Sustainability & Wellbeing in Real Estate

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Research Question

On the basis that there is evidence that a well-designed office space can combine the benefits of reducing overhead costs, increasing productivity being sustainable and improving the wellness of its occupants, what are the key factors preventing occupiers of office space from occupying premises in this way?

Executive Summary

The physical and spatial environment in which employees spend their working lives play an important role in physical and mental wellbeing and are a source of job satisfaction and productivity. This research paper examines academic and industry-related (real estate, sustainability and wellbeing) evidence together with government studies to verify the merits and inhibiting factors to sustainability and wellbeing in real estate. Specifically, this paper spotlights the commercial office market as the key focus of the evidence and research presented. Both arguments for and against sustainability and wellbeing in this type of real estate are examined to present a critical and reflective academic paper.

Relevant industry standards and certification programs are discussed to highlight policy options and stakeholder considerations that advance sustainability and wellbeing in real estate. Specifically, the '**healthy buildings movement**' and supporting scholarly literature is presented to stakeholders as an industry case study on how a well-designed office space can combine the benefits of reducing overhead costs, increasing productivity, being sustainable and improving the wellbeing of its occupants. This case study highlights the returns on investment being realised for developing environments that support health and wellbeing. The justification for this particular case study is twofold; firstly, it supports a better understanding of the building related factors that influence health in buildings, and secondly, presents evidence of how a healthy building acts as a differentiator for recruitment and retention and optimising employee productivity. An important finding from this case study is quantitative data confirming the importance of occupant health and wellbeing in commercial office space. Specifically, 'The Emerging Trends in Real Estate 2021' survey by ULI/PwC[1] found that over **86% of respondents agree or strongly agree that health and wellbeing will become more important in all sectors of commercial real estate**. Whilst 70% of respondents were concerned for the health and wellbeing of staff in commercial real estate.

Wellbeing is a keyword in the World Health Organisation (WHO) definition of health: "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity".[2] However, different audiences have different readings of the terms wellbeing and wellness. As such, the meaning not only changes through time but is open to overt and subtle dispute by practitioners and academics.[3] In academic literature, wellbeing is perceived 'multidimensionally and consisting of the fulfilment of different interdependent categories of need and wellness including the material level of living and the physical and biological environment'.[4] There is evidence that the discourse of 'wellbeing' - how, for what purposes, and with what effects the term is being used – continues to produce differences in approaches to public policy.[5] Given the importance of the term to the research and findings of this paper, a deliberate strategy is engaged to use both the terms wellbeing and wellness interchangeably and employ the definition above.

The methodology for collecting data for this research paper involved a literature review followed by a series of interviews with relevant stakeholders to provide critical reflections on the key factors preventing occupiers of office space from occupying premises in a way that improves sustainability and wellbeing. Interviewees identified cost as the most significant restrictive factor followed by buy-in from senior executives, whereas time was the least significant factor for occupiers fitting out their premises in a way that enhances sustainability and wellbeing. Evidence from the research indicates there is a cost benefit to implementing 'healthy building' strategies to commercial office spaces. Interviewees comment on the stark realisation that ***the costs of inaction outweigh the costs of acting now*** to

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[1] PricewaterhouseCoopers. "Emerging Trends in Real Estate®: The Global Outlook 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/industries/financial-services/asset-management/emerging-trends-real-estate/global-outlook-2021.html.
[2] WHO constitution, signed on 22 July 1946 by the representatives of 61 States and entered into force on 7 April 1948. https://www.who.int/about/who-we-are/constitution Retrieved on May 10, 2021.
[3] Ereaut, Gill, and Rebecca Whiting. "What do we mean by 'wellbeing'?: and why might it matter?." (2008).
[4] Helne, Tuula, and Tuuli Hirvilammi. "Wellbeing and Sustainability: A Relational Approach." Sustainable Development 23, no. 3 (2015), 167-175. doi:10.1002/sd.1581.
[5] Ereaut, Gill, and Rebecca Whiting. "What do we mean by 'wellbeing'?: and why might it matter?." (2008).

make the relevant renovations required to improve sustainability and wellbeing indicators within ‘office spaces’. The paper concludes with recommendations to stakeholders and a call to action for relevant stakeholders to address. A key recommendation is that of ‘*a tenant and landlord relationship that is focused on sustainability and wellbeing*’.

Introduction

There is a broad acknowledgement of the scientific evidence and industry practices that promote sustainability and wellbeing in real estate. Scholars have termed this the “healthy buildings movement” which advocates for science-backed improvements in the physical and spatial environment[6] to promote occupant health and wellbeing. Recent research[7] has led to the use of evidence-based designs and technologies to create new environments with healthier materials and with the intent to promote active and healthy choices and emotional and physical wellbeing, as well as a shared sense of community.[8] However, the question still remains ‘*what prevents office workers using office spaces in a way that improves wellbeing, sustainability and productivity?’*

The 9 Foundations of a Healthy Building study identifies 9 building design factors that are a clear and actionable distillation of the core elements of healthy indoor environments, based on underlying science and primary academic literature and distils 40 years of research on the key determinants of health in a building.[9] These are listed in ***Figure 1*** below and each Foundation is supported by scientific literature on key topics related to buildings and health fully cited back to the primary literature including and a brief guide for how to achieve the Foundation. The justification for selecting this case study is because The 9 Foundations “apply universally to all building types although the supporting text focuses mainly on commercial office environments”.[10]

[6] Lawrence, Denise L., and Setha M. Low. "The Built Environment and Spatial Form." Annual Review of Anthropology 19, no. 1 (1990), 453-505. doi:10.1146/annurev.an.19.100190.002321.
[7] Healthy Buildings. Accessed May 18, 2021. https://forhealth.org.
[8] Allen, Joseph G., and John D. Macomber. Healthy buildings: How indoor spaces drive performance and productivity. Harvard University Press, 2020.
[9] Allen, J. G., A. Bernstein, X. Cao, E. Eitland, S. Flanigan, M. Gokhale, J. Goodman et al. "The 9 foundations of a healthy building." Harvard: School of Public Health (2017), Accessed May 18, 2021 https://9foundations.forhealth.org/wp-content/uploads/2020/02/9_Foundations_of_a_Healthy_Building_February_2017_R1.8.pdf
[10] Ibid 9

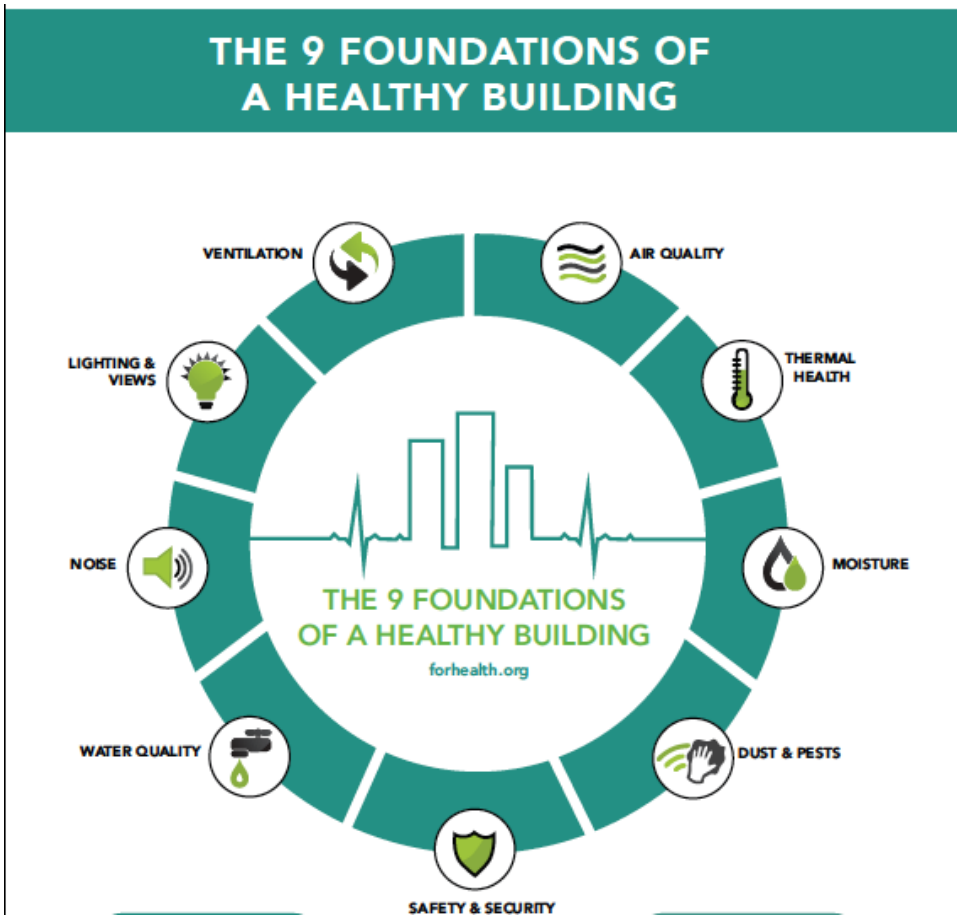

Figure 1. Reprinted from "The 9 foundations of a healthy building." *Harvard: School of Public Health* (2017)[11].

Similarly, some of the leading building certification programs, for instance The WELL Building Standard and Leadership in Energy and Environmental Design (LEED®) are grounded on evidence-based criteria, informed by a team of advisers from public health, design, development, statistics, and research, and are supported by more than 3,000 research studies.[12] This research paper addresses the research question in light of above building certification programs, current academic discourse, industry debates and an interview report.

COVID-19 effect/considerations on offices

The healthy buildings movement in architecture has significantly developed in the last decade, as architects and public health officials continue to evidence how sustainable building improvements are beneficial to occupant health and productivity. The latest developments brought about by the COVID-19 pandemic include "an increased interest in the role indoor environments play in our health".[13] Different media representations, researchers and academic scholars discuss this trend and how the pandemic has "accelerated health, wellness and technology trends, while also bringing more attention to ventilation and indoor air quality in buildings".[14]

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[11] Allen, Bernstein, Cao, Eitland, Flanigan, Gokhale, Goodman et al. "The 9 foundations of a healthy building."
[12] "International WELL Building Institute." International WELL Building Institute. Accessed May 18, 2021. https://resources.wellcertified.com/articles/special-report-inside-the-well-building-standard/.
[13] "Why The Healthy Buildings Movement Will Explode In 2020." SageGlass. Accessed May 18, 2021. https://www.sageglass.com/eu/visionary-insights/why-healthy-buildings-movement-will-explode-2020.
[14] "A Smart Building is a Healthy Building." Metal Architecture. Last modified March 1, 2021. https://www.metalarchitecture.com/articles/a-smart-building-is-a-healthy-building.

The ‘Emerging Trends in Real Estate 2021’ survey by ULI/PwC[15] found that over 86% of respondents agree or strongly agree that health and wellbeing will become more important in all sectors of commercial real estate. Whilst 70% of respondents were concerned for the health and wellbeing of staff in commercial real estate. With COVID-19 reinforcing so many real estate trends, one of the most notable examples is the increasing concern over the health and wellbeing of employees whilst working from commercial office spaces.[16]

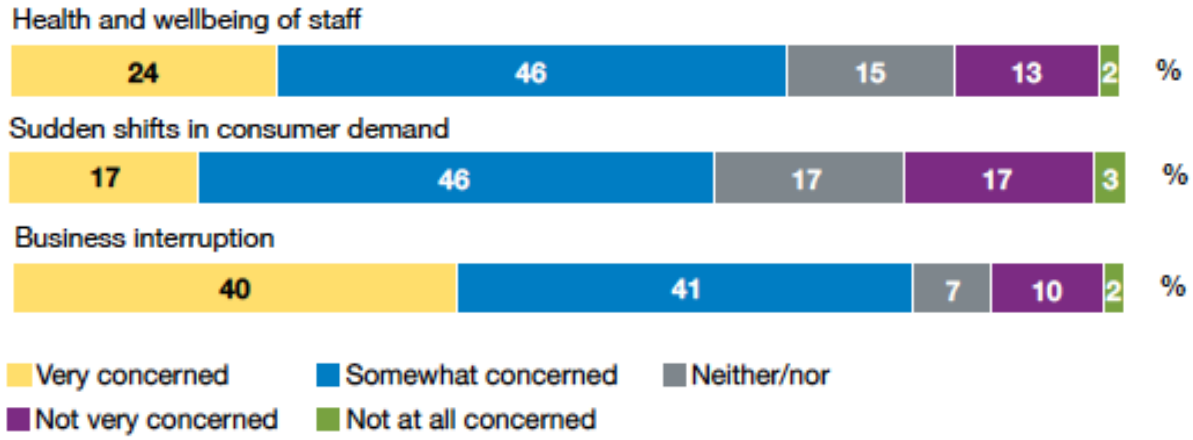

Figure 2. Reprinted from “Emerging Trends in Real Estate 2021.” Survey conducted by *PwC and Urban Land Institute* (2021) [17].

Figure 3. Reprinted from “Emerging Trends in Real Estate: Europe 2021.” Survey conducted by *PwC and Urban Land Institute* (2021) [18].

[15] PricewaterhouseCoopers. "Emerging Trends in Real Estate®: The Global Outlook 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/industries/financial-services/asset-management/emerging-trends-real-estate/global-outlook-2021.html.
[16] PricewaterhouseCoopers "Emerging Trends in Real Estate®: Europe 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/asset-management/emerging-trends-real-estate/assets/emerging-trends-in-real-estate-europe-2021.pdf.
[17] PricewaterhouseCoopers. "Emerging Trends in Real Estate®: The Global Outlook 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/industries/financial-services/asset-management/emerging-trends-real-estate/global-outlook-2021.html.
[18] PricewaterhouseCoopers "Emerging Trends in Real Estate®: Europe 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/asset-management/emerging-trends-real-estate/assets/emerging-trends-in-real-estate-europe-2021.pdf.

The other trend coming out of the pandemic is an increased demand for flexible work environments, aided by **smart building technology**.[19] For instance, PropTech applications "support facility managers with operational automation, artificial intelligence, access control, system performance, security and spatial analytics to boost efficient use of space".[20] As lockdown measures ease and employees return to office environments, building data will be essential for answering occupant concerns and promoting sustainability and wellbeing in real estate.

Combining smart building technology within healthy buildings, promotes increased performance, desirability and health resilience. **Community Health Resilience** is the ability of a community to use its assets to strengthen public health and healthcare systems and to improve the community's physical, behavioural, and social health to withstand, adapt to, and recover from adversity.[21] There is academic and practitioner evidence of the associations between 'Green Building' design strategies and community health resilience. For instance, a systematic literature review[22] examined evidence linking green building design strategies with the potential to enhance community resilience. The review assessed the strength of the evidence supporting the potential for LEED® credit requirements to reduce the adverse effects of extreme heat events and identified links between LEED® credit requirements and risk of exposure to extreme heat, environmental determinants of health, co-benefits to public health outcomes, and co-benefits to built environment outcomes.[23]

Therefore, health resilience within a building setting is the capacity to adapt to challenges and changes at different system levels, to maintain the health of occupants.[24] Health resilience must derive from stronger health and health systems, improved population health, and the capabilities to sustain physically, mentally, and socially healthy individuals and communities amid large-scale changes.[25]

As organisations start to move staff back into office environments, it is important to review the behaviour and working practices within the organisation and for staff who have been working remotely. For those organisations that are exploring how to increase wellbeing in the workplace, it is important to examine how the workspace will be used, by whom and when.[26]

A workspace analysis will provide detailed information about how the workspace can used after which a detailed plan should be drawn up highlighting how to tailor-make the space to suit the needs of the business and promote wellbeing of occupants. The workspace analysis could include feedback from occupants returning from remote working to capture their needs and requirements that promote wellbeing in the office. Such analysis and implementation promote

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[19] "A Smart Building is a Healthy Building." Metal Architecture. Last modified March 1, 2021. https://www.metalarchitecture.com/articles/a-smart-building-is-a-healthy-building.
[20] Ibid 19
[21] PHE, "Community Health Resilience." U.S. Department of Health and Human Services . Accessed May 18, 2021. https://www.phe.gov/Preparedness/planning/abc/Pages/community-resilience.aspx.
[22] Houghton, Adele, and Carlos Castillo-Salgado. "Associations between Green Building Design Strategies and Community Health Resilience to Extreme Heat Events: A Systematic Review of the Evidence." International Journal of Environmental Research and Public Health 16, no. 4 (2019), 663. doi:10.3390/ijerph16040663.
[23] Houghton, Adele, and Carlos Castillo-Salgado. "Associations between Green Building Design Strategies and Community Health Resilience to Extreme Heat Events: A Systematic Review of the Evidence." International Journal of Environmental Research and Public Health 16, no. 4 (2019), 663. doi:10.3390/ijerph16040663.
[24] Wiig, Siri, Karina Aase, Stephen Billett, Carolyn Canfield, Olav Røise, Ove Njå, et al. "Defining the boundaries and operational concepts of resilience in the resilience in healthcare research program." BMC Health Services Research 20, no. 1 (2020). doi:10.1186/s12913-020-05224-3.
[25] Wulff, Katharine, Darrin Donato, and Nicole Lurie. "What Is Health Resilience and How Can We Build It?" Annual Review of Public Health 36, no. 1 (2015), 361-374. doi:10.1146/annurev-publhealth-031914-122829.
[26] "How to Invest in Social Capital." Harvard Business Review. Last modified June 1, 2001. https://hbr.org/2001/06/how-to-invest-in-social-capital

social capital in the office[27] [28]. A **tailored sustainability and wellbeing workspace assessment** has been included in detail in policy recommendation (3) and includes questions like: *has the Property or the building in which it is situated ("Building") been accredited for wellness through organisations such as the WELL Building Standard, Fitwel or BREEAM? And supply details of any of the following assessments in relation to the Property and the Building: Air quality; Water quality; Light assessment; Noise assessment*.

[27] "Morgan Lovell Agree Strategic Partnership to Achieve WELL Building…." Morgan Lovell. Last modified March 31, 2017. https://www.morganlovell.co.uk/about/news/morgan-lovell-agree-strategic-partnership-to-achieve-well-building-standard.

[28] "What is 'social Capital' in the Workplace?" Morgan Lovell. Last modified January 13, 2021. https://www.morganlovell.co.uk/inspiration/insights/what-is-social-capital-in-the-workplace.

Research methods

Research Question

On the basis that there is evidence that a well-designed office space can combine the benefits of reducing overhead costs, increasing productivity and being sustainable and improving the wellness of its occupants, ***what are the key factors preventing occupiers of office space from occupying premises in this way?***

Sub-research questions

- Whilst considering the drivers and blockers for tenants and landlords, how can real estate lawyers shape their advice to clients to underscore the importance of sustainability and wellbeing considerations?
- How can cost limitations or considerations be addressed by landlords and tenants?
- Why is sustainability and wellbeing important, what changes need to be made to advance this agenda and what can policy makers, industry experts and academics do to advance or convene this space?

The research objective was to identify evidence on whether a well-designed office space can combine the benefits of reducing overhead costs, increasing productivity, being sustainable and improving the wellbeing of its occupants and if so, the key factors preventing occupiers of office space from occupying premises in this way. This objective alludes to an acknowledgement of the strategies that the building owners (landlords) can put in place and those that the occupiers (tenants) can request or do on their own to improve the space and promote sustainability and wellbeing.

The research paper advances academic scholarship on sustainability and wellbeing in real estate. Through a multimethod qualitative research, data was collected via a literature review and semi-structured interviews. Specifically, a literature review of academic papers, government white papers, policy papers and industry reports were conducted. Findings were triangulated with data from interviews, online resources and secondary data. The multimethod approach is a strategy for overcoming each method's weaknesses and limitations by deliberately combining different types of methods within the same investigations and a systematic synthesis of these different research styles, purposefully aimed at improving social science knowledge.[29] [30]

Semi-structured interviews were held with industry stakeholders and responses grouped into three industry categories; architects/ design consultants; commercial landlords; and commercial tenants. The purpose of conducting a series of interviews with the above stakeholders was to identify and critique the drivers, opportunities, challenges and cost-savings models for landlord, tenants and stakeholders wishing to advance property portfolios focused on sustainability and wellbeing. Interviews captured current practice, case studies and recommendations for addressing inhibiting factors. Interviewees were selected using a pragmatic approach, based on their industry expertise, availability and willingness to discuss the topic. Interviewees were committed to sustainability and wellbeing in real estate and commented on the extent of the inhibitory factors specifically; cost, lack of buy-in from the top down and time. The interviews took place remotely via video conferencing tools. Responses were recorded through notetaking with no visual recording of the respondents. By engaging a range of experts, practitioners and leaders from different parts of society and different disciplines, the interviews were able to bring a wide-ranging view of the extent of the inhibitory factors.

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[29] Brewer, John, and Albert Hunter. Foundations of Multimethod Research: Synthesizing Styles. Thousand Oaks: SAGE, 2006.
[30] Goertz, Gary. "Multimethod Research, Causal Mechanisms, and Case Studies: An integrated approach." Princeton University Press, 2017. doi:10.2307/j.ctvc77khf.

Data from the literature review and semi-structured interviews was analysed through qualitative coding to determine the relationship between the various data points, policies, organisations and policy actors. Through a case study research method, the paper examines key standards and certification programs used in the marketplace and the returns on investment being realised for developing environments that support health and wellness. The case study method avails the opportunity to critically reflect on the drivers, opportunities and challenges to sustainability and wellbeing in real estate. Through the above methods, this research paper presents stakeholders and policy makers with the ability to draw on the range of industry practices, policies and inhibiting factors that have emerged in the sustainability and wellbeing agenda.

Terminology and background

Sustainability is defined as the avoidance of the depletion of natural resources in order to maintain an ecological balance. A sustainable or green building aims to reduce its impact on the environment through measures that include: using renewable and recyclable resources; reducing energy consumption and waste; creating a healthy, environmentally friendly environment, and protecting the natural environment.[31] However, sustainability is often viewed through an anthropocentric lens, that is, humankind as the central or most important element of existence[32] [33]. Hence, it is important to challenge the notion of human-centred building design approaches derived at the expense of sustainability. Environmentally concerned authors[34] have argued that anthropocentrism cannot lead us to a sustainable future. In contrast, Ecocentrism, as a pathway to sustainability[35] accepts that we are part of nature, and have a responsibility to respect the web of life and heal the damage caused by the ideological dominance of anthropocentrism.[36] There is a need to align physical environment and society in definitions, as such this broader definition of sustainability is retained in this research paper.

Workplace Wellbeing relates to all aspects of working life, from the quality and safety of the physical environment, to how workers feel about their work, their working environment, the climate at work and work organisation. Wellbeing relates to both physical and mental wellbeing while the ability of a building to promote wellbeing is conceptualised as both internal and external features of a building that promote holistic health. A holistic health approach emphasises the need to consider the health needs of a person as whole, providing for their physical, mental, spiritual, and social needs. [37]

Healthy Building is one that considers the impact of its environment on those living, working or spending leisure time within it.[38] Homes, offices, schools, and other indoor environments are being transformed by health and wellness design principles to promote sustainability and wellbeing considerations. The healthy buildings movement is similar to the human-centred design concept, which is amongst the age-old, honoured foundations for development. Adjustable controls for air temperature, humidity, and acoustics help create a comfortable work environment and biophilic design, with natural views and materials, connect people to nature. [39]

This research paper differs from other research papers on the topic of sustainability and wellbeing in real estate. With the foundational understanding that there is a body of evidence to support the benefits of a sustainable and wellbeing

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[31] "What is Sustainable Construction and Why is It Important?" British Assessment Bureau. Last modified June 12, 2020. https://www.british-assessment.co.uk/insights/what-is-sustainable-construction-and-why-is-it-important/.
[32] Goralnik, L., and M.P. Nelson. "Anthropocentrism." Encyclopedia of Applied Ethics, 2012, 145-155. doi:10.1016/b978-0-12-373932-2.00349-5.
[33] Kopnina, Helen, Haydn Washington, Bron Taylor, and John J Piccolo. "Anthropocentrism: More than Just a Misunderstood Problem." Journal of Agricultural and Environmental Ethics 31, no. 1 (2018), 109-127. doi:10.1007/s10806-018-9711-1.
[34] Ibid 33
[35] Allen, Stephen, Ann L. Cunliffe, and Mark Easterby-Smith. "Understanding Sustainability Through the Lens of Ecocentric Radical-Reflexivity: Implications for Management Education." Journal of Business Ethics 154, no. 3 (2019), 781-795. doi:10.1007/s10551-016-3420-3.
[36] Washington, Haydn, Bron Taylor, Helen Kopnina, Paul Cryer, and John J. Piccolo. "Why ecocentrism is the key pathway to sustainability." The Ecological Citizen 1, no. 1 (2017): 35-41.
[37] "Workplace Well-being." International Labour Organization. Last modified June 15, 2009. https://www.ilo.org/global/topics/safety-and-health-at-work/areasofwork/workplace-health-promotion-and-well-being/WCMS_118396/lang--en/index.htm.
[38] Welcome to UKGBC | UK Green Building Council. Accessed May 18, 2021. https://www.ukgbc.org/sites/default/files/How%20to%20deliver%20Healthy%20Buildings.pdf.
[39] "Business Case for Healthy Buildings." Global Wellness Institute. Accessed May 18, 2021. https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf.

real estate agenda, this research paper outlines the arguments for and against this agenda whilst examining the relevant inhibitory factors. For instance, **occupant health and wellbeing** was ranked high in a national survey of building owners, architects, and interior designers conducted by *Dodge Data & Analytics* and published in the firm's report, *The Drive Toward Healthier Buildings 2016*.[40] As highlighted in this report, two-thirds of building owners ranked occupant health and wellbeing as "moderately important," ahead of return on investment and tenant demand, while three quarters of architects ranked health/wellbeing as "important," and 83 percent of interior designers ranked health and wellbeing as "most important" in influencing design and construction decisions. [41] This dichotomy is further evidenced in Figure 4 below.

Factors Influencing Design and Construction Decisions

	Owners	Architects	Interior Designers	Contractors
MOST IMPORTANT (80% or More)	• Design and Construction Cost Savings (85%) • Operating Cost Savings (82%)	• Design and Construction Cost Savings (84%) • Aesthetics (81%)	• Aesthetics (92%) • **Occupant Health and Well-Being (83%)**	• Design and Construction Cost Savings (81%)
IMPORTANT (70% to 79%)	• Aesthetics (74%) • Building Energy Performance (74%)	• Building Energy Performance (79%) • **Occupant Health and Well-Being (74%)**	• Design and Construction Cost Savings (75%)	No items selected
MODERATELY IMPORTANT (60% to 69%)	• **Occupant Health and Well-Being (67%)** • Return on Investment (63%) • Tenant Demand (61%)	• Operating Cost Savings (68%)	No items selected	• Operating Cost Savings (63%) • Building Energy Performance (60%)
LESS IMPORTANT (50% to 59%)	No items selected	• Materials Resource Conservation (51%) • Water Conservation (50%)	• Building Energy Performance (54%) • Operating Cost Savings (54%)	• **Occupant Health and Well-Being (51%)** • Aesthetics (51%)

Figure 4. Reprinted from "The Drive Toward Healthier Buildings Report 2016." *Dodge Data & Analytics,* (2016).[42]

There are numerous reported benefits of healthier building investments and three of the most significant benefits are highlighted in Figure 5 below.

Figure 5. Reprinted from "The Drive Toward Healthier Buildings Report 2016." *Dodge Data & Analytics,* (2016).[43]

[40] "Drive Toward Healthier Buildings." World Green Building Council. Accessed May 18, 2021. https://www.worldgbc.org/sites/default/files/Drive%20Toward%20Healthier%20
[41] Ibid 40
[42] "Drive Toward Healthier Buildings." World Green Building Council.
[43] "Drive Toward Healthier Buildings." World Green Building Council.

Impact of Healthier Building Investments on the Value of the Building

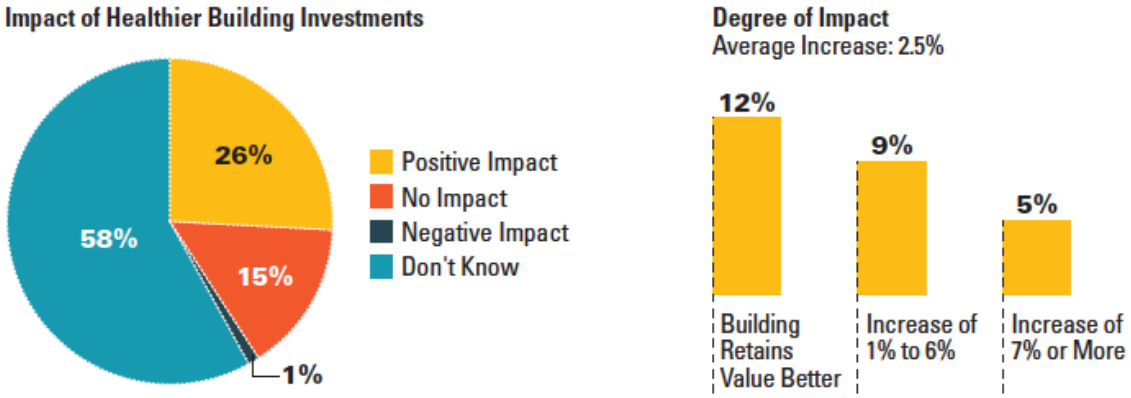

Figure 6. Reprinted from "The Drive Toward Healthier Buildings Report 2016." *Dodge Data & Analytics,* (2016).[44]

The percentage of those who see a positive impact believe that it helps the building hold its value better and this may reflect growing awareness in the marketplace of the importance healthy buildings. For buildings at the high end of the market, being able to show that the building contains healthier features may be necessary to remain competitive. [45]

Impact of Building Certification Programs

There is a wide range of building certifications and sustainability and wellbeing programs for landlords and commercial tenants to consider. For instance, the ***WELL Building Standard*** was launched in 2014 by the International WELL Building Institute (IWBI) as a performance-based system for measuring, certifying, and monitoring features of the built environment that affect human health and wellbeing.[46] The IWBI combines best practices in building design, construction, and management with evidence-based medical and scientific research on environmental health, behavioural factors, health outcomes, and demographic risk factors that affect health. Scientists, health care practitioners, and public health and building professionals developed the standard's ten core concepts of building performance that support and advance human health: air, water, nourishment, light, movement, thermal comfort, sound, materials, mind, and community. [47]

[44] "Drive Toward Healthier Buildings." World Green Building Council.
[45] "Drive Toward Healthier Buildings." World Green Building Council.
[46] International WELL Building Institute. Accessed May 18, 2021. https://www.wellcertified.com.
[47] Ibid 46

WELL Standard's 10 core concepts of building performance that advance human health

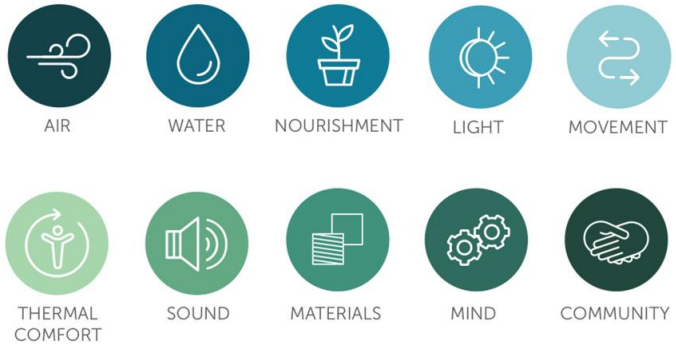

Figure 7. Reprinted from "**WELL Building Standard**" launched in 2014 by *the International WELL Building Institute,* (2014). [48]

Similarly, **Fitwel's** evidence-based criteria are informed by a team of advisers from public health, design, development, statistics, and research, and are supported by more than 3,000 research studies.[49] The advantages of working through the Fitwel or WELL certification process include their use of specific scientifically derived standards to guide investments and the assurance of third-party verification.[50] The Fitwel standard focuses on 12 wellness health factors: location, building access, outdoor spaces, ground floor, stairwells, interior environmental quality, workspaces, shared spaces, water supply, cafeterias, vending machines, and emergency procedures[51]. Fitwel addresses health as an interconnected system, with no single dominant category or area of focus, and list seven health impact categories.

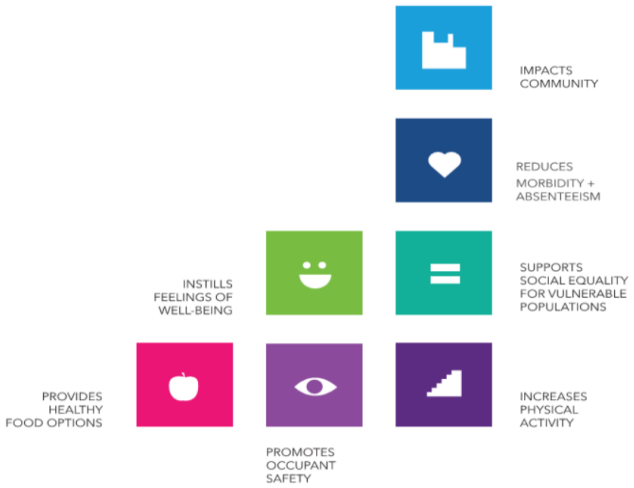

Figure 8. Reprinted from "**Fitwel Building Standard**" launched in 2016 by *the U.S. Centers for Disease Control and Prevention,* (2016). [52]

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[48] International WELL Building Institute. Accessed May 18, 2021. https://www.wellcertified.com.
[49] Fitwel Building Standards. Accessed May 18, 2021. https://www.fitwel.org.
[50] Ibid 49
[51] "Business Case for Healthy Buildings." Urban Land Institute and Centre For Sustainability and Economic Performance. Accessed May 18, 2021. https://ulidigitalmarketing.blob.core.windows.net/ulidcnc/2019/02/Business-Case-for-Healthy-Buildings-copy_V1-002.pdf.
[52] Fitwel Building Standards. Accessed May 18, 2021. https://www.fitwel.org.

Other well-established sustainable building standards that also contain health-related elements, include LEED®[53], Building Research Establishment Environmental Assessment Method (BREEAM)[54], and the Living Building Challenge[55].

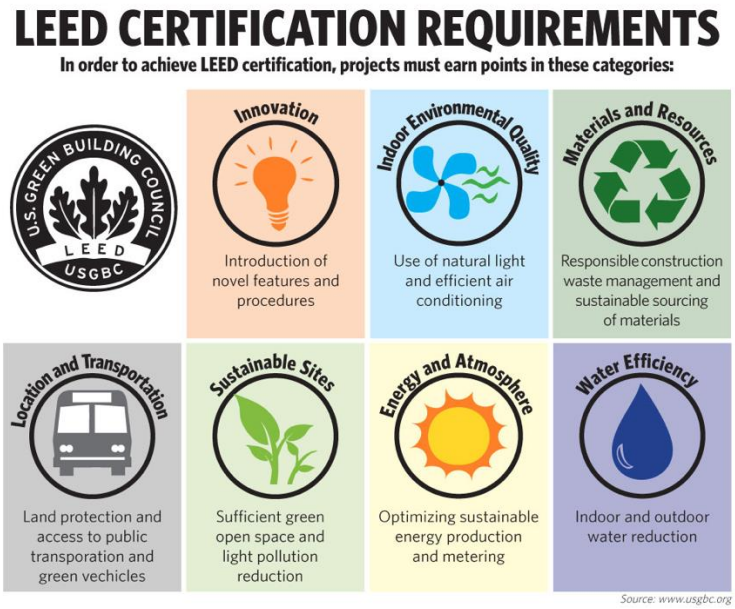

Figure 9. Reprinted from "LEED®" launched in 1998 by *U.S Green Building Council* (2019). [56]

[53] "LEED Rating System." USGBCU.S. Green Building Council. Accessed May 18, 2021. https://www.usgbc.org/leed.
[54] BREEAM. Last modified October 7, 2019. https://www.breeam.com.
[55] "Living-Future.org." International Living Future Institute. Last modified February 20, 2020. https://living-future.org/lbc/.
[56] "LEED Rating System." USGBCU.S. Green Building Council. Accessed May 18, 2021. https://www.usgbc.org/leed.

Healthy buildings case study

The healthy buildings movement in architecture has significantly developed in the last decade, as architects and public health officials continue to evidence how sustainable building improvements are beneficial to occupant health and productivity. The latest developments brought about by the COVID-19 pandemic include "an increased interest in the role indoor environments play in our health".[57] Different media representations and researchers continue to discuss this trend and how the pandemic has "accelerated health, wellness and technology trends, while also bringing more attention to ventilation and indoor air quality in buildings".[58] The "Emerging Trends in Real Estate 2021" survey by ULI/PwC[59] found that over 82% of respondents agree or strongly agree that health and wellbeing will become more important in all sectors of commercial real estate. The other trend coming out of the pandemic is an increased demand for flexible work environments, aided by smart building technology.[60] For instance, PropTech applications "support facility managers with operational automation, artificial intelligence, access control, system performance, security and spatial analytics to boost efficient use of space".[61] As lockdown measures ease and employees return to office environments, building data will be essential for answering occupant concerns and promoting sustainability and wellbeing in real estate. Combining smart building technology within healthy buildings, promotes increased performance, desirability and health resilience.

In 2017, a multidisciplinary team of experts from the Healthy Buildings Program at Harvard University's T.H. Chan School of Public Health published The 9 Foundations of a Healthy Building[62]. The report examined all building types but focused on studies related to commercial office spaces.

Highlights from industry report[63]

Good air quality is important because people work more efficiently in environments with good air quality. Common indoor pollutants that pose risks to human health include nitrogen oxides, carbon monoxide, ozone, particulate matter, and volatile organic compounds (VOCs) found in building materials, printer emissions, cleaning supplies, paint, glue, furniture, and other materials. Exposure has been linked to numerous health problems, such as cancer and respiratory diseases, as well as absenteeism, poor productivity, and low cognitive function.

Buildings constructed with low-VOC materials and finishes reduce exposure to these toxic substances. Studies show employees who work in buildings where fresh air is adequately circulated and distributed are more productive and healthier than those who work in poorly ventilated spaces. A low-VOC, high-ventilation office space with superior air quality improves cognitive function by as much as 101 percent.

Comfortable temperature and humidity levels are less likely to make workers feel sick or get sick. A study on workplace thermal conditions found that workers experienced itchy and watery eyes, headaches, and throat irritation when exposed to poor ventilation, humidity, and heat. When indoor environments are too warm, occupants can

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[57] "Why The Healthy Buildings Movement Will Explode In 2020." SageGlass. Accessed May 18, 2021. https://www.sageglass.com/eu/visionary-insights/why-healthy-buildings-movement-will-explode-2020.
[58] "A Smart Building is a Healthy Building." Metal Architecture. Last modified March 1, 2021. https://www.metalarchitecture.com/articles/a-smart-building-is-a-healthy-building.
[59] PricewaterhouseCoopers. "Emerging Trends in Real Estate®: The Global Outlook 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/industries/financial-services/asset-management/emerging-trends-real-estate/global-outlook-2021.html.
[60] "A Smart Building is a Healthy Building." Metal Architecture. Last modified March 1, 2021. https://www.metalarchitecture.com/articles/a-smart-building-is-a-healthy-building.
[61] Ibid 60
[62] Allen, Bernstein, Cao, Eitland, Flanigan, Gokhale, Goodman et al. "The 9 foundations of a healthy building."
[63] Allen, Bernstein, Cao, Eitland, Flanigan, Gokhale, Goodman et al. "The 9 foundations of a healthy building."

experience symptoms of “sick building syndrome,” such as headaches, dizziness, fatigue, and flu-like symptoms, as well as negative moods, heart rate changes, and respiratory problems. Temperature and humidity may also influence disease transmission: cold, dry environments are more likely to spread the flu virus, and warm, humid environments are conducive to growth of mould and fungus.

Good lighting leads to better sleep at night and better productivity during the day. Lack of natural light has been associated with physiological and sleep problems and depression. Exposure to daylight and access to windows at work have been linked to better sleep duration, an improved mood, less sleepiness, lower blood pressure, and increased physical activity. Office workers with access to natural light have a better circadian rhythm—important for sound sleep and cognitive function. Electric lighting that adjusts for intensity and colour spectrum, mimicking solar light and darkness levels at different times of the day and night, can support a healthy circadian rhythm.

The Value Proposition for Healthy Buildings and Workplaces

For many employers, healthy work environments are proving to be a recruiting and retention tool, attracting the health-conscious employees they prefer.[64] Staff members are the most valuable resource per square foot for most organizations, “typically accounting for 70 to 90 percent of business operating costs, so even a 1 percent improvement in productivity, a 1 percent decrease in missed workdays, or a 1 percent reduction in annual employee turnover can have a major impact on a company’s bottom line and competitiveness”.[65]

Healthier buildings can lead to engaged employees who stay in their jobs longer and are absent less, translating into benefits for employers.[66] Workplaces designed and constructed to support health and wellness have been shown to have benefits for retention and engagement of employees. According to a 2017 CoreNet Global and CBRE survey[67] of “211 senior executives in real estate, tech, and finance firms committed to workplace health and wellness design, 19 percent reported a decrease in absenteeism, 25 percent reported increased employee retention, and 47 percent reported increased employee engagement”.[68]

Additionally, a recent industry study[69] found that “78 percent of millennials see workplace quality as important when choosing an employer, and 69 percent said they would trade other benefits for a better workplace”. The study was conducted by CBRE who commissioned Ipsos to survey 13,000 millennials in their 20s across 12 countries around the world, and the findings were supplemented with 7,000 survey responses from global CBRE staff, individual interviews and focus groups. [70] CBRE conducted one of the most extensive and detailed global studies of millennials and key findings from this Report that provide supporting evidence for this research paper are highlighted below.

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64 https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf
65 https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf
66 https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf
67 https://www.corenetglobal.org/KCO/content.aspx?ItemNumber=36454
68 https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf
69 https://www.cbre.com/about/live-work-play-2016
70 https://www.cbre.com/about/live-work-play-2016

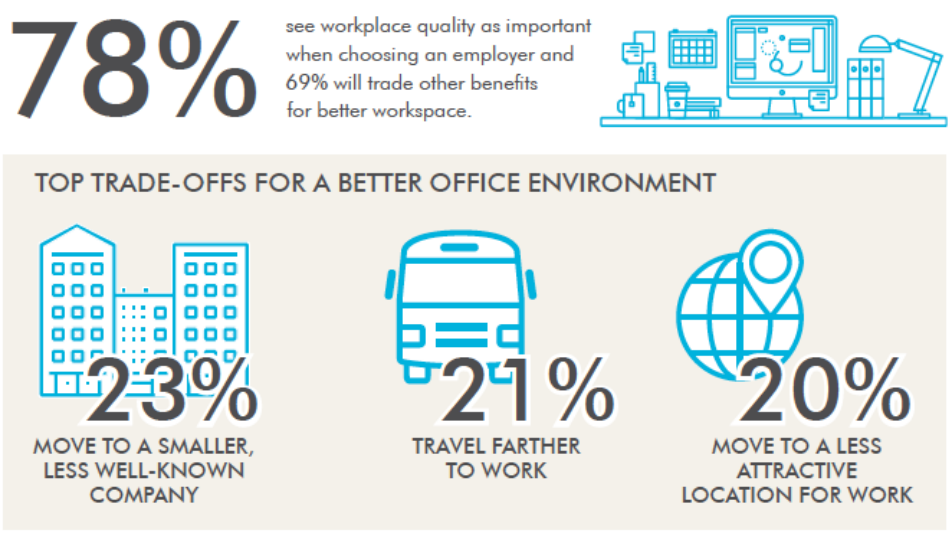

Figure 11. Reprinted from "**Global Major Report - Live Work Play: Millennials Myths and Realities**, 2016 *by CBRE and Ipsos* (2016). [71]

Health and wellness– focused office environments communicate and enhance culture, brand, and corporate responsibility. They differentiate a workplace from those of competitors and demonstrate an investment in human capital. All of these factors can help reduce company operating costs and increase revenues and profits.

Factors inhibiting Healthy Buildings and Workplaces

Though the benefits of a healthy building are compelling to many landlords, tenants, and investors, uncertainties exist that are inhibiting the uptake. Firstly, as confirmed by participants during interviews, the most significant factor is the ***lack of clarity on total costs***. A majority of building owners and commercial tenants are unaware of the costing model for such renovations and building alterations. Additionally, the "costs of certifications are relatively high, and it is not certain whether certification will translate into higher rents and lower vacancy rates".[72] Secondly, renovations or building alterations may result in lease complications as "tenants must commit to specific actions related to building operations, maintenance and tenant fit-out". [73] Thirdly, the potential liability claims that may arise from building renovations or alterations, and perceived risk to owner/landlord reputation including legal risks associated with healthy building certification.[74] Fourthly, the divergent views and employers' beliefs around the role the workplace should play in influencing health and wellbeing.[75]

Despite these uncertainties, many believe that healthy buildings eventually will lead to market differentiation and returns, such as above-market rents and better tenant retention. Whilst some practitioners state that the "return on investment for healthy buildings can be quantified, data quantifying the impact of healthy buildings on ROI and net operating income (NOI) for employers and developers are still emerging". [76] However, in a survey cited in The Drive toward Healthier Buildings 2016: Tactical Intelligence to Transform Building Design and Construction, from Dodge

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[71] https://www.cbre.com/about/live-work-play-2016
[72] https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf
[73] "Business Case for Healthy Buildings." Global Wellness Institute. Accessed May 18, 2021. https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf.
[74] Ibid 73
[75] Pescud, Melanie, Renee Teal, Trevor Shilton, Terry Slevin, Melissa Ledger, Pippa Waterworth, and Michael Rosenberg. "Employers' views on the promotion of workplace health and wellbeing: a qualitative study." BMC Public Health 15, no. 1 (2015). doi:10.1186/s12889-015-2029-2.
[76] "Business Case for Healthy Buildings." Global Wellness Institute.

Data & Analytics[77], 69 percent of building owners who had implemented healthy building features saw improvements in employee satisfaction and engagement, with 29 percent reporting what they termed a high level of improvement. The building owners said improving employee satisfaction was the best way to improve ROI—an even better value than reducing health care costs and increasing occupant productivity. A healthy workplace environment can have a significant impact on all three.[78]

A multifaceted approach is required that takes into account the complex factors influencing sustainability and wellbeing in real estate. For instance, “an education campaign providing information about what constitutes health and wellbeing beyond the scope of occupational health and safety paradigms along with information on the benefits of workplace health and wellbeing aligned with perceptions relating to healthy and unhealthy workers”. [79]

[77] "The Drive Toward Healthier Buildings 2016." World Green Building Council. Accessed May 18, 2021. https://worldgbc.org/news-media/drive-toward-healthier-buildings-2016.
[78] "Business Case for Healthy Buildings." Global Wellness Institute.
[79] Pescud, Teal, Shilton, Slevin, Ledger, Waterworth, and Rosenberg. "Employers’ views on the promotion of workplace health and wellbeing: a qualitative study."

Policy options and business considerations

According to the Global Wellness Institute, the global wellness real estate industry, “valued at $134 billion in 2017, has increased 6.4 percent annually since 2015, and is headed toward being a $180 billion industry by 2022”.[80] As highlighted in previous sections of this paper, there is a growing evidence base supporting sustainability and wellbeing alterations in real estate. The section below presents policy options and business considerations for stakeholders interested in advancing the healthy buildings agenda. The section responds to the main research question and two research sub-questions introduced at the beginning of this research paper.

Research Question Analysis

What are the key factors preventing occupiers of office space from occupying premises in a way that improves wellbeing, sustainability, and productivity?

[80] "Statistics & Facts." Global Wellness Institute. Last modified April 23, 2020. https://globalwellnessinstitute.org/press-room/statistics-and-facts/.

Architects and Design Consultants

Cost:

Interviewees identified cost as the most significant restrictive factor for occupiers fitting out their premises in a way that enhances sustainability and wellbeing. Below, a selection of architects and design consultants interviewed stated how they experienced cost as a restrictive factor during their interactions with clients.

i. Costs involved in renovating, fitout, redesigning, and maintenance are the biggest challenge for both landlords and commercial tenants. For instance, the standard financial models from which clients operate inhibit the kind of risk-taking involved with making significant architectural or structural changes without clear benefits to the business or bottom line.
ii. Costs are likely to change during the "fitout stage" and clients are told that there could be a 2-3% cost uplift which could dissuade clients.
iii. Management and operations costs after "fitout" to support running the building in a healthy way and maintaining what changes have been made to the building are viewed as substantial ongoing costs.
iv. For a majority of occupiers and businesses, it is about the bottom line and profit maximisation strategies.
v. Fitouts can lead to a waste of resources during fitout phase, for instance, the costs of stripping out old fittings and working within the constraints of existing spaces. Fittings may still be fit for purpose when stripped out, and there are concerns for the costs of recycling.
vi. Costs involved with installing fitouts on top of old fittings, for instance, clients deciding against removing old ventilators/heating systems yet adding new systems on top. This could be due to the significant costs associated with stripping out old ventilators/ heating systems.
vii. Costs are a significant factor when considering sustainable materials to use during fitouts. For instance, low carbon natural materials are more expensive because of the limited number of distributors that specialise in these. Similarly, traceability and realistic/comparable metrics over material lifecycles are still limited.
viii. Costs are a factor in instances where new occupiers have a set relocation budget.
ix. Costs are a significant factor when considering fitout of older buildings/ structures due to significant renovation costs involved.
x. The correlation between the rent costs and the costs of making changes to the buildings is a significant factor for occupiers.
xi. Commercial landlords will significantly consider the correlation between the capital investment and proof of Return on Investment.
xii. The pre-existing building structure has a role to play as it might present difficulties in changing the structure. Specifically, the renovation cost burden inherent to legacy of buildings.

However, there are a few instances where architects/ design consultants viewed costs not as a material factor. Specifically stating that costs in the past were a significant factor for clients, but there is now a stark realisation that ***the costs of inaction outweigh the costs of acting now*** to make the relevant renovations required to improve sustainability and wellbeing indicators within 'office spaces'. The adverse costs of inaction include negatively impacting staff wellbeing and productivity, as research shows that productivity increases in 'office spaces' that have sustainability and wellbeing indicators. Furthermore, costs are not necessarily the restrictive factor as occupiers and landlords might lack knowledge on the true costs of renovation, and sometimes overestimate costs leading to inaction.

Proposed cost mitigation Recommendation

To justify costs, architects/ fitout companies could conduct a gap analysis of what currently exists in the building and the most cost-effective way for improvements and fitouts to occur. Furthermore, costs should be considered as an investment in staff and a balance sheet cost that could yield financial returns in years to come through increased productivity, staff retention and reduced absenteeism.

- **Lack of buy-in from the top down:**

This was identified as the second significant restrictive factor for occupiers fitting out their premises in a way that enhances sustainability and wellbeing. Architects and design consultants interviewed stated how they experienced this as a restrictive factor during their interactions with clients.

i. Senior management have a significant role to play in advancing the sustainability and wellbeing in office space agenda as they are the decision makers.
ii. Investors are increasingly keen on ESG investments and this may fit in with investing in how their staff experience their offices.
iii. Senior management and investors play a significant role in evaluating proposed projects and the costs versus benefit implications for the business.
iv. Senior managers, funders or decision makers may not be aware of the benefits of sustainability and wellbeing focused fitouts. This knowledge gap is a significant inhibiting factor and "blind spot" that leads to inaction.
v. Decision makers are sometimes more concerned with sustainability and not necessarily wellbeing in office fitout projects. For instance, there is a wide use of recycling, and other sustainability focused practices within office spaces but not as much effort has been directed to wellbeing practices.

However, there are a few instances where architects/ design consultants viewed lack of buy-in from the top down as an immaterial factor, specifically stating that; funders, investors and senior managers are concerned about their corporate image and in certain instances, proactively seek out office fitouts aligned with their ESG agendas. Therefore, pressure actually comes from the top in line with consumer demand and changing trends. Furthermore, management thinking has evolved significantly, and senior management are keen to do well by their employees and recognise the added benefits to the business by investing in employee wellbeing through office fitouts.

Proposed Management Recommendation

Managers need to be flexible in their approach to staff productivity by considering new office fitout strategies that incorporate sustainability and wellbeing indicators. Leadership team have an important role to play in promoting and protecting the brand by deciding to make ESG aligned changes to office spaces.

- **Time:**

Time was identified as the least significant restrictive factor for occupiers fitting out their premises in a way that enhances sustainability and wellbeing. Architects and design consultants interviewed stated how they experienced time as a less restrictive factor during their interactions with clients.

i. Time is not a material factor if upfront research and robust project planning measures are put in place in the first instance.
ii. Time is more of a restrictive factor for the "design team" who might not want to increase workload (due to prolonged project) for little pay increase.
iii. Time constraints can be mitigated by working with a 'design and fit company' as this ensures clients get the whole design team from one firm (that is, planner, design consultant, architects etc). This also provides a smooth transition between project phases and a smoother implementation experience.
iv. Large businesses and institutions might not want to make these fitout changes because of the large-scale nature of the fitouts to match the business/ institution size.

However, there are a few instances where architects/ design consultants viewed time as a material factor. Specifically stating the need to act promptly, as employers may lose out on staff that leave the business for other employers/businesses who have promptly redesigned their office spaces. Similarly, relocation timeframes are sometimes a restrictive factor, specifically, the time involved in moving from one office space to another office space. Furthermore, clients and occupiers of 'office space' consider time a factor when considering the length of the tenancy or the term of the lease. Specifically, a tenant occupying premises for a limited time period (for instance 3-5 year leases) may not want to make significant changes to the premises as opposed to tenants with longer term leases.

Proposed Time mitigation Recommendation

'COVID-19 lockdown periods' are a good time to act to make office fitout changes because staff are not in the office. Therefore, fitout and renovations can happen in a faster and streamlined manner.

Other Important Factors

- ***Lack of understanding*** of current sustainability and wellbeing design standards. For instance:
  - In the past, architects and design consultants were not taught these principles in depth and were predominantly taught how to design and fitout spaces that were functional, practical and safe.
  - Architecture and design students have not been given adequate teaching and training on the psychological impact of buildings and 'office spaces'[81].
  - The Covid-19 pandemic has forced individuals to have a different relationship with their homes and spaces. Therefore, people are becoming more aware of the impact of buildings and spaces to their mental wellbeing.
  - Current architecture and design students now have more exposure to these principles than previous architects/ design consultants. However, current industry practitioners might not have adequate knowledge because they were not taught these during their initial university studies/training.
  - There is limited understanding within industry and by owner/occupiers on the impact of tactility of materials, acoustic, warmth etc on wellbeing within office spaces. Furthermore, certain volatile organic compounds have a significant impact on people's experience of space.
  - There are significant challenges (cost, expertise, evaluation tools etc) to evaluating which evaluation frameworks effectively showcase benefits of sustainability and wellbeing changes to a building.

- The **strong business case for sustainability and wellbeing** in real estate:
  - Commercial landlords are increasingly keen on commissioning fitouts in line with the WELL building standards.[82] They consider the value-added to their property portfolios as they are able to charge more for these office spaces upon receiving WELL certification.
  - Building certification programs like WELL or Fitwel support brand building as landlords are ethical and responsible by having properties that have sustainability and wellbeing at the core.
  - People are now more interested in the wellbeing indicators of their office space than sustainability considerations.
  - Office space should be a vehicle for connectivity, recruitment, brand building, relationship building, and increasing staff productivity and performance.

- **Aligning with ESG agenda**:
  - The trend for ESG investing and impact investing could actually advance this space further. However, **auditable** and **measurable** impact is needed for any marked charges to occur in this space. Furthermore, such data is indisputable therefore there is a need to find and disseminate data points that support sustainability and wellbeing indicators in office fitouts.

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[81] Dannenberg, Andrew L., and Heather Burpee. "Architecture for Health Is Not Just for Healthcare Architects." HERD: Health Environments Research & Design Journal 11, no. 2 (2018), 8-12. doi:10.1177/1937586718772955.
[82] "Is WELL Certification Worth It for Developers?" Wealth Management. Last modified March 11, 2021. https://www.wealthmanagement.com/office/well-certification-worth-it-developers.

  - There is a significant environmental cost associated with office fitouts. For instance, with each fitout, furniture and fittings could be removed to make space for new fitout but it is not clear whether these are recycled or disposed of in an environmentally suitable way.
  - There is growing interest in modularity by architects and designers as a strategy to create spaces that are physically more flexible, agile and could support a reduction in the need to completely refit spaces for new occupants.[83]
- **Stakeholder wellbeing versus shareholder maximisation strategies**:
  - There is a mismatch between senior managers perception of sustainability and wellbeing fitouts compared with staff members. Therefore, staff representatives should be included in consultations with designers to ensure inclusive innovation and design processes.
  - The mentality of leadership teams needs to change from the archaic views of office as a functional space. Yet staff consider office space to be an experiential and holistic space.
  - Concern that if staff can show that their work environment is causing mental and physical distress, could their employer be held liable?
- Architects and practitioners have been at the forefront of the sustainability and wellbeing in office fitout agenda and continue to **encourage occupiers and landlords to adapt**.

[83] Tavernier, Ineke, Charlotte Cambier, Waldo Galle, and Niels De Temmerman. "A Conceptual Framework for Interpretations of Modularity in Architectural Projects." Sustainability in Energy and Buildings 2020, 2021, 127-137. doi:10.1007/978-981-15-8783-2_10.

Commercial landlord

The findings below are reflections from commercial landlords committed to sustainability and wellbeing in real estate. In order to understand what factors may prevent commercial landlords FITTING OUT their premises in a way that enhances sustainability and wellbeing, participants were asked to comment on three key factors; cost, lack of buy-in from the top down and time.

Cost:

Cost was identified as the most significant restrictive factor for commercial landlords fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced costs as a restrictive factor as highlighted below:

i. Costs are the most significant factor because their property portfolios include legacy buildings/ old buildings with high structural, renovation and fitout costs.
ii. Tenants are hesitant to sign lease agreements with green clauses and sustainability clauses unless landlords commit to bearing the cost burden.

Lack of buy-in from the top down:

This was identified as the second significant restrictive factor for commercial landlords fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced this as a restrictive factor as highlighted below:

i. Senior executives and decision makers are keen to determine the value-added from making these changes to their premises. Therefore, will scrutinise the case for quantifiable benefit against cost considerations.

Time:

Time was identified as the least significant restrictive factor for commercial landlords fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced time as a less restrictive factor as highlighted below:

i. Time is not a material driver if the business is committed to the renovation changes.

Other Important Factors

- **Legislative impediments:**
  - The Landlord and Tenant Act 1954 procedure in relation to lease renewals has made landlords hesitant to adapt or update the lease significantly by, for example, including ‘green clauses’.
- **Constrained costs margins:**
  - Cost margins are under significant pressure at the moment because of Covid-19 lockdown. Retail and business clients are conflicted with cost saving measures.
  - Utilise strategies that prioritise low costs interventions that cost less than initially expected.
  - Wellbeing is considered easier to achieve than sustainable office spaces. This is because of the low costs of certain wellbeing initiatives. For instance, community initiatives, staff hubs, online staff wellbeing resources etc.
- **Outsourcing expertise:**
  - Consider recruiting consultants who can drive environmental performance of commercial landlords’ assets.

- Designers and architects need to do more to encourage and inform clients. They should provide advice on sustainability and wellbeing considerations during initial client prospecting meetings. They should also ‘call out’ landlords on why they are not doing more in this space.

Commercial tenant

The findings below are reflections from commercial tenants committed to sustainability and wellbeing in real estate. In order to understand what factors may prevent commercial tenants FITTING OUT their premises in a way that enhances sustainability and wellbeing, participants were asked to comment on three key factors namely; cost, lack of buy-in from the top down and time.

Cost:

Cost was identified as the most significant restrictive factor for commercial tenants fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced costs as a restrictive factor as highlighted below:

i. Costs are a significant factor especially for shareholder maximisation businesses/firms.
ii. Ongoing conflicting priorities when it comes to balancing employee needs with business financial growth strategies.

Lack of buy-in from the top down:

This was identified as the second significant restrictive factor for commercial tenants fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced this as a restrictive factor as highlighted below:

i. Shareholders and investors need to commit to this agenda entirely or else the necessary changes cannot be made.

Time:

Time was identified as the least significant restrictive factor for commercial tenants fitting out their premises in a way that enhances sustainability and wellbeing. They stated how they experienced time as a less restrictive factor as highlighted below:

i. Time constraints can be alleviated through the right project planning strategies. For instance, more resources can be allocated to manage time although you cannot put more resources to reduce costs.
ii. Time can be managed effectively if there is an initial commitment from parties that the renovation or fitout costs will remain unchanged.
iii. Time factor, in that policy and legal shift is happen very slowly. Government needs to swiftly enact incentives and rewards to promote sustainability and wellbeing initiatives in real estate.

Other Important Factors

- **Short-termism of shareholder strategies:**
  - Shareholder maximisation strategies are inhibiting fitouts due to the increased focus on short term performance targets to ensure profit maximisation. This short-termism conflicts with the long-term nature of sustainability and wellbeing projects in office fitouts.
- **Profit maximisation strategies:**
  - These office fitouts might not be top of the agenda for shareholders who continue to demand higher dividends and profit maximisation strategies.
- **Policy intervention:**

- Government and policy makers need to take more concerted action to advance this agenda. For instance, set out new building requirements for sustainability and wellbeing indicators within office fitouts, renovation or redesign projects.

- **Cost-mitigation strategies:**
  - It is sometimes more advantageous to knock down buildings and reconstruct than renovating old buildings. This however depends on the elements prioritised in a life cycle analysis and there are increasing studies on this[84]. This also relates to the architectural design life of buildings, which for newer buildings (especially commercial office spaces) may only be a few decades.
- **Building analytics and workspace assessments:**
  - Post occupation surveys are useful for understanding the building's impact on occupier's mental wellbeing.
  - Encourage participatory design approach where staff and occupiers are involved in the design of healthy buildings. Human nature of not being vocal enough on what they need.
- **Emerging Healthy buildings trend for commercial office spaces:**
  - Real estate and office space will become a much more hybrid environment, where offices will emerge as a place where people get both physical and wellbeing benefits from working within office spaces.
  - Mental health and wellbeing will become a prime factor for leadership and executive teams to ensure staff safety.
  - COVID-19 has been a catalytic event for the promotion of mental health and sustainability within real estate.

[84] Kale, Nilima N., Deepa Joshi, and Radhika Menon. "Life cycle cost analysis of commercial buildings with energy efficient approach." Perspectives in Science 8 (2016), 452-454. doi:10.1016/j.pisc.2016.04.102.

Sub Research Questions Analysis

Whilst considering the drivers and blockers for tenants and landlords, how can real estate lawyers shape their advice to clients to underscore the importance of sustainability and wellbeing considerations?

a) **ADVICE** on the **management** of the building moving forward and preparing precedent documents.
   I. **BESPOKE CLAUSES** or **BOLT ON CLAUSES** on how to manage a building effectively to ensure that landlords or tenants enhance the wellbeing of occupiers as well as reduce carbon emissions.
   II. **PRECEDENT CLAUSES** within lease documents. This is something tangible that property lawyers could provide to clients alongside quality legal advice for those clients interested in implementing healthy building standards.
   III. **LICENCE TO ALTER** documents with specific clauses relating to sustainability and wellbeing.

b) **BRIEFING NOTES;** Provide client briefing note that highlights how the lease could be redrafted to support sustainability and wellbeing practices within the premises. The briefing note could further clarify what is achieved by redrafting leases and specific clauses. For instance, support multiple tenants to work together to promote sustainability and wellbeing or bridge the costs of renovations and maintenance.

c) **MITIGATING DISPUTES** from the perspective of maintaining the Landlord: Tenant relationship.
   I. An important question and consideration is: *how can the Landlord/Tenant relationship be made more sustainable*? For instance, through documents like **LEASE CLAUSES/ LICENCE CLAUSES / HEADS OF TERMS**.
   II. Put objectives on either party to ensure that both the Landlord and Tenants' sustainability goals are met through the property. This requires working with both parties to build a new legal relationship and in doing so, avoid future disputes.
      - For instance, how you can enter and exit a lease in a building in the most sustainable way and what objectives can you place on the other party in doing so?

d) **FIT OUT FIRMS;** Working with office fitout companies who are renown in the sustainability sector to identify where the key concerns and crunch points between the Landlord and Tenant exist. Subsequently, drafting documents (leases/clauses etc) to pave way for a more sustainable relationship between parties. Morgan Lovells[85] is one of the key players in designing sustainable office interiors.

How can cost limitations or considerations be addressed by landlords or tenants?

e) **IMPACT FINANCE** and how this links to real estate law advice. A significant number of impact economy initiatives in real estate are underpinned by real estate finance, investment finance or development finance as certain lenders are keen to support the impact economy aspect to these transactions[86].

[85] "Designing a Sustainable Office." Morgan Lovell. Last modified May 16, 2019. https://www.morganlovell.co.uk/inspiration/checklists/how-to-get-a-sustainable-office.
[86] United Nations Environment – Finance Initiative – Partnership Between United Nations Environment and the Global Financial Sector to Promote Sustainable Finance. Accessed May 18, 2021. https://www.unepfi.org/fileadmin/documents/SustainableRealEstateInvestment.

i. **GREEN FINANCE** is where the Key Performance Indicators and financial performance of borrowers is grounded in incentives to reach more sustainable criteria.[87] Fundamentally, finance is awarded for **GREEN PROJECTS.**
ii. **LENDERS/FUNDERS** who lend to charities embarking on green projects, for instance Unity Trust Bank, Charity Bank are naturally more aligned to and interested in sustainability/ impact finance.[88]

f) **COSTS SHARING MODELS;** This could be an important consideration for commercial landlords and landlords with large property portfolios or landlords who are interested in sustainability and wellbeing. Evidently, landlords with lesser property portfolios highlight challenges with implementing cost sharing models because of additional costs involved in renovation and fitout projects. However, these must be in line with Royal Institution of Chartered Surveyors (RICS) mandatory standards which promote best practice in relation to commercial property service charges, encouraging greater fairness and transparency.[89] Furthermore;
   i. Multi-let buildings or office environments and relevant stakeholders could be incentivised to share the costs. *Promoting a tenancy community and tenants sharing the costs is a movement that is growing similar to the Green lease movement.*[90]
   ii. When a landlord changes one lease, they may need to change other leases in a multi-lease building with multiple tenants.
   iii. If costs are a limiting factor, then bolt on clauses/ model sustainable lease may be a good option. This does not require a significant initial investment and can achieve positive outcomes in increments.
   iv. Consider the low-cost options for making a building more sustainable and wellbeing oriented. For instance, biophilic design, which improves air quality (ventilation) and low-cost heating adaptions to improve heating quality. It is important to identify low cost, simple and effective measures that landlords or tenants can take to improve wellbeing for occupants.

Covid-19, UK national lockdown and large retailers declaring bankruptcy has had an immense impact on the property market. The question still remains on what the current property market means for both landlords and tenants. Even if the 'working from home' movement has soared, there is still a need for office space. However, it is not yet clear how tenants, staff or occupiers will occupy or use premises differently. An office is important in a firm's culture and wellbeing of staff, creating a nexus and hub for staff to interact will become an important point post Covid-19. People will crave social interaction and perhaps social interaction will now form part of sustainability and wellbeing criteria.

[87] "What is Green Finance and Why is It Important?" World Economic Forum. Accessed May 18, 2021. https://www.weforum.org/agenda/2020/11/what-is-green-finance/.
[88] ***Complete Reference from Bates BDM feedback***
[89] "Mandatory Standards." Royal Institution of Chartered Surveyors. Accessed May 18, 2021. https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/regulation/rules-of-conduct-for-members_2020.pdf.
[90] Levy, Deborah, and Gemma Peterson. "The effect of sustainability on commercial occupiers' building choice." Journal of Property Investment & Finance 31, no. 3 (2013), 267-284. doi:10.1108/14635781311322238.

Policy and business recommendations

1. Legal Strategies Recommendation

- Amending lease agreements to include sustainability and wellbeing considerations and implications for both landlord and tenant ensuring that risk is properly managed between parties.
- Lawyers could advocate for legal changes necessary to advance this agenda.
- Lawyers could lobby government for changes in the Landlord and Tenant Act 1954, similar to the lobbying role played by the British Property Foundation.
- Advocate for minimum legislative building standards for designing healthy buildings and designing with human health in mind for example, enhancing planning law requirements.
- There is scope for a coalition of lawyers working exclusively to advance this agenda.
- Government could advance this agenda through punitive measures for businesses failing to implement sustainability and wellbeing indicators within their offices. For instance, fines, penalties, or incentives.
- Law firms could initiate strategic collaborations with organisations like Architects Climate Action Network (ACAN) and support architects to advocate for improvements in this space. This could also involve advocating for policy change or legislative changes.
- Lawyers could support on building the evidence-base for policy makers through producing reports or thought-leadership pieces about the impact/role of sustainability and wellbeing indicators in real estate.
- A policy issue, in that the government should do more to ban the use of building materials which have a negative impact on the mental wellbeing of staff, tenants, landlords or occupiers.

2. Reassessing and Redesigning the work environment Recommendation

The following recommendations are overarching areas for consideration in designing, redesigning or assessing the work environment[91]:

- recognise the potential impact of the physical office environment beyond the legal requirements of the Health and Safety Executive (HSE)
- engage staff in workplace design and where possible allow greater flexibility
- integrate evidence into practice, drawing on best and promising practice

3. Tailored Sustainability and Wellbeing workspace Assessments Recommendation

Workspace assessments could examine the questions below[92]:

- *Has the Property or the building in which it is situated ("Building") been accredited for wellness through organisations such as the WELL Building Standard, Fitwel or BREEAM?*
- *Supply details of any of the following assessments in relation to the Property and the Building: Air quality; Water quality; Light assessment; Noise assessment*
- *Has the Landlord taken any steps to promote a clean air policy and to reduce or minimise the sources of indoor air pollution at the Property and the Building?*
- *Is the water supply to the Property and the Building filtered? Does the Landlord have a programme of regular water quality testing at the Property and the Building?*

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[91] Public Health England. *The impact of physical environments on employee wellbeing, topic overview.* London, United Kingdom: Department of Health, 2015. Accessed May 18, 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/772615/20150318_-_Physical_Environments_-_V3.0_FINAL.pdf

[92] Adapted from WELL building standards and industry building requirements. https://www.wellcertified.com

- *If there is a communal café/restaurant for the use of all the occupiers of the Building, does the Landlord operate this or is it through a third-party provider?*
- *Where the Landlord employs contractors for cleaning, repair and maintenance or operating any communal café/restaurant at the Building, does the tenant have any particular requirements in relation to the products used for example, suppliers must only use environmentally friendly products?*
- *Provide details of any wellbeing programme that supports an active lifestyle for all the occupiers in the Building which the tenant can participate in.*
- *Does the Landlord have a policy to promote wellbeing at the Building?*

Conclusion

Evidence from the research and data provided in this paper clearly points to the merits of sustainability and wellbeing in real estate. However, the aforementioned inhibitory factors must be overcome in order to see progress on this agenda. This section of the paper is therefore framed as a call to action for relevant stakeholders to move this agenda forward by actioning the recommendations above. There is a need for meaningful engagement around the policy options, business case and policy recommendations. Most importantly is the need for greater cost benefit analysis and legal intervention strategies. Evidently, the need to successfully balance business bottom line and profit maximisation strategies with occupant health and wellbeing building strategies. The landlord and tenant relationship should be reimagined in line with the sustainability and wellbeing in real estate agenda and government schemes, including tax breaks and incentives, should be prioritised on the 'build back better agenda'. Fundamentally, there is a need for a coalition of lawyers working exclusively to advance this agenda. Sustainability is often times viewed through a future focused lens, but we must act now to promote sustainable environments with embedded wellbeing considerations and this methodology should be factored into decision making by policy makers, business leaders and at scale. There is a stark realisation that the costs of inaction outweigh the costs of acting now to make the relevant renovations required to improve sustainability and wellbeing indicators within 'office spaces'. Fortunately, management thinking has evolved significantly, and senior management are keen to do well by their employees and recognise the added benefits to the business by investing in employee wellbeing through 'healthy building' office fitouts.

Academic disclaimer

This academic paper is produced as part of a PhD research secondment between University College London and the Real Estate department at Bates Wells. The research produced is part of an important dialogue to improve sustainability and wellbeing through ESG transparency and industry collaboration. This article is a contribution to this larger conversation and does not necessarily reflect Bates Wells or University College London positions.

Bibliography

1. Allen, Stephen, Ann L. Cunliffe, and Mark Easterby-Smith. "Understanding Sustainability Through the Lens of Ecocentric Radical-Reflexivity: Implications for Management Education." Journal of Business Ethics 154, no. 3 (2019), 781-795. doi:10.1007/s10551-016-3420-3.

2. Allen, J. G., A. Bernstein, X. Cao, E. Eitland, S. Flanigan, M. Gokhale, J. Goodman et al. "The 9 foundations of a healthy building." Harvard: School of Public Health (2017), Accessed May 18, 2021 https://9foundations.forhealth.org/wp-content/uploads/2020/02/9_Foundations_of_a_Healthy_Building_February_2017_R1.8.pdf

3. Allen, Joseph G., and John D. Macomber. Healthy buildings: How indoor spaces drive performance and productivity. Harvard University Press, 2020.

4. BREEAM. Last modified October 7, 2019. https://www.breeam.com

5. Brewer, John, and Albert Hunter. Foundations of Multimethod Research: Synthesizing Styles. Thousand Oaks: SAGE, 2006.

6. "Business Case for Healthy Buildings." Global Wellness Institute. Accessed May 18, 2021. https://globalwellnessinstitute.org/wp-content/uploads/2018/12/Business-Case-for-Healthy-Buildings-FINAL.pdf

7. "Business Case for Healthy Buildings." Urban Land Institute and Centre For Sustainability and Economic Performance. Accessed May 18, 2021. https://ulidigitalmarketing.blob.core.windows.net/ulidcnc/2019/02/Business-Case-for-Healthy-Buildings-copy_V1-002.pdf

8. "Constitution." Accessed May 18, 2021. https://www.who.int/about/who-we-are/constitution

9. Dannenberg, Andrew L., and Heather Burpee. "Architecture for Health Is Not Just for Healthcare Architects." HERD: Health Environments Research & Design Journal 11, no. 2 (2018), 8-12. doi:10.1177/1937586718772955.

10. "Designing a Sustainable Office." Morgan Lovell. Last modified May 16, 2019. https://www.morganlovell.co.uk/inspiration/checklists/how-to-get-a-sustainable-office

11. "The Drive Toward Healthier Buildings 2016." World Green Building Council. Accessed May 18, 2021. https://worldgbc.org/news-media/drive-toward-healthier-buildings-2016

12. "Drive Toward Healthier Buildings." World Green Building Council. Accessed May 18, 2021. https://www.worldgbc.org/sites/default/files/Drive%20Toward%20Healthier%20Buildings%202016_ffff.pdf.

13. Ereaut, Gill, and Rebecca Whiting. "What do we mean by 'wellbeing'?: and why might it matter?." (2008).

14. Fitwel Building Standards. Accessed May 18, 2021. https://www.fitwel.org.

15. Goertz, Gary. "Multimethod Research, Causal Mechanisms, and Case Studies: An integrated approach." Princeton University Press, 2017. doi:10.2307/j.ctvc77khf.

16. Goralnik, L., and M.P. Nelson. "Anthropocentrism." Encyclopedia of Applied Ethics, 2012, 145-155. doi:10.1016/b978-0-12-373932-2.00349-5.

17. Healthy Buildings. Accessed May 18, 2021. https://forhealth.org.

18. Helne, Tuula, and Tuuli Hirvilammi. "Wellbeing and Sustainability: A Relational Approach." Sustainable Development 23, no. 3 (2015), 167-175. doi:10.1002/sd.1581.

19. Houghton, Adele, and Carlos Castillo-Salgado. "Associations between Green Building Design Strategies and Community Health Resilience to Extreme Heat Events: A Systematic Review of the Evidence." International Journal of Environmental Research and Public Health 16, no. 4 (2019), 663. doi:10.3390/ijerph16040663.

20. "How to Invest in Social Capital." Harvard Business Review. Last modified June 1, 2001. https://hbr.org/2001/06/how-to-invest-in-social-capital

21. International WELL Building Institute. Accessed May 18, 2021. https://www.wellcertified.com.

22. "International WELL Building Institute." International WELL Building Institute. Accessed May 18, 2021. https://resources.wellcertified.com/articles/special-report-inside-the-well-building-standard/

23. "Is WELL Certification Worth It for Developers?" Wealth Management. Last modified March 11, 2021. https://www.wealthmanagement.com/office/well-certification-worth-it-developers

24. Kale, Nilima N., Deepa Joshi, and Radhika Menon. "Life cycle cost analysis of commercial buildings with energy efficient approach." Perspectives in Science 8 (2016), 452-454. doi:10.1016/j.pisc.2016.04.102.

25. Kopnina, Helen, Haydn Washington, Bron Taylor, and John J Piccolo. "Anthropocentrism: More than Just a Misunderstood Problem." Journal of Agricultural and Environmental Ethics 31, no. 1 (2018), 109-127. doi:10.1007/s10806-018-9711-1.

26. Lawrence, Denise L., and Setha M. Low. "The Built Environment and Spatial Form." Annual Review of Anthropology 19, no. 1 (1990), 453-505. doi:10.1146/annurev.an.19.100190.002321.

27. "LEED Rating System." USGBCU.S. Green Building Council. Accessed May 18, 2021. https://www.usgbc.org/leed

28. Levy, Deborah, and Gemma Peterson. "The effect of sustainability on commercial occupiers' building choice." Journal of Property Investment & Finance 31, no. 3 (2013), 267-284. doi:10.1108/14635781311322238.

29. "Living-Future.org." International Living Future Institute. Last modified February 20, 2020. https://living-future.org/lbc/

30. "Mandatory Standards." Royal Institution of Chartered Surveyors. Accessed May 18, 2021. https://www.rics.org/globalassets/rics-website/media/upholding-professional-standards/regulation/rules-of-conduct-for-members_2020.pdf

31. "Morgan Lovell Agree Strategic Partnership to Achieve WELL Building…." Morgan Lovell. Last modified March 31, 2017. https://www.morganlovell.co.uk/about/news/morgan-lovell-agree-strategic-partnership-to-achieve-well-building-standard

32. Pescud, Melanie, Renee Teal, Trevor Shilton, Terry Slevin, Melissa Ledger, Pippa Waterworth, and Michael Rosenberg. "Employers' views on the promotion of workplace health and wellbeing: a qualitative study." BMC Public Health 15, no. 1 (2015). doi:10.1186/s12889-015-2029-2.

33. "PHE, Community Health Resilience." U.S. Department of Health and Human Services. Accessed May 18, 2021. https://www.phe.gov/Preparedness/planning/abc/Pages/community-resilience.aspx

34. "PricewaterhouseCoopers "Emerging Trends in Real Estate®: Europe 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/asset-management/emerging-trends-real-estate/assets/emerging-trends-in-real-estate-europe-2021.pdf

35. PricewaterhouseCoopers. "Emerging Trends in Real Estate®: The Global Outlook 2021." PwC. Accessed May 18, 2021. https://www.pwc.com/gx/en/industries/financial-services/asset-management/emerging-trends-real-estate/global-outlook-2021.html.

36. Public Health England. *The impact of physical environments on employee wellbeing, topic overview.* London, United Kingdom: Department of Health, 2015. Accessed May 18, 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/772615/20150318_-_Physical_Environments_-_V3.0_FINAL.pdf

37. "A Smart Building is a Healthy Building." Metal Architecture. Last modified March 1, 2021. https://www.metalarchitecture.com/articles/a-smart-building-is-a-healthy-building

38. "Statistics & Facts." Global Wellness Institute. Last modified April 23, 2020. https://globalwellnessinstitute.org/press-room/statistics-and-facts/

39. Tavernier, Ineke, Charlotte Cambier, Waldo Galle, and Niels De Temmerman. "A Conceptual Framework for Interpretations of Modularity in Architectural Projects." Sustainability in Energy and Buildings 2020, 2021, 127-137. doi:10.1007/978-981-15-8783-2_10.

40. United Nations Environment – Finance Initiative – Partnership Between United Nations Environment and the Global Financial Sector to Promote Sustainable Finance. Accessed May 18, 2021. https://www.unepfi.org/fileadmin/documents/SustainableRealEstateInvestment.pdf

41. Washington, Haydn, Bron Taylor, Helen Kopnina, Paul Cryer, and John J. Piccolo. "Why ecocentrism is the key pathway to sustainability." The Ecological Citizen 1, no. 1 (2017): 35-41.

42. Welcome to UKGBC | UK Green Building Council. Accessed May 18, 2021. https://www.ukgbc.org/sites/default/files/How%20to%20deliver%20Healthy%20Buildings.pdf

43. "What is Green Finance and Why is It Important?" World Economic Forum. Accessed May 18, 2021. https://www.weforum.org/agenda/2020/11/what-is-green-finance/

44. "What is 'social Capital' in the Workplace?" Morgan Lovell. Last modified January 13, 2021. https://www.morganlovell.co.uk/inspiration/insights/what-is-social-capital-in-the-workplace

45. "What is Sustainable Construction and Why is It Important?" British Assessment Bureau. Last modified June 12, 2020. https://www.british-assessment.co.uk/insights/what-is-sustainable-construction-and-why-is-it-important/

46. "Why The Healthy Buildings Movement Will Explode In 2020." SageGlass. Accessed May 18, 2021. https://www.sageglass.com/eu/visionary-insights/why-healthy-buildings-movement-will-explode-2020

47. Wiig, Siri, Karina Aase, Stephen Billett, Carolyn Canfield, Olav Røise, Ove Njå, et al. "Defining the boundaries and operational concepts of resilience in the resilience in healthcare research program." BMC Health Services Research 20, no. 1 (2020). doi:10.1186/s12913-020-05224-3.

48. "Workplace Well-being." International Labour Organization. Last modified June 15, 2009. https://www.ilo.org/global/topics/safety-and-health-at-work/areasofwork/workplace-health-promotion-and-well-being/WCMS_118396/lang--en/index.htm

49. Wulff, Katharine, Darrin Donato, and Nicole Lurie. "What Is Health Resilience and How Can We Build It?" Annual Review of Public Health 36, no. 1 (2015), 361-374. doi:10.1146/annurev-publhealth-031914-122829.

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