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Journal of Building Material Science

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ARTICLE

Sustainable Development through WELL Buildings: A Pathway for Developing Nations

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ABSTRACT

Nowadays, the need for health-building is considered an important requirement in most countries, and these buildings have adopted WELL standards. Moreover, developing countries need WELL buildings to achieve the design requirement with limited resources. The study examines whether embracing WELL-rated construction helps advance these worldwide goals, improves community health, and safeguards environmental balance. Instead of numbers and charts, it leaned on conversations guided loosely by open-ended questions to gather insights. Out of that came a hands-on model showing how to weave WELL strategies into early blueprints, layout choices, and build processes within resource-limited settings, shaped around regional realities. Still, results show poorer countries struggle to use eco-friendly construction methods because they lack money and trained workers—just like what happens when trying to meet WELL standards. Because of this, one strong idea stands out: build flexible systems that mix worldwide wellness targets with local climate and budget realities so healthier buildings work in different parts of the world. Therefore, this study recommends providing full support to relevant authorities to adopt sustainable building standards in the design, planning, and implementation phases of building projects, whether residential or governmental. This will contribute to improving the performance of individuals on both a personal and professional level.

Keywords: WELL Building; Sustainable; Developing Countries; Development; Initiatives

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ARTICLE INFO

Received: 4 March 2026 | Revised: 1 April 2026 | Accepted: 9 September 2026 | Published Online: 4 November 2026
DOI: https://doi.org/10.30564/jbms.v8i4.116788

CITATION

Albtoush, F., 2026. Sustainable Development through WELL Buildings: A Pathway for Developing Nations. Journal of Building Material Science. 8(4): 111–123. DOI: https://doi.org/10.30564/jbms.v8i4.116788

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1. Introduction

The building sector is vital in both developing and developed countries. Moreover, it is a powerful economic driver and contributor to the gross domestic product (GDP) of various nations. Therefore, development in the building sector is essential for the economic and social progress of countries. In recent years, a new way of defining buildings has emerged through the WELL Building Standard, which was created by the International WELL Building Institute. Moreover, it focuses on how spaces affect people inside them. By 2050, the number of city dwellers worldwide could rise by 2.5 billion, mostly in less wealthy countries [1]. With this rapid expansion, challenges appear alongside difficulties when bringing WELL ideas into real projects. Since cities in poorer regions are growing fast, making healthier places to live matters more than ever.

The WELL Building Standard presents a significant opportunity for developing countries to prioritize the health and well-being of building occupants in the design process. While adoption of this standard remains relatively limited in many developing regions, its documented benefits are substantial. Dust from inexpensive building materials often lingers long after construction is complete, exacerbating illnesses in densely populated cities in developing countries. Sometimes, regulations fail to keep pace with rapid development, as choices made in the early design phases impact future decades. Better decisions emerge when the focus is on comfort rather than solely on cost. Building occupants function better when their environment supports their basic needs. Starting with cleaner indoor air, progress is rapid. Furthermore, how people eat is just as important as their surroundings. When contaminated water flows through the pipes, solutions begin to rethink daily routines. Light transforms moods, especially when natural sunlight reaches offices and kitchens. When spaces support movement, bodies respond slowly but steadily. Minds find peace when clutter fades and quiet corners emerge. Therefore, change is more ingrained when it feels natural, not imposed.

Currently, due to the prevalence of diseases and epidemics, the search for comfortable buildings that meet health and safety standards for their occupants is a top priority. The degree of this priority may vary from country to country and from individual to individual, but it remains a basic need.

Spaces shaped around wellness tend to draw interest from investors, lifting real estate value along the way. Studies indicate that structures built with people's health at the center often yield better financial results over time [2]. Where money is tight, like in many growing nations, supporting healthy living conditions opens doors to lasting community gains, tying directly into broader sustainability targets. So, choosing the WELL Building Standard in these areas becomes one route toward stronger cities, both physically and socially. With attention shifted to how people feel inside buildings, those involved help ease urgent health challenges while quietly boosting economies in places changing fast.

Building health and well-being is a global concern, influenced by local context, climate, laws, and customs [3]. Spending most of one's time indoors affects the daily feelings and performance of individuals, whether at home, school, or the office. Therefore, the design and management of these spaces can alter psychological state and mood over weeks. Air, lighting, and noise levels all affect the concentration and energy levels of facility occupants. Thus, the materials used, airflow systems, and room sizes contribute to long-term effects on both body and mind.

Thus, the current study aims to investigate sustainable development through WELL buildings, focused on developing countries. The interview was conducted with building industry professionals. The data collected were analyzed using thematic analysis. This study is useful for policymakers, researchers, and industry practitioners in decision-making and improving the existing standards for sustainable development of buildings in developing countries. Furthermore, this study seeks to address the research gap in the adoption of WELL Building Standards in developing countries, and its findings will support future research.

2. WELL Building Standards

A comfortable house is not only a place to live; its function goes beyond that, addressing social needs and improving the quality of life for residents [4,5]. Sustainability is an effort to ensure that economic development aligns with efforts to preserve the environment and promote community well-being [6]. Housing development should focus on aesthetic design and incorporate health, safety, and environmental considerations. The International WELL Building Institute provides the WELL Building Standard as a guideline

for health, well-being, and productivity. Therefore, several countries around the world focus on improving their buildings by adopting the WELL Building Standard. For instance, the Malaysian government provides strategies for ensuring good-quality housing for all[7].

A system named WELL began standing out by focusing tightly on human well-being indoors[8]. These standards include seven parts, which are breathable air, safe water, food options, natural light rhythms, encouragement to move, comfort in reach, and mood awareness. These standards zoom in on ventilation, natural light, and physical ease, while earlier systems like Leadership in Energy and Environmental Design (LEED) give those less weight[9]. Rather than ticking forms, it nudges builders to question layouts, choices in construction, even finishes—all centered on human presence[8,10]. Workers in areas shaped by these principles often report sharper moods, clearer heads, and improved output—verified through studies comparing certified spots against typical workplaces[8].

Previous research indicates that people in WELL spaces report being almost twice as likely as those in spaces that have only LEED tags, showing the impact that can be had by seemingly minor design features on an everyday basis[10]. Taking into consideration the fact that the majority of the human population spends most of their time indoors[10], it is necessary to put man at the center. Indeed, studies of the WELL standards suggest actual outcomes: people report enhanced well-being, improved ease and efficiency after relocating to a WELL building[8]. These are not small increments—when measured, the improvement in personal wellness ratings is evident and shows significant results from the framework[8]. What becomes clear quickly is that such guidelines leave a footprint, subtly improving routines in the workplace or at home[8]. The World Health Organization (WHO) says healthy is: Body Strong, Mind Clear, Community Connected. This concept is well expressed in WELL's perspective taking, which is quite wide-angle[11]. Countries with low income levels are most concerned with the overlap. Savvy design could enhance quality of life while helping to alleviate financial pressures—all in one.

The study by Zamani et al. summarizes the WELL elements for residential buildings that affect health, well-being, and productivity in Malaysia[12], namely: Air, Water, Fire, Fitness, Comfort, Mind, Safety & Security, Community, and Management.

2.1. Benefits for Occupants

There are several benefits found in the WELL building, which ultimately reflect on the quality of life for individuals. The quality of the air appears to be one of their top priorities; about one-third of all WELL characteristics fall under the "Air" category[13]. Additionally, WELL places a strong emphasis on the residents' diet and regular exercise. Therefore, as part of a WELL project, WELL worked with numerous physicians, dietitians, and personal trainers to create guidelines for food and activity options[13]. In developing countries, this is particularly important for reducing the incidence of illnesses that require significant financial resources. Reducing mental health issues and stress among workplace occupants has a profound impact on their productivity and enthusiasm in the workplace.

For businesses that work in WELL spaces, having more enthusiastic, passionate, happier, less stressed, and more productive employees can have a profound impact on the success of the company. It changes the atmosphere of the office, as well as pleasing clients and customers at a much higher rate. Only 44.4% of all private-sector establishments in California offered health insurance in 2016[14]. Thus, getting ahead of the curve will most likely prove to be a very worthwhile investment if a developer chooses to sell a WELL-certified building. In terms of short-term benefits, WELL buildings have the ability to bring in significantly more rent[15].

According to one hypothesis at the time, diseases were caused by chemical ferments created by dirt and decay, which may develop on their own in the correct climatic circumstances, particularly in areas with little sunlight and fresh air. Building codes, therefore, made an effort to create new buildings with more windows and better ventilation. For the first time, the causes of diseases were identified, and authorities prioritized personal health and environmental hygiene.

2.1.1. Enhanced Occupant Health and Well-Being

WELL certification focuses directly on human health outcomes, which distinguishes it from purely energy-focused standards. Research shows that WELL-certified buildings have a 39% higher probability of occupant satisfaction compared to other certified buildings[9]. The standard empha-

sizes seven key features: air quality, water, light, thermal comfort, movement, sound, and materials, all designed to improve indoor environmental quality[16]. In developing countries where indoor environmental quality concerns are often overlooked, WELL certification ensures that buildings meet rigorous health standards. The standard achieved the highest health synergy scores (38%) compared to other major certification systems like LEED[17].

2.1.2. Economic and Financial Viability

The case study shown here from a developing country (Indonesia) illustrates how WELL retrofits can be financially viable and make buildings better. The retrofit raised the WELL score from 34 to 66 points (gold certification), increased the internal rate of return (IRR) from 5.71% to 7.55%, and reduced the payback period from 13.97 years to 11.95 years[18]. This indicates that occupant benefits can be achieved with solid economic returns via health-driven improvements.

2.1.3. Holistic Sustainability Benefits

In addition to the health benefits, a range of other benefits was found for green buildings in developing countries such as South Africa, such as the protection of the ecosystem, optimization of energy use, improvement of the wellbeing of the occupants, reduction in CO_2 emissions and improvement of the quality of indoor air[19]. WELL's focus on the health-environment connection brings co-benefits to sustainable development in resource-limited environments.

2.1.4. Addressing Implementation Gaps

Stakeholders in developing countries that have introduced WELL standards report that there is a great benefit in having WELL as a guideline for implementing health and wellbeing initiatives, in accordance with organizational standards, and in the context of global sustainability reporting[20]. This is especially significant in areas where the indoor environment has been neglected in terms of basic construction requirements.

Despite these benefits, the adoption of WELL remains concentrated in developed nations, with minimal presence in Africa and Latin America[10], suggesting significant potential for expanded implementation in developing countries seeking to improve building quality and occupant health outcomes.

2.2. The Context of Wellness within Sustainability

The existence of tools such as the WELL Building Standard (WBS) evidences the relevance of wellness in the ongoing sustainability conversation and requires a closer investigation from rarely studied angles. Moreover, firms, to attract and retain top talent, use wellness strategies. Hence, people are interested in being exposed to well-being initiatives in their place of work, which in turn will make health and wellness strategies desirable to be applied to other typologies of buildings. Thus, current changes in the conception of the workplace generate the appropriate environment to open the conversation about the physical, social, and political implications of that change[21].

According to a recent Harvard alumni study, men who climb at least eight floors a day on average have a 33% reduced death rate compared to sedentary men. As a result, the outcomes of building design, development, and management are starting to materialize.

Based on the comprehensive literature review, the study by Suárez Flores[22] summarizes the categories that the WBS proposes to have a better understanding of their intent and their weight in the code, as shown in **Figure 1**, including air, water, nourishment, light, fitness, and comfort.

The adoption of WELL Building Standards represents a strategic commitment to creating environments that enhance human health and well-being through evidence-based design and operational practices. Successful implementation requires a multifaceted approach that integrates organizational leadership, technical expertise, stakeholder engagement, and continuous performance management.

2.2.1. Organizational Leadership and Governance Strategies

Research indicates that projects with executive-level sponsors achieve certification 30% faster and demonstrate 25% better post-occupancy performance compared to those without[23]. The implementation approach includes:

- Form a cross-functional WELL Steering Committee with representatives from real estate, facilities management, HR, sustainability, finance, and occupant groups.
- Develop a formal wellness policy endorsed at the board or executive leadership level.

- Establish clear accountability structures with defined roles, responsibilities, and decision-making authorities.
- Integrate wellness KPIs into executive performance metrics and compensation structures [24].

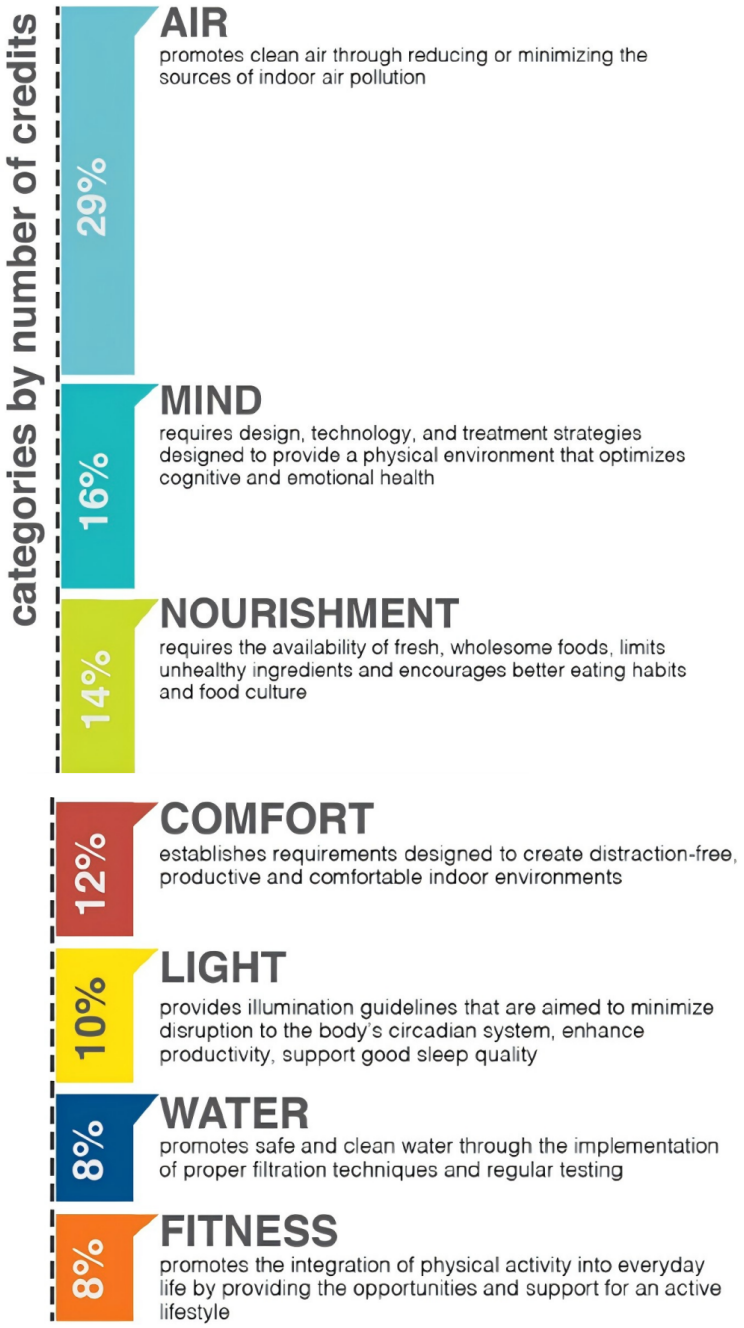

Figure 1. Summary Diagram of Categories' Intent and Weight in the Code.

2.2.2. Portfolio-Wide Strategic Planning

Rather than pursuing WELL certification on a project-by-project basis, leading organizations adopt portfolio-wide strategies that create economies of scale, standardize approaches, and accelerate organizational learning. The implementation approach includes:

- Conduct a comprehensive portfolio assessment to identify buildings with the highest potential for WELL certification based on age, condition, occupancy patterns, and strategic importance.

- Develop a phased rollout plan prioritizing flagship properties, high-occupancy buildings, and those undergoing major renovations.
- Create standardized design guidelines, specification templates, and operational protocols aligned with WELL requirements.
- Establish a central knowledge management system to capture lessons learned and best practices across projects[25].

2.2.3. Financial and Investment Strategies

Developing a compelling business case is essential for securing investment in WELL certification. The financial argument should encompass both quantitative metrics (productivity gains, reduced absenteeism, lower healthcare costs, rental premiums) and qualitative benefits (enhanced brand reputation, talent attraction, occupant satisfaction)[26]. The financing strategies include:

- Green Bonds and Sustainability-Linked Loans: Access preferential interest rates (typically 5–15 basis points lower) by linking loan terms to achievement of WELL certification or specific health performance metrics[27].
- Energy Performance Contracts (EPCs): Partner with energy service companies (ESCOs) that finance efficiency upgrades through guaranteed savings, often incorporating WELL-aligned measures such as enhanced ventilation and lighting controls.
- Internal Carbon Pricing: Allocate internal carbon fees to fund wellness improvements that deliver co-benefits for energy efficiency and occupant health.
- Phased Investment Approaches: Implement WELL features in stages aligned with capital planning cycles, prioritizing high-impact, low-cost interventions initially[28].

2.2.4. Technical Implementation Strategies

The Integrated Design Process (IDP) is foundational to achieving WELL certification efficiently and effectively. IDP brings together diverse stakeholders early in the design process to collaboratively develop solutions that optimize health, environmental, and economic outcomes[27]. The IDP Best Practices are:

- Early Engagement: Involve architects, engineers, contractors, facility managers, wellness consultants, and future occupants from conceptual design through construction documentation.
- Charrette Facilitation: Conduct multi-day design charrettes focused specifically on WELL feature optimization, using scenario modeling to evaluate trade-offs.
- Performance Modeling: Utilize computational tools to simulate indoor environmental quality outcomes (airflow, daylight, acoustics, thermal comfort) during design development, enabling iterative optimization.
- Decision Matrices: Develop weighted decision criteria that explicitly value health outcomes alongside cost, schedule, and aesthetic considerations.

3. Methodology

This study used a qualitative approach because of the nature and title of the study, which required qualitative data from experts and specialists in WELL Building Standards. This study followed a qualitative approach to achieve its purpose, with ten semi-structured interviews with professionals in the construction industry. This was selected as the approach to allow collection of relevant information, centered on the professionals' views, experiences and knowledge of adopting WELL Building Standards. It also provided the scope to explore in detail the advantages and challenges, as well as obstacles, of implementing these standards in construction projects. The study sample was selected for representation of the groups. As shown in **Table 1**, the target sample is 10 professionals and stakeholders interested in building construction in Jordan, one of the developing countries, including:

- Architects and designers with experience in sustainable building practices.
- Project managers in construction projects.
- Government officials and policymakers focused on urban development and sustainability.
- Health and wellness experts who advocate for improved living conditions.

The variety of the study sample is also well represented in the potential outcomes, allowing the generation of realistic and actionable results and recommendations to the stakeholders in the construction sector in developing countries. Furthermore, the wide diversity of the study samples tries to reflect the wide diversity of views that are required

for a comprehensive understanding of the application of WELL Standards in developing countries. In keeping with this, the interview protocol was carefully developed, and several open-ended and probing questions were included that would guide each individual interview with the participants while maintaining the consistency needed for the study, but also provide enough flexibility to explore each participant's perspective.

The research methodology involved the study first identifying the research problem and gap by intensive study of the literature on the subject. This stage helped the researcher in shaping and structuring the questions of the interview, which had been divided into the following main themes: Awareness and Understanding of the WELL Building Standard, Barriers and Challenges to Implementing WELL Principles in Developing Nations, Benefits of WELL Buildings, and a practical framework that outlines steps for integrating WELL Building concepts into the planning, design, and construction phases.

Table 1. List of the participants.

Participants	Designation	Years of Experience
P1	Architect and designer	8 years
P2	Project manager	More than 15
P3	Government official	5 years
P4	Project manager	10 years
P5	Architect and designer	More than 15
P6	Architect and designer	7 years
P7	Project manager	More than 15
P8	Health and wellness expert	10 years
P9	Project manager	8 years
P10	Project manager	10 years

4. Data Collection

Participants were interviewed in person or through videoconferencing technology, depending on their availability and location. The duration of each interview was 30–45 min. Interviews, after gaining participants' consent, were audio recorded and transcribed for analysis. Each interview was transcribed and then manually reviewed to reflect the main points identified by the interviewees. The entire interview data was then collated, analyzed and contrasted to allow the researcher to present and discuss the data within the proposed study. The data were analyzed thematically using thematic analysis of the transcripts from the interviews.

The analysis process followed the following steps as given in **Figure 2**:

1. Familiarization: Reading and re-reading the transcripts for a thorough understanding of the data.
2. Coding: Recognition and labelling of important themes and patterns concerning the research questions.
3. Theme Development: Summarizing codes into larger themes that represent the essence of the responses of participants.
4. Interpretation: Interpret findings in relation to research objectives, and connect themes with the greater context of sustainable development and WELL buildings.

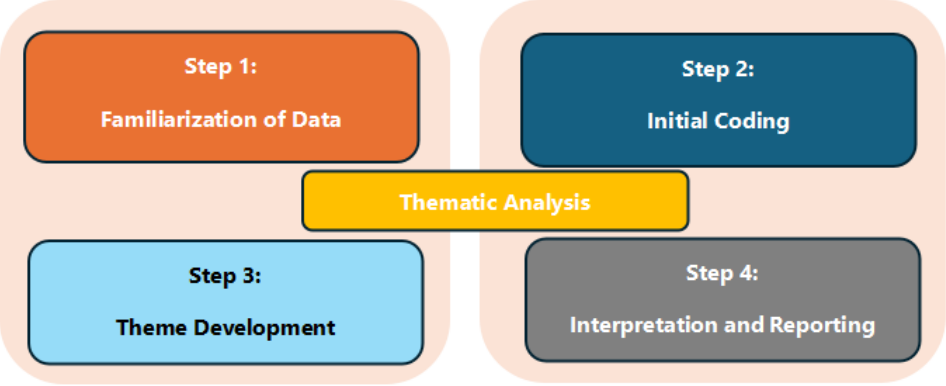

Figure 2. Steps of Thematic Analysis.

5. Results and Discussion

The results of the thematic analysis of the collected data were summarized in the main aspects, which include: Awareness and Understanding of the WELL Building Standard, Barriers and Challenges to Implementing WELL Principles in Developing Nations, Benefits of WELL Buildings, and a practical framework that outlines steps for integrating WELL Building concepts into the planning, design, and construction phases.

5.1. Awareness and Understanding of the WELL Building Standard

Interviews showed that developers, along with officials and everyday people, did not grasp what WELL standards were about. Since these rules aim to improve how buildings affect human health, not knowing them matters. One big problem is that the missing piece slows real progress down. When those in charge miss the point, nothing moves forward right. Awareness just isn't there, even though it should be at the core. Without a clear understanding, good intentions fade fast.

Some builders hesitate to explore WELL guidelines simply because they do not know much about them. Yet learning these standards might open doors to spaces that support better health at home or work. A few admit confusion over whether adding such elements truly pays off in real terms. Instead of seeing upgrades as long-term gains, some view them as extra expenses without clear returns. Without a clearer understanding, many hold back from seeking certification, slowly shaping buildings that miss chances to improve people's daily lives.

Even though officials help push WELL rules forward, several people we spoke with said those in charge often do not grasp what the standards involve. Because of this gap, backing for laws that promote or reward using WELL practices in construction tends to fall short. When regulations stay unclear, designing cities with wellness in mind might barely move ahead—which means fewer chances for better community health down the line.

Few people know much about WELL standards. When asked, several interviewees said locals usually care more about price and looks than well-being in construction choices. Because of this, fewer residents push for buildings that support good health, so builders see little reason to follow WELL rules. Learning how these certified spaces offer cleaner air, smarter light, and brighter moods might help neighborhoods value wellness-focused architecture.

Starting fresh, people talked about how little they know of WELL rules. A lack of clarity slows progress, yet learning helps. When teams work together, ideas spread more easily. Support from leaders makes change possible. Healthier spaces grow from shared effort. Individuals gain comfort, yes, though entire neighborhoods feel the shift too. Society shifts slowly when small steps add up.

Furthermore, one participant pointed out the need for governments to adopt WELL standards in buildings occupied by institutions, schools, hospitals, and departments, as this helps raise awareness of the standards' economic, environmental, and social benefits.

5.2. Barriers and Challenges to Implementing WELL Principles in Developing Nations

Data analysis revealed several challenges hindering the adoption of WELL Building Standards in developing countries. Participants emphasized the existence of numerous hurdles at various levels, noting that these challenges are particularly pronounced in the context of developing nations.

From the participants' perspective, limited resources in developing countries are the primary obstacle. As one industry expert noted, "In our context, limited resources are the primary bottleneck; we simply do not have the financial or technical reservoirs that developed nations have, as every dollar is already allocated to basic infrastructure" (P4). This scarcity cascades into other specific hurdles, most notably high establishment costs and severe budget constraints. Participants highlighted that the upfront capital required is often prohibitive, with one architect explaining, "The initial capital required to meet WELL standards is astronomical for our local market. Clients look at the upfront cost and immediately walk away before we even begin the design phase" (P6).

Furthermore, the high cost of the certification process itself acts as a deterrent. A project manager pointed out, "Even if a developer manages to build to the standard, the certification fees are priced in US dollars, which makes the final verification completely unviable for local, mid-scale projects" (P9).

Beyond financial barriers, there is a distinct lack of expertise and a poor understanding of WELL principles within the local industry. Participants observed a massive knowledge gap, with a sustainability consultant stating, "Most local contractors and engineers have never even heard of the WELL concept, let alone know how to integrate its specific metrics into the construction phase" (P1). This knowledge deficit is compounded by weak political support. Participants expressed frustration over the lack of governmental intervention, noting, "The government is entirely focused on rapid urbanization and basic housing. There are zero subsidies, tax incentives, or regulatory pushes for healthy building standards like WELL" (P3).

Culturally, these challenges are reinforced by industry mindsets that often disregard human health in relation to green buildings. Participants explained that local markets frequently conflate "green" buildings solely with environmental sustainability, ignoring the human element. People here confuse 'green' with just planting trees or saving energy. Human health aspects, like indoor air quality, circadian lighting, and mental well-being, are completely overlooked by both developers and buyers" (P8).

However, progress is emerging as attention shifts. Despite the systemic barriers, there is growing interest in healthy spaces among stakeholders, driven by external market forces. As one participant optimistically concluded, "Multinational corporations and global non-profit organizations are beginning to mandate healthy workspaces for their local offices, which is finally forcing the domestic market to pay attention and adapt" (P3).

On the other hand, tracking indicators such as air quality or lighting, which are associated with fewer sick days and improved thinking at work, encourages not overspending but seeing real long-term benefits [29,30].

On the other hand, most participants emphasized that a lack of knowledge and understanding of the benefits of implementing WELL standards hinders their application. Therefore, workshops are essential to raise awareness and understanding of the need to implement WELL Building Standards, particularly in developing countries, given their urgent need.

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Based on the data analysis from the interviews, the challenges can be categorized into several groups: financial, social, and organizational. Financial challenges include the limited financial resources available to individuals and institutions in developing countries, as implementing WELL Building Standards requires financial support at both the individual and institutional levels. Regarding social challenges, participants indicated that building users in developing countries primarily focus on cost-effectiveness and do not prioritize the comfort and health requirements of WELL Building Standards. As for regulatory challenges, there are no regulatory legislations that adopt standards focusing on health and comfort standards for building users in developing countries. Also, some regions have no evaluation systems suited to their weather patterns, economic limits, or community demands.

5.3. Benefits of WELL Buildings

Stakeholders see clear value in the WELL Building Standard—many believe it can boost public health while supporting long-term environmental goals. Yet money issues slow things down, and so do gaps in rules and a lack of trained people. Earlier studies noticed similar roadblocks when pushing high-level green practices in poorer regions.

However, the architects involved in this study, who are familiar with green buildings, view sustainability from a different perspective. Durability and performance are paramount in affluent areas, while price dominates the thinking in disadvantaged regions, demonstrating how corporate standards shape priorities [31]. Because of this gap, solutions must fit the financial limits found in emerging economies without losing sight of the advantages tied to WELL-rated buildings. Evidence supporting this comes from research by Callway et al. [29], along with subsequent work by Atmoko et al. [32].

Even so, spreading the WELL Building Standard further in low-income countries might change how structures shape well-being and environmental goals. Where budgets are tight, yet skilled crews remain scarce, rolling out healthy building practices drags behind—especially clear when trying to follow WELL guidelines. Harder still, some regions have no evaluation systems suited to their weather patterns, economic limits, or community demands. Yet progress could

come through adaptable frameworks, mixing global benchmarks with local contexts. When policies back training, improvements may finally take root precisely where they matter most. Working together—officials from cities, international agencies, and companies—could make frameworks fit better by matching them to how people live, what the climate does, plus what supplies exist locally [29].

One participant pointed out that the most significant expected benefit lies in reducing long-term costs, whether direct building costs or indirect costs related to building occupants. This requires increased awareness of these benefits to develop strategies for their integration into systematic plans specific to developing countries. The participants concluded that implementing WELL Building Standards will effectively contribute to developing a healthy environment for individuals, both in homes and workplaces, which will positively impact individual performance and behavior.

On the other hand, one of the participants, a health and wellness expert, pointed out that implementing WELL Building Standards will positively impact the health of residential building occupants and significantly improve their mental well-being, thanks to the comfort these buildings provide, which in turn benefits both physical and mental health. As for employees using the buildings, this will lead to improved productivity and increased employee satisfaction with the work environment.

Practical Framework That Outlines Steps for Integrating WELL Building Concepts into the Planning, Design, and Construction Phases

The diverse sample size of the study contributed to the development of effective steps for integrating Well Building concepts throughout the project lifecycle. This diversity ensured the comprehensiveness of the framework, encompassing all relevant aspects and segments of the study. Furthermore, this framework comprises practical, realistic, and applicable steps, grounded in data from experts, stakeholders, and decision-makers in the building sector across developing countries. These steps are summarized in a framework applicable to all relevant parties. This framework is particularly well-suited to developing countries and their specific needs.

Those involved in discussions mentioned that clear guidelines matter—they help construction crews understand expectations. When teams exchange practical solutions, coordination improves despite geographic separation. A possible path ahead? From the start, rewards pop up for choosing greener options—training follows, rules shift, messages go out, all shown clearly in the image. Money perks caught the attention of some; others focused on learning paths, rule updates, and sharing awareness as vital steps. Mixing past methods with modern earth-friendly targets mattered more to another group, keeping houses feeling like home but fitting today's demands. Companies link clinics, local wellness circles, and classrooms, creating spots where advice flows freely, built around real daily routines.

The framework presented in **Figure 3** provides a detailed five-step process for attaining WELL Building Standard certification and a systematic approach for incorporating health and wellness principles into building design, construction and operations. This phased structure is suitable for project delivery practices and highlights specific considerations to support health and wellness certification based on performance. Moreover, most of the participants believed that the practical implementation of this approach calls for cooperation and coordination of employers, legislators, and investors; otherwise, it will be hard to embrace any practical framework. Thus, it is necessary to coordinate with relevant stakeholders in order to do preliminary studies to determine the needs and priorities, as well as to align it with sustainable building to determine the most appropriate framework.

The focus on building a WELL Steering Committee in Phase One: Planning & Feasibility is important. Evidence shows that early engagement with stakeholders and the setting of clear goals have a clear positive impact on the outcome of certification and its cost-effectiveness [33]. Gap analysis and feasibility studies before design will help project teams identify potential barriers and opportunities, thereby avoiding costly redesigns later in the design process.

Furthermore, the Integrated Design Process (IDP) in Phase 2 is a best practice for sustainable building construction. This framework actively includes the ten WELL concepts (air, water, nutrition, lighting, movement, thermal comfort, acoustics, materials, mental health and community) for comprehensive coverage of factors that impact the well-being of building occupants. The need for multiple system integration is paramount because of the linkages between building performance factors.

The biggest challenge is often the disconnect between the intent of design and how the project is built, which is

the focus of Phase Three. The specified low-volatile organic compounds (VOC) materials, air quality protections and health-promoting features are actually installed through material tracking, construction pollution management, and policy development during construction. This is an important phase to ensure the credibility of the certification and to ensure the desired health effects are achieved [34].

In contrast to prescriptive standards, the focus of Phase 4 on third-party performance testing is based on measured building conditions, not assumed. Air quality, water quality, light level, thermal comfort and acoustic performance are all tested on-site, giving objective evidence the building meets the strict health criteria set out by WELL. This is one of the key steps to validate that design solutions result in tangible health outcomes for occupants [35].

Phase Five: Continuous monitoring and re-certification every 3 years recognizes that building performance will decline over time if not managed. Air quality sensors are monitored continuously, reported yearly, and recertified periodically, establishing measures of accountability to keep the health of the air quality in the building on track throughout its life.

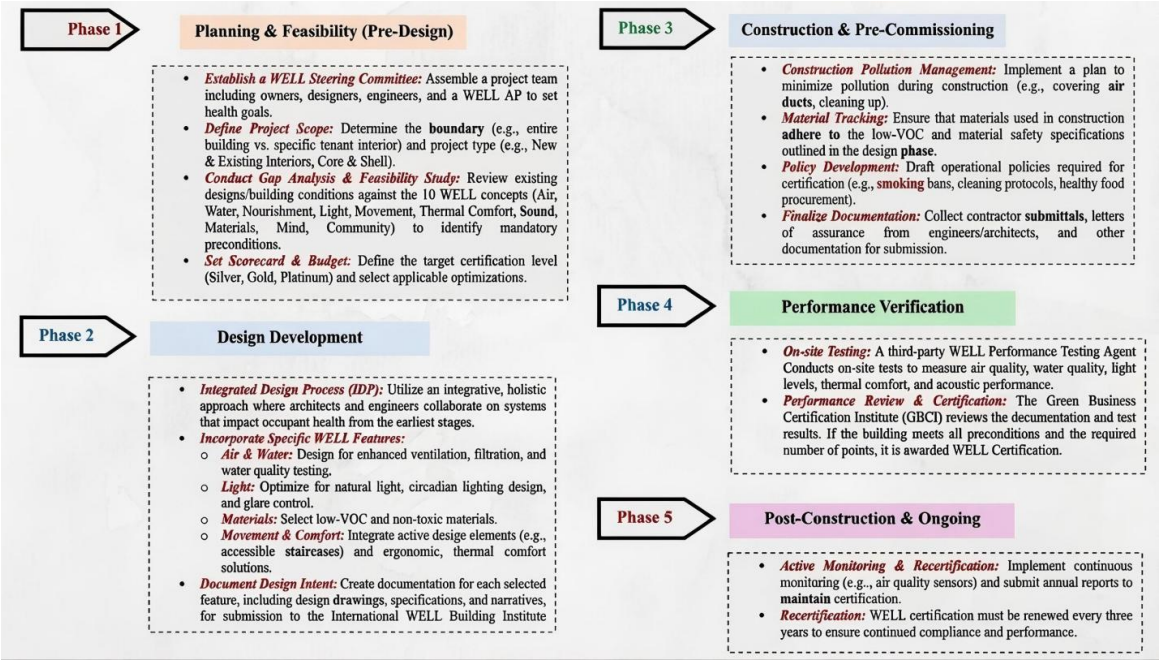

Figure 3. Framework for integrating WELL Building concepts into the planning, design, and construction phases.

6. Conclusions and Recommendations

The researcher found that the effective application of the WELL Building Standard in developing countries leads to better health and improvement of sustainability measures in the construction industry. It is essential that more focus is paid to the adoption of WELL Building Standards in these countries, through training and sustainable design, even though there is no infrastructure in place. Therefore, adopting a specific framework for adopting the WELL Building Standards will help to support the growth of the economy and the good use of limited resources. The results will be more rapid when the actions are in line with authentic community conditions.

The current study recommends focusing on raising awareness of the benefits of adopting WELL standards in buildings in developing countries, given the direct and indirect advantages they offer. The study further proposes that stakeholders implement WELL standards in planning and design to support cost savings in implementation.

The five-phase framework for WELL certification offers a strong, research-backed framework that enables the design of buildings that actively support human health and wellbeing. It's good when it comes to getting things done, interdisciplinary cooperation, performance verification, and accountability over time. But if it is to be implemented successfully, there is a need for good documentation, partici-

pation of the occupants, operating procedures, and context-specific adaptation. This is one of the many new frameworks that have become integral to the building industry as the evidence base of the relationship between building design and health outcomes grows from a niche certification to a mainstream expectation.

There is no doubt that organizations that become proficient in this framework will not only attain certification credentials, but more significantly, will design and create spaces where occupants' health, productivity, and satisfaction are measurably improved, which is the true value of sustainable, health-enabling design and certification.

However, the present study suggests future studies that can be conducted using quantitative methods that can be compared with the results of the current study.

Limitations

One of the main limitations of this study is that the WELL Building Standard focuses on human health rather than environmental sustainability, which may limit the generalizability of the findings to the environmental pillars of the United Nations (UN) Sustainable Development Goals. Furthermore, the current study employed a qualitative approach with a limited number of participants in developing countries.

Funding

This work was supported by Jadara University.

Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Informed consent was obtained from all participants involved in the study. After gaining participants' consent, interviews were audio recorded and transcribed for analysis.

Data Availability Statement

The data that support the findings of this study are not publicly available due to restrictions regarding the privacy and confidentiality of the research participants.

Acknowledgments

The author is grateful to the Deanship of Scientific Research at Jadara University for providing financial support for this publication.

Conflicts of Interest

The author declares no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

AI Use Statement

During the preparation of this manuscript, the authors used AI solely for language refinement. No AI tools were used for data analysis, interpretation, or generation of scientific content. All outputs were critically reviewed and edited by the authors. The authors take full responsibility for the integrity and accuracy of the work.

References

[1] United Nations DESA, 2018. The Sustainable Development Goals Report 2018. UN DESA: New York, NY, USA.

[2] IWBI, 2020. WELL Building Standard®, Q4 2020 Version. IWBI: New York, NY, USA. Available from: https://standard.wellcertified.com/well

[3] Emmitt, S., 2022. Building health and wellbeing. Building Research and Information. 50(1–2), 1–5.

[4] Kamaruzzaman, S.N., Azmal, A.M., 2019. Evaluation of occupants' well-being and perception towards indoor environmental quality in Malaysia affordable housing. Journal of Facilities Management. 17(1), 90–106.

[5] Riley, M.L., Kamaruzzaman, S., 2016. Critical aspects of the inclusive environmental for the well-being of building occupant—A review. MATEC Web of Conferences. 66, 00114.

[6] Aun, L.H., 2019. Malaysia's Shared Prosperity Vision 2030 Needs a Rethink to Make a Breakthrough. ASEAS: Singapore.

[7] IEA, 2021. Buildings. Available from: https://www.iea.org/energy-system/buildings (cited 3 March 2026).

[8] Ildiri, N., Bazille, H., Lou, Y., 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.

[9] Kent, M.G., Parkinson, T., Schiavon, S., 2024. Indoor environmental quality in WELL-certified and LEED-certified buildings. Scientific Reports. 14(1), 15120.

[10] Condezo-Solano, M.J., Erazo-Rondinel, A., Barrozo-Bojorquez, L.M., et al., 2025. Global Analysis of WELL Certification: Influence, Types of Spaces and Level Achieved. Buildings. 15(8), 1321.

[11] Haidamous, T., 2022. Will Biophilic Design Become Another Checklist. WIT Transactions on Ecology and the Environment. 260, 27–35.

[12] Zamani, S.H., Rahman, R.A., Yusof, L.M., 2023. WELL Building: Criteria for Residential Buildings in a Developing Country. Journal of Engineering, Project & Production Management. 13(3), 0018.

[13] IWBI, 2018. WELL V2™ Pilot. IWBI: New York, NY, USA. Available from: https://v2.wellcertified.com/en/v2/overview

[14] Kaiser Family Foundation, 2017. Percent of Private Sector Establishments That Offer Health Insurance to Employees, by Firm Size. Available from: https://www.kff.org/state-health-policy-data/state-indicator/firms-offering-coverage-by-size/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (cited 3 March 2026).

[15] Kirk, P., 2017. Is WELL Certification Worth It for Developers? Available from: https://www.wealthmanagement.com/professional-development/is-well-certification-worth-it-for-developers- (cited 3 March 2026).

[16] Kokatnur, T., Faris, F., Gunay, B., et al., 2025. The WELL Building Standard: A literature review and bibliometric analysis of a nascent field. Journal of Building Engineering. 103, 112121.

[17] Leite Ribeiro, L.M., Piccinini Scolaro, T., Ghisi, E., 2025. LEED certification in building energy efficiency: A review of its performance efficacy and global applicability. Sustainability. 17(5), 1876.

[18] Sari, M., Berawi, M.A., Angelia, C.F., et al., 2026. Retrofitting towards a healthy building: A case study of hotel in Bali. Built Environment Project and Asset Management. 16(4), 878–891.

[19] Khan, M.M.H., Bashir, M.T., Sikandar, M.A., et al., 2023. Green buildings and indoor air quality: A health and technological review. Preprints. DOI: https://doi.org/10.20944/preprints202308.0368.v1

[20] Ghosn, C., Candido, C., Warren-Myers, G., 2026, February. Unravelling property stakeholders' motivations and challenges when adopting WELL within the APAC region. IOP Conference Series: Earth and Environmental Science. 1582(1), 012067.

[21] Morgan Lovell, 2016. The Evolution of Office Design. Available from: https://www.morganlovell.co.uk/insights/evolution-of-office-design (cited 3 March 2026).

[22] Suárez Flores, Y.A., 2017. Contributing with Voluntary Certification Systems a Case-Study Evaluating Knowledge Gaps between Design Professionals and the Well Building Standard [Master's Thesis]. University of Texas at Austin: Austin, TX, USA.

[23] Hart, J., 2024. Exploring the Determinants of Happiness to Improve Societal Well-Being: The Lee Kum Sheung Center for Health and Happiness, Harvard TH Chan School of Public Health. Integrative and Complementary Therapies. 30(5), 244–246.

[24] IWBI, 2024. WELL V2™. International WELL Building Institute: New York, NY, USA. Available from: https://v2.wellcertified.com/en/wellv2-24q1q2/overview

[25] International WELL Building Institute, 2025. WELL Program Guidebook (Q2 2025). International WELL Building Institute: New York, NY, USA.

[26] Sadikin, N., Turan, I., Chegut, A., 2021. MIT Center for Real Estate Research Paper, No. 21/04: The Financial Impact of Healthy Buildings: Rental Prices and Market Dynamics in Commercial Office. MIT Center for Real Estate: Cambridge, MA, USA.

[27] Marek, M., Krejza, Z., 2024. Sustainable building: Circular economy as a key factor for cost reduction. E3S Web of Conferences. 550, 01009.

[28] Xu, L., 2024. Analyzing Information on Cooling Systems Using IFC Data. Journal of Asian Urban Environment. 2024(1).

[29] Callway, R., Pineo, H., Moore, G., 2020. Understanding the role of standards in the negotiation of a healthy built environment. Sustainability. 12(23), 9884.

[30] Xie, J., Zhang, J., Cao, Z., et al., 2024. Feasibility of using building-related construction and demolition waste-derived geopolymer for subgrade soil stabilization. Journal of Cleaner Production. 450, 142001.

[31] Imafidon, H., Enwerem, M., Boye, A., 2024. Adapting green building practices and smart technology in developing countries: A review. African Journal of Environmental Sciences and Renewable Energy. 16(1), 183–202.

[32] Atmoko, D., Susilawati, C., Devi, B., et al., 2025. Challenges and Opportunities for Promoting Sustainability in Public Buildings. Sustainability. 17(2), 403.

[33] De Paula, N., Jyo, L.K., Melhado, S.B., 2022. Sources of challenges for sustainability in the building design—The relationship between designers and clients. Buildings. 12(10), 1725.

[34] Heidari, L., Younger, M., Chandler, G., et al., 2017. Integrating health into buildings of the future. Journal of Solar Energy Engineering. 139(1), 010802.

[35] Bibang Bi Obam Assoumou, S.S., Zhu, L., Khayeka-Wandabwa, C., 2022. Invigorating health strategy in an integrated design process. Smart Cities. 5(3), 819–831.