Towards an 'Engaging' Post-Pandemic Workplace: Office, Hybrid…?

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Abstract

The recent global acceleration of hybrid work patterns among knowledge-intensive organizations due to the COVID-19 pandemic has substantially changed our understanding of the physical workplace environment. This new (hybrid) physical context of work to some extent may thus challenge the pre-pandemic research on work-related issues. The article critically examines and discusses whether, and how, the pre-pandemic research on both the physical workplace environment and employee engagement can sufficiently address the post-pandemic hybrid workplace context. The paper draws upon studies from several disciplines, such as organizational behaviour, environmental psychology, real estate, and interior architecture, to fully embrace the complexity of hybrid workplaces. This paper provides insights into how the transition to the hybrid workplace can contribute to more sustainable employee engagement in knowledge-intensive organizations.

Keywords: *physical workplace environment, employee engagement, COVID-19, hybrid workplace, knowledge-intensive organizations*

Introduction

Employee engagement is a psychological construct that has been of interest to both researchers and businesses for a few decades now. The recognition by global organizations that employee engagement is a key determinant of their success, along with reported evidence of employee engagement in raising performance and productivity across the UK economy (Rayton et al., 2012), signal the continuing relevance of employee engagement. Unfortunately, according to recent studies, only 20% of the global workforce is actively engaged (Gallup, 2022a) and low engagement had been consistently reported among European and American employees (Attridge, 2009).

Knowledge-intensive organizations (KIOs) are organizations whose main activity is based on the employment of knowledge (Alvesson, 2004), such as IT firms, finance organizations, and management consultancies. Although all types of conventional office-

based jobs entail a mix of physical, social, and mental work, it is the “perennial processing of non-routine problems that require non-linear and creative thinking that characterizes knowledge work” (Reinhardt et al., 2011, p. 150). In this light, knowledge-intensive work is essential for exploring what drives productivity and economic growth (OECD, 1996). Knowledge-intensive services already constituted 61.20% of all service exports in 2012 (European Commission, 2014). Knowledge-intensive work is therefore crucial in achieving a key aspect of the “UK Industrial Strategy”: becoming the world’s most innovative economy (HM Government, 2017).

Creating healthy workplaces with engaged and productive employees within KIOs is paramount in achieving this aim. In the last two decades, both academics and industry research have demonstrated a considerable interest in the development of the physical workplace environment aiming to contribute to organizational outcomes in, among others, productivity, performance, and employee engagement (Kegel, 2017). The specific focus was put on supporting the knowledge-intensive businesses – the main clients of the global corporate prime office real estate sector (Cooke et al., 2022). A large body of cross-disciplinary research has been developed to justify the relevance of the indoor (office) environmental quality for knowledge-intensive work and the health and well-being of office buildings’ occupants (Chadburn et al., 2017; Chan et al., 2007; Clements-Croome, 2004; Kwallek et al., 2007; Vischer, 2007; Wyon, 2004). For example, some environmental psychology studies reported the relevance of biophilic design for mental recovery, air quality for cognitive performance, and lightning for better focus on work, among others.

In the light of the accelerated shift towards hybrid work patterns due to the COVID-19 pandemic, the above considerations, underpinned by the assumption that the knowledge work’s outcomes are solely affected by the corporate office environment, have been revisited (Fiorentino et al., 2022). It is now clear that the hybrid workplace, defined as conducting work tasks in several physical locations during a working week, has been successfully adopted as a “default workplace” for the majority of global knowledge-intensive organizations (Future Forum Pulse, 2022). In the hybrid workplace, employees share their working time between a variety of physical locations such as their homes, the office, and other locations (Deloitte, 2021; Gillen et al., 2021; Teevan et al., 2021). The hybridization of the workplaces, physical and virtual, is now expanding to the wider urban realm environment (Surma et al., 2021, p.4). These dynamics signal the need to revisit the traditional conceptualizations of both the physical workplace environment and employee engagement.

Therefore, this article seeks to uncover a new, additional viewpoint that could aid other researchers in understanding the relevance of the physical workplace environment for employee engagement, defined as “a positive, fulfilling, work-related state of mind that is

characterised by vigour, dedication and absorption" (Schaufeli et al., 2002, p. 74). It discusses the link between the physical workplace environment and employee engagement and how it has evolved in the relevant studies in the field. Firstly, it summarizes the pre-pandemic studies that have focused on full-time corporate office work. Secondly, it explores new insights that emerged whilst approaching hybrid work scenarios as a result of the COVID-19 pandemic. Thirdly, it highlights possible future research directions. This study suggests that greater collaboration between academics working across different fields, such as real estate, organizational behaviour, environmental psychology, and city planning, and knowledge-intensive organizations can shed new light on what constitutes an engaging workplace for knowledge workers.

Employee Engagement in Full-Time Office Work

There are two main conceptualizations of employee engagement in organizational behaviour research: "employee engagement" (Kahn, 1990) and "work engagement" (Schaufeli et al., 2002). While much research does not adequately differentiate the two concepts, some academics suggest that they should be treated as distinct concepts due to their distinct origins and the contents they measure (Kosaka & Sato, 2020). For example, "work engagement" is generally understood as the relationship between an employee and work, while "employee engagement" is perceived in the wider context of the relationship between an employee and work and the workplace. The preference for using the term (and understanding) of "employee engagement" is more visible in industry research (see for example Gallup, 2022b).

The research on the relationship between employee engagement and the physical workplace environment is largely focused on the office workplace environment, which is perceived as the dominant place where knowledge work occurs (Appel-Meulenbroek et al., 2020; Carter et al., 2020; Feige et al., 2013; McCunn & Gifford, 2012; Roskams & Haynes, 2021). Studies in environmental psychology suggest that the office indoor environmental quality, such as air ventilation, biophilic design, temperature, and views, is largely responsible for health and well-being of buildings' occupants (Chadburn et al., 2017; Chan et al., 2007; Clements-Croome, 2004; Kwallek et al., 2007; Vischer, 2007; Wyon, 2004). This, in turn, results in better financial outcomes for organizations via more productive and better-performing employees (World Green Building Council, 2014). This hypothesis was explored by both academic and industry studies in several disciplines and has had important practical implications on the contemporary design of global cities, such as London and New York, informing the way we live and work. For example, the prime quality office real estate is predominantly offered in core business hubs (i.e., central business district–CBD) located in central parts of large urban agglomerations such as Manhattan, Canary Wharf, and the City

of London. However, the full-time office work in such workplaces is often related to the long daily commutes of those living in suburban locations and may lead to disengagement.

The strong focus on the office workplace is also visible in organizational behaviour research. For example, organizational constructs are largely defined by the quality of the social relationships at work, such as with supervisors, colleagues, and co-workers, which usually happen in face-to-face office environments (Bakker et al., 2014; Kumar & Sia, 2012; Osborne & Hammoud, 2017; Rana et al., 2014).

Employee Engagement in a Hybrid Workplace

The COVID-19 pandemic has accelerated new work trends among global knowledge-intensive organizations, most notably in terms of performing work tasks in several physical locations within a working week. This shift has contributed to new insights into the challenges related to remote work (Al-Habaibeh et al., 2021), its effectiveness (Hickman & Robison, 2020), comfort (Carmona et al., 2020), satisfaction (Yang et al., 2021), productivity and well-being (Russo et al., 2021), and a general effect on employee engagement (Appel-Meulenbroek et al., 2020). A hybrid workplace has become associated with increased flexibility, reduced carbon footprint, labour-cost optimization, and increased employee satisfaction. Alongside the benefits of working from home, traditional co-located work assures smoother coordination, informal networking, stronger cultural socialisation, greater creativity, and face-to-face collaboration (Mortensen & Haas, 2021). Workplace flexibility and environmental conditions of home offices were found to be positively associated with productivity, satisfaction with working from home, and work-life balance (Yang et al., 2021). Following latest recent findings that flexible work positively affects work engagement in the hybrid workplace (Naqshbandi et al., 2023), hybrid work modes may also provide other benefits. For example, home workplace may be more suited to conduct focused work while office workplace may be more conducive to collaboration.

The above new trends were quickly and widely adopted by global businesses worldwide (Gillen et al., 2021, Deloitte, 2021, Teevan et al., 2021), impacting office markets and corporate real estate (Cooke et al., 2022). A global shift from “5-day in the office” to fully remote work from home has unexpectedly encouraged many organizations and the real estate sector to think differently about what constitutes a workplace environment and how this workplace ecosystem impacts organizational outcomes (Boland et al., 2020). The generally positive working-from-home employee experience (Barrero et al., 2021) has been accompanied by positive statements made by the most prominent global agencies, projecting a permanent transition to a “total workplace ecosystem” (Cushman & Wakefield, 2020b) with “adaptive workplaces” (Deloitte, 2021) underpinned by a high-quality urban realm to fully embrace “workplacemaking” as a whole (IPUT & ARUP, 2020).

Many employees nowadays who work in the knowledge economy sectors split their working environments between different physical locations. How are the parameters of employee engagement, defined as “a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication and absorption” (Schaufeli et al., 2002, p.74), impacted by workplace hybridization since the pandemic? And how can we reconcile physical properties of real estate across the workplace ecosystem with an effort to address well-being in the workplace (Surma et al., 2021)?

The new industry-projected workplace ecosystem scenarios, which have been developed by leading global providers of consulting (e.g., Deloitte), commercial real estate (e.g., Cushman & Wakefield; CBRE; and IPUT), and design, planning and engineering (e.g., ARUP), involve both physical and virtual workplaces (Gillen et al., 2021). The increased popularity of hybrid workplaces, whereby an employee may work across a network of different work locations (Cambon, 2021), encourages a rethink of the current arrangements for employee engagement and its unpreceded impact on organizations and their employees (Future Forum Pulse, 2022). Considerations of different employee engagement metrics and industry approaches to monitoring workplace design and management may help businesses and their employees adapt to the emergence of this “New Normal” i.e., blended virtual and physical work environments underpinned by digital technology across the office, home, and/or “third place” work environments (Deloitte, 2021). There is also a growing need to facilitate this apparent shift towards hybrid work as well as of the formulation of innovative digital solutions that can support collaboration in an ever more diverse and volatile labour market (International Labour Organisation, 2023).

After the initial “home versus office” debate, there has been growing evidence of “hybrid” as the best option for all (Naor et al., 2021; Teevan et al., 2021; Williamson & Colley, 2022), including the youngest workforce (Pataki-Bittó, 2021). The flexibility of hybrid working was also identified as a game-changer for those with caring responsibilities (Wyatt et al., 2022). Therefore, we should re-examine the role of the office post-pandemic to better accommodate a hybrid workforce (Gillen et al., 2021; Orel, 2022; Vinopal, 2022). Considering the key role that the real estate industry sector plays in providing global standards on how to create and evaluate the office workplace environment, we can argue that a new set of guidelines is needed for knowledge organizations to operate successfully in an engaging hybrid workplace ecosystem.

Employee Engagement in Future Workplace: Physical versus Virtual?

We need to frame our discussion on creating engaging workplaces within the wider impact of the built and natural environment on human health and well-being (Altomonte et al., 2020;

Hartig et al., 2014; IWBI, 2021; Loder, 2020; Ostner, 2021). Given that the assumption that the centrally located office is the predominant place where knowledge work occurs has been challenged in the post-pandemic reality, we can expect future cities and workplaces to be planned around the concepts of stronger compactness, decentralization and greater availability (e.g., a “15-min city”). This will ensure greater connectivity within a network of workplaces, underpinned by equal access to the city’s infrastructure and amenities (e.g., shops, parks, and entertainment). This suggests that employee vigour, dedication, and absorption will greatly rely on both the human and cities’ conditions, and that the relationship between them will inform sustainable employee engagement.

Although the connectivity between employee engagement, health, and well-being in the physical workplace environment has already been explored on the office scale (Appel-Meulenbroek et al., 2020; Carter et al., 2020; Feige et al., 2013; McCunn & Gifford, 2012; Roskams & Haynes, 2021), it remains a question how the development of the virtual reality and digital technologies will impact on employee engagement. For example, some studies show that using electronic devices in green spaces substantially counteracts the attention enhancement benefits of green spaces (Jiang et al., 2019). On the one hand, knowledge-intensive work requires employees to use technological advances to perform complex cognitive tasks. Another view suggests that greater availability and access to new technologies may have both positive and negative impacts on employee vigour, dedication, and absorption (Jha et al., 2019). Therefore, more transdisciplinary research is needed to explore the phenomenon of employee engagement in the future workplace.

This article highlights that wider adoption of hybrid workplace scenarios in the future can significantly contribute to better employee engagement in knowledge-intensive organizations. However, this is not a straightforward task, considering the complexity of the transition, the number of actors involved, and still limited research on hybrid workplaces. Despite some significant shortcomings, some workplaces in the fields of academic and industry have been transitioning toward modes of work that are more flexible, digital and physically distributed across a workplace ecosystem. These developments are likely to inform employee engagement levels across the whole ecosystem. Additionally, the growing importance of the home workplace should encourage the global workplace industry to re-evaluate current workplace standards or metrics more broadly. For example, the available on-the-market certification schemes ensuring office workplace quality needs to be framed more widely to include residential, district, and city-scale developments. This joint approach will holistically contribute to more sustainable employee engagement–with a greater awareness of employees’ subjective well-being leading to “full engagement”–a broader

conception of engagement beyond “a commitment-based view” to a more “human-oriented” holistic sense of thriving and well-being (Robertson & Cooper, 2010).

Discussion and Conclusion

This article has elucidated how the COVID-19 pandemic has changed the trajectory of academic and industrial thinking of an “engaging” workplace environment, pushing boundaries for more transdisciplinary research in the future. This research should touch on, among others, organizational behaviour, urban planning, real estate, management, environmental psychology and sustainability transition studies.

Firstly, the pre-pandemic research which focuses on the office workplace needs to be re-examined in the context of a more distributed workplace ecosystem. Most workplace-related studies separately investigated either full-time office work or remote work, but the hybrid workplace has remained under-researched. Therefore, we should pay greater attention to the hybrid workplace to better understand the impact of workplace flexibility on employee engagement. Subsequently, further research is needed to comprehensively analyse vigour, dedication, and absorption in different physical locations on the city scale. Secondly, we need to further examine how specific management styles can enhance working practices within such a network of workplaces and contribute to better employee engagement. We would likely benefit from more mixed-methods approaches. Further research could investigate different strategic interactions such as how different city planning scenarios are better suited to greater employee engagement and the role of co-working spaces in cities and towns as a potential for social connection among remote workers. Overall, more transdisciplinary research with various actors, such as city planners, knowledge-intensive organizations, and the real estate industry, could better explain the post-pandemic workplace and its implications on different levels, such as policy, planning, and management.

Although there is a growing, common acceptance of a hybrid workplace, still little is known about the specific assessment criteria of the home workplace and the wider urban ecosystem. Considering the relevance of both environmental and human factors for employee engagement in a hybrid workplace, we need to fully embrace this complexity through an accurate evaluation methodology that addresses the whole workplace ecosystem. This will benefit the formulation of future workplace strategies.

This article suggests that flexible workplace arrangements allow more options for supporting individual needs via “environmental crafting” and contributing to employee engagement (Roskams et al., 2021). This finding is important and may track a higher level of organizational and governmental policy support for a hybrid workplace. The analysis emerging from this study largely follows expectations: that a hybrid workplace is associated

with greater employee flexibility (e.g., improved work-life balance), economic values for employees and organizations (e.g., greater productivity and less commute), and improved employee well-being (e.g., more time for wellness activities). Therefore, the hybrid workplace may substantially contribute to employee engagement by strengthening vigour, dedication, and absorption with work. However, we still require further research to examine whether a hybrid model of work relies on the wider urban quality for its benefits on employee engagement. Future research should focus on reconciling the efforts toward better employee engagement and sustainable real estate, considering the challenges associated with delivering on these two fronts (Surma et al., 2021).

References

Al-Habaibeh, A., Watkins, M., Waried, K., & Javareshk, M. B. (2021). Challenges and opportunities of remotely working from home during Covid-19 pandemic. *Global Transitions*, *3*, 99-108. https://doi.org/10.1016/j.glt.2021.11.001

Altomonte, S., Allen, J., Bluyssen, P. M., Brager, G., Heschong, L., Loder, A., Schiavon, S., Veitch, J. A., Wang, L., & Wargocki, P. (2020). Ten questions concerning well-being in the built environment. *Building and Environment, 180*, 106949. https://doi.org/10.1016/j.buildenv.2020.106949

Alvesson, M. (2004). *Knowledge work and knowledge-intensive firms*. Oxford University.

Appel-Meulenbroek, H., Aussems, R., Le Blanc, P. M., & Arentze, T. A. (2020, September 16-19). *The association between office use and the burnout-engagement continuum in activity-based offices* [Chapter]. In Proceedings of the Transdisciplinary Workplace Research (TWR) conference 2020, Frankfurt am Main, Germany.

Attridge, M. (2009). Measuring and managing employee work engagement: A review of the research and business literature. *Journal of Workplace Behavioral Health, 24*(4), 383-398. https://doi.org/10.1080/15555240903188398

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior, 1,* 389-411. https://doi.org/10.1146/annurev-orgpsych-031413-091235

Cambon, A. (2021). *3 ways to redesign knowledge work for a hybrid world*. Human Resource Executive. https://hrexecutive.com/3-ways-to-redesign-knowledge-work-for-a-hybrid-world/

Carmona, M., Giordano, V., Nayyar, G., Kurland, J., & Buddle, C. (2020). *Home comforts: How the design of our homes and neighbourhoods affected our experience of the Covid-19 lockdown and what we can learn for the future.*

https://www.housinglin.org.uk/_assets/Resources/Housing/OtherOrganisation/Report_Home-Comforts-Report.pdf

Carter, K. M., Harman, D. M., Walter, S. L., & Gruca, T. S. (2020). Relationship of immediate workspace and environmental workplace with organizational citizenship behaviors. *Journal of managerial psychology, 36*(4), 310-326. https://doi.org/10.1108/jmp-09-2019-0539

Chadburn, A., Smith, J., & Milan, J. (2017). Productivity drivers of knowledge workers in the central London office environment. *Journal of Corporate Real Estate, 19*, 66-79. https://doi.org/10.1108/jcre-12-2015-0047

Chan, J. K., Beckman, S. L., & Lawrence, P. G. (2007). Workplace design: A new managerial imperative. *California Management Review, 49*(2), 6-22. https://doi.org/10.2307/41166380

Clements-Croome, D. (2004). *Intelligent buildings: Design, management and operation* (1st ed.). Thomas Telford.

Cooke, H., Fiorentino, S., Harris, R., Livingstone, N., & McAllister, P. (2022). Corporate occupiers' attitude to flex space in the post-Covid environment. *Journal of Property Investment & Finance*, 40(5), 493-507. https://doi.org/10.1108/jpif-02-2022-0011

Deloitte. (2021). *Designing adaptive workplaces: How the public sector can capitalize on lessons learned from COVID-19*. Deloitte. https://www2.deloitte.com/xe/en/insights/industry/public-sector/designing-for-adaptive-work-in-the-public-sector.html

European Commission. (2014). *Research and Innovation Observatory, United Kingdom. Delivering an effective innovation system*. https://rio.jrc.ec.europa.eu/en/file/8445/download?token=cQ2HCOec

Feige, A., Wallbaum, H., Janser, M., & Windlinger, L. (2013). Impact of sustainable office buildings on occupant's comfort and productivity. *Journal of Corporate Real Estate, 15*, 7-34. https://doi.org/10.1108/jcre-01-2013-0004

Fiorentino, S., Livingstone, N., McAllister, P., & Cooke, H. (2022). The future of the corporate office? Emerging trends in the post-Covid city. *Cambridge Journal of Regions, Economy and Society, 15*(3), 1-13. https://doi.org/10.1093/cjres/rsac027

Future Forum Pulse. (2022). *Leveling the playing field in the hybrid workplace.* Future Forum by Slack. https://futureforum.com/pulse-survey/

Gallup. (2022a). *State of the Global Workplace: 2022 Report*. Gallup. https://www.gallup.com/workplace/349484/state-of-the-global-workplace-2022-report.aspx#ite-393245

Gallup. (2022b). *What Is Employee Engagement and How Do You Improve It?* Gallup. https://www.gallup.com/workplace/285674/improve-employee-engagement-workplace.aspx#ite-357458

Gillen, N., Nissen, P., Park, J., Scott, A., Singha, S., Taylor, H., Taylor, I., & Featherstone, S. (2021). *RETHINK Design Guide: Architecture for a post-pandemic world* (1st Ed.). RIBA Publishing.

Hartig, T., Mitchell, R., De Vries, S., & Frumkin, H. (2014). Nature and health. *Annual Review of Public Health, 35*, 207-228. https://doi.org/10.1146/annurev-publhealth-032013-182443

Hickman, A., & Robison, J. (2020). *Is working remotely effective? Gallup research says yes*. http://metadataetc.org/gigontology/pdf/Is%20Working%20Remotely%20Effective%20Gallup%20Research%20Says%20Yes.pdf

HM Government. (2017). *Industrial Strategy: Building a Britain fit for the future* [White Paper]. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf

International Labour Organisation. (2023). *World Employment and Social Outlook. Trends 2023*. International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_865332.pdf

IWBI. (2021). *Global research agenda: Health, well-being and the built environment*. International WELL Building Institute. https://marketing.wellcertified.com/global-research-agenda

Jha, N., Sareen, P., & Potnuru, R. K. G. (2019). Employee engagement for millennials: considering technology as an enabler. *Development and Learning in Organizations: An International Journal, 33*(1), 9-11. https://doi.org/10.1108/DLO-05-2018-0057

Jiang, B., Schmillen, R., & Sullivan, W. C. (2019). How to Waste a Break: Using Portable Electronic Devices Substantially Counteracts Attention Enhancement Effects of Green Spaces. *Environment and Behavior, 51*(9-10), 1133-1160. https://doi.org/10.1177/0013916518788603

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692-724. https://doi.org/10.2307/256287

Kegel, P. (2017). The impact of the physical work environment on organizational outcomes: A structured review of the literature. *Journal of Facility Management Education and Research, 1(*1), 19-29. https://doi.org/10.22361/jfmer/76637

Kosaka, D., & Sato, H. (2020). Employee engagement and work engagement: Same wine, different bottles? *Annals of Business Administrative Science, 19*(6), 227-239. https://doi.org/10.7880/abas.0200911a

Kumar, R., & Sia, S. K. (2012). Employee engagement: Explicating the contribution of work environment. *Management and Labour Studies, 37*(1), 31-43. https://doi.org/10.1177/0258042X1103700104

Kwallek, N., Soon, K., & Lewis, C. M. (2007). Work week productivity, visual complexity, and individual environmental sensitivity in three offices of different color interiors. *Color Research & Application, 32(*2), 130-143. https://doi.org/10.1002/col.20298

Loder, A. (2020). *Small-scale Urban Greening: Creating Places of Health, Creativity, and Ecological Sustainability* (1st Ed.). Routledge/Taylor & Francis. https://doi.org/10.4324/9781315642857

McCunn, L. J., & Gifford, R. (2012). Do *green offices affect employee engagement and environmental attitudes? Architectural Science Review, 55*(2), 128-134. https://doi.org/10.1080/00038628.2012.667939

Mortensen, M., & Haas, M. (2021, February 24). *Making the hybrid workplace fair*. Harvard Business Review. https://hbr.org/2021/02/making-the-hybrid-workplace-fair

Naor, M., Pinto, G. D., Hakakian, A. I., & Jacobs, A. (2021). The impact of COVID-19 on office space utilization and real-estate: a case study about teleworking in Israel as new normal. *Journal of Facilities Management.* Advance online publication. https://doi.org/10.1108/jfm-12-2020-0096

Naqshbandi, M. M., Kabir, I., Ishak, N. A., & Islam, M. Z. (2023). The future of work: work engagement and job performance in the hybrid workplace. *The Learning Organization*. Advance online publication. https://doi.org/10.1108/tlo-08-2022-0097

OECD. (1996). *The knowledge-based economy*. OECD. https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=OCDE/GD%2896%29102&docLanguage=En

Orel, M. (2022). Guest editorial: The pandemic-driven metamorphosis of a modern workplace. *Journal of Corporate Real Estate, 24*(2), 73-75. https://doi.org/10.1108/JCRE-03-2022-074

Osborne, S., & Hammoud, M. S. (2017). Effective employee engagement in the workplace. *International Journal of Applied Management and Technology, 16*(1), 50-57. https://doi.org/10.5590/IJAMT.2017.16.1.04

Ostner, S. W. (2021). Biophilia Hypothesis: The benefits of nature in the workplace. In R. Appel-Meulenbroek & V. Danivska (Eds.), *A Handbook of Theories on Designing*

Alignment between People and the Office Environment (pp. 169-180). Routledge. https://doi.org/10.1201/9781003128830

Pataki-Bittó, F. (2021). Work environment transformation in the post COVID-19 based on work values of the future workforce. *Journal of Corporate Real Estate, 23*(3), 151-169. https://doi.org/10.1108/jcre-08-2020-0031

Rana, S., Ardichvili, A., & Tkachenko, O. (2014). A theoretical model of the antecedents and outcomes of employee engagement. *Journal of Workplace Learning, 26*, 249-266. https://doi.org/10.1108/jwl-09-2013-0063

Reinhardt, W., Schmidt, B., Sloep, P., & Drachsler, H. (2011). Knowledge worker roles and actions—Results of two empirical studies. *Knowledge and Process Management, 18*(3), 150-174. https://doi.org/https://doi.org/10.1002/kpm.378

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: the integration of employee engagement and psychological well-being. *Leadership & Organization Development Journal, 31*, 324-336. https://doi.org/ 10.1108/01437731011043348

Roskams, M., & Haynes, B. (2021). Environmental demands and resources: a framework for understanding the physical environment for work. *Facilities, 39*, 652-666. https://doi.org/10.1108/F-07-2020-0090

Roskams, M., McNeely, E., Weziak-Bialowolska, D., & Bialowolski, P. (2021). Job Demands-Resources Model: Its applicability to the workplace environment and human flourishing. In *A Handbook of Theories on Designing Alignment between People and the Office Environment* (pp. 27-38). Routledge. https://doi.org/10.1201/9781003128830-3

Russo, D., Hanel, P. H. P., Altnickel, S., & van Berkel, N. (2021). Predictors of well-being and productivity among software professionals during the COVID-19 pandemic – a longitudinal study. *Empirical Software Engineering, 26*(4), 62. https://doi.org/10.1007/s10664-021-09945-9

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies, 3*(1), 71-92. https://doi.org/10.1023/A:1015630930326

Surma, M. J., Nunes, R. J., Rook, C., & Loder, A. (2021). Assessing Employee Engagement in a Post-COVID-19 Workplace Ecosystem. *Sustainability, 13*(20), 11443. https://doi.org/10.3390/su132011443

Teevan, J., Hecht, B., & Jaffe, S. (2021). *The New Future of Work: Research from Microsoft on the Impact of the Pandemic on Work Practices*. Microsoft.

https://www.microsoft.com/en-us/research/uploads/prod/2021/01/NewFutureOfWorkReport.pdf

Vinopal, C. (2022). *Workers Are Returning to the Office, But It Won't Look Quite the Same*. Observer Media. https://observer.com/2022/09/workers-are-returning-to-the-office-but-it-doesnt-look-quite-the-same/

Vischer, J. C. (2007). The effects of the physical environment on job performance: towards a theoretical model of workspace stress. *Stress and health: Journal of the International Society for the Investigation of Stress, 23*(3), 175-184. https://doi.org/10.1002/smi.1134

Williamson, S., & Colley, L. (2022). *Working During the Pandemic: The Future of Work is Hybrid*. UNSW Canberra.

World Green Building Council. (2014). *Report on Health, Wellbeing & Productivity in Offices*. https://www.worldgbc.org/sites/default/files/compressed_WorldGBC_Health_Wellbeing__Productivity_Full_Report_Dbl_Med_Res_Feb_2015.pdf

Wyatt, M., Dexter, V., Dunn, E., Ashley, R., & Esse, J. (2022). *What's Hiding in Hybrid Work? The Rewards and Risks for Women in Hybrid Work*. https://www.thefemalelead.com/_files/ugd/05606b_0f09515731e6405b8db1b8741c3eb027.pdf

Wyon, D. P. (2004). The effects of indoor air quality on performance and productivity. *Indoor Air, 14*, 92-101. https://doi.org/10.1111/j.1600-0668.2004.00278.x

Yang, E., Kim, Y., & Hong, S. (2021). Does working from home work? Experience of working from home and the value of hybrid workplace post-COVID-19. *Journal of Corporate Real Estate.* Advance online publication. https://doi.org/10.1108/jcre-04-2021-0015