

DENTON

# Shaping a Sustainable Workplace

MEETING THE CHALLENGE OF THE CLIMATE CRISIS



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# Let's forge a sustainable future.

If the climate crisis isn't already the biggest global priority, it soon will be.

Your customers, suppliers or clients want to see a commitment to the planet. To future-proof yourself, sustainability needs a steadfast place in your business strategy.

In our last [insights paper](#), we touched on the many ways that workspaces can be creatively furnished for maximum aesthetic, functional and, of course, environmental performance.

Whilst the furniture is a hugely important consideration, it's only one aspect of any project. What other sustainable steps can be taken throughout the rest of the fit-out?

Let's delve back into the future of fit-out with insights from **Richard Douglas**, one of the DENTON Directors, **Valentina Lupi**, our Designer and **Will Bell**, currently working with us on his final assignment.

How can we forge a sustainable future in design and build? In this white paper, we take a broader look at environmental certification schemes and present some of our latest thinking on how sustainable design can benefit our clients and the environment.

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## CHAPTER 1

# Taking the Lead in the Climate Crisis

In an increasingly environmentally conscious world, sustainability is becoming even more important to consumers, clients, employees, suppliers – indeed, stakeholders want to see action. And fast.

Recent research has shown that businesses with a sustainability strategy have **greater medium-to-long-term longevity**<sup>1</sup> than those who don't. There's proof that **employees are more productive and motivated**<sup>2</sup> in an environment that has a sustainable bedrock. Then there's the fact that three-quarters of us are **changing our habits to benefit the planet**.<sup>3</sup>

So, like never before, it pays to be sustainable. To future-proof your brand, business or organisation, showing you care for our planet has never been so important.

But what can be done to demonstrate that you are ahead of the curve, doing

everything possible to tackle the ongoing climate crisis? Considering buildings and construction account for **39% of all carbon dioxide emissions**,<sup>4</sup> we think we know where to start. Start with the physical embodiment of any brand, business or organisation – the office.

As one of Britain's longest-established design and build companies, we are serious about sustainable design. We provide our clients with considered, demonstrable environmental solutions, taking care to be at the forefront of the latest environmental technologies, ideas and sustainable material opportunities.



# Certifying your Commitment: SKA Ratings

So, you're thinking of making an environmental commitment to a sustainable workspace fit-out. How can you measure and demonstrate the quality and environmental standard of the design and build?

For this, you might like to consider Certification.

Our favourite environmental solution for interior design fit-out projects is the **RICS SKA scheme**.<sup>5</sup> SKA rating is an assessment process that helps landlords and tenants evaluate fit-out projects against a set of sustainability good practise criteria.

The SKA rating demonstrates a serious commitment to the environment and achieving optimum sustainability. It is a voluntary environmental assessment tool to help organisations achieve sustainable fit-outs. Currently, there are over 500 projects registered for certification using the SKA rating.

**SKA Rating: Why Should You Use It?**

It's not just the improved environmental performance that makes the certification so valuable — a SKA rating can provide indirect benefits to your organisation.

SKA certification showcases your commitment to sustainability to clients, investors, employees, or other stakeholders. It brings authenticity and credibility — a SKA rating allows you to make a confident, bold statement about your environmental credentials.



### Reduce lighting energy in use

Criteria

Annual lighting electricity use is less than or equal to:

	Naturally ventilated cellular office	Naturally ventilated open plan office	Air-conditioned office	Air-conditioned prestige office
kWh/m <sup>2</sup> /year	14	22	27	29

Scoping

This measure applies to occupancy stage assessments if any of the lighting energy measures (D01, D02 and E01-E04) were in scope at the handover stage assessment and regardless of whether sub-metering arrangements allow lighting energy use to be measured (see guidance).

Assessment

This measure can only be assessed after a minimum of one year's occupation as the electricity usage has to be measured over a full calendar year (365 days). This is to take account of seasonal variations, such as amount of daylight, and occupant behaviour, such as holidays.

At handover stage: record electricity meter readings for the lighting circuit(s).

At occupancy stage: take meter readings for the lighting circuit(s) and use the meter readings taken at the handover stage to calculate the annual lighting electricity consumption in kWh (the difference between the readings). Calculate the lighting electricity use based on the net floor area of the interior space (in m<sup>2</sup>).

The calculation is as follows:

Lighting electricity use (kWh/m<sup>2</sup>) =  $\frac{\text{Annual electricity usage related to lighting (kWh)}}{\text{Floor area (m}^2\text{)}}$

Rationale

The aim is to encourage the occupant to reduce energy consumption. The targets set here are based on good practice benchmarks. If the fit-out process has introduced energy efficiency measures, then the impact of these measures should be reflected in reduced annual energy consumption.

If you would like to comment on this measure please email [skafit@rics.org](mailto:skafit@rics.org)

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### Fit-out Benchmark & Assessment Tool

Energy and CO<sub>2</sub>

Issue

ID

P10

Rank

1

Ska Offices

Version 1.2 2013

[www.rics.org/ska](http://www.rics.org/ska)

### Outside views

Criteria

All workstations intended for non-transient workers are within seven metres of external windows or benefit from an outside view; the view must be visible within 65 degrees rotation from the normal working position at those workstations.

For the purpose of these criteria:

- transient workers include visitors and those using touchdown workstations;
- 'hot desking' or shared desks are considered to be part of the non-transient workstation provision; and
- outside views are views to external and atrium spaces that benefit from full daylight.

Scoping

This measure applies if workstations are being installed.

Assessment

At design stage: check plans to ensure internal layouts are in accordance with the criteria.

At handover stage: carry out a site visit to confirm internal layouts are in accordance with the criteria.

At occupancy stage: if internal layouts have changed then carry out the handover stage assessment. If this measure was achieved at handover stage and internal layouts have not changed, this measure will be achieved by default.

Rationale

The aim is to ensure high quality workspaces and wellbeing for occupants. Key to this are two factors: reduction of eye strain by ensuring access to long distance views, and the psychological benefit experienced from views to naturally lit spaces.

Guidance

BCO Guide to Specification, British Council for Offices, 2009.

Metric Handbook: Planning and Design Data (4th edition), Littlefield, D., Architectural Press, 2012.

If you would like to comment on this measure please email [skafit@rics.org](mailto:skafit@rics.org)

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### Fit-out Benchmark & Assessment Tool

Wellbeing

Issue

ID

D39

Rank

98

Ska Offices

Version 1.2 2013

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Having a certified project shows that you place value on positive measures such as outside views and natural light — as an employer, it shows that you take wellbeing, health and happiness seriously in the office environment.

If your company is currently using ISO 14001 accreditation, then a SKA certificate can provide assurance that a project is measured precisely and can be used to support your environmental management system.

The SKA rating also helps you to understand what is truly important and most significant in affecting a building's sustainability. Beyond cost and quality, this adds another parameter when assessing your fit-out projects. SKA ratings can assure you that every decision made is truly making a difference.

This allows you to precisely measure the sustainability impact your fit-out will have, influenced only by what you have chosen to do (and not what has been done previously). Therefore, a SKA rating provides you with confirmation of the positive impact your organisation is making.

**How SKA Ratings Work**

The SKA rating for commercial office fit-outs consists of 104 good practice methods spanning a number of criteria: energy &

CO2, waste, water, pollution, transport, materials and wellbeing.

Everything makes a difference: 'good practice' can mean recycling old carpet rather than taking it to a landfill or perhaps ensuring you have suitable water management software in place.

Every good practice measure is explained in a datasheet. This defines the criteria needed to accomplish good practice, the rationale behind each measure and instructions on how to achieve it.

Due to the uniqueness of each individual fit-out project, the SKA rating scores the project on measures that are relevant to the project. These are referred to as 'measures in scope'. On average, between 30 and 60 measures are applicable to a particular project. The score a project receives is based on three tiers — Gold, Silver and Bronze — achieved by getting 75%, 50% or 25%, respectively, of the measures in scope.

Due to some measures having more of an impact on sustainability, the measures are ranked from 1 to 99 (1 being the highest, 99 the lowest). Design teams must implement a number of the highest-ranked measures in scope to achieve a score, rather than simply focusing on the most straightforward measures — these are

known as 'getaway measures'.

Let's take a look at some examples of datasheets from both the top and bottom of the measurement ranking.

**The SKA Assessment Process**

As you would expect from a leading environmental strategy scheme, a holistic view of the entire fit-out is taken. Assessments are made right from planning, even through to ongoing use of the building.

**Design and Planning**

First, the measures and issues 'in scope' are identified in the design phase. Once identified, the client can decide which measures are most important and decide against cost, design, programme and benefit, adding them into the project's scope of works.

**Delivery and Construction**

During the delivery phase, evidence must be gathered from O&M manuals and other sources to validate what has been specified and review the performance and waste benchmarks that have been delivered.

**Occupancy Stage Assessment**

A year after completion, the fit-out is reviewed again to see how it has performed in use against its original brief.



# For Assessing High-Performance, Sustainable Fit-Outs: BREEAM

In addition to the SKA sustainability scheme, clients are able to choose **BREEAM**.

**B**REEAM certificates exist for new buildings, and the certificate can be updated to ensure the fit-out phase is BREEAM compliant.

If you're looking to showcase a passion for sustainability and want to ensure every aspect of your office has top sustainability performance, a BREEAM assessment might be just the ticket for your space.

BREEAM is the world's leading sustainability assessment method for master planning projects, infrastructure and buildings. As a result, it recognises and reflects the value of higher-performing assets throughout the built environment lifecycle, from new construction to in-use and refurbishment.

It is run by the **Building Research Establishment**<sup>6</sup> (BRE), an organisation with a century-long commitment to innovation in the built environment.

## How might a BREEAM certification benefit my organisation?

BREEAM is a comprehensive, independent, holistic and credible scheme covering a

wide range of building types, including offices. Apart from the increased sustainability performance, certification has many aspects that may be beneficial for your organisation.

The BREEAM Refurbishment and fit-out (RFO) standard enables you to alleviate sustainability-related impacts during the design and build of a fit-out project and update your existing BREEAM certificate.

By using the assessment and certification process, BREEAM reflects and acknowledges the sustainability performance of your building once improvements have been made to both the external and internal design.

This allows you to improve and future-proof your existing building instead of demolishing and rebuilding. This has the potential to increase value and improve overall building performance, reducing the operation costs. Of course, that's in addition to showcasing your sustainable business leadership and corporate social responsibility.



# How to Create a Space That is Kind to Our Planet

Not everyone has the time, cost or resources to adopt a certified environmental strategy such as BREEAM and SKA. However, they still want to make responsible environmental choices for their project and staff’s well-being.

Fortunately, with the considered selection of low-carbon-impact products and services, it’s still simple to furnish your building’s environmental credentials and make a demonstrable, clear difference.

So, to showcase your design sustainability, consider incorporating a few of these environmental ‘quick wins’ into your fit-out project.

**Transport**

Often overlooked, the source of the furnishings and materials in your build needs consideration.

Logistically, vehicle emissions and pollution are hidden environmental dangers — this includes the impact of vehicle emissions into the atmosphere, onto the road or into water. Transporting furnishings and materials has the potential to consume fossil fuels, increasing a project’s carbon footprint.

Choosing options that are locally manufactured represents the ideal solution. However, many sustainable products are produced in other European countries — Spain or Italy — which can make it helpful to scrutinise and carefully select your suppliers. How often does the company deliver? Select furniture suppliers that pre-plan their deliveries to ensure they

reach their maximum order levels.

**Wellbeing**

People spend a significant amount of time sitting at a desk. Standard desks are 75cm in height and, since we’re all different, this does not perfectly accommodate everyone. A wellbeing-focused solution, therefore, is to incorporate standing desks into your space. These allow everyone to set their own height and alternate between sitting and standing while working.

**Natural light**

Pretty much everyone recognises the stimulating, uplifting effects of light — not only the differing effects of outdoor light in summer and winter, but also the effects of light in the interior environment. But are most people aware of the extent of light’s significance?

Indeed, natural light has a social sustainable benefit. In fact, studies suggest that employees exposed to natural light are more productive<sup>7</sup> and less tired than employees exposed to artificial lighting. Lighting even affects our heart rate and insulin level.

This effect is partly psychological, but there is also a physical component contributing to this — differing light levels make changes in the EEG (ElectroEncephaloGraph) pattern,

influencing the central nervous system and various body functions.

A building that makes strategic use of natural light, there is less need to resort to artificial lighting, and therefore there is less reliance on electricity. A good tactic for maximising the valuable commodity of light is to use glazing in the workspace to divide meeting rooms, offices, breakout spaces and other neighbourhoods — this opens the space and allows light to penetrate.

**Acoustics**

Of course, what we see in a workspace is important, but so is what we hear. Carefully considered acoustics are clearly essential for providing privacy where needed (such as in meeting rooms). Optimised acoustics throughout the open plan also helps employees focus better, making a tremendous impact on productivity, focus, comfort and enjoyment of a space.

**Rainwater**

You might be surprised to learn that rainwater is actually a pretty clean water source that only needs minimal treatment, such as UV filtration. Rainwater in office fit-outs can be used for many uses such as flushing toilets, cleaning dishes, operating dishwashers or even watering the plants. These are actually very water-intensive;

these sorts of uses account for 70% of water in a workspace.

**Renewable Energy**

There are different options for renewable energy, but the most efficient one to apply to an office fit-out is solar power. Solar electricity panels, also known as photovoltaics (PV), capture the sun’s energy and convert it into electricity that you can use in your workspace. They can also be used to heat water.

Solar PV cells are made from layers of semiconducting material, usually silicon. When light shines on the material, electrons are knocked loose, creating a flow of electricity.

Anyone who lives and works in the UK may worry about a lack of sunlight hindering this renewable energy source. Thankfully, these cells do not need direct sunlight to work and can work on a cloudy day. Although, of course, with strong sunshine comes more electricity generation.

**Saving the Planet — and a Pretty Penny**

Did you know that per square foot of office space, electricity bills sit at around £2 each year? Not only is renewable energy great for the planet, but it can also do wonders for your organisation’s bottom line over the longer term.

Renewable energy in offices can be used for lighting, powering laptops, heating the office and using kitchen appliances. A great example is The Crystal in London; this innovative building is entirely 100% electric and, using solar panels, has 70% lower CO2 emissions compared to an average London office. As a result of its use of 100% natural heat sources, The Crystal has a whopping heating bill of £0 per year!

**Furniture**

A sustainable furniture strategy needs to follow the three Rs: reduce, reuse and recycle.

One of the first steps while choosing furniture for a space is analysing what can be reused to avoid old furniture going to landfills. As we explored in our last white paper, ‘zero waste’ is the ultimate aim that should guide any furniture curation strategy.

Sustainable materials with a minimal carbon footprint should be prioritised. Don’t forget the production process, too — if a company uses recycled materials but non-renewable energy, can the product be really considered sustainable?

What is important when choosing sustainable furniture is the percentage of recycled materials used to make the product, and how much of it is recyclable in the future. The entire

lifecycle of a product needs to be considered.

So, the takeaway here — focus on the process, not just whether recycled materials have been used. For example, sustainably created furniture is common in Scandinavian, but primary sources are often imported from China, which does not comply with European emissions standards.

**Materials**

Renewables and recyclables are both brilliant, but the way a material is made is fundamental to its sustainability. For example, leather production is very polluting because of the amount of water it requires and the gas emissions released.

Look at the life cycle of the materials used in the production process. Some products are made from recycled materials, but the way they are bound together does not allow them a second life — for example, if they make use of chemical glue.

Cork applied on walls for acoustic purpose is claimed to be a sustainable material, but most companies use adhesives to bind it together. Instead, natural, sustainable cork is bonded together using very high temperatures that expand and compact it in the chosen shape.

Indeed, many materials nowadays are produced from natural sources whilst still having plenty of durability.





# Make Sustainability Simple: Choose the Workspace Experts

**B**eing sustainable isn't so simple so, when it comes to buildings, we're here to guide you through.

For over 25 years, we've been leading the way in commercial design and build throughout the UK. Drawing on their expertise, our team will consider the best practices specifically for your next project — whether you adopt a certifiable scheme like SKA or BREEAM, or simply opt for some

quick-win sustainability ideas with our expertise and care.

We're delighted to have worked on a wide range of innovative, planet-first fit-outs for clients large and small, spanning all sectors, industries and verticals. Could yours be our next project?

Weave sustainability into your office space. Talk to DENTON's fit-out experts today.





# Document References

CHAPTER 1	1 McKinsey Company – Profits With Purpose	<a href="#">VIEW PDF</a>
	2 Workplace Insights – Workers Value Employers with Right Approach to Sustainability	<a href="#">VIEW WEBSITE</a>
	3 Nielsen IQ – A Natural Rise In Sustainability Around The World	<a href="#">VIEW WEBSITE</a>
	4 The International Energy Agency - Global Status Report for Buildings and Construction	<a href="#">VIEW REPORT</a>
CHAPTER 2	5 RICS – SKA Ratings	<a href="#">VIEW RATINGS</a>
CHAPTER 3	6 Building Research Establishment	<a href="#">VIEW ORGANISATION</a>
CHAPTER 4	7 A Systematic Review Protocol: The effects of exposure to natural light in the workplace on the health and productivity of office workers	<a href="#">VIEW WEBSITE</a>

# Document Credits



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Richard has been a Director of DENTON for the past 24 years and is a visiting lecturer in Interior Architecture at the University of Hertfordshire.



**Valentina Lupi**

JUNIOR DESIGNER  
DENTON

After completing a masters degree in sustainable design, Valentina joins DENTON, having studied in Hong Kong, Madrid, and the UK. She is passionate about making a change to the environment by emphasising ethical and social issues. Through her work, Valentina is keen to pursue how social and environmental factors can positively impact workplace design.



**Will Bell**

STUDENT  
University of Leeds

Will is currently studying a Master’s in Management Consulting at the University of Leeds, having studied Environmental Business at undergraduate level. He has worked with DENTON as part of his final consulting project, which explores voluntary environmental accreditation.

DENTON

Creating innovative workspaces, fit for the future

For over 25 years, we’ve been at the forefront of innovative workspace design in the UK. From design to fit-out and aftercare, right down to the smallest furniture details, our team combines creativity with experience to design to truly stunning offices.

If you’re interested in creating a workspace that’s truly fit for the future, get in touch with our expert team and let us know a little more about what you’re after.

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