CREATING POSITIVE SPACES

USING THE WELL BUILDING STANDARD™

An accessible practitioner's guide to help inspire architects & designers to understand and practice according to the principles of the globally emerging WELL Building certification standard.

With health and wellbeing rising up the agenda it's only right that we should seek to measure and standardise it. The WELL Standard does just that in an accessible and comprehensive way. But even if you don't intend to apply for the standard, knowing the core concepts detailed within are essential in the creation of happier, healthier, more productive places to live and work."

– OLIVER HEATH, Director of Oliver Heath Design, author of this Design Guide

OLIVER HEATH DESIGN

Interface®

WHY IS INTERFACE SUPPORTING THIS SUBJECT?

Creating spaces where we work, rest and play involves design that incorporates visual appeal, purpose, sustainable elements and an understanding of human behaviour. Striking the balance between those elements to ensure the space reflects each person's need and adheres to regulatory standards, without compromising on the design aesthetic, demands bold thinking.

With marks including the WELL Building standard awarding recognition to companies whose premises support the wellbeing of its people, now more than ever the design and creation of positive spaces requires further investigation.

To capture insights from industry leaders Interface has co-authored a series of papers to explore the value of human centric design, understand how nature can inspire the creation of positive spaces and examine the future of sustainable buildings.

CONTENTS

CHAPTER 1: SO, WHAT IS THE WELL BUILDING STANDARD™?

THIS DESIGN GUIDE HELPS CREATE POSITIVE SPACES USING THE WELL BUILDING STANDARD™ - WHAT'S IN IT FOR YOU?

This design guide, underpinned by a wealth of research, has been written to inspire the thinking and discussion around creating spaces that improve health and performance and enable us to reach our full potential. One standard in which this is reflected is the emerging and internationally recognised WELL Building Standard™, from which we draw expertise.

If this topic does inspire you, we have made the WELL accreditation process easy and accessible to understand, with:

- An explanation of the WELL Building Standard™, its background and the key concepts
- A concise, step-by-step guide to achieving WELL certification
- Case study examples of who is already implementing this method of human-centred design
- Advice on who can support you going forward

Here's a quick list of some of the things WELL does to make it human-centred:

- Places people at the heart of design
- Makes successful and thriving spaces to support human health and well-being
- Promotes healthy behaviour to improve nutrition, mood, sleep patterns, fitness, productivity and performance, and prevent occupant sickness
- Sets human centred performance requirements to provide a framework for building project teams
- Draws from scientific research that looks at the impact of our built environment - in which we spend more than 90 percent of our time[1] - on our health and well-being
- Reduces costs and improves outcomes, offering tangible financial benefits to businesses

Engineers, designers and architects must work together to meet all the requirements to achieve WELL Certification. A significant portion of the requirements are down to good design plus ongoing maintenance, testing and upkeep.

HOW HAS IT COME ABOUT?

A bit of background.

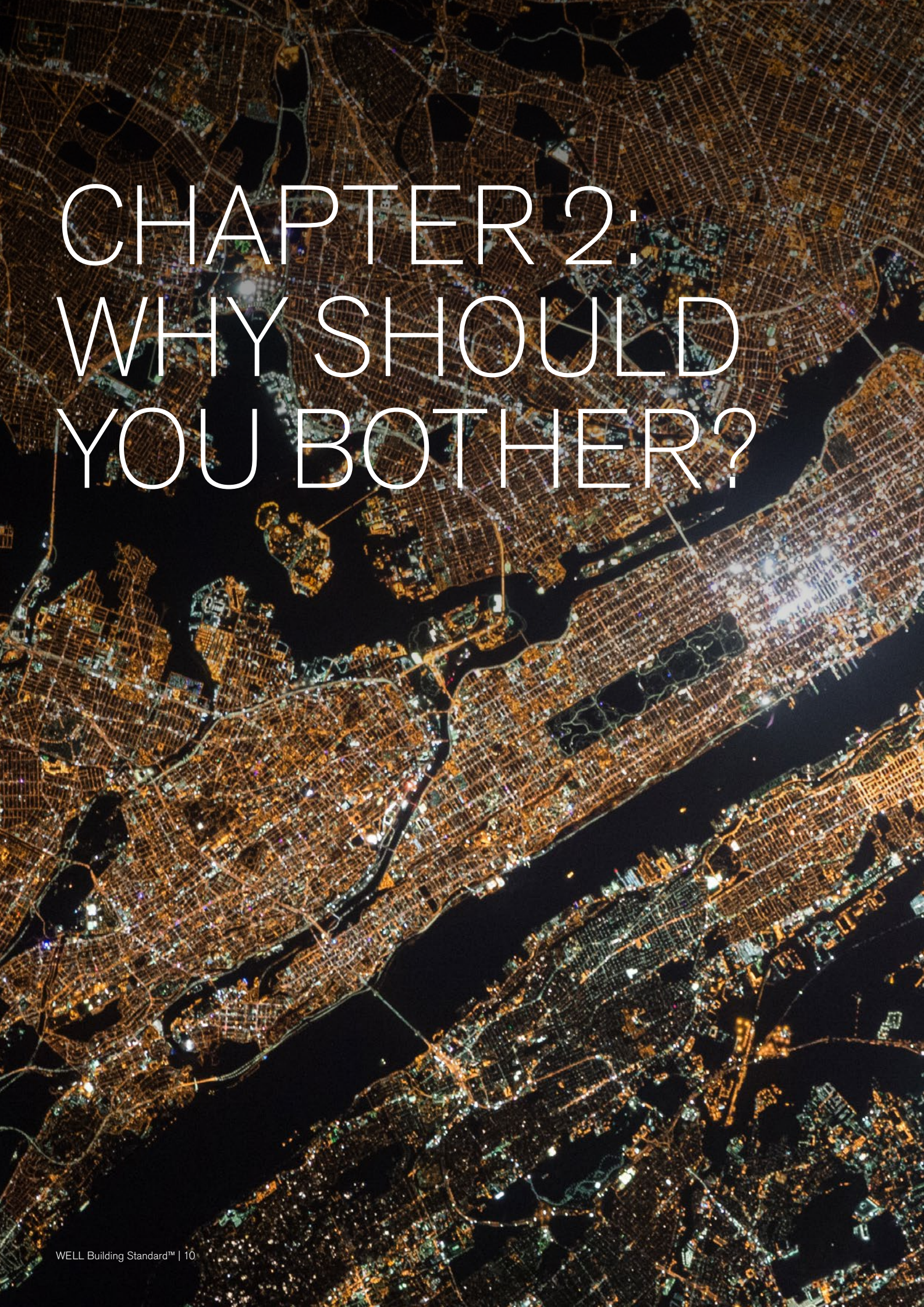
Administered by the International WELL Building Institute™ (IWBI™), and certified by Green Business Certification Inc., the WELL Building Standard is a building standard that focuses on human health and well-being.

Although the WELL Building Standard is not the first sustainable building assessment system, it is fast emerging as a leading human-centred approach to health and well-being in the built environment. Other well-known building standards such as LEED (https://new.usgbc.org/leed) and BREEAM (http://www.breeam.com/), which differ mainly in their assessment methods, tend to be carbon-centred and focus more on buildings' environmental performances.

A QUICK SNAPSHOT OF ITS 7 KEY CONCEPTS

There are 7 *"concepts"* that are considered within the standard. Each concept contains multiple *"features"* which are both required and optional design strategies that need to be met to achieve certification (For more detail, see: *'All you need to know (and more) about WELL's 7 Concepts').*

This is a very comprehensive, detailed standard that requires a holistic design concept to achieve the best possible outcome, but we'll go into all of that later…



CHAPTER 2: WHY SHOULD YOU BOTHER?

With over half of the world's population now living in cities we are beginning to recognise the need for a shift towards human centred-design which must include bringing natural systems into our indoor and outdoor urban spaces. This enrichment will lead to so many cohesive corporate and societal benefits including staff retention and engendering a spirit of environmental stewardship."

– RICHARD SABIN, Director, Biotecture Limited.

IS IT REALLY WORTH THE EFFORT?

Workplace design that considers air quality, lighting, views onto nature and the general layout of the interior[2] can significantly impact on health, satisfaction, well-being and staff productivity. Studies show that companies prioritising employee engagement and well-being outperform those that don't by an average of 10%.[3].

This means that adopting this human-centred approach can provide businesses with evidence-based savings and increases in profit, whilst gaining recognition for achieving the WELL Building Standard™.

NOW IS THE TIME, AND HERE'S WHY

Preventable chronic diseases, such as stress related illness and heart disease, are one of the leading global causes of early death,[4] and cost employers heavily both through medical expenses, sickness absence as well as loss of productivity. At the same time, our physical and social environments are amongst the largest determinants of health.[5] Thus, healthier environments lead to healthier people.

People have started to take this message on board, and human-centred design is becoming an industry aspiration. As a result, standards are being introduced to ensure human needs are a fundamental consideration in the built environment.

54%

In 2014, the urban population made up 54% of the global population in comparison to 34% in 1960.

76%

Globally, 76% of employees report a struggle with well-being.

90%

90% of business costs are in staff and salaries, so any improvement in well-being and productivity is valuable

77%

77% of CEOs see accessing and retaining employees as the biggest threat to their businesses.

WE'VE PICKED OUT SOME COMPELLING STATISTICS FOR YOU. HAVE A READ AND TELL US YOU DON'T SEE THE PROBLEM. . .

ISSUE	FINDINGS
Urbanisation	In 2014, the urban population made up 54% of the global population, in comparison to 34% in 1960, and continues to grow by between 1.4-1.9% every five years. Estimates show that a majority of the population of all countries will be urbanised by 2017, even in less developed countries[6].
	Densely populated urban areas are associated with reduced subjective well-being and individual life-satisfaction[7].
Well-being and sickness costs	Globally, 76% of employees report a struggle with well-being[8].
	90% of business overheads are attributed to staff costs, and so any improvements in staff's physical and mental health will have a large positive financial impact.[9]
	Employee mental health issues alone cost companies in the UK £30 (€30.4) billion a year due to lost production, absenteeism and recruitment[10].
	Across 27 EU Member States, the average rates of absenteeism are between 3% and 6% of working time, costing roughly 2.5% of gross domestic product. For example, annual costs of absenteeism in Austria are approximately €6 billion, in Belgium €10.5 billion, and in Germany €34 billion[11].
	Work related stress costs the US $300 (€255) billion and Europe $650 (€553) billion annually, and this is likely to grow[12].
	Presenteeism (continuing to come into work when unwell and not functioning at an optimal level) costs $100 (€850) billion a year[13] which is 10 x higher than the cost of absenteeism[14].
	90% of business costs are in staff and salaries, so any improvement in well-being and productivity is valuable[15].
	Businesses with highly satisfied employees have 37% lower absenteeism, 21% higher productivity, and 10% higher customer satisfaction than those without[16].
Employee attraction and retention	77% of CEOs see accessing and retaining employees as the biggest threat to their businesses[17].
	Companies with satisfied, engaged workers have 25-65% lower employee turnover[18].
	60% of staff are more likely to feel they work in a good organisation if their employer supports well-being[19].

BUT WHY GET THE WELL BUILDING STANDARD™ ACCREDITATION?

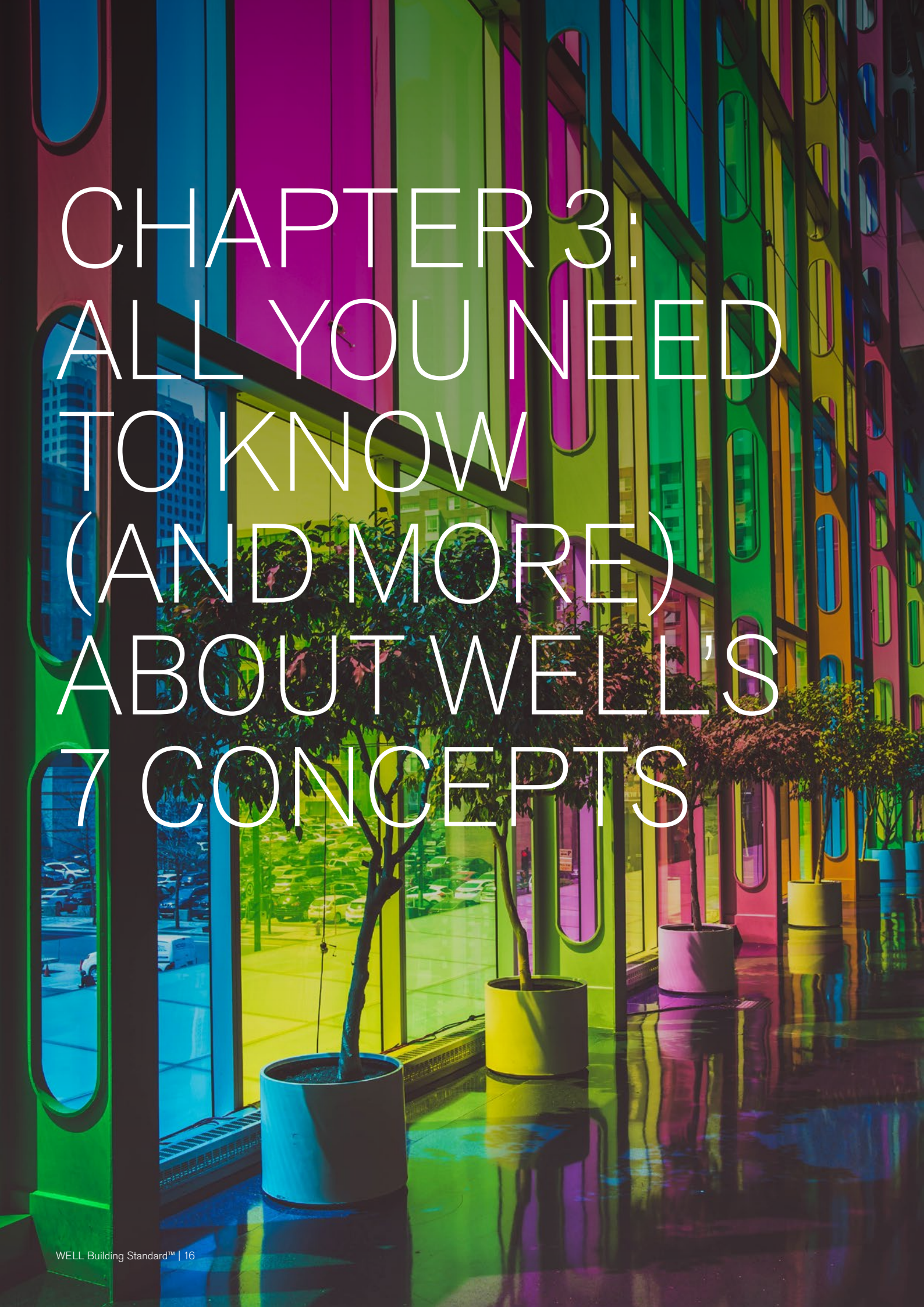
The implementation of human-centred design is growing rapidly in a variety of building types, with WELL™ being a leading force in this much-needed movement.

At the time of writing (2017)*, there are 95 WELL registered projects underway in Europe, with a total of approximately 2.2 Million m² across 13 countries including France, UK, Spain, The Netherlands, Sweden, Ireland, Slovakia, Czech Republic, Poland and Finland. **Globally, there are 502 WELL projects across 30 countries covering a total of approximately 10 Million m².**

**These figures are constantly increasing - see: https://wellonline.wellcertified.com/community/projects*

In November 2016, the WELL Building Standard™ and BREEAM were aligned, meaning submitted documentation can be recognised by both organisations to save time and money. In April 2017, WELL and LEED were also aligned to work harmoniously. If “sustainability and health are synonymous” (Rick Febrizzi, CEO of IWBI), it only makes sense for these systems to work together.

For more detail, see: http://standard.wellcertified.com/well-crosswalks..



CHAPTER 3: ALL YOU NEED TO KNOW (AND MORE) ABOUT WELL'S 7 CONCEPTS

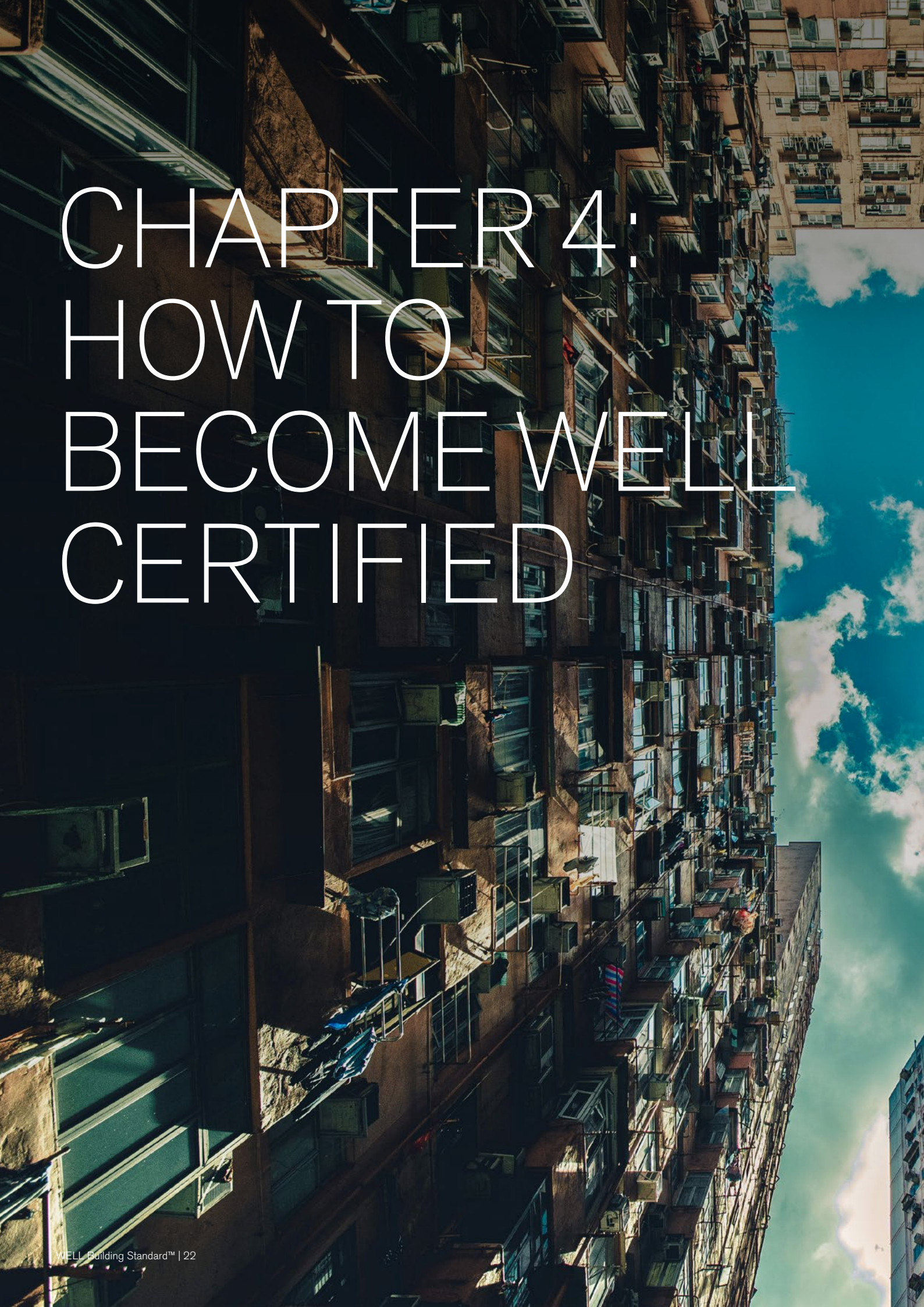
WE'VE SUMMARISED THE FULL WELL BUILDING STANDARD[20] BELOW WITH SOME ADDITIONAL RESEARCH TO ILLUSTRATE THE VALUE AND GIVE SOME CONTEXT TO THE CONCEPTS:

CONCEPT	WHAT?	WHY?	PRACTICAL SUGGESTIONS
 AIR (29 features)	Optimal indoor air quality to support the health and well-being of building occupants. Features include material selection, ventilation, filtration, and pest control.	First of all, we breathe in 15,000 litres of air every day. Air pollution contributes to 7 million premature deaths annually worldwide. Indoor pollution levels can be 100 times higher than pollution found outdoors, and toxic household cleaners can be three times more likely to cause cancer than breathing in outdoor air[21]. Volatile Organic Compounds (VOCs), such as adhesives, paints, and air fresheners[22], cause headaches, eye, nose and throat irritation and dizziness, and may lead to chronic diseases or cancer. 96% of VOCs detected in a large office building were a result of materials used to construct and furnish the building[23]. These air quality issues can diminish work productivity and lead to sick building syndrome. Better indoor air quality, such as low levels of CO_2, pollutants and increased ventilation, can lead to an 8-11% improvement in productivity[24]	The WELL Building Standard requires a combination of the installation of appropriate materials with the implementation of effective procedures to improve air quality. Implement a smoking ban Optimise mechanical and natural ventilation VOC reduction in adhesives, finishes, furniture and cleaning products Air filtration (such as carbon filters that remove volatile pollutants, and media filters for smaller particles) Microbe and mould control (ultraviolet germicidal irradiation devices) Healthy entrances (such as floor systems that capture pollutants from shoes) Cleaning protocol (frequency, supplies, equipment, procedures and training) Pesticide management (use only approved, nontoxic products) Humidity control and balancing Operable windows Pest control for food storage and presentation
 WATER (8 features)	Safe and clean water promoted through proper filtration and other methods. Features include quality, treatment and hydration promotion.	The National Academy of Medicine (NAM) in the US recommends that women consume approximately 2.7 litres and men 3.7 litres of water per day[25]. However, up to 80% of the U.S. adult population go through their normal day in a mildly dehydrated state[26], reducing work productivity by 12%[27] and reaction time by 23%[28]. Contaminants, such as lead and arsenic, can have serious effects on health. However, treating water with chlorine and chloramine can also lead to adverse health effects. performance.	WELL carries out an assessment of the building's water source. Filtration can be installed based on the specific requirements. Regular testing to maintain water quality is an optional strategy. Fundamental water quality tests Filter out inorganic contaminants using reverse osmosis systems or Kinetic Degradation Fluxion filters Filter out organic contaminants using activated carbon filters Monitor public water additives to maintain disinfectant, and fluoride levels Regular water quality testing and monitoring Drinking water promotion (easily accessible drinking water throughout the building) over that of sweetened sodas

CONCEPT	WHAT?	WHY?	PRACTICAL SUGGESTIONS
 NOURISHMENT (15 features)	Readily available fresh, wholesome foods, whilst limiting unhealthy options. Features include healthy portions, mindful eating, preparation, contamination & alternatives.	Urbanisation has led to limited access to fresh and well sourced food, such as from farmers markets. Across Europe, a majority of countries' obesity rates are between 20 and 30%[29]. As of 2014, on a global scale 1.9 billion (39%) of adults were overweight, of which 600 million (13%) were obese. 2.7 million deaths worldwide are due to insufficient fruit and vegetable intake, putting poor nutrition within the top 10 global mortality risk factors (WHO). Better nutrition is significantly associated with a 27% reduction in depression, a 13% reduction in distress, and overall better mental health[30], productivity and job performance[31].	WELL takes into account that simply having healthier options available could make for a healthier, happier and more productive workplace. Improve availability of fresh fruit and vegetables Limit or prohibit access to processed foods Label food clearly for food allergies Improve access to good hand washing facilities – paper hand towels are encouraged Clearly label artificial ingredients Make nutritional information available Promote healthy food options over advertising unhealthy ones Reduce serving sizes (reduces unintentional over eating) Responsible food production (organic and free-range required) Food production - give occupants space and tools to grow vegetables) Mindful eating – create dedicated eating spaces
 LIGHT (11 features)	Guidelines to minimize disruption to the body's circadian system, enhance productivity and alertness, and provide appropriate visual acuity. Features of this include circadian design, glare control, visual aspects and improving access to day lighting.	Regular daily exposure to natural light is key to a balanced circadian rhythm; ensuring greater alertness in the day and better sleep at night. The circadian rhythm is an internal clock that operates on a 24-hour cycle and affects the body's mood behaviour and hormone release. Poor lighting can lead to a drift of the circadian phase, which has a negative impact on sleep. The National Academy of Medicine (NAM) reports that 50-70 million U.S. adults suffer from sleep disorders, which are risk factors for diabetes, obesity, depression, heart attack and stroke. Evidence suggests a positive correlation between proximity to windows and productivity. This effect is particularly strong if there is a view offering a connection to nature[32].	WELL buildings should have the correct amount of light with appropriate limits to glare. For most architectural lighting and day lighting, glare prevention is essential by either diffusing the light to reduce the luminance or shielding the source from view[33]. Balancing of direct task lighting with indirect ambient lighting Circadian lighting design for circadian health Controlling glare emanating from artificial lighting Solar glare control using shielding, baffles, controls and dimmable glass on windows Low-glare workstation design to minimise contrast between computer screens and background Measure light colour quality using the colour rendering index (CRI) Use surfaces with higher light reflectance values (LRVs) to bounce and maximise natural light Exposing occupants to adequate levels of sunlight by sitting close to windows Window design to optimise daylight and minimise unwanted glare and thermal heat

CONCEPT	WHAT?	WHY?	PRACTICAL SUGGESTIONS
 FITNESS (8 features)	Integration of exercise and fitness into everyday life by providing features to support an active and healthy lifestyle. Features include support, activity programs, spaces, and interior and exterior active design.	Many people are physically inactive due to sedentary jobs, modern transportation, and urbanisation. US statistics show that less than 50% of young school students, 10% of adolescents and 5% of adults reach the recommended exercise goal. Worldwide, fewer than 40% get the 30 minutes of moderate-intensity activity per day recommendation. Physical inactivity is estimated to be responsible for 30% of ischemic heart disease, 27% of type 2 diabetes and 21-25% of breast and colon cancer cases, and is the 4th leading risk factor for mortality. Implementing active design and exercise into the workplace creates healthier lifestyles and environments[34].	WELL Buildings should be designed to encourage movement to, from and around them, to help to make occupants less sedentary. Interior fitness circulation through prominent designs to promote movement i.e. promoting use of stairs rather than elevators, or zoning of activity spaces to create destination points Activity incentive programs - wearable activity monitors and gym memberships Structured fitness opportunities, such as access to personalised fitness advice and classes Exterior active design to facilitate more active living Physical activity spaces Active transportation support – showers and bicycle storage required Fitness equipment
 COMFORT (12 features)	Create a distraction-free, productive and comfortable indoor environment. Features include accessibility, ergonomics, acoustics, sound masking and thermal considerations.	Disruption, distraction and irritation can be caused by acoustic, ergonomic, olfactory and thermal problems, which are a leading source of workplace dissatisfaction[35]. Whilst there are benefits to open plan offices, they allow for distractions. Performance can be lowered by as much as 66% when distracted by noise in the office[36]. Thermal comfort has a significant impact on staff satisfaction, and even more so if staff are given slight control over this[37]. Office workers experience a 4% decline in performance when subjected to warmer temperatures and an even higher 6% in cooler temperatures[38]. Ergonomics and universal design effect physical and mental stress, with symptoms such as musculoskeletal disorders (MSDs), back and neck pain[39].	WELL encourages consideration of how spaces make us feel and perform. Ergonomics: visual and physical - employees able to adopt comfortable sitting and standing positions Set indoor sound level limits to reduce exterior noise intrusion Limit sound from building systems & create quiet zones Sound masking to increase speech privacy and reduce acoustic disruptions Sound reducing surfaces and sound-absorbing materials determined by the noise reduction coefficient to reduce reverberation time Thermal comfort considerations in heating and cooling equipment Individual thermal control via adjustment devices and varying temperatures throughout the office Discourage strong chemical smells for olfactory comfort

CONCEPT	WHAT?	WHY?	PRACTICAL SUGGESTIONS
 MIND (17 features)	This requires a physical environment that optimizes cognitive & emotional health. Features include biophilia, beauty and design, sleep, wellness awareness as well as protocols, support, treatment and transparency.	The growing body of evidence showing the positive effect green space has on mental health has large implications for design possibilities and how it can be used to improve the lives of employees[40]. Adding plants into the workplace significantly reduces stress, health concerns, and sickness absence[41]. Exposure to views onto a concrete roof causes an 8% decrease in performance, whereas viewing a green planted roof improves performance by 6%[42]. Employees favour natural outdoor workspaces over constructed indoor workspaces for performing 75% of tasks, rating them as more fascinating, relaxing, open, bright and quiet[43]. If the interior design of an office takes the occupants into consideration, such as creating both breakout space and social space, improvements are found in concentration, collaboration, confidentiality and creativity[44]. Offices with elements of greenery and nature improve self-reported[45]: · Well-being by 15% · Productivity by 6% · Creativity by 15%	WELL buildings should use design strategies to help promote mental and psychological health of its occupants. Promote health and wellness awareness by making literature on the subject available All stakeholders must meet regularly throughout the project to ensure ongoing adherence to wellness goals Post-occupancy surveys to provide wellness feedback Design environments that positively impact occupants' mood and comfort levels Investigate local environmental conditions to deliver an appropriate biophilic framework to enhance the human-nature connection, for both interior and exterior areas. To include both direct and indirect references to nature Produce quiet, adaptable and productive workspaces for focused work and also recuperation Implement healthy sleep policies such as reasonable work hour limits and communications Reduce business travel stress by providing opportunities for a fitness regimen and protection of healthy sleeping patterns Flexible work schedules to allow for a healthy work-life balance Provide wearable devices to track wellness, heart rate variability, sleep quality and activity Stress and addiction treatment, such as therapies and pharmacological interventions
 INNOVATIONS	WELL projects are encouraged to submit up to 5 innovations - this is effectively a 'bonus category' that sits outside the main 7. These are Features 101-105.	Innovation has long been a key driver in developing the WELL Standard. This can set your project apart from others and improve outcomes for occupants. It can be as simple as educating people about what the building offers, using innovative processes or materials, making a WELL Accredited Professional a core member of the design team or promoting biodiversity.	The two key strategies that teams deploy are to either: Go above and beyond the current requirements of the existing WELL features OR Relate to a wellness concept in a novel way that is not already covered in the WELL Building Standard. - i.e. draw on research and propose a novel strategy.



CHAPTER 4: HOW TO BECOME WELL CERTIFIED

WHERE DO WE START?

There are three different project types, depending on the stage of construction and what proportion of the building is registered for certification. *'Core and Shell'* projects seek to implement WELL features into the base of the building during construction, such as window locations. Achieving certification at this level makes it easier to become certified in the *'New and Existing Interiors'* level (in which the project only occupies a portion of the space in a building). Lastly, *'New and Existing Buildings'* applies to projects that cover a minimum of 90% of the whole building.

THE PROCESS:

1. REGISTRATION through WELL online – On registration, a fee is paid anywhere from $1,500 - $10,000 (approx. €1,300 - €8,500) depending on project type, size and location. New and existing buildings over 500,000 sq ft./46,500m² incur the highest fees. You can register here: https://www.wellcertified.com/en/start-a-project

2. DOCUMENTATION – Such as annotated project documents, drawings, as well as letters of assurance from the project team. These must demonstrate adherence to mandatory preconditions and optional optimisations (see the certification breakdown below).

3. PERFORMANCE VERIFICATION – A series of onsite post-occupancy performance tests are carried out by your WELL assessor to ensure that the building is performing as intended.

4. CERTIFICATION – Once the project has complied with all features of WELL and passed Performance Verification, WELL Certification is awarded at one of three levels: Silver, Gold and Platinum.

5. RECERTIFICATION – After three years, the project must undergo the recertification process to ensure the project has sustained its high level of design, maintenance, and operation. In addition, post-occupancy studies, evidence of maintenance, and ongoing environmental measurement will need to be demonstrated to the IWBI on an annual basis.

If you would like to estimate the cost of your potential project, WELL provides a pricing calculator: https://wellonline.wellcertified.com/node/add/pricing

CERTIFICATION – A BREAKDOWN:

So, we have WELL's 7 concepts. Each concept, for example air, has a list of features that act as a checklist to fulfil each concept to a high enough standard. These features, of which there are 105 in total, are split up into either **preconditions** or **optimisations**. Let's explain those:

- A **precondition** is the foundation for wellness in the built environment. For occupied spaces, all preconditions are required to achieve SILVER certification.
- **Optimisations** are extra features such as optional technologies, strategies, protocols and designs, which can be pursued to achieve a higher level of certification such as GOLD or PLATINUM. If you want to get on the good side of your WELL assessor, you'll include as many of these as possible!

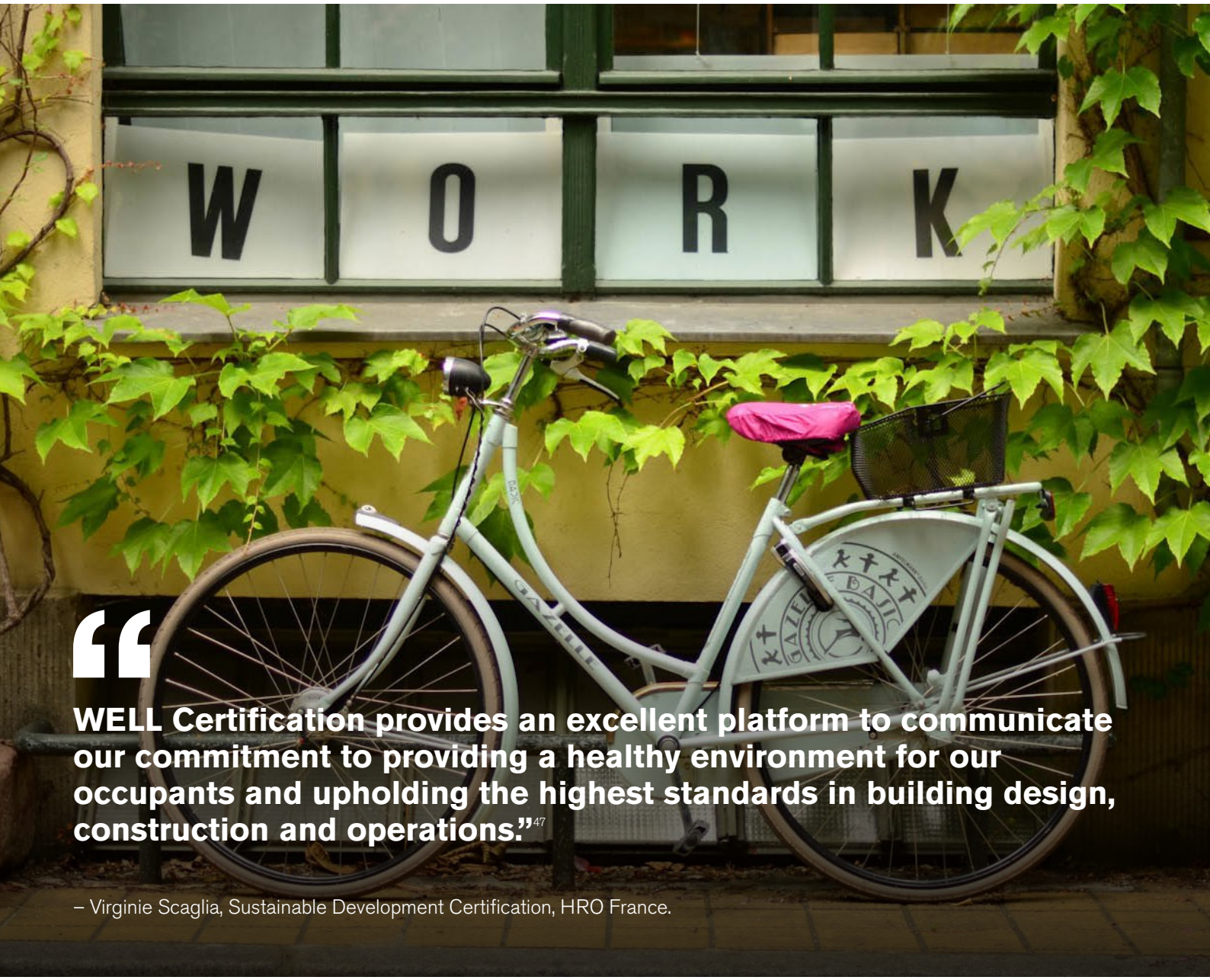
For example, for a New and Existing Interiors project, the preconditions in the light concept are 'Visual lighting design', 'Circadian lighting design', 'Electric light glare control' and 'Solar glare control.'

> **"Over the last few years in lighting design, we have learned the importance that light has on human health... One of the most exciting elements of WELL is that it enables designers to promote these health aspirations in a meaningful way."**
>
> – Jake Wayne, senior lighting designer for ARUP[46].

		Core and Shell	New and Existing Interiors	New and Existing Buildings
LIGHT				
53	Visual lighting design		P	P
54	Circadian lighting design		P	P
55	Electric light glare control	P	P	P
56	Solar glare control	O	P	P
57	Low-glare workstation design		O	O
58	Color quality		O	O
59	Surface design		O	O
60	Automated shading and dimming controls		O	O
61	Right to light	O	O	O
62	Daylight modeling	O	O	O
63	Daylight fenestration	O	O	O

P - preconditions O - optimisations.

See: http://standard.wellcertified.com/features for the full requirements.



WELL Certification provides an excellent platform to communicate our commitment to providing a healthy environment for our occupants and upholding the highest standards in building design, construction and operations."[47]

– Virginie Scaglia, Sustainable Development Certification, HRO France.

The WELL Building Standard presents us all with an opportunity – using the built environment to promote and improve the health of our society. Now, that just makes me excited. And that is why I became a WELL AP."[48]

– Jacqueline Langhals, WELL AP, Energy Conservation and Sustainability Administrator at Ohio Department of Rehabilitation and Correction (ODRC).

SCORING

A WELL Assessor will grade each concept independently on a numerical scale, and the final WELL score is calculated based on the total preconditions and optimisations achieved across the board. It's like exam results day all over again.

All preconditions within the standard need to be met in order for WELL certification to be achieved. If they are met, then the number of optimisations are calculated to determine if the project scores Silver, Gold or Platinum. Each optimisation is treated alike, for example daylight modelling is no more valuable than surface design.

See: http://standard.wellcertified.com/scoring

WHAT ON EARTH IS A WELL ACCREDITED PROFESSIONAL?

Just in case you don't feel like you've delved into the world of WELL enough already, you can go one more extra mile. The WELL Accredited Professional (WELL AP) credential is an advanced credential for experienced building professionals, engineers, architects and designers alike. It denotes expertise in the WELL Building Standard and a commitment to building with human health and wellness at the core of design. This will enable you to serve as a project consultant and advance your career. You do not need to be a WELL AP to register a project for certification; however, every WELL project team would benefit from having a WELL AP on board to serve as the primary source of WELL expertise – which also counts as an innovation. So basically, no, you don't need to become a WELL AP, however this will greatly benefit your accreditation chances.

You can get access to a 30-day study plan through the IWBI, and the exam costs $660/ €550 (correct at the time of writing - July 2017).

You can register for the online exam here: https://wellonline.wellcertified.com/user/login?destination=user-profile

It's been amazing to combine my passion for human health and well-being with my profession and watch my business flourish… WELL has revitalized my company in a way I could have never expected. I am honoured to be a part of movement that makes the world a healthier place for people."[49]

Jennifer Berthelot-Jelovic, WELL AP and CEO of A Sustainable Production.

CHAPTER 5: WHO'S DOING IT?

We have picked out two inspiring projects from around the world to illustrate how some companies have already reached certification. We've gathered a range of insights into the projects from their costs and savings, to statistics on the benefits to occupants, quotes from owners, architects and end users, and lastly some of their practical approaches to getting certified. We hope these case studies get you thinking.

This means that adopting this human-centered approach can provide businesses with evidence-based savings and increases in profit, whilst gaining recognition for achieving the WELL Building Standard™.

CUNDALL'S 'ONE CARTER LANE' LONDON, UK

Cundall is a multi-disciplinary engineering consultancy established in 1976. The company has 20 offices globally, has delivered projects in more than 50 countries, and has grown to become the world's first consultancy to be endorsed as a 'One Planet' company, supporting the idea that if we have healthy buildings, we will have a healthy planet. Cundall's London office, designed by Studio Ben Allen and completed in 2016, is the first building in Europe to achieve WELL Certification at the GOLD level.

Achievements:

- Air: Ventilation switches off overnight, letting the outside air in, and then is ventilated back out in the morning. Materials with low/ zero VOCs, formaldehyde and toxic content were used throughout the project for furnishings, paint, adhesives, oils, waxes and insulation. CO_2 sensors are used for high density areas to ensure that the high standard of air quality is maintained.
- Water: Activated carbon water filtration system – made from coconut shell - following Water Regulations Advisory Scheme.
- Nourishment: Access to fresh food, minimised cross-contamination by using all brass surfaces in bathrooms and eating areas, and only use paper towels to dry hands
- Light: Lighter coloured finishes used reflecting light more effectively, e.g. reflective floor increasing daylight in the office by 20-30%. Costs are kept to a minimum by using efficient lighting with passive infra-red occupancy detection and daylight dimming controls.
- Fitness: Yoga classes offered to employees, standing desks, cycle racks to encourage cycling to work, and active work stations.
- Comfort: Shelving and planted trellis dividers to create 'rooms' within the open plan office. This allows for privacy and refuge, and a 'team mentality' between individuals in a more private space.
- Mind: Active living wall and moss walls. Plants are integrated throughout the office in furniture and space dividers and raised from the floor to make them more visible. A small amount of seasonal food is also grown.

©Dirk Lindner and Cundall

27%

drop in staff turnover compared to the previous year, saving £122,000 (€132.500)

50%

lower absenteeism than the previous year, leading to an annual saving of £90,000 (€97.700)

Costs:

- Cost of the total 1,500m^2 fit-out: £850,000 (€922.836)

Costs attributed to WELL:

- £6,000 (€6,500) WELL fees, plus £15-20,000 consultancy fees (€16.300 – €21.700)
- "The additional construction cost of WELL is between 1 and 3% depending on how early it is considered. This represents approximately £200 (€217) per person to an employer and is good value for money."[50]
- Total WELL cost (certification fees, consultancy time and hard materials): £55,000 (€59.700)

Benefits attributed to WELL:

- In October 2016, absenteeism was 50% lower than the previous year, leading to an annual saving of £90,000 (€97.700)
- 27% drop in staff turnover compared to the previous year, saving £122,000 (€132.500)

These figures clearly show that there are immediate financial benefits; within one year the savings from staff retention and absenteeism easily paid for the costs of getting WELL certified. In the long-term this will translate into greater profits, creating a strong business case for certification.

It is interesting that the notable savings after one year strongly reflect the benefits on a human level (improved satisfaction and wellbeing); the achievements are totally in line with what WELL and anyone registering for certification is striving for. As such, there are numerous lessons to be learned from this pioneering refurbishment project.

Download their brochure here for more information: www.cundall.com/Knowledgehub/WELL-Building-Standard.aspx

CBRE OFFICES, MADRID

CBRE, a world leading real estate consultant, was awarded the first WELL certification in Spain in 2016. The project earned GOLD in the 'new and existing interiors' category. CBRE now has a global team of WELL APs to assist their clients to also attain WELL Certification.

The CBRE office was designed, by their Department of Architecture and Interior Design, to enable all employees and clients to work together and interact, passing on knowledge and ideas, and to stimulate the five senses of all visitors and occupants. It is now considered one of the top 50 companies to work for in Spain.

Inspiration for the office design came from the concept of a forest cabin. The open plan office resembles the forest, with a wooden 'hut' office space in the centre used for client presentations.

Some of the design elements that enabled them to achieve their GOLD status:

- Natural settings
- Height adjustable desks
- Planted walls
- Wood flooring
- Furniture that mimics shapes found in nature
- Grass-like carpeting
- Conference rooms named after natural wonders such as the Grand Canyon and Kilimanjaro
- Relaxation spaces
- Work spaces that vary in size, furniture type and aesthetics to choose from to best fit certain activities
- Healthy food with nutritional information
- Yoga and Pilates classes and a running club
- Policies protecting employee health
- Sustainability report detailing its environmental impact (Organisational Transparency)

Employees are now requesting that companies provide improved well-being policies. These measures have not just helped to improve employee satisfaction and productivity, but have also improved results in terms of attracting and retaining talent. In fact, according to CBRE's report, 85% of young employees now see well-being in the workplace as a key factor."

– Adolfo Ramirez-Escudero, Executive Managing Director, CBRE Spain.

The return of investment is seen within a year. Following our experience, 80% of employers now feel more productive, they do not have fixed posts, each one works where they feel best, 90% of those interviewed would not go back to the old office layout, and they think that WELL has had a positive impact on them. 86% of companies say that the new space helps them to concentrate, 87% say that the environment helps them to generate business."[50]

– Luis Cabrera, Head of Energy & Sustainability, CBRE

Adopting wellness strategies, and achieving WELL certification, in our own premises gives us the opportunity to fully understand the benefits to individuals and ongoing management activities for optimal organisational performance. As well as enhancing work life for our own people this allows us to help occupiers and owners get the best value for their wellness investment."[52]

– Rebecca Pearce, EMEA Head of Sustainability, CBRE.

Savings and Outcomes:

12%

Energy reduction

40%

Water consumption reduction

30%

Productivity increase

76%

Overall employee satisfaction increase

Since achieving WELL certification, CBRE has seen a significant increase in employee health and wellbeing; because of the healthier environment, occupants report feeling more creative and are making more health-conscious decisions[53]. Further, a healthier workforce will result in major positive financial implications for the company as a whole. Everyone's a winner!

ARUP, BOSTON

In mid-2017, ARUP engineers refurbished their 1970s built offices alongside Dyer Brown, and achieved WELL certification at the Gold level. ARUP, in addition to being the owner, provided lighting design, WELL consulting, commissioning, acoustics and structural engineering. They were the 14th building to achieve WELL certification globally.

Design team members: Dyer Brown Architects for architecture and interior design, and Corderman & Company, Inc. as general contractors.

“A major goal in this effort was to show other clients and owners that this can be done, and it can be done within a budget and schedule. This meant significant work on multiple design options and extensive material research, since in many cases instead of 50 suppliers available for a given product need, for example, there might only be three available that meet the more restrictive criteria of WELL Gold.”

– Karen Bala, Senior Architect, Dyer Brown.


Dorchester
Mattapan

We wanted space that was progressive, cutting edge, so that we could attract good quality staff. We'd like to think that a graduate would come in here and take a look at this place and say 'OK, this is a place I'd like to work."

– Tim McCaul, Principal and Boston Group Leader, ARUP

Achievements:

- Circadian lighting design that goes above and beyond what is required for WELL certification with dynamic controls to automatically adjust brightness and colour of lighting in accordance with the position of the sun.
- Highly reflective ceiling materials for maximised indirect lighting.
- Ventilation system that filters air and ventilates spaces in response to occupancy levels.
- Use of materials that do not emit harmful contaminants.
- Employees report feeling less tired at the end of the day.
- Hosting more events and meetings which have increased opportunities for social connectedness.
- Larger dining area created, increasing social benefits and reducing mindless eating at desks e.g. big sociable Friday breakfast for employees.
- Healthier food options have been provided;
- Providing a sparkling water dispenser has meant staff are hydrating more often.
- Informal break out space, non-bookable space, and small group space have been created for enhanced collaboration.
- Increased number and size of meeting rooms have been provided for when privacy and formal spaces are needed.
- Movement is encouraged; employees move around and work in different spots each day if they wish.
- A standing desk for every employee has improved how they report feeling, even if only used for a short while.

ARUP conducted an occupant survey in December 2016 in the old office (Mass Avenue), and another in June 2017 in the new office (State Street). In comparing the two, the results are as follows:

Question	Old Office (Mass Ave.)	New Office (State St.)
Satisfied with glare at workstation?	51%	81%
Is the lighting environment comfortable?	42%	75%
Satisfied with lighting at workspace?	35%	74%
Sit at your desk 8+ hours per day?	40%	14%
Sit at your desk 5+ hours per day?	94%	71%
Experience bothersome noise from colleagues?	75%	38%
Provided access to healthy food options?	23%	94%
Satisfied with quality of space to eat?	23%	94%
Eat lunch at your desk 3-5 days per week?	63%	27%
Sense of community at work?	65%	87%
Office environment is inspiring and energising?	38%	72%
Proud to bring visitors to the office?	33%	94%
Productivity positively impacted by office environment?	8%	68%
Feel healthier when in the office than out the office?	2%	43%
Workplace supports creative thinking/ collaboration?	37%	83%

In addition, occupants have reported becoming increasingly 'satisfied and comfortable' with the both the air quality and their thermal comfort post-move.

The range of first-hand experiences, observed through pre-and post-occupancy studies at ARUP, really demonstrate the enormously positive effect of the human-centred approach of WELL. The impact WELL can have on occupiers' behaviours is clear, and this in turn will affect productivity and ultimately the bottom line of businesses.

These are just two of the amazing WELL certified projects that are out there. The WELL Building Standard is growing rapidly, with more and more buildings registering for certification. For more inspiration and insights from those who have gone through the WELL certification process, see: https://wellonline.wellcertified.com/community/projects.

CHAPTER 6: SO, WHAT NEXT?

WHERE IS HUMAN-CENTRED DESIGN GOING?

There is huge potential for creative development within this area of design. The **WELL Building Standard™ - and comparable country specific standards** - is helping to increase the recognition of the benefits human-centred design has on building occupants.

Architects, designers and decision makers across all sectors are seeing the need for the shift to human-centred design and are beginning to register their buildings to the standard. As it grows, we will soon see the first certified buildings in hospitality, retail, education and other sectors.

There is also a lot of development in the methods of measuring and quantifying the benefits human-centred design has on people, profit and planet. Quantifying the positive impact and possible economic value will help to drive and accelerate the movement even further.

Human-centred design, such as WELL, is inspiring, progressive and, above all just makes sense; If you think about it, who wouldn't want to work, eat, sleep, learn, relax and shop in a healthy environment that is proven to make you feel better and perform at your best? Promoting the discussion and implementation is crucial for our future wellbeing, so let's stay on top of it.

WHERE CAN YOU GET HELP GOING FORWARD?

Since WELL is being so well received, they have also launched a Community Standard with the aim to create healthier communities… We told you it's progressive. (see: https://www.wellcertified.com/en/articles/your-guide-well-community-standard%E2%84%A2-pilot)...

Although not the lightest of reads, absolutely everything you could ever want to know about WELL and its features can be found here by downloading the latest brochure: https://www.wellcertified.com/en/resources/well-brochure

WELL also now has an app, to make things even easier for you: https://www.wellcertified.com/app

If you want to get some advice or find a WELL AP near you, follow this link to search for a WELL professional who can support you in any queries: https://wellonline.wellcertified.com/people

Further movement towards human-centred design is Biophilic Design (designing nature back into the built environment to increase wellbeing). Take a look at the content around Human Spaces at blog.interface.com.

Finally, you can contact your local Interface account manager or interior concept design team to see how they can help. If you want to know even more, why not ask them to give you a quick run-through of Interface's presentation on the WELL Building Standard™.

REFERENCES

[1]European Federation of Allergy & Airways Diseases (2004) Towards Healthy Air in Dwellings in Europe, THADE Report

[2]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[3]http://workplace.bitc.org.uk/sites/default/files/bitc_ guidelines_-public_reporting_0.pdf

[4]World Health Organization. The top 10 causes of death, 2012: http://www.who.int/mediacentre/factsheets/fs310/en. Accessed December 1, 2016.

[5]https://www.cdc.gov/nchhstp/socialdeterminants/faq.html

[6]http://www.who.int/gho/urban_health/situation_trends/urban_population_growth_text/en/

[7]http://journals.sagepub.com/doi/pdf/10.1177/0042098016631918

[8]https://www.globalwellnessinstitute.org/global-wellnessinstitute-releases-report-and-survey-on-the-future-of-wellnessat-work/

[9] https://www.ukgbc.org/sites/default/files/Health%20Wellbeing%20and%20Productivity%20in%20Offices%20-%20The%20next%20chapter%20for%20green%20building%20-%20Key%20Findings%20(1)_0.pdf

[10]ACAS (2014) promoting positive mental health at work. Available: http://www.acas.org.uk/index.aspx?articleid=1900

[11]https://www.eurofound.europa.eu/observatories/eurwork/comparative-information/absence-from-work

[12]http://www.globalwellnesssummit.com/images/stories/gwi/ GWI_2016_Future_of_Wellness_at_Work.pdf

[13]Presenteeism occurs when workers are present in the office, but functioning at sub-optimal levels.

[14]http://ehstoday.com/safety-leadership/presenteeism-costsbusiness-10-times-more-absenteeism

[15]http://www.worldgbc.org/news-media/building-business-case-health-wellbeing-and-productivity-green-offices

[16]http://wellbeing.bitc.org.uk/sites/default/files/final_ftse_100_ workwell_public_reporting_benchmarking_report_0_0.pdf

[17]https://www.pwc.com/gx/en/ceo-survey/2017/deep-dives/ceosurvey-global-talent.pdf

[18]http://www.gallup.com/services/178517/state-global-workplace. aspx?ays=n

[19]https://www.mind.org.uk/media/428496/Resource3_HowToPromoteWellBeingFINAL.pdf

[20]http://www.hemlow.com/download/WELL-Building-Standard_v1-with-January-2017-addenda-_2.pdf

[21]Environmental Protection Agency. Volatile Organic Compounds (VOCs). An Introduction to Indoor Air Quality (IAQ). [Online] Jul 9, 2012. http://www.epa.gov/iaq.voc.html.

[22]https://www.cdc.gov/niosh/topics/indoorenv/chemicalsodors.html

[23]http://greenguard.org/en/indoorAirQuality/iaq_chemicals.aspx

[24]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[25]http://www.nationalacademies.org/hmd/Reports/2004/Dietary-Reference-Intakes-Water-Potassium-Sodium-Chloride-and-Sulfate.aspx

[26]Avoid Dehydration in the Workplace, Mike Marcovsky. ISHN, 2009

[27]Wasterlund DS, Chaseling J, Burstrom L: The effect of fluid consumption on the forest workers' performance strategy. Appl Ergon 35:29-36, 2004

[28]Gopinathan PM, Pichan G, Sharma VM: Role of dehydration in heat stress-induced variations in mental performance. Arch Environ Health 43:15-17, 1988

[29]http://www.worldobesity.org/data/map/overview-adults

[30]Mcmartin, Jacka, & Colman. (2013). The association between fruit and vegetable consumption and mental health disorders: Evidence from five waves of a national survey of Canadians. Preventive Medicine, 56(3-4), 225-230.

[31]Merrill, R. M., Aldana, S. G., Pope, J. E., Anderson, D. R., Coberley, C. R., Grossmeier, J. J., & Whitmer, R. W. (2013). Self-rated job performance and absenteeism according to employee engagement, health behaviors, and physical health. Journal of occupational and environmental medicine, 55(1), 10-18.

[32]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[33]http://www.archlighting.com/projects/controlling-glare_o

[34]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[35]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[36]Banbury SP. and Berry DC. (1998) Disruption of Office-related Tasks by Speech and Office Noise. British Journal of Psychology 89:3, pp. 499–517.

[37]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[38]Lan L. Wargocki P. Wyon DP. Lian Z. (2011) Effects of Thermal Discomfort in an Office on Perceived Air Quality, SBS symptoms, physiological responses, and human performance. Indoor Air 21:5, pp. 376-90

[39]http://www.solaripedia.com/files/1321 (pg 121)

[40]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[41]Smith, A., Tucker, M., & Pitt, M. (2011). Healthy, productive workplaces: towards a case for interior plantscaping. Facilities, 29(5/6), 209-223.

[42]Torres, Nicole. "Gazing at Nature Makes You More Productive." Harvard Business Review. 1 Sept. 2015

[43]Mangone, Capaldi, Van Allen, & Luscuere. (2017). Bringing nature to work: Preferences and perceptions of constructed indoor and natural outdoor workspaces. Urban Forestry & Urban Greening, 23, 1-12.

[44]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[45]Health, Wellbeing & Productivity in Offices: The next chapter for green building, 2014. World Green Building Council

[46]https://www.wellcertified.com/en/articles/well-story-light-at-arup

[47]https://www.wellcertified.com/en/articles/sceneo-first-well-certification-france

[48]https://www.linkedin.com/pulse/why-i-became-well-ap-langhals-mba-well-ap-leed-green-assoc

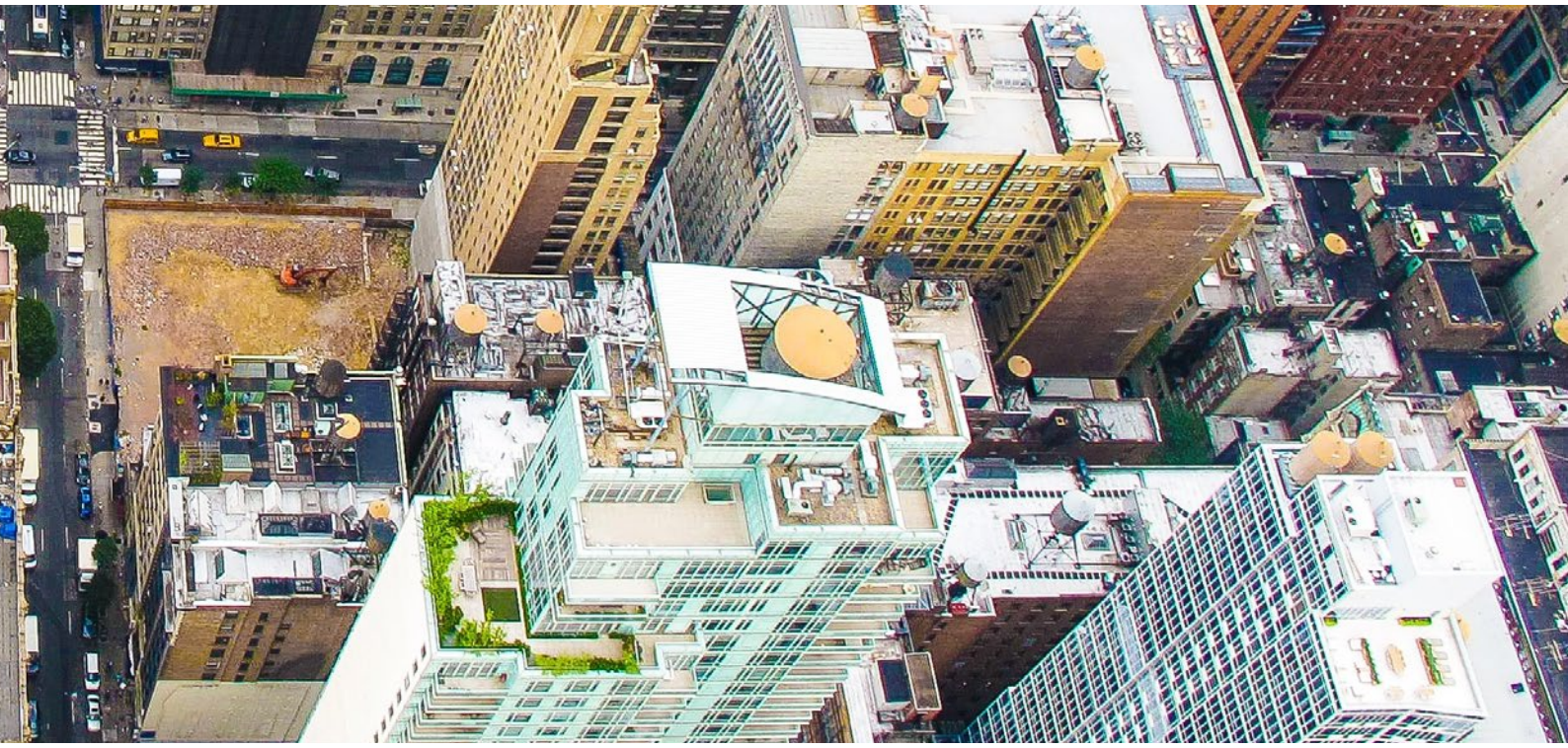
[49]https://www.wellcertified.com/en/articles/well-story-jennifer-berthelot-jelovic-ceo-sustainable-production

[50]http://www.cundall.com/Knowledgehub/WELL-Building-Standard.aspx

[51]https://www.actiu.com/en/articles/news/investing-in-employee-well-being-starts-to-bring-benefits-within-a-year

[52]http://news.cbre.eu/cbre-madrid-office-awarded-the-first-well-building-standard-certification-in-spain/

[53]https://www.wellcertified.com/en/articles/well-story-mind-cbre-madrid



This design guide has been produced as part of Interface's DesignLab. DesignLab is a community of forward thinking architects and designers who want to create positive spaces for people and planet.

Interface want to share their innovative approach to human centred design and help architects, designers and decision makers pave the way towards innovative ways of creating sustainable buildings with wellbeing at their heart.

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