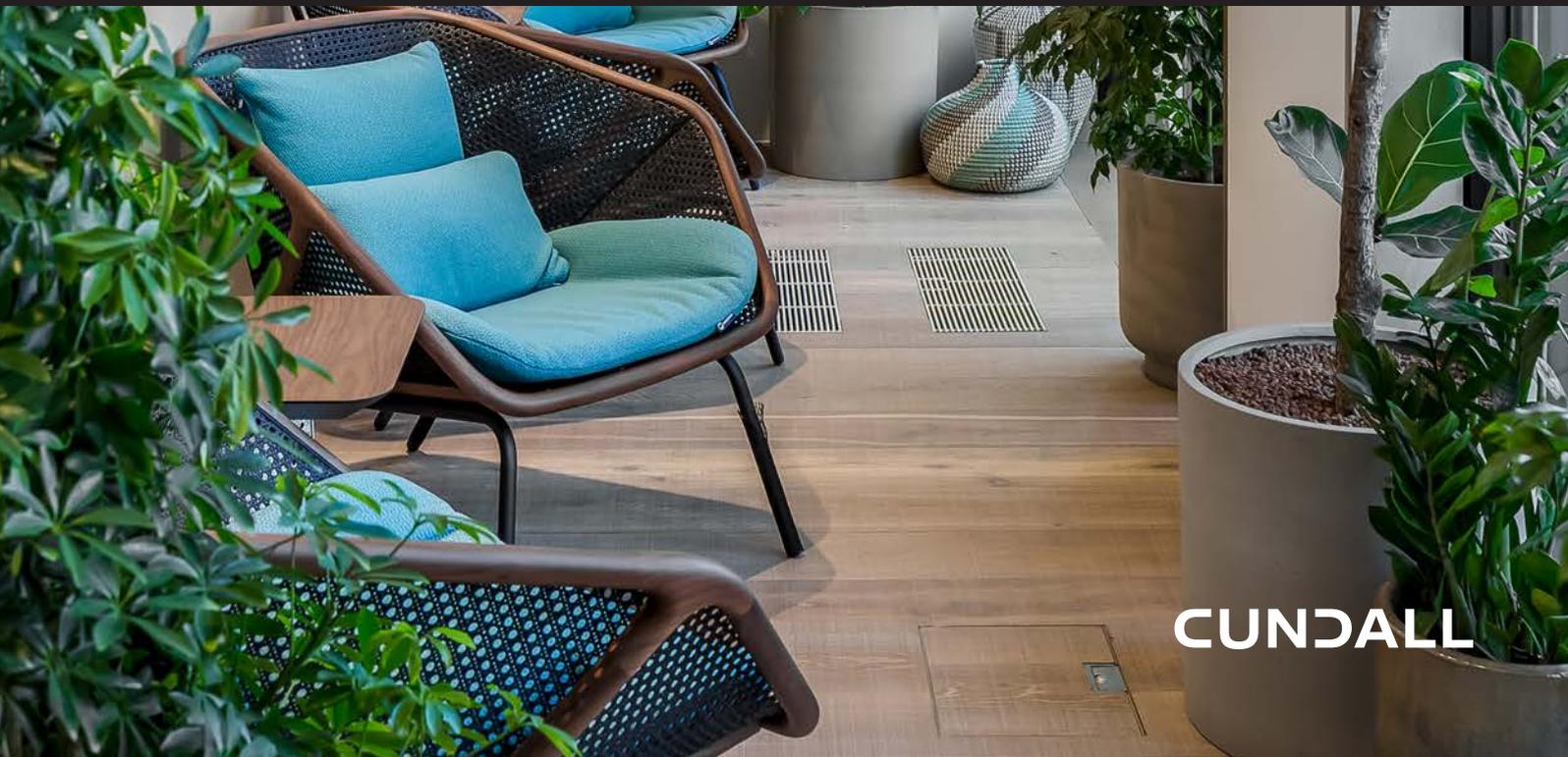




Health and Wellbeing Services



CUNDALL



FORA Soho - 33 Broadwick Street © Jonathan Bushell

Introduction

The recent drive towards healthier workplaces has been borne from the understanding of the link between workplace wellbeing and productivity. Progressive organisations are therefore introducing comprehensive corporate wellbeing programmes, whilst simultaneously, research is showing that workplace environments can also significantly impact on occupancy health and wellbeing. Studies from Harvard and Oxford Brookes universities indicate that a range of environmental factors, such as CO2 concentrations, thermal, visual and acoustic comfort, can have an impact of up to 20% on peoples' productivity.

When you consider that 90% of business operating costs are typically associated with staff, this means that even a 1% increase in productivity could equate to savings of hundreds of thousands, or even millions of pounds. The business case for investing in workplace wellbeing and productivity is therefore compelling.

Health and wellbeing is fundamental to us at Cundall. It is part of the way we think, work and live. We are passionate about improving the way we do things and committed to delivering spaces that enhance the occupants' health and quality of life.

To this end, we have developed our own environmental monitoring system, the IEQube, which allows us to monitor comfort and air quality in our offices and those of our clients. This has allowed us to build a better understanding of where systems fail to deliver.

When moving offices in London, we put health and wellbeing at the forefront of our design by applying the WELL Building Standard™, becoming the first office in Europe (and only seventh in the world) to achieve certification.

Our WELL Accredited Professionals™ are continuously developing their knowledge on a range of projects, including delivering the UK's first shell and core certified building and the world's first certified co-working office, as well as the world's first Platinum certified project outside of the USA for The Crown Estate. Our WELL APs can offer advice and guidance based on our experience in delivering WELL. They are supported by our in-house lighting, acoustic and air quality consultants.

We are in a unique position, being the only organisation in the UK to have successfully delivered multiple WELL-certified schemes. Giving us an unrivalled depth of knowledge in the WELL Building Standard™ and the delivery of healthy spaces.

This capability statement outlines the expertise and health and wellbeing services we can provide:

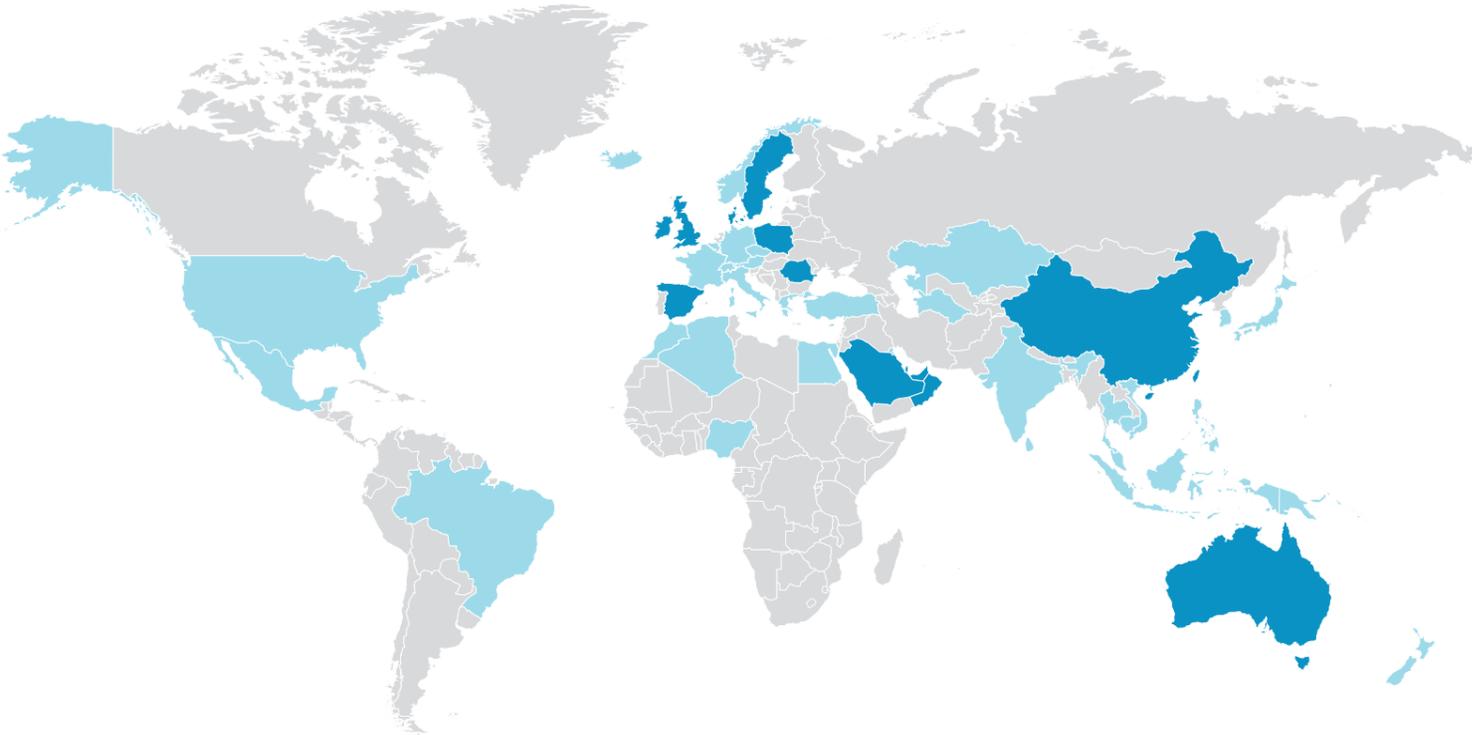
1. Health and Wellbeing Audit and Design Reviews
2. Health and Wellbeing Certification – WELL, Fitwel, RESET
3. Indoor Environmental Quality (IEQ)
4. Indoor Air Quality (IAQ)
5. Ambient (outdoor) Air Quality
6. Productivity Mapping
7. Healthy Materials
8. Health and Wellbeing Induction Workshops
9. Post Occupancy Evaluation (POE)
10. Building User Surveys (BUS)

Front cover image:
FORA Fitzrovia - 42 Berners Street
© Jonathan Bushell

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www.cundall.com
Asia Australia Europe MENA UK & Ireland

About Cundall



Cundall projects

Cundall offices

- | | | |
|------------|-----------|---|
| Adelaide | Perth | Associated offices
Oman
Saudi Arabia |
| Belfast | Shanghai | |
| Birmingham | Singapore | |
| Brisbane | Sweden | |
| Bucharest | Sydney | |
| Denmark | Warsaw | |
| Doha | Wrocław | |
| Dubai | | |
| Dublin | | |
| Edinburgh | | |
| Hong Kong | | |
| London | | |
| Madrid | | |
| Manchester | | |
| Melbourne | | |
| Newcastle | | |

We are an international multidisciplinary consultancy, operating from 21 locations across the globe. With sustainability at the heart of everything we do, our team of engineers deliver innovative, sustainable design solutions to address the project's whole life cycle.

We expect our engineers to consider the implications of their design for every project as a whole, as well as commenting on wider environmental issues across disciplines. We routinely design to LEED, BREEAM and Green Star standards, and our approach is always to look for those wider implications. This goes beyond simply meeting the requirements for benchmarking credits, while also acknowledging that these are important as a minimum requirement.

We are also the world's first consultancy to be formally endorsed as a One Planet Company by sustainability charity Bioregional.

Our mission is to play a key role in making buildings more energy-efficient, sustainable and cost-effective to operate.

In 2018 we published our sustainability roadmap; One Planet, Once Chance, which identifies how we maximise our impact using the One Planet Living Principles and the UN Sustainable Development Goal frameworks, and also sets out clear targets, action plans and indicators which will guide our business until 2025.

We apply these across our projects, our own offices, our homes and communities and through industry leadership.



21
OFFICES GLOBALLY

ESTABLISHED IN
1976

950+
PEOPLE WORLDWIDE

500+
AWARDS WON

PROJECTS DELIVERED IN
50+ COUNTRIES

35+
LANGUAGES

1st
ONE PLANET COMPANY

1st
CARBON NEUTRAL CONSULTANCY



One Carter Lane © Dirk Lindner

Cundall's Health and Wellbeing Expertise

There are increasing demands for buildings to achieve robust standards to support the health and wellbeing of occupiers, one example being the growing interest of the WELL Building Standard™. This standard is the world's first performance-based system for measuring, certifying and monitoring features of the built environment that impact human health and wellbeing. The concepts addressed are air, water, nourishment, light, fitness, comfort and mind. Some businesses are reviewing the WELL Building Standard™ as a means of demonstrating the quality of their space which potentially, may attract and retain staff. This will have implications for the attractiveness, and consequently the investment value, of office buildings in the future.

Cundall has delivered Europe's first WELL certified project and is now using their experience to help guide clients through the process, with the aim of helping to establish the business case for health and wellbeing.

Cundall has already started to measure some of these metrics in their WELL certified office in London. The early findings from their post-occupancy evaluations show significant improvements in staff engagement and enjoyment in the environment, as well as increases in perceived wellbeing and productivity.

This has resulted in a payback period of months rather than years for implementing wellbeing measures, with ongoing savings potentially in the millions of pounds for the life of the lease.

Health & Wellbeing Services

The indoor environment has a direct impact on our wellbeing as we spend most of our time indoors. The key to delivering a sustainable development is to provide environments which promote and enhance the health and wellbeing of the building occupants so that they can flourish. Our research demonstrates that in healthy environments, productivity increases, absenteeism reduces, and concentration improves.

Cundall is passionate about improving the way we live and work, and is committed to delivering spaces that enhance the occupant's health and quality of life. We deliver on our commitment to occupant wellbeing by providing a range of health and wellbeing services which are documented in the following pages:

- Health and Wellbeing Audit and Design Reviews
- Health and Wellbeing Certification
- Indoor Environmental Quality (IEQ)
- Indoor Air Quality (IAQ)
- Ambient (Outdoor) Air Quality
- IEQ Desktop Review
- Productivity Mapping
- Water Quality
- Post Occupancy Evaluation (POE)
- Building User Surveys (BUS)
- Human Comfort
- Acoustic Soundscapes
- Circadian Lighting
- Healthy Materials
- Biophilic Design
- Plants and Green Infrastructure (GI)
- Ergonomic Design
- Personal Fitness
- Nutrition
- Mental Wellbeing and Mindfulness
- Health and Wellbeing Inductions Workshops
- Foresight, research + Innovation



National CASH Register Photography © Philip Durrant

Cundall's Indoor Air Quality Expertise

Air inside buildings – even with good levels of ventilation – can still possess higher concentrations of pollutants than the ambient air, even within relatively polluted outdoor urban environments. Key pollutants that are associated with indoor air quality are Volatile Organic Compounds (VOCs) and particulate matter. Other pollutants, such as Ozone and the oxides of Nitrogen (NO_x) are prevalent outdoors, but research into their presence indoors is still relatively nascent, although a high concentration outdoors can often indicate a risk to air quality indoors.

It has been estimated that we spend up to 90% of our lives indoors, and as such most of a person's exposure to pollutants may come whilst inside. Modern ventilation systems in commercial buildings in London generally allow for some level of particulate filtration and control of fresh air to spaces to reduce indoor pollutants. The same cannot always be said for existing buildings, which may have a poor quality, poorly designed, or poorly maintained ventilation plant, and for buildings which are naturally ventilated, such as houses or schools, which are at the mercy of the pollutants in the ambient air. This, when combined with inadequate fresh air, can cause pollutant levels indoors to reach concentrations significantly higher than outdoors.

Airborne volatile organic compounds (VOCs), such as formaldehyde, toluene, and benzene, originate from building materials such as paints, coatings, adhesives, sealants, furniture and cleaning materials. They are substances that vaporise at room temperature and can cause health problems ranging from minor irritation to links with cancer. Finally, airborne microbial pollution is also a key consideration of indoor air quality. It is caused by hundreds of species of bacteria and fungi, in particular, filamentous fungi (mould), growing indoors when sufficient moisture is available.

What might be perceived as good indoor air quality, may in fact be less than optimal for productivity. An example of this is the increase of Carbon Dioxide (CO₂) concentration, which has been shown to dramatically impact on decision making and cognitive performance as concentration increases. Many of the elevated CO₂ concentrations observed in practice are a consequence of a failure to supply the amount of outdoor air specified in standards.

Cundall has provided diagnostic and continuous monitoring and remediation of a variety of building types with the goal of improving indoor air quality. As a result, we are acutely aware of the difference between perceived and actual performance, as well as the risk factors. We are able to advise on everything from minimum fresh air rates and ventilation design, to state-of-the-art measuring and monitoring technologies.

Edwin Wealend of Cundall is a founding member and Chairman of the CIBSE Air Quality Working Group, which was set up to provide guidance to the industry on how to improve indoor air quality.

Cundall has also been involved in the peer review process for a number of documents related to indoor air quality, for CIBSE. This includes the air quality section of CIBSE TM40, Health Issues in Building Services, and Working with WELL: Using the WELL Building tool in the UK. We also reviewed the RESET v2 indoor air quality standard, and the credits relating to indoor air quality monitoring as part of the WELL v2 standard.



Lifestyle Working © Stable properties



The Crown Estate, WELL Platinum @ Andrew Hendry

Health and Wellbeing Audits and Design Reviews

Cundall have established themselves as global leaders in human centric design, delivering spaces that enhance the occupants' health, wellbeing and quality of life.

Using our experience, we are able to offer meaningful health and wellbeing design advice and guidance. As well as conducting audits of existing facilities with the aim of improving occupants' health, wellbeing and productivity.

We have worked on a range of building typologies to create bespoke health and wellbeing frameworks for our clients, created brand and design guidance for portfolios, and also provided health and wellbeing certification.

Cundall can offer the following services:

- **Audits** – We provide desktop audits to highlight existing good practice for health and wellbeing measures and recommend enhancements using the International WELL Building Standard and Fitwel requirements as a framework
- **Design Guidance** – We help embed healthy design measures and practises into the design and operation of a building
- **Brand Guidance** – We review existing standards and update them to embed healthy design measures and requirements in the client's design standards
- **Formal Health and Wellbeing Certification** – We facilitate formal certification including The WELL Building Standard®, Fitwel and RESET.

Cundall can also provide a bespoke Productivity Mapping service, which involves surveying a tenancy to identify areas of the floor plate that do not support staff productivity. This can be of particular benefit to an occupier who is comparing prospective tenancies or to an existing tenant looking to enhance productivity through workplace design.

Health and Wellbeing Certification

Cundall is a global leader in delivering health and wellbeing certification, having delivered Europe's first WELL certified project, MENA's first WELL registered project, Europe's first WELL Platinum building, and the world's first co-working WELL certified office. We are also currently delivering the world's highest FitWel project.

We have a number of WELL facilities members who help write and develop the standards. Additionally, we were one of the first adopters in the World of both the Fitwel and RESET standards.

The WELL Building Standard®

The WELL Building Standard® is the world's first building standard focused exclusively on human health and wellness. It is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and wellbeing, through air, water, nourishment, light, fitness, comfort and mind. Cundall's WELL AP's™ can provide advice and guidance based on their experience to achieve certification.

Fitwel

Fitwel is a certification scheme designed to optimise occupant health and productivity, regardless of size, age or location of the building facilities. There are no mandatory requirements and only features that are applicable are assessed against the following seven key health impact categories – community health impact, reduction in morbidity and absenteeism, supporting social equality for vulnerable populations, instilling feelings of well-being, providing healthy food options, promoting occupant safety, and increasing physical activity. Our Fitwel Ambassadors are ideally positioned to support design teams through the assessment process.

RESET

RESET™ is an international indoor environmental quality performance-based building standard and certification program. It measures real-time performance and communicates this to building users, enabling them to take appropriate action. Cundall has in-house RESET AP's, who can guide clients through the certification process.



UK Green Building Council, London © Philip Vile

Indoor Environmental Quality (IEQ)

Cundall has implemented a revolutionary Indoor Environmental Quality (IEQ) monitoring and problem-solving service. Real time IEQ sensors optimise the environmental performance of spaces, improving occupant wellbeing and productivity.

Poor indoor environmental quality has an ongoing impact on occupant productivity as well as a long-term impact on health. The issues associated with poor performance, such as pollutants and temperature are largely invisible. Relying on occupant feedback on perceived problems is not reliable and issues such as thermal comfort and air quality are frequently confused. Monitoring and testing are the most effective ways of determining how well spaces are performing and likely to support occupant productivity.

Cundall offers the following IEQ services in combination or stand alone:

1. **System review** – In the event of poor environmental performance, to prevent surprises, we review the available information on the ventilation and comfort systems and identify the order of cost of solutions
2. **IEQ testing** – Over a suitable period we will monitor the IEQ, report on any problems and offer solutions
3. **Monitoring** – We can set up a monitoring system for the client's on going use and provide a regular review of the monitored data. This includes developing a data reporting tool for multiple sites as well as part automation of summary reports. We can provide periodic reports and where problems arise, provide an analysis and resolution service.

An increasing body of research is highlighting that poor IEQ results correlate with occupant dissatisfaction and reduced productivity. By knowing there is an issue, we can find a solution.

Cundall can also provide a bespoke Productivity Mapping service, which involves surveying a tenancy to identify areas of the floor plate that do not support staff productivity. This can be of particular benefit to an occupier who is comparing prospective tenancies or to an existing tenant looking to enhance productivity through workplace design.



Indoor Air Quality (IAQ)

Cundall offer an integrated air quality service. This considers both indoor and outdoor air quality and allows us to establish current and future air quality exposures, societal impacts, and specify and evaluate appropriate mitigation controls.

Exposure to poor IAQ is associated with 3.8 million deaths a year worldwide. The toxic pollutants causing poor IAQ are produced indoors by our behaviours and numerous sources that we introduce. Namely, electrical equipment, cleaning products and air fresheners/deodorants. Additionally, the infiltration of outdoor produced pollutants further exacerbates the problem. Alongside the serious health issues these pollutants cause, other issues such as productivity loss and increased absenteeism heavily influence how a business operates – with 90% of a business' costs being staff related, optimising the workplace should be of paramount importance.

Cundall offers a high degree of expertise and experience in monitoring, building performance and other mitigation services required to alleviate the issues caused by poor IAQ. We offer the following IAQ services:

1. **Monitoring** – Indoor pollutant monitoring is an essential aspect of identifying where problems exist and facilitating effective mitigation strategies. We have real-time IEQ monitoring across every Cundall office, allowing us to share the lessons we've learnt with our clients and provide bespoke monitoring systems for all building types.
2. **Ventilation and filtration** – Cundall are experts in designing sophisticated ventilation and filtration systems. This keeps pollutant concentrations low benefiting both health and employee productivity.
3. **Further mitigation strategies** – Other services such as indoor plant installation, bespoke IAQ plans and our proven experience in achieving air quality criteria through various certification schemes – namely, our own office in London (One Carter Lane), the first Well certified building in Europe – means clients are ensured of an expert IAQ service.



Ambient (Outdoor) Air Quality

Cundall offer an integrated air quality service. This considers both indoor and outdoor air quality and allows us to establish current and future air quality exposures, societal impacts, and specify and evaluate appropriate mitigation controls.

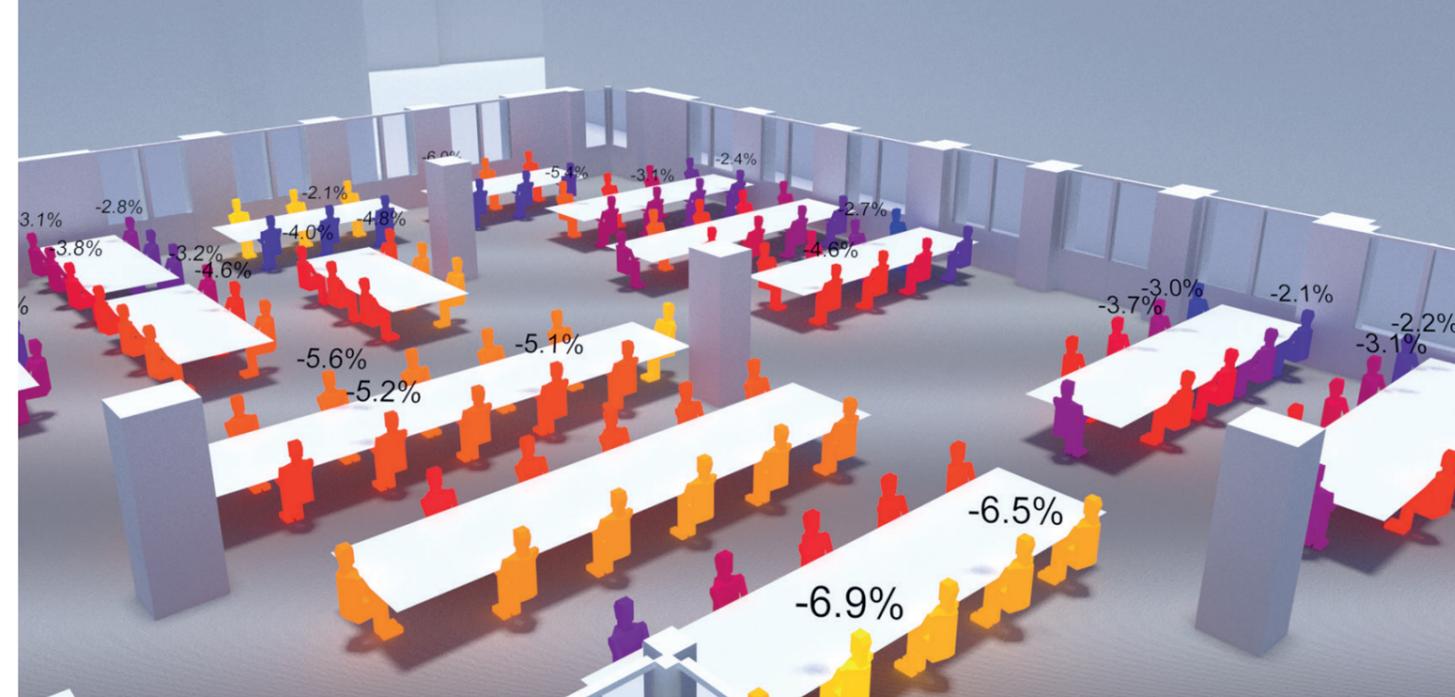
Each year, 4.2 million deaths worldwide are associated with exposure to poor ambient (outdoor) air quality. This poor air quality is caused by numerous pollutants, with particulate matter and nitrogen dioxide (NO₂) contributing to 40,000 deaths annually in the UK alone. To this, the further impacts of poor indoor air quality can be added.

We adopt a pragmatic approach to ambient air quality assessment, ensuring the scope of work for each project comprises all the necessary elements that allow regulators to reach robust decisions in support of our schemes. Our assessments build incrementally to ensure all recommendations we make are transparent, reliable and dependable delivering the right findings quickly and ensuring our clients only pay for what they need.

Alongside this assessment process, we offer comprehensive air quality monitoring services, which establish baseline environmental conditions, confirm if standards are being achieved, verify modelling results and post-scheme compliance auditing. Cundall offer the following ambient air quality services:

- 1. Assessment** – Bespoke scope and screening services are offered for each project, assessing the air quality impact and exposure through advanced dispersion modelling and computational fluid dynamics.
- 2. Monitoring** – Our service measures pollutant concentrations on-site (exposure) and off-site (impact), informing clients if standards are being achieved which in-turn, may facilitate the need to implement our well-versed mitigation controls.

We exceed our clients' expectations by continually advising them at each assessment stage of the potential outcomes and implications to the project; this way we ensure they don't receive any surprises. This enables early cross-party engagement that minimises any delays to the programme and ultimately provides project cost savings.



Simulation of occupant access to daylight linked to productivity loss

Productivity Mapping: Making the Business Case for Wellbeing

90% of business costs are typically associated with staff. This means that even a 1% improvement in productivity could equate to savings of hundreds of thousands, or millions of pounds.

Research has shown that workplace environments significantly impact on productivity and wellbeing. Studies from Harvard and Oxford Brookes universities indicate a 20% impact on productivity, based on a range of environmental factors, such as CO₂ concentrations, thermal, visual and acoustic comfort.

Cundall has created a tool which quantifies how indoor environmental quality (IEQ), such as temperature, CO₂ levels and daylight supports occupant productivity and helps optimise it. This tool can be used at any stage of a building's life cycle; from technical due diligence studies, to optimising architectural test fits and space planning designs to enable an organisation to perform to its full potential.

Applications:

- Design optimisation
- Massing studies
- Optimising storey heights and depth ratios
- Refining refurbishment layouts and plans
- Architectural test fits
- Environmental/HVAC system selection
- Façade optimisation.

In-site building review:

- Due diligence surveys
- Troubleshooting
- Lease and rent reviews
- Pre and post occupancy studies.



£12m

PRODUCTIVITY IMPROVEMENT ESTIMATED FOR ONE CLIENT FROM WORKPLACE OPTIMISATION



0.3%

PRODUCTIVITY IMPROVEMENT FROM JUST CHANGING DESK ORIENTATIONS



RESEARCH HAS FOUND THAT CO₂ LEVELS OF 1400PPM CAN REDUCE PRODUCTIVITY BY

14%



WE HAVE MEASURED SOME WORKSPACES CO₂ CONCENTRATIONS IN EXCESS OF

2500ppm



One Carter Lane, London @ Dirk Lindner



One Heddon Street, London @ Andrew Hendry

Healthy Materials

Based on Cundall's vast experience with building certification schemes we are able to offer expert advice on which materials will ensure a healthy indoor environment.

The choice of materials and finishes are fundamental to achieving a healthy building. Whether it is an unpleasant odour, chemical sensitivity, asthma, or common allergies, people are increasingly aware of the impact building materials have on their indoor environment. The materials used indoors contribute to the air quality, emitting VOCs and various other pollutants. The choice of low-VOC products is therefore of paramount importance as these products can release organic compounds while you are using them, and, in the case of some furniture and wood-based products, continuously over several months — a process known as off-gassing.

Cundall can offer the following services relating to healthy materials:

1. **Expert and transparent product advice** – we can advise on different material properties, their toxicity and ingredient transparency helping to achieve a healthy indoor environment.
2. **Bespoke cleaning protocols** – Cundall offer specific guidance on cleaning regimes and products which will not increase the concentration of VOCs and other pollutants indoors.

Health and Wellbeing Induction Workshops

Businesses value their staff's wellbeing and experiences. To ensure that their workspaces are able to enhance their health, wellbeing and productivity, we have developed a number of bespoke health and wellbeing workshops.

These can be arranged for large or small groups, as well as offering one-to-one appointments. The aim of these sessions will be to:

1. Look at why the topic is important
2. Examine the key themes of the topic
3. Dispel common misconceptions and myths surrounding the latest fads related to the topic
4. Answer any questions.

For fit-out projects, during the first week of occupation we can host a series of staff wellbeing engagement workshops, providing hints and tips on maximising the new office environment and personal wellbeing, including:

- **Workspace overview** – a summary of the wellbeing measures included in the design
- **Air quality** – a summary of the impact of air quality on health and how to improve it
- **Nutrition** – a guide to healthy eating, with helpful hints and tips
- **Ergonomics** – a summary of the impact of workplace ergonomics and tips on how to set up workstations
- **Plants and green infrastructure** – the impact of biophilia on air quality and the cognitive performance benefits
- **Mindfulness** – a summary of the importance of mental wellbeing and mindful guidance
- **Personal fitness** – tips and guidance on how to improve personal fitness.

For existing buildings, we can host regular wellbeing events or weeks including any number of the above workshops or fitness classes if required.



LinkedIn, Dubai



WPP, 24-28 Bloomsbury Way © Kristen Mccluskie

Post Occupancy Evaluation (POE)

Many buildings do not perform as planned - in some cases this can impact on running costs, staff and client satisfaction and performance, health, safety and comfort. For repeat construction clients, learning from and correcting past mistakes in design and commissioning of buildings can be extremely cost-effective and greatly improve workplace productivity.

Post-Occupancy Evaluation (POE) is the process of obtaining feedback on a building's performance in use. The value of POE is being increasingly recognised, and it is becoming mandatory on many public projects. POE is valuable in all construction sectors, especially healthcare, education, offices, commercial and housing, where poor building performance will impact on running costs, occupant wellbeing and business efficiency.

Post-Occupancy Evaluation will:

- Highlight any immediate teething problems that can be addressed and solved
- Identify any gaps in communication and understanding that impact on the building operation

- Provide lessons that can be used to improve design and procurement on future projects
- Act as a benchmarking aid to compare across projects and over time.

Cundall offers a variety of post-occupancy evaluation methods which can be tailored to your individual needs, including:

- Occupant and client consultation
- Environmental comfort and control over environmental conditions
- Building impact on productivity and performance, staff and user retention and motivation
- Customer experience and user satisfaction with amenities, image and layout; using either building user surveys or Leesman surveys
- Monitoring of environmental conditions - including temperature, noise, light, air quality, ventilation and relative humidity
- Sustainability and energy audits - to measure and demonstrate the environmental performance of buildings in use, to inform property management and energy efficiency strategies.

Building User Surveys (BUS)

To understand true performance, we need to understand both quantitative and qualitative data. Qualitative data comes from the perception feedback from user. One of the most established ways of gathering this feedback is using Building User Surveys (BUS).

The BUS methodology is a well-established, simple and standardised questionnaire to benchmark levels of occupant satisfaction within buildings. Results can be used to create solutions to improve the occupant experience and optimise building performance.

Over 45 key variables are evaluated covering aspects such as thermal comfort, ventilation, indoor air quality, lighting, personal control, noise, space, design and image. Twelve summary variables provide a snapshot of the overall building performance. The non-domestic database has around 650 buildings from 17 countries and the domestic database has around 50 projects (over 1,100 domestic premises) from the UK.

Surveys can be printed, or internet based. The survey contains up to 50 questions and seeks views on aspects such as:

- Thermal comfort and ventilation
- Lighting and noise
- Personal control
- Space, design, image and needs.

In commercial buildings occupants are asked about their perceived productivity, health, response to problems, effect on behaviour and how they travel to the building. In domestic buildings, occupants are asked about their lifestyle, health, environmental issues and utilities costs.

The summary results give a quick view of overall building performance. Results for each question are reported statistically and compared against benchmarks for the building type.

For commercial workplaces we can use either the BUS or the more detailed Leesman survey. The Leesman survey is a leader in measuring workplace effectiveness, providing deep insight into how well workplace environments support the productive work activities of the employees they accommodate.

One Carter Lane

London, UK



One Carter Lane is more than an office fit-out. It is an expression of Cundall's belief that great design should inspire a creative, healthy and collaborative workspace. It is unique in being BCO compliant as well as the first project in the UK and Europe to achieve WELL Certification through the WELL Building Standard™ (WELL) and only the seventh to have been through the process in the World (there were also six pilot projects); a goal intended to put the health and wellbeing of occupants at the heart of the design. The design achieved the WELL Certification at the Gold level, BREEAM Excellent and SKA Gold ratings which demonstrate that health, wellbeing and sustainability are compatible.

The space was designed by Studio Ben Allen to include research and development areas in the form of an 'Acoustic Lab' featuring Cundall's award winning Virtual Acoustic

Reality (VAR) - Oculus Rift technology and a 'Green Lab' for continued research into biophilia and indoor air quality testing.

Build quality and materials are of paramount importance to achieve WELL compliance. The design team collaborated closely with local fabricators, engaging early in the design process to ensure fittings were of the highest quality from sustainable materials.

Using our own Indoor Environment Quality (IEQ) monitoring system - IEQube™ we are monitoring in real time our internal environment, including temperature, humidity, lux levels, particulates, CO2 and VOCs – all of which are performing significantly better than the EU and World Health Organisation limits.

Client: Cundall
Sector: Workplace
Value: Confidential
Completion date: 2016
Architect: Studio Ben Allen
Services: Building services and fire engineering, sustainable design, acoustics, BREEAM assessment, lighting design, SKA and WELL assessment
Images: © Dirk Lindner

In HR terms, absenteeism rates have reduced significantly; they are 20% lower than those of a typical new office development. Staff turnover is also down by more than 25% in the year. This has resulted in a payback period for implementing wellbeing measures of months rather than years, with on-going savings potentially in the millions for the life of the lease.



The Crown Estate

London, UK

Client: The Crown Estate
Sector: Workplace
Value: Confidential
Completion date: 2018
Architect: Barr Gazetas
Services: Sustainable design and WELL
Images: © Andrew Hendry

The Crown Estate's new workplace office at 1 St James's Market visioned benchmark workspace, which would encourage and empower collaboration. The scheme achieved WELL Platinum certification (the highest rating awarded by the International Well Building Institute), through the WELL Building Standard™ - the first scheme in Europe to achieve the rating.

The Crown Estate's purpose, 'brilliant places through conscious commercialism,' is at the heart of everything it does. Futureproofing, sustainability and a long-term focus were embedded in the design approach. To avoid waste, and meet sustainability ambitions, there were minimal changes to base build.

Cundall provided wellbeing and sustainability which were core components of the design. Compliance with environmental aims was assured at the outset by establishing clear sustainability objectives, namely maintenance of an existing BREEAM rating, and requirement for a SKA Gold rating for the fit-out.

Achieving the highest certifications for health, wellbeing and sustainability required new learnings, rigorous specifications and innovative use of materials.

The application of a 'transparent ingredients' criterion ensured that the origin of all materials

were known and met SKA and WELL requirements. Energy saving installations, such as LED Lighting, daylight dimming and absence detection, are supported by monitoring of energy use and water consumption, with automated shut-off leak detection. The roof of St James's Market contributes 700m² of greenspace to Wild West End. The green roof features bird/bat boxes, planters and invertebrate habitats aimed at attracting wildlife.

The Porter Building

London, UK



The Porter Building is a 5-storey, 100,000ft² new build development in Slough.

Our client, Landid, wanted to offer possible tenants maximum potential to adapt and modify the building to their future needs, whilst proactively managing the economics of a speculative office development in Slough.

To achieve this, the Porter Building design delivers future flexibility and multi-occupancy through its conception and design. A flexible grid and an economic structural solution were important. In the earliest design stages, our structural engineers optioneered multiple solutions to work within the desired 9m grid, creating quick sketch options to help the developer compare initial outlay cost, with lettable area, projected income and project programme.

Parts of the building or single floors can be modified and adapted for future changes in use, including internal staircases, splitting of floors

or multi-floor letting depending on the tenant. Systems within the building including displacement ventilation, lighting and layouts have also been designed for future adaptability.

Structural solutions include an increased percentage of heavier loading allowance at 7.5% of floorplate instead of the normal 5%. This has allowed floor plates to be easily divided into four tenancies each with a 'hard spot' to facilitate local areas for the likes of server room, filing storage, UPS equipment etc.). This would be an essential requirement for trading floors or tech companies requiring on-site servers.

The intrusive noise from the nearby train line and vehicles has been reduced by incorporating mechanical ventilation and robust external façade constructions. Detailed room acoustics assessment of the main atrium space and adjoining office spaces were undertaken using acoustic modelling such that the building provides appropriate room acoustics conditions for comfortable working at Cat A fit-out stage.

Client: Landid
Sector: Workplace
Value: Confidential
Completion date: 2017
Architect: tp bennett
Services: Structural, civil, geotechnical, geo-environmental and fire engineering, acoustics, sustainable design, transport and vertical transportation
Images: © Hufton and Crowe

Cundall worked with tp bennett to establish a series of Revit protocols to work on and share our BIM models through collaborative working which was embedded from the outset of this project. This maximised early stage collaboration, designing out issues such as head height pinch points in the ground floor car park. Up to date BIM models offer the ability to review the existing structural grid and establish if the condition of a building is adequate to justify any refurbishment and an adequate future design life.



One Heddon Street

London, UK

Client: The Crown Estate
Sector: Workplace
Value: Confidential
Completion date: 2018
Architect: Barr Gazetas
Services: sustainable design and WELL
Images: © Phillip Vile

One Heddon Street is the first dedicated co-working office space provided by The Crown Estate and is the first WELL certified coworking office.

Offering 350 desks for professionals, startups, and project teams located in the West End of London.

Cundall provided wellbeing and sustainability which were core components of the design. This project is aiming for Gold standard.

Existing building services have been retained and augmented saving the client money. Where new items were needed fully WELL compliant, transparent procurement was used.

Zonal temperature, humidity and air quality is monitored throughout the office and effective ventilation maintains air quality and is demand controlled to regulate rates and reduce CO₂ levels.

Heating and cooling meet CIBSE and ASHRAE comfort levels providing a healthier, hypoallergenic environment. All paint used is low VOC non-toxic. Maintained thermal comfort and air quality ensures health and wellbeing, and improved staff productivity.

Quiet working spaces and privacy booths provide low noise rating and ambient lighting. Meeting rooms include extensive acoustic treatment to provide private spaces.

Chilled water dispensers are located within 30m of all staff and tested to WELL requirements. Staff are provided with a personal cup to encourage them to stay hydrated and reduce disposable plastics.

Onsite catering facilities offer subsidised, inclusive menus of healthy, nutritionally balanced meals. Ingredients are locally sourced and seasonal. There is allergy, nutrient and calorie advice readily on display.

Lighting is set to visual acuity for focus, brightness management, light colour quality, responsive lighting control and circadian lighting. Daylight dimming also reduces wastage and no desk is more than 7m from an external window.

UK GBC

London, UK



We were delighted to be selected by the UK Green Building Council (UK-GBC) to be a part of the design team, chosen from their member organisations, to design their new office. As appropriate to an organisation that aims to lead the industry in all things sustainable they wanted their office to be an exemplar for sustainable fit out. It was therefore important to them to have Cundall involved.

UK-GBC's mission is to radically improve the health and wellbeing of their working environment in a highly sustainability manner. The organisation refurbished its headquarters with the aim of challenging industry thinking as to what is achievable in a small scale fit-out.

We joined architectural practice Barr Gazetas, working closely with the client and leaseholder, The Building Centre, on refurbishing the office space. We drew on our experience of WELL and other sustainability rating tools to create a bespoke sustainability framework to respond their own demanding brief.

The brief aimed to balance the health, wellbeing and productivity of the 25 regular office users with outstanding resource efficiency within a restrained budget. Cundall provided advice on sustainability, health and wellbeing, and building services engineering for the office fit-out. Where possible, we reused and enhanced the existing systems, conserving the embodied energy, whilst improving the environmental and energy performance of the space.

Targets:

- Achieved the lowest measured fit-out carbon footprint in UK
- 98% of original fixtures and finishes reused and repurposed, each with an 'end of life' plan
- 99.4% of construction waste diverted from landfill
- A responsible sourcing plan was developed for all new materials, which took an integrated view of the environmental impact including carbon profiling

Client: UK Green Building Council
Sector: Workplace
Value: Confidential
Completion date: 2016
Architect: Barr Gazetas
Services: Building services engineering, sustainable design and health and wellbeing
Images: © Philip Vile

- Air quality maximised in line with the relevant WELL Standard requirements, including the minimisation of VOCs
- Reducing energy used per employee for lighting and small power by 40% by 2020 compared to a 2013 baseline, and the overall performance (including HVAC) should equal or better best practice benchmarks



Re:mind

London, UK

Cundall was approached by Oliver Heath Design to support in the design of Re:mind; London's first meditation studio. Health and wellbeing was at the heart of the project creating a bright, airy and calm sanatory in the heart of the city.

The studio which has a yoga/ meditation room, retail space and tea tasting area is designed to give stressed out Londoners a moment to breath. Biophilic design has been incorporated alongside guidelines from the WELL Building Standard to truly create a healthy space, with good air quality, high levels of natural light and an increased connection to nature. Even brief exposure to nature

and natural stimuli has been shown to have positive effects on a person's heart rate, blood pressure and sympathetic nervous system.

The studio consists of bright surfaces to maximise daylight penetration, doors made from reclaimed, chemical free wood and a ventilation system which cleanses the rooms of pollutants from the capital's busy streets. Every element of the fit-out was key to the success of the project.

In order to maintain a low environmental impact, reclaimed elements have been incorporated into other parts of the design. Throughout the space the use of low

Client: Re:mind
Sector: Lifestyle
Value: Confidential
Completion date: 2018
Architect: Oliver Heath Design
Services: Building services and fire engineering, vertical transportation and lighting design

VOC (volatile organic compounds) has been prioritised within materials and finishes, helping to maintain good air quality. The finishes were selected to stand-up to the use of low VOC cleaning products – often cleaning products such as bleach are the main culprit in raising the level of VOC's within a building.

The key focal point of the studio is the extensive living wall, which is not only visually impressive but also naturally filters the air.

Cundall used the principles from the WELL Building standard and FitWel to enhance the design, creating a toxic-free space for busy Londoners to breathe freely and relax.

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