, building scale and density, etc.); use of materials that are healthy for people and planet; design features that enhance connections to nature and to other people; technology that monitors air, water, and health; etc. Wellness amenities and facilities (e.g., fitness, saunas, meditative spaces, walking paths, etc.) can be an important part of the infrastructure and can support ongoing activation of the development, but they are just one piece of a bigger picture.

Wellness real estate should be activated through ongoing operations and programming that facilitates wellness.

By definition, "real estate" means buildings and structures that are largely static. But once a development is occupied and operational, it becomes a dynamic organism. While the hard infrastructure, design, materials, and technologies lay the groundwork, soft infrastructure is also needed to activate and nurture wellness, and to bring a community to life. This can include: health-promoting policies (e.g., non-smoking, recycling); regular wellness programming and activities (e.g., fitness classes; arts, culture, and music programs; farmers markets; family and children's events); ongoing tech-based environmental and/or health monitoring; etc. Developments also need appropriate funding mechanisms, business models, management, communications, and participatory governance for the wellness programming to ensure that it is relevant, accessible, and evolves with the needs of the occupants/users over time. This kind of soft infrastructure is what moves a wellness real estate project from just bricks and mortar to a true community.

PRINCIPLE 6: From "me" to "we"

The modern concept of wellness focuses largely on individual needs and behaviors.

The modern wellness concept can be very individualistic – that it is our personal responsibility to make healthy choices, improve our lifestyles, prevent disease, and elevate our own well-being. When we translate this thinking into a real estate setting, it can manifest as luxury homes and exclusive, gated "wellness enclaves" that emphasize high-end amenities, robust air/water filtration, special lighting and soundproofing, spa-like services, and exclusive access to certain natural assets. The benefits of these projects are limited and end at their door. We can live and work within a wellness cocoon, but studies are showing that obsessing over our own happiness, biometrics, sleep, exercise, and organic or vegan diets can actually increase anxiety and be detrimental to our well-being. And, no amount of air filtration, high-tech thermal controls, or biophilic design can protect wellness real estate residents from the mounting barrage of congestion and gridlock, air pollution, climate change, extreme weather, and other health threats growing outside their doors or gates.

Connections and community are also central to our well-being.

Intentionally designed wellness real estate projects consider the wellness benefits to their visitors, neighbors, and community, in addition to their immediate occupants – recognizing the virtuous circle between the ME and the WE. What we do and how we live have a broader impact on things outside of our own homes; likewise, the community environment has a profound impact on our individual health and well-being. This perspective does not mean just making some token donations to community groups, or including a few affordable housing units as required by local law. Rather, it means designing wellness real estate projects that are integrated with the community beyond their walls – for example, giving local stakeholders a voice in the project's design and operations; opening services and amenities to local residents; improving the local infrastructure and connectivity (walkability, bikeability); supporting neighborhood revitalization; building or improving public spaces and green spaces; and protecting and celebrating the shared natural and cultural assets of the local region. "Blurring the edges" and situating real estate projects within a broader community mindset not only supports better financial sustainability, but also brings wider health and well-being benefits to all stakeholders.

What is the role of certifications in wellness real estate?

There are many certifications, toolkits, and design principles available to help guide the development of healthy and sustainable building projects.

While green and sustainable building certifications (BREEAM, LEED, etc.) have existed since the 1990s, certifications focusing specifically on human health and wellness have emerged over the last 10-15 years alongside the growth of the wellness real estate market. The WELL Building Standard (WELL) and Fitwel are the two largest and best-known third-party rating systems that operate globally and that focus specifically on the health and wellness of building occupants. WELL awarded its first certifications in 2014, while Fitwel certified its first projects in 2016. Since their initial launch, both WELL and Fitwel have developed numerous certification pathways and ratings to address many different types of projects – from new construction to existing buildings; from shell buildings to owner-occupied projects to "at scale" initiatives; and from commercial, industrial, and retail spaces to multifamily, senior housing, and residential. In addition to WELL and Fitwel, there are a few other wellness-related and wellness-adjacent certifications that operate primarily in specific countries/markets, or that focus on overlapping spaces like regenerative living and social equity (*see Figure 2.2*). Looking beyond certifications, there are many healthy building toolkits and manuals, as well as a variety of design principles, which also can provide useful guidance on how to build spaces and places that enhance human health and well-being.

Simultaneously, the well-established green building certifications have been shifting toward a more holistic emphasis on social sustainability and human health alongside planetary priorities. Over the last decade, certifications like LEED and BREEAM have expanded from a narrower focus on indoor air quality/environments as their main health-related criteria, toward an embrace of much broader criteria related to occupant and community health and well-being (e.g., worker safety, physical activity, access to food, social equity). For example:

- BREEAM first introduced "health & well-being" as one of its assessment categories in 1998[1], and the weightings placed on the "health & well-being" category have increased from 5-10% to 15%+ over time.[2] BRE Group has expanded its health and well-being strategy since 2016, including developing partnerships with the International Well Building Institute (IWBI) and the Center for Active Design to develop streamlined dual certification processes for BREEAM and WELL or Fitwel.
- Starting in 2012, the U.S. Green Building Council (USGBC) launched a systematic review and subsequent expansion of health-related credits within LEED, working through their Green Health Partnership with the University of Virginia and Robert Wood Johnson Foundation.[3] Since 2016, they have developed the LEED Integrative Process for Health Promotion, which extends the LEED framework to formally certify health promotion as a built environment project goal.[4] In 2022, they announced a partnership with IWBI to streamline the process for earning dual LEED and WELL certifications,[5] and there are also dual certification pathways for LEED and Fitwel.

There are now numerous crosswalks that capture the many areas of alignment between various green building and healthy building certifications, supporting projects that are seeking dual ratings.[6] As interest in and awareness of the interactions between human health and planetary health grow, we would expect these overlaps in the certification space to expand – to the point where it may no longer make sense to think of these aims as being separate from one another.

Figure 2.2 provides a list of certification/rating systems, toolkits/manuals, and design theories/principles that can provide planners, developers, builders, and policymakers with practical, systematic, and science-

based approaches to design projects that address many different aspects of health and wellness within the context of the built environment. Considering the growing overlap between human health and planetary health, *Appendix B* provides a list of major green and sustainable building certifications, ratings, and guidelines.

Wellness certifications have been an important driver in the growth of the wellness real estate market over the last 10-15 years.

Wellness certifications have played – and will continue to play – an important role in the development and growth the wellness real estate market for many reasons:

- **Advancing the understanding of wellness in the built environment:** The development of certifications like WELL and Fitwel has helped to establish wellness real estate as a category that is separate from green building; has put a growing emphasis on people as the primary focus for design and building; and has helped to define the many different aims, approaches, and tools that can be used to influence our health and well-being via our built environments.
- **Providing clarity, rigor, and verification of wellness claims:** Certifications can help to reduce ambiguity about what wellness real estate is, because they establish a shared language and set of expectations. Most certifications are grounded in rigorous, peer-reviewed scientific evidence and public health research, and they often require independent verification, documentation, reviews, site visits, and performance testing. This process helps to improve the credibility of wellness and sustainability claims and reduces "well-washing" or "greenwashing." It also helps to encourage more scientific study of the interactions between specific built environment features and health.
- **Aligning with regulatory and reporting requirements:** Many certifications (especially in the green/sustainability space) align with regulatory requirements across different markets, and they sometimes even provide projects with access to special incentive programs supporting sustainable and healthy development. Certifications can also help projects and organizations to meet Environmental, Social, and Governance (ESG) reporting obligations and respond to growing investor priorities in these areas – especially addressing the less well understood "S" within the ESG framework.
- **Communicating values and raising the bar for real estate:** Certifications can be a useful tool for demonstrating a project's, organization's, or investor's commitment to human and planetary health and well-being. Obtaining a certification requires a significant amount of time and money, indicating that a project's leadership are not just paying lip service to these values. Wellness certifications in real estate/building projects can help demonstrate an organization's commitment to putting the needs of people first (including employees, tenants, buyers/renters, local residents, etc.). And, as these certifications become more widespread and well-known, they can help raise the bar and the minimum expectations across the real estate market.
- **Supporting the scalability of wellness real estate:** Wellness real estate is increasingly pursed on a larger scale, with large corporations and large developers investing in wellness-minded projects across their entire portfolios of commercial and residential properties. Certifications support the scalability of wellness real estate because they provide a useful platform and a set of standards that can be applied and tweaked across an entire organization or real estate portfolio, without having to start from scratch each time. For example, in 2018 WELL introduced the "WELL at Scale" program to support organizations in applying the standard across their entire enterprise or a portfolio of five or more properties.[7] Fitwel has operated an "at scale" program since at least 2017, and it now offers a "Fitwel Scale Certification," as well as the "Fitwel Champions" program, which supports companies with a streamlined process for portfolio-scale certifications.[8]

- **Providing a platform for measuring wellness and business impacts:** Since the definition of "wellness real estate" is amorphous, it is challenging for researchers and academics to identify a study population that would allow them to research and compare multiple wellness-focused properties and developments. The use of wellness certifications is important, because it establishes a large and growing population of identifiable wellness real estate projects that can be studied and compared. Indeed, some of the most useful impact studies that have been published in recent years have used WELL and Fitwel certified properties as their study targets (*see Chapter 3 and Chapter 4*).

Wellness certifications are a useful tool but not a requirement for wellness real estate projects.

In GWI's view, wellness real estate can be manifested in many different ways, and projects do not have to have a certification to "qualify" as wellness. Every project is unique in its goals, location, context, and target market. Wellness-related certifications, standards, rating systems, and toolkits (as elaborated in *Figure 2.2*) are among the numerous useful tools that planners, developers, and builders can draw upon to develop their own customized approaches for addressing the many dimensions of wellness. There are many questions that project stakeholders may want to consider when determining whether to pursue a wellness or green certification for their real estate project:

- What is the cost of the certification? Is the time and money worth the benefits?
- Why are you pursuing the certification, who are you trying to communicate with, and what will you gain from it? (For example, reporting to investors/ESG, differentiating your project from competitors, communicating to buyers/tenants, supporting employee wellness, etc.)
- Do you need help knowing where to start with wellness real estate? Will the certification help to guide your focus and investments in various aspects of healthy building?
- What type of certification makes sense based on the scope, characteristics, and objectives of your project?
- Will certification assist with future benchmarking of wellness real estate projects within a firm's portfolio?

Figure 2.2: Certification/Rating Systems, Toolkits/Manuals, and Design Principles that Support Building for Wellness

Name	URL	Date Established	Geographic Focus
Certifications and Rating Systems			
WELL	https://www.wellcertified.com	2014	Global
Fitwel	https://www.fitwel.org	2016	Global
Living Building Challenge & Living Community Challenge	https://living-future.org/programs/	2006	Global
One Planet Living	https://www.bioregional.com/one-planet-living	2002	Global
UL Verified Healthy Building	https://www.ul.com/services/verified-healthy-buildings	2020	United States
GBC Life Certification	https://www.gbcbrasil.org.br/certificacoes/	2023	Brazil
Healthy Building Certificate	https://hbcertificate.com	N/A	Brazil
Toolkits and Manuals			
ULI Building Healthy Places Toolkit	https://bhptoolkit.uli.org	2013	Global
Harvard T.H. Chan School of Public Health, 9 Foundations of Healthy Buildings	https://healthybuildings.hsph.harvard.edu	2017	Global
World Green Building Council Health & Well-being Framework	https://worldgbc.org/healthy-equity-resilience/health-framework/	2020	Global
WHO/Bloomberg Partnership for Healthy Cities	https://cities4health.org https://www.bloomberg.org/public-health/building-public-health-coalitions/partnership-for-healthy-cities/	2017	Global
Blue Zone Principles	https://www.bluezones.com https://info.bluezonesproject.com	2000s	Global
National Healthy Housing Standard	https://nchh.org/tools-and-data/housing-code-tools/national-healthy-housing-standard/	2014	United States
CDC Healthy Places	https://www.cdc.gov/healthy-places/php/about/index.html	2000s	United States
ISSA Clean Standard	https://www.issa.com/education/issa-clean-standards/	2006	United States
Healthy Active by Design	https://www.healthyactivebydesign.com.au	2014	Australia
Healthy Home Design Guide/ Superhome New Zealand	https://healthyhomedesignguide.co.nz https://www.superhome.co.nz	2015	New Zealand

Name	URL	Date Established	Geographic Focus
Design Principles			
Biophilic Design Principles	https://www.terrapinbrightgreen.com/publications/	1980s	Global
Active Design Guidelines	https://www.nyc.gov/site/planning/plans/active-design-guidelines/active-design-guidelines.page	2010	Global
New Urbanism, Traditional Neighborhood Development (TND), Smart Growth	https://www.newurbanism.org/newurbanism/principles.html https://www.cnu.org/resources/what-new-urbanism	1980s	Global
Transit-Oriented Development (TOD)	https://tod.itdp.org	1980s	Global
Universal/Inclusive/Trans-generational Design, Design for All	https://universaldesign.ie/about-universal-design https://www.inclusivedesigntoolkit.com	1960s & 1970s	Global

Note: By listing these certification and rating systems, the GWI team is not endorsing or recommending them. This table is simply a list of the programs and resources that we have come across in the marketplace, and which can be used as a starting point for readers who want to explore different approaches, systems, and guidelines for healthy building. This list is not exhaustive, and we may have missed or accidentally omitted other relevant resources.

Endnotes

[1] See: https://bregroup.com/web/breeam/about/how-breeam-works; https://bregroup.com/web/breeam/about/health-and-social-impact; https://breeam.com/web/bre-group/expertise/wellbeing-built-environment/. See also: 1) Taylor, T., and Pineo, H. (2015). *Briefing Paper: Health and wellbeing in BREEAM*. Watford, UK: BRE Global. https://tools.breeam.com/filelibrary/Briefing%20Papers/99427-BREEAM-Health---Wellbeing-Briefing.pdf. 2) Yates, A. (2016). *Briefing Paper: Health and Wellbeing Strategy*. Watford, UK: BRE Global. https://tools.breeam.com/filelibrary/Briefing%20Papers/92935-BRE_BREEAM-health-wellbeing-agenda-A4-v2.pdf.

[2] Anyanya, D., et al (2025). Evaluating sustainable building assessment systems: a comparative analysis of GBRS and WBLCA. *Frontiers in Built Environment*, 11, 1550733. https://doi.org/10.3389/fbuil.2025.1550733.

[3] See: 1) Worden, K., et al (2016). *Measuring Health in LEED: Representation of health and well-being within U.S. Green Building Council LEED 2009 rating systems*. Washington, DC: AIA. https://content.aia.org/sites/default/files/2016-04/DH-Measuring-Health-in-LEED_0.pdf. 2) Trowbridge, M.J., et al (2016). Using Green Building as a Model for Making Health Promotion Standard in the Built Environment. *Health Affairs*, 35(11), 2062-2067. https://doi.org/10.1377/hlthaff.2016.1020.

[4] See: https://www.greenhealthpartnership.org/ and https://www.usgbc.org/about/priorities/human-health. See also: 1) Worden, K., et al (2020). Using LEED green rating systems to promote population health. *Building and Environment*, 172(106550). https://doi.org/10.1016/j.buildenv.2019.106550. 2) USGBC (2021, Dec.). *LEED in Motion: Health*. https://www.usgbc.org/sites/default/files/2021-12/2021-USGBC-LEED-in-Motion-Health.pdf. 3) Worden, K., et al (2022). *Green Buildings for Health*. Green Health Partnership and USGBC. https://www.usgbc.org/resources/green-buildings-health-owner-s-roadmap-leed-health-process.

[5] Verdinez, D. (2022, Nov. 2). Partnership to offer dual certification pathways for LEED and WELL, designed to help the global building sector lead on climate and health. *USGBC Press Release*. https://www.usgbc.org/articles/usgbc-and-iwbi-strengthen-their-strategic-partnership-accelerate-healthy-sustainable.

[6] See: 1) WELL Crosswalks: https://standard.wellcertified.com/well-crosswalks; https://support.wellcertified.com/hc/en-us/sections/25696102933527-Crosswalks; 2) LEED Crosswalks: https://www.usgbc.org/leed-tools/crosswalks; 3) BREEAM Crosswalks: https://breeam.com/tools/clients; https://kb.breeam.com/us/knowledgebase/well-building-standard-alignment-with-breeam-2/; 4) Passive House Crosswalks: https://passivehouse-international.org/index.php?page_id=530.

[7] "WELL at Scale" was initially launched as the "WELL Portfolio" program in 2018, with pilot participants including Barclays, JLL, Lendlease, and Prologis, among others. See: https://resources.wellcertified.com/press-releases/iwbi-announces-first-well-portfolio-participants/; https://resources.wellcertified.com/articles/advancing-human-health-through-the-well-portfolio-program/; https://resources.wellcertified.com/press-releases/first-well-portfolio-scores-demonstrate-commitment-to-health-through-a-portfolio-wide-approach/.

[8] See: https://www.fitwel.org/scale-certification-fsp; and https://www.fitwel.org/champions.

CHAPTER 3

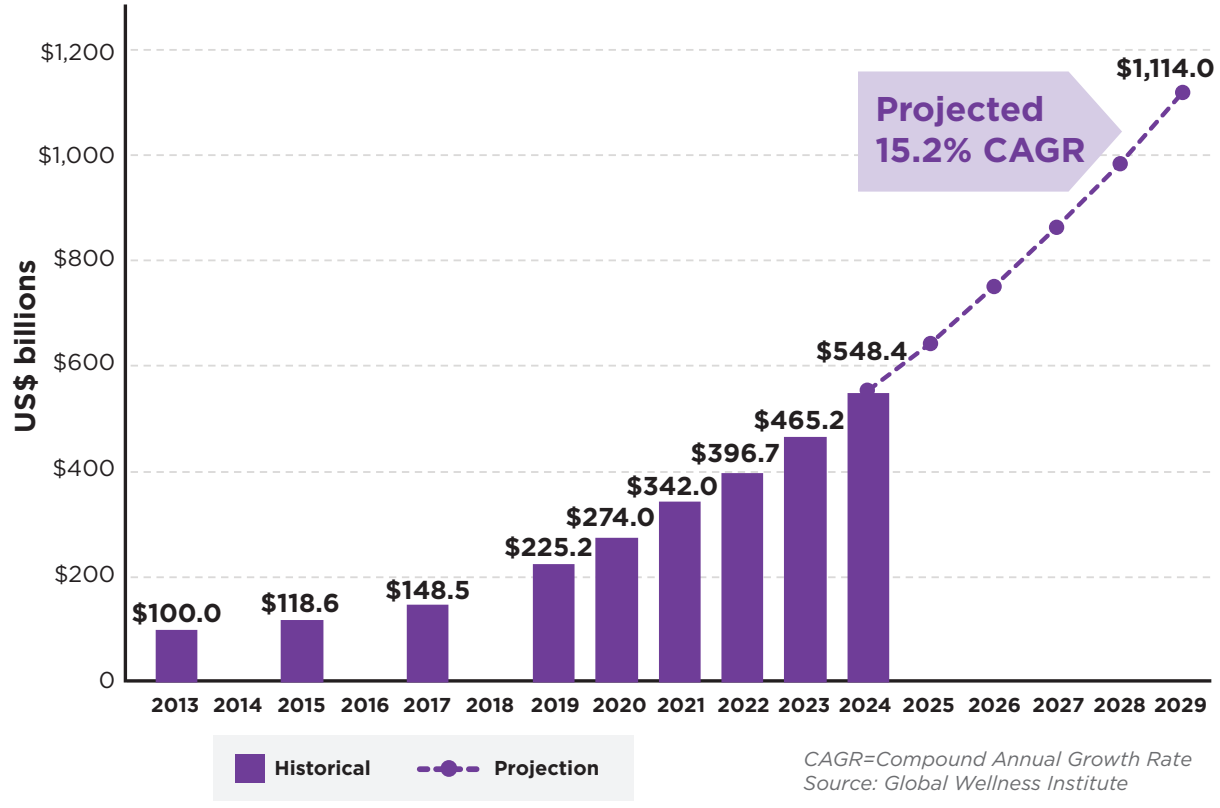
The Business Case

Already the fastest growing sector in the global wellness economy, wellness real estate is poised for sustained growth.

Wellness real estate has long been the fastest-growing sector in the wellness economy. The GWI research team first defined and quantified the global wellness real estate industry as a $100.0 billion market in 2013.[1] Since then, this sector has experienced dramatic growth, uninterrupted even through the pandemic year of 2020, when most other wellness sectors shrank.

We estimate that wellness real estate reached a global market size of $548.4 in 2024, which is 17.9% larger than in 2023. Wellness real estate now represents about 3.3% of global annual construction output.[2] The wellness real estate market has grown by 19.5% annually over the five-year period from 2019-2024, as compared to a 5.5% average annual growth rate for overall construction. **We project 15.2% annual growth over the next five years, with the market increasing to a projected $1,114.0 billion by 2029.**

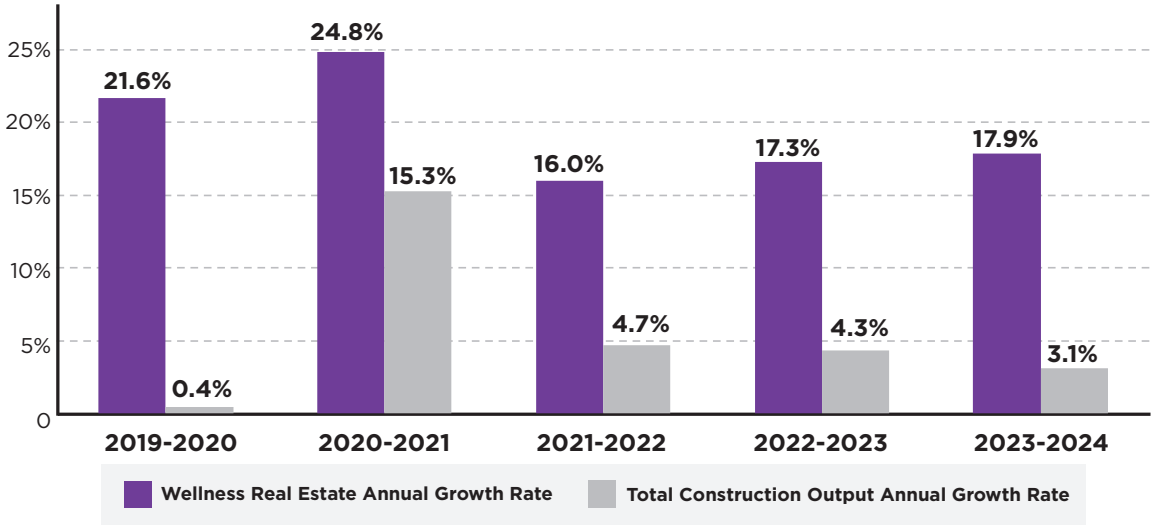
Figure 3.1: Global Market Size and Growth Projections, 2013-2029



CAGR=Compound Annual Growth Rate
Source: Global Wellness Institute

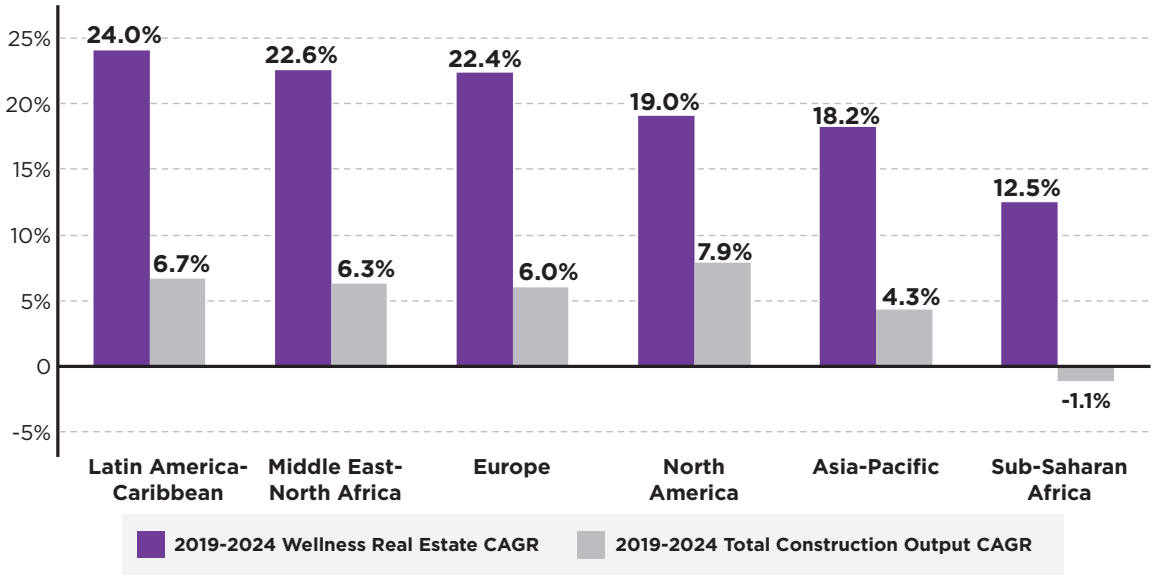
Over the last few years, global construction growth has slowed considerably, from 15.3% growth in 2020-2021 to only 3.1% growth in 2023-2024 (see *Figure 3.2*). This shift has been driven by an overall slowdown in economic growth, a major real estate crisis in China (which is by far the world's largest construction market), and a negative construction market growth rate across a number of large markets in 2023-2024 (including Japan, South Korea, Germany, France, and Russia, as well as much of Sub-Saharan Africa). While the growth rate for wellness real estate has remained well above that for overall construction, the sector's annual growth rate has also tapered off a bit in the last few years, from a 24.8% increase in 2020-2021 to 17.9% growth in 2023-2024.

Figure 3.2: Wellness Real Estate Versus Construction Output, Global Annual Growth Rate, 2019-2024



Source: Global Wellness Institute, based on construction output data from the United Nations

Figure 3.3: Wellness Real Estate Versus Construction Output, Regional Compound Annual Growth Rate, 2019-2024



Source: Global Wellness Institute, based on construction output data from the United Nations

The wellness real estate market is heavily concentrated in North America, Asia-Pacific, and Europe (see *Figure 3.4*); these regions together account for 99% of the global market. **North America** remains the largest regional market in 2024, accounting for 44% of the global total.

At the regional level, wellness real estate growth has outpaced overall construction growth across every single region from 2019-2024, by a factor of 2-4 times or more (see *Figure 3.3*). Latin America-Caribbean, Middle East-North Africa, and Europe have been the fastest-growing regional markets for wellness real estate over the 2019-2024 time period. In **Latin America-Caribbean**, regional growth has been driven by very high overall construction growth through 2023, with just three countries accounting for most of the increase in wellness real estate (Mexico, Brazil, Argentina). **Middle East-North Africa** has remained one of the fastest-growing regional markets for wellness real estate investment since the pandemic (even alongside relatively slow overall construction growth in 2021, 2023, and 2024), and the majority of the growth is concentrated in United Arab Emirates and Saudi Arabia. In **Europe**, overall construction growth has also slowed in recent years, and the region's robust growth in wellness real estate is driven by several large markets (United Kingdom, France, Germany, Netherlands, Italy, Sweden, Switzerland). **Asia-Pacific** is home to a number of very large and fast-growing countries for wellness real estate (China, Australia, Japan, India, South Korea), but the regional growth trend in the last few years has been dampened by economic volatility, currency fluctuations, and overall construction market downturns in several large countries in 2022, 2023, and 2024 (including China, Japan, and South Korea).

Figure 3.4: Wellness Real Estate Market by Region, 2019-2024

	Wellness Real Estate Market (US$ billions)						Average Annual Growth Rate	
	2019	2020	2021	2022*	2023*	2024	2023-2024	2019-2024
North America	$100.19	$118.82	$146.89	$180.50	$206.82	$239.43	*15.8%*	*19.0%*
Asia-Pacific	$77.51	$97.70	$119.36	$130.59	$151.78	$178.65	*17.7%*	*18.2%*
Europe	$46.03	$55.84	$73.68	$83.07	$103.39	$126.36	*22.2%*	*22.4%*
Middle East-North Africa	$0.71	$0.78	$0.96	$1.23	$1.55	$1.96	*26.3%*	*22.6%*
Latin America-Caribbean	$0.55	$0.61	$0.80	$0.96	$1.29	$1.60	*24.4%*	*24.0%*
Sub-Saharan Africa	$0.24	$0.25	$0.30	$0.34	$0.40	$0.43	*8.0%*	*12.5%*
WORLD	**$225.23**	**$273.99**	**$342.00**	**$396.69**	**$465.23**	**$548.43**	***17.9%***	***19.5%***

** 2022 and 2023 figures have been revised since GWI's previous release of data for this sector (in the 2024 Global Wellness Economy Monitor), due to data revisions and updates made by key underlying data sources such as the United Nations.*
Note: Figures may not sum to total due to rounding.
Source: Global Wellness Institute, based on construction output data from the United Nations.

The top twenty largest country markets for wellness real estate have remained largely the same since 2019, with very little movement up or down within these rankings. In 2024, Vietnam entered the top twenty for the first time (bumping down Finland to #21). The list of the largest markets further illustrates how heavily concentrated the wellness real estate sector is in just a few major countries. The United States alone accounted for 41% of the global market in 2024. **The United States and Canada, plus a few key countries in Asia (China, Australia, Japan) and Europe (United Kingdom, France, Germany), accounted for 85% of the global market.** Average annual growth rates for 2019-2024 remained quite high across all of the largest country markets, and many of the countries on this list have been growing faster than the global sector average (19.5%) during this time period.

Figure 3.5: Top Twenty Markets in 2024

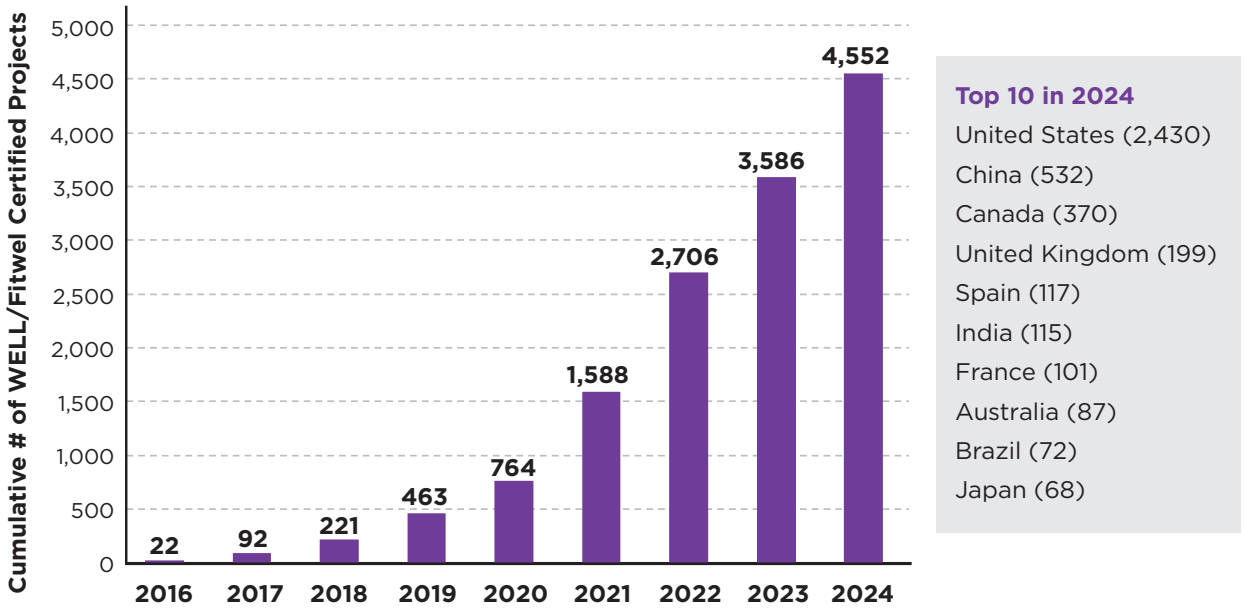
	Wellness Real Estate Market (US$ billions)						Rank in 2024	Average Annual Growth Rate 2023-2024	Average Annual Growth Rate 2019-2024
	2019	2020	2021	2022*	2023*	2024			
United States	$94.32	$110.99	$136.85	$168.31	$192.62	$223.17	**1**	*15.9%*	*18.8%*
China	$36.96	$50.90	$62.13	$63.37	$73.54	$86.29	**2**	*17.3%*	*18.5%*
United Kingdom	$10.77	$14.76	$21.40	$23.37	$28.64	$38.50	**3**	*34.5%*	*29.0%*
Australia	$15.58	$16.54	$21.12	$23.94	$27.38	$30.86	**4**	*12.7%*	*14.6%*
France	$9.55	$11.24	$15.47	$18.00	$23.45	$28.53	**5**	*21.7%*	*24.5%*
Japan	$7.60	$11.47	$13.21	$15.00	$18.15	$21.45	**6**	*18.2%*	*23.1%*
Germany	$8.67	$9.71	$11.10	$12.16	$16.64	$18.58	**7**	*11.7%*	*16.5%*
Canada	$5.87	$7.83	$10.04	$12.19	$14.20	$16.27	**8**	*14.6%*	*22.6%*
India	$5.01	$5.25	$7.00	$8.62	$9.83	$12.63	**9**	*28.5%*	*20.3%*
South Korea	$5.67	$6.17	$7.16	$8.86	$10.07	$11.85	**10**	*17.6%*	*15.9%*
Netherlands	$2.88	$4.00	$5.50	$6.92	$8.13	$9.86	**11**	*21.3%*	*27.9%*
Switzerland	$2.27	$2.51	$2.88	$3.24	$3.87	$4.36	**12**	*12.6%*	*13.9%*
Norway	$2.04	$2.30	$2.80	$3.23	$3.46	$3.90	**13**	*12.5%*	*13.8%*
Singapore	$1.14	$1.25	$1.71	$2.56	$3.21	$3.84	**14**	*19.9%*	*27.5%*
Sweden	$1.63	$1.80	$2.71	$2.84	$3.31	$3.73	**15**	*12.5%*	*18.0%*
Italy	$1.29	$1.46	$2.07	$2.38	$2.89	$3.61	**16**	*24.7%*	*22.9%*
New Zealand	$1.47	$1.55	$1.91	$2.18	$2.42	$2.70	**17**	*11.6%*	*13.0%*
Austria	$1.50	$1.73	$2.06	$2.22	$2.45	$2.65	**18**	*7.8%*	*12.0%*
Denmark	$1.32	$1.52	$1.81	$1.97	$2.24	$2.47	**19**	*10.3%*	*13.3%*
Vietnam	$0.77	$0.91	$0.99	$1.26	$1.49	$2.13	**20**	*42.5%*	*22.6%*

**2022 and 2023 figures have been revised since GWI's previous release of data for this sector (in the 2024 Global Wellness Economy Monitor), due to data revisions and updates made by key underlying data sources such as the United Nations.*
Source: Global Wellness Institute, based on construction output data from the United Nations

Accelerating wellness building certifications are a bellwether for wellness real estate demand.

One good way to understand the rapid growth trajectory of wellness real estate is to look at the number of projects earning wellness building certifications in recent years. The WELL Building Standard (WELL) and Fitwel are the two major third-party rating systems that focus specifically on health and wellness of building occupants and that operate in multiple countries. WELL awarded its first certifications in 2014, while Fitwel certified its first projects in 2016. As illustrated in *Figure 3.6*, interest in wellness certifications has risen rapidly since that time, with the total number of wellness-certified building projects increasing by nearly fifty-fold from 2017 to 2024. **At the end 2024, there were over 4,550 WELL and Fitwel certified projects around the world.** Over 53% of these certifications are located in the United States. The majority of the certifications are for office/commercial and mixed-use properties, with about 24% in residential projects (including multifamily, single family, and senior living). As of May 2025, an additional 2,000 projects were in progress for certification (Fitwel) or pre-certified (WELL) across 49 countries, with the majority of these located in the United States, China, the United Kingdom, and India.

Figure 3.6: WELL and Fitwel Certifications, Cumulative, 2016-2024



These figures measure fully certified projects, and they are cumulative (showing the increase in the total number of certified projects over time).
Data compiled by GWI using publicly-available online project databases from WELL/IWBI and Fitwel. Note that the data have been revised slightly since the previous release of this data (in the 2024 Global Wellness Economy Monitor), due to changes in the underlying project databases.
Source: Global Wellness Institute, based on data from WELL/IWBI and Fitwel

It is important to keep in mind that WELL and Fitwel certifications represent only a small fraction of the wellness real estate market as defined by GWI. And, the impact of rating systems extends far beyond the simple number of certifications awarded. For example, large, multi-location companies are increasingly consulting with these rating systems to enhance healthy features across their entire portfolio of buildings, even though they may only officially certify their headquarters. Although WELL and Fitwel are the most well-known and most global programs, several other wellness-related certifications and toolkits are available in the market, some of which focus more broadly on regenerative living or more narrowly on indoor environmental quality (see *Chapter 2*). For example, there are more than 250 certified Living Building projects, as well as 895 UL Verified Healthy Buildings around the world. As noted in *Chapter 2*, well-established green building certifications like LEED and BREEAM have been shifting toward a more holistic emphasis on human health and have added criteria related to indoor environments and occupant health and well-being. Globally, there are more than 610,000 BREAM-certified buildings, more than 118,300 LEED-certified projects, and more than 47,400 Passive House-certified projects. Therefore, the extent of the real estate projects that have obtained certifications using some kind of human health- or wellness-related criteria extends far beyond just the number of WELL and Fitwel certified properties discussed above.

Figure 3.7

GWI's Measurement Methodology for Wellness Real Estate

The GWI research team measures the wellness real estate market by estimating annual expenditures on the construction of residential and commercial/institutional properties (including office, hospitality, mixed-use/multi-family, medical, and leisure) that incorporate intentional wellness elements in their design, materials, and building, as well as their amenities, services, and/or programming. To arrive at these estimates, we estimate annual, country-by-country construction output based primarily on data from the United Nations Statistics Division, *National Accounts Official Country Data Database*, and supplemented by data gathered from Euromonitor, IMF *International Financial Statistics*, OECD, and Eurostat. Wellness real estate is estimated as a percentage of each country's total annual construction output, based upon GWI's research on country-by-country market trends, including the estimated number of wellness-related projects, growth in wellness-certified projects (WELL/Fitwel), growth in the green building market and certifications (LEED/BREEAM/etc.), and other country-specific factors.

Consumer preferences are clear: Health is the new wealth, and wellness is the new "why."[3]

Consumers have long been interested in wellness features and amenities in their homes and neighborhoods – things like walkability, natural light, outdoor spaces, trees, green spaces, parks, fitness and recreation facilities, libraries, and public transit. Interest in these features has grown even stronger since the COVID-19 pandemic. This growing demand has become more clear and more measurable, as real estate surveys increasingly include wellness in their questions about the needs, concerns, wants, and motivators of buyers and renters.

The desire for healthier real estate is universal, and consumer understanding of wellness has broadened in scope since the pandemic.

In a 2023 PwC-ULI study of nearly 1,100 **European property industry leaders**, 70% said that incorporating the health and well-being of occupants into real estate will rise in importance in the next 3-5 years, while 64% said the same regarding public space, green space, and community amenities.[4] In a 2024 **European consumer** survey by RE/MAX, outdoor space was ranked as the most important factor when searching for a new home (44% of respondents), followed by energy efficiency (36%) and access to nature/green spaces (31%).[5]

In the 2021 Knight Frank Global Buyer Survey, **Asian consumers** said that good air quality has become one of their most important features when choosing a home (76% of respondents), along with proximity to green space (72%), access to good healthcare (71%), more outdoor space (64%), overall wellness/well-being amenities (61%), views of nature (57%), and a home gym (43%). In the same survey, **African respondents** said their most important factors when choosing where to live include good air quality (76%), proximity to green space (74%), access to good healthcare (72%), more outdoor space (64%), wellness/well-being amenities (60%), and views of nature (54%).[6]

In a 2021 survey, **Australians** said their most important neighborhood design features include fresh foods close by (90% rated as important); a sense of safety (88%); natural elements (83%); walkable/bikeable to key places (83%); and park/open space proximity, backyards, and safe footpaths (all at 80%).[7]

In a 2022 survey of **U.S. homeowners and renters**, 95% of respondents said they believe that a home impacts its occupants' health, while 73% will be considering health when choosing their next home.[8] When a 2024 National Association of Realtors (NAR) survey asked **recent U.S. homebuyers** which factors influenced their neighborhood choice, 21% said walkability, 20% said convenience to parks and recreational facilities, and 19% said convenience to health facilities.[9] In a 2024 Zillow survey of **U.S. renters**, 39% indicated they want a neighborhood that offers a sense of community or belonging, while 55% want a walkable neighborhood; 53% want to be close to shopping, services, and leisure activities; and 33% want to be close to public transit.[10] A 2023 NAR survey found that 53-56% of Americans would prefer an attached dwelling or a house with a small yard that is walkable to places, while only 44-47% would prefer a large yard or a single-family home that requires driving to most places or a longer commute.[11]

The 2022 America At Home Study of **U.S. consumers** asked respondents what are the most important features for wellness: more than 50% chose energy and water conservation, elimination of harmful chemicals (VOC-free paints and finishes), and low-energy windows, while 48% chose a whole house air filtration system and 43% chose a whole-house water filtration system. When asked their motivations for

choosing these features, those who chose "improves my health and wellness" (43%) exceeded those who chose "saves me money" (42%). According to the study's authors, this is the first time that respondents **chose health and wellness over money as a purchase motivator**.

Financial wellness is rising in importance as homes have become increasingly unaffordable in many major cities around the world.

In a 2024 survey of **UK renters**, 73% said that affordability is their biggest worry.[12] In a 2024 survey of **Canadians living in multi-family rental buildings**, 52% said they are concerned about affording their rental, 92% said that rents are rising significantly in their region, and 54% said they need more space but cannot afford to move.[13] A 2024 survey of **European adults** found that, on average, respondents spend nearly 38% of their monthly incomes on rent, mortgage payments, and utility bills, which would meet the definition of housing cost-burdened. Across Europe, 64% of those who are interested in moving said that they are held back by the high cost of housing.[14] In the 2022 America At Home Study of **U.S. consumers**, 62% of respondents said their biggest concern is inflation, while 36% said they are concerned with the economy and jobs.[15]

Wellness is increasingly overlapping with sustainability in the minds of consumers when it comes to their homes and living environments.

In a 2022 survey, 76% of **Indian respondents** said that the sustainability features of a property have become more important when choosing a home.[16] In a 2024 survey of **UK residents planning to move in the next five years**, 64% said it is important for their next home to be sustainable and environmentally friendly. In the same study, 66% of respondents said they are looking for an electrical vehicle charging point in their next home, while 16% said that not having it would be a deal breaker. Other desirable sustainable features include triple glazed windows (61%), solar panels (56%), eco-friendly building materials (54%), and rainwater harvesting (54%).[17] In a 2022 survey of **U.S. renters**, two-thirds of respondents said that green practices are important to them, and 40% consider green practices to be a deal breaker in their choice of residence.[18] A 2024 survey of **Canadian renters** found that 39% would pay more monthly to live in a zero-carbon building.[19]

Climate risks are also on the minds of potential buyers.

In a 2023 Zillow survey of **prospective U.S. homebuyers**, 83% said that at least one climate risk (flood, hurricane, wildfire, etc.) affects where they shop for a home. Flood was the most commonly mentioned risk (41% of respondents), followed by wildfires and extreme temperatures (both at 37%).[20]

Consumers say their wellness can be improved with better home design features that reduce daily "friction" and inconveniences.

Interest in at-home conveniences and flexibility has increased in response to people's experiences during the pandemic and the explosion of remote work. For example, the 2022 America At Home Study asked **U.S. consumers** what is currently missing in their homes that they would be willing to pay for: 56% said greater technology and energy efficiency, 55% said better/expanded storage, 49% said a better equipped kitchen, 30% said a home office with a door and soundproofing, and 25% said flexible space for multiple uses.[21]

In the 2021 Knight Frank Global Buyer Survey, 62% of **Asian consumers** and 56% of **African consumers** said that flexible living/multiple-use rooms are an increasingly important factor in choosing a home; a home study/office was also increasingly important for both Asians (68%) and Africans (77%). In the same study, 67% of **global respondents** said that a home study/office will be an important factor in their choice of a residence, while 55% said that flexible/multi-use rooms are increasingly important to them.[22] In CBRE's 2022 survey, 76% of **Indian consumers** said that a dedicated space for working at home has become more important to them, while 65% said that spaces for remote working in the community were very important, and 67% said that smart-home technology is increasingly important.[23]

COVID-19 has turbo-charged global demand for wellness real estate across multiple sectors (office, residential, and retail).

In late-2020, the Center for Active Design, BentallGreenOak, and the UN Environment Programme Finance Initiative joined forces to conduct a **global survey of real estate investors** (including owners and asset/fund/investment managers), who collectively represent assets under management of more than $5.75 trillion. 61% of the respondents reported that they already use healthy building certification systems; 87% had experienced increased demand for healthy buildings over the previous 1-2 years; and 92% expect demand to grow in the coming years across all asset categories. On a regional basis, respondents noted moderate to strong demand across Asia (100%), North America (90%), and Europe (85%). Key motivations for investing in healthy buildings included COVID-19 (91%), tenant satisfaction (91%), human health (87%), and market differentiation (86%). In addition, 89% of respondents reported that they incorporate health and wellness into their ESG strategy (either somewhat or to a great extent).[24]

In addition to the rising demand for wellness features, the market is also willing to pay for them.

After conducting an extensive literature review of more than 300 academic, peer-reviewed, and independent studies, GWI found solid, global evidence that buyers/occupants are willing to pay more for built environment features that enhance health and well-being, across both the residential and commercial real estate markets.[25] Our findings on the premiums for different types of wellness-supporting features are summarized below, and examples across the world are highlighted in *Figure 3.8.*

- **Biophilic features and views of nature:** In the United States, we found property value premiums of 2-5% for homes with more greenery, trees, and landscaping, as well as a sales price premium of more than $9,000 for houses in neighborhoods with more tree canopy. In the United States, homes overlooking nature are also estimated to have an average price premium of 44%. In New York City, we found commercial office rent premiums of 5.6%-7.8% for street-level greenery and 5%-6% for good natural light indoors. In addition, customers have demonstrated willingness to pay an 8-25% premium when they are shopping in an environment with more biophilic features.[26]
- **Walkability:** U.S. studies indicate a 1% increase in a home's price for every one-point increase in a neighborhood's walkability score (on a 100-point scale). Higher scores mean better access to nearby amenities such as parks, restaurants, retail shops, and public transit. A Walk Score of 50 or above is correlated with a 40-54% sales premium per square foot for office buildings. A 10-point increase in Walk Score has been associated with a 5-8% increase in commercial property value.[27]

Figure 3.8

Consumers around the world are willing to pay more for wellness-enhancing features, buildings, and neighborhoods.

CANADA

When asked where they would spend an extra $10,000 if they could, **16.3%** of new home buyers said energy efficiency, **9.4%** said aging in place/accessibility, **3.9%** said improved indoor air quality, and **3.5%** said closer to work/amenities.

NETHERLANDS

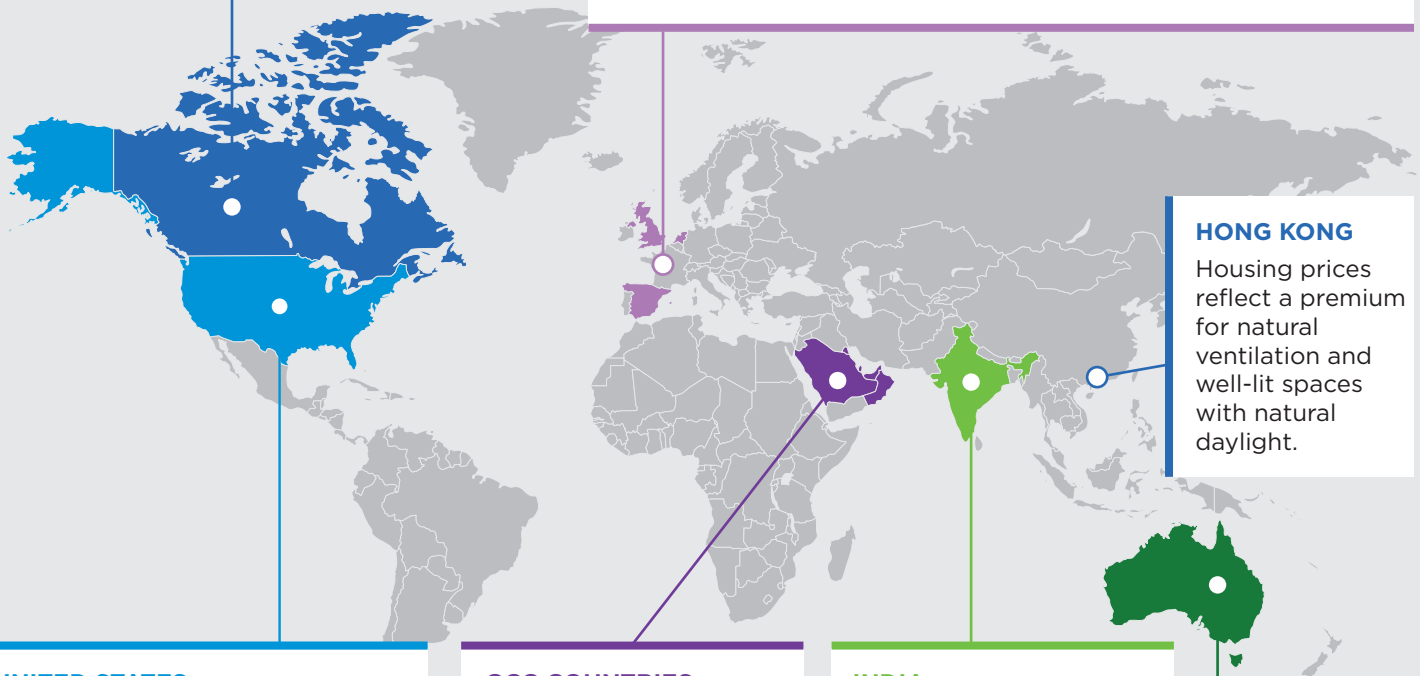
Proximity to urban nature – such as parks, gardens, and greenery – increases local property values by up to **20%**.

SPAIN

Almost half of all consumers looking for a new property would pay more because it is sustainable.

UNITED KINGDOM

Houses located in an "area of outstanding natural beauty" can attract a price premium of **13%** as compared to other similar homes across the country.



HONG KONG

Housing prices reflect a premium for natural ventilation and well-lit spaces with natural daylight.

UNITED STATES

- **78%** would be willing to pay more for a home within an easy walk of parks, shops, and restaurants.
- A walkable home can sell **2.2-3.9 days** faster.
- Homes with an EV charging station or drought resistant landscaping can sell more than **9 days** faster.
- Home buyers are willing to pay **2.5%** more for a "she shed" (where women can relax and unwind), **2.1%** more for saltwater pool, **1.7%** more for a meditation room, and **0.6%** more for a spa-inspired bathroom.

GCC COUNTRIES

- In Dubai, wellness-focused developments reported a **14%** annual increase in property value from 2021-2023, as compared to a 7% rise in non-wellness properties.
- Across the six GCC countries (UAE, Saudi Arabia, Qatar, Kuwait, Bahrain, Oman), residents are willing to pay **15-20%** more for energy-efficient housing.

INDIA

In Tier 1 Indian cities, middle-income consumers will pay a **5-10%** premium for sustainable living, while corporations will pay a 15% premium for green-certified buildings.

AUSTRAILIA

For commercial properties, Green Star certifications have delivered **16.4%** higher market value per square meter, **2.7%** higher occupancy rates, **23%** longer weighted average lease expiry, and **13.5%** higher annual returns to investors.

Data aggregated by the Global Wellness Institute; see the list of sources at the end of this chapter.

- **Proximity and easy access to high-quality natural and recreational amenities:** Home price premiums range from 3-12% for nearby open space, greenbelts, and conservation areas; 4-20% for nearby parks and multi-use trails; and 5-15% for recreational programming and amenities within the community (e.g., fitness centers, swimming pools, golf courses, etc.). The size of the premium depends on the quality and characteristics of these amenities, as well as their distance from the home.
- **New Urbanist features such as mixed-use, higher-density, transit-oriented, and traditional neighborhood design:** Communities with these health-enhancing elements have demonstrated home price premiums of 5-20% across the United States.
- **Sustainability features:** Commercial buildings with green certifications have yielded a rent premium of 6% and a sales premium of 7.6% around the world. Other studies have found rent premiums of 5-15% across commercial and industrial properties with various green features. For the residential market, we found sales price premiums of 2-14% in the United States for homes marketed with green features or certifications.[28]
- **Features that support employee health, well-being, and inclusion:** In the commercial space, businesses and investors are increasingly focusing on healthy built environments that can have a positive impact on their bottom lines. In 2023, CBRE surveyed more than 500 commercial real estate professionals worldwide and found that 49% would pay a premium for features that improve the physical and mental health of building users; 47% would pay a premium for health and well-being certifications; 40% would pay a premium for facilities that support cycling and walking; and 37% would pay a premium for inclusive building design (e.g., accommodating ability, age, or neurodiversity). In addition, nearly half of respondents said they would pay a premium for green-certified buildings, and 79% said that green building certifications have an impact on their real estate decisions.[29]

Market metrics reflect the compelling value proposition of wellness real estate.

When wellness real estate combines many of the above elements into an intentional and multidimensional concept, the whole is more than the sum of its parts. Over the last 10-15 years, there has been a growing body of evidence demonstrating the strong business case for building and operating wellness real estate. Many of these studies have been led by the organizations that certify properties in wellness and sustainability (e.g., IWBI, Fitwel, U.S./World Green Building Council). Others have been conducted by companies/developers after pursuing these certifications.

It would be ideal if one could sum up all of the high-quality studies in a simple "premium rate" for wellness real estate. Alas, all these studies vary in scope and methodologies; define wellness, "well buildings," and "healthy buildings" in many different ways; and collect many different types of business/financial outcome metrics. In addition, these kinds of real estate metrics are closely tied to the characteristics of each project and the market where they are located. This section provides a collection of many outcome metrics for wellness real estate projects across the world. The numerous economic benefits of wellness real estate are summarized in *Figure 3.9* and described in detail below.

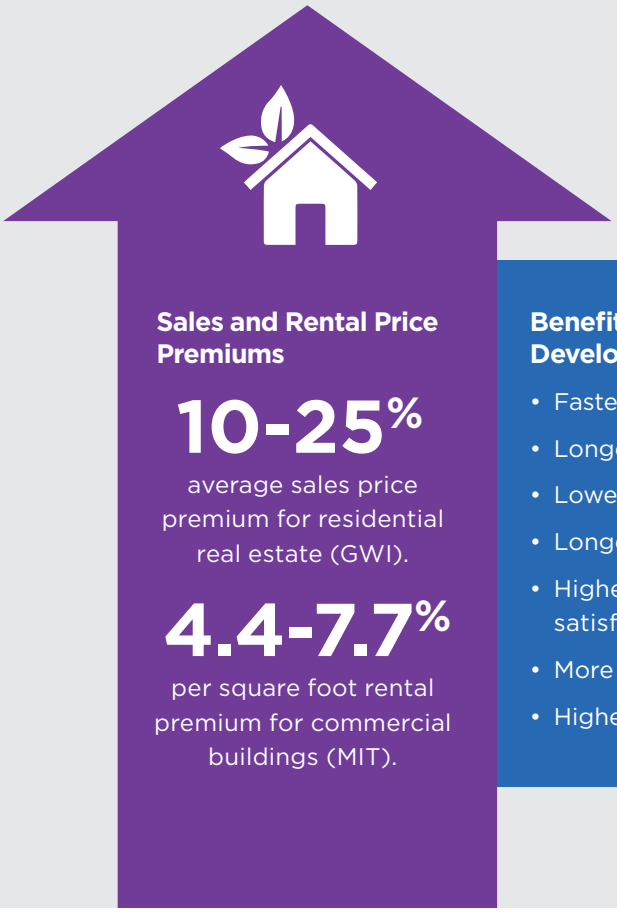
Wellness real estate can command price premiums in both the residential and commercial spaces.

GWI's own estimates put the **average sales price premium in the range of 10-25% for residential wellness real estate** (for properties positioned at the middle and upper ends of the market).[30] The wide range in the price premiums reflects the varying positioning of wellness real estate developments within their local real estate market. Projects with a greater level of differentiation, a more unique community environment, higher-quality residences, more natural assets, and more extensive/specialized amenities and services will typically command higher price premiums.

A 2020 study by the MIT Real Estate Innovation Lab, focusing on ten cities across the United States, found that **wellness-certified commercial buildings (WELL and Fitwel) collect a rental premium in the range of 4.4-7.7% per square foot**. This premium for healthy spaces is independent of all other factors, such as LEED certification, building age, renovation, lease duration, and submarket.[31]

Figure 3.9

Wellness real estate brings many economic benefits to developers, builders, investors, and businesses.



Source: Global Wellness Institute

Wellness real estate can bring many financial returns beyond price premium, such as faster absorption rates and higher asset value and profits.

The economic value of wellness real estate can come in many forms to investors, developers, owners, and operators, such as: **faster sales, longer waitlists, longer leasing terms, lower turnover, more tenant recommendations, higher resident satisfaction, and higher asset value and profits in an investment portfolio**.

- A 2022 study that surveyed 60 properties in QuadReal Property Group's portfolio across Canada found a clear correlation between a higher Fitwel score and **a greater willingness of occupants to recommend their building** to their friends and colleagues (i.e., a higher "Net Promoter Score"). This was the case even when occupants were not aware of the specific features that associated with the healthy building strategies.[32]
- A 2020 study by the MIT Real Estate Innovation Lab, focusing on ten cities across the United States, found that wellness-certified commercial buildings (WELL and Fitwel) achieve **longer average lease terms** – 88.3 months for buildings with healthy features versus 75.3 months for the control group.[33]
- In Australia, Stockland Corporation – a large property group specializing in developing livable, healthy, and affordable residential communities – enjoyed **a 53% increase in its "return on equity"** over a 5-year period from 2014-2019. Stockland also achieved a **greater than 80% satisfaction level for residents, retailers, and tenants** during this time period.[34]
- In Hong Kong, the Double Cove project (a mixed-use, residential/retail high-rise development with LEED-ND Gold certification in 2015) **achieved a 40% higher market value than nearby properties** that cater to similar budgets, ages, and typologies. It also posted a 21% higher market value than an upcoming development in the same district. The developer attributed this premium to the project's emphasis on biophilia, air quality, and other green building attributes, as well as access to amenities. **Resident satisfaction with the building and its wellness features is very high**, with a 97% score for overall satisfaction; 87% for satisfaction with biophilia, plants, and greenery; 84% for on-site opportunities to exercise; and 50% for acoustics inside the apartments.[35]
- Lakehouse in Denver, Colorado, is mixed-use project (for-sale condominiums and retail) with WELL Gold certification. The project was completed and marketed during the onset of the COVID-19 pandemic – a period when the real estate industry endured immense hardships. Even so, Lakehouse experienced **strong sales absorption rates** and some of the developer's highest monthly traffic counts. Lakehouse's absorption rate was unaffected when unit prices were raised by up to 5% in mid-2021, signaling buyers' willingness to pay a higher price to live in a healthy building. Improved absorption during the second half of its sales cycle resulted in Lakehouse **selling out faster than anticipated, saving the developer nearly $600,000 in budgeted overhead costs**.[36]
- The Pearl in Silver Spring, Maryland, was the first building to receive the Fitwel Multifamily Residential certification in 2017. The Tower Companies (the developer/owner/operator) believes that the health and wellness orientation of the project helped it to achieve a consistent **95% lease rate**, with many residents sharing that these features were a factor in their decision to choose the Pearl and extend their lease. The Pearl has since been recertified by Fitwel, and Tower is expanding certifications to other properties in their portfolio.[37]

Wellness real estate can benefit businesses and employers by boosting employee productivity, health, and well-being.

In the commercial market, the positive financial metrics of wellness real estate also reflect the value of **higher employee productivity and performance, reduced absenteeism and presenteeism, improved retention and recruitment,** and other benefits for the bottom-line of businesses and employers. The evidence for these business impacts comes from a handful of multi-building studies, along with many case studies conducted by specific companies and buildings in countries around the world.

- A 2015 study of office buildings in seven U.S. cities found that higher indoor air quality can **improve employee performance by up to 8%,** equivalent to a **$6,500 increase in employee productivity** each year.[38]
- A longitudinal analysis of six offices pursuing WELL certification in 2015-2018 found a **28-percentage point increase in employee satisfaction** after moving into WELL-certified offices, as well as a **10-point increase in median productivity scores**.[39]
- A 2020 survey-based study of nine companies in Australia (comparing WELL-certified and non-certified offices) found **higher rates of employee satisfaction, workability, and perceived productivity** in offices that had WELL certification or incorporated active design principles.[40]
- In 2020, a U.S. Department of Energy review of 63 studies on healthy buildings found that, on average, improvements in indoor environmental quality resulted in a **5.7% improvement in productivity** and a **37% reduction in absenteeism**.[41]
- Research by Stok in 2018 found that high-performance buildings – those with healthy and green features, designed to enhance the occupant experience – can **increase employee productivity by 9%**. Putting all the productivity gains together, the study estimated that health and wellness-focused design can yield gains of $3,395 per employee in annual profit, or $18.56 per square foot in annual profit. The profit estimate was calculated after taking out the extra costs of delivering and maintaining healthy buildings. **The total gains amount to $23,584 per employee, or $129 per square foot, in Net Present Value** over ten years. The largest gain comes from **enhanced employee productivity**, followed by **increased employee retention**, with smaller gains from improved employee health and wellness, and savings on utilities and maintenance.[42]
- In 2020, Pacific Northwest National Laboratory studied the impacts of improving indoor environmental quality (including air quality, thermal comfort, and lighting) in two buildings, looking at both energy savings and economic benefits from improved health and productivity. For one building, the estimated 10-year net present value (NPV) for energy was $44,000, while **the estimated 10-year NPV for health and productivity gains was over $2.16 million**.[43]
- In Arup's new downtown Boston office (Fitwel, WELL Gold, and LEED Platinum certified), post-occupancy surveys in 2017-2018 found that 83% of employees felt that the new office supported creative thinking and collaboration (as compared to 37% for their previous office). In addition, **68% said their productivity was positively influenced** by better comfort, lighting, and air quality (as compared to 8% for their previous office).[44]
- The new Poly (formerly Plantronics) headquarters in Hoofddorp, Netherlands, is part of the Park 20|20 business park, which is the world's first full-service Cradle to Cradle-optimized working environment. The building achieved BREEAM certification and uses a variety of healthy and sustainability features. A study after moving into the building in 2017 found that the **perceived productivity by the building's users increased by 11.7%**, bringing an **estimated €2.1 million in value per year** for the company.[45]

- In 2016, the municipality of Venlo, Netherlands, constructed a new office building with many green and healthy features (e.g., green/living walls, state-of-the art indoor ventilation, etc.). A study of municipal employees found that moving to this new building led to **significantly enhanced job satisfaction,** as well as a **2% reduction in the prevalence of sick leave**.[46]
- In 2016, the American Society of Interior Designers studied the impacts of moving into its new LEED Platinum and WELL Platinum building in Washington, DC. The research found that office design affected employee health and wellness, retention, performance, and resource efficiency, and they measured **a 19% decrease in absenteeism** and a **16% decrease in presenteeism**.[47]
- After moving into its new BREEAM Excellent and WELL Gold certified office in London, UK, in 2016, Cundall saw **a 58% reduction in staff absenteeism**, as well as **a 27% reduction in staff turnover** – together providing an estimated savings of £200,000 per year.[48]
- After moving into its new LEED Platinum office building in Philadelphia, PA (in 2015), Saint-Gobain's call center staff achieved a dramatic improvement in productivity and performance as compared to their old building, including a **97% increase in sales-generated leads** and a **101% increase in leads per call**.[49]
- After moving into their BREEAM-UK Outstanding office in Doncaster, UK, Skanska **saved £28,000 in absenteeism costs** in 2015, and reduced the green payback period of an office move from 11 to 8 years by achieving **3.5 fewer building-related sick days (as compared to other UK offices)** alongside increased employee comfort and satisfaction.[50]
- In 2015-2016, CBRE commissioned a post-occupancy employee survey after moving into new and renovated offices with a variety of healthy features in Vancouver and Toronto, Canada (with WELL and LEED certifications). The survey found a high level of employee satisfaction with their workplaces and a strong impact on employee retention/recruitment. The **employee turnover rate fell by nearly one-third**, while the **hiring rate for new talent doubled**.[51]
- Sherwin-Williams Centro América (San Salvador, El Salvador) renovated their office with many healthy features (natural daylight, improved air quality, better acoustics, low-VOC materials) and LEED Gold certification (in 2009). After the refurbishment, **overall worker satisfaction improved to 91%**. There was a **44% reduction in employee absenteeism**, resulting in an **estimated savings of $85,000 per year**.[52]

Endnotes

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CHAPTER 4

The Wellness Case

The built environment is a critical yet often unaddressed determinant of our health.

The Global Wellness Institute defines wellness as ***the active pursuit of activities, choices, and lifestyles that lead to a state of holistic health***. Wellness is best viewed as a continuum that extends from poor health to a state of optimal well-being (*see Figure 4.1*).[1] The left-hand or "sick" side of the continuum is addressed by the medical paradigm, with a focus on treating disease (the *pathogenic* approach). The right-hand side of the continuum requires wellness, with individuals proactively adopting activities and lifestyles that benefit their body, mind, and spirit (the *salutogenic* approach).[2]

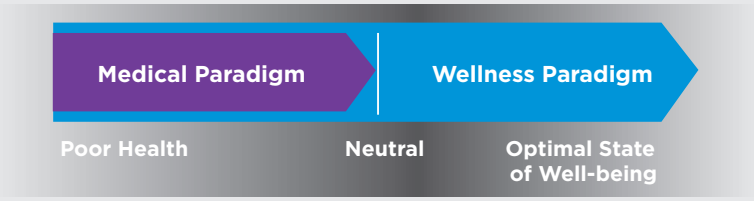
Our ability to live a healthy lifestyle and our well-being are largely determined by the physical, social, community, and economic environments in which we live. Up to 80-90% of our disease risks, health outcomes, and longevity likely depend on all of these modifiable environmental and lifestyle factors rather than on our genes (*see Figure 4.2*).[3] Those who are very young, elderly, disabled, or poor are particularly vulnerable to these factors.[4]

Epigenetics research tells us that while we may carry genetic tendencies for many types of disease, our environments and our lived experiences can alter gene expression to increase or decrease the risks of developing these diseases – while also rewiring our brains (neuroplasticity) – and these effects can be passed down to our children and future generations along with our genes.[5]

Simply put, our genetic disposition for disease can be augmented or mitigated by a **wellness ecosystem**, which extends from healthcare and socioeconomic factors to our natural and built environments (*see Figure 4.3*). **This 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.**

Figure 4.1

The Wellness Continuum



Source: Global Wellness Institute, adapted from Dr. Jack Travis

Figure 4.2

Numerous studies have demonstrated the impacts of modifiable risk factors – including lifestyle and environment – on our health outcomes and lifespans.

- One of the newest and largest-scale studies, published in *Nature Medicine* in February 2025, and based on 500,000 participants in the UK Biobank, found that environmental factors (including lifestyle and living conditions) explained 17% of the variation in the risk of death, as compared to less than 2% explained by genetics.[6]
- Another recent longitudinal cohort study, also based on the UK Biobank (354,000 participants), found that a healthy lifestyle can offset the effects of genetic risks by 62% and can add about 5.22 years to our lifespans.[7]
- The Global Burden of Disease study (195 countries) has highlighted the important impacts of environmental and lifestyle risks on our health. It found that modifiable risks (behavioral, metabolic, environmental, and occupational factors) contributed to about 60% of deaths worldwide in 2016.[8]
- The World Health Organization (WHO) has been estimating the environmental burden of disease since 2000, based on the Global Burden of Disease dataset. In 2016, an estimated 24.3% of global deaths (or 13.7 million deaths) were due to modifiable environmental and occupational risk factors, including built environments, air pollution, unsafe water, UV radiation, noise, occupational risks, agricultural methods, and climate/ecosystem change.[9]
- Based on data from the Global Burden of Disease Study, the Lancet Commission on Pollution and Health found that one in six premature deaths per year are attributable to environmental pollution.[10]
- A 2016 study in Spain found that nearly 20% of premature deaths could be prevented if international recommendations for access to green space; physical activity; and exposure to air pollution, noise, and heat were followed.[11]
- A U.S. study in 2019 found that 40% of cancer cases and 44% of cancer deaths in adults were due to modifiable risk factors (lifestyle, environmental exposures, etc.).[12]
- A 2015 study found that external and environmental factors may cause 70-90% of cancers.[13]
- A 2021 study across 21 countries found that 70% of cardiovascular disease cases and deaths were due to modifiable risk factors (metabolic, behavioral, environmental).[14]
- Various U.S. research studies have shown that the neighborhood or county where we live can predict our life expectancy as well as how we will die, and these differences persist even after adjusting for socioeconomic and demographic factors.[15]

Wellness real estate is an essential part of our wellness ecosystem.

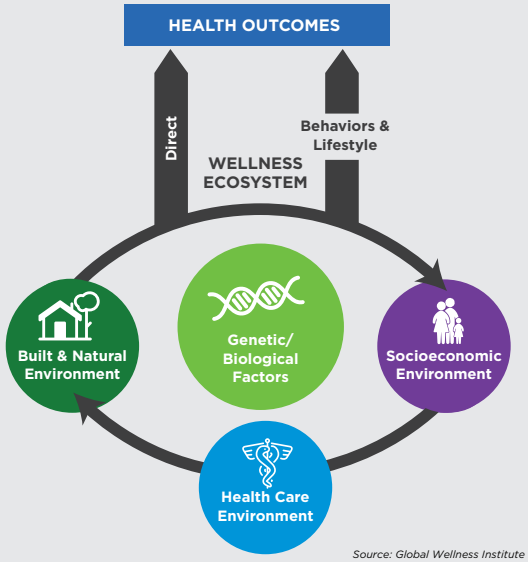
The built environment is an essential foundation for building healthy lives, because it both directly and indirectly shapes our health and well-being. Specifically, wellness real estate can improve our community environments and enhance our wellness in several ways:

- **Supporting behavior change and healthier lifestyles:** No one would dispute that healthy behaviors and lifestyles have a profound impact on our health, but our habits are very difficult to change. Fortunately, psychology shows that changing our living environment can greatly impact our behavior.[16] Our built environments establish the "default" choices in our daily activities and routines, and they can nudge us to behave in one way or another. Wellness real estate can help make the healthy options more convenient, accessible, and affordable. It can also encourage social connections and build community trust.
- **Minimizing the environmental impacts on human health:** Human activities have generated pollution in our air, soil, water, light, and sound that adversely affects our health. While it is beyond the scope of any wellness real estate project to tackle these issues on a macro scale, healthy built environments can help to mitigate these harmful impacts in several important ways. Wellness real estate can reduce our exposure to environmental toxins and viruses; create environments that promote better sleep, rest, and stress reduction; and use earth-friendly practices that help support a sustainable planet, along with a healthy and safe future for everyone.
- **Improving access to wellness infrastructure for the most vulnerable populations:** Poor, marginalized, and underserved populations and regions face the highest health risks and are most burdened by the social determinants of health. And yet, they also have the least access to wellness-supporting facilities, are not served by the private sector wellness industry, and often live in the unhealthiest environments. Built environment interventions are critical for these populations and communities, in order to improve accessibility, lower cost barriers, and address other inequities that work against healthy lifestyles.

Figure 4.3

The Wellness Ecosystem

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



Source: Global Wellness Institute

Wellness real estate can bring many benefits across all dimensions of wellness.

Numerous academic and scientific studies have documented how specific types of infrastructure and design features in wellness real estate can change our behaviors, improve the environmental impacts on our health, and lead to positive outcomes across all six dimensions in GWI's wellness framework. Below, we present a selection of data and findings from systematic reviews, meta-analyses, longitudinal studies, and other research on the relationships between various built environment characteristics and wellness. See *Appendix C* for a list of other reports and studies that catalogue the growing body of evidence on built environments and health.

Benefits of Wellness Real Estate

Physical Wellness

Wellness real estate improves our physical health by shaping the "default" movement options in our daily lives, and by linking us to recreational physical activity infrastructure. Community design that increases the ease and attractiveness of walking, biking, and public transit encourages us to get more **natural movement and exercise** on a regular basis. Inside buildings, attractive and well-located stairways steer us away from elevators. Recreational facilities and programs that are free/cheap and close to home (e.g., parks, playgrounds, walking trails, outdoor gyms, sports courts, community fitness centers, etc.) help us to engage in more **recreational physical activity** during our leisure time. When we have easy and close access to fresh, healthy, and local foods – via well-stocked neighborhood grocery stores, farmers markets, food co-ops, etc. – we are more likely to have **healthy eating habits**. Healthy and non-toxic building materials, fixtures, and furnishings – along with safe water and clean air – reduce our physical **exposure to environmental elements** that can make us sick. Efforts to improve **mobility and accessibility** for people of all ages and abilities, along with improving **safety and security** in our buildings and communities, bring physical health benefits to everyone.

- Numerous studies have shown that proximity to parks is associated with higher levels of physical activity, especially for seniors, children, and disadvantaged populations.[17]
- The 12 country, cross-sectional IPEN Adult study found that a variety of neighborhood environment attributes (higher density, street connectivity, distance to transit, park access, walkability, safety, aesthetics) are strongly related to physical activity behaviors, including walking for transport and for leisure.[18]
- Simple greening interventions – such as adding street trees and greening public plazas – can support spontaneous outdoor exercise, especially when designed with input from community groups and potential users, and when done in conjunction with social engagement activities and programs to promote usage.[19]
- Studies have shown a link between the availability of grocery stores in a neighborhood and quality of dietary intake, including consumption of fruits and vegetables.[20]
- Studies have found a number of positive impacts from efforts to improve indoor air quality, including fewer asthma attacks, improved cardiovascular and respiratory symptoms, fewer sick building symptoms, and better self-reported physical and mental health.[21]
- A U.S. study found that every $1 spent on health- and safety-related repairs in low-income homes can save up to $19 of spending on Medicaid/Medicare.[22]
- A European study found that better indoor environmental quality in hospitals could reduce average length of stay by around 11%, reduce mortality rates by up to 21%, and reduce medication costs by up to 21%.[23]

Benefits of Wellness Real Estate

Mental & Spiritual Wellness

Wellness real estate can play an important role in improving our mental, emotional, and spiritual well-being. **Access to nature** and green/blue spaces – through biophilic design, parks, street trees, etc. – has been demonstrated to boost our mood and cognitive functioning, while reducing stress, aggression, and negative feelings. Building projects can promote better **sleep, rest, and stress reduction** through measures such as soundproofing, noise control, natural daylight, and human-centered lighting. Building on the emerging field of neuroaesthetics, our built environments can **inspire** us, create a sense of **awe and delight**, and connect us to **spirituality, purpose, and meaning** – via public art, beautiful gardens, inspiring architecture, majestic monuments, sacred buildings, and multi-sensory design. Many features in our communities can improve our **work-life balance** and work-related mental well-being, including a robust Internet infrastructure, as well as access to flexible workspaces and easy/short commutes to work. Close proximity to schools, libraries, local clubs/organizations, and community programming can support **lifelong learning** and improve our mental wellness and cognitive functioning throughout our lifespans.

- Urban green space/blue space and contact with nature can enhance mental well-being, improve cognitive abilities, attention, and mood; and reduce aggression and negative feelings.[24]
- Biophilia and indoor natural elements, such as potted plants, pictures of nature, and views of the outdoors, also have positive impacts on healing, stress, mood, and cognitive functioning.[25]
- The 2015-2016 COGfx Buildingomics Study, led by Harvard's T.H. Chan School of Public Health, found that people working high-performing green certified buildings have 26.4% higher cognitive function scores and 6.4% higher sleep quality scores.[26]
- People living in quiet neighborhoods report higher well-being and health-related quality of life than those living in noisy neighborhoods.[27]

Benefits of Wellness Real Estate

Social Wellness

Wellness real estate should encourage different types of meaningful social connections, from our "strong ties" (family, friends, colleagues), to our "weak ties" (neighbors, acquaintances, people we bump into). Many **prosocial planning, zoning, and design** elements – such as mixed-use spaces, housing diversity, higher density, limited street setbacks, strategically located parking and public transit, walkable schools, well-designed sidewalks, public plazas and parks, porches and balconies, benches and street furniture, etc. – have been demonstrated to encourage more pedestrian and street activities, public gathering of people, spontaneous meeting of neighbors, and general social interactions. **Ample, attractive, free, and accessible public spaces and "third places"** (e.g., parks, playgrounds, community gardens, pet parks, community centers, libraries, etc.) help to combat loneliness and social isolation by providing places to meet and encouraging us to socialize with people beyond our close friends and family. Neighborhoods with **mixed housing types and price points** help to reduce social segregation and encourage us to cross paths with people of diverse backgrounds, ages, social classes, identities, cultures, races, and ethnicities.

- Gallup's 2023 research in the United States found that adults who regularly say hello to multiple people in their neighborhood have higher well-being scores than those who greet fewer or no neighbors.[28]
- A U.S. study found that neighborhood walkability is positively related to social interactions with neighbors.[29]
- The 2024 American Social Capital Survey found that Americans living in communities with good access to public gathering places (e.g., parks, coffee shops, libraries) are three times more likely to say they have one or more close friends.[30]
- Studies show that urban greening can reduce loneliness.[31] For example, a 2021 study in Australia found that a 10% increase in urban green space within 1.6km of homes was associated with lower levels of loneliness, especially for people living alone. The researchers concluded that urban-greening targets of 30% total area could lower the odds of cumulative incident loneliness by up to 26% among adults in general and by 52% among adults who live alone.[32]
- A 10-year longitudinal study in Australia found that green space quality is associated with prosocial behavior in children.[33]
- People with stronger social relationships have a 50% increased likelihood of survival than those with weaker social relationships.[34]

Benefits of Wellness Real Estate

Civic & Community Wellness

A community is only as strong as the engagement of its members and the trust that people place in each other. Studies have shown that community interaction builds trust among neighbors and encourages civic engagement. Studies have also shown that **social trust** increases with walkability and access to nature and attractive public spaces. Real estate and building projects that are rooted in the **local culture and traditions** – such as using local materials and plants, vernacular architecture, and culturally-relevant design – will reinforce our sense of place and identity and also build a sense of community connection. Public spaces are even more vital and vibrant parts of the social fabric when they are **"activated" with regular programming and events** (e.g., festivals, concerts, sporting/exercise events, etc.) and when they are well-maintained, well-functioning, inviting, and **accessible to everyone**. Real estate and infrastructure projects are most likely to address the wellness needs of the community when they are designed with **local engagement, participation**, **and governance structures**. The impacts of wellness real estate projects are also much broader when they are **open to the wider community**, and when they are situated within a broader effort of urban infill, regeneration, or redevelopment.

- Public spaces with features such as accessibility, walkability, street furniture, and historical/cultural connections are associated with higher levels of social cohesion and social capital.[35]
- Studies show that walkability and attractive, well-maintained public spaces can increase trust and civic engagement at the community level.[36] For example, a 2024 survey found that Americans who walk around their neighborhood more than once a week are nearly twice as likely to say they can generally trust people (as compared to those who seldom or never walk in their neighborhood).[37]
- Close proximity to amenities such as cafés, restaurants, parks, and libraries increases neighborliness, feelings of safety, social trust, and positive feelings about the community.[38]
- Studies have found that neighborhood community life and social capital are associated with better physical and mental health outcomes.[39]
- Trusting neighbors is associated with higher measures of subjective well-being and health.[40]

Benefits of Wellness Real Estate

Environmental Wellness

Wellness real estate can help combat the rapidly rising environmental threats to our health and well-being. Many infrastructure and design elements that are good for our health are also **environmentally sustainable and energy-efficient** – such as locally-sourced, recycled, natural, nontoxic, and sustainable building materials and methods; net-zero architecture; circular and regenerative design; passive design; indoor plants and green walls; public transit; and so on. **Climate adaptable and resilient** building practices, as well as strategies to **manage and conserve water** help to protect us against the rising health threats from extreme heat, storms, and droughts. All kinds of **urban greening** efforts – parks, street trees, community/rooftop gardens, protected natural areas, native landscaping, etc. – are simultaneously good for our physical and mental health, combat climate change, and **support biodiversity.**

- In France, a study on the costs and benefits of renovating 7.4 million energy-inefficient dwellings estimated that it would result in €758 million in annual savings for the healthcare system. Similarly, a study in Spain found that renovating 1.5 million old, energy-inefficient dwellings could save €150 per household per year in health services costs.[41]
- Green buildings are associated with improvements in some health conditions, including respiratory conditions and depression.[42]
- Green building strategies can help reduce the risk of negative health outcomes following exposure to flooding and extreme heat events.[43]

Benefits of Wellness Real Estate

Economic & Financial Wellness

It is well-documented that our individual and family economic situations play a major role in our health and well-being. **Housing stability and affordability** are critical – and wellness real estate projects that increase the supply of high-quality and affordable middle-class housing can reduce financial pressures and lay the foundation for residents to build economic stability, dignity, and wealth for future generations. Real estate projects that develop higher density, mixed-use, integrated, and walk-/transit-friendly neighborhoods help their residents with **accessing job opportunities**, balancing work-life demands, and reducing the economic burden of car ownership. The expansion of wellness real estate into a **wider variety of building projects at different price points** – from affordable housing and multi-family developments, to co-living, coworking, live-work units, senior housing, etc. – helps to support the economic well-being of a growing range of individuals and families at different income levels and life stages.

- IA U.S. study found that a 1% increase in community economic connectedness is associated with significant decreases in the prevalence of disease such as diabetes, hypertension, high cholesterol, and kidney disease.[44]
- Housing interventions such as refurbishment, heating, and energy efficiency positively affect respiratory health outcomes, quality of life, and mental health.[45]
- Increased daylight exposure improves performance by as much as 10% in workplaces and 9-18% in schools.[46]
- A 2018 survey by the U.S. Green Building Council found that 93% of workers in LEED certified buildings are satisfied at their jobs as compared to 81% of workers in conventional buildings.[47]
- A 2018 study in Europe found that a holistic-people-centered renovation of a typical office (e.g., better ventilation, air temperature, daylight, and acoustics) can result in up to a 12% increase in employee productivity.[48]

Dozens of wellness real estate projects have measured and documented their wellness impacts.

One of the continuing challenges in making the case for wellness real estate is the lack of an established system or metrics to measure and communicate their impacts.[49] Nonetheless, a growing number of projects and developers are experimenting with different approaches for documenting their wellness impacts on residents and occupants – and the number of studies has increased significantly over the last decade. **We have compiled information on 39 wellness impact studies** conducted at the project, developer, and community levels, including:

- **28 wellness impact studies for residential and mixed-use projects** that have already published results or are currently underway.
- **11 studies that have documented wellness impacts for commercial/office properties.**

Key high-level findings from all of the identified studies are summarized in *Figure 4.4*, and details are provided in *Figure 4.5* and *Figure 4.6*.

Note that these studies are different from those summarized on Pages 66-71 above, because they measure broad-based impacts at the project level (i.e., what are the health and well-being outcomes when we design a home, building, or neighborhood with intentional and holistic health and well-being features?), rather than isolating the impacts of a specific feature (i.e., what are the physical health benefits of living in close proximity to a park?).

There are many challenges to conducting wellness impact studies for real estate projects.

Conducting wellness impact studies requires a level of **resources, time, and expertise** that is typically not available or practical for most developers, companies, and communities. The projects that do conduct studies often partner with universities or outside research organizations in order to access the specialized expertise necessary, and these studies are sometimes funded via government grants. For example, the wellness impact studies at **Mueller** (Texas), **Lake Nona** (Florida), **Arbor House** (New York), **High Point** and **Yesler Terrace** (Washington), **Orness Plaza** (Minnesota), **Brent Cross** (UK), **Selandra Rise** (Australia), and **Minta Farm** (Australia) have all been developed via with partnerships with university researchers. Developers would typically need to have a **longer-term involvement in the project** (a "build and operate" model rather than "build and sell") in order to make any kind of study feasible, unless the research is entirely undertaken by a university or outside organization.

Another important challenge of these studies is the **long-term and multi-factorial nature of our health and well-being**. It is not necessarily difficult to observe and document changes in specific health behaviors (e.g., the frequency/amount of walking, the number of neighbors residents talk to), especially if a study is able to do pre-/post-observations or benchmark against a comparison/control group. However, it is methodologically much harder to establish the connections from built environment features to health behaviors to health outcomes (e.g., rates of chronic disease or premature death), because these kinds of health outcomes manifest over a very long time horizon and are influenced by many different factors. In addition, any studies that collect data on people's health must contend with **privacy concerns, ethical considerations, and rules regarding human subject research**.

Figure 4.4

Health and Well-being Impacts of Wellness Real Estate

- Increased happiness or subjective well-being
- Increased feelings of good physical health
- More physical activity (walking, biking, stairs)
- More time spent in nature
- More interactions with neighbors
- Greater sense of belonging and connection
- Improved self-reported mental health
- Better memory, concentration, cognitive function
- Better sleep
- Increased feelings of safety

- Reduced rates of feeling lonely
- Less time spent commuting
- Lower crime rates
- Lower rates of chronic disease
- Lower smoking rates
- Reduced sick days at work
- Reduced symptoms of asthma
- Reduced hospital admissions & urgent care visits
- Fewer falls for seniors
- Lower healthcare costs

EXAMPLES OF WELLNESS IMPACT STUDIES

See Figure 4.5 and Figure 4.6 for details about each project and its measured wellness impacts.

CANADA

RESIDENTIAL & MIXED-USE

- North Vancouver Active Design, BC
- Our Urban Village, BC
- Zibi, Ontario/Quebec

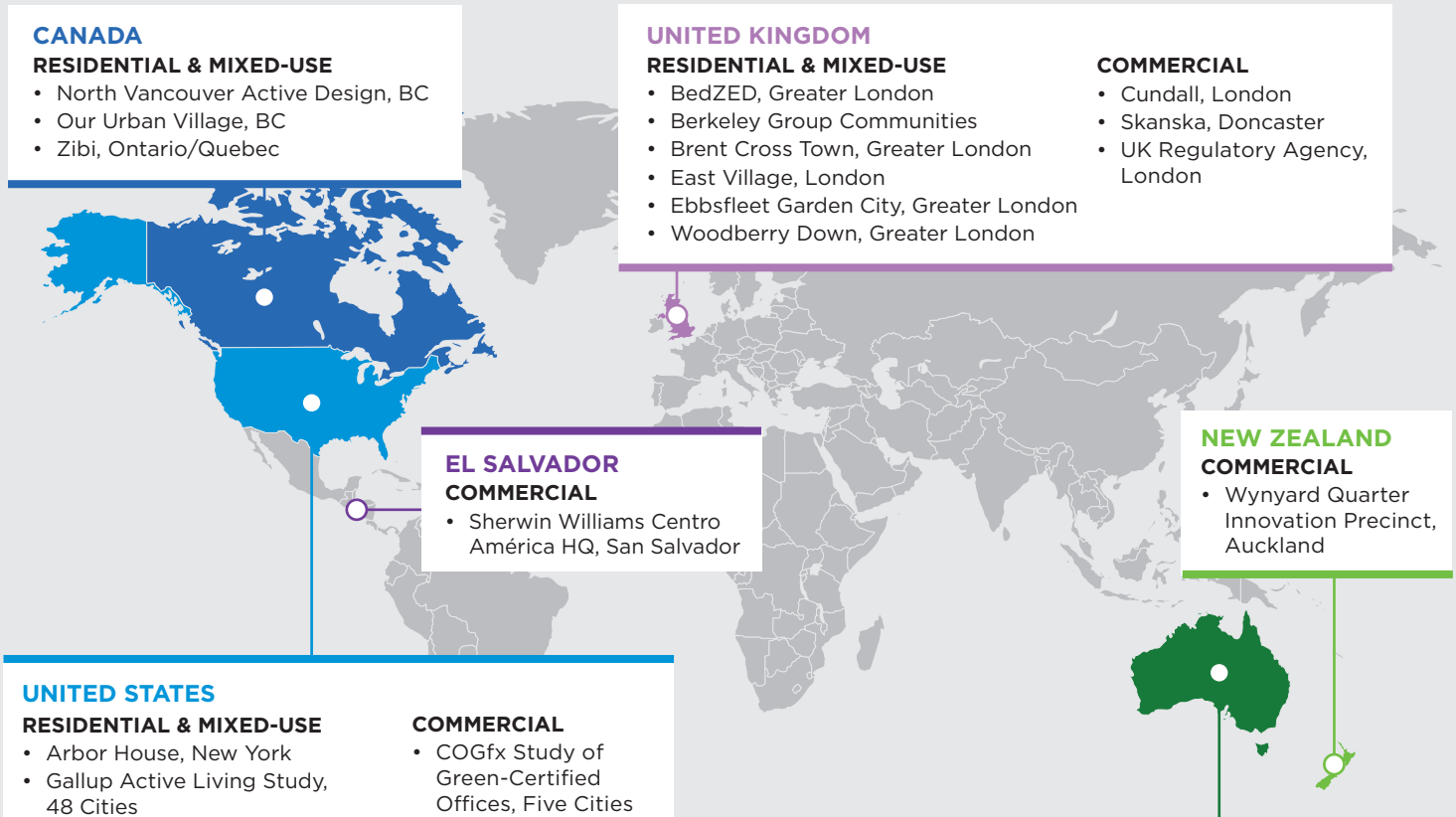
UNITED KINGDOM

RESIDENTIAL & MIXED-USE

- BedZED, Greater London
- Berkeley Group Communities
- Brent Cross Town, Greater London
- East Village, London
- Ebbsfleet Garden City, Greater London
- Woodberry Down, Greater London

COMMERCIAL

- Cundall, London
- Skanska, Doncaster
- UK Regulatory Agency, London



EL SALVADOR

COMMERCIAL

- Sherwin Williams Centro América HQ, San Salvador

NEW ZEALAND

COMMERCIAL

- Wynyard Quarter Innovation Precinct, Auckland

UNITED STATES

RESIDENTIAL & MIXED-USE

- Arbor House, New York
- Gallup Active Living Study, 48 Cities
- Grow Community, Washington
- Harmony, Florida
- High Point, Washington
- Lakehouse, Colorado
- Lake Nona, Florida
- Mariposa District, Colorado
- Mueller, Texas
- Orness Plaza, Minnesota
- Rancho Mission Viejo, California
- Yesler Terrace, Washington

COMMERCIAL

- COGfx Study of Green-Certified Offices, Five Cities
- Saint-Gobain, Pennsylvania
- Stok, California
- Study of WELL-Certified Offices, Six Companies

AUSTRAILIA

RESIDENTIAL & MIXED-USE

- CRT+YRD, Victoria
- Groote Archipelago, Northern Territory
- High Life Study, 172 Buildings
- Minta Farm, Victoria
- RESIDE Study, Western Australia
- Selandra Rise, Victoria
- Stockland Communities

COMMERCIAL

- Medibank, Victoria
- Study of Green & WELL-Certified Offices, Nine Companies

Source: Global Wellness Institute

Why conduct wellness impact studies for wellness real estate projects?

Even though there are many challenges and barriers to conducting wellness impact studies, an increasing number of projects and developers are attempting to do this kind of research. There are many motivations for doing so, depending on the type of project and the organizations involved:

In the commercial space, there is a greater incentive to measure impacts from healthy built environment interventions because the findings can support branding and employee recruitment/retention efforts, can be used to meet ESG reporting requirements, and can be translated into tangible business outcomes for business owners and investors (e.g., productivity, reduced absenteeism, lower turnover, etc.). These kinds of studies are most common among companies that have adopted wellness and sustainability certifications (WELL, Fitwel, BREEAM, LEED, etc.) – often at scale across multiple business locations – and are seeking to justify their investment with an ROI analysis. Indeed, all of the major certification systems provide detailed guidance on how their approaches align with various ESG reporting frameworks (GRESB, GRI, UNSDGs, etc.) and how they can be incorporated into CSR and sustainability reports.

In the residential real estate space, the motivations for project developers to engage in wellness impact studies are most often related to branding, positioning, and differentiation. With the rapid expansion of the wellness real estate market over the last decade, one major shift has been the increase in medium- and larger-sized residential projects that are explicitly using health and wellness as a key selling point for potential residents. A number of the projects and studies detailed in *Figure 4.5* illustrate this trend, with the developers using their wellness impact studies to underpin their value proposition and marketing efforts – such as **Brent Cross** (UK), **Rancho Mission Viejo** (California), and **Lake Nona** (Florida). Due to the more dispersed and regional nature of residential real estate development, we do not see many "at scale" wellness interventions and studies in this space, but a couple of residential developers have pursued multi-community studies across their portfolio of properties – notably, **Stockland** (Australia, measurement efforts ongoing) and **Berkeley Group** (UK, measurements primarily took place from 2007-2013). These developers, along with the developer of Brent Cross in the UK (**Related Argent**), seem to be using their wellness impact measurements to support ESG, CSR, and sustainability reporting, as well as to support their interactions with governments, local planning authorities, and residents (for permissions and entitlements, local buy-in, etc.).

Local housing and development authorities have championed many wellness impact measurements in the affordable housing and urban regeneration space. These include the projects at **Mariposa District** (Colorado), **Yesler Terrace** and **High Point** (Washington), **Orness Plaza** (Minnesota), and **Ebbsfleet Garden City** (UK). In these cases, measuring wellness impacts can be a useful tool for local authorities to justify large-scale public investments in regeneration projects, maintain positive relationships with local residents, and establish proof-of-concept that health- and wellness-driven approaches have tangible benefits.

Organizations and nonprofits involved healthy building certifications and advocacy have led many wellness impact studies as pilot and demonstration efforts. These projects and studies include **Arbor House** in New York (led by the Center for Active Design); **Grow Community** in Washington, **Zibi** in Canada, and **BedZED** in the UK (led by One Planet Living); and **Our Urban Village** and **North Vancouver Active Design Study** (Happy Cities Network and Hey Neighbour Collective). Studies by **Berkeley Group**, including the one at **Woodberry Down**, were also done in partnership with Social Life, a social enterprise in the UK.

Non-profit and academic institutions have been responsible for some larger-scale studies looking at the built environment and wellness connections across multiple communities. These include the **Gallup Active Living Study** in the United States (fueled by Gallup and its large-scale survey-based datasets);

the **RESIDE Study** in Australia (University of Western Australia); and Australia's **High Life Study** (RMIT University/University of Western Australia). In addition, the long-term measurement efforts at **Mueller** in Texas have been led by researchers from Texas A&M University (supported by grant funding from the National Institutes of Health and American Institute of Architects).

Wellness real estate studies are innovating and using a variety of research methods to document impacts.

Another important development over the last 10-15 years has been greater innovation and experimentation in different methodologies and approaches for measuring the wellness impacts of real estate projects. These include the following:

- **Well-being indices and benchmarking:** A couple of innovative residential developers have created bespoke "well-being index" tools in order to measure, track, and benchmark the outcomes of their projects. These include the "Flourishing Index" launched in 2021 at **Brent Cross** (UK), as well as the "Liveability Index" developed in 2011 by **Stockland** (Australia) and used across its portfolio of residential projects. These efforts deploy resident surveys to collect data points on subjective well-being, life satisfaction, physical activity and social behaviors, etc. They are useful in tracking changes over time (e.g., before and after people move into a community), as well as for benchmarking key metrics against regional/national datasets where feasible.
- **Social value accounting/social ROI analysis:** While there is clear evidence that wellness real estate can create positive impacts for people and communities, it can be challenging to express these impacts in terms of their economic value. Several organizations in the United Kingdom and Australia have been pioneering new "social value measurement frameworks," which can be used to quantify and monetize the social benefits from healthy and sustainable built environment interventions.[50] These measurement approaches support developers and companies in aligning their healthy built environment efforts with ESG, CSR, and other reporting frameworks. Wellness real estate impact studies that have utilized social value accounting methods include **CRT+YRD**, **Groote Archipelago Housing Programme**, and **Stockland** in Australia, as well as **Ebbsfleet Garden City** and **Berkeley Group** in the UK.
- **Tech-based monitoring and tracking:** Smart tech, sensors, and Internet of Things (IoT) technologies are among the newest tools that real estate projects can use for tracking health impacts. Sensor technologies are already becoming ubiquitous in the newest buildings for monitoring and optimizing indoor environmental quality (e.g., temperature, humidity, CO2 levels, ventilation, light, etc.). A growing number of studies (primarily in offices and schools) are using sensor-based data, combined with occupant behavior and cognitive function measurements, to track health impacts – for example, the 2018-2020 **COGfx Study** led by the Harvard T.H. Chan School of Public Health. Wearable technologies are frequently used to study and track health behaviors (e.g., walking and physical activity), while smart-home/IoT tech and sensors, geolocation systems, biometrics, and other innovations offer an expanding array of options for measuring health outcomes in specific physical environments and settings. In the residential real estate arena, **Brent Cross** (UK) and **Lake Nona** (Florida) are using tech-based approaches for tracking health behaviors and impacts.
- **Surveys and focus groups:** Surveys, focus groups, and interviews with residents/occupants are by far the easiest and lowest-cost method for wellness real estate projects to track their impacts. While, ideally, they should be based on systematic social science-based research methodologies, these kinds of evaluation methods are accessible for real estate project developers and their research partners to implement, especially in terms of tracking self-reported health-related behaviors and subjective well-being. Surveys can be implemented on a regular basis to show change over time, conducted as pre-/

post-studies, and/or compared against a "control" group or regional/national benchmark data. Most of the wellness impact studies profiled in *Figure 4.5* and *Figure 4.6* have used survey-based research methods to some extent.

- **Scientific studies:** Experimental and non-experimental scientific research methodologies – including longitudinal studies, randomized control trials, etc. – are rarely used in wellness real estate impact studies because they require specialized expertise, a sizable research infrastructure, a larger sample size of subjects, and a longer timeframe to pursue. The **Lake Nona Life Project** (Florida) is one example of a longitudinal study. Launched in 2015, it is being implemented in partnership with the UCF College of Medicine; no data or results have been released yet. In Western Australia, the **RESIDEntial Environment Project (RESIDE) Study** was a 10+ year longitudinal study (2003-2012) to research the impacts of a regional "livable neighborhoods" policy across 73 new housing developments, and it resulted in over 60 scientific publications in peer-reviewed journals.
- There are dozens, or even hundreds, of longitudinal studies around the world that have studied the long-term health impacts of built environment upgrades and interventions in affordable/public housing projects and lower-income neighborhoods (for example, see the **Watts Neighborhood Health Study** in Los Angeles, or the **PHRESH** study in Pittsburgh). Randomized control trials have also been used to measure impacts from "healthy homes" interventions and programs, which focus on things like improvements to indoor air quality or food environments for underprivileged or at-risk families, or reducing fall hazards for seniors (for example, the **High Point Breathe-Easy Homes** in Washington, or the **Victoria Healthy Homes Program** in Canada). While these kinds of programs extend beyond the scope of this report (they are a function of local public policies and investments in affordable housing and health programs), they are also a major part of the body of research evidence documenting the connections between the built environment and health. *Figure 4.5* provides examples of just a few of these studies.
- **Health impact assessments:** Health impact assessments (HIAs) have developed since the 1990s and early-2000s, spinning out of the field of environmental impact assessments. HIAs are a tool that helps public policymakers and planners to objectively evaluate the potential and often overlooked human health risks and impacts of a new project or policy *before* it is implemented. HIAs are intended to encourage a planning and decision-making process that will keep health issues at the forefront and shape projects/policies ex ante, in order to reduce risks and negative externalities. Hundreds of HIAs have been conducted around the world, although not necessarily specifically directed at wellness real estate projects. Many case studies and detailed toolkits are available from the WHO[51], U.S. CDC[52], and others.[53]

Figure 4.5

Wellness Impact Studies in Residential and Mixed-Use Projects

See Appendix D for full documentation and links to the studies and reports for each project.

To our knowledge, this is the first time anyone has identified and compiled a list of wellness impact studies conducted by residential and mixed-use real estate projects. While we have aimed to be a comprehensive as possible, this list is not exhaustive. The studies we identified are all located in North America, the United Kingdom, and Australia; there may be studies in other countries that we missed, especially if they were not available in the English language.

United States

ARBOR HOUSE — **NEW YORK CITY, NY, US**

124-unit affordable housing building in the South Bronx, New York City. Fitwel and LEED Platinum certified. Opened in 2013.

Icahn School of Medicine at Mount Sinai and the Center for Active Design conducted a study to compare residents of Arbor House to residents in a building without active design features. After one year of living in Arbor House:

- 58% of residents reported increasing stair use each week (versus 20% in the comparison building).
- 53% decrease in the number of individuals who reported not walking up any flights of stairs in a week.
- 31.5% increase in study participants meeting moderate-intensity physical activity targets (versus no change in the comparison building).
- Increased feelings of safety that supported residents' pursuit of health and wellness.

GALLUP ACTIVE LIVING STUDY — **40 COMMUNITIES, US**

Study of the "active living environment" in 48 medium- to large-sized metro areas. Conducted in 2015 and 2023.

In 2015, Gallup and Healthways created an "Active Living Score" for 48 medium-to-large metro areas across the United States, measuring built environment characteristics like walkability, bikeability, parks, and public transit. The scores were compared with key indicators of community health and well-being (from the Gallup World Poll) to assess relationships. An updated study in 2023 found the following:

- Investing in active living infrastructure can significantly reduce economic costs associated with obesity and related health conditions.
- Top-ranked active living communities exhibit lower rates of diabetes, high blood pressure, high cholesterol, depression, and smoking than the lowest-ranked communities (even when controlling for household income, age, and other factors).
- Residents of communities with higher well-being scores exercise more frequently and have fewer chronic health conditions.
- Higher Bike Scores and Park Scores are correlated with lower rates of diabetes, high blood pressure, heart attack incidents, and smoking.
- Higher Transit Scores and Walk Scores are correlated with lower depression rates and more favorable impressions of housing quality.

GROW COMMUNITY — **GREATER SEATTLE, WA, US**

142-home agrihood, net-zero, and "One Planet Living" community, located on Bainbridge Island, near Seattle. First Energy Star certified multi-family community in the country; homes meet/exceed Seattle's 3-Star Built Green program. Constructed in 2011-2022.

A 2014-2015 resident survey and project evaluation conducted by One Plant Living/Bioregional found that:

- 70% of residents reported improved physical or mental well-being.
- 85% increase in walking and 30% increase in cycling since moving into the development.
- 65% of residents participated in the community garden program.
- 85% of residents supported local or fair-trade goods (especially the local farmers market).

HARMONY TRANSLATIONAL HEALTH STUDY — **HARMONY, CENTRAL FL, US**

1,200+-home master-planned development, located about 40 miles southeast of Orlando, designed to promote healthy interactions between humans and nature. Opened in 2002.

A longitudinal study was launched in 2014, in conjunction with the University of Central Florida College of Medicine and University of Miami, looking at the relationships between health behaviors and the physical/natural environment. No findings have been released yet.70% of residents reported improved physical or mental well-being.

HIGH POINT BREATHE-EASY HOMES — **SEATTLE, WA, US**

1,600+-unit affordable and market rate housing redevelopment project in Seattle (including 60 Breathe-Easy homes, which were the first green homes in the country built specifically to improve indoor air quality). Constructed in 2003-2007.

The Breathe-Easy upgrades cost about $5,000-$7,000 (about 5% more) per home. A quasi-experimental study, funded by a government grant, found that asthmatic children living in Breathe-Easy healthy homes had:

- 63% more symptom-free days than in their previous homes.
- Dramatic improvement in lung functioning.
- 66% reduction in the need for urgent medical care.

LAKEHOUSE — **DENVER, CO, US**

196 for-sale condominium and rowhome residences, designed to encourage a healthy lifestyle. WELL Gold certified. Opened in 2020.

Colorado State University's Institute for the Built Environment conduced a 3-year pre-/post-occupancy study of residents in 2019-2022. As compared to their prior residences before moving to Lakehouse, residents reported the following improvements to their health and well-being:

- Increased satisfaction with natural light, views, air quality, acoustics, safety, location, and fitness equipment.
- Residents considered 10 more neighbors to be acquaintances than in their prior residences.
- 66% of residents spent 1+ hours per week interacting with neighbors (as compared to 35% in prior residences).
- Feeling happier and less stressed; experiencing better concentration and memory; having stronger connectedness to nature.
- Experiencing decreased health symptoms; better memory and sleep; feeling less tired.
- Post-occupancy residents sat for 41 fewer minutes on weekdays and 26 fewer minutes on weekends.

LAKE NONA LIFE PROJECT — **GREATER ORLANDO, CENTRAL FL, US**

35,000+-home master-planned development, located on the edge of Orlando, FL, and conceived as a "medical city" and living lab community. Construction started in 1998 (still building). Study started in 2015.

A community-wide longitudinal study was launched in 2015, in partnership with University of Central Florida College of Medicine, Johnson & Johnson, and other partners. The study is examining linkages between lifestyle and health, wellness, longevity, quality of life, and human performance. No findings have been released yet.

MARIPOSA DISTRICT — DENVER, CO, US

800+-unit affordable and market rate housing redevelopment project near downtown Denver. Some buildings are LEED certified. Phase I opened in 2012; completed in 2017.

The Denver Housing Authority launched the Mariposa Healthy Living Initiative and conducted a baseline study in 2009, with periodic follow-up studies to monitor progress. After the first phase of development (2012 evaluation):

- 38% of residents said their health had improved.
- Total crime rate decreased from 248 to 157/1,000 people.
- Average transit commute time dropped from 24 minutes to 20 minutes.
- Smoking rates dropped by 6%.

A follow-up community health evaluation found that residents:

- Logged thousands of hours in walking groups, activities, and nutrition education.
- Described a sense of belonging.
- Reported losing significant weight and no longer needing maintenance medication.

MUELLER — AUSTIN, TX, US

6,900+-home mixed- use and mixed-income community 3mi from downtown Austin. One of the first and largest LEED-ND certified neighborhoods. Opened in 2007 (still building).

Researchers from Texas A&M University started studying Mueller in 2012 (funded by grants from the National Institutes of Health, American Institute of Architects, and others), focusing on the health impacts of living in walkable and activity-friendly communities. They have released at least 8 peer-reviewed journal articles from 2012-2025.

- As compared to their previous neighborhoods:
  - 65-70% of residents increased their physical activity.
  - 48-51% said their health improved.
  - 84-90 minutes less spent in a car/week.
  - Increased social interactions with neighbors.
  - Stronger feelings of neighborhood cohesion.
- Residents moving to Mueller increased their moderate and vigorous physical activity by 53.2 minutes/week, while a comparison group in a less active-friendly neighborhood had a decrease of 23.1 minutes per week.

ORNESS PLAZA — MANKATO, MN, US

101-unit low-income senior independent living building in Mankato, Minnesota, renovated to Enterprise Green Community and LEED Silver standards. Project ran from 2009-2012.

The Green Rehabilitation of Elder Apartment Treatments (GREAT) study was conducted by researchers from the National Center for Healthy Housing, University of Minnesota, Case Western University, and local partners (with government grant funding). This was one of the country's first studies of health outcomes for seniors following renovations using green and healthy design. Using pre-/post-surveys, benchmarked against a comparison group of seniors, the study found:

- Improved mental and general physical health.
- Average of 27.3 days of good mental health (as compared to 25.1 days for a comparison group of seniors not living at Orness).
- 16% fewer residents reported falls (as compared to 8% increase in falls among a comparison group).
- Reduced exposure to tobacco smoke and decreased smoking rates.
- Energy use cut by 44%.

RANCHO MISSION VIEJO — **GREATER LOS ANGELES, CA, US**

14,000+-home master-planned and mixed-use community located in Orange County, about 60 miles south of Los Angeles. Opened in 2013 (still building).

The community's leadership and homeowner's association conduct regular resident surveys, as well as periodic focus groups, to explore different aspects of wellness in the community. The 2023 resident survey found that:

- 83% of respondents agree or agree strongly that living at RMV supports their well-being.
- 73% engage in 30+ minutes of moderate exercise 3x a week or more.
- 76% walk, jog, or bike for fitness on RMV's trails or pathways.

YESLER TERRACE — **SEATTLE, WA, US**

Transformation of Seattle's first public housing development to create healthy, safe, and sustainable affordable and market-rate housing (5,000+ units) and a mixed-use neighborhood. Work started in 2013 (still building).

The Seattle Housing Authority conducts periodic resident surveys to measure progress. The 2017 resident survey found several positive trends in well-being:

- 92% of heads of households indicated they have health insurance.
- 85% of residents have a primary healthcare provider.
- 88% of heads of households consider their health to be fair, good, or excellent (up from 80% in 2016).
- 90% of heads of households indicated Yesler was a safe place to live in 2017 (up from 67% in 2014).
- Other studies of the project have shown improvements in social cohesion and increased perception of safety.

Canada

NORTH VANCOUVER ACTIVE DESIGN STUDY — **NORTH VANCOUVER, BC, CANADA**

14 multi-unit buildings (townhouses, multiplexes, apartments, cohousing) in North Vancouver that have implemented active design approaches since 2015.

Happy Cities, Hey Neighbour Collective, and Simon Fraser University partnered with North Vancouver to assess the impact of the city's active design policy enacted in 2015. A 2023 resident survey found that:

- 72% reported being happy or very happy.
- 88% reported knowing one or more neighbors in their building.
- 70% reported having conversations with their neighbors.
- Length of time living in one's home was significantly associated with knowing more neighbors and doing more activities together.
- Renters and homeowners with mortgages reported lower mental health than those without mortgages.

OUR URBAN VILLAGE (TOMO HOUSE) — **VANCOUVER, BC, CANADA**

12-unit "cohousing lite" project for middle income residents, located on Vancouver's Main Street. Passive House design. Opened in 2023.

Happy Cities collaborated with the project developers on a multi-year study of prosocial built environment approaches. A pre-/post-occupancy study of residents found that 6 months after moving in:

- 100% rarely or never feel lonely (compared to 40% before move-in).
- 100% have four or more neighbors they can ask for favors from (compared to 0% before move-in).
- 88% consider two or more neighbors as friends (compared to 11% before move-in).
- 88% interact with neighbors daily/weekly on shared walkways (compared to 30% weekly/0% daily before move-in).
- 100% report good to excellent mental health (compared to 70% before move-in).

ZIBI — **OTTAWA/GATINEAU, ONTARIO/QUEBEC, CANADA**

1,000+-home master-planned, mixed-use redevelopment project and "One Planet Living" community in Ottawa. Opened in 2018 (still building).

A 2024 resident survey and project evaluation conducted by One Plant Living/Bioregional found that:

- 78% of residents feel happy with their lives.
- 81% of residents know at least one neighbor.
- 56% of residents said their awareness of sustainability issues has increase in the last year.
- 46% of residents said their time in nature has increased in the last year.

United Kingdom

BedZED — **GREATER LONDON, UK**

100-unit sustainable housing development and "One Planet Living" community in the London suburb of Hackbridge; the UK's first larger-scale, mixed-use sustainable community. Opened in 2002.

A 2007 resident survey and project evaluation conducted by One Plant Living/Bioregional found that:

- 84% of residents feel the community facilities here are better than in their previous neighborhood.
- 65% know more neighbors than in their previous neighborhood.
- Residents know an average of 20 neighbors by name. The regional average is 8.

BERKELEY GROUP COMMUNITIES — **MULTIPLE LOCATIONS, UK**

Berkeley Group is a major UK developer of nearly 20,000 homes in Greater London, Birmingham, and South of England, and the only major UK developer delivering brownfield regeneration at scale.

Berkeley Group partnered with Social Life (a nonprofit) and the University of Reading to measure the "social sustainability" of its new housing and mixed-use developments. Data collection was done in 2003-2017 across six Berkeley-developed communities, via interviews and surveys, and results were benchmarked against national datasets. In the study, residents reported:

- Greater feelings of safety.
- Greater feeling of belonging to the neighborhood.
- Higher rates of talking regularly to neighbors.
- Higher likeliness of staying in their neighborhood.

BRENT CROSS TOWN — **GREATER LONDON, UK**

6,700-unit high-density master-planned and mixed-use "park town" in the North London suburb of Brent Cross. Opened in 2025 (still building).

The developers of Brent Cross Town (in partnership with University of Manchester, Sheffield Hallam University, and other local partners) have created a custom "Flourishing Index" to measure and track the holistic well-being of residents over time, including individual and community-level metrics. This is the first-ever attempt to systematically measure the concept of flourishing within the context of an urban regeneration project. Baseline data was collected in 2021, and data collection will continue for ten years or more, with results published every 2-3 years.

EAST VILLAGE/ENABLE LONDON STUDY — LONDON, UK

East Village (formerly the London 2012 Olympic Village) is a purpose-built, mixed-use residential development specifically designed to encourage healthy active living and sustainability; will have over 5,800 homes when complete. Opened in 2013 (still building); study ran from 2013-2017.

Examining Neighbourhood Activity in Built Living Environments in London (ENABLE London) is a longitudinal cohort study to examine physical activity and other health behaviors among people relocating to the East Village development. Nearly 1,500 study participants were recruited from those interested in moving into the development; follow-up occurred at 2-year intervals after half the participants had relocated to East Village and half had moved elsewhere (or did not move). The study resulted in at least 13 papers and abstracts in peer-reviewed publications. Findings from the study were mixed:

- There was a statistically significant increase in daily steps and daily amount of moderate-to-vigorous physical activity for residents two years after they moved to East Village. These relationships were mostly driven by two factors – residential density and land use mix – which were both strongly and positively associated with increased physical activity level. However, another paper found that there was not a statistically significant different between residents who moved to East Village and the control group.
- One paper found a statistically significant increase in life satisfaction for residents moving into affordable housing in East Village.

EBBSFLEET GARDEN CITY — GREATER LONDON, UK

The first new government-sponsored "Garden City" in the UK in over 100 years, and one of the NHS "Healthy New Towns" pilot sites, with up to 15,000 new homes. Launched in 2015; target completion in 2035.

A 2024 resident satisfaction survey conducted by Ebbsfleet Development Corporation found that:

- 84% are satisfied with their local area as a place to live (national avg. is 74%).
- 78% feel there is a sense of belonging in their neighborhood (national avg. is 61%).
- 84% feel that their neighborhood is a place where people of different backgrounds get on well together (national avg. is 81%).
- 85% feel safe in their neighborhood (national avg. is 78%).
- 89% spend time outside in green/blue spaces at least once a week.
- 90% are satisfied with their home (national avg. is 88%).
- A 2019 study by NHS England of the community's Get Active App found that in the first three months:
- Users walked, ran, or cycled a collective total of 16,168 miles and burned 1.5 million calories.
- 40% of people who were inactive achieved NHS recommended levels of physical activity for three weeks or more.
- 66% of people who had downloaded the app were actively using it (double the industry standard).

WOODBERRY DOWN — GREATER LONDON, UK

5,500 new homes, and one of Europe's largest single-site estate regeneration projects, located in the North London suburb of Finsbury Park. Developed by Berkeley Group (see above). Work started in 2009 (still building).

A mid-stage assessment by the Berkeley Group in 2014 found that:

- 90% of Woodberry Down residents feel satisfied with their life overall (as compared to a UK average of 60%).
- 80% of Woodberry Down residents feel as though they belong to the neighborhood (as compared to a UK average of 67%).

The UK nonprofit Social Life has conducted periodic social impact assessments in 2019-2020 and 2023. The 2023 survey of residents found that, relative to comparison neighborhoods, Woodberry Down residents are::

- 7% more satisfied with life.
- 24% more likely to regularly talk/walk with people in the neighborhood.
- 33% more likely to feel that people in their neighborhood can be trusted.
- 19% more likely to feel a sense of belonging to the neighborhood.
- 41% more likely to feel that their health is generally good.

Australia

CRT+YRD (NIGHTINGALE VILLAGE) — MELBOURNE, VICTORIA, AUSTRALIA

39-unit apartment building, designed for environmental and social sustainability, located in the Melbourne suburb of Brunswick. CRT+YRD is one of six residential buildings in the Nightingale Village development. Opened in 2022.

Design firm Hayball pioneered the first Australian initiative to measure and quantify the social value of its projects, working with the Australian Social Value Bank, using CRT+YRD as its pilot case study. A 2023 post-occupancy resident survey found a significant improvement to well-being since moving into the building:

- 93% speak to their neighbors more than before they moved in.
- 79% feel a sense of belonging and inclusion.
- 72% trust their neighbors more.
- 69% use sustainable transit often or very often.
- 83% feel safer than where they lived before.
- The study also estimated that the project created A$517,023 of social value in the first year due to well-being improvements for residents.

GROOTE ARCHIPELAGO HOUSING PROGRAMME — GROOTE EYLANDT, NT, AUSTRALIA

100 homes built to meet the needs of an indigenous population on Groote Eylandt, an island off the north coast of Australia. Project started in 2015.

In 2020, architecture/design firm The Fulcrum Agency developed a "Social Return on Design Investment" toolkit to measure a project's social impact. These tools were tested in a post-occupancy study of residents, which found that, as a result of the community co-design and consultation process, 100% of residents felt more confident, happier, and an increased sense of agency. As a result of the new home designs:

- 100% of residents felt more secure and experienced increased well-being.
- 87.5% felt happier in their new homes.
- 86% felt an increase in cultural safety.

THE HIGH LIFE STUDY — MELBOURNE/PERTH/SYDNEY, AUSTRALIA

Study of multiple apartment buildings in Perth, Melbourne, and Sydney, running from 2018-2026.

The High Life study was launched to test whether and how specific apartment design features affect their residents' health and well-being. Researchers from RMIT University and the University of Western Australia collaborated to study 172 apartment buildings in 113 developments (constructed in 2006-2016) in Perth, Melbourne, and Sydney. Over 1,300 residents participated in surveys, and 96 metrics of healthy design were evaluated (e.g., daylight, ventilation, outdoor spaces, community spaces, etc.). The study resulted in at least 19 peer-reviewed journal publications. Key findings included the following:

- Residents in "high policy performance" buildings (i.e., those with many healthy design features) had significantly better mental well-being (on average, better by +1.96 points).
- Features such as natural ventilation, summer thermal comfort, indoor space, and communal area quality were associated with positive mental well-being.
- During the COVID-19 lockdowns, residents with natural views had significantly higher well-being scores than those without.

PEOPLE AND PLACE AT MINTA FARM STUDY — **GREATER MELBOURNE, VICTORIA, AUSTRALIA**

3,000+-home community located 30mi southeast of Melbourne CBD, developed by Stockland (see below). Opened in 2010 (still building). Study started in 2020.

A 5-year longitudinal study on the long-term impacts of placemaking and innovation at Minta Farm on residents' sense of physical and mental health and well-being, their lived experiences, and their active connections to place. Minta Farm is a Stockland Innovation Project, with innovative initiatives such as smart and sustainable technologies, place-making activities, connectivity, etc. The study is a collaboration between researchers from RMIT University's Centre for Urban Research and Stockland Corporation (the developer, who is also funding the study). The study utilized an adapted version of the annual liveability survey that is conducted by Stockland across its portfolio of communities. No findings have been released yet.

RESIDE STUDY — **73 COMMUNITIES, WESTERN AUSTRALIA**

Study of a "Liveable Neighborhoods" policy in 73 new housing developments around Perth, Western Australia. Conducted in 2003-2013.

Based at the University of Western Australia, the RESIDEntial Environment Project (RESIDE) was launched in 2003 to study the impact of a Liveable Neighborhoods (LN) policy on the health and well-being of Perth residents in 73 new housing developments built according to LN design codes. Nearly 2,000 residents completed questionnaires 4 times over 9 years, and the project resulted in over 60 peer-reviewed publications. Key findings included:

- For every 10% increase in a new housing development's compliance with Liveable Neighborhood design standards, residents were:
  - 53% more likely to walk in their neighborhood.
  - 40% less likely to feel unsafe from crime.
  - 14% more likely to have better mental health.
- Local recreational walking increased by 9 minutes/per week for each added neighborhood attribute (park access, beach access, higher street connectivity, neighborhood aesthetics, and safety from crime).
- A synthesis of 26 studies found that Liveable Neighborhoods policies have the potential to encourage health supporting behaviors and well-being outcomes, and to create neighborhoods with a stronger sense of community.

SELANDRA RISE — **GREATER MELBOURNE, VICTORIA, AUSTRALIA**

1,300-home community located 30mi southeast of Melbourne CBD, developed by Stockland (see below). Opened in 2011; completed in 2016. Study ran from 2011-2015.

From 2011-2015, researchers from RMIT University collaborated with Stockland to study the impacts of putting health at the center of community planning, as well as early delivery of wellness services/infrastructure. Via pre-/post-move surveys and structured interviews, they found that:

- As compared to previous neighborhoods, residents were more satisfied with the opportunities to meet people, as well as the walking amenities and parks.
- 41% attended a social event or activity in the community within the last year.
- 42% increased their physical activity after moving in (but 24% decreased physical activity).
- Residents with short commutes were more likely to report an increase in physical activity (47%), while those with long commutes were more likely to report exercising less (36%).

STOCKLAND COMMUNITIES **MULTIPLE COMMUNITIES IN AUSTRALIA**

One of the largest diversified property groups and a leading residential developer in Australia with $15+ billion of real estate assets (residential master-planned communities, retirement communities, retail town centers, workplaces, and logistics).

In 2011, Stockland created its own "Liveability Index" to measure levels of resident satisfaction in their residential communities. Five subcategories capture areas such as community perceptions, satisfaction with community design elements, satisfaction with one's own home, education, and personal well-being (which can be benchmarked against a nationwide Personal Well-being Index). Stockland regularly surveys thousands of residents across its communities.

- From 2021-2024, the personal well-being index score for Stockland residents has ranged from 77-79% in residential communities and 83-84% in retirement communities, well above the Australian national average.

A 2018 study of Stockland retirement communities found that:

- Stockland creates $1.66 in social value for every $1 invested in retirement living communities.
- Estimated A$162 million saved by state governments each year from avoided health and care costs.
- 64% of positive changes reported by residents are attributable to the services and amenities provided by Stockland.
- 42% of residents felt their well-being would have worsened if they had not been living in a Stockland retirement community.

A 2017 survey of 40 Stockland residential communities found that:

- 6/10 residents feel healthier since moving in.
- 63% are doing more exercise.
- 2/3 of residents have made new friends.
- 75% feel like they are part of a community.

Other Related Residential/Neighborhood Studies

There are dozens, or even hundreds, of studies around the world that have studied the long-term health impacts of built environment upgrades and interventions in affordable and public housing projects. Another set of literature examines "healthy homes" interventions and programs, which focus on subjects like improvements to indoor air quality, food environments for underprivileged or at-risk families, or reducing fall hazards for seniors. While these kinds of programs extend beyond the scope of this report (they are a function of local public policies and investments in affordable housing and health programs), they are also a major part of the body of research evidence documenting the connections between the built environment and health. Below, we provide just a few examples of these kinds of studies; many others can be found online, in peer-reviewed journals, and on government and housing authority websites.

Healthy Home Interventions

CHESAPEAKE HOUSING MISSION HEALTHY HOMES INITIATIVE **EASTERN SHORE, MD, US**

Program to make healthy home repairs in 676 homes of low-income residents in the Eastern Shore region of Maryland. Program ran from 2019-2021.

A healthy homes project evaluation in 2023 found the following outcomes:

- 87% reduction in falls.
- 38% reduction in hospital admissions.
- 80% improvement in connection to the community.
- 85% improvement in daily outlook.
- 3-year healthcare savings of $1.4 million and an estimated return on investment of 220%.

VICTORIA HEALTHY HOMES PROGRAM — **VICTORIA, AUSTRALIA**

Program to make energy efficiency and thermal comfort upgrades in 1,000 homes of lower-income residents in western Melbourne and the Goulburn Valley. Program ran from 2018-2021.

A randomized control trial by Sustainability Victoria found that healthy home upgrades (costing an average of A$2,809) had wide ranging benefits, including:

- Health improvements for residents, such as reduced breathlessness and improved mental health.
- Healthcare cost savings of A$887 per person over the winter period.
- For every A$1 saved in energy, more than A$10 was saved in health.
- Net savings of A$4,783 over 10 years due to both energy and health.

Healthy Built Environment Interventions in Low-Income/Affordable Housing Developments (and other Neighborhood-Focused Studies)

WATTS NEIGHBORHOOD HEALTH STUDY/JORDAN DOWNS — **LOS ANGELES, CA, US**

A 5-year, $1b project to redevelop the Jordan Downs public housing development, with 1,400 new affordable and mixed-income housing units and healthy design features (green spaces, walking/biking lanes, street lighting) and amenities (community center, retail with healthy foods). Study started in 2018 (ongoing).

A longitudinal cohort study to examine the effects of neighborhood built and social environments on obesity and health outcomes for low-income, urban populations. It is collecting pre-/post-redevelopment data from over 1,600 residents of the Jordan Downs housing development and two nearby control public housing sites. The study has resulted in at least eight peer-reviewed journal articles.

PITTSBURGH HILL/HOMEWOOD RESEARCH ON NEIGHBORHOOD CHANGE AND HEALTH (PRESH) HILL DISTRICT AND HOMEWOOD NEIGHBORHOODS — **PITTSBURGH, PA, US**

Hill District and Homewood are two distinct neighborhoods in Pittsburgh with similar characteristics: primarily African American, lower-income, food deserts with high levels of food insecurity, and higher levels of chronic disease. Study started in 2011 (ongoing).

A long-term longitudinal study to assess how improvements in neighborhood conditions (e.g., renovating parks and green spaces, increasing high-quality affordable housing, increasing food access) can influence residents' health and well-being throughout their lifespan (including diet, exercise, sleep, heart health, thinking, and memory). The study is led by RAND (working with University of Pittsburgh and local partners), with grant funding from the National Institutes of Health. The study has resulted in over 45 peer-reviewed journal articles.

HOW AREAS IN BRISBANE INFLUENCE HEALTH AND ACTIVITY (HABITAT) STUDY — **BRISBANE, QUEENSLAND, AUSTRALIA**

200 neighborhoods in Brisbane, Australia. Study ran from 2007-2016.

A longitudinal study of the built and social environments of 200 Brisbane neighborhoods and their relationship to health, well-being, and related behaviors. Over 11,000 residents, aged 40-65 years old, were surveyed on 5 occasions for nearly a decade (2007-2016). The study was led by RMIT University, with grant funding from the Australian government, and it resulted in 73 peer-reviewed publications.

LIVEABLE NEIGHBOURHOODS FOR HEALTHY AGING STUDY — **AUSTRALIA**

A longitudinal study to investigate neighborhood liveability factors (environmental and social factors that support active lifestyles) and how they influence healthy aging. This study is led by RMIT University, running from 2023-2026, with grant funding from the Australian government.

Figure 4.6: Wellness Impact Studies in Commercial Projects

See Appendix D for full documentation and links to the studies and reports for each project.

Most of the commercial studies included here are for green- or wellness-certified offices. While there are many companies that have documented positive impacts from new/refurbished offices with green or wellness certifications, most of those studies focus on business-related impacts (which we cover in *Chapter 3*) – such as improved productivity, reduced employee turnover, etc. Here, we are focusing more narrowly on studies that show health and well-being impacts in commercial real estate projects – such as fewer sick days or reduced health symptoms at work. This list is not exhaustive; we primarily identified studies that have been highlighted in publications from the World Green Building Council, IWBI, etc. There are certainly other studies out there, especially since not every company makes this kind of information publicly available.

MULTIPLE WELL-CERTIFIED OFFICES — **6 COMPANIES, US & CANADA**

In a longitudinal analysis of six offices pursuing WELL certification, pre-/post-occupancy surveys of over 1,300 workers found that transitioning from non-certified to WELL-certified offices had positive impacts on employees' perceived health and well-being:

- 26% higher well-being scores.
- 10% increase in reported mental health.
- 2% increase in reported physical health.

MULTIPLE GREEN AND WELL-CERTIFIED OFFICES — **9 COMPANIES, AUSTRALIA**

This study looked at nine offices in Australia, all with a Green Star Australia and/or NABERS certification, and two with WELL certification. Post-occupancy surveys were conducted with 1,121 workers. Results were compared between WELL and non-WELL offices, as well as benchmarked against other companies from a national database. The study found that the offices with WELL certification and offices with active design principles had higher scores for health, along with other measures such as productivity.

COGfx STUDY OF GREEN-CERTIFIED OFFICES — **10 BUILDINGS, 5 CITIES, US**

This study, led by Harvard's T.H. Chan School of Public Health, looked at workers in 10 "high-performing" green-certified buildings across five U.S. cities. As compared to workers in non-certified buildings, workers in green-certified offices had:

- 26.4% higher cognitive health scores.
- 6.4% higher sleep quality scores.
- 30% fewer health symptoms (such as headaches, respiratory issues, fatigue).

SAINT-GOBAIN — **PHILADELPHIA, PA, US**

This study, led by Harvard's T.H. Chan School of Public Health, looked at workers in 10 "high-performing" green-certified buildings across five U.S. cities. As compared to workers in non-certified buildings, workers in green-certified offices had:

- 26.4% higher cognitive health scores.
- 6.4% higher sleep quality scores.
- 30% fewer health symptoms (such as headaches, respiratory issues, fatigue).

STOK/DPR CONSTRUCTION OFFICE	**SAN FRANCISCO, CA, US**
After moving into their new LEED Platinum/net-zero energy offices, 72% of Stok employees reported improved health. Employee sick days dropped from an average of 18.19 hours per employee per year to 14.91 (a 25% reduction).	
CUNDALL	**LONDON, UK**
Cundall saw a reduction of 4 sick days per year per employee (a 58% reduction) after moving into its new WELL Gold/BREEAM Excellent office in London.	
SKANSKA	**DONCASTER, UK**
After moving into their BREEAM-UK Outstanding office, there were 3.5 times fewer building-related sick days in the Skanska building as compared to other offices in the United Kingdom.	
UK REGULATORY AGENCY	**LONDON, UK**
A study of a UK government regulatory agency that relocated to a new office with active design features (and a neighborhood with more green and open space) found a decrease in the amount of time sitting per day; an increase in time walking at work; fewer musculoskeletal pain complaints; and improvements in self-reported mental health.	
MEDIBANK	**MELBOURNE, VICTORIA, AUSTRALIA**
After moving into their Green Star certified office in Melbourne, 2 out of 3 employees reported feeling healthier in the office, while sick days fell by 5%.	
WYNYARD QUARTER INNOVATION PRECINCT (12 MADDEN & MASON BROS. BUILDINGS)	**AUCKAND, NZ**
A study of employees after moving into these Green Star certified buildings found a 130% increase in cycling by employees, a 25% drop in absenteeism, and an increase in self-reported health.	
SHERWIN WILLIAMS CENTRO AMÉRICA HQ	**SAN SALVADOR, EL SALVADOR**
A staff survey after an office refurbishment and LEED Gold certification found a 64% reduction in reported allergy problems and a 68% reduction in reported respiratory problems. Staff sick days also fell by 44%.	

Endnotes

[1] The continuum concept is adapted from Dr. Jack Travis's Illness-Wellness Continuum. Travis was one of the pioneers of the modern wellness movement in the 1970s.

[2] For more information on *pathogenesis* vs *salutogenesis*, see: 1) Bhattacharya, S., et al (2020, Jan.). Salutogenesis: A bona fide guide towards health preservation. *Journal of Family Medicine and Primary Care*, 9(1), 16-19. https://doi.org/10.4103/jfmpc.jfmpc_260_19. 2) Mittelmark, M.B., et al (Eds.) (2017). *The Handbook of Salutogenesis*. Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-04600-6. 3) Fries, C.J. (2020). Healing Health Care: From Sick Care Towards Salutogenic Healing Systems. *Social Theory & Health,* 18(1), 16-32. https://doi.org/10.1057/s41285-019-00103-2.

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[5] See, for example: 1) Pelletier, K. (2018). *Change Your Genes, Change Your Life: Creating Optimal Health with the New Science of Epigenetics*. San Rafael, CA: Origin Press. 2) Virolainen, S.J., et al (2023). Gene-environment interactions and their impact on human health. *Genes & Immunity*, 24, 1-11. https://doi.org/10.1038/s41435-022-00192-6. 3) Vermeulen, R., et al (2020). The exposome and health: where chemistry meets biology. *Science*, 367(6476), 392-396. https://doi.org/10.1126/science.aay3164. 4) Choy, L., and Bodeker, G. (2020, May). *Resetting the World with Wellness: Mental resilience in a time of stress and trauma*. Global Wellness Institute White Paper Series. Miami, FL: Global Wellness Institute. https://globalwellnessinstitute.org/industry-research/resetting-the-world-with-wellness/.

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CHAPTER 5

Innovating the Future of Wellness Real Estate

In the eight years since we released the original *Build Well to Live Well* report, the wellness real estate market has undergone tremendous growth as developers have launched numerous variations and models around the world. Undoubtedly, the wellness real estate market is still over-represented by Class A office buildings in global metropolises, corporate campuses of multinationals, and luxury properties in the hospitality and residential segments. At the same time, the current market has yet to address the needs of many other users and occupants, in the face of numerous global pressures: rapidly changing demographics, the rise of chronic and environmental diseases, increasing social isolation and civic disengagement, climate risks, and challenging economic realities. The good news is, with the lessons learned from existing projects – combined with technological advances, emerging research (from building materials to neuroscience), and design innovations – we now have many more tools to design, build, and operate wellness real estate to meet the needs of the future and increasing consumer demand.

In this chapter, we present many themes for wellness real estate projects, which can address what we view as the most salient needs in the market, both at present and into the future. We also provide a variety of project examples around the world for each theme. We hope that these examples can spur new thinking, creativity, and innovations that will future-proof wellness real estate projects; provide wide-ranging benefits for users, occupants, and the broader community; and help to reduce the financial risks while increasing the ROI for projects.

- **Climate adaptation and resilience.**
- **Earth-friendly and sustainable living.**
- **Innovations to improve the construction process and home supply.**
- **Healthy homes for the non-rich.**
- **Wellness-centric urban regeneration.**
- **From healthcare clusters to healthy communities.**
- **Improving healthspans and thriving in aging.**
- **Diversifying co-living models.**
- **Building healthier food environments.**
- **Embracing the benefits of nature.**
- **Improving sensory environments with neuroarchitecture and the arts.**
- **Infusing wellness into travel and tourism infrastructure.**

Note that our selection of project examples for each theme does not imply that these are the best or only examples. The sample projects were chosen because they illustrate a cross-section of different approaches, sizes and types of projects, and geographic regions. For the most part, we focus on projects that were built in the last decade, and projects that are already built/in operation (although a few are still in the concept phase or pre-sales). In Appendix E, we provide relevant weblinks for each project for additional information.

Climate adaptation and resilience.

Unusual weather events like extreme heat and freak storms have become so common and widespread that they are impossible to ignore. The rise of extreme weather and increased risks of floods, wildfires, water shortages, bad air quality, and power outages not only endanger our safety and comfort, but also threaten our financial investments in real estate. In some locations, these risks are already increasing insurance rates to unaffordable levels, and in some cases, they are even making buildings uninsurable. Wellness real estate of the future will have to contend with these risks and include climate adaptive features in order to improve resilience. At a minimum, wellness real estate needs to double down on the features that help protect people from unhealthy air, contaminated water, extreme temperatures, fires, storms, and floods. There is increasing consumer demand for strategies and features that help to climate-proof homes and communities, such as: wildfire-proof design and landscaping; water- and energy-saving appliances; gray water reuse systems; heat-reflecting materials, green and cool roofs; energy independence through renewable energy-based microgrids; and protection of surrounding natural habitats, wetlands, and watersheds.

Aura (Sunshine Coast, QLD, Australia): This 20,000-home residential development uses light-colored "cool roofs" and 30% green space coverage to reduce the urban heat island effect – keeping the community 1.5-2°C (2.7-3.6°F) cooler than comparable areas and helping to reduce heat-related mortality. Mandatory rooftop rainwater harvesting tanks capture greywater for use in laundry, toilets, and landscaping.

The Gables (Sydney, NSW, Australia): This 1,900-home residential development is built for water resilience in a drought-prone area. All new homes are connected to a sustainable water supply network (harvesting, treating, and recycling wastewater from homes), with the recycled water meeting up to 70% of resident requirements for toilets, laundry, and landscaping.

Casa Adelante (San Francisco, CA, United States): This 143-unit affordable apartment complex is designed for flood resilience, with a ground floor raised above the floodplain, rooftop urban gardens to absorb stormwater, and courtyard planters to retain water runoff from the roof. A centralized HVAC and air filtration system ensures that all units receive clean air even during wildfire smoke pollution, while perforated metal sunshades on the windows control heat gain in each unit.

Rancho Mission Viejo (Orange County, CA, United States): This 14,000-home master-planned community uses proactive wildfire resilience tactics and fire-wise community design approaches to reduce risks, informed by a fire behavior modeling study. Fire-prevention measures include home-hardening and landscaping restrictions, limited vegetation and hardscapes around perimeters to create non-combustible buffer zones, and requirements for noncombustible construction materials and automatic fire sprinklers throughout the community.

Babcock Ranch (Greater Fort Myers, FL, United States): This 19,500-home solar-powered master-planned community is built for resilience as climate change brings stronger hurricanes. All structures in the development are designed to withstand over 150 mile-per-hour winds, its 150-megawatt solar farm provides an emissions-free source of power generation, and the underground transmission system reduces the likelihood of power outages. About 90% of the property is preserved wetland to absorb excess water and prevent flooding.

Bayshore Villas (San Juan, Puerto Rico): This complex of 174 mixed-income rental apartments is designed to be hurricane resilient, with underground cisterns to hold 70,000 gallons of stormwater, solar panels and backup generators to power common areas, impact-resistant windows and doors, and reinforced concrete in exterior structures to withstand strong storms.

BedZED

Earth-friendly and sustainable buildings.

The prevalence of extreme weather and the deteriorating quality of air, water, and soil are stark reminders that if our planet is not well, the humans residing on it cannot be well either. Within the real estate sector, sustainability and wellness are converging. As more and more people experience climate anxiety, wellness real estate projects that are earth-friendly can help occupants to improve their mental resilience by becoming part of the solution rather than part of the problem. If the demand for green buildings was driven primarily by energy cost savings in the past, there is now more interest in a systematic approach to green and healthy communities, including low-carbon building technologies and materials, net-zero or energy-efficient design and systems, planning for active transit and minimizing automobile use, and creating entire communities around sustainability and circular/regenerative living systems. And, wellness is the reason consumers are demanding these approaches, it is no longer just about saving money. Already, this convergence is reflected in the certification world, as the well-established green building certifications shift toward a more holistic emphasis on human health and social sustainability alongside planetary priorities. From now on, it no longer makes sense to think of human health and planetary health as being separate from one another in creating wellness real estate.

- Grow Community (Bainbridge Island, WA, United States)
- Veridian at County Farm (Ann Arbor, MI, United States)
- Kendeda Building for Innovative Sustainable Design (Atlanta, GA, United States)
- Green Point Project (Vancouver, BC, Canada)
- BedZED (Greater London, United Kingdom)
- EDGE Suedkreuz (Berlin, Germany)
- Nijverdal Social Housing Apartments (Nijverdal, Netherlands)
- Clichy-Batignolles Ecodistrict (Paris, France)
- Burwood Brickworks (Greater Melbourne, VIC, Australia)
- Sumu Yakushima Regenerative Residence (Yakushima Island, Japan)
- Paya Lebar Green (Singapore)
- Alfa Campus (Israel)
- The Sustainable City Yas Island (Abu Dhabi, UAE)

Innovations to improve the construction process and home supply.

There is a significant amount of unwellness embedded in the construction and building industry. With the energy-intensive production of cement, steel, and aluminum, the construction industry is one of the top sources of global greenhouse gas emissions. Inefficient processes result in a massive amount of construction waste, estimated to account for one-third of the world's total waste. Rising costs for energy and building materials are a major threat to affordability. On the human side, construction workers are particularly vulnerable to extreme weather, with an increasing number of deaths from heat stroke in the industry. Simultaneously, the industry is facing an aging workforce and a shortage of workers, exacerbating the undersupply of residential housing in markets across the world. Developers and designers need to partner with home manufacturers to innovate and adopt new designs, production processes, and technologies that can increase speed, performance, and sustainability while keeping down the cost of building healthy homes. For example, factory-built homes (including modular, manufactured, panelized construction; prefabricated components; etc.) are often considered healthier than site-built homes due to several factors. The controlled environment of a factory allows for tighter seals, better insulation, and use of more sustainable materials – all contributing to a healthier indoor environment – with a higher level of quality control. It also generates significantly less construction waste than conventional site-built homes, resulting in a lower carbon footprint. In addition, it can minimize the exposure of construction workers

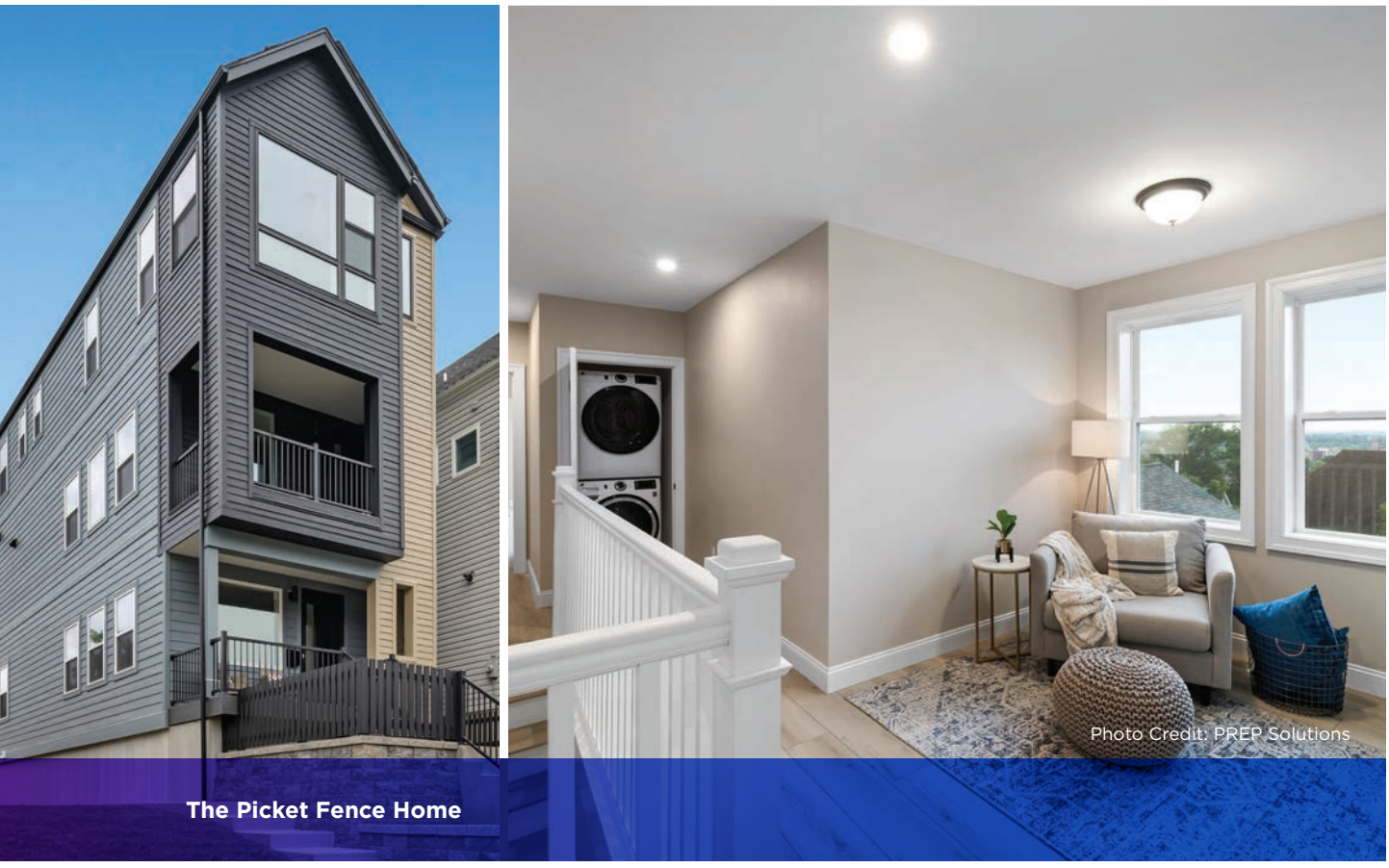

Photo Credit: PREP Solutions

The Picket Fence Home

to extreme weather and increase worker safety. The systems-built approach to off-site construction can also integrate technologies such as health, air and water monitoring; advanced HVAC systems; and home maintenance update reminders in a package that lowers installation costs. While nascent, 3D printed homes are also gaining interest and are powered by AI to increase inefficiency, reduce waste, and scale production to meet the need for affordable homes.

The Picket Fence Home (Pittsburgh, PA, United States): A 2-unit concept home built using off-site volumetric modular construction and assembled on an urban infill lot.

The BLOCK Project (Seattle, WA, United States): A prototype of an accessory dwelling unit that can be assembled easily without a general contractor, using prefabricated components and low-cost healthy and sustainable materials.

Genesis Collection at Wolf Ranch (Austin, TX, United States): A large master-planned community with a collection of 100 3D- printed homes.

Living Homes at Mill Creek (Moab, UT, United States): Five affordable, net-positive single-family homes built using inexpensive and sustainable straw bale, earth plaster, and natural materials.

LAC+USC Restorative Care Village (Los Angeles, CA, United States): A mental health, social services, and temporary housing center for those experiencing mental health issues and homelessness, with 76 bedrooms/bathrooms built using off-site modular construction to reduce costs and speed up delivery time.

Sneglehusene (Aarhus, Denmark): A 93-unit residential complex built using prefabricated modular construction and inexpensive materials.

Stockholm Wood City (Greater Stockholm, Sweden): A mixed-use project (housing, offices, retail, restaurants), which will be the largest wood urban construction project in the world.

Apex House Wembley (Greater London, United Kingdom): A 558-unit student housing high-rise and one of the tallest buildings in Europe using volumetric modular construction.

New Story/ICON Homes (Nacajuca, Mexico): A 50-home affordable housing project for those living in poverty and the world's first 3D-printed neighborhood.

Mvule Gardens (Kilifi, Kenya): A 52-home affordable housing development based on the "garden city" concept, and the largest 3D-printed housing project in the world when it was built.

Healthy homes for the non-rich.

In our assessment, the luxury end of wellness real estate is alive and well, with plenty of options for occupants to live permanently in a wellness club, spa, or resort. Given enough resources, there is no limit to the kinds of wellness features and amenities that can be included in luxury homes and developments – a private gym and spa, recovery equipment, a meditation space, a hyperbaric oxygen chamber, an infrared sauna, a cold plunge tub, disease-detecting toilets and mirrors, vitamin C infused showers, beyond-premium air filtration systems and circadian lighting, advanced smart-home controls and sensors, dramatic and awe-inspiring views, and even exclusive access to nature – all in a community of fellow well-resourced people. The market for the non-rich is where wellness real estate is sorely needed. In today's economic environment, the majority of people are struggling to afford starter homes, and affordable rental housing is in short supply. Typical buyers and renters are seeking a more basic range of wellness-supporting features: homes free from lead and mold; protection from air, noise, and light pollution; access to healthcare, employment, public transit, healthy fresh foods, and green spaces; and a safe, stable, and walkable community. The growing housing supply gap and the expanding desire for affordable healthy homes represent important opportunities for new kinds of wellness real estate and business models to emerge. Developers can bring their expertise and partner with governments and communities to create options that will meet these needs and priorities across different price points and segments. In some cases, local policymakers and jurisdictions need to be flexible in updating zoning, building codes, and other regulations (e.g., density, walkability) to allow for more thoughtful wellness-supporting homes and neighborhoods to be developed.

Mid-Market

- Cadia Sherman/Zeal for Living (Sherman, TX, United States)
- Indigo (Greater Houston, TX, United States)
- Culdesac (Tempe, AZ, United States)
- Gravity (Columbus, OH, United States)
- Corvias Military Housing (multiple locations, United States)
- Hero of Breda (Breda, Netherlands)
- Moda Living Apartments (multiple locations, United Kingdom)
- Eddington Cambridge (Cambridge, United Kingdom)
- Nightingale Housing (multiple locations, Australia)
- Ginninderry (Greater Canberra, ACT, Australia)
- Gamuda Gardens & Gardens Park (Rawang, Malaysia)
- Haven by Aldar (Dubai, UAE)

Affordable & Mixed-Income

- Rockaway Village (Queens/NYC, NY, United States)
- Sendero Verde (Harlem/NYC, United States)
- The Rose (Minneapolis, MN, United States)
- High Point (Seattle, WA, United States)
- Casa Adelante (San Francisco, CA, United States)
- Taylor Street Apartments & Little Italy Branch Library (Chicago, IL, United States)
- Maceo May Apartments (San Francisco, CA, United States)
- Savonnerie Heymans (Brussels, Belgium)
- Redfern Place (Sydney, NSW, Australia)
- Urbanización El Paraíso (Valparaíso, Colombia)
- The Bahareya Village (Egypt)

Brent Cross Town

Wellness-centric urban regeneration.

Cities everywhere are working to revitalize their urban cores; redevelop derelict industrial sites and economically depressed districts; and leverage assets such as waterfronts, cultural sites, and transit infrastructure. There are thousands of such initiatives around the world, with massive investments in large-scale, mixed-used projects that include offices, housing, retail, recreation, arts, and tourism. Developers and governments have an important opportunity to infuse health and well-being into these projects. Wellness should be incorporated at the outset of the design and infrastructure planning, so that the different dimensions of wellness are embedded as linchpins of the community, rather than plugged in via amenities or just as an afterthought. Some aspects of wellness infrastructure (e.g., walkability and connectivity, green spaces, public plazas, libraries, healthy food access, transit, and healthcare services) typically require partnerships and co-investments from local governments and other community stakeholders. These projects also create opportunities for "placekeeping" – that is, using a place-based architecture, design, and planning process that honors a region's unique heritage, culture, and environment, and that engages existing residents to preserve and build the social fabric. All too often, the practice of "placemaking" has catalyzed gentrification and privileged dominant cultures, resulting in cookie-cutter developments. By pairing placemaking with the principles of placekeeping, projects can create communities that are more organic, resilient, and socially connected, and where everyone can thrive.

- Civita (San Diego, CA, United States)
- Mueller (Austin, TX, United States)
- Pearl (San Antonio, TX, United States)
- Mariposa (Denver, CO, United States)
- Water Street Tampa (Tampa, FL, United States)
- Zibi (Ottawa/Gatineau, ON/QC, Canada)
- Brent Cross Town (Greater London, United Kingdom)
- Ebbsfleet Garden City (Greater London, United Kingdom)
- Woodberry Down (Greater London, United Kingdom)
- CityLife District (Milan, Italy)
- Sekisui House West Village Precinct (Brisbane, QLD, Australia)
- STH BNK (Melbourne, QLD, Australia)

University of Huddersfield National Health Innovation Campus

- Destination Medical Center (Rochester, MN, United States)
- Lake Nona (Greater Orlando, FL, United States)
- Heartland Whole Health Institute (Bentonville, AR, United States)
- Poplar Health & Wellness Village (Collingwood, ON, Canada)
- Barton (Oxford, United Kingdom)
- Newcastle Health Innovation Neighbourhood / Center for Ageing and Vitality (Newcastle upon Tyne, United Kingdom)
- University of Huddersfield National Health Innovation Campus (Huddersfield, United Kingdom)
- KL Wellness City (Kuala Lumpur, Malaysia)

From healthcare clusters to healthy communities.

Healthcare is a rapidly growing industry around the world, accounting for an increasingly large share of the global economy. Many cities and regions are trying to attract and build new healthcare facilities to serve their expanding populations. Many governments are seeking to improve the delivery and effectiveness of healthcare, while addressing rising costs. Many regions also seek to attract adjacent biomedical activities and businesses (i.e., research, education, training, testing, design, manufacturing, technology, etc.) for economic development and job creation. Health professions can be demanding and stressful, and their workers are not immune to an unhealthy lifestyle. It is in the interest of employers that their healthcare workforce is healthy, engaged, and productive. It is also antithetical to the spirit of a biomedical and healthcare industry cluster that its community and local population are not well or have inadequate access to care. Therefore, a health industry cluster can provide the ideal opportunity for regional stakeholders – e.g., developers, hospitals, higher education institutions, employers, community organizations, and local government – to collaborate and shape the built environment; develop wellness real estate; and support healthy, thriving, and sustainable communities. Wellness real estate can have a major impact on promoting healthier behaviors and lifestyles for residents, which can ultimately reduce reliance on the healthcare system and bring positive economic impacts.

The Mather

Improving healthspans and thriving in aging.

Populations are rapidly aging across many parts of the world (North America, East Asia, Europe), and most societies are not prepared for this silver tsunami of rising healthcare costs and increased demand for caregiving and appropriate housing. Many who will enter the "senior club" in the coming years (whether we define the cut-off as 55 or 65) do not think of themselves as "old." This cohort has been advancing in age with the attitude that "60 is the new 40." They are equipped with more knowledge about wellness, and they expect to continue living active, vibrant, and meaningful lives. They are also highly aware of the risks of chronic disease, loneliness, and social isolation, especially as they live through the experience of watching their parents age and caring for them. The upcoming wave of seniors will prioritize healthspan and will desire housing options that support them in maintaining an active and healthy lifestyle, continuing to thrive intellectually, staying socially engaged, and contributing to society in meaningful ways. Rather than moving to sprawling, car-centric developments, many would prefer to downsize, get rid of their cars, and move closer to town so they can walk more and take advantage of city life. Many will want to live in a more diverse, multigenerational environment – whether in an urban or suburban setting. Many will need a model that provides for a transition to more caregiving – and for scenarios of low mobility or cognitive decline – in a way that is financially sustainable. What is clear is that this growing cohort will create demand for a variety of wellness real estate options that will support longer healthspans and enable seniors to thrive.

- The Mather (Greater Washington DC/Fairfax County, VA, United States)
- Enso Village (Healdsburg, CA, United States)
- Rancho Mission Viejo (Orange County, CA, United States)
- Village Hearth (Durham, NC, United States)
- Generationernes Hus/House of Generations (Aarhus, Denmark)
- SällBo Project (Helsinborg, Sweden)
- The Hogeweyk Dementia Village (Greater Amsterdam, Netherlands)
- Castlemaine Court (Greater London/Byfleet, United Kingdom)
- Residencia de Ancianos (Camarzana de Tera, Spain)
- Kampung Admiralty (Singapore)
- Setagaya Nakamachi Project (Tokyo, Japan)
- Aspen Tree Residences at Forestias (Thailand)
- Komune Living & Wellness (Kuala Lumpur, Malaysia)
- Yangcheng Lake Island Senior Housing (Suzhou, China)

Urbanest Battersea

- Haven Co-Living (Venice Beach/Los Angeles, CA, United States)
- Petaluma Avenue Homes (Sebastopol, CA, United States)
- Driftwood Village Cohousing (North Vancouver, BC, Canada)
- Vancouver Cohousing (Vancouver, BC, Canada)
- Stavnsholt Co-Housing (Stavnsholt, Denmark)
- Calico Co-Housing Project (Brussels, Belgium)
- Les Grandes Casas (multiple locations, France)
- La Balma Collective Housing (Barcelona, Spain)
- Wooncoöperatie De Warren/ Housing Cooperation de Warren (Amsterdam, Netherlands)
- Urbanest Battersea (London, United Kingdom)
- B-Hive Living (multiple locations, United Kingdom)
- Episode Suyu 838 (Seoul, South Korea)
- Mangrove Dongdaemun Co-living (Seoul, South Korea)
- Digital Nomad Anji/DNA (Huzhou, China)
- Taihang Village (Ankang, China)
- LYF Co-living (11 countries)

Diversifying co-living models.

The great societal shift to single living continues across the world, as marriage rates drop, divorce rates rise, and late marriages and child-free lifestyles become increasingly common. More and more adults of all ages are living alone. But, as housing costs rise across major metropolitan areas, it has become increasingly difficult to afford an apartment on a single income. Co-living and cohousing have been around for more than 50 years, and already they have evolved toward wellness, with projects targeting those who would like to seamlessly move between work, play, travel, and exercise. These projects provide small-/micro-sized apartments or studios with flexible lease terms, combined with robust communal spaces and wellness amenities, such as ample outdoor areas for socializing and exercise, community living rooms and game rooms, community kitchens, coworking spaces, fitness facilities, and extensive social programming. Currently, most of the new co-living projects are geared toward younger demographics, creative class workers with remote jobs, and digital nomads. But, this segment can serve many more people who are looking for affordable places to live and do not want to feel isolated – e.g., those who are divorced or widowed, single parents, working in a different city from their family, or in seasonal/traveling jobs. Going forward, more people will seek out living options that can facilitate social connections, provide a sense of community and belonging, and create a "chosen family." There are many opportunities in co-living-based wellness real estate to serve the needs of diverse groups (e.g., LGBTQ+, seniors, young parents, students, ethnic and religious minorities, migrants, local service workers/seasonal workers, and more).

Building healthier food environments.

The places where we live and work are the "last mile" of the food supply chain, influencing our access to healthy options and our decisions about what, how, and where we eat. In urban areas around the world, the proliferation of modern supermarkets, hypermarkets, convenience stores, and fast-food outlets has been associated with more purchases and consumption of processed and ready-to-eat foods. A growing number of people (especially the urban poor) now live in "food deserts" where grocery stores and outlets selling fresh healthy foods are scarce or nonexistent, and "food swamps" where fast food and packaged/convenience foods may be overabundant. While solving the immense challenges in our food systems is largely the domain of public policy, wellness real estate also plays an important role because it can help increase access to healthy food options. One approach is the agrihood model, which has spread mostly in suburban and exurban areas of North America over the last few decades – i.e., making an on-site organic or regenerative farm the focal point of a master-planned residential development. Even more critical is for urban real estate and development projects to consider how they can provide access to healthy, fresh, and local foods, especially for neighborhoods and populations that may be underserved or lacking these options. Urban multi-family and affordable housing developments can incorporate on-site community gardens, rooftop farms, mobile produce markets, and community-sponsored agriculture (CSA) distribution points, while mixed-use and urban regeneration projects can incorporate full-service grocery stores, restaurants with local/healthy options, farmers markets, urban farms, urban markets/food halls, culinary incubators, and more. In the post-pandemic era, a few U.S. cities have also piloted concepts to co-locate larger-scale vertical farms with mixed-income or affordable housing, although these projects have not yet been fully realized.

Agrihoods

- Serenbe (Greater Atlanta, GA, United States)
- Fox Point Farms (Encinitas, CA, United States)
- Bellefield at Historic Hyde Park (Hyde Park, NY, United States)
- Southlands Tsawwassen (Greater Vancouver, BC, Canada)
- Landgoed Wickevoort (Cruquius, Netherlands)
- The Paddock Eco Village (Castlemaine, VIC, Australia)
- Organo Naandi and Antharam (Hyderabad, India)

Urban Projects

- Agrihood Sustainable Community & Senior Housing (Santa Clara, CA, United States)
- Aria Denver (Denver, CO, United States)
- Curries Woods and Marion Gardens + AeroFarms (Jersey City, NJ, United States)
- Brooklyn Grange/Brooklyn Navy Yard/Market @77 Food Hall (Brooklyn/NYC, NY, United States)
- Pasona Urban Farm (Tokyo, Japan)
- CapitaSpring (Singapore)
- Agri Hub Dubai (Dubai, UAE)

The Spine

- Phipps Conservatory Center for Sustainable Landscapes, Nature Lab, & Exhibit Staging Center (Pittsburgh, PA, United States)
- Cordilleras Mental Health Facility (Greater San Francisco/ Redwood City, CA, United States)
- One River North (Denver, CO, United States)
- The Spine (Liverpool, United Kingdom)
- Bosco Verticale (Milan, Italy)
- Wonderwoods (Utrecht, Netherlands)
- Faelledby (Copenhagen, Denmark)
- Gardens by the Bay (Singapore)
- Khoo Teck Puat Hospital (Singapore)
- The Forestias (Greater Bangkok, Thailand)
- Green School (Bali, Indonesia)
- Tao Zhu Yin Yuan/Agora Garden Tower (Taipei, Taiwan)
- Easyhome Huanggang Vertical Forest City Complex (Huanggang, China)
- The Wilds (Dubai, UAE)

Embracing the benefits of nature.

It is well-documented that mental well-being has been on the decline all across the world. There are multiple stressors (lack of time, pressures from work/school/family, economic insecurities, physical safety, social disconnection, etc.) – and our living environments often aggravate these stressors. In congested urban areas, a lack of green space and the noise from traffic, from construction, and from other people can make it difficult to find mental respite. The "green space gap" is especially acute for marginalized neighborhoods and populations. A growing body of research shows that contact with nature can help to relieve stress and improve our mental, psychological, and physical well-being. Positive impacts include buffering or reduction of noise and air pollution, improvements in cognitive abilities and moods, promotion of healing, and reduction of aggression and negative feelings. This research, along with strong consumer demand for access to green space, has spurred a growing movement of urban greening and biophilic design. Indeed, a renewed appreciation for nature triggered by the pandemic has continued to build, with a growing interest in incorporating more parks, gardens, trees, landscaping, green/blue public spaces, and natural areas for outdoor recreation into more real estate projects and communities. The expanding movement of biophilic design offers numerous ways to bring natural elements into any building project – not only providing plants, greenery, water features, and natural light indoors, but intentionally bringing nature into the materials, patterns, design, and viewscapes through sight, sound, touch, and other sensory experiences. At the same time, it is important that everyone has access to these green assets and feels safe and welcome (e.g., those with disabilities, seniors, women, minorities, LGBTQ+, etc.).

Improving sensory environments with neuroarchitecture and the arts.

Emerging research in neuroscience is beginning to demonstrate how our sensory environments can profoundly affect our brains and our mental well-being. It is already well-established that contact with nature can affect our mood, emotions, and cognition; provide stress relief; and accelerate healing. As nascent fields of study, neuroaesthetics and neuromusicology are providing early insights on how our brain responds to beauty and the arts (both natural and human-created) – from awe and inspiration, to love and healing, to spirituality and transcendence. The spa and hospitality sector has been a pioneer in creating multi-sensory spaces for relaxation, stress relief, and mental wellness. Researchers and clinicians are also experimenting with generative art applications for therapies and healing in healthcare settings. Wellness real estate can draw upon these new and emerging fields to help improve our current built environments, which are often uninspiring and stress-inducing – i.e., full of artificial light and noise that give us no mental respite, while blocking out views and sounds of nature like birdsong or the rustling of leaves. Designers, architects, developers, and builders can leverage new knowledge in neuroscience to create spaces than will enhance our well-being. Different approaches include prosocial and biophilic

The High Line

design, public art installations, multi-sensory installations, curated and natural soundscapes, fountains and water sculptures, digital art, and interactive spaces that invite engagement and co-creation from users. The integration of sight, sound, scent, and touch is still very new, and there is a lot of room for experimentation and innovation, especially with emerging technologies, generative AI, and biofeedback.

Strawberry Hill Campus, University of Kansas Health System (Kansas City, KS, United States): An inpatient adult mental/behavioral health facility that uses neuroaesthetics to create a healing environment for patients.

Lucile Packard Children's Hospital Stanford (Greater San Francico/Palo Alto, CA, United States): This hospital has an arts program built into the building, incorporating moments of discovery and delight throughout the public spaces. Outdoor spaces are visually accessible from all patient rooms and physically accessible for all patients.

The High Line (New York City, NY, United States): A 1.45-mile-long elevated linear park and greenway (on a repurposed rail viaduct) that provides a multi-sensory urban experience via extensive gardens and trees, biophilic elements, and public art.

Zibi (Ottawa/Gatineau, ON/QC, Canada): This urban, mixed-use master-planned development intentionally embraces and celebrates art in all its forms, with Algonquin, indigenous, and non-indigenous artworks featured throughout the community.

Brent Cross Town (Greater London, United Kingdom): A high-density, mixed-use, master-planned "park town" that has developed a first-of-its kind, bespoke holistic sound and music strategy for the entire development. Key locations are mapped out for reducing noise pollution and amplifying positive noise to promote well-being (e.g., amplifying bird songs and water sounds in public spaces, uplifting soundscapes in stairwells, excellent acoustics in restaurants/retail areas, sound-dampening features in apartment bedrooms).

Barangaroo (Sydney, NSW, Australia): One of Australia's largest sites of public art and cultural activity, this large, mixed-use harborside development has commissioned public art by Aboriginal and contemporary artists throughout the precinct.

Stockland Point Cook (Greater Melbourne, VIC, Australia): This town center development is anchored by a 50m long road mural, "The Point Cook Rainbow Serpent," created as a collaboration with local artists and the community.

Upper House (Brisbane, QLD, Australia): The façade of this 33-story, 188-apartment high-rise tower is punctuated by a 5-story tall external body of art by indigenous artist Judy Watson, serving as a cultural narrative that acknowledges the Turrbal people as the traditional custodians of the land on which the project is built. The exterior of the building evokes tree roots and celebrates the natural world.

Jewel Changi Airport

Infusing wellness into travel and tourism infrastructure.

Wellness tourism is a powerful and enduring trend that is reshaping the global tourism industry, as well as the communities that host wellness visitors. Wellness tourism often serves as an opening to wellness real estate, converting wellness travelers into buyers of retreat style properties in prime wellness destinations. These branded residences are already a major area of opportunity for destination spas and luxury hospitality brands, with many destinations vying for these investments. What is still nascent is for tourism destinations to focus on wellness infrastructure that is accessible to their own residents, and to invest in creating a vibrant and authentic wellness ecosystem locally. Today's wellness travelers are increasingly aware of the environmental and social footprints of their trips. They are also becoming more purposeful, wanting to engage with the place they are visiting and to connect with local people in a less commercial and more authentic way. Many elements that are central to community wellness – food, music, and the arts, urban green spaces, trails and biking paths, public plazas, public transit, walkable and vibrant streetscapes, environmental sustainability, and the preservation of local history and heritage – will simultaneously make a place more attractive to wellness travelers. There are many opportunities to align the travel and tourism infrastructure with wellness, in particular by infusing wellness, sustainability, biophilia, culture, and authenticity into the design and fabric of resorts, hotels, airports, and other real estate developments that serve tourists.

Resorts/Hotels/Tourist Sites

- Populus Hotel (Denver, CO, United States)
- The Lodge at Gulf State Park (Gulf Shores, AL, United States)
- Fogo Island Inn (Fogo Island, NL, Canada)
- Casona Sforza (Puerto Escondido, Mexico)
- Arctic Bath (Harads, Sweden)
- Max Royal Bodrum Resort (Bodrum, Turkey)
- Pan Pacific Orchard (Singapore)
- Raga Svara Wellness Center (Rajkot, India)
- Song Saa Reserve (Banteay Srei, Cambodia)
- Gelephu Mindfulness City (Bhutan)
- Resort Deer-Chaser (Yuchi, Taiwan)
- Desert Rock Resort (Saudi Arabia)
- Dar Hi Life (Nefta, Tunisia)
- Sussuro (Mozambique)

Airports

- Portland Airport (PDX) Main Terminal (Portland, OR, United States)
- Jewel Changi Airport (Singapore)
- Terminal 2 at Kempegowda International Airport (Bengaluru, India)

Appendix A

"Wellness Real Estate" Versus "Wellness Community" – What Is the Difference?

The term "wellness community" is sometimes used in conjunction with, or interchangeably with, "wellness real estate." In our 2018 *Build Well to Live Well* report, the GWI research team did an in-depth exploration of these terminologies and discussed how they are different. In this report, we have chosen to focus on "wellness real estate" because it is a tangible, definable, measurable, and actionable concept. As the market has evolved, the concept of a "wellness community" has remained amorphous because the word "community" itself is complex and can be used in many different ways:

- **A community as a place:** Sometimes, the word "community" is used to refer to a group of people *living in a specific locality*. In this sense, the term "wellness community" could be used as a label for a larger-sized residential wellness real estate development. For example, our case studies (in the companion volume to this report) present examples of two very large-scale projects – Rancho Mission Viejo in California (which will have 35,000+ residents) and Brent Cross Town in the United Kingdom (planned for more than 6,700 homes and 25,000 workers). Both of these are the size of a town or small city and, therefore, could arguably be labelled as "wellness communities."
- **A community as a group of people:** In its more traditional definition, the word "community" refers to a group of people *with common characteristics or interests*. In this sense, a "wellness community" can develop around shared culture, interests, and social networks rather than around a defined physical location. In today's hyper-consumerist, fad-driven, and social media obsessed society, there are "wellness communities" (both virtual and in-person) that have developed around all kinds of wellness themes (both positive and negative): doing yoga or running; CrossFit or Peloton; veganism, keto diets, or "clean eating"; weight loss and being thin; using essential oils; or anti-vaxxing and distrust of "big pharma." Purpose-built wellness real estate can be used as a way to cultivate a wellness community, but a wellness community does not require a real estate component in order to exist and flourish.
- **A community can be inclusive and health-enhancing:** Strong social connections and supportive communities are essential for our mental and physical health and well-being and are even associated with longer lifespans. When we build a strong community with family, friends, neighbors, and acquaintances, we are satisfying a fundamental human need to connect with one another and to feel a sense of belonging. In this regard, the idea of using wellness real estate to cultivate a "wellness community" (both within and beyond its walls) can be very positive and affirming, because it provides a critical support network; improves our "wellness ecosystem" (*see Chapter 4*); and can influence our daily motivations, behaviors, and lifestyles.

- **A community can be exclusive and alienating:** When people talk about their "community" they can also mean it in an exclusionary sense – i.e., I only want to be around people who are "like me." Throughout history and especially now, this "tribe-like" thinking has led to immense divisiveness, segregation, racism, classism, and strife. Many real estate developments are implicitly or explicitly exclusionary, and wellness real estate projects that are designed to be expensive, exclusive, and gated – or that encourage residents to hide within the "wellness cocoon" of their homes and not interact with neighbors – may be antithetical to the development of true community.

Clearly, defining and understanding the term "wellness community" is challenging. We also recognize that this semantic discussion is specific to the English language; other languages will have many other nuanced ways of labelling and understanding different versions of "community." For this reason, this report focuses on the more tangible concept of "wellness real estate," with the understanding that some wellness real estate projects can and do cultivate broad-based, inclusive, wellness-enhancing communities – both within and beyond the boundaries of the development – but such an outcome is no guarantee.

Appendix B

Certification/Rating Systems for Green and Sustainable Building

Name	URL	Date Established	Geographic Focus
Green Certifications and Rating Systems – Multi-Attribute			
BREEAM	https://breeam.com/	1990	Global
LEED	https://www.usgbc.org/leed	1998	Global
DGNB Certification	https://www.dgnb.de/en/certification/	2007	Global (primarily Germany & Europe)
Passive House Institute	https://passivehouse.com https://passivehouse-international.org	1990s	Global
SITES	https://www.sustainablesites.org/	2009	Global
EDGE	https://edgebuildings.com/	2015	Global (emerging markets focus)
RESET	https://www.reset.build/	2013	Global
BOMA BEST & BOMA 360	https://boma.org/building-recognition/	2005	Global
ENVISION	https://sustainableinfrastructure.org/	2012	Global
FAST-Infra Label	https://www.fastinfralabel.org/	2025	Global
Blue Dot Network	https://www.bluedot-network.org/	2022	Global
Parksmart	https://parksmart.gbci.org/	2016	Global
EarthCheck Building Planning & Design Standard	https://earthcheck.org/	2022	Global
International Green Construction Code	https://www.iccsafe.org/products-and-services/i-codes/igcc/	2012	Global
PHIUS (Passive House Institute US)	https://www.phius.org/certifications/projects	2007	Primarily North America
Green Globes	https://thegbi.org/greenglobes/	2004	Primarily North America
Enterprise Green Communities	https://www.greencommunitiesonline.org/	2004	United States
National Green Building Standard	https://www.ngbs.com/	2008	United States
PEER (Performance Excellence in Electricity Renewal)	https://peer.gbci.org/	2015	United States & India

Name	URL	Date Established	Geographic Focus
EarthCraft	https://earthcraft.org/	1999	SE United States
NABERS (National Australian Built Environment Rating System)	https://www.nabers.gov.au/	1998	Australia, New Zealand, UK
IS Rating Scheme (Infrastructure Sustainability Council)	https://www.iscouncil.org/is-ratings/	2011	Australia, New Zealand
Green Building Council Australia: Green Star	https://www.gbca.au/	2003	Australia
New Zealand Green Building Council: Green Star and Homestar	https://nzgbc.org.nz/	2007	New Zealand
CASBEE	https://www.ibecs.or.jp/CASBEE/english/	2002	Japan
BCA Green Mark	https://www1.bca.gov.sg/buildsg/sustainability/green-mark-certification-scheme	2005	Singapore
BEAM Plus	https://www.beamsociety.org.hk/en/	1996	Hong Kong
EEWH	https://www.greenjump.com.tw/en/service/eewh-service	1999	Taiwan
Green Building Index	https://www.greenbuildingindex.org/	2009	Malaysia
Green Building Evaluation Standard	https://worldgbc.org/wp-content/uploads/2022/02/Introduction-to-China-Green-Building-Assessment-Standard-3rd-Edition.pdf	2006	China
Green Rating for Integrated Habitat Assessments (GRIHA)	https://www.grihaindia.org/	2007	India
Global Sustainability Assessment System (GSAS)	https://gsas.gord.qa/	2007	Middle East & North Africa
Al Sa'fat Green Building Rating System	https://www.dm.gov.ae/municipality-business/al-safat-dubai-green-building-system/	2016	UAE/Dubai
Estidama Pearl Building Rating System	https://www.dmt.gov.ae/	2010	UAE/Abu Dhabi
Green Star SA	https://www.gbcsa.org.za/green-star/	2009	South Africa
GBC Casa, Condomínio, Zero Energy, & Biodiversidade Certifications	https://www.gbcbrasil.org.br/certificacoes/	2010s	Brazil
Selo Casa Azul & CAIXA	https://www.caixa.gov.br/sustentabilidade/negocios-sustentaveis/habitacao-sustentavel/Paginas/default.aspx	2010	Brazil
Haute Qualité Environnementale (HQE)	https://www.hqegbc.org/qui-sommes-nous-alliance-hqe-gbc/la-certification-hqe/	1990s	France & Global
VERDE Sustainability Certificate (Valoración de Eficiencia de Referencia de Edificios / Building Reference Efficiency Evaluation)	https://gbce.es/certificacion-de-edificios/	2000s	Spain
Miljöbyggnad / CityLab	https://www.sgbc.se/certifiering/	2011	Sweden

Name	URL	Date Established	Geographic Focus
Green Certifications and Rating Systems – Single-Attribute			
Living Future Zero Energy Certification / Zero Carbon Certification	https://living-future.org/programs/	2011	Global
WiredScore & SmartScore	https://wiredscore.com/	2013	Global
TRUE Zero Waste	https://true.gbci.org/	2013	Global
Energy Star Certified Buildings and Plants	https://www.energystar.gov/	1990s	United States
Indoor AirPlus	https://www.epa.gov/indoorairplus	2010s	United States
DOE Zero Energy Ready Home	https://www.energy.gov/eere/buildings/zero-energy-ready-home-program	2013	United States
Green Certifications and Rating Systems – Products & Materials			
Living Product Challenge	https://living-future.org/lpc/	2015	Global
Living Future Declare Label	https://living-future.org/declare/	2019	Global
Health Product Declarations	https://www.hpd-collaborative.org/	2012	Global
Green Seal	https://greenseal.org/	1989	Global
Cradle to Cradle Certified	https://c2ccertified.org/	2005	Global
Phius Certified Products	https://www.phius.org/certifications/products	2013	North America
UL Greenguard	https://www.ul.com/services/ul-greenguard-certification	2000	United States

Note: By listing these certification and rating systems, the GWI team is not endorsing or recommending them. This table is simply a list of the programs and resources that we have come across in the marketplace, and which can be used as a starting point for readers who want to explore different approaches, systems, and guidelines for sustainable and healthy building. This list is not exhaustive, and we may have missed or accidentally omitted other relevant resources.

Appendix C

Reports and Studies on Built Environments and Health

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Fitwel (2024). *Building Health Issue #2: Expanding the Evidence*. https://www.fitwel.org/building-health-issue-2-expanding-the-evidence.

Healthy Buildings Program, Harvard T.H. Chan School of Public Health, *Health Co-Benefits of the Built Environment*, https://healthybuildings.hsph.harvard.edu/research/climate/cobe/.

Healthy Cities Commission, *Healthy Cities Toolkit*, https://www.healthycitiescommission.org/toolkit/.

Ige, J., et al (2019). The relationship between buildings and health: a systematic review. *Journal of Public Health*, 41(2), e121-e132. https://doi.org/10.1093/pubmed/fdy138.

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Appendix D

Wellness Impact Studies Conducted by Wellness Real Estate Projects

United States	
Arbor House New York City, NY United States	Center for Active Design (2017). *Advancing Research on Active Design*. Claflin, A., et al (2017, Jan. 26). *Policy Brief: Understanding the Impact of Active Design in Affordable Housing: Insights for Policymakers and Developers*. New York City: Center for Active Design. https://nyhealthfoundation.org/wp-content/uploads/2017/11/center-for-active-design-brief-jan-2017.pdf. Garland, E., et al (2014). One Step at a Time Towards Better Health: Active Design in Affordable Housing. *Environmental Justice*, 7(6), 166-171. https://doi.org/10.1089/env.2014.0031. Garland, E., et al (2018). Active design in affordable housing: A public health nudge. *Preventive Medicine Reports*, 10, 9-14. https://doi.org/10.1016/j.pmedr.2018.01.015. Serlin, C. (2017, Feb. 1). Active Design Can Improve Residents' Health. *Affordable Housing Finance*. https://www.housingfinance.com/management-operations/active-design-can-improve-residents-health_o.
Gallup Active Living Study **40 Communities** **United States**	Gallup (2023). *The Economics of Wellbeing: Why Wellbeing Matters and Insights for Leaders of Businesses and Communities*. https://www.gallup.com/analytics/608741/wellbeing-practice-hub.aspx. Gallup-Healthways (2015). *State of American Well-Being: Active Living Environment in U.S. Communities*. https://wellbeingindex.sharecare.com/wp-content/uploads/2017/12/Active-Living-Environment-in-U.S.-Communities-2016.pdf. Witters, D. and Nekvasil, N. (2016, October 11). *Communities Built for Active Living Have Healthier Residents*. http://news.gallup.com/businessjournal/196061/communities-built-active-living-healthier-residents.aspx/.
Grow Community **Greater Seattle, WA** **United States**	Bioregional (2016, Mar. 3). *Grow Community One Planet Annual Review 2015*. https://www.bioregional.com/resources/grow-community-one-planet-annual-review-2015. Pineo, H.S. (2022, June 17). Healthy Urban Development Case Studies: Grow Community. *Healthy Urbanism*. https://healthyurbanism.net/grow-community/.
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Lakehouse Denver, CO United States	Schill, J., et al (2023). *A Research Case Study of Denver's Lakehouse Community*. Institute for the Built Environment, Colorado State University. https://ibe.colostate.edu/resident_wellbeing_case_study/.
Lake Nona Life Project Greater Orlando, Central FL United States	Bianchi, J. (2016, Oct. 5). The making of tomorrow's super communities: How the Lake Nona Life Project could save your life. *J&J Latest News*. https://www.jnj.com/health-and-wellness/lake-nona-project. Gruber, K. (2023, Dec. 3). UCF's pursuit of wellness through the Lake Nona Life Project. *The Charge*. https://www.nicholsonstudentmedia.com/life/ucfs-pursuit-of-wellness-through-the-lake-nona-life-project/article_45f2741e-861e-11ee-94f3-67bbf0c142aa.html. Lake Nona Life Project, https://www.liveworkparticipate.com/.
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Our Urban Village (TOMO House) Vancouver, BC Canada	Happy Cities (n.d.). *Happy neighbours: Design and programming strategies to boost wellbeing, belonging, and connection in multi-unit housing*. https://happycities.com/happy-neighbours. Happy Cities (n.d.). *Our Urban Village Cohousing*. https://happycities.com/projects/tomo-on-main. Happy Cities (2024, April). *The happier missing middle: Lessons for building an urban cohousing village*. https://happycities.com/s/OUV-report-0423.pdf.
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BedZED Greater London United Kingdom	BioRegional (2017). *The BedZED Story: The UK's first large-scale, mixed-use eco-village*. https://www.bioregional.com/resources/bedzed-the-story-of-a-pioneering-eco-village. BioRegional and Peabody (2009). *BedZED Seven Years On: The impact of the UK's best-known eco-village and its residents*. Wallington, UK: BioRegional Development Group. https://globalwellnessinstitute.org/wp-content/uploads/2019/12/BedZEDsevenyearson_lowres.pdf.
Berkeley Group Communities Multiple Locations United Kingdom	Berkeley Group (2015). *Creating Strong Communities: How to measure the social sustainability of new housing developments*. https://greatplaces.housing.org.uk/resources/creating-strong-communities-how-to-measure-the-social-sustainability-of-new-housing-developments. Dixon, T., and Woodcraft, S. (2013, Nov.). Creating Strong Communities: Measuring Social Sustainability in New Housing Development. *Town and Country Planning*. https://discovery.ucl.ac.uk/id/eprint/10049018/1/Tim-Dixon-Design-Wellbeing-paper.pdf. Social Life (2013). *Living at Beaufort Park*. https://www.social-life.co/publication/Beaufort-Park/. Social Life (2013). *Living at Kidbrooke Village*. https://www.social-life.co/publication/living-at-kidbrooke-village/. Social Life (2014). *Living at the Royal Arsenal*. https://www.social-life.co/publication/royal-arsenal-riverside/.

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Selandra Rise Greater Melbourne, Victoria Australia	Gunn, L., et al (2020). Early delivery of equitable and healthy transport options in new suburbs: Policy, place and people. *Journal of Transport & Health*, 18, 100870. https://doi.org/10.1016/j.jth.2020.100870. Maller, C. (2012). *Master Planned Communities and the Re-formation of Cities for Health and Wellbeing: The Case of Selandra Rise*. International Making Cities Livable Paper. https://core.ac.uk/download/pdf/30677685.pdf. Maller, C. and Nicholls, L. (2016). Build in good services from day one for healthier communities: lessons from Selandra Rise. *The Conversation*. https://theconversation.com/build-in-good-services-from-day-one-for-healthier-communities-lessons-from-selandra-rise-58790. Maller, C., and Nicholls, L. (2016). *Planning and designing healthy new communities: Selandra Rise – Research Highlights*. Melbourne: Victorian Health Promotion Foundation. https://www.vichealth.vic.gov.au/sites/default/files/Selandra-Rise-research-highlights.pdf. Mandour, M.A., et al (2021). Creating healthy spaces indicators. *Engineering Research Journal*, 169, A22-A37. http://dx.doi.org/10.21608/erj.2021.152743. Nicholls, L., et al (2018). 'A Fantasy to Get Employment Around the Area': Long Commutes and Resident Health in an Outer Urban Master-Planned Estate. *Urban Policy and Research*, 36(1), 48-62. https://doi.org/10.1080/08111146.2017.1308859. VicHealth (2016). *Planning and designing healthy new communities: Selandra Rise – Research Summary*. Melbourne: Victorian Health Promotion Foundation. https://www.vichealth.vic.gov.au/sites/default/files/Selandra_Rise_Final_Summary_Report.pdf.
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Chesapeake Housing Mission Healthy Homes Initiative Eastern Shore, MD United States	Chesapeake Housing Mission (2022). *Healthy Homes Initiative: 3-Year Study (2019-2021)*. https://www.chesapeakehousingmission.org/wp-content/uploads/2022/10/CHM-Healthy-Homes-Initiative-3-year-study-V05-hp.pdf.
Victoria Healthy Homes Program Victoria Australia	Campbell, M., et al (2022). Evaluation of the Victorian Healthy Homes Program: protocol for a randomised controlled trial. *BMJ Open*, 12(4), e053828. https://doi.org/10.1136/bmjopen-2021-053828. Hassell and Green Building Council Australia (2024, Feb.). *Social Value in the Built Environment*. https://new.gbca.org.au/green-star/green-star-strategy/social-value/. Page, K., et al (2025). Outcomes from the Victorian Healthy Homes Program: a randomised control trial of home energy upgrades. *BMJ Open*, 15(2), e082340. https://doi.org/10.1136/bmjopen-2023-082340. Sustainability Victoria (2022, Aug.). *The Victorian Healthy Homes Program: Research Findings*. https://www.sustainability.vic.gov.au/research-data-and-insights/research/research-reports/the-victorian-healthy-homes-program-research-findings.
Watts Neighborhood Health Study Los Angeles, CA United States	HACLA (n.d.). *Jordan Downs Redevelopment*. https://www.hacla.org/en/development-services/development/jordan-downs-redevelopment. USC Dornsife Center for Economic and Social Research (n.d.). *Watts Neighborhood Health Study*. https://dornsife.usc.edu/cesr/watts-neighborhood-health-study/. Welk, H. (2020, Sept. 13). $1 Billion Overhaul Underway for Jordan Downs Complex in Watts. *Los Angeles Business Journal*. https://labusinessjournal.com/real-estate/1-billion-overhaul-underway-jordan-downs-watts/.
Pittsburgh Hill/ Homewood Research on Neighborhood Change and Health (PHRESH) Study Pittsburgh, PA United States	Corn, M. (2022, Mar. 23). Could your neighborhood influence the health of your brain? *Pittwire*. https://www.pittwire.pitt.edu/pittwire/features-articles/pitt-rand-nih-neighborhood-study. Dubowitz, T., et al (2025). *Neighborhood Change and Community-Engaged Research in a Series of Natural Experiments*. University of Pittsburgh School of Public Health. https://d-scholarship.pitt.edu/48480/2/Dubowitz_Rosso_Wagner_CESF%20Presenation%20for%203.4.25.pdf. RAND (n.d.). *PHRESH: Pittsburgh Hill/Homewood Research on Neighborhood Change and Health*. https://www.rand.org/well-being/community-health-and-environmental-policy/projects/phresh.html. Smith, R.B. (2024). Do Publicly Funded Neighborhood Investments Impact Individual-Level Health-Related Outcomes? A Longitudinal Study of Two Neighborhoods in Pittsburgh, PA from 2011 to 2018. *Housing Policy Debate*, 34(4). https://doi.org/10.1080/10511482.2024.2309952.
HABITAT Study Brisbane, Queensland Australia	RMIT University, Centre for Urban Research (n.d.). *HABITAT: A study of how areas in Brisbane influence health and activity.* https://cur.org.au/project/habitat/.
Liveable Neighbourhoods for Healthy Aging Study Australia	RMIT University, Centre for Urban Research (n.d.). *Designing liveable neighbourhoods to support healthy ageing*. https://cur.org.au/project/designing-liveable-neighbourhoods-to-support-healthy-ageing/.

Commercial Studies	
WELL-Certified Offices 6 Companies United States+Canada	Ildiri, N., et al (2022). Impact of WELL certification on occupant satisfaction and perceived health, well-being, and productivity: A multi-office pre- versus post-occupancy evaluation. *Building and Environment*, 224, 109539. https://doi.org/10.1016/j.buildenv.2022.109539. IWBI (2022). *The WELL Factor: Understanding the Impact of WELL Certification*. https://resources.wellcertified.com/tools/the-well-factor-understanding-the-impact-of-well-certification/.
Green & WELL-Certified Offices 9 Companies Australia	Candido, C., et al (2020). Designing healthy workspaces: results from Australian certified open-plan offices. *Facilities*, 39(5-6), 411-433. http://dx.doi.org/10.1108/F-02-2020-0018.
COGfx Study of Green-Certified Offices 10 Offices United States	*The COGfx Study*, https://thecogfxstudy.com/. Harvard T.H. Chan School of Public Health (n.d.). *The COGfx Study*. https://healthybuildings.hsph.harvard.edu/research/indoor-air-quality/cogfx/. MacNaughton, P., et al (2017). The impact of working in a green certified building on cognitive function and health. *Building and Environment*, 114, 178-186. https://doi.org/10.1016/j.buildenv.2016.11.041.
Saint-Gobain (US)	Doria, J. (2019, Jan. 24). *Saint-Gobain Headquarters Occupant Comfort Study: The Value of Multi-Comfort*. https://www.sageglass.com/industry-insights/saint-gobain-headquarters-occupant-comfort-study-value-multi-comfort. Post, N.M. (2018, July 3). Saint-Gobain Study Shows Quality Indoor Environment Can Boost Productivity. *Engineering News-Record*. https://www.enr.com/articles/44809-saint-gobain-study-shows-quality-indoor-environment-can-boost-productivity. Saint-Gobain (2024). *Occupant Comfort Study Revisited 2022*. https://es.saint-gobain-northamerica.com/sites/default/files/2024-11/SGNAHQ_Occupant_Comfort_Study_02232022.pdf. USGBC (2018, Nov. 5). *Survey says employees are healthier and more productive in LEED buildings*. https://www.usgbc.org/articles/survey-says-employees-are-healthier-and-more-productive-leed-buildings.
Stok/DPR Construction Office (US) **Cundall** (UK) **Sherwin Williams** (El Salvador)	Laski, J. (2018). *Doing Right by Planet and People: The Business Case for Health and Wellbeing in Green Building*. World Green Building Council. https://worldgbc.org/wp-content/uploads/2022/03/WorldGBC-Doing-Right-by-Planet-and-People.pdf.
Skanska (UK) **Medibank** (Australia)	WGBC (2016). *Building the Business Case: Health, Wellbeing and Productivity in Green Offices*. https://worldgbc.org/wp-content/uploads/2022/03/WGBC_BtBC_Dec2016_Digital_Low-MAY24_0.pdf.
UK Regulatory Agency (UK)	Munir, F., et al (2021). Evaluation of a natural workspace intervention with active design features on movement, interaction and health. *Work*, 70(4), 1229-1241. https://doi.org/10.3233/wor-205180.
Wynyard Quarter Buildings (NZ)	Green buildings increase productivity for New Zealand office space firm. *Resolution Labs*. https://quidos.resolutionlabs.co.uk/green-building-increase-productivity-new-zealand-office-space-firm. Precinct Properties' green buildings deliver environmental and economic benefits for occupiers. *Building Today*. 26 Sept. 2018. https://buildingtoday.co.nz/2018/09/26/precinct-properties-green-buildings-deliver-environmental-and-economic-benefits-for-occupiers/.

Appendix E

Weblinks for Chapter 5 Project Examples

These weblinks are provided to help readers find additional information about the wellness real estate project examples listed in *Chapter 5*. They include the official project websites (as available), in addition to case studies and media articles that provide more insights on how the projects address each theme. These links are all valid as of the publishing date for this report (June 2025), but we cannot guarantee that they will remain workable over the longer term.

Climate adaptation and resilience.

Aura (Sunshine Coast, QLD, Australia)

- https://www.stockland.com.au/residential/qld/aura
- https://www.stockland.com.au/our-stories/2023/cool-roofs-creating-cooler-more-sustainable-communities
- https://baringass.eq.edu.au/supportandresources/formsanddocuments/documents/community/aura-welcome-pack.pdf

The Gables (Sydney, NSW, Australia)

- https://www.stockland.com.au/residential/nsw/the-gables
- https://www.stockland.com.au/sustainability/sustainability-news/delivering-water-resilient-communities

Casa Adelante (San Francisco, CA, United States)

- https://www.tndc.org/property/casa-adelante-2828-16-street
- https://www.architectmagazine.com/aia-architect/aiafuture/casa-adelante-provides-a-haven-in-san-franciscos-mission-district_o
- https://gbdmagazine.com/casa-adelante/

Rancho Mission Viejo (Orange County, CA, United States)

- https://www.ranchomissionviejo.com/
- https://developingresilience.uli.org/case/rancho-mission-viejo/
- https://www.ranchomissionviejo.com/uploads/downloads/Fire_Fact_Sheet_2_27_24.pdf

Babcock Ranch (Greater Fort Myers, FL, United States)

- https://babcockranch.com
- https://www.nytimes.com/2024/10/15/climate/florida-climate-resilience-babcock-ranch.html

Bayshore Villas (San Juan, Puerto Rico)

- https://bayshorevillaspr.com/
- https://developingresilience.uli.org/case/bayshore-villas/
- https://www.mccormackbaron.com/community-profiles/bayshore-villas

Earth-friendly and sustainable living.

Grow Community (Bainbridge Island, WA, United States)

- https://growbainbridge.com/
- https://casestudies.uli.org/grow-community/
- https://www.bioregional.com/one-planet-living/one-planet-living-leaders/grow-community-one-planet-living-leader
- https://healthyurbanism.net/grow-community/

Veridian at County Farm (Ann Arbor, MI, United States)

- https://www.veridian.community/
- https://living-future.org/case-studies/veridian-at-county-farm-south-parcel/
- https://casestudies.uli.org/net-zero-for-all-veridian-at-county-farm/
- https://www.cnu.org/what-we-do/build-great-places/veridian-county-farm

Kendeda Building for Innovative Sustainable Design (Atlanta, GA, United States)

- https://livingbuilding.gatech.edu/
- https://www.usa.skanska.com/what-we-deliver/projects/206618/Georgia-Institute-of-Technology%2C-The-Kendeda-Building-for-Sustainable-Design
- https://www.bdcnetwork.com/home/blog/55152723/the-benefits-of-biophilic-design-in-the-built-environment

Green Point Project (Vancouver, BC, Canada)

- https://www.thegreenpointproject.org/
- https://living-future.org/case-studies/the-green-point-project-2/

BedZED (Greater London, United Kingdom)

- https://www.bioregional.com/projects-and-services/case-studies/bedzed-the-uks-first-large-scale-eco-village
- https://www.bioregional.com/resources/bedzed-case-study-report
- https://www.architectural-review.com/buildings/bedzed-in-beddington-uk-by-zedfactory
- https://www.zedfactory.com/bedzed

EDGE Suedkreuz (Berlin, Germany)

- https://edge.tech/buildings/edge-suedkreuz-berlin
- https://metropolismag.com/projects/this-berlin-office-was-germanys-most-sustainable-building-in-2022/
- https://edge.tech/article/press/edge-suedkreuz-berlin-named-germanys-most-sustainable-building-by-dgnb

Nijverdal Social Housing Apartments (Nijverdal, Netherlands)

- https://www.activehousenl.info/nieuws/sustainable-social-housing-focusing-on-the-residents/
- https://healthybuildings.velux.com/case-studies/netherlands-social-housing

Clichy-Batignolles Ecodistrict (Paris, France)

- https://www.fastcompany.com/91318915/this-parisian-neighborhood-could-be-a-blueprint-for-better-american-cities
- https://www.archdaily.com/1019244/ahead-of-the-paris-olympics-discover-the-eco-district-of-clichy-batignolles-in-paris-through-the-lens-of-paul-clemence
- https://www.parisetmetropole-amenagement.fr/en/clichy-batignolles-paris-17th
- https://gagosian.com/quarterly/2024/09/27/essay-eco-district/

Burwood Brickworks (Greater Melbourne, VIC, Australia)

- https://www.burwoodbrickworks.shopping/
- https://www.frasersproperty.com/what-we-do/our-portfolio/aus_burwood-brickworks
- https://nharchitecture.net/blog/projects/burwood-brickworks/
- https://living-future.org/case-studies/burwood-brickworks/

Sumu Yakushima Regenerative Residence (Yakushima Island, Japan)

- https://www.dezeen.com/2022/12/28/sumu-yakashima-co-operative-housing-tsukasa-ono/
- https://www.archdaily.com/992151/sumu-yakushima-residence-and-hotel-tono-inc
- https://happyeconews.com/regenerative-architecture-in-japan-is-100-off-grid/

Paya Lebar Green (Singapore)

- https://www.payalebargreen.com.sg/
- https://www.lendlease.com/sg/projects/paya-lebar-green/
- https://www.lendlease.com/us/media-center/media-releases/paya-lebar-green-to-comprise-the-most-sustainable-retrofitted-building-in-singapore/

Alfa Campus (Israel)

- https://alfaprojects.co.il/alfa-campus/
- https://living-future.org/case-studies/alfa-campus/

The Sustainable City Yas Island (Abu Dhabi, UAE)

- https://thesustainablecity.com/cities/abudhabi/
- https://www.aldar.com/en/yas-island-sustainable-city

Innovations to improve the construction process and home supply.

The Picket Fence Home (Pittsburgh, PA, United States)

- https://pbpicketfencehome.com/
- https://www.americaathomestudy.com/the-picket-fence
- https://www.dahlingroup.com/media/project-news/the_picket_fence,_a_modular_concept_home,_starts_production

The BLOCK Project (Seattle, WA, United States)

- https://www.the-block-project.org/
- https://living-future.org/case-studies/block-009/
- https://living-future.org/wp-content/uploads/2022/05/20-0630-BLOCK-Case-Study.pdf
- https://www.architectmagazine.com/project-gallery/block-houses_o

Genesis Collection at Wolf Ranch (Austin, TX, United States)

- https://www.wolfranchbyhillwood.com/
- https://homes.iconbuild.com/wolf-ranch/
- https://www.wolfranchbyhillwood.com/news/latest-news/post/an-inside-look-at-wolf-ranch-s-new-3d-printed-homes
- https://www.fastcompany.com/91169888/this-3d-printer-is-making-the-worlds-largest-neighborhood-of-its-kind

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Rockaway Village (Queens/NYC, NY, United States)

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Destination Medical Center (Rochester, MN, United States)

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Diversifying co-living models

Haven Co-Living (Venice Beach/Los Angeles, CA, United States)

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Petaluma Avenue Homes (Sebastopol, CA, United States)

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Urbanest Battersea (London, United Kingdom)

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- https://b-hiveliving.com/

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LYF Co-living (11 countries)

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Building healthier food environments.

Agrihoods

Serenbe (Greater Atlanta, GA, United States)

- https://www.serenbe.com/

Fox Point Farms (Encinitas, CA, United States)

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Organo Naandi and Antharam (Hyderabad, India)

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Embracing the benefits of nature.

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Infusing wellness into travel and tourism infrastructure.

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