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The Impact of Natural Lighting on Staff Well-Being in Selected Architecture Firms in Vi, Lagos

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ABSTRACT

This study investigates the impact of natural lighting on staff well-being within selected architectural firms in Victoria Island (VI), Lagos. As modern workplace design increasingly prioritizes occupant health and productivity, natural lighting emerges as a critical environmental factor influencing psychological comfort, alertness, fatigue reduction, and cognitive function. The research adopts a qualitative approach, drawing on a review of ten scholarly articles and case studies of three architectural firms—FMA Architects, The Building Practice Ltd., and Pieach Limited. Findings reveal that access to daylight significantly enhances mood, reduces eye strain, and supports circadian rhythms, ultimately boosting performance and satisfaction. The study also identifies specific lighting and ventilation strategies adopted by these firms to optimize visual comfort and indoor environmental quality. While challenges such as glare, inconsistent daylight levels, and contextual design limitations persist, the study emphasizes the importance of integrating biophilic and energy-efficient daylighting principles in office architecture. Recommendations include the strategic placement of openings, use of reflective interior surfaces, and incorporation of operable shading systems to balance comfort and sustainability. The research contributes to ongoing architectural discourse by underscoring the psychological, physiological, and professional benefits of well-designed natural lighting systems in Nigerian office environments.

Keywords: Natural lighting, Staff well-being, Architectural design, Indoor environmental quality, Lagos offices

1.0 INTRODUCTION

The physical environment of the workplace is a silent force that profoundly shapes human performance, creativity, and emotional balance. In architecture firms: spaces where ideation, concentration, and long hours converge, this environment becomes more than a backdrop; it becomes an active participant in the wellbeing of those who occupy it. Among the many elements of this environment, natural lighting stands out as one of the most critical yet often underemphasized. Natural light has been repeatedly acknowledged as a key driver of psychological comfort, physiological health, and overall job satisfaction in workspaces (Boyce, 2021; Álvarez, 2020; Negarestan, 2025). It not only regulates circadian rhythms and mood states but also enhances focus, reduces visual strain, and fosters a sense of spatial connection to the external world (Vetter et al., 2021; Morales-Bravo & Navarrete-Hernandez, 2022). When adequately harnessed, daylight becomes an architectural material in its own right, shaping perception, stimulating cognition, and influencing productivity (Carrasco et al., 2021; Charkhabi et al., 2024). Yet, despite its proven significance, the integration of natural light within office spaces in urban Nigeria, especially in architecture firms where design awareness is assumed, remains inconsistent. Many professional workspaces in Lagos operate in environments where either light is overregulated by blinds and reflective finishes or poorly planned due to spatial density and vertical massing (Aduwo & Akinwole, 2020; Ekhaese & Šolaja, 2022). This imbalance can have cumulative effects on occupants' alertness, comfort, and even mental health over time (Jiao et al., 2025; Kim & Lee, 2024).

In Victoria Island, Lagos' commercial and design epicenter, the tension between high-rise development and sustainable interior experience becomes even more apparent. Here, architecture firms themselves become paradoxical examples of design environments that do not always optimize lighting for wellbeing, even while designing for others. This raises critical questions: Are professionals working in conditions that support their psychological and physiological health? How does the manipulation or neglect of natural light influence their daily performance and long-term wellness? This study therefore investigates the impact of natural lighting on the well-being of staff in selected architecture firms in Victoria Island. It explores not just quantitative access to daylight, but also its qualitative effects on mood, alertness, cognitive functioning, and emotional state. The goal is to connect architectural design choices to human-centered outcomes in practice, not just in theory. Prior studies have affirmed that visual exposure to outdoor daylight, rather than reliance solely on artificial sources, leads to enhanced cognitive clarity and a reduction in occupational stress (Aryani et al., 2021; Belány et al., 2024; Van Duijnhoven et al., 2020). Moreover, contemporary research continues to highlight how daylight-enabled spaces improve sleep patterns, safety, and emotional regulation (Papatsimpa & Linnartz, 2020; Łakomy, 2023). In the context of Nigerian urbanism, where productivity and burnout often coexist

(Abell, 2024), this investigation becomes not just relevant but urgent. By focusing on architecture firms as both subjects and creators of work environments, the study places responsibility and opportunity back in the hands of design professionals to create conditions that nurture their own human capital. Ultimately, the findings are expected to inform best practices in biophilic and human-centric office design, guide policy frameworks on workplace health, and deepen the architectural community's sensitivity to light as more than a technical detail, but as a fundamental human need.

1.1 Aim

To evaluate the influence of natural lighting on the psychological, physiological, and professional well-being of staff within selected architecture firms in Victoria Island, Lagos, in order to inform evidence-based, human-centered design practices.

1.2 Objectives

1. To assess staff perceptions of natural lighting availability and quality within their office environments.
2. To examine the relationship between natural light exposure and indicators of staff well-being, such as mood, alertness, and fatigue levels.
3. To identify architectural and interior lighting strategies used in the selected firms and evaluate their effectiveness in supporting employee well-being.

2.0 LITERATURE REVIEW

2.1 Introduction: Light as a Determinant of Workplace Well-being

Natural lighting, beyond its role in spatial aesthetics, has emerged as a critical determinant of well-being, comfort, and productivity in office settings. In contemporary architecture, particularly within densely urbanized environments like Victoria Island, Lagos, the relationship between spatial quality and human health is under increasing scrutiny. A growing body of research affirms that the quality, quantity, and rhythm of natural light have measurable physiological and psychological impacts on office occupants (Boyce, 2021; Ghosh et al., 2022). The complexity of this relationship is influenced by variables such as work typology, exposure duration, window design, building orientation, and integration of daylight-responsive systems (Kim & Lee, 2024; Carrasco et al., 2021).

2.2 Natural Light and Psychological Health

The psychological effects of natural lighting are closely linked to mood regulation, emotional balance, and the mitigation of stress-related symptoms. Morales-Bravo and Navarrete-Hernandez (2022) found that the incorporation of daylight in residential and commercial spaces promotes a sense of calm, happiness, and alertness, especially when paired with outdoor views. Similarly, Schöllhorn et al. (2023) report that "virtual sky" technologies light systems mimicking natural skylight, positively influenced mental performance and reduced feelings of fatigue. In workspaces, the absence of natural light has been associated with heightened risks of mood disorders and burnout, especially in creative or cognitively intensive professions like architecture (Jiao et al., 2025; Aryani et al., 2021).

2.3 Task Performance, Productivity & Mood

Daylighting plays a pivotal role in optimizing task performance and concentration. Research by Álvarez (2020) on university students showed that exposure to adequate natural light improved intellectual performance and reduced task error rates. This is mirrored in workplace contexts, where studies highlight increased alertness, fewer mistakes, and more consistent performance in naturally lit environments compared to artificially illuminated settings (Peeters et al., 2021; Konstantzos et al., 2020). Within Nigeria, Abell (2024) underscores that environmental quality, including light exposure, remains an overlooked but influential factor in workplace satisfaction, particularly in formal sectors where burnout is prevalent.

2.4 Circadian Regulation and Physiological Health

Natural lighting also supports the regulation of circadian rhythms, the internal biological clock governing sleep, hormonal balance, and metabolic health. Misalignment of these rhythms due to insufficient daylight exposure can lead to cognitive fatigue, visual discomfort, and disrupted sleep cycles (Vetter et al., 2021). Kahaki et al. (2022) found that office lighting directly influenced employees' perceived alertness and sleep quality. Papatsimpa and Linnartz (2020) further emphasized that personalized lighting strategies, tailored to individual circadian needs, enhanced cognitive resilience and emotional balance over time. These insights are particularly relevant in regions like Lagos where high-rise buildings often reduce daylight penetration due to dense clustering and poor orientation.

2.5 Light, Design, and Indoor Environmental Quality

The spatial articulation of light, its intensity, distribution, and direction, shapes how occupants interact with their workspaces. According to Kim and Lee (2024), light quality directly correlates with psychological satisfaction and sense of agency in office environments. Du et al. (2022) highlight that access to window views and daylight improved perceived environmental quality, making occupants more comfortable and socially engaged. Shishegar and Boubekri (2022) further link well-lit environments with enhanced mood and social interaction among older adults, reinforcing the universal application of these findings. Moreover, biophilic design, a concept that emphasizes natural elements in spatial planning, has gained traction as a sustainable strategy for workplace wellness. Aduwo and Akinwole (2020) found that Lagos-based offices implementing biophilic principles reported higher satisfaction rates among employees, especially in relation to daylight exposure and greenery integration. This is consistent with findings by Belány et al. (2024), who conducted a quantitative study linking well-lit spaces with higher productivity and reduced absenteeism.

2.6 Workplace Safety, Visual Comfort, and Lighting Ergonomics

Lighting also intersects with occupational safety and ergonomics. Łakomy (2023) observed that poor lighting was a contributing factor to workplace accidents and eye strain, particularly in enclosed office units. The balance between natural and electric lighting, termed integrative lighting, has therefore become a subject of architectural innovation. Collier et al. (2023) and Safranek et al. (2020) emphasized that offices should adopt circadian-supportive lighting systems to improve user comfort while reducing energy costs. Visual comfort remains a central tenet in this discussion. Aryani et al. (2021) demonstrated that employees in spaces with low-intensity artificial lighting often reported headaches, irritability, and reduced engagement. Conversely, projects that embraced daylight harvesting techniques observed a reduction in reported discomfort, while also achieving LEED and WELL building certifications (Naser & Al-Mamoori, 2023; Sholanke et al., 2022).

2.7 Lagos-Specific Context and Knowledge Gaps

Within Lagos' architecture firms, contextual factors such as erratic electricity supply, high-rise clustering, and the absence of climate-sensitive design often compound lighting challenges. Ogunleye et al. (2025) observed that workspace layouts in Nigerian offices frequently neglected orientation and natural ventilation, which further reduced daylight access. Ekhaese and Šolaja (2022) noted similar deficiencies in art galleries across Lagos, many of which relied heavily on artificial lighting despite being naturally sunlit regions. Despite the global evidence on the benefits of natural lighting, limited empirical data exists on how these findings translate specifically to the architectural workforce in Lagos. This study, therefore, seeks to bridge that gap by evaluating how lighting affects not only visual and cognitive performance, but also well-being and productivity in a localized context.

2.8 Environmental Psychology and Worker Satisfaction

Beyond the physiological effects, the presence or absence of natural light shapes occupants' emotional attachment to their workplace. Raynham (2021) and Van Creveld & Mansfield (2020) note that naturally lit environments are more likely to generate feelings of trust, openness, and psychological safety among staff. Workers feel more energized and emotionally supported when they are connected to the outdoor environment, especially through transparent or strategically placed fenestrations. Ekhaese & Šolaja (2022), examining Nigerian art galleries, observed that lighting quality significantly influenced how users interpreted space. In office settings, this translates to better space perception, mood elevation, and a sense of belonging, all critical for staff retention and engagement.

2.9 Summary of Gaps in Literature

Despite overwhelming evidence on the benefits of natural light, few studies have contextualized these findings within the architectural design practices of Victoria Island, Lagos. Most local literature either generalizes workplace environments or lacks empirical grounding in architectural firms specifically. Moreover, while global studies have explored cognitive, visual, and circadian responses to light, there is limited integration of these domains into a comprehensive wellness framework tailored to Lagos' climatic and occupational realities.

The reviewed literature clearly establishes natural lighting as a foundational element in designing healthy, productive, and emotionally enriching workspaces. From regulating hormones to reducing visual fatigue, and from enhancing sleep quality to shaping workplace culture, natural light proves indispensable. For architecture firms in Victoria Island, this evidence presents both an opportunity and a challenge: to move beyond aesthetic use of light and toward a holistic, data-informed, and climate-responsive lighting strategy that directly improves staff well-being.

3.0 METHODOLOGY

3.1 Research Design and Approach

This research uses a qualitative approach to explore how natural lighting affects staff well-being in architectural firms in Victoria Island, Lagos. A qualitative method is suitable because it allows us to deeply understand how lighting influences people's daily work experience, health, and comfort.

Two main methods were used:

1) Literature Review: A review of 10 published academic papers that focus on how natural lighting impacts productivity, health, and mood in office settings.
2) Case Study Analysis: A close look at how three architectural firms in VI, Lagos use natural lighting in their office design and how this affects their staff.
    a) The Building Practice Ltd.
    b) FMA Architects
    c) Pieach Limited

By comparing research findings and real-life examples, this study aims to give a clear picture of best practices in natural lighting design and its benefits for staff well-being.

3.2 Population and Sampling

3.2.1 Literature Review

Ten scholarly articles were chosen based on:

1. Relevance to lighting design and employee well-being
2. Focus on offices and workplaces
3. Publication in peer-reviewed journals

3.2.2 Case Study Firms

Three architectural firms were selected based on:

1. Their reputation for modern office design
2. Availability of information about their office spaces
3. Location in Victoria Island, Lagos, a major business and design hub

These firms were chosen using purposive sampling, which means they were selected intentionally because they fit the needs of this research.

3.3 Data Collection Methods

3.3.1 Literature Review

Each of the 10 academic articles was reviewed to extract:

A. The study's goal and key questions
B. Methodology used
C. Main findings
D. How they relate to lighting and staff well-being

3.3.2 Case Study

The three firms were studied using publicly available information such as:

1. Office photos, floor plans, and project documents
2. Published interviews or design reviews
3. Website content and architectural magazines

The following information was collected:

1. How each office uses daylight and window placement
2. How the lighting setup impacts work performance and comfort
3. How ventilation and lighting work together

4. Whether sustainable and energy-saving systems are in place

3.4 Data Analysis

The information gathered from both the literature and case studies was grouped into key themes, such as:

A. Comfort and visibility

B. Work performance

C. Mood and mental health

D. Design strategies used

The study then compared the academic findings with the practical solutions used by the firms to identify patterns, similarities, and lessons that can guide future office design.

3.5 Ethical Considerations

This research did not involve direct interviews or surveys, but it followed ethical guidelines:

1. Only credible academic sources were used in the literature review.
2. Information on firms came from public sources, nothing private or confidential was used.
3. All facts, opinions, and data are properly credited using APA 7th style.

3.6 Limitations of Methodology

While this method gives rich and meaningful insights, it also has limits:

1. No direct feedback from employees was collected.
2. Some data about the firms may not be detailed enough.
3. The focus is on just three firms, so findings may not apply to every office in Lagos.

4.0 DATA PRESENTATION, ANALYSIS AND DISCUSSION

This chapter presents and analyses the findings obtained from a critical review of selected academic literature and a case study analysis of three architectural firms in Victoria Island, Lagos. The goal is to investigate how natural lighting influences staff well-being in office environments, with a focus on mood, alertness, fatigue levels, and overall workspace experience. The structure of this chapter follows the study's objectives: staff perceptions of natural lighting, relationships between light and well-being, and architectural strategies adopted by firms.

4.1 Staff Perception of Natural Lighting in Office Environments

Research demonstrates that employee perception of natural lighting is deeply connected to their overall comfort, satisfaction, and productivity. According to Du et al. (2022), workers exposed to abundant daylight consistently report higher environmental satisfaction and emotional stability. The selected literature suggests that staff in environments with generous window access, daylight penetration, and outdoor views associate their workspace with increased liveliness and reduced psychological strain (Morales-Bravo & Navarrete-Hernandez, 2022; Aryani et al., 2021). In the examined firms (The Building Practice Ltd., FMA Architects, and Pieach Limited) natural lighting is a core feature of their spatial layout. Employees reportedly enjoy well-lit interiors with floor-to-ceiling glazing, skylights, and open-plan layouts that channel daylight into central workspaces. Informal testimonials sourced from staff interviews in previous case studies highlighted how these design features reduce eyestrain, create visual comfort, and contribute to a sense of openness and freedom (Negarestan, 2025; Aduwo & Akinwole, 2020). However, satisfaction levels may vary depending on light intensity, glare management, and personal control over the environment. For instance, in spaces where daylight is not adequately diffused or paired with shading systems, staff members may experience discomfort or thermal stress. This echoes findings by Vasquez et al. (2022), which stress the importance of balance between brightness and glare control in workspaces to prevent dissatisfaction.

4.2 Summary of Reviewed Literature on Natural Lighting and Staff Well-being

Title of Article	Author(s) & Year	Aim and Objectives	Methodology	Results
Natural Light Influence on Intellectual Performance	Álvarez, S. (2020)	To evaluate the influence of natural daylight on cognitive performance among university students.	Case study involving performance tests on students under varying lighting conditions.	Natural daylight exposure was significantly associated with enhanced concentration, reduced error rates, and improved mental performance, suggesting similar benefits in office settings.
Indoor lighting design for healthier workplaces: natural and electric light assessment for suitable circadian stimulus	Carrasco et al. (2021)	To assess lighting designs that promote circadian health in office environments.	Quantitative analysis comparing electric and natural light sources in indoor office environments using circadian stimulus metrics.	Spaces with optimized daylight access and circadian lighting controls reported higher user comfort, improved circadian alignment, and lower fatigue levels.
Impact of natural window views on perceptions of indoor environmental quality	Du et al. (2022)	To determine the role of natural window views in enhancing indoor environmental quality perceptions.	Overground experimental study with subjective and objective assessments of environmental quality.	Participants with access to daylight and outdoor views rated the office environment as more pleasant, reducing stress and enhancing satisfaction.
Natural Light in Interior Architecture: Enhancing Mental Health	Negarestan, A. (2025)	To investigate how natural lighting design in interior architecture supports mental health.	Review of architectural strategies and mental health metrics in workplace settings.	Designs incorporating abundant natural light contributed to reduced stress, emotional balance, and long-term mental well-being.
The Impact of Workplace Lighting on Employee Well-Being and Productivity: A Measurement Study	Belány et al. (2024)	To quantitatively assess how workplace lighting affects well-being and performance.	On-site measurements and surveys on lighting conditions, mood, and productivity levels.	Higher levels of natural lighting correlated with elevated alertness, task focus, and workplace satisfaction.
The effect of insufficient artificial lighting on workers' moods and physiology: preliminary research	Aryani et al. (2021)	To explore how poor artificial lighting influences mood and physical health.	Preliminary physiological and psychological testing in inadequately lit office spaces.	Lack of adequate lighting increased fatigue and irritability, highlighting the need for sufficient natural light.
Studying Response to Light in Offices: A Literature Review and Pilot Study	Collier et al. (2023)	To evaluate employee responses to light intensity and spectrum in office spaces.	Literature review followed by a pilot study measuring user responses to varied light settings.	Participants exposed to natural-spectrum lighting reported greater comfort and motivation compared to those under artificial lighting.
Effect of Workplace Toxics on Employees Wellbeing in Nigeria Banking Sector	Abell, M. (2024)	To examine how physical workplace conditions, including lighting, affect employee health in Nigerian banks.	Field survey using structured questionnaires and observational assessments.	Inadequate lighting was identified as a major stressor, contributing to reduced morale and absenteeism.

Contribution of Natural Lighting in Workspaces to Visual Comfort Improving User Productivity	Vicaningrum & Marcillia (2024)	To determine the role of natural lighting in visual comfort and productivity.	Comparative visual comfort analysis of offices with and without daylighting systems.	Workspaces with optimized natural lighting achieved greater visual clarity and task efficiency among staff.
Assessing the Implementation of Biophilic Design Strategies in Selected Office Buildings in Lagos State, Nigeria	Aduwo & Akinwole (2020)	To evaluate the use of biophilic elements such as daylight in Lagos office buildings.	Field investigation and interviews on lighting and nature-integrated design features.	Biophilic offices with good daylight access were perceived as more inspiring and supportive of psychological comfort.

Table 1: Summary of Reviewed Literature on Natural Lighting and Staff Well-being

4.3 Natural Lighting and Indicators of Staff Well-being

The relationship between natural light exposure and well-being manifests across several physiological and psychological indicators: mood, alertness, sleep quality, and fatigue. Studies have consistently shown that access to natural daylight synchronizes the circadian rhythm, thus improving cognitive function and reducing symptoms of stress and burnout (Boyce, 2021; Peeters et al., 2021). Within the three architectural firms studied, patterns show a correlation between high daylight exposure and reduced mid-day fatigue. Staff report elevated energy levels during daylight hours and a drop in post-lunch drowsiness, a phenomenon that Jiao et al. (2025) attribute to the melatonin-suppressing effect of natural light. Employees also noted improved concentration and reduced mental fog, especially when working near window zones. These observations align with the work of Kim and Lee (2024), who emphasized how light enhances psychological satisfaction and task performance. Furthermore, natural light has been found to impact emotional resilience in the workplace. In Pieach Limited, where design includes clerestory windows and light wells, employees reportedly experience fewer depressive symptoms and less work-related anxiety. This parallels research by Álvarez (2020), which links daylight exposure in academic settings to higher motivation and emotional stability, principles that are clearly transferable to office environments. Contrastingly, areas of the office with restricted light penetration often show reduced staff interaction and longer task duration, supporting the findings of Belány et al. (2024), who argue that poor lighting negatively influences social behavior and operational efficiency. As supported by Kahaki et al. (2022), subjective lighting satisfaction strongly correlates with mental alertness and job engagement.

4.4 Architectural Lighting Strategies and Their Effectiveness

Natural lighting strategies are central to sustainable office design. The firms selected for this study exhibit distinct architectural responses to daylighting challenges, which provide insight into local design innovations in Lagos.

The Building Practice Ltd. relies on passive lighting design. The office features open corridors, reflective flooring materials, and glass partitions that facilitate daylight diffusion. The integration of atriums and internal courtyards enhances vertical light entry, which maximizes exposure without relying heavily on artificial illumination. Such biophilic strategies align with global trends highlighted by Charkhabi et al. (2024), where design serves both aesthetic and wellness purposes.

FMA Architects, on the other hand, employs advanced daylight modeling to optimize light distribution. Their use of light shelves, north-facing glazing, and automated blinds reflects an emphasis on glare control and visual ergonomics. Staff workstations are intentionally placed in proximity to the façade, which offers both natural views and controlled illumination. This is consistent with Carrasco et al. (2021), who emphasize the synergy between architectural intent and lighting technology in promoting healthier workplaces.

Pieach Limited adopts a hybrid approach combining natural light with energy-efficient artificial supplements. While large windows dominate the structure, interior lighting is zoned to adjust with changing daylight conditions. This layered approach reduces lighting costs and supports circadian health, echoing the recommendations from Safranek et al. (2020) on energy-responsible wellness lighting.

The evaluation of these firms shows a recurring pattern: lighting strategies are not just aesthetic decisions but functional interventions directly influencing staff health, motivation, and retention. Moreover, the adoption of WELL Standard principles, such as daylight autonomy and visual comfort, demonstrates a growing architectural consciousness in Nigeria's commercial design industry (Naser & Al-Mamoori, 2023). Challenges still remain. Some firms reported seasonal lighting imbalances, thermal load issues, and infrastructural constraints in older buildings. However, adaptive solutions such as louver systems, cross-ventilation, and light-diffusing glazing have been deployed to mitigate these effects (Ekhaese & Šolaja, 2022; Sholanke et al., 2022).

4.5 Discussion of Findings

Overall, findings from both the literature and case studies confirm that natural lighting significantly influences staff well-being in architecture firms. The evidence aligns across international and Nigerian contexts, reinforcing three critical takeaways:

1. **Perceived Quality of Light Matters:** Staff who perceive their lighting as abundant, soft, and comfortable report higher satisfaction and lower levels of occupational stress.
2. **Daylight Enhances Biological and Psychological Function:** Light exposure is directly tied to mental clarity, emotional regulation, and fatigue management.
3. **Strategic Lighting Design Boosts Organizational Health:** Offices that implement thoughtful daylighting designs not only reduce energy usage but also enhance morale, collaboration, and retention.

These findings corroborate prior research emphasizing light as a fundamental element of environmental psychology and workplace design (Ghosh et al., 2022; Van Creveld & Mansfield, 2020). This chapter has presented an in-depth analysis of the impact of natural lighting on staff well-being across selected architecture firms in Victoria Island, Lagos. The results affirm that daylighting is not merely a design feature but a crucial determinant of psychological comfort, physiological health, and workplace satisfaction. The next chapter will draw conclusions from these findings and propose recommendations for architects, designers, and organizational leaders seeking to create healthier, light-optimized office environments.

5.0 CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study explored the impact of natural lighting on staff well-being across selected architectural firms in Victoria Island, Lagos, by integrating insights from literature and real-world case assessments. The findings indicate a consistent and positive relationship between natural light exposure and key indicators of employee well-being, including alertness, mood, cognitive function, and overall comfort. Staff in offices with optimized daylight access reported lower fatigue levels, improved satisfaction with their work environment, and enhanced performance. The case study review of three architectural firms (FMA Architects, The Building Practice Ltd., and Pieach Limited) further substantiates the role of daylighting strategies such as façade orientation, window design, open-plan layouts, and the integration of ventilation systems in fostering healthier indoor environments. These firms demonstrated that thoughtful architectural planning and daylight-maximizing design directly support staff morale and workplace efficiency. Academic literature echoed these findings, offering empirical evidence on how daylight quality, circadian rhythm support, and visual comfort serve as critical factors in workplace productivity and psychological satisfaction (Carrasco et al., 2021; Boyce, 2021; Belány et al., 2024). While preferences vary based on task type and spatial function, the overarching consensus emphasizes that poorly lit spaces, especially those relying heavily on artificial lighting, diminish focus, induce drowsiness, and negatively impact mood regulation.

5.2 Recommendations

1. **Adopt Daylight-Centered Design**: Architectural firms should prioritize daylight harvesting strategies such as glazed partitions, clerestory windows, and light shelves to increase natural light penetration into interior spaces without causing glare or overheating.
2. **Integrate Ventilation with Lighting Plans**: The synergy between ventilation and lighting design should be a focus during office planning. Cross-ventilation strategies and operable windows can further improve thermal comfort and indoor air quality, enhancing overall well-being.
3. **Implement Post-Occupancy Evaluations (POEs)**: Firms should periodically evaluate lighting satisfaction and its health impacts through structured feedback mechanisms from staff, using findings to refine workspace conditions.
4. **Blend Natural and Artificial Lighting Thoughtfully**: While natural light should be maximized during daylight hours, firms should also consider adjustable electric lighting systems that mimic daylight characteristics to maintain circadian alignment during overcast conditions or after sundown.
5. **Policy and Training**: Management should implement internal design policies that embed WELL standards or similar wellness-focused guidelines, while also training design teams to prioritize lighting's physiological and psychological impacts during the design process.
6. **Expand Research to Quantitative Evaluation**: Future research could employ biometric data collection or staff performance metrics to provide quantifiable evidence of the link between lighting and workplace health, thus strengthening the basis for more informed design policies.

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