



Creating sustainable healthcare environments

Solutions for greener healthcare facilities

PHILIPS

A world where everybody wins

Better healthcare, cost savings and energy efficiency

At Philips, when we talk about sustainable healthcare environments, we're looking to the future. A future that is more energy efficient, more cost effective and better for the wellbeing of your patients and staff.

With your continuous drive to optimise cost performance and the growing demands from government and consumers to reduce the ecological footprint, a sustainable approach to your healthcare facility is more important than ever, for environmental and financial reasons and also, crucially, for the benefits it can bring for your patients and staff.

Within these pages, we would like to demonstrate how you can create a more sustainable hospital, by making use of the latest innovations in healthcare, lighting and controls technology, in collaboration with a trusted partner – Philips. We can support you in achieving your healthcare, environmental and budgetary goals, and we can reduce the complexity and risks of defining and implementing new technologies, so you can focus on your key tasks in healthcare.

And just so you know, it's surprising to see the difference you can make, by updating the lighting solutions and other healthcare technologies and systems you use in your hospital.



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“ Some of our goals are to reduce energy and maintenance costs while improving the welfare of our patients, visitors and employees, transforming the spaces in environments to make them more attractive and rewarding.”

José Ramón, Santamaría Barreiro-Hospital Manager



Green buildings – a brief introduction

The green building movement

Originating in the US in the 1970s, green buildings can be defined as having structures and using processes that are environmentally responsible and resource-efficient throughout their lifecycle. The 2013 Business Case For Green Building Report states: 'The green building movement has matured over time, and a deeper understanding of the 'triple bottom line' value of green buildings has emerged, shifting the emphasis from 'planet' to 'people' and 'profit'. Consequently, the conversation is now geared around how green buildings deliver on economic priorities such as return on investment and risk mitigation and on social priorities such as employee productivity and health'.

Why focus on green buildings?

Sustainability has become a key element in business strategy development. Building a balanced sustainability approach makes a lot of sense, because the initial investment can pay off in different ways. You can benefit from energy saving, reduction of CO₂ emission, cost saving and increased brand reputation. You can re-invest saved money to enhance the healthcare environment for patients and staff, thereby supporting people's health and wellbeing. It's about taking a long-term view that can often deliver surprising short-term results. It can enhance your brand, your reputation and appeal to staff, patients, partners, investors and the wider community.

Reduced energy use

Estimates for the reduction in a green building's energy use compared to a conventional code-compliant building range from 25-30%. Green buildings have been shown to save money through reduced energy and water use and

lower long-term operations and maintenance costs. Energy savings in green buildings typically exceed any design and construction cost premiums within a reasonable payback period.

The building industry view

The industry now recognises that green buildings deliver much more than energy efficiency alone. It also understands that green buildings must be viewed holistically – that energy efficiency cannot come with a price of reduced fresh air and poor indoor environmental quality, or high water consumption. Buildings must be examined in the context of their impact on the local, natural and built environments – and their neighbours.

What green buildings cost

From the Business Case For Green Building Report, in relation to higher initial investment costs: 'It is critical to bear in mind that these upfront costs are often offset by a decrease in long-term lifecycle costs, particularly in the case of green buildings that feature high performance façades and energy efficient building systems. The delivery of cost-effective buildings, more so for green building, is about taking the long-term view and translating that into short-term actions'.

The real cost of not 'going green'

Green buildings, particularly those with improved indoor environmental quality, are being shown to positively impact human health and performance. Again, from the Business Case For Green Building Report: 'It is not surprising that the business community is increasingly interested in how green building design can positively impact its people. Some leading businesses are now shifting their thinking from 'how much will green building cost my business' to 'how much will not investing in green building cost my business?'



Savings – green buildings compared to conventional code compliant buildings¹



Mental function and memory improvement in better lit environments that include daylight²



The amount of payback gained by adding a 2% sustainability budget to builds³

The benefits of sustainable investments

Creating value for your hospital

When you consider that a substantial 22% of a typical hospital's energy bill is spent on lighting, reducing energy consumption by up to 50% through low-energy LED solutions makes solid commercial sense. And with intelligent lighting management through control systems, you can factor in additional savings of up to 80%. So the argument for sustainable lighting is impressive on cost grounds alone.

Recognising the risks of low quality lighting

Most hospitals tend to adopt a 'low bid approach' when choosing their lighting solutions. Essentially, they opt for whoever offers the cheapest upfront cost. As a result, they can miss out on significant savings. And because they have bought on initial price alone, many of these hospitals end up worrying that their chosen solution won't deliver in terms of performance in the longer run.

Invest now, save now and keep on saving

You don't have to wait to see a saving. Philips sustainable lighting solutions will deliver significant energy reductions from the moment they are installed. They can provide you with an excellent return on investment. Depending on the energy

saving potential and the new lighting scenario you prefer, full payback can be realised in as little as three years. But the energy and cost savings don't stop, of course. And when you invest in lighting technology which needs less maintenance, you can also reduce disruption of hospital activities, thus increasing operational efficiency. Reduction of energy use can be further increased by making use of our intelligent control systems, that help to take care that light is provided where it is needed, in the right way, at the right moment. In addition, multiple studies have found that there is significant energy saving potential for medical equipment by reducing 'idle' energy – by making sure that equipment is switched off – where Philips can help is with analysis training and features to reduce 'idle' energy to a minimum.

Return on investment example traditional lighting versus LED installation over a 10 year period*



*Based on calculation of lighting across all areas within a UK hospital – burning hours in areas: 24/7, 18/7, 14/5. Electricity cost £0.08 per unit.

“ The quality and brightness of the new lighting is excellent; it has reduced fatigue as well as delivering 50% savings on our energy bill. Without the help of Philips Lighting Capital I would never have made this investment and taken advantage of all the benefits.”

Jan van der Meij, General Practitioner and co-owner of the Lindehof Health Centre in Hazerswoude-Dorp



22%

The percentage of total hospital energy used by lighting¹

up to 50%

Energy reduction by using low energy LED lighting³

up to 80%

Additional savings made by using controls with LED lighting⁶

“ At The Yorkshire Clinic the new lighting uses only 25% of the energy that equivalent conventional light fittings would consume, producing only a quarter of the CO₂ helping the clinic achieve its CO₂ reduction targets far quicker.”

The Yorkshire Clinic, Bingley, UK



Targeting green certification

Meeting and exceeding expectations

Regulatory requirements have changed rapidly in recent years. Consumers and governments expect you to meet strict targets for energy reduction and carbon footprint. And as hospitals typically consume considerably more energy than commercial offices per square metre, there is an ever-greater emphasis placed on green procurement.

Green building standards

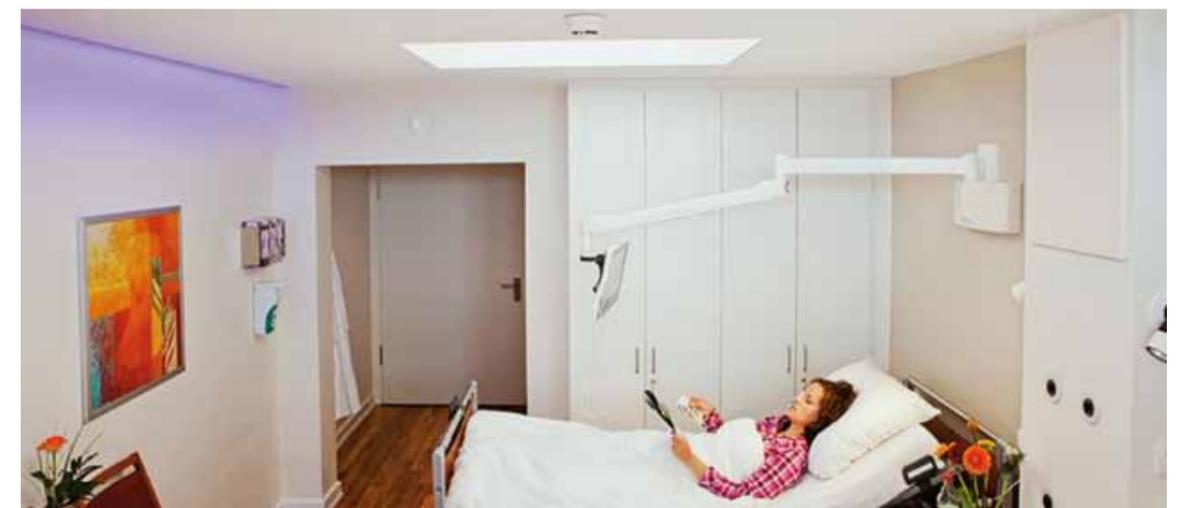
Adopting a sustainable lighting strategy not only has social and commercial benefits, but it also increases your points towards green building certification.

Philips has a wide range of lighting and control products that, designed well into the hospital environment, can considerably help towards certification credits of national or international certification programmes like LEED, BREEAM, HQE, DGNB, VERDE and others.

Programmes exist to help building owners achieve either voluntary certification or meet mandatory energy targets. BREEAM (Building Research Establishment Environmental Assessment Method) ratings are used in more than 50 countries, with some countries creating their own variants,

for example BREEAM Outstanding Offices UK, LEED (Leadership in Energy and Environmental Design) and Energy Star, which both originated in the US, are voluntary certifications now accepted internationally. The Green Mark is applicable in Singapore, while Green Star is a voluntary sustainability rating for buildings in Australia. Israel's voluntary Standard 5281 is unique in encouraging passive and low energy architecture. Our solutions can help you meet current legislation, but also allow you to adopt a 'future proof' strategy, so that you can meet or exceed likely targets in the future.

The green procurement of medical equipment can be further supported by Philips – as we can disclose environmental product characteristics with a high level of detail.



2018

UK deadline that will make most energy inefficient buildings unable to be leased by, under The Energy Act 2011⁷



\$612m

Estimated energy savings made by existing buildings in the first 10 years of San Francisco's green buildings programme⁸



1.44m

Tons of carbon saved – Tokyo's mandatory emission reductions programme first year results in 2011 (38% of applicable buildings achieved 2014 targets, 26% achieved 2019 targets)⁹

Better environments for patients and staff

How lighting and design make a difference to healthcare

Sustainable healthcare environments are not only about conscious energy saving and reduction of waste emissions. We also need to take into account the people perspective, meaning that patients, visitors and staff should feel comfortable in the healthcare facility and supported in their health and wellbeing.

Our environment influences our health and wellbeing much more than we realise. Light, as a key element, is important for peoples' health, since it helps in regulating important processes in our body, such as the sleep-wake rhythm, that is determined by light and darkness. Using modern, sustainable lighting solutions to recreate the beneficial effects of daylight can help both staff and patients alike to function as they should, naturally.

Our lighting solutions can be used to mimic natural daylight, to create flexible and dynamic spaces and more comfortable and relaxing environments, just to name a few.

By switching to an intelligent lighting system that applies the correct level of light as required, you can move to a sustainable, low impact lighting solution that helps you meet energy consumption, carbon emissions targets and legislation requirements and can substantially reduce your expenditure, whilst improving the comfort for patients and staff in hospitals.

Happier, more productive staff

It's not just patients who benefit from adjustable, responsive lighting. It makes a difference to your staff too. If you adjust light in the 'post lunch dip', for example, it can enhance energy levels, improve alertness and help to minimise errors. Effective lighting can help doctors, nurses and other staff concentrate better and stay alert.

Other advantages include more accurate diagnosis through effective colour rendering, less stressful consultations and a better environment to undertake admin. And due to their longer lifetime, LEDs require less maintenance so there's less disruption to the delivery of care.

Beautiful and sustainable

LED low energy solutions are also ideal for creating inspiring spaces. From the façade of your hospital to every space within it, lighting can be used effectively to enhance your brand, welcome patients and create less stressful waiting rooms, where the perceived time from arrival to consultation is reduced. From an employer perspective, an attractive, well-lit workplace will not only make employees feel better and increase their productivity, it will also help you to attract and retain valuable, high-calibre staff.

Philips innovations

While we have solutions available for every hospital application area, in addition we have worked on specific application solutions. For scanning environments we have developed Ambient Experience, designed to help relax patients and make this process easier and more efficient. Especially for longer patient stays and rooms without access to full daylight, our HealWell patient room solution mimics the patterns of natural daylight, to support patient's sleep, mood and well-being, thus creating an improved healing environment.

“The LED lighting is a very creative solution which will help alleviate some of the stressful emotions associated when receiving treatment at the centre. We are amazed at the difference it has made and it's definitely a hit with both our patients and staff alike.”

Andreas Janzen, Anesthesiologist, Managing Director of Lumaris GmbH – South Operating Centre



Reduction in patient stay times when exposed to plenty of natural daylight¹⁰



Call processing increase in better lit environments that include daylight¹¹



Productivity increase in better lit environments that include daylight¹²

“ As part of the Green Hospital program, we have succeeded, in cooperation with our official partner Philips, in bringing about a significant ecological and economic improvement. Thanks to the extremely efficient LED solutions provided by Philips, we were nominated as an environment partner for the city of Hamburg.”

Volker Müller, Head of Facility Management, Asklepios Clinic St. Georg

Developing successful stewardship

Green brands enhance reputations



Patients are now making more active and conscious choices about where they want to receive treatment. Creating a better patient experience in your hospital can play a critical role in their decision making. What's more, it's worth remembering that both customers and commercial organisations are looking at the partners they choose from a sustainability perspective too.

Green hospital lighting offers instant results and long-term benefits. The asset value of your building will increase by 16% as a result of adopting a sustainable approach and investors will be reassured that you demonstrate clear corporate and social responsibility. Installing sustainable lighting is a 'quick win' because the effects are instant and they continue long term, so you can harness green lighting as both a productive brand builder and an efficient and effective cost-saving tool for your organisation.



Sources: ¹Kats, 2003, Page 51, Business Case For Green Building Report (WEB) 2013-04-11. ²Heschong, 2003, Page 69, Business Case For Green Building Report (WEB) 2013-04-11. ³Kats, 2003, Page 56, Business Case For Green Building Report (WEB) 2013-04-11. ⁴GfK 2004-2006, Philips. ⁵Philips. ⁶Philips. ⁷Page 84, Business Case For Green Building Report (WEB) 2013-04-11. ⁸Page 98, Business Case For Green Building Report (WEB) 2013-04-11. ⁹Page 96, Business Case For Green Building Report (WEB) 2013-04-11. ¹⁰Ulrich, 1984, Page 69, Business Case For Green Building Report (WEB) 2013-04-11. ¹¹Heschong, 2003, Page 69, Business Case For Green Building Report (WEB) 2013-04-11. ¹²Loftness, et al. 2003, Page 69, Business Case For Green Building Report (WEB) 2013-04-11. ¹³Philips. ¹⁴(Various): BRE, 2007; BRE Trust, 2005; Target Zero, 2010, 2011 and 2012; Kats, 2003, 2006 and 2009; BCA Singapore, 2008; Davis Langdon, 2007; Syphers et al, 2003; American Chemistry Council, 2005; Building Design and Construction, 2003; Matthiessen et al, 2004 and 2007; GSA, 2004; CBRE, 2009; Luciuik, 2005; Jackson, 2009; Building Design and Construction, 2007; Galuppo et al, 2010; Turner Construction Company, 2005; World Business Council for Sustainable Development, 2007; Gomez, 2008; Berman, 2001; The David and Lucille Packard Foundation, 2002.



Increase in asset value for green buildings compared with conventional buildings¹³



Estimated cost premium for green buildings (based on design stage estimates and surveys)



Cost premium for green buildings (actual costs based on various studies)¹⁴

Why choose Philips?

A trusted name in healthcare

We understand the challenges you face when you want to substantially and structurally improve on sustainability and business targets in general. The possibilities in new healthcare innovations and technologies are endless, but how can you make sure that you get an overview, and how do you assess what is the best solution and the best way forward for you and your stakeholders? One example is our continuous innovation around the patient experience. Our competitive advantage lies in our clinical perspective, our broad expertise in healing environments and light and health within the company, as well as an extensive network we have with our healthcare customer base and hospital build partners. We can help you to assess the potential in accordance with your vision and targets. In a joint effort with you we can interactively identify the best solutions in a step-wise approach.

Supporting you at every stage

Of course, there are many options available to you when you purchase lighting for your hospital. What makes Philips unique is our ability to see the bigger picture and simplify the whole process of retrofitting or installing new lighting.

We're not only a reliable partner, known for our high standards of service and quality, but we also take a forward-thinking approach to ongoing maintenance issues, regardless of the complexity of your lighting system.

We can offer you a complete service package that includes everything from project definition and scoping, design and delivery through to monitoring and assistance with finance. You have the option of extended warranties with specialist diagnostic and expert support, as well as learning programmes which enhance your in-house knowledge and maximise the potential of your lighting system.

With considerable experience in lighting for hospitals and an approach tailored to healthcare specifically, we're able to deliver sustainable solutions for virtually every room of your facility.

Our 4-step approach:



“ Thanks to the innovative lighting solutions supplied by Philips, we have now been able to reduce perceived waiting time and, despite being a medical facility, produce a pleasant ambience.”

Dr Lothar Sommer, Specialist Radiologist, Greifswald Radiology Unit



This Philips Ingenia dStream MR scanner is the market leader in energy efficiency. It offers exceptional clarity due to digital broadband technology, giving up to 40% higher SNR compared to analogue – improving workflow speed and throughput by up to 30%.

From our experience, initial consultations are of paramount importance – allowing you to plan and design effectively and get the best results for your facility.

If you would like to know more about our sustainable lighting solutions for hospitals, please contact us via your local Philips representative, or find out more at www.philips.com/greenhealthcare



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