

# Arup

## Leading the way with WELL in Australia

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The most comprehensive WELL case study in Australia to date—showcasing a leading global workplace that advances health through human-centered design and operational practices.

### BACKGROUND

In September 2018, Arup moved into their new workplace at One Melbourne Quarter in the Docklands neighborhood. Prior to the move, Arup's team occupied three levels of office space at 1 Nicholson Street. Due to a steady increase in employee numbers, and a growing desire to occupy a self-designed space that would adequately showcase the firm's best work, the firm began searching for a new property in June 2013. After finding a suitable site, the company initiated the design process for the new facility in April 2016.

The new Arup Workplace is approximately 5,100 sqm (~55,000 square feet), occupying the first three tenant levels (L1 to L3) in the building, including the Sky Park, an integrated public greenspace on the doorstep of the office's primary entrance. The total office floor space roughly doubled from the previous tenancy. This has enabled Arup's continued growth and provided space for creating a health-promoting workplace, which, consequently, has improved the workplace experience for employees.



## WHY WELL?

Arup's desire to create a human-centric, health-enabled space made pursuing WELL Certification a clear decision. The WELL Building Standard's (WELL) research-backed features and its focus on adopting holistic health and well-being interventions resonated with the project team. Arup submitted an initial WELL v1 submission before ultimately completing the certification process under the WELL v2 pilot.

Moreover, the project team had numerous sustainability aspirations for the new office, many of which are aligned with WELL. For example, currently each WELL feature is mapped against the [UN Sustainable Development Goals \(UN SDGs\)](#), and so achievement of WELL Certification can now help Arup disclose its progress toward its UN SDG goals, in addition to meeting desired organizational health and well-being objectives. Furthermore, going through the WELL Certification process challenged the project team's conceptualization of the built environment, elevated their understanding of how buildings can affect people, and improved Arup's capacity to deliver on health, well-being, and sustainability goals for their clients moving forward.

## RESEARCH

Arup has demonstrated a commitment to documenting, testing and tracking their workplace initiatives. This data-forward approach enables the organization to measure the impact of their efforts over time, produce insights that can inform organizational decision-making and reporting and positions Arup as a leader of innovation within the industry.

Arup implemented the Leesman Office Workplace Experience Survey in September 2017 in their original office and again, with the addition of the pilot Leesman WELL module, in September 2019—one year after moving into the new office. The survey is conducted globally by Leesman and has gathered over 1.2 million responses across over 8,000 workplaces. Leesman is an [IWBI pre-approved survey provider](#) and has since developed a Well-being module, which alongside the core Leesman survey can be used for WELL v2 projects, focused on measuring environmental well-being which has been completed by approximately 215,000 respondents.

Results from the survey are translated into a Leesman Lmi score, which provides a numeric value along a 0 to 100-point scale, to characterize the quality of the workplace experience. The survey reveals how the new office space altered employees' perceptions of work and the Lmi score allows Arup to benchmark their results against other high performing working environments within the Leesman database, which is one of the largest repositories of employee workplace experience data in the world. This allows Arup to compare their performance and approach with leading workplace trends and employee preferences. The findings provide immense insight into the impact of Arup's design and operational efforts for their people and organization.

In addition to the Leesman survey measuring occupant satisfaction, to achieve certification Arup underwent onsite performance testing, which included collecting workplace environmental data by CETEC, a [WELL Performance Testing Organization](#) Green Business Certification Inc. (GBCI), a third-party credentialing organization providing third party verification for single asset certification projects, validated Arup's office as WELL Certified at the Platinum level.

# HIGHLIGHTS



## COMMUNITY

WELL v2 Feature C01: Health and Well-being promotion

WELL v2 Feature C02: Integrative Design

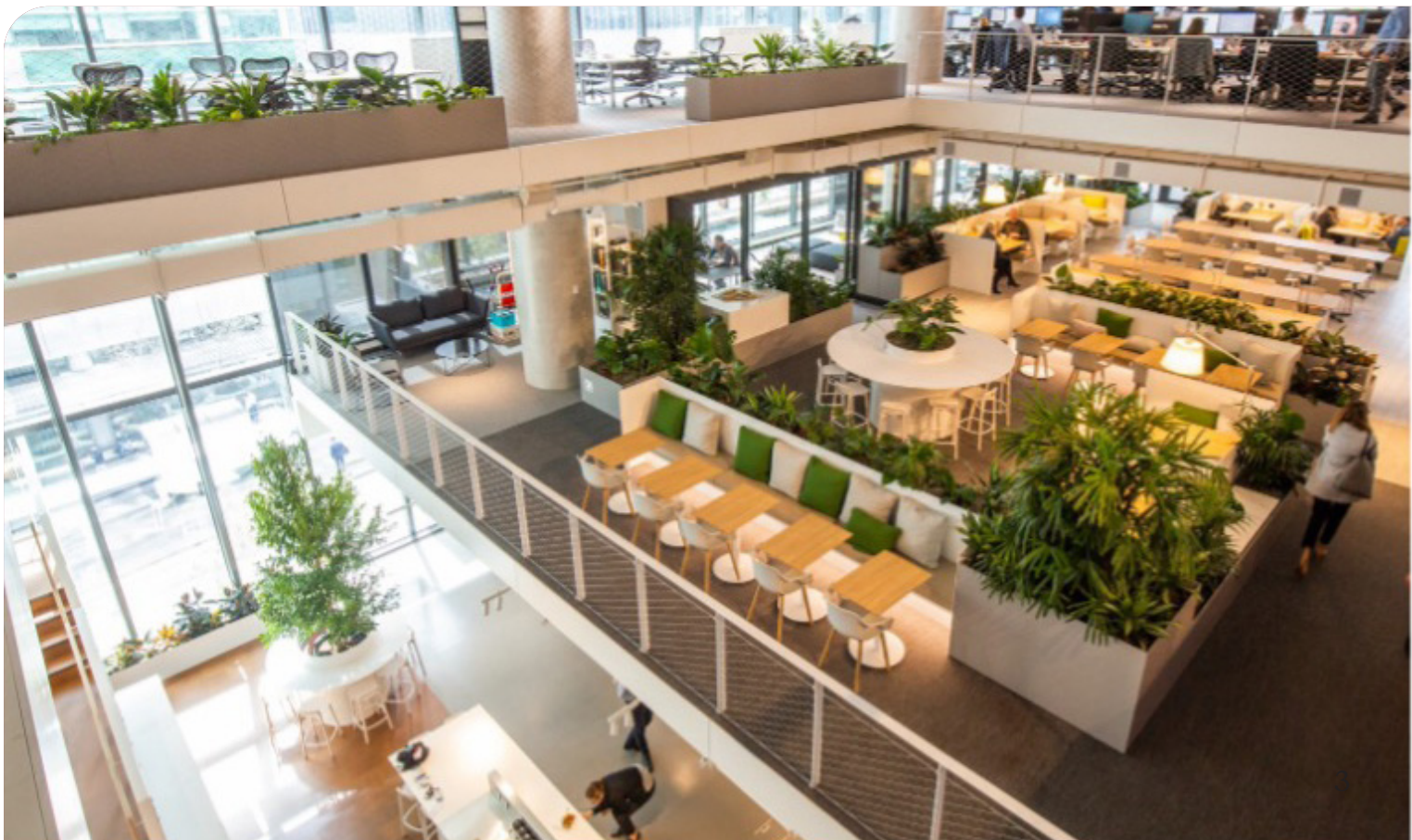
**Summary:** A critical objective for Arup was to create a space which fostered a sense of belonging and shared identity for their people. Several programming initiatives aim to develop this sense of community within the workplace and the office layout has been

designed in a way that promotes ‘coincidental meetings’ between people throughout the building.

**Arup’s Approach:** Arup-STREAT– a café at the building’s main entrance–is a common meeting point that employees pass through as they begin their day. Employee lockers are all co-located in a common area on the second floor, and each story is connected through a roundabout stairway and ramp system.

This not only increases the average step count for Arup, but it also promotes interaction and connection among employees, as they must pass by their coworkers while moving between levels. Void spaces, an architectural design choice, create sight lines and open areas to visually connect all three stories of the office and encourage co-mingling between teams located in different sections of the building.

Source: Arup Melbourne Photography, 2018



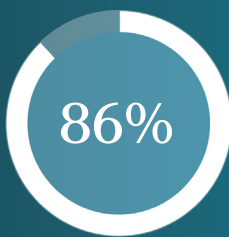
Furthermore, teams with similar role responsibilities are encouraged to sit together in a designated part of the office; however, these assignments rotate several times throughout the year and the void spaces ensure that no matter where a given team is located, they are not isolated from familiar faces.

Additionally, Arup Eats, the dining facility, is equipped with a full kitchen, which is able to seat over 25% of the workforce at the same time. It is the only part of the office stocked with cutlery and equipped with refrigerators, in order to direct all team members to one location and encourage socialization and a shared mealtime experience. This is one way Arup has promoted chance encounters between employees, who may otherwise be unlikely to cross paths in the office. Additionally, in alignment with WELL v2 Feature N01: Fruits and Vegetables, salad and fresh fruit are provided daily to employees to promote healthy and mindful eating.

**Outcome:** Survey results suggest that these features have contributed to a stronger culture of belonging in Arup's new workplace. The aforementioned design choices contributed to significant improvements in employees' workplace experience, with 82.5% of employees reporting the new Arup office contributes to a greater sense of community at work, a 16% improvement compared to the previous office. This score is 7.6% higher than the Leesman+ industry benchmark.



Source: Arup Melbourne Photography, 2018



86% of employees felt the new space contributed to creating a positive workplace culture

Additionally, 86% of employees felt the new space contributed to creating a positive workplace culture—a 19% improvement from the previous office and 13.5% higher than the Leesman+ industry benchmark of 72.5%. Accordingly, based on survey responses, the impact of WELL Certification as part of the new office design has been shown to improve reports of belongingness and an enhanced workplace culture, resulting in Arup outperforming compared to the Leesman global industry benchmark.



## SOUND

WELL v2 Feature S01: Sound Mapping

WELL v2 Feature S02: Maximum Noise Levels

**Summary:** Auditory distractions rank as one of the top complaints among individuals in the workplace.<sup>1</sup> According to Leesman’s 2022 data, only 36% of employees are satisfied with their office’s noise levels.<sup>2</sup> Satisfaction with acoustics is also closely linked with employee productivity.<sup>3</sup> Arup recognized acoustics as a critical component of the workplace experience and, consequently, prioritized the acoustic design of the space.

Arup’s Approach: Acoustic spatial planning identified the relationship between portions of the office with varied acoustic characteristics and the [Arup SoundLab™](#) provided designers with insights to improve acoustic treatments for the space. An acoustic gradient was developed for the workplace, meaning the deeper into the office one travels, the quieter the workspace. Thanks to Arup’s flexible work-from-anywhere policy in the office, employees are able to select a work environment that meets their varied personal acoustic preferences throughout the day. Additionally, focus spaces—designed for individual and small group use—offer low noise levels and carefully controlled acoustics without the use of partitions. Instead, clear messaging about volume etiquette and expected behavior has encouraged self and group-enforcement of acoustic levels. These design choices and operational practices have resulted in measurable positive outcomes for Arup’s team.



Source: Arup Melbourne Photography, 2018

**Outcome:** Arup’s design choices paid off, as survey data indicates acoustic satisfaction in the new office improved by 28.5%, relative to the pre-occupancy data; a striking improvement. Survey respondents’ post-occupancy acoustic satisfaction of 52% is 7.4% higher than the Leesman+ industry benchmark. Additionally, employees indicated their satisfaction with individual focused work, away from desks, was 88% – a 33% improvement from pre-occupancy survey numbers. These findings suggest the design of Arup’s new office was designed to support focused work, without compromising the acoustic quality of the overall work environment.

<sup>1</sup> Noguchi, Y. (2016, October 26). What’s More Distracting Than A Noisy Co-Worker? Turns Out, Not Much. NPR. <https://www.npr.org/2016/10/26/498850659/what-s-more-distracting-than-a-noisy-coworker-not-much>

<sup>2</sup> Leesman. (2023, May 10). A decade of change. Retrieved July 18, 2023, from <https://www.leesmanindex.com/a-decade-of-change/>

<sup>3</sup> Hedge A. The open-plan office: A Systematic Investigation of Employee Reactions to Their Work Environment. *Environ Behav.* 1982;14(5):519-542. doi:10.1177/0013916582145002



## AIR

WELL v2 Feature A05: Enhanced Air Quality

WELL v2 Feature A08: Air Quality Monitoring and Awareness

WELL v2 Feature A12: Air Filtration

**Summary:** The quality of the air people breathe has a significant impact on the overall health and physiology of those individuals. Studies have indicated good air quality, meaning low VOC levels and satisfactory ventilation, is associated with improved cognitive and physical function and workplace performance; thus, the Arup team prioritized indoor air quality.<sup>4,5</sup>

**Arup's Approach:** At the onset of the buildout, mechanical engineers designed a natural ventilation system, which directs air through F7/MERV13 air filters before supplying substantial quantities of new, purified, air to the space. Furthermore, Arup Melbourne's design team selected building materials and workplace furniture with low-to-no toxicity and low-to-no VOC content. Additionally, a sensor network, which monitors CO<sub>2</sub>, Ozone, PM<sub>2.5</sub>, PM<sub>10</sub> levels and temperature in real-time, allows for the Building Management System (BMS) to make immediate adjustments to indoor air quality conditions as necessary.

The Arup Office Services team provides regular filter maintenance that follows manufacturer recommended schedules and maintains a strict cleaning procedure with minimally harsh chemicals, which is regularly audited to ensure compliance. Without this operational oversight, the air quality control mechanics of the building would only have limited impact.

**Outcome:** 91% of respondents reported satisfaction with the indoor air quality, a striking improvement from the pre-occupancy scores of 50% and markedly ahead of the 62.5% Leesman+ industry benchmark. These subjective measures were also aligned with the extensive air quality and water quality results from WELL Certification performance testing, conducted by CETEC.

Air testing showed low levels of PM<sub>2.5</sub> (0.44 ug/m<sup>3</sup> on average; WELL threshold limit = 10.0 ug/m<sup>3</sup>), PM<sub>10</sub> (8.18ug/m<sup>3</sup> on average; WELL threshold limit = 20.0 ug/m<sup>3</sup>), organic gases such as Benzene (0.974 ug/m<sup>3</sup> on average; WELL threshold limit = 3), and inorganic gases such as Carbon Monoxide (0.02 ppm on average; WELL threshold limit = 6.0 ppm). In fact, **Arup Melbourne's office achieved maximum points for feature A05: Enhanced Air Quality<sup>6</sup>.**

<sup>4</sup> Haverinen-Shaughnessy U, Moschandreas DJ, Shaughnessy RJ. Association between substandard classroom ventilation rates and students' academic achievement. *Indoor Air*. 2011;21(2):121-131. doi:10.1111/j.1600-0668.2010.00686.x

<sup>5</sup> Milton DK, Glencross PM, Walters MD. Risk of sick leave associated with outdoor air supply rate, humidification, and occupant complaints. *Indoor air*. 2000;10(4):212-21.

<sup>6</sup> On-site testing was performed by CETEC, a third-party registered WELL Performance Testing Agent. These values represent point-in-time measurements which were taken on the day of on-site testing. WELL has specific testing protocols and documentation requirements which must be met in order to achieve certification. Performance testing allows companies to benchmark their internal performance and enables goal-setting informed on performance history. Furthermore, third-party Performance Testing Agents ensures testing results are accurate and valid.

## SUCSESSES AND CHALLENGES

Designing a new office space provided Arup with the opportunity to demonstrate their technical capabilities while challenging the team to innovate their office design, operations, and workplace policies and practices to promote the health and well-being of their people. The effort and care the Arup team put into their design investment paid off. They have received significant industry recognition and overwhelming positive reception from employees. Leesman recognized Arup as a top workplace globally in 2019, awarding the firm the Leesman+ certification, which is only awarded to top-tier workplaces that have achieved a score of 70 or greater on the Leesman Index<sup>7</sup>. In 2019, only 31 global workplaces earned this distinction. Arup has also received several awards, both nationally and internationally, based on the quality and design of the office space.

Additionally, employees' improved perceptions of their productivity and overall workplace satisfaction validate the importance of designing for health and well-being and indicate Arup is meeting many of their employees' workplace needs. This validation is the result of triangulating data on environmental measures, implementation of relevant WELL features, and subjective employee surveys that measure occupant satisfaction.

In an increasingly remote or hybrid world, creating a supportive workplace that compels employees to come into the office can be a strategic advantage. Arup has created an office that caters to shifting workplace expectations and fosters productivity, which can encourage employees to work in-person more frequently.

Although Arup has achieved great successes, they also faced challenges throughout their pursuit of WELL Certification. First, justifying the up-front financial cost to leadership was difficult without being able to determine the exact financial and performance payoff in advance. Second, an elevated communication strategy for the workforce and design team was needed, to ensure all parties were on the same page throughout the process. Third, Arup initially aligned their strategy around WELL v1, but when IWBI released WELL v2, Arup adapted their approach to meet the updated certification guidelines, requiring additional resources close to the finish line.

A strategy to address these challenges was recognized by Cameron McIntosh, Corporate Real Estate and Workplace Leader, Australasia and Ken Fong, the Healthy Buildings Lead at the time. Together they led the coordination, management, and evaluation of any WELL v2 or Healthy Workplace-related aspect of the project.

- **Winner of the Best Workplace Project** – Property Council of Australia Innovation and Excellence Awards, 2020
- **Best Workplace over 1000 m<sup>2</sup>** – Interior Design Excellence Awards (IDEA) Australia 2019
- **Gold Award Winner Interior Design: International Corporate Workplace** – New York Driven x Design Awards, 2019
- **Winner, Sustainability Advancement Category** – Australian Interior Design Awards Workplace, 2019

<sup>7</sup>Leesman. (2020, March). The world's best workplaces 2019: Unpacking lessons from the top. In <http://leesmanindex.com/>. Retrieved July 5, 2023, from <https://www.leesmanindex.com/media/LeesmanInsights-Book-SP-2019-Digital.pdf>

## BUSINESS CASE<sup>8</sup>

Arup's prioritization of health and well-being in their new office space, and the subsequent benefits to the Arup workforce, have demonstrated tangible impacts on the business as well.



Based on survey responses from a group of recently hired employees (n=47), approximately 83% indicated that the health and well-being design features built into the Arup Melbourne office factored into their decision to accept the job offer.

From these results, Arup estimates employee attraction advantage accrues a realized benefit of approximately A\$112,250 (USD\$75,761) per recruitment cycle<sup>9</sup>.

Additionally, Arup estimates the impact of workplace-related productivity improvements on average, per annum, result in A\$544 (USD\$367) additional value per employee<sup>10</sup>, retention rate improvements result in A\$756 (USD\$510) additional value per employee<sup>11</sup>, and reduced absenteeism rates result in A\$196 (USD\$132) additional value per employee<sup>12,13</sup>. Based on Arup's model, this translates to an estimated A\$868,000 (USD\$585,843) per annum and represents a payback period, for the up-front health and well-being investment, of 15 months.

To reiterate, these calculations were conducted internally by the Arup team. They synthesized findings from industry research and applied them to data from the Arup office in order to generate estimated financial value associated with their investment in a healthy workplace.

Workplace-related productivity improvements resulted in:

**+ A\$544** additional value per employee<sup>10</sup>

**+ A\$756** retention rate improvements per employee<sup>11</sup>

**+ A\$196** reduced absenteeism rates per employee<sup>12,13</sup>

**= A\$868,000** total over 15 months.

<sup>8</sup> The projected calculations were based on analysis done in-house by Arup to estimate overall benefits based on value, retention rates, environmental benefits, and reduced absenteeism. These estimates were generated using logic derived from industry research. The calculations used the following estimated values: Productivity increase: 3%; Reduction in separation rate (i.e., increased retention rate): 5%; Reduction in illness-related absences: 30%. These percentages were informed by Arup's internal literature review and were applied to the Arup office data. Citations are included in this paper's footnotes. For more details on the calculation methodology throughout the business case, contact Jason Yang.

<sup>9</sup> Recruitment timelines & costs - Staff Services - ANU. (n.d.). Recruitment Timelines & Costs - Staff Services - ANU. <https://services.anu.edu.au/human-resources/recruit/planning/recruitment-timelines-costs>

<sup>10</sup> These values are based on over 35 peer-reviewed academic and industry articles, referenced in detail within the Stok report.

<sup>11</sup> These metrics are based on 7 peer-reviewed academic and industry articles. The specific values used for the calculation contextualized to Arup and the Australian market.

<sup>12</sup> Over 15 peer-reviewed academic and industry articles were analyzed to quantify the benefits of this category.

<sup>13</sup> Attema, J.E., Fowell, S.J., Macko, M.J., & Neilson, W.C. (2018). The Financial Case For High Performance Buildings. San Francisco: stok, LLC.

## CONCLUSION

Arup has invested countless dollars and people-hours to research and implement optimal indoor building conditions, which has improved their people operations, business function and organizational well-being. Arup's new office space serves their workforce and demonstrates their dedication to the principles that underlie the WELL Building Standard, as well as their commitment to research and science-backed design choices. This is further supported by Arup's global WELL efforts. Currently, Arup has eight projects actively engaged in WELL programs, totaling over 912,000 square feet. Additionally, Arup is the Administrative Organization for 67 active projects, 14 of which are WELL Certified spaces, representing over 6,000,000 square feet. Arup is the first WELL v2 case study that elevated multiple levels of data to demonstrate the value of investing in people-first places from a human, health and business perspective.

## PROJECT TEAM

- Architect/Designer: HASSELL
- Project Manager: Montlaur
- General Contractor: Lendlease User Experience
- MEP Engineer: Arup
- Acoustical Consultants: Arup
- Office and Facilities Management: Arup
- AV and Technology: Arup
- Lighting Consultants: Arup
- Healthy Building Design: Arup
- User Experience Design: Arup
- Sustainability & ESD: Arup
- Structural: Arup
- Façades: Arup
- Fire Engineering: Arup
- Performance Testing Agent: CETEC

## CONTRIBUTORS/TEAM MEMBERS

- Daniel Wexler, Research, International WELL Building Institute
- Whitney Austin Gray, PhD, SVP, Research, International WELL Building Institute
- Ken Fong, Healthy Buildings Lead, Arup<sup>1</sup>

<sup>1</sup> Title and role for the duration of the project & study