

# UCL – IWI Workplace Health & Wellbeing Research @ LandSec

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Young Lee, PhD, LEED, WELL, FITWEL



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## Executive Summary

The UCL-IWI Workplace Health and Wellbeing Research Initiative was launched in May 2019. Its main purpose was, first, to understand the current state of the health and wellbeing performance of major contemporary workplaces and, second, to promote workplace health and wellbeing for enhanced employee health and wellbeing as well as improved organisational outcomes. It carried out a case study with Land Securities Group (LandSec), the largest commercial property development and investment company in the UK, at their London Head office in July.

LandSec's London Head office is the first workplace in the world to achieve both WELL Certified Silver and BREEAM Outstanding, showing their strong pursuits in both sustainability and workplace health and wellbeing. The floor plate, designed to promote activity-based working, of the London Head office accommodates their entire workforce of 470 on one floor (41,000 sqft). The environmental features highlight ample daylight, airy floor-to-ceiling heights, bespoke lighting and colour-coded neighbourhoods.

The case study comprised four main sections:

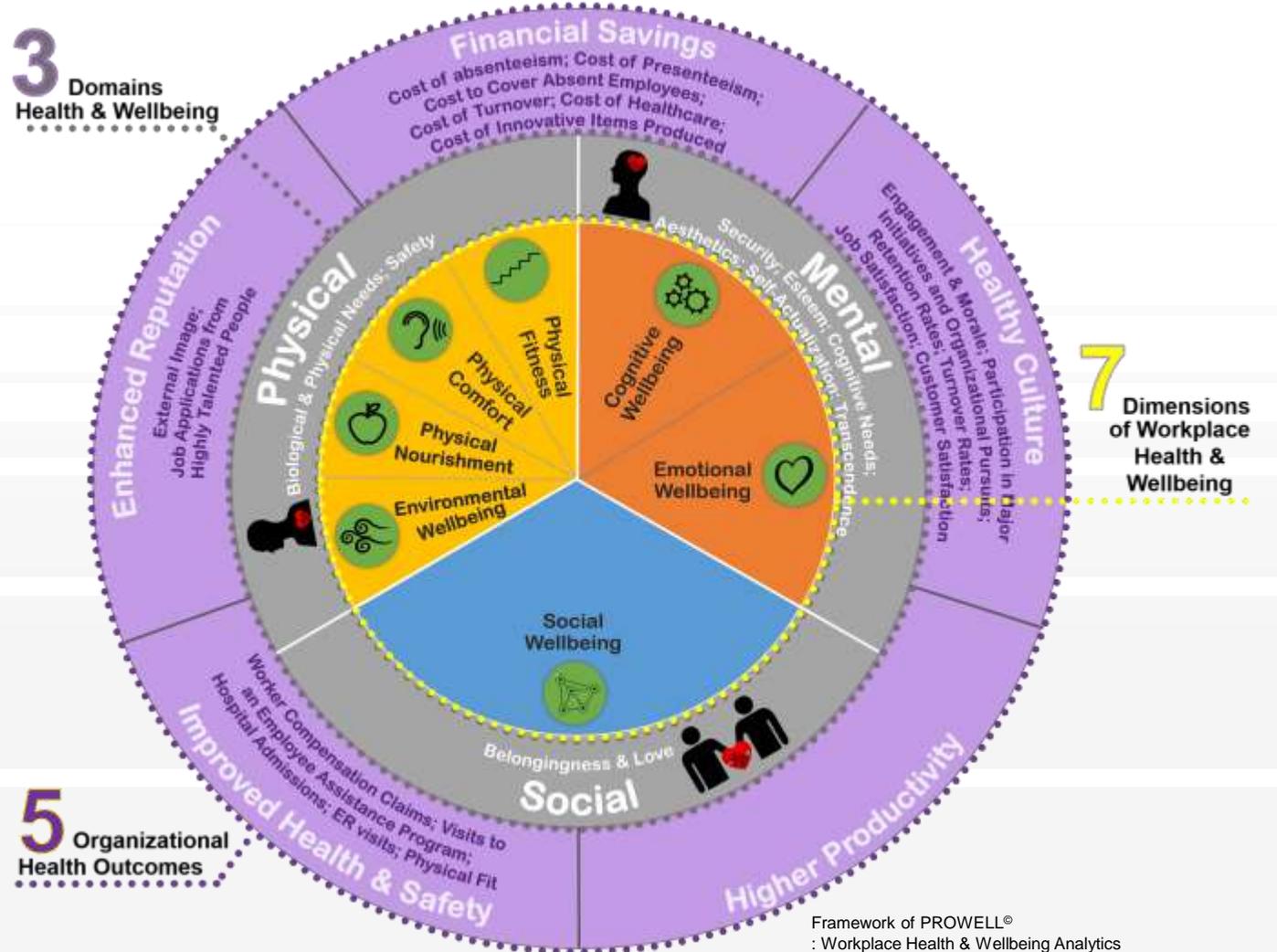
- Comprehensive performance assessment of workplace health and wellbeing
- Organisational health outcomes assessment
- Indoor environmental quality monitoring in indoor air, temperature & humidity, lighting, and acoustics
- Employee health monitoring via wearable technology

The assessment for the workplace health and wellbeing performance was conducted using PROWELL<sup>®</sup>: Workplace Health and Wellbeing Analytics, developed by Innovative Workplace Institute (IWI). PROWELL<sup>®</sup> was developed by a collective effort between IWI and industry leaders in workplace design, management, strategy, and research to provide a tool for practitioners to analyse the health and wellbeing performance of their workplace projects [1,2].

PROWELL® analyses the workplace health and wellbeing performance by seven dimensions covering all three health and wellbeing domains defined by the World Health Organization (WHO) – physical, mental, and social [3]. These seven dimensions comprise Physical Fitness (PF), Physical Comfort (PC), Physical Nourishment (PN), Cognitive Wellbeing (CW), Emotional Wellbeing (EW), Social Wellbeing (SW), and Environmental Wellbeing (EnW).

Organisational health outcomes were assessed by an employee survey consisting of topics in employee health and wellbeing state, performance, presenteeism, absenteeism, job satisfaction, engagement, and loyalty. Various existing questionnaires with proven validity and reliability have been utilised to create a set of evaluative tools for this purpose [4,5,6,7]. Indoor environmental quality (IEQ) monitoring employed environmental sensors to monitor those aforementioned indoor environmental factors. Indoor air quality, thermal comfort, and lighting comfort were monitored by a total of 11 sensors installed in the office. The survey and these three IEQ criteria ran for three weeks from 8 July to 26 July. The survey return rate was 14% (total 65 participants).

Additional spot measurements were conducted for ambient noise, background noise, reverberation time, daylight amount, and circadian



Framework of PROWELL®  
: Workplace Health & Wellbeing Analytics

stimulus for 3-4 times throughout the day on various days to create averages. Lastly, employee health and wellbeing was monitored via wearable technology, using Fitbit and Empatica E4. Fitbit is an end-user oriented fitness tracker, while Empatica E4 is a medical grade device with an electrodermal activity sensor for research. Volunteers wore either device from Monday through Friday during the regular work hours.

Additionally, Fitbit volunteers also wore a Fitbit overnight to observe their sleep patterns. The following highlights major findings in this study.

- Employee health and wellbeing at LandSec was positively related to their job performance, job satisfaction, engagement, and loyalty all together (statistical significance at 95% confidence). Employee health and wellbeing in the study combined three categories of health and wellbeing: physical chronic health, mental health, and sick building syndrome symptoms. A positive relation means when employee health and wellbeing is enhanced, the other factors are also enhanced.

According to the WHO, good health and wellbeing generates a positive state of mind and studies suggests a strong relationship between positive affect and attitudes towards the workplace and enhanced motivation and desired behaviors such as lower absenteeism and turnover rates [8,9,10]. In addition, their positive affect has shown a strong association with better performance in creative tasks [11] and productivity [12,13] as well as interpersonal and decision-making performance [14,15].





Employee engagement is a significant predictor of profitability of the organisation while turnover rate and customer loyalty need to be well maintained to keep this relationship prosperous [16].

Job satisfaction is known to be a major contributor to organisational performance including financial outcomes and product/service quality [17]. It also has a positive relationship with stock returns as the companies with higher employee satisfaction exhibited 2.11% higher stock returns than the industry average [18].

As seen above, employee health and wellbeing is a foundation of high job satisfaction, positive attitudes and morale towards the organisation, heightened motivation, and better performance at both the individual level and the organisational level. Furthermore, it can be a predictor for stock market performance of the company as shown in exponential growth of stock values among the companies that were recognized as leaders in cost-effective health and wellbeing programmes for their employees [19].

- Employee's exercise level was positively related to their presenteeism. (statistical significance at 95% confidence level). The benefits of physical exercises on reducing

sickness absenteeism are often highlighted in literature. However, the advantages of healthy body and mind due to physical exercise on presenteeism are even more substantial. Physical exercises are linked to heightened mood, tolerance, and resilience of employees, and the mood, especially, is a major contributor to better performance outcomes [20].

Positive affective states due to physical exercises tend to enhance performance outcomes by improved cognitive functions such as working memories [21]. Physical exercises can also be used as a social cohesion strategy in the workplace as doing physical exercises with colleagues has shown more effectiveness [22].

- The total score of workplace health and wellbeing performance assessed by PROWELL in seven dimensions at LandSec was 79, which was 22.17% higher than the benchmark. The score falls into the top tier group.
- The highest performing key dimension of workplace health and wellbeing, compared to the benchmark, was SW: Social Wellbeing 100 (+45.45%), and the lowest performing key dimension of workplace health and wellbeing was EnW: Environmental Wellbeing 60 (-4.92%)

followed by EW: Emotional Wellbeing 66 (+3.88%).

- The area with the lowest score in the Environmental Wellbeing dimension came from “Indoor Air Quality (IAQ),” especially in the topics of “Indoor Air Filtration” and “Enhanced IAQ Features” such as real time IAQ monitoring and outdoor air monitoring.

Research suggests a significant impact of IAQ on occupant health and cognitive performance. There is scientific evidence that increased ventilation and decreased CO<sup>2</sup> and volatile organic compounds (VOCs) contribute to better cognitive performance.

It should be noted that CO<sup>2</sup> limit recommendations in many conventional ventilation standards are derived from a purpose of removing human body odor, not for health or productivity [23]. It is necessary to examine newer scientific studies and recommendations for CO<sup>2</sup> limit in the workplace for enhanced health and cognitive performance.

Increased ventilation has tradeoffs. It tends to increase the level of PM<sub>2.5</sub>. PM<sub>2.5</sub> is atmospheric particulate matter with a diameter of less than 2.5 micrometers, which causes penetration into the lung and corrode the alveolar wall in human body. An appropriate air filtration system will be the key to reducing PM<sub>2.5</sub>.

In addition, increased ventilation also increases energy cost. However, in general literature suggests that the health and performance benefits outweigh the increased energy cost [24].

- The areas with the lowest scores in the Emotional Wellbeing dimension came from “Art & Design Element,” and “Personalization & Control of Spaces.” Art significantly increases cognitive and psychological stimulation [25]. The use of arts for health and wellbeing and patient healing speed expedition is a widening practice in healthcare settings. Art has shown reduction in anxiety, depression





and restlessness, increase in calming effect and social interaction, and decrease in noise level [26]. Using a variety of art pieces and other visual media in the workplace can also reflect a sense of creativity, which often leads to the use of imagination and innovation [27].

Literature suggests a positive association between personal control of the workplace environment and employee satisfaction and productivity. It is evident that various environmental factors such as temperature, noise, indoor air, and vibration affect employee performance, and being able to control the environment becomes a key to not only comfort but also productivity [28].

Also, recent workplace design & management strategies suggest that choice and autonomy that allow employee to control their spaces increase motivation, satisfaction, as well as performance [29].

- Employee Engagement level was 74, higher than the score 71 from a validation study [30]. Especially, the Dedication (77) and Absorption (76) levels were fairly high.
- Employee Job Satisfaction level was 69, higher than the score 65 from a validation study; comparable to scores in highly wellbeing oriented countries such as Denmark [30].
- Presenteeism level was 79, significantly higher than the threshold 40 for the optimal cutoff value to prevent mental sickness absence in the workplace [31].
- Absenteeism level was significantly lower with -3.4 sickness absence days, compared to 4.1 sickness absence days in the UK [32].

In the additional statistical analysis looking into between employee health monitoring data and organisational health outcomes, some interesting findings were exhibited. However,

the participants in the health monitoring were quite low, 11 in Fitbit and 9 in Empatica E4, one needs to be mindful of low statistical power even if statistical significance was found. Following are the findings with statistical significance.

- Employee Performance was positively related to the amount of sedentary time and negatively affected by the amount of fairly active time.
- Both Employee Job Satisfaction and Engagement were positively related to the total amount of sleep time and the amount of light sleep time.
- Employee Loyalty was positively related to the amount of activity calories consumed.

Lastly, top three most favourable and least favourable features in the LandSec Head office were identified from open-ended questions from the survey. While an equal number of features were identified between two, the overall amount of comments on favourable features was substantially higher than the one on disfavourable features, which indicates that more people found more positive, desirable items than undesirable items in the LandSec Head office.

- The top three most favourable features were office ambience and the layout; knowledgeable and friendly colleagues; and free and healthy breakfast and treats. Many people liked the friendly and modern office environment, good layout, and efficient breakout spaces. They also liked breakfast, refreshments, and healthy snacks provided in the office.
- Free treats have shown a positive impact on productivity up to 12% on their tasks [5]. In addition, diet (nutrition) is known to be the second most significant lifestyle factor contributing to health in the EU [33] and, in the field of nutritional psychiatry, it has shown a keen relationship between proper nutrition and mental health and wellbeing [34].
- The top three least favourable features included no daylight into the core area due to the deep floorplate; cold or inconsistent temperature; and no plants in the office. Such biophilic elements of nature as daylight and plants are known to contribute to decreasing stress and anxiety, encouraging desirable behaviors, and enhancing cognitive restoration and function [35,36].





The daylight issue was double confirmed by the PROWELL assessment as only a point was achieved out of four points available. Daylight has been consistently the most desired biophilic element in various studies. In the additional analysis examining the proximity between individual desks and windows at the LandSec Head office, it was found that their desk distance from windows was related to their job satisfaction level (statistical significance at 99% confidence level) as well as loyalty level (statistical significance at 95% confidence level). This indicates that the closer the distance between their desks and windows is, the higher their job satisfaction and loyalty are.

However, it is also important to understand the complex impact of biophilic elements on human psychology and cognitive performance in both short and long terms. In recent studies using cognitive performance or creativity tests as well as physiological measures, biophilic elements such as plants and natural views outside windows were found to contribute to decreasing stress and increasing creative thinking but distracting from attention [38,39]. Thus, a careful planning is necessary to determine the purpose of biophilic elements and where to use them.

The study at the LandSec Head office highlights the critical impact of employee health and wellbeing on organisational outcomes, and the importance of supporting a workplace environment by balancing three domains and seven dimensions of workplace health and wellbeing.

The LandSec Head office's leadership in and commitment to workplace health and wellbeing is evidently shown in the study outcomes. The LandSec Head office has exhibited superb workplace health and wellbeing performance by meeting the performance level of the highest tier group in PROWELL®: Workplace Health and Wellbeing Analytics. It has also demonstrated an outstanding level of organisational outcomes related to workplace health and wellbeing.

When utilising this report to further enhance workplace health and wellbeing at the LandSec Head Office, it would be best to concurrently identify organisational goals and objectives and which health and wellbeing areas will support these organisational pursuits to develop a strategic plan for more meaningful organisational outcomes.

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