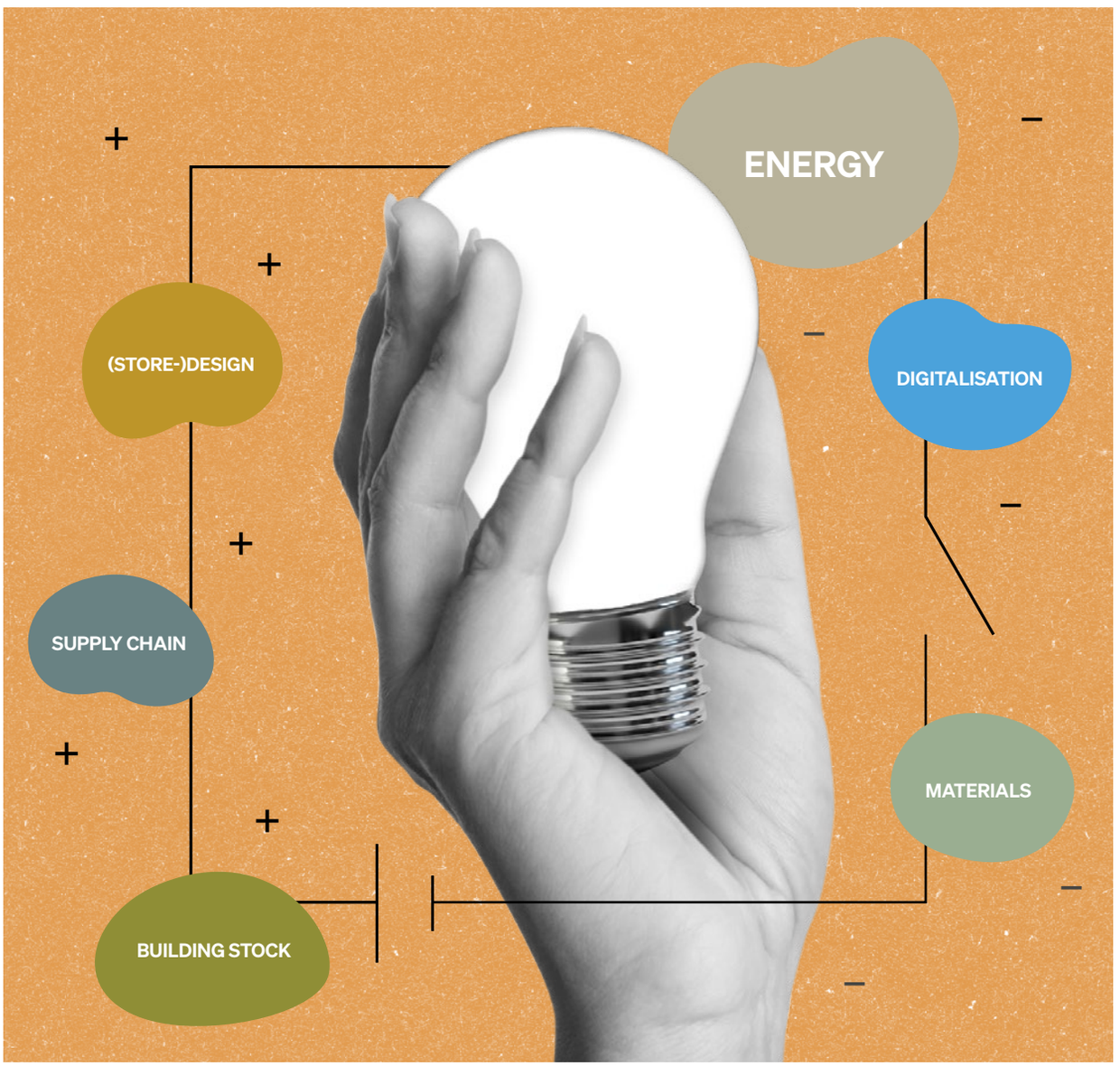
inSites

Unlocking Insights from the World of Placemaking

No. 2

FROM CHANGE TO TURNING POINT

The role of energy for sustainable spaces



umdasch

THE STORE MAKERS

INTRODUCTION

Where trends meet spaces

inSites is the new online format from umdasch The Store Makers. It deals with developments, trends and innovations in the creation of spaces. The name says it all: the format aims to provide in-depth insights into different places (sites) - be it retail spaces, offices, food courts or other exciting meeting spaces. inSites shows what moves the placemaking industry: it uncovers backgrounds, sheds light on complex topics and focuses on the people who work every day to make spaces more functional, aesthetic and sustainable - in short: better.

inSites goes green in 2024

Sustainability is the main theme running through 2024 inSites, with everything revolving around the umdasch Sustainability Guide. This was created by the Store Makers after the umdasch exhibition at EuroShop 2023. Under the motto „Plant an idea“, visitors to the most important industry event for the retail sector were invited to record their ideas for a sustainable point of sale on the umdasch Sustainability Tree.

Many exciting and valuable contributions were collected, from which a comprehensive guide with six sustainability focal points was created - with the most important resource at the centre: people. Because successful, sustainable spaces can only be created through joint action.

Your Store Makers from umdasch wish you inspiring reading moments!

EXECUTIVE SUMMARY

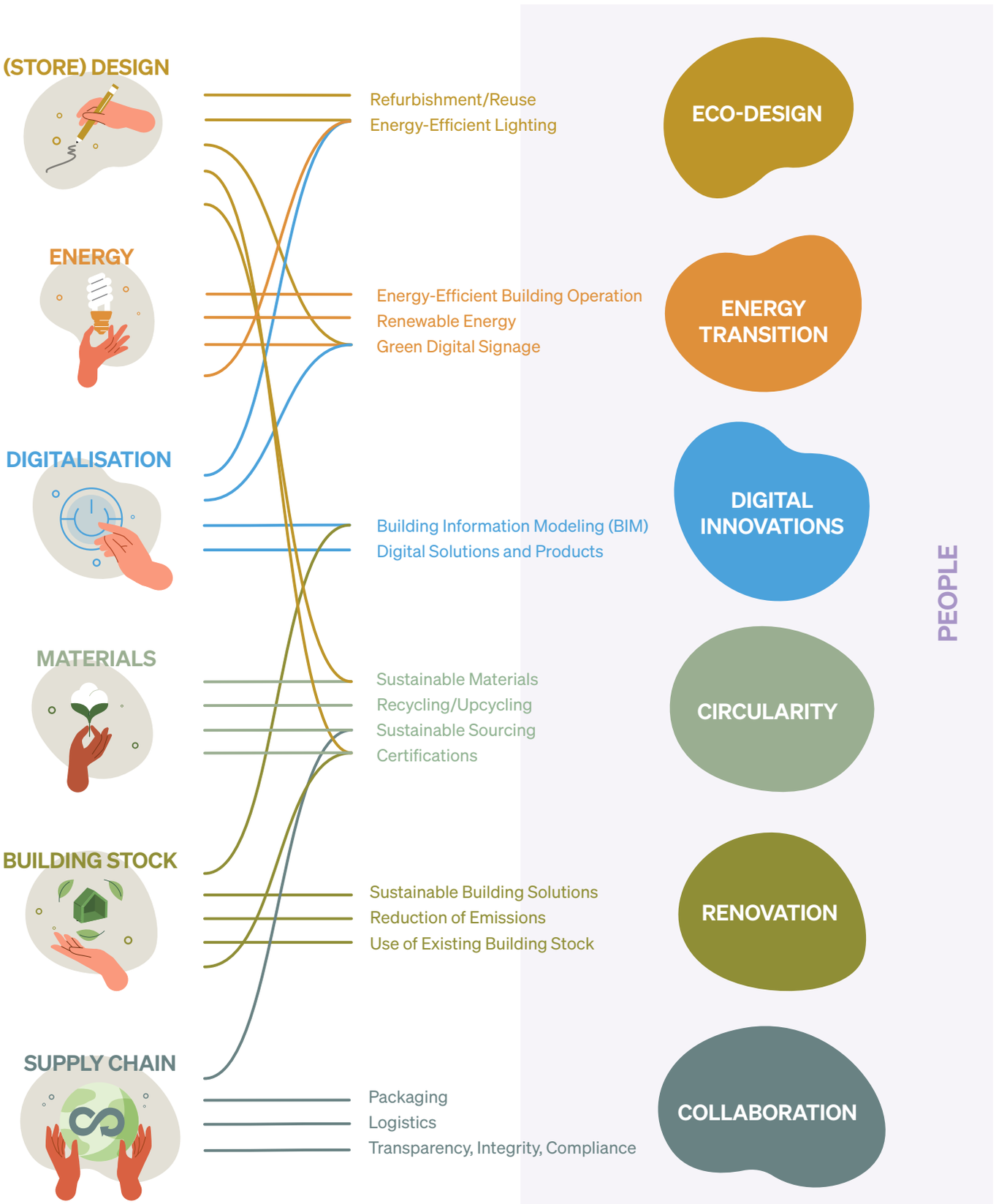
The second issue of inSites is dedicated to energy efficiency in buildings and retail. As one of six sections on sustainability, it highlights the importance of energy-efficient building operations. Furthermore it illustrates why awareness of energy consumption is essential in the retail sector.

This trend paper discusses measures to improve energy efficiency. Specifically, it looks at optimising the building envelope and operations. It also examines the key energy drivers in retail spaces and provides expert advice on how to optimise energy consumption. In particular, this paper focuses on digital signage and lighting in retail - and how these can be made more energy efficient with surprisingly simple means. Finally, the importance of the energy transition for a holistically sustainable future is highlighted.

UMDASCH SUSTAINABILITY GUIDE

The Way to Sustainable (Retail) Environments

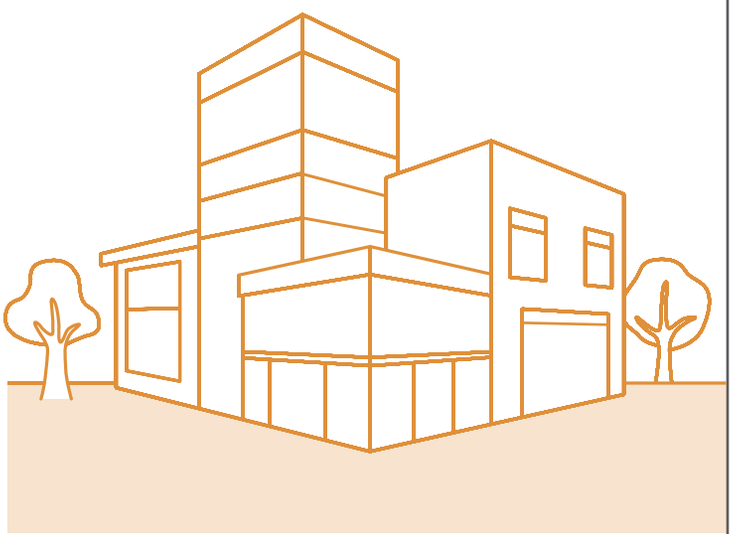
The six focal points do not stand alone, but are interlinked. Follow the lines in the guide to see which topics influence the area of energy. These lines will lead you to the individual sub-chapters of the Trend Paper.



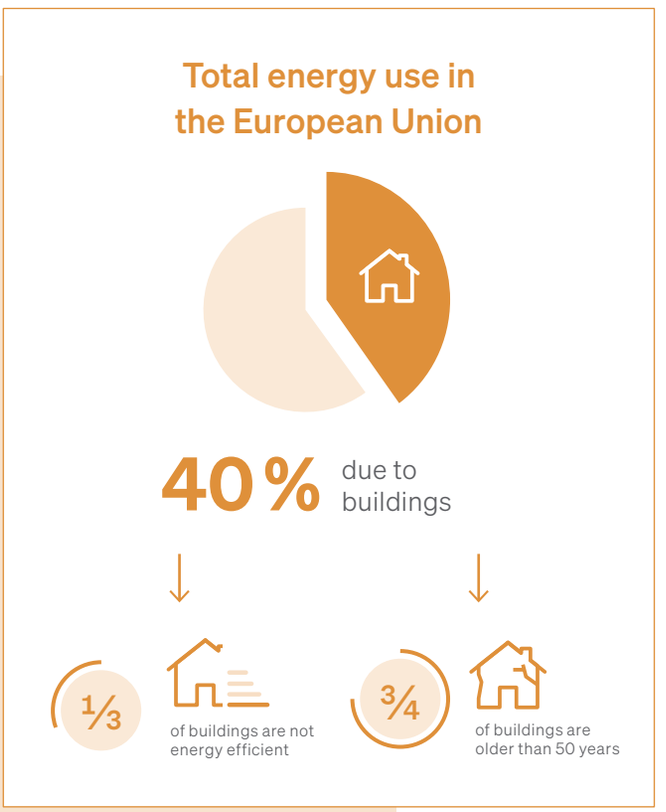
ENERGY-EFFICIENT BUILDING OPERATION

OF GREY AND GREEN GIANTS

Buildings are highly complex. This becomes particularly apparent in their day-to-day operation and when it comes to energy. There is much more to everyday terms such as electricity, heat and air than meets the eye.



The figures published by the European Commission at the end of 2023 show just how important the issue of energy and energy consumption is: buildings account for around 40 per cent of total energy consumption in the European Union. Around one third of the building stock is not energy efficient and almost three quarters are more than 50 years old.



Source: European Commission

The release of these statistics coincides with the publication of newly adopted directives and guidelines to reduce emissions and energy consumption in the EU. The main objective of the European Union is clearly to decarbonise the building stock across the Union and reduce energy consumption.

Specifically, this is to be achieved by structurally improving the energy efficiency of residential and non-residential buildings. This will ultimately have an impact on the commercial sector. The focus is on buildings with the lowest energy efficiency. However, standards have also been set for new buildings, for example, that they should no longer emit emissions from fossil fuels.

ENERGY-EFFICIENT BUILDING OPERATION

But what does this mean in practice? How easy is it to optimise energy efficiency and what are the challenges? These and other questions were discussed in an inSites interview with Jakub Albert, Head of PMPS, Utilities & CSR Austria/Germany at Unibail-Rodamco-Westfield (URW), one of the world's largest shopping centre operators.

"If you look at the main drivers of energy consumption and CO_2 emissions, you have to start with the construction and use of a building," Jakub Albert tells inSites. The URW group operates a total of 72 shopping centres in twelve countries. Energy efficiency is on the agenda.

"The largest proportion of emissions over the lifetime of a building comes from its use – primarily the consumption of electricity, heat, ventilation and cooling."

However, the design of the building envelope also has a significant impact on its use. It provides the framework for all other internal measures. In addition to facade insulation, which can make a big difference in terms of energy consumption, the amount and size of glazing also plays an important role, says Albert. Energy efficiency can be achieved with flexible solar shading.

"But we also have open-air shopping centres in our asset portfolio. In terms of energy consumption, there are very different issues at play here," Albert explains - and this is where psychology comes into play: "An open door is more inviting to customers and has been shown to increase footfall. However, especially in extreme temperatures, the psychological advantage quickly becomes an economic disadvantage and an "energy guzzler". This is because open doors mean that the temperature in a store has to be constantly regulated by operating an air curtain.

The more glass there is, the more natural light enters the building and the less artificial light is needed. On the other hand, a lot of glass also lets a lot of heat into a building. Pictured here: the Gropius Passagen in Berlin.

ENERGY-EFFICIENT BUILDING OPERATION

One compromise could be an automatic sliding door, a kind of intermediate stage between an open and closed door. But Albert points out another important factor on which all decisions should be based: looking at user behaviour. If an automatic entrance door opens and closes relatively often because of good traffic flow - and that is ultimately the aim - then the question arises as to whether there is a better, more energy-efficient solution". The design of a building therefore has a significant impact on its subsequent operation and how it can be made as energy efficient and sustainable as possible. As explained in issue 1 of inSites, lighting is a key energy factor in the operation of retail buildings.

LEARN MORE IN INSIGHTS NO. 1

Significant energy savings can be achieved simply by switching to LED lighting, which is now commonplace.

Sensors are a good way to control lighting on demand, for example, to automatically turn on and off lights in areas that do not need to be lit all the time. In the Green Digital Signage section, we explain how this principle can also have a significant impact on the use of screens.

"Ventilation, heating and cooling are all issues where interaction with our tenants is crucial," continues Albert. Why is that? It is necessary to go into a little more detail: When it comes to ventilation, there is the option of using a CO_2-based control system instead of an energy-intensive fixed air exchange rate. In addition to fresh air, recirculated air can also be used for ventilation.

Energy management is a complex task, especially for shopping centre operators. After all In cooperation with tenants from different sectors, the aim is to create a pleasant overall atmosphere for visitors. Pictured here: the Gropius Passagen in Berlin.

But put simply, isn't fresh air better than 'used' air? Not necessarily, it is a question of system and energy consumption.

"Especially in extreme temperatures, the air from outside has to be either heated or cooled so that it is useful for the interior." This means that fresh or outdoor air is usually even more energy intensive.

ENERGY-EFFICIENT BUILDING OPERATION

How does this affect the tenants?

Depending on the building and location of the store, tenants have their own controls or even their own systems that they install. “Overall, we want to create the best possible shopping experience for our visitors and our tenants’ customers - and air quality and, above all, temperature plays an important role. We don’t want to have too many temperature differences or even separate climate zones in our centres, which can sometimes affect the quality of the shopping experience,” says Albert.

Overall, the aim is to make existing systems more efficient or to take advantage of technological developments by investing in more modern systems. Keyword: energy-efficient renovation. “We are at a time when most buildings in Europe are old and no longer meet modern standards. Especially when it comes to energy efficiency. And that’s where we come in,” explains Christoph Hermes, Project Manager Construction Solutions at umdasch The Store Makers.

Under the direction of Managing Director Marco Gösling, he supervises projects in the phases before the umdasch shopfitting experts get involved. As a general contractor, umdasch takes on the coordination and, where possible, the execution of all trades. The industry mix of the umdasch general contracting experts is as diverse as the service portfolio: from retail to banking and gastronomy to the large business sector of real estate.

IN A NUTSHELL

Unibail-Rodamco-Westfield (URW) owns, develops and operates sustainable, high-quality real estate in the most dynamic cities in Europe and the United States. The Group is a committed partner to major cities in the regeneration and modernisation of urban spaces. Through its ‚Better Places‘ plan, the Group aims to have a positive environmental, social and economic impact on the cities and communities in which URW operates.

Source: www.unibail-rodamco-westfield.de

As a result, umdasch The Store Makers is not only associated with URW for the shopfitting of various shopping centres for international clients but also for the assets themselves, such as the Gropius Passagen in Berlin. There, umdasch’s general contractors were responsible for the complete remodelling of the food court: a total of seven restaurants with over 500 seats in the front and a central island area. The core tasks included the coordination of the various trades, including the smooth execution of all construction measures.

In the area of energy renovation, which umdasch views as a holistic renovation measure and implements as a general contractor, there is a lot of potential for savings. “Depending on the energy

ENERGY-EFFICIENT BUILDING OPERATION

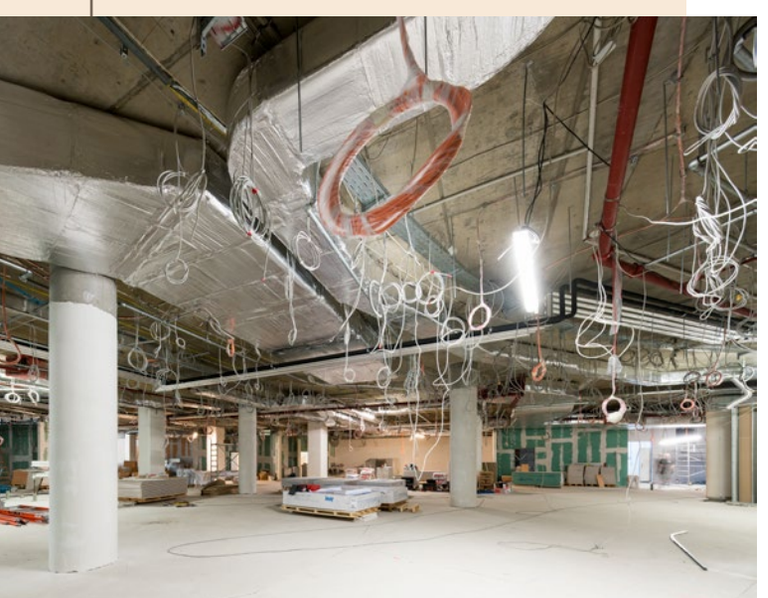
standard, energy savings of around 60 to 85 per cent can be achieved," says Christoph Hermes. In addition to the ecological and economic effects, he sees another advantage: "At the same time, refurbishment measures extend the life cycle of a building by up to 75 years - a not insignificant period of time.

VERONIKA HAMMINGER
BUSINESS DEVELOPMENT MANAGER
UMDASCH GROUP

CHRISTOPH HERMES
PROJECT MANAGER
CONSTRUCTION SOLUTIONS
UMDASCH THE STORE MAKERS

Veronika Hamminger, Business Development Manager at the Umdasch Group, agrees. "Energy renovation is a crucial step in improving the energy efficiency of a building," she says. Whether the effect is greater when more is invested depends on several factors, such as the current energy efficiency of the building, the type of measures and local conditions.

A thorough analysis is therefore needed to determine which investments will deliver the greatest energy savings per euro invested. Cheaper measures can often be much more effective and should therefore be preferred to more expensive options. One thing is certain: Refurbishment has great potential for energy and cost savings, and can sometimes bring economic benefits such as increased property value.



A forest of cables: Scenarios like this are commonplace for the GC experts at umdasch The Store Makers. They gain insight into the structure of buildings and transform them into spaces that can be filled with life.

TEASER INSITES NO. 5

Discover more insights on building stock in the fifth issue of inSites. Stay tuned!

RENEWABLE ENERGY

THE MAMMOTH TASK

Energy in retail is not a buzzword, it is a necessity. So much so that we urgently need to look at how we can optimise its consumption and source it as far as possible from nature.

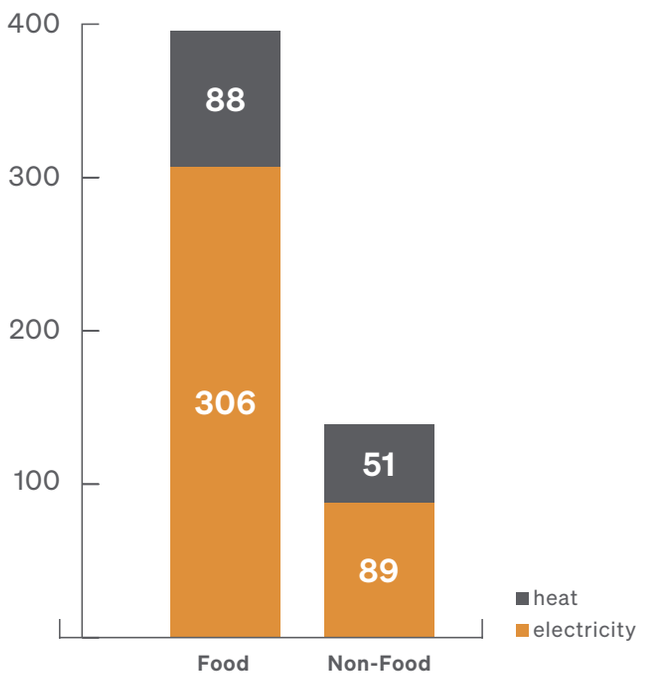
When you think of energy or energy consumption in the retail sector, the most obvious factors immediately come to mind: on the one hand, electricity consumption on the sales floor - in the form of lighting or the operation of energy-intensive equipment, such as those used to maintain a strict cold chain. On the other hand, you would probably think of heating and cooling.

Simple optimisation of energy consumption during operation can be achieved without major investment. In addition, consumers have clear expectations.

At a certain point, however, these options are exhausted. Other measures that could be considered include upgrading systems and, above all, increasing the use of renewable energy.

Natural forms of energy such as solar, wind or hydro, which are relatively rapidly renewable or inexhaustible, should ideally become the primary sources of energy. A common method, also known from the private sector, is the installation and

Comparison of food and non-food energy consumption
In kWh per square metre of sales area per year

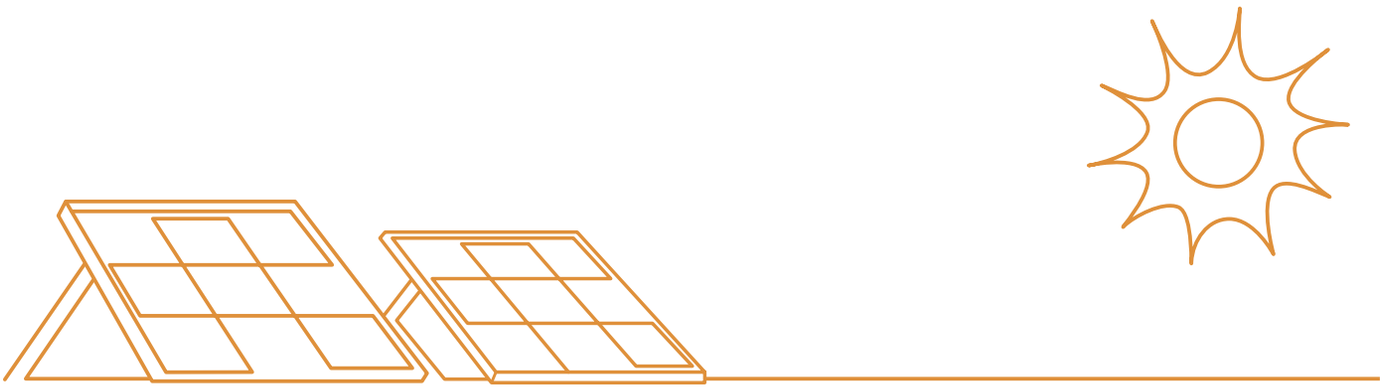


Food basis: 28 retail chains/over 23,000 stores/over 29 million square metres of sales area;
Non-food basis: 25 retail chains/over 16,000 stores/over 24 million square metres of sales area;
Source: EHI study “Energiemanagement im Einzelhandel 2023”

LEARN MORE IN INSIGHTS NO. 1

The simplest and quickest way to achieve energy savings is through operational measures, such as changing light bulbs. Read more in issue 1.

RENEWABLE ENERGY



operation of a photovoltaic system. A combination, for example in the form of a photovoltaic-wind combination, is now also an option for generating energy.

For environmental reasons, targets have been set at the EU level and beyond, for example for the share of renewable energy.

Among other things, the regulations require new buildings to be suitable for solar energy - just one of many options for investing in renewable energy.

In the retail sector, it is impossible to make a blanket statement about the best solution. The individual requirements are too diverse and the conditions for tenants and operators are too different.

As an operator or owner of a building or space, it is much easier to influence the origin of the energy you use.

According to Katharina Flöck, Sustainability Manager at umdasch The Store Makers, energy storage is an important issue, but it is still very cost-intensive. Switching to renewable energy is therefore initially a major investment.

“Depending on energy prices, a switch can pay for itself more quickly than expected”.

Energy can also be recycled to a certain extent, adds Flöck. She is referring to the use of waste heat from waste water or machines and equipment to heat an area. However, this requires the right technical and infrastructural conditions. There also needs to be a balance between availability and demand.

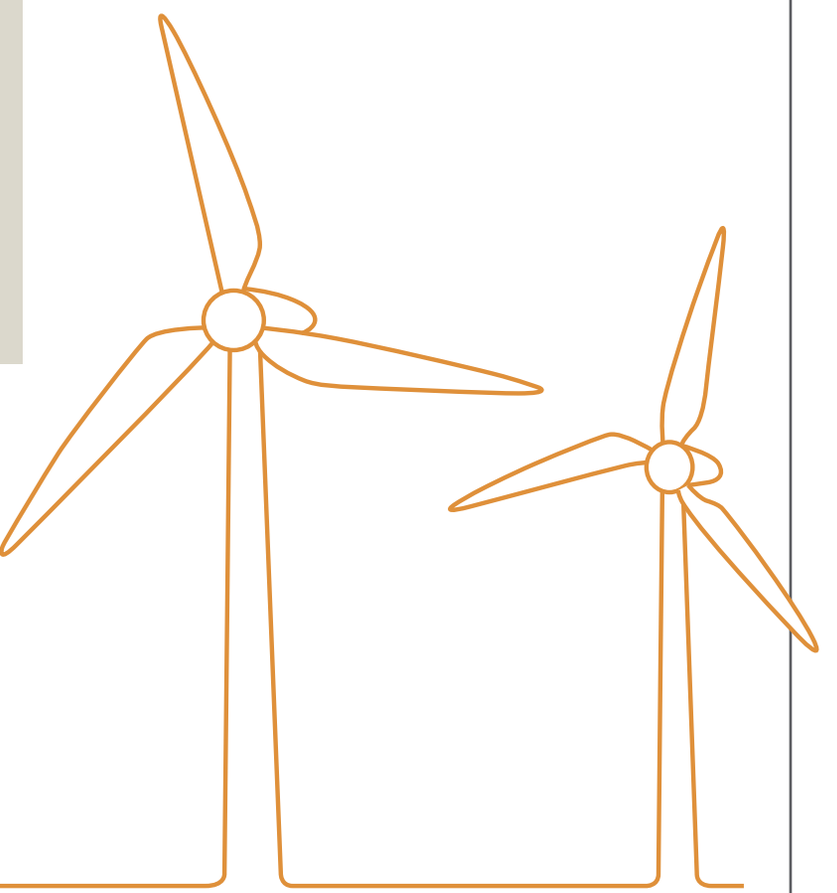
RENEWABLE ENERGY

STORE MAKERS ALSO FOCUS ON RENEWABLE ENERGY

The umdasch logistics centre in Hasendorf, close to the production site in Leibnitz (AT), has been equipped with a 250 kWp photovoltaic system on the roof. This sustainable energy source will supply the local vehicle fleet and the building itself with electricity, but also represents an important step in our commitment to sustainability. Further expansion is already in the pipeline.

This is also one of the reasons why general statements about good or efficient measures should be treated with caution. After all, local conditions and external circumstances are and will remain very individual. It is important to take a close look at your own circumstances before making major investments. Understanding your own needs and infrastructure will help you find the best solution. This is the only way to achieve the greatest possible potential.

KATHARINA FLÖCK
SUSTAINABILITY MANAGER
UMDASCH THE STORE MAKERS



GREEN DIGITAL SIGNAGE

AN ON OFF STORY

Energy efficient and digital - how do they go together? Very much so, because in the case of digital signage, for example, there are many levers for optimisation. The combination of hardware and software, as well as the connection to other touchpoints, offers a wide range of options for energy-saving operation.

When looking at the energy consumption of retail spaces, especially when it comes to saving energy, digital solutions come to mind, mostly in the form of screens. In September 2022, short- and medium-term energy-saving measures have been implemented in Germany. These were introduced to avoid an emergency energy supply situation during the winter. This has also had a major impact on digital signage and digital advertising media, presenting the industry with a major challenge: to drastically reduce energy consumption in a short period of time. Many devices were either not state of the art or were not designed to switch to low-power mode with minimal effort.

Digital signage as a communication talent: screens offer exciting communication opportunities at the point of sale thanks to dynamic content. Energy consumption can be optimised with just a few measures. The digital experts at umdasch Digital Solutions were commissioned to equip the Hartlauer branch in the centre of St. Pölten with digital signage in various areas of the store and in the shop window. In addition to advertising products and promotions, the screens will be used in the interior to better identify the theme areas through appropriate visualisations and to advertise the corresponding services.

ENERGY SAVING ORDIANCE

The Regulation on Securing the Energy Supply through Short-Term Measures, which came into force in September 2022, regulates the framework conditions for energy savings in the building sector. Measures for private households, non-residential buildings and businesses have been defined for a period of eight months. These include some that particularly affect the retail sector, such as restrictions on the use of illuminated advertising. Medium-term energy saving measures will remain in force until 30 September 2024.

Quelle: www.bundesregierung.de

So what can be done to make digital signage operations green and energy efficient?

One of the key factors in energy savings is definitely the hardware. As invidis writes in its Green Signage Handbook, the aim is to maximise energy efficiency, i.e. to use less energy for the same amount of light. The main challenge for display manufacturers is to find new ways to make their products more energy efficient. „The use of hardware must be considered early in the planning process," says Bernd Albl, Managing Director Digital Solutions at umdasch The Store Makers.

GREEN DIGITAL SIGNAGE

It‘s about choosing the right hardware for the right location. „There is also a lot to consider when planning the installation. First and foremost, air circulation and cooling on the hardware side must be ensured for energy-efficient operation,“ adds Albl. Regular maintenance of the hardware, such as cleaning the ventilation, is also necessary.

LEARN MORE IN INSIGHTS NO. 1

In issue 1 of inSites, you can read how the digital professionals at umdasch implemented hardware optimisation for around 7,000 monitors at 700 Circle K (formerly TotalEnergies) locations throughout Germany.

In addition to the display technology used, monitors also offer great potential for savings during operation. However, adjusting the brightness has only a small effect on energy consumption. According to Albl, it is much more a question of careful infrastructure planning. One obvious and highly efficient way to save energy when using screens is to switch them off completely. Interestingly, however, this is often not considered.

“A black screen does not automatically mean it is switched off. It can also be switched to standby mode. The common argument is that this is already very energy-efficient,” says Albl, explaining a common misconception. In reality, however, the savings are limited.

Many screens run around the clock, but this is not necessary as they are only viewed for a fraction of the day. This can be remedied with sensible operating times and the option of remote management.

As described in the chapter on energy efficient building operation, sensors are also a way to save energy when using digital signage. For example, brightness sensors can be used to adjust the visibility of the screen to suit the environment. The darker the lighting around the screen, the darker the screen brightness - and vice versa. This significantly reduces energy consumption in a darker environment, such as a pedestrian precinct in the

Particularly in sunlight, higher screen brightness is required for optimal display. The darker the environment, the better the brightness contrast, even with less bright screens. Shown in the picture: Hartlauer St. Pölten.

GREEN DIGITAL SIGNAGE

evening. Another option is motion sensors. These cause screens to 'light up' and move content when passers-by are detected.

Last but not least, energy can be saved through good content preparation. Of course, there are always basic aesthetic considerations. Brand, design and experience are at the heart of it. Nevertheless, it can be said: The brighter the content, the brighter the screen and the more energy it consumes. "White on LED requires the most energy," explains Albl. Energy consumption can be optimised by adjusting the colour spectrum. But it also depends on the content. Highly complex, dynamic content requires more processing power. This means it uses more energy than quiet, static content – especially if it is generated live.

When it comes to sustainability issues, the industry focuses on economic interests. "From a business perspective, the savings potential is of course relevant. Our role as a provider is to raise awareness. It's about demonstrating the connection between sustainability and digital signage for the entire retail sector. And we must always keep the economic aspect in mind," says Albl.

BERND ALBL
MANAGING DIRECTOR
UMDASCH DIGITAL SOLUTIONS

IN A NUTSHELL

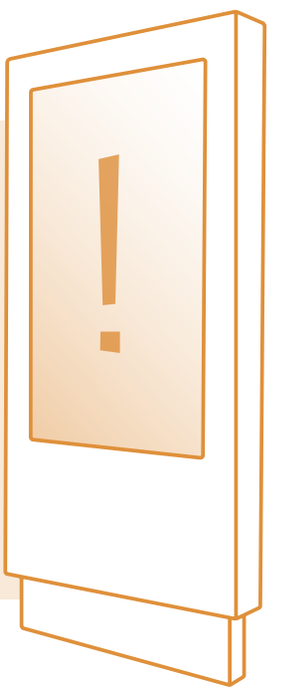
Hardware: Choosing the right hardware is critical. Energy efficiency should be considered at the design stage.

Operational management: Many displays run around the clock, which is often not necessary. Energy can be saved by managing operating times.

Brightness control: Adjusting the intensity and colour of lighting to suit requirements and the time of day has a positive impact on energy efficiency.

Sensors: The use of sensors such as brightness sensors and motion detectors can help improve energy efficiency.

Content optimisation: Energy consumption can be reduced by adjusting the colour spectrum and using less complex, static content.



ENERGY-EFFICIENT LIGHTING

EFFICIENT BRIGHT SPOT

Some retailers have stage fright when it comes to energy efficiency and sustainable lighting - but it is one of the key solutions for saving energy. And also one of the easiest, as the lighting experts at umdasch The Store Makers make clear.

Electricity consumption plays a major role in the retail sector, as described in the chapter on renewable energy. Lighting is one aspect that offers huge potential for savings across all sectors. In issue 1 of inSites, Anton Gassner, lighting expert at umdasch The Store Makers, gave tips for sustainable solutions based on his many years of experience. “Energy optimisation in lighting is possible without much effort,” he explains: “First of all, it’s about choosing the right light sources.”

Well lit: The Liebenau pharmacy in Graz has a contemporary design concept that sets off its wide range of products to optimum effect. umdasch The Store Makers was able to accompany the project as an integral partner. On request, umdasch Shop Consultants also integrated a cosmetics consultation area and another personal area for special products or treatments into the sales area on the ground floor. Appropriate lighting supports the zoning and highlights the areas in an ideal way.

The previous chapters have explained that switching to LED luminaires offers significant savings potential. It goes without saying that this development should also be exploited in shopfitting. For example, the lighting solutions integrated into the shopfittings by umdasch have been converted from fluorescent tubes to LEDs in recent years.

LEARN MORE IN INSIGHTS NO. 1

Issue 1 of inSites explained how to design energy-efficient retail spaces, i.e. how to best integrate lighting into the concept and how to best meet green building standards.

ENERGY-EFFICIENT LIGHTING

A benchmark that plays an important role in energy efficiency is called luminous efficacy. It indicates how much light a light source can produce with a given amount of energy. It is expressed in lumens per watt or lm/W for short. The higher the lm/W of a light source, the more energy efficient it is. Simply increasing the efficiency of the light source has a big impact on energy consumption. To give an example: some manufacturers already have light sources with 160 lm/W in their range. This is around ten times the luminous efficacy of conventional incandescent lamps.

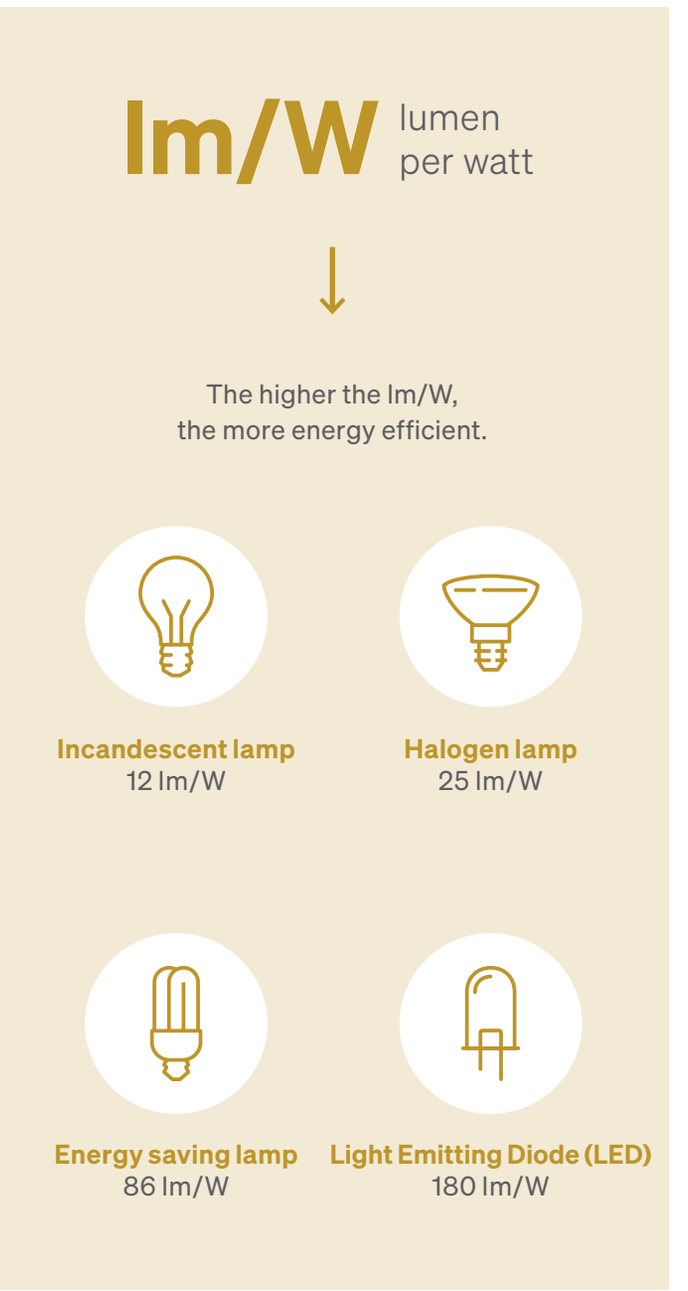
Lighting is a crucial element in store design. “On the one hand, light can be used to create excitement and variety, and on the other hand, an appropriate lighting concept contributes significantly to the overall atmosphere,” explains Maik Drewitz, Shop Consult Director at umdasch The Store Makers.

But what can be done to make lighting even more efficient and energy-saving?

Drewitz has an answer: “There should always be a well thought-out lighting management system in the background.” What does that mean?

The aim is to adjust the intensity and colour of the light to suit requirements and the time of day - ideally automatically. This can be done using

LIGHT SOURCE COMPARISON



Source: www.licht.de

ENERGY-EFFICIENT LIGHTING

motion detectors, i.e. sensors. Or by using daylight sensors, dimmers and intelligent lighting systems for automatic control. The advantage is that almost all lighting parameters can be changed with a good control system.

The most obvious source of light, which is also the most natural and therefore the most energy-efficient, is clearly daylight, as Jakub Albert of Unibail-Rodamco-Westfield explains in the chapter on energy-efficient building operation, using the example of a shopping centre. Windows, skylights, light domes or lighting control systems are all structural measures that can be incorporated from the outset and, if designed intelligently, can also make a big difference in terms of energy consumption. Daylight, on the other hand, can be used to create completely different lighting moods than artificial light.

“Atmosphere, orientation and energy efficiency: LED technology is essential in retail design.”

MAIK DREWITZ
SHOP CONSULT DIRECTOR
UMDASCH THE STORE MAKERS

CONCLUSIO

Energised for a sustainable future

A paradigm shift is taking place in the world of retail and building management. The core issues go far beyond aesthetics and functionality. This was already made clear in issue 1 of inSites. Regardless of the type and size of the space, sustainability is a key issue, especially in terms of energy.

There are many ways to make spaces energy efficient. Essentially, these can be divided into purely structural measures - the building envelope - and the operation of the building. But there is another crucial factor: the origin of the energy.

Purely structural measures have a major influence on the operation of a space and therefore on its energy efficiency. Even the size and number of glass surfaces can have a significant impact on issues such as lighting, ventilation, heating and cooling. Energy optimisations to the building envelope are usually associated with high investment costs and long implementation times. Optimisation of day-to-day operations is usually much quicker and less expensive, for example by replacing light sources or regulating the hours of use of computer screens.

Moving to sustainable solutions is not a constraint, but an opportunity. New technologies offer exciting possibilities for product and brand presentation. Aesthetics and sustainability go hand in hand.

Overall, the energy transition is a top priority. At a certain point, the construction and operation of premises reach their limits in terms of energy optimisation and sustainable solutions. The ultimate goal is to use renewable energy. The more energy-efficient the operation of buildings, i.e. the less energy is consumed, the faster the expansion of renewable energy will take place. However, a fully sustainable future can only be achieved in conjunction with the energy transition. Policies and frameworks for dealing with energy and its origins have been, and continue to be, defined and adapted. Cooperation at all levels is needed to achieve these goals and have a significant impact at the macro level. The energy transition is more than a trend - it is our responsibility and our opportunity for a better future.

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