

# Building a Model Company

Corporate Responsibility 2014

PDF-edition - 80 pages











# Our approach

Corporate Responsibility in our company describes the principles, policies and processes that help us deliver on our objective to be a Model Company.



From left to right: Jacob Schambye, Patrick W. McKenzie, Michael K. Rasmussen, Peter Kragh Knudsen, Jørgen Tang-Jensen, Ingemar Tärnskär, Peter Bang, Klaus Lorentzen.

# Our Corporate Responsibility achievements in 2014

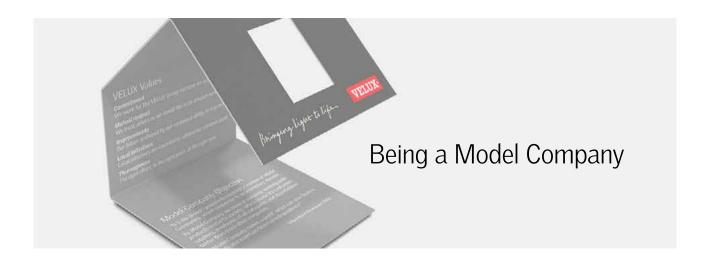
Back in 1965 – almost 50 years ago – our founder, Villum Kann Rasmussen, formulated the Model Company Objective to declare his ambition for how the company should be run. The wording shows that he was working with value-based leadership long before it became a management theme. For the last 50 years, the Model Company Objective and our VELUX Values have determined how we work in the VELUX Group and how we take responsibility for our products, customers, suppliers and employees.

An important aspect of aiming to be a Model Company is to work with products that are useful to society. In 2014, we published the results of several research projects based on the scientific monitoring of our demonstration buildings. The overall conclusion is that we can build carbon-neutral buildings today that also have a healthy indoor climate. These results encourage us to continue our work with supplying products and solutions that reduce energy consumption at the same time as improving indoor comfort with daylight and fresh air. This will benefit both the people inside the buildings and society in general, with reduced  ${\rm CO_2}$  emissions and improved productivity. This is why we call Sustainable Living in Buildings our commitment to people and planet.

In 2014, we had only 11 work-related accidents, which is a historically low number. Moreover, the hours lost due to accidents were also the lowest ever recorded. We are very proud of and pleased with these results. We will continue to maintain a sharp focus on safety, especially at our factories, because we know it is essential to maintaining our high safety performance.

Our  $\mathrm{CO_2}$  emissions have decreased by 29% compared to our 2007 baseline. This achievement is due to better use of our waste wood for heating at the factories, numerous local energy efficiency initiatives, and the implementation of an energy-management programme at our German factory. To accelerate our  $\mathrm{CO_2}$  reduction even further, we will implement this programme at all our European locations.

The purpose of this report is to document how we act as a responsible company and how we strive to be a Model Company. It is a quest that started 50 years ago and one that will never end. With this report, we give an insight into the activities we instigated in 2014 as part of this quest.



To become a model for others was an important ambition for the founder of the VELUX Group, Villum Kann Rasmussen. In 1965, he expressed this ambition in the Model Company Objective, which remains the guiding principle for the VELUX way of doing business to this day.

The Model Company Objective forms the raison d'être of the VELUX Group. In 2015, it will have been a source of inspiration for the whole organisation for 50 years.

# The Model Company Objective - why we are here

"It is the Group's purpose to establish a number of Model Companies which cooperate in an exemplary manner.

By Model Company we mean a company working with products useful to society which treats its customers, suppliers, employees of all categories and shareholders better than most other companies.

A Model Company makes a profit, which can also finance growth and maintain financial independence."

Villum Kann Rasmussen, 1965

#### Our values - who we are

#### Commitment

We work for the VELUX Group because we want to.

### Mutual respect

We treat others as we would like to be treated ourselves.

#### Improvements

Our future is shaped by our continued ability to improve.

#### **Local initiatives**

Local initiatives are essential to achieve our common goals.

## **Thoroughness**

The right effort, in the right place, at the right time.

## Our vision - where we are going

It is the vision of the VELUX Group to lead the development of better living environments with daylight and fresh air through the roof, and to be rated as the best in the eyes of our customers.

# Explaining our Model Company Objective

At the heart of the VELUX business is the Model Company Objective, urging us always to do better than most other companies – through the products we develop and through the way we do business.

The VELUX Group is guided by a strong wish to provide high-quality products that are useful to society and bring daylight and fresh air into people's homes and lives at affordable prices.

The Model Company Objective is reflected in our business practices and experienced by our customers and other partners in the daily interaction. We engage with our stakeholders to make sure our products stay relevant and create value for individuals, for companies and for society as a whole.

Internally, we focus on creating an inspiring and safe working environment and on developing our employees to succeed with their careers and to navigate in an everchanging business environment.



We always seek to conduct our business in a way that limits the impact on the surrounding environment and natural resources.

# Case: A healthy workforce



At the NB Polska factory in Poland, a programme to promote the health of the employees was kicked off in 2014.

"It is a well-known fact that even though we do a lot of work to prevent harmful events such as repetitive work, heavy lifts and undesirable work postures in our daily work, the type of physical work our employees do requires that they are fit enough to avoid health problems. Therefore, we have introduced a programme that focuses on a healthy life style at work and in people's private lives," explains Magdalena Witaszczyk, who is responsible for the factory's health programme.

As part of the programme, weekly training sessions open to all employees are held.

"We want our factory to be known for offering not only good social conditions but also good workplace ergonomics. We are sure we will benefit from this focus on our people's health and the programme has received a warm welcome among our employees," says Magdalena.

The next step of the campaign is to supply additional information, for instance posters with exercises to remind people how important it is to do workout exercises before, during and after work in order to stay fit and avoid health problems.

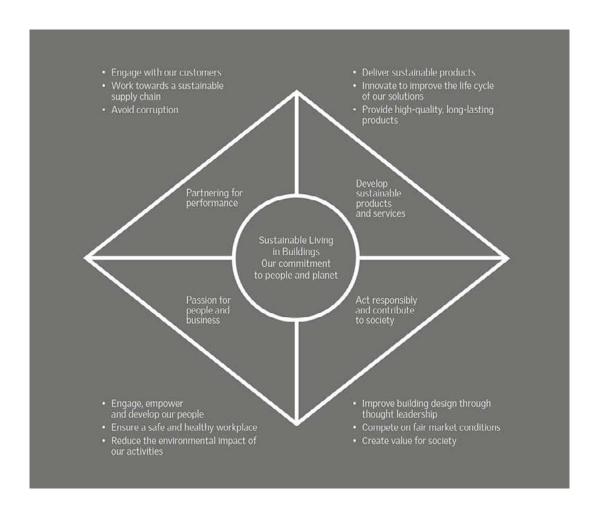


Corporate Responsibility helps us implement the Model Company Objective in practice. At the strategic level, Corporate Responsibility is governed by the VELUX Management Group.

Our Corporate Responsibility activities are typically organised as projects run by a formal organisation set-up representing all relevant functions of the business. The project steering groups mainly include members of the VELUX Management Group. In the implementation phase and subsequent daily operations, activities are handled by the relevant line function. In this way, Corporate Responsibility activities are embedded in the VELUX Group's daily business practices.

### **Corporate Responsibility model**

The VELUX Corporate Responsibility model explains how we understand and work with Corporate Responsibility at the VELUX Group.



At the core of our work with Corporate Responsibility is our commitment to Sustainable Living in Buildings. This is where our core competences can be applied to develop a new paradigm for the buildings of the future, in which human health and well-being go hand in hand with high energy efficiency.

Today, the larger part of most people's lives is spent inside buildings – living, working, learning and playing. 15-16% of the European population live in damp or unhealthy buildings. At the same time, buildings are major energy consumers; in fact, energy used in buildings accounts for approximately 40% of the total energy consumption in the Western world.

In recent years, the energy agenda has dominated the development of sustainable buildings, and less attention has been paid to the indoor climate and people's health and well-being. Energy efficiency of buildings is key for both society and building owners but has to go hand in hand with building comfort.

As provider of daylight and fresh air through the roof with energy-efficient windows, the VELUX Group has the opportunity to take a leading role in the design of sustainable buildings with a holistic focus on health, comfort, energy and environment. At the same time, our work with Sustainable Living in Buildings ensures the relevance of VELUX products today and tomorrow.

#### **Partnering for performance**

In our value chain, we partner with customers and suppliers to improve our performance.

It is our vision to be perceived as the best by our customers. We strive for the highest standards of business practice and we promote responsibility in our supply chain.

#### Developing sustainable products and services

We enable better living environments through sustainable products and services.

It is our vision to lead the development of better living environments with daylight and fresh air. Through research and innovation, we wish to contribute to the sustainable buildings of the future by continuously improving the performance of our products. A good indoor climate is important for people's health and well-being.

#### **Managing people and business**

We manage the business with a focus on people and environmental leadership.

Our values-based approach and focus on creating a workplace built on innovation, teamwork and mutual respect helps us to attract and retain the talent we need.

We are systematically working to reduce the environmental impact of our operations and to achieve our goal of zero accidents at work.

#### Acting responsibly and contributing to society

We seek to influence policy and its implementation to enable sustainable living in buildings, while acting as a responsible business ourselves.

The long-term success of our company depends on the strength and prosperity of the societies we are part of. We take our social responsibility seriously and aim to use our influence and resources to create value for both our company and society.

# Perception of the VELUX Group as a responsible company

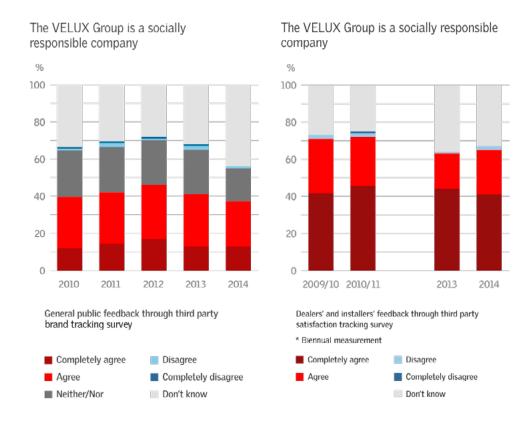


The Model Company Objective and its inherent responsible business practices are deeply rooted in the VELUX organisation. To follow how that objective and our values resonate with our customers and the general public, we carry out a VELUX Brand Survey every year. In 2014, the survey showed that among people who know the VELUX Brand, nearly all rate our company positively. 97% of the professional stakeholders (installers and builders' merchants) with in-depth knowledge of our company rate the VELUX Group as a socially responsible and environmentally conscious company.

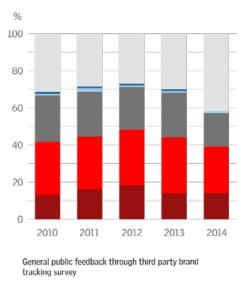
As expected, the awareness in the general public of the VELUX Group's corporate responsibility activities is significantly lower than in the professional community. Around 38% of respondents in the brand survey characterise the company as environmentally conscious and socially responsible. The remaining 43% answer "don't know" to these questions. We continuously seek to strengthen our communication on corporate responsibility to the general public, for instance by disseminating knowledge on Sustainable Living in Buildings, healthy homes and energy-saving measures.

#### **Examples of awards received in 2014 for our commitment**

- Germany: The German sales company, VELUX Deutschland GmbH, was elected "Hamburgs Bester Arbeitgeber 2014" (Hamburg's best employer 2014.)
- Estonia: The Estonian sales company, VELUX Eesti OÜ, was presented with an award by the Ministry of Culture for supporting Estonian culture.
- France: The French sales company, VELUX France, was proclaimed as "Best Workplace".
- Poland: The Polish sales company, VELUX Polska Sp. z o.o., received the Danish Export Association Diploma and HRH Prince Henrik's Medal of Honour for its contribution to the positive development of the Polish economy.
- Poland: VELUX Polska Sp. z o.o. was honoured with two titles as "Market Leader in the Woodwork/Windows and Doors Joinery Sector 2014". One title was awarded for the largest production of roof windows and the other for success in export.
- Romania: The Romanian sales company, VELUX România S.R.L., was awarded for supporting the National Championship of Young Roofers, which was held in Romania by the International Federation of the Roofing Trade.



# The VELUX Group is an environmentally conscious company

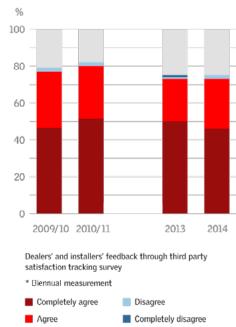


Disagree

Don't know

Completely disagree

# The VELUX Group is an environmentally conscious company



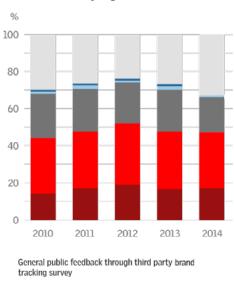
Don't know

# Choosing a VELUX product is environmentally a good choice

■ Completely agree

Agree

■ Neither/Nor



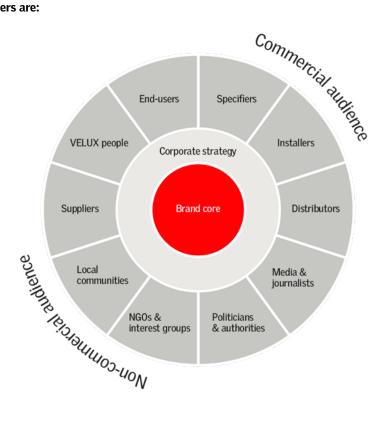


Stakeholder engagement is a core element in fulfilling our objective to be a Model Company that "treats its customers, suppliers, employees of all categories and shareholders better than most other companies".

We also engage with stakeholders to gain insight into emerging trends and opportunities for growth and development. This means that we:

- Discover stakeholder concerns and needs through research and analysis of global, societal trends
- Engage in dialogue in a number of forums, meetings and platforms
- Influence development by providing knowledge, tools and methods related to Sustainable Living in Buildings.

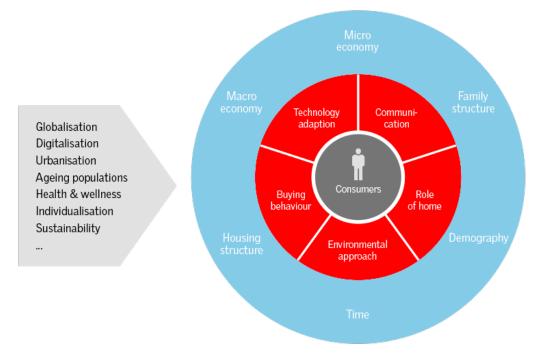
### Our primary stakeholders are:



# Case: Discovering the trends of tomorrow



The VELUX Group picks up future global trends that will affect our product development, les processes and business models. We continuously monitor what goes on in the global marketplace. Through a structured process, we discover changes in attitude and behaviour among consumers, changes in structural conditions and technology, and mega trends that are likely to influence consumer behaviour in the long run.



One major trend is the focus on health across Europe. People are beginning to take an interest in the indoor climate at home, at work and at their children's school. This trend echoes the widespread interest and concern with the risk of asthma and allergies caused by, for example, poor indoor air quality (Attitudes of Europeans towards air quality, Eurobarometer 2013).

Despite the concern with air quality among consumers, people have only limited knowledge of what it takes to secure a healthy indoor climate in their home. However, the findings so far have spurred the VELUX Group to engage in the development of concepts for healthy buildings and natural ventilation. Making the case for good indoor air quality is therefore an essential element of recent building experiments conducted by the VELUX Group to develop the next generation of sustainable building concepts.



The VELUX Group creates better living environments with daylight and fresh air through the roof for life, work and play. The VELUX product programme contains a wide range of roof windows and skylights, along with solutions for flat roofs.

The Group also supplies many types of decoration and sun screening, roller shutters, installation products and products for remote control. The VELUX Group represents one of the strongest brands in the global building materials sector and its products are sold in most parts of the world.

The VELUX Group employs about 10,000 people and is owned by VKR Holding A/S, a limited company wholly owned by foundations and family. The VELUX Group head office is in Hørsholm, north of Copenhagen, Denmark.



#### The overall goals of the VELUX Group Strategy 2013-2017 are to:

- 1. Ensure the relevance of our core business (daylight and fresh air through the roof)
- 2. Retain our high market share globally
- 3. Deliver high profitability.

#### These goals will be achieved by:

- Delivering outstanding perceived value with affordable core products and services
- Focusing on high-volume standard product platforms for the mass market
- Leveraging our scale advantage to produce at significantly lower cost than competitors
- Fulfilling local customer needs with lean global structures and processes
- so that customers are satisfied and our local relationships are strong
- to remain the strongest brand in our industry.

# Organisation and ownership



The VELUX Group is a global company with manufacturing companies in ten countries and sales companies in just under 40. VELUX products are sold in more than 100 countries.

Through its entire history, the VELUX Group has been characterised by a high degree of local autonomy within the framework of the Model Company Objective and the VELUX Values

Today, the VELUX Group operates as One Company with a dual focus on local initiative to serve local customer needs and on global integration to enhance efficiency through shared processes.

The VELUX Group is owned by VKR Holding A/S, a financial holding company 100% owned by foundations and family. The main shareholder of VKR Holding A/S is the foundation VILLUM FONDEN.

Each year a share of VKR Holding A/S' profits is paid back to society by the two foundations VELUX FONDEN and VILLUM FONDEN, supporting scientific, environmental, social and cultural purposes around the world. The foundations operate independently from VKR Holding A/S and its companies.

# Our history



A passion for daylight, fresh air and better living environments is what started our company almost 75 years ago. That passion still drives our development.

In 1941, entrepreneur and inventor Villum Kann Rasmussen came up with an idea that would transform dark attics into liveable spaces full of daylight and fresh air.

His first roof window was patented in 1942. He designed a distinctive name that brought out the key benefits of his solution: VE' which is short for ventilation and 'LUX' which is the Latin word for light – VELUX.

Within a few decades, Villum Kann Rasmussen and his team opened up the roofs of homes and workplaces all over Europe and America, making the VELUX brand synonymous with daylight, fresh air and functional, high-quality design.

If you want to take a historic journey through the prosperous '60s, the energy-conscious '70s, the economic downturn of the '80s, the new world of hope of the '90s, the new

millennium and how the VELUX Group has changed and adapted, visit our history timeline.

## **Board members**

Our board consist of eight members.

## Søren Bjerre-Nielsen

Chairman of the Board, VELUX A/S
Chairman of the Board, VKR Holding A/S
Chairman of the Board and Chairman of the Committee of Directors, Danmarks
Nationalbank
Chairman of the Board, Højgaard Holding A/S
Chairman of the Board, MT Højgaard A/S

### **Kim Fausing**

Deputy Chairman, VELUX A/S Executive Vice President & Chief Operating Officer, Danfoss A/S Board member, Hilti AG, Liechtenstein



#### Kent-Åke Ahlgren

Board member, VELUX A/S Owner, Ahlgren Consulting GmbH

#### Morten Falkenberg

Board member, VELUX A/S President & CEO, Nobia A/B

#### Lykke Friis

Board member, VELUX A/S
Pro-Rector, University of Copenhagen
Representative member of EIT Governing Board
Member of the International Advisory Board, University of Helsinki
Member of the Board, Rockwool Foundation
Member of the Board, Vestas Wind Systems A/S

#### **Arne Christensen**

Employee-elected board member, VELUX A/S Quality worker, Skærbæk Bygningsindustri A/S

#### **Øjvind Frank**

Employee-elected board member, VELUX A/S IT-Responsible and CAD Coordinator, A/S Østbirk Bygningsindustri

#### Jan Thomsen

Employee-elected board member, VELUX A/S Warehouse worker, Gåsdal Bygningsindustri A/S

# Risk Management and Audit Committee

The VELUX Management Group continuously identifies and monitors significant risks related to the business.

The Audit Committee has two members elected by the Board. One member is designated as chairman. Under the Danish Act on Auditors, all members qualify as financial experts and one of the members also qualifies as independent.

### The members are:

Søren Bjerre-Nielsen – Chairman of the Audit Committee since 2013 Jan Lundsgaard Jensen – member of the Audit Committee since 2012, CEO of VKR Holding A/S  $\,$ 

### The Audit Committee assists the Board with supervision of:

- the external auditor
- the internal audit function
- financial reporting
- the internal control system
- the procedure for handling complaints regarding accounting, internal accounting controls, auditing, or financial reporting issues, and matters of business ethics.

# Risk management

The VELUX Management Group continuously identifies and monitors significant risks related to the business. Specific risks in relation to presentation of accounts and fraud are handled by the Audit Committee.





# Citizenship

We take our social responsibilities seriously and aim to use our influence and resources to create value for both our company and society. A share of our profits is distributed to society by THE VELUX FOUNDATIONS.

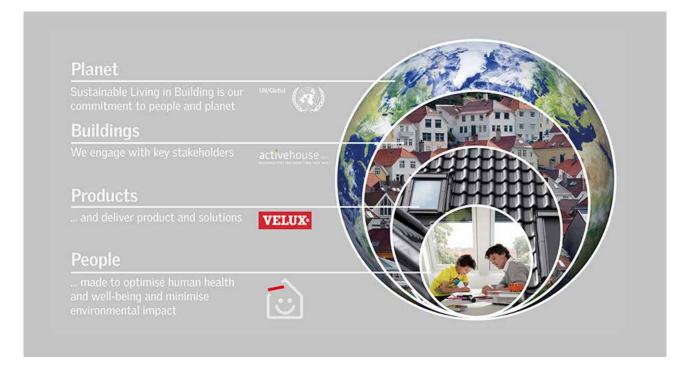
# Sustainable Living in Buildings

Sustainable Living in Buildings is our commitment to people and planet. We engage with key stakeholders and deliver products and solutions made to maximise human health and minimise environmental impact. Our work with Sustainable Living in Buildings has demonstrated that the EU targets for nearly-zero-energy buildings in 2020 can be achieved with solutions and technology readily available today without compromising the comfort and indoor climate.

"It is possible to build nearly-zero-energy buildings with today's technology"

Conclusion from a recent, comparative study at the Technische Universität Braunschweig, Germany.

# Our work on Sustainable Living in Buildings is structured in four perspectives:



# Planet perspective: agenda for the future



With our Sustainable Living in Buildings initiative, the VELUX Group has made a strong commitment to contribute with innovative concepts for solving the challenges of climate change, limited energy resources and unhealthy buildings.

The majority of most people's lives is spent inside buildings. In the developed world, people tend to spend up to 90% of their time living, working, learning and playing inside buildings. At the same time, research shows that 80 million Europeans, for instance, live in damp or unhealthy buildings.

Buildings are some of society's biggest energy consumers through their entire life cycle. According to the International Energy Agency (IEA), buildings currently account for 40% of the primary energy consumption in Europe and North America. This makes sustainable development of buildings an important lever to solve challenges connected with global warming and high energy consumption.

Throughout 2014, the VELUX Group participated in numerous conferences around the world to share knowledge on Sustainable Living in Buildings. At the 2014 World Sustainable Building Conference in Barcelona, the VELUX Group presented ten papers on future sustainable building solutions based on the findings of the Model Home 2020 project and other, similar building experiments.

# Case: Papers at 2014 World Sustainable Building Conference

The VELUX Group has authored or co-authored ten scientific and peer-reviewed papers that were presented at the World Sustainable Building Conference 2014 in Barcelona in October 2014. The papers report on the scientific monitoring results of the Model Home 2020 project and similar building experiments. The theme of the conference was "Results, are we moving as fast as we should?".

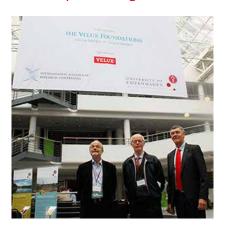
The papers cover a variety of important topics for sustainable living, such as comfort, life cycle cost analysis and socio-psychological monitoring in energy-efficient housing.

### The following papers were presented:

- Control of indoor climate systems in Active Houses: recommendations and experiences from six demonstration houses occupied by families.
- Subjective and objective measurements of thermal comfort in an Austrian Active House: occupant-reported thermal sensation and measured temperatures during a one-year period.
- The Road to Zero Carbon: is it really as long as it is wide?
- Post-Occupancy Evaluation by the test families in five Model Home 2020 buildings across Europe.
- Climate renovation can pay off: a life cycle cost analysis conducted as part of the LichtAktiv Haus experiment confirms the economic viability of modernising a 1950s settler's house.
- Social performance criteria for buildings according to the CEN TC 350: case study of the assessment of the VELUX Sunlight House, Austria
- Carbon-neutral living in a modernised settler's house.
- The psychophysics of well-being: socio-psychological monitoring and benchmark measurement in energy-efficient housing.
- Evaluation of ventilative cooling in a single-family house characterisation and modelling of natural ventilation.
- Tomorrow's buildings today results, conclusions and learnings from a pan-European demonstration programme.



# Case: Sponsoring IARU Sustainability Science Congress 2014



In October 2014, the International Alliance of Research Universities (IARU) held its Sustainability Science Congress in Copenhagen, with THE VELUX FOUNDATIONS as main sponsor and the VELUX Group among the sponsors. The topic was "Global Challenges – Achieving Sustainability".

The VELUX Group hosted an information and meeting point, where VELUX representatives shared knowledge and opinions on Sustainable Living in Buildings with the participants, and presented Active House principles and results of the Model Home 2020 project.

"We were present at the 2014 IARU congress to show our strong commitment to sustainability. In particular, we shared our ideas on how buildings can support the health and comfort of people while fulfilling the nearly-zero energy objectives set up for future buildings," said Per Arnold Andersen, head of the VELUX Knowledge Centre for Daylight, Energy and Indoor Climate.

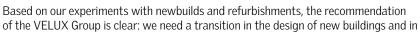
A number of top universities are partners of IARU, including Yale University, Oxford University, Cambridge University, ETH Zürich and Peking University. Among the key note speakers were Connie Hedegaard, former European Commissioner for Climate Action, Peter Bakker, President of World Business Council for Sustainable Development, and Jane Lubchenco, former energy advisor to US President Barack Obama.

# Building perspective: engage with stakeholders

Since 2005, the VELUX Group has been driving the agenda of Sustainable Living in Buildings, co-creating ideas and solutions with a wide range of partners. As part of this work, we:

- discover new solutions through full-scale building experiments and research, establishing in-depth knowledge and applicable solutions
- engage in dialogue with politicians and stakeholders in the building industry, initiating building experiments and sharing knowledge
- influence the agenda of sustainable buildings through cooperation and argumentation.

35 years from now, 90% of the current building stock will still be in use. Modernisation and refurbishment of existing buildings is therefore a key challenge facing building owners, the building industry, planners and policy makers.



renovation projects based on the collected knowledge that it is possible to construct nearly-zero-energy buildings with a good indoor climate using the methods, technology and building components known and available today. Such buildings will support human health and well-being.



The VELUX Group is one of the founding partners of the Active House Alliance, a global network of builders, universities, designers, building contractors and manufacturers of building components. An Active House integrates the three basic principles of comfort, energy and environment in the design and use of a building, and it is the ambition of the Active House Alliance to establish a benchmark for new buildings and renovation.

"One experiment is better than a thousand expert views" was the belief of the VELUX Group's founder, Villum Kann Rasmussen. During the last ten years, the VELUX Group has initiated and partnered the building of 21 Active Houses in a number of countries from Russia to Canada. Moreover, several countries have now established their own Active House initiatives and associations to promote the Active House building principles even further.

The results of the Active House building experiments have established that the future solutions are already available today.



# Case: VELUX Canada part of initiating national Active House Alliance



From the Active House Canada inauguration ceremony in September 2014: Christopher Wein, President of Great Gulf Residential, Nels Moxness, President of VELUX Canada, and HRH the Crown Prince Frederik of Denmark.

A Canadian chapter of the Active House Alliance was officially launched in September 2014. The founding partners of the national alliance include VELUX Canada, Great Gulf Homes, Roxul inc. (Rockwool), Waterloo University, as well as the international Active House Alliance.

The establishment of the Canadian Active House Alliance is an important step towards the development of Active House projects in Canada and North America.

"With the strong support of Great Gulf Homes, we are very pleased to formalise our Canadian Alliance. The alliance will allow us to build new partnerships in others regions of Canada and expand the network of like minds who wish to build better homes," says Nels Moxness, President of VELUX Canada.

# Product perspective: deliver products and solutions



VELUX products and solutions support the transition towards Sustainable Living in Buildings. Our business is founded on a vision to bring daylight and fresh air into people's everyday lives in buildings that give more to the environment than they take. Our products are made to add value, to increase comfort and to reduce energy costs.

We will continue to drive our innovation towards enhancing energy efficiency and healthy buildings. We believe the key to energy-efficient buildings with a good indoor climate is to be found in building components that are dynamic and responsive to the outdoor climate and seasonal changes.

Windows are special in this regard. They are one of the few building components that can play an active role in creating a good indoor climate and a positive energy balance. Roof windows and skylights are highly effective daylight and energy sources due to their position in the sloping roof.

A VELUX window is designed to provide the best energy balance in itself. However, it is through a combination of our products that the end-user gets the most dynamic and responsive solution – for instance by taking full advantage of the solar heat gain through the windows, by using natural building ventilation and by fitting sun screening for coolness during summer and insulation during winter.

# Case: Future solutions are here today – conclusions from 21 recent building experiments

Over a period of ten years, the VELUX Group has participated in 21 full-scale, experimental demo houses in 12 countries in order to develop know-how and solutions for Sustainable Living in Buildings. The majority of the projects have tested the Active House principles in practice and the indoor climate of the homes has subsequently been monitored and evaluated. The conclusions from our building experiments are clear:

#### • Future solutions are here today

It is possible to build affordable and nearly-zero-energy buildings with a good indoor climate by using methods, standard materials and technologies that are available today.

#### • Optimum comfort through use of natural ventilation

Controlled natural ventilation is an integral part of healthy and sustainable buildings. Natural ventilation not only contributes to minimum energy consumption but also to enhanced comfort of the building.



#### • Natural daylight is a mood lifter and energy saver

Building design with plenty of natural daylight is highly valued by end-users for its pleasant indoor comfort and energy performance.

#### **Key findings**

Until now, data from the six experimental building projects across Europe in the Model Home 2020 project has been analysed with a special focus on daylight, use of electric light, thermal comfort and ventilation. The following key findings were deduced from the analysis:

- A roof window solution will not cause the room to overheat
- Plenty of daylight will eliminate the use of artificial lighting between sunrise and sunset
- Cooling by natural venting prevents overheating and ensures moderate temperatures at night
- Exterior sun screening actively prevents overheating during the day
- · Automated products help home-owners utilise the full potential of the solution, even when they are not home
- Natural ventilation ensures good indoor air quality.

Sustainable living cannot be evaluated based on data alone. To supplement the factual findings, the VELUX Group commissioned a socio-psychological study of the five Model Home 2020 projects to be performed by social scientists from Humboldt University, Berlin. The study was carried out among the test families who lived in the homes for up to two years, and the findings were subsequently summarised in a report.

In the socio-psychological study, questions were asked about the residents' satisfaction with specific aspects of their home, their interaction with the building design, components and technology, and its effect on their everyday routines and living preferences. Some of the key learnings of the socio-psychological study are:

- The Model Home 2020 projects had positive effects on the health, well-being and productivity of the families
- Daylight and fresh air are the key reasons for the feeling of well-being in a home
- A view to the outside is important to the feeling of well-being
- Good noise protection is mandatory during daytime and night-time
- One size does not fit all when it comes to building design flexibility is a must
- The home shapes people's behaviour, i.e. living in a sustainable home raises people's awareness of the importance of energy and environment
- Living with plenty of daylight and fresh air is a benefit to social life, inviting people in to enjoy the comfort and explain about the functionality
- · Concerns about sustainability extend beyond the home to include such aspects as transportation and other environmental issues.

# People perspective: Human health and well-being



For more than 70 years, it has been the vision of the VELUX Group to bring daylight and fresh air into buildings to create healthy and attractive homes, inspiring work environments and productive learning spaces.

We are committed to proving that the quality of people's lives and the quality of the environment are closely linked. It is never a question of either-or, but always a quest to find solutions that combine benefits for people and planet alike in the design of new, and renovation of existing, buildings.

This is what we call our commitment to Sustainable Living in Buildings.

# Case: The Healthy Home Barometer

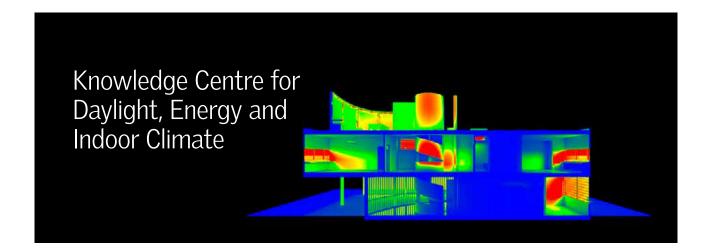


The Healthy Home Barometer is a European survey carried out by the VELUX Group to analyse people's perception and behaviour in relation to comfort, energy and environment in their home.

With the Healthy Home Barometer, the VELUX Group aims to shed light on the quality of life inside buildings and to start a debate about healthy homes and what it takes to achieve them.

The survey was carried out in the autumn of 2014 among a representative share of the population in 12 European countries.

Overall, the survey shows that having a healthy home is very important to Europeans. When defining what a healthy home is, they put great emphasis on the quality of sleep, ventilating regularly, plenty of daylight, and also having these factors available when moving or renovating their home. The results will be consolidated and analysed in detail and disseminated per country to provide new inspiration to designers, specifiers, homeowners and policy makers throughout 2015.



The VELUX Knowledge Centre for Daylight, Energy and Indoor Climate (DEIC) develops tools and shares knowledge with a specific focus on the effects of windows, shading and controls in buildings. DEIC gathers and publishes the most recent knowledge in the Daylight, Energy and Indoor Climate Basic Book, which supports specifiers and other building professionals in the design of sustainable buildings. The third edition of the book was published in 2014.

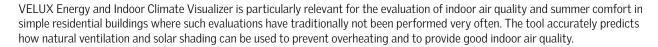
# VELUX building simulation tools

The VELUX Group offers professional tools for building simulation:

- The Daylight Visualizer for evaluating and optimising daylight conditions in buildings
- The Energy and Indoor Climate Visualizer for evaluating and optimising energy efficiency, thermal comfort and indoor air quality of buildings.

The tools are user-friendly and offer accurate simulation results on building performance to aid professionals in the design of sustainable and healthy buildings. In a recent evaluation of daylighting simulation tools conducted by the Danish Building

Research Institute and Aalborg University, the VELUX Daylight Visualizer passed all tests with excellent accuracy.



The VELUX Building Simulation Tools are used in several education programmes at universities and schools of architecture around the world to teach future building professionals how to work with daylight and indoor climate in building design.

# Case: Simulating daylight factors and indoor climate before renovating school



When Langebjerg School in Denmark had to go through an extensive roof renovation, VELUX building simulation tools – the Daylight Visualizer and the Energy and Indoor Climate Visualizer – were used in the design phase to create an optimum learning environment with plenty of daylight and fresh air.

#### Old rooms - new feeling

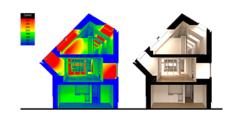
The daylight performance of the classrooms was defined by using the average daylight factor levels as primary indicator. The daylight factor expresses the amount of daylight available inside a room compared to the amount of unobstructed daylight available outside under overcast conditions. According to international standards, rooms with an average daylight factor of 2% or more are considered daylit, but electric light may still be needed. When the daylight factor is 5% or more, a room will appear strongly daylit with no need for electrical lighting during daytime.

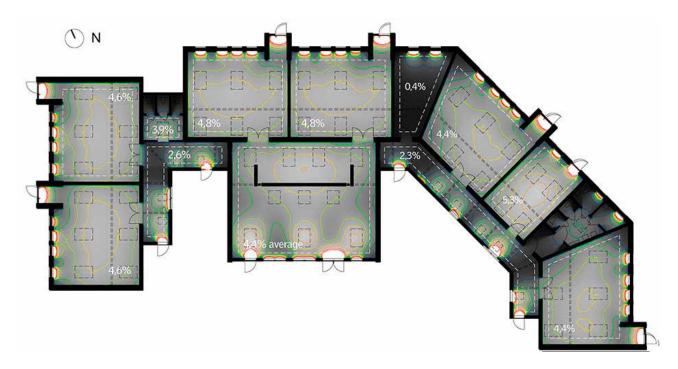
By installing roof windows as part of the renovation at Langebjerg School, the daylight factor of the classrooms and halls was improved to an average of more than 4%.

"It gives the building a lighter feel. The roof windows add new qualities and properties to the indoor climate. The fact that the roof windows can be controlled automatically based on  $CO_2$  levels in the room ensures that the air is fresh," says Peter Sommerfeld, architect at the municipality of Fredensborg and project manager of the renovation project.

To teacher Lena Mossin, the daylighting of the rooms makes a big difference in the daily work of teachers and children.

"The first time we entered the new rooms, I thought – wow this is great!"





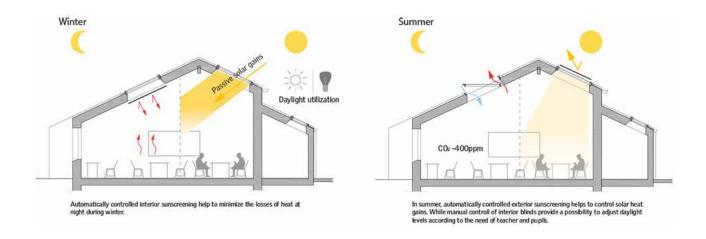
Simulations were made by the VELUX Daylight Visualizer, a tool for daylighting design and analysis. The illustration shows the daylight factor in classrooms after the roof renovation.

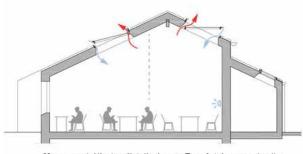
#### Fresh air increases learning abilities

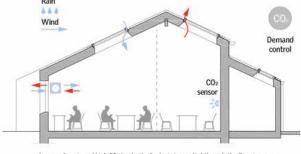
To ensure adequate natural ventilation of a classroom, the window opening area is a key design parameter. One-sided ventilation from facade windows tends to create a draught. A much better result is achieved when open facade windows are combined with open roof windows to create a controlled stack effect in the room, or simply with VELUX roof windows as in this case.

At Langebjerg School, the VELUX Energy and Indoor Climate Visualizer was used to evaluate the air quality and comfort in a classroom before the actual design of the roof renovation was finalised. By installing  ${\rm CO_2}$  sensors and automatically controlled roof windows in each classroom, the  ${\rm CO_2}$  level of the indoor air of the classrooms is now kept below 1,150 ppm, in accordance with the Active House category 2 specification and the Danish building code. The result is a significant improvement compared to an average Danish classroom and thus provides a better indoor climate for learning.

"The steady air change is great. When the open windows are located in the roof, we avoid the unpleasant draught that occurs when we open the facade windows," says teacher Lena Mossin.







CO<sub>2</sub> sensors control the air quality in the classroom. The roof windows open automatically and close again when minimum CO<sub>2</sub> setpoint is achieved or if it rains.

In case of a rain and high CO<sub>2</sub> levels, the fresh air is supplied through the flaps in upper part of roof windows or additional mechanical ventilation, if needed.

# **VELUX** Building Monitoring



The purpose of VELUX Building Monitoring is to gather and disseminate learnings from the many demonstration buildings that the VELUX Group has been involved in during the last decade. Detailed monitoring programs have been established in many of the buildings, providing insights into indoor climate, comfort and how specific product solutions perform. The results of VELUX Building Monitoring are shared with the building community through magazines, scientific journals and at conferences.

The results compiled show that high daylight levels and good summer comfort can go hand-in-hand when natural ventilative cooling, night ventilation and dynamic solar shading are combined to achieve maximum cooling effect.

The results have also revealed that automation is important to achieve an optimum indoor climate any time of day, summer and winter. It has also been established that the automation system must be simple and intuitive. Social scientists involved in the building experiments conclude that the residents quickly become acquainted with the controls and appreciate the automatic operation of windows and solar shading. An

additional benefit of natural ventilative cooling in summer is the extensive airflow that keeps the air fresh and the  ${\rm CO}_2$  levels low inside the home

"It is as if the house breathes. In the evening, before bedtime, the windows open to let in the cool night air."

The Pastour family living in the Model Home Maison Air et Lumiére in France.

# Circadian House - principles and guidelines for healthy homes

As a contribution to the discussion on the future development of sustainable architecture, a series of principles and design guidelines under the heading "Circadian House" was compiled in 2013 by the VELUX Knowledge Centre for Daylight, Energy and Indoor Climate and a group of internationally recognised external experts.

A Circadian House is a home that adapts to the natural, daily and seasonal rhythms of people and nature. A Circadian House allows the inhabitants to live in sync with the rhythms of nature for improved health and well-being.

As a result of the development work, a report with principles and guidelines for circadian buildings was published in 2013. During 2014 the work was continued, widening the scope to include more factors and involving additional experts.

The October issue of Daylight & Architecture features the thinking behind and practical application of the circadian principles for healthy living around the clock.



The overall theme of "sleep, work, live" is a call to building owners, engineers and architects to take into consideration the opportunities and challenges related to human health and contact with nature in the built environment.

When working with the circadian principles, a virtuous circle becomes apparent telling us that the more people interact with nature in their everyday lives, the healthier they are likely to become and, at the same time, their concern for nature grows.

"Particularly significant is bright light in the morning, confirming the old idea that bedrooms and breakfast rooms should face east to facilitate alertness in the morning."

Peter Buchanan, architect and author, in Daylight & Architecture, October 2014.

#### Nine key circadian design factors

- 1. Variation: adapting to cycles and natural rhythms rather than uniformity or non-variability
- 2. Stimulation: providing different levels of stimulation from light, sound and other external stimulations during day and night
- 3. Outdoor/indoor relation: giving easy access to the outdoors/semi-outdoors and a feeling of connectedness to the outdoors when indoors
- 4. Warm/cool: adapting to thermal comfort during day/night, according to activity level and use of different rooms
- 5. Silence/sounds: opening up to sounds from the outdoors during daytime, quiet spaces during night time
- 6. Light/darkness: following the natural human rhythms, more light during daytime, darkness at night
- 7. Rest/activity: providing spaces for activity as well as relaxation/recreation
- 8. Flexibility related to seasons: stimulating the use of outdoor and semi-outdoor spaces outside the heating season
- 9. Control: giving freedom to residents to control the indoor climate.

# International VELUX Award for Students of Architecture



International VELUX Award for Students of Architecture encourages and challenges students worldwide.

The purpose of the International VELUX Award for Students of Architecture is to encourage and challenge students of architecture worldwide to explore the theme of daylight in its widest sense.

The VELUX Group organises the award every second year to strengthen the role of daylight in building design in accordance with the company's vision to promote daylight, fresh air and sustainable living. The award is part of our continuous efforts to establish close relations with current and future generations of architects and other building professionals.

In 2014, the International VELUX Award celebrated its tenth anniversary. Over the years, it has developed into one of the most important awards of its kind worldwide. So far almost 4,000 student teams from more than 60 countries have contributed to the

discussion of "Light of Tomorrow" through entries in the six award rounds held from 2004 to 2014.

The June 2014 issue of the Daylight & Architecture magazine published by the VELUX Group dived into the backlist of the International VELUX Award by featuring some of the thousands of bright ideas from students all over the world. The magazine also kicked off a long-ranging discussion on the future of architectural education.

# Case: And the winners are...



Prize winners share global responsibility.

Three prize winners and nine mentions were awarded in the International VELUX Award 2014. The celebration took place in October 2014 in Vienna, where the winners were the centre of attention among building professionals and journalists from all continents.

A team of four students from Tsinghua University in Beijing, China, took first prize for their project "Light, Revitalization", a beautiful and profound exploration of the role of daylight in modern urban life.

"To us, the light of tomorrow means an emphasis on the more spiritual beauty of life. We did not only discuss better use of light in the future. We searched for a new definition of light. In our project, light serves as a stage, leading us to rethink the deeper values of daily life," says Du Dikang (22), undergraduate student at Tsinghua University and captain of the winning team.

Taking their starting point in the city of Beijing, a testing ground of new architecture, the winning team from Tsinghua University decided to search for the valuable things that should be preserved from the past and reconnected to modern life.

The jury praised the project for its maturity and for presenting something entirely plausible and feasible, tying together old Chinese traditions and new ways of looking at these traditions.

"The first-prize-winning project ties to cultural conditions regarding the cycles of the sun foretold in the cultural heritage of the region. There are several narratives at work, and the possibility to heal urban conditions through light. That is an interesting commentary on light," says jury chairman Craig Dykers in his motivation of the winning project.

#### 2nd and 3rd prizes concerned with global responsibility

The jury characterised the 2nd prize as fantastic, tying aspects of science fiction with the real world in a very mature approach, animating a demilitarised zone as an artificial cloud. The project "Morning Glory Cloud" was created by two students from Korea to encourage reflections on the possible reunification of the divided country.

The third-prize-winning project "Light of Hope" aimed to bring glows of hope and lighting to the millions of people living in refugee camps around the world. The jury found the project both cost effective, practically feasible and with a human quality expressing the sincere social engagement of the team of four students from the University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria.

In addition to the prize winners, the jury awarded two special mentions, both to students from China, and seven honourable mentions representing Canada, Italy, Denmark, Bulgaria and China.

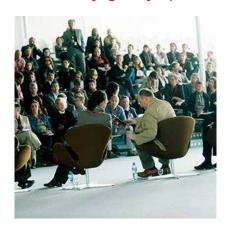
### Daylight remains the central issue

The jury applauded the fact that many projects sent in for the International VELUX Award 2014 went beyond the parameters of design and served as a positive contribution to social responsibility and society.

"Many projects deal with how light can affect political situations. They tie the functionality of light with purposes beyond what light ordinarily provides. Not just views and comfort, but dealing with challenging situations, social discussions, and pooling the political aspects into the work with light," says jury chairman Craig Dykers.

All winning projects were featured in the November issue of "Architectural Review"

# VELUX Daylight Symposium

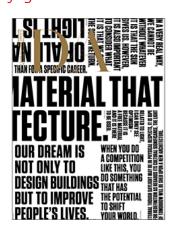


Every second year, the VELUX Group hosts the Daylight Symposium, inviting researchers and building professionals from all over the world to share know-how and experience in designing with daylight. In 2015 the symposium will be held for the sixth time, with a special focus on daylight as a driver of change.

In line with the Circadian House principles and guidelines for healthy and attractive buildings, the Daylight Symposium 2015 will discuss the challenges faced by today's 24/7 society where people spend 90% of their time inside buildings, and how this life style can be balanced with nature's daily and seasonal cycles.

The symposium takes place in September 2015 in London and registration opened in December 2014. Go to the Daylight Symposium website to learn more. Visit the Daylight Site for new research, presentations and webinars on daylight.

# Daylight & Architecture



The VELUX Group publishes Daylight & Architecture, an international magazine targeted at architects, designers and other building professionals with an interest in daylight and architecture. So far, 22 issues of Daylight & Architecture have been published.

The aim of the magazine is to create a platform where topics related to daylight in architecture are illustrated and discussed from many different viewpoints.

In 2014, two issues of Daylight & Architecture were published. The first issue featured the International VELUX Award and trends in architectural education. The second issue dealt with healthy living around the clock and the circadian design principles.



The VELUX Group plays an active role in the public policy process, using our expertise as a basis for dialogue to ensure that the perspective of Sustainable Living in Buildings is reflected in building regulation. Our approach is guided by our Public Affairs Policy, which applies to all employees, consultants and advisors involved in VELUX Group Public Affairs activities.

#### **Public Affairs Policy**

The VELUX Group conducts all Public Affairs activities in compliance with applicable national and international legal requirements. When conducted in a transparent, trustworthy and socially responsible manner, it is the belief of the VELUX Group that Public Affairs activities are an integral and legitimate part of the legislative process.

# Windows play a central role in healthy, energy-efficient buildings

The VELUX Group works actively to demonstrate that windows play a central role in healthy and energy-efficient buildings.

The VELUX Group takes two approaches to creating healthy buildings and to reducing the energy consumption and CO<sub>2</sub> emissions from the building stock:

- 1. We promote healthy and energy-efficient buildings through the Active House principles
- We promote energy balance to be the basis for assessing the energy performance of windows.



On the level of the building as a whole, the VELUX Group supports the Active House vision for future building and renovation. The Active House principles apply a holistic approach to health and comfort, energy efficiency and environmental impact.

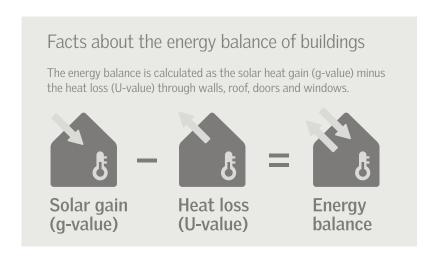


Active House is a response to the EU Energy Performance of Buildings Directive stating that all new buildings must be Nearly-Zero-Energy Buildings by 2020.

Active House principles are also applicable to existing buildings that make up 90% of the building stock. They serve as input to the national building renovation strategies that all EU member states are devising as part of the implementation of the EU Energy Efficiency Directive from 2012.

#### 2. Energy balance to be the basis for assessing windows' energy performance

The VELUX Group supports energy balance to be the basis for assessing the energy performance of a window. Energy balance provides the consumer with the most accurate picture of a window's contribution to the energy consumption of a given building in the heating and cooling season. The energy balance principle must reflect both the risk of excessive heat loss in the cold season and the risk of overheating in the warm season.



# Making the case for healthy buildings



In modern society, people typically spend 90% of their time indoors. Numerous studies have shown that good indoor climate, daylight and fresh air are essential factors in people's health, well-being, learning abilities and productivity. Ensuring healthy indoor comfort with plenty of fresh air and daylight is therefore crucial when building or renovating buildings.

Unfortunately, a healthy home or workplace cannot be taken for granted. WHO has estimated that in Europe 15-16% of the indoor environments where people live, work and play are damp. Humid buildings are known to cause problems such as allergies and asthma and to affect people's general well-being.

Unintended consequences of highly-insulated and energy-efficient buildings may be overheating, unless well-known and efficient measures are taken to prevent it — for instance operable windows, dynamic solar shading and overhangs. Overheating has implications for the health and well-being of people living and working in the buildings.

Energy efficiency and healthy buildings must therefore go hand in hand. This is not yet fully reflected in current national and European legislation. The VELUX Group works to include these concerns in existing and future building requirements. One example is by getting daylight conditions, thermal comfort, indoor air quality and ventilation better reflected in the revision of the Energy Performance of Buildings Directive (revision of EPBD by 2017) and in the renovation strategies that member states are obliged to prepare in accordance with the Energy Efficiency Directive.

# Making the case for good daylighting

Where there is light, there is life. It is indisputable that daylight has a positive impact on human health, well-being, productivity and learning abilities. The VELUX Group works actively to promote the role of daylight in national building regulations for newbuilds and renovation. Our work is based on three key points:

- Daylight should be used as primary light source in buildings during daytime to fulfil both our visual and non-visual (biological) needs. Evidence and research show that human health and well-being rely on regular exposure to high levels of light during daytime and complete darkness at night.
- We recommend levels of minimum 300 lux for 75% of the room area and 500 lux for areas where a task has to be performed. These values are based on the coming EN standard on daylight in buildings, expected to be published in 2016. When daylight is the primary lighting source during daytime, the need for electric lighting can be reduced by 15-30%, leading to a significant reduction in electricity consumption.



• Adequate daylight should always be part of renovation strategies. Daylight is essential for improving the energy efficiency and indoor comfort of modernised buildings.

Daylight is important to human health. Daylight deprivation in buildings has been shown to have hugely damaging consequences.

Without access to daylight, the human body-clock becomes disrupted.

Any disruption to our circadian rhythm has highly negative consequences in terms of people's health, happiness and well-being.

Peter Buchanan, architect and author, in Daylight & Architecture, October 2014.

# Making the case for natural ventilation



The VELUX Group works for ventilation concepts that utilise the natural flow of air through a building to ensure a good indoor climate and optimum cooling. We are engaged in developing standards and methods for natural ventilation calculations in building regulations.

Indoor air quality has an important impact on people's health, well-being, productivity and learning abilities. Fresh air benefits human well-being, while poor indoor air quality can have serious negative effects.

The VELUX Group advocates natural ventilation of buildings as an energy-efficient solution that is easy to integrate in the renovation of buildings. The driving forces in natural ventilation are wind, temperature and stack effect. Roof windows play an important role in natural ventilation solutions, where the stack effect creates a flow of fresh air from the ground-floor facade windows to the roof windows.

Read more about natural ventilation in the Daylight, Energy, Indoor Climate Basic Book.

# Protecting the environment

Protecting the environment is a central aspect in the work with Sustainable Living in Buildings. The overall aim is to create buildings that give more to the environment than they take in terms of energy and other natural resources.

We support the Active House specification that takes the following into consideration:

- Limiting environmental loads during the whole life cycle of the building
- Minimising freshwater consumption
- Sustainable construction and sourcing.

The VELUX Group develops Life Cycle Assessments (LCAs) of our products to monitor and improve their environmental impact from production, transport, use and disposal. In 2014, we continued to develop and fine-tune the model for Life Cycle Assessments of our products; LCAs in a Northern European scenario are available for all our main product categories.





Since 1996, the VELUX Group has had a comprehensive Competition Law Compliance Programme in place to prevent anti-competitive behaviour in our business and to ensure that all sales companies are aware of their obligations in terms of competition rules. Our leading position in the market makes this programme crucial to our business.

# Competition law compliance



The VELUX Group complies with the Competition Law Compliance Policy laid down by our owner, VKR Holding A/S. The policy describes our approach in relation to customers, competitors, mergers and acquisitions, and other relevant issues.

It is the overall Competition Law Compliance Policy that all VKR Holding A/S companies comply, at all times, with the relevant national and international antitrust and competition law requirements (e.g. EU Competition Law). The General Council monitors competition law compliance and continuously assesses compliance procedures.

# Tax policy

The VELUX Group acts with integrity and transparency in tax matters. Our approach is guided by our Tax Policy, which applies to employees as well as to consultants and advisors involved in tax issues.

#### In summary, the tax policy of the VELUX Group states that:

- It is the overall tax policy of our Group to consider tax as a cost; therefore, the objective will be to minimise the total tax payment of the VELUX Group in order to improve the cash flow with respect to the rules formulated by VELUX A/S.
- The business perspective is always the key driver when making decisions. The VELUX Group will not enter into projects without substance, in which the only objective is to create tax benefits for the participants.
- The VELUX Group will not register in countries known as tax havens (as listed by OECD) unless there is a sound business reason for doing so.



The Danish VELUX companies are included in the mandatory joint taxation with VKR Holding A/S and the other Danish companies owned by VKR Holding A/S. Corporation tax of the Group's Danish joint taxation income is paid by VKR Holding A/S.



The Model Company Objective implies that the VELUX Group wishes to contribute to the development of the societies we are part of. The biggest financial contributions to community development are made by THE VELUX FOUNDATIONS due to the owner structure of the company. However, the local VELUX companies also contribute to local development through a wide range of projects, activities and donations.

# Case: Hungarian factory awarded for support to local community



The VELUX factory LKR-Hungary is located in a relatively small town in the western part of Hungary and has more than 1,000 employees. This means that almost every family in the nearby towns and villages has relatives or friends working for the company.

Over the years, the factory has donated financial support to many local projects in order to give back to the local community that supports the company with hard work and a dedicated workforce. One example of how LKR-Hungary has contributed to the local society in 2014 was the funding of a new playground.

In September 2014, the city of Fertőd honoured Zoltán Vincze, General Manager of LKR-Hungary, with the "Pro Urbe Fertőd" Award. The honour is given to people who are not Fertőd citizens but have made a huge effort to support the local community and make the lives of local citizens easier.

"It means a lot to me as General Manager of the LKR-Hungary factory that the local citizens appreciate our efforts. The VELUX Group is a unique company. We really would like to give back as much as possible to the local communities, because they make it possible for us to run this amazing business. It is not an award to me personally; it is an award to the VELUX Group for the idea behind the company," said Zoltán Vincze at the award ceremony.

# Case: Bringing light to off-grid areas in Africa



To mark the 75th anniversary of bringing daylight and fresh air into people's homes, the VELUX Group will extend its focus on social responsibility by bringing light to some of Africa's off-grid areas.

Today, 1.2 billion people have no access to electricity. To address the need for light in off-grid communities, the VELUX Group has partnered with Little Sun, a social business founded by world-renowned artist Olafur Eliasson and his partner Frederik Ottesen.

The aim of the joint venture between the VELUX Group and Little Sun is to develop and produce a special-edition solar lamp that will bring sustainable and affordable light to regions where electricity is a scarcity.

To design the new solar lamp, the partners are organising an international design competition under the heading "Natural Light". When the winning design has been found in May 2015 and the new lamp has been produced, 14,500 of them will be sold in off-grid regions of Africa at locally affordable prices, like the original Little Sun lamp.

"Through Natural Light, we are giving design students a unique opportunity to have their own creation produced and marketed globally. For the winning designer, this will be a great showcase. But more importantly, the designer will help provide sustainable light and fresh air to homes that were previously lit by smoking kerosene lamps – if they had light at all," says Michael K. Rasmussen, VELUX Group Senior Vice President, Group Communication and Brand.

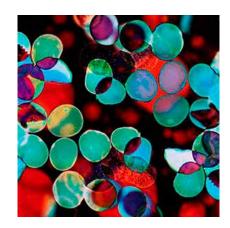
The design competition was launched in November 2014 with a submission date of 15 March 2015.

## THE VELUX FOUNDATIONS

Through THE VELUX FOUNDATIONS a share of the VELUX Group's profits is returned to society every year. The VKR Group's founder, Villum Kann Rasmussen, instigated the foundation VILLUM FONDEN in 1971 and ten years later VELUX FONDEN. Both foundations provide support for larger, non-profit projects with scientific, cultural, artistic, social or environmental objectives.

VILLUM FONDEN targets its grants towards research and knowledge dissemination in the fields of natural sciences and technology, as well as social, environmental and other projects with major impact on the development of society. It also presents the Villum Kann Rasmussen Annual Award for Technical and Scientific Research of €670,000. VILLUM FONDEN is active in Denmark, Greenland and Europe.

VELUX FONDEN supports projects associated with active elderly citizens, gerontological research, ophthalmological research and humanities research projects. It also supports major projects with environmental, social, cultural or artistic purposes. VELUX FONDEN is active in Denmark.



Both foundations are non-profit trust funds governed by Danish law and subject to the supervision of the Civil Affairs Agency under the Danish Ministry of Justice. The foundations each have their own independent boards.

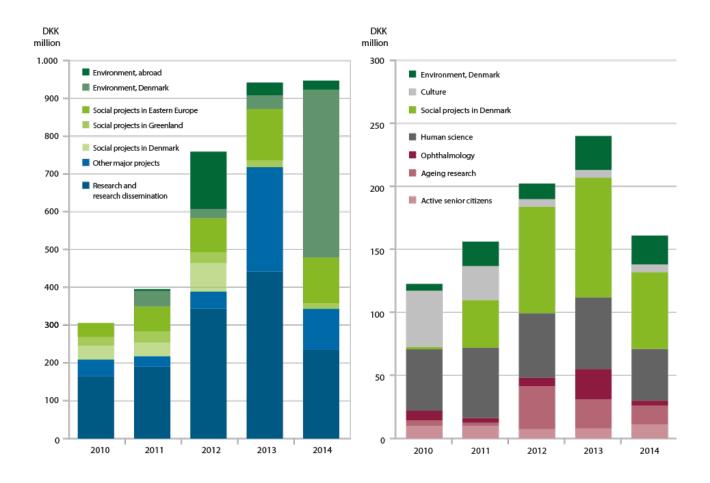
In 2014, the two foundations made 478 donations totalling nearly €150 million. Below are a few of the projects that received support from the foundations during the year.

#### VILLUM FONDEN donated €127 million to such projects as:

- Technical and natural sciences, Denmark: €810,000 to the University of Copenhagen, Department of Plant and Environmental Sciences, for the project "Understanding Plant Evolution and Diversity in a Changing World".
- Environment and sustainability: €1.5 million to the global research organisation World Resources Institute for the project "Developing Communications Capacity on Low-Carbon Economics to Support Global Action on Climate Change".
- Social projects, Romania: €1.4 million to the international non-governmental organisation Save the Children for the project "Protection and Education of Children Affected by Migration for Work Abroad through Day Centres".

#### **VELUX FONDEN** donated €22 million to projects such as:

- Active senior citizens, Denmark: €22,000 to the Danish India Group for the development of affordable, sustainable housing in Nepal and India.
- Gerontology and geriatrics, Denmark: €220,000 to Bispebjerg Hospital, Copenhagen, for the research project "MicroRNA as a biomarker in Parkinson's disease and Multiple System Atrophy".
- Ophthalmology, Denmark: €290,000 to Roskilde Hospital for the research project "Age-related macular degeneration: an immunological and functional genetic study of different clinical sub-groups".
- Human science, Denmark: €750,000 to Copenhagen Business School, Department of Management, Politics and Philosophy for the project "Sustainable Entrepreneurship".
- Arts and culture, Denmark: €37,000 to Nivaagaard's Fine Arts Collection for the refurbishment of the roof of the museum building.
- Environment and sustainability, Denmark: €1.3 million to the Center for Sustainability and Resilience Foundation in support of projects that aim to transform knowledge in terms of a sustainable and resilient society into action.
- Social projects, Denmark: €1.3 million to Randers Production School for their project "Local Partnership, New Ways of Helping Deprived Youth to Gain Employment and Education."



# The new KR Foundation targets environment and sustainability



Based on a wish to extend its activities within environment and sustainability, VILLUM FONDEN decided, in 2014, to establish a new foundation, the KR Foundation. The primary purpose of the foundation is to engage in environmental issues in an international context and support international efforts that deal with the interaction of climate and economy. The intention is to endow the KR Foundation with €13.5 million every year for the next ten years.

The new foundation will be led by a board consisting of international experts with deep insight in the focus areas of the KR Foundation. Connie Hedegaard, former Danish EU Commissioner for Climate, has been appointed chairman of the board.

"The climate is challenged, and we need to act now. With €135 million for the KR Foundation, VILLUM FONDEN enables us to take an integrated approach to climate, environment and economy. And that is exactly what is needed now, since the interaction between economic growth on the one hand and climate/environment on the other is the most critical challenge right now. To me it is a privilege to be part of the

board of the KR Foundation and to be able to launch important projects in this field," says Connie Hedegaard.

Besides Connie Hedegaard, the board comprises Anthony Leiserowitz, Johan Rockström, Tim Jackson and Astrid Kann-Rasmussen. René Dinesen has been appointed director of the KR Foundation.



# Products

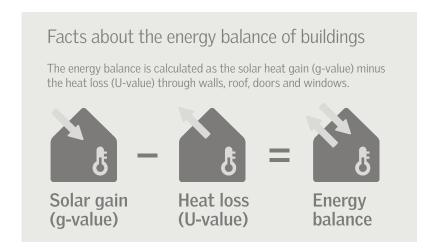
Through research, innovation and partnership, we are helping to define the sustainable buildings of the future, whilst continually working to improve the performance of our products.

## Sustainable products

The product development strategy of the VELUX Group aims at constantly improving the sustainability of the products offered to the global market of newbuilds and building renovation. Healthy buildings with more daylight, more fresh air and low energy consumption are key drivers in all our product development activities. Durability is another key driver and all VELUX products are designed and made for up to 40 years of service life in any climate.

Windows are one of the few building components that can play a central role in providing good indoor climate and a positive energy balance. VELUX windows are carefully designed to minimise heat loss through the windows and to make the most of the solar heat gain.

The New Generation roof windows launched in 2012 provide even more daylight, fresh air and better energy efficiency. The launch of New Generation was continued through 2014 with the introduction of the new products in the Central and Eastern European markets.





The VELUX product programme ranges from complete skylight systems to roof windows, sun tunnels, blinds and shutters as well as home-automation systems. All products are developed to provide daylight and fresh air through the roof as part of our vision to lead the development of healthy and sustainable buildings.

The energy efficiency of our products is continuously improved to comply with the highest standards. Our latest product features include new high-performing insulation material, improved airtightness and maximised effect of free solar heat gain through large window panes.

All VELUX products are designed with a view to optimising the energy balance of the individual window. It is through a combination of products, however, that the most sustainable and healthy solutions are achieved, by taking full advantage of the solar heat gain through the windows, natural ventilation to bring fresh air to the indoors, and sun screening for cooling.

#### The VELUX product categories comprise:

- Roof windows
- Electric- and solar-powered windows
- Installation products
- Flat-roof windows
- Sun Tunnels
- Blinds and shutters
- VELUX Modular Skylights

#### Examples of awards received for our products in 2014

- Germany: the German sales company, VELUX Deutschland GmbH, won the international "IF design award 2014" for VELUX INTFGRA®.
- Poland: the VELUX factory in Namysłów was honoured with the Platinum Laurel of Skills and Competence in the "Science and Innovations" category by the Regional Economic Chamber in Katowice and Opole.
- Romania: the Romanian sales company, VELUX România S.R.L., received the Award of Excellence for promoting innovative solutions for sustainable constructions and for its special contribution to the development of the construction sector in Romania by the Agenda Constructiilor Magazine.
- Germany: the German sales company, VELUX Deutschland GmbH, won the Service Champion in Gold awarded by Goethe-Universität in Frankfurt and the newspaper Die Welt.
- · Germany: the German sales company, VELUX Deutschland GmbH, won the Architects' Darling® Award in Gold in the product category Windows.
- The Czech Republic: the Czech sales company, VELUX Česká republika, s.r.o., won the Grand Prix award for the New Generation VELUX INTEGRA® roof window. The award is presented to the best products presented at the Czech Republic's most attended international building fair FOR ARCH 2014.
- The Czech Republic: VELUX Česká republika, s.r.o., received the award "Střešní okno roku 2014" (Best Roof Window Brand 2014). The winners are chosen by craftsmen engaged in the construction and reconstruction of roofs, based on their long-term professional experience.

#### **High-quality roof windows**

The VELUX Group offers a complete range of roof windows for a wide range of building types and applications. VELUX roof windows are designed to offer people better living environments with no negative impact on the environment.

The objectives in the development of our new generation of roof windows have been to provide more daylight and comfort while using less energy.

Our roof windows are designed to maximise the heat gain through the windows and to retain heat inside the building in the heating season with the new insulation design, VELUX Thermo Technology™. At the same time, large window panes ensure a maximum flow of daylight into the room while offering attractive views of the outdoors and reducing the need for artificial lighting. The unique ventilation flap lets in fresh air, even when the window is closed.

VELUX roof windows are sold in approximately 100 countries around the world, and our solutions are suited for every climate. All VELUX roof windows are made to last with a service lifetime of 40 years or more.

#### **Electric- and solar-powered roof windows**

The VELUX Group offers a wide range of electric- and solar-powered roof windows and accessories for easy control of the indoor climate and high energy efficiency.

Intelligent controls enable roof windows to be opened and closed automatically at pre-set times to create a pleasant indoor climate in accordance with the rhythm of the day and the seasons. Built-in rain sensors ensure that the windows close if it starts to rain. A solar-powered INTEGRA® roof window is part of the product range.

In 2014, a new and innovative control unit was launched for electric windows. Thanks to the intelligent touch screen, easy-tounderstand icons and menu structure, programming has become simpler than ever to achieve a healthy and comfortable home.

#### Installation products for easy and reliable installation

Installation of VELUX windows is easy, fast and reliable. The VELUX Group has developed a unique installation procedure that ensures the best possible connection to the roof and minimum energy loss. Every installation product, from outside to inside, is designed to fit a wide range of roof window sizes and types, as well as roof types, ensuring correct and weather-tight installation. The VELUX installation concept takes all challenges of a roof construction into consideration. Our installation products offer a logical, complete and trouble-free process.

#### Wide range of flat-roof windows

The VELUX Group designs and manufactures a comprehensive portfolio of windows for flat roofs with the same high standard of quality, comfort, durability and energy efficiency as our range of traditional roof windows.

The flat-roof product programme offers windows that can be opened and windows without opening function. One of the latest models is a smoke ventilation window that increases safety in case of fire. VELUX flat-roof windows are designed with an insulation pane that ensures the full benefit of daylight through the roof combined with excellent insulation properties.

#### **Sun Tunnels**

For homes with bathrooms, hallways and other rooms with no daylight, we have developed the VELUX Sun Tunnel that leads daylight into the darkest spaces through a specially designed tunnel from roof to ceiling. Our Sun Tunnels are available in a number of designs for pitched or flat roofs.

During 2014, the next generation VELUX Sun Tunnel was developed for launch in Europe and North America. The new Sun Tunnel was designed to provide more daylight and easy installation.

#### **Blinds and shutters**

VELUX blinds and roller shutters are essential elements in indoor climate control when it comes to daylight, heat intake and heat loss. The blinds and shutters come in manual, electric- or solar-powered variants.

When blinds or shutters are rolled down on a cold winter night, heat loss can be reduced by up to 19%. On warm summer days, exterior roller shutters can block up to 97% of the heat from the outside, effectively protecting the building from overheating.

Our automatic blinds and shutters can be set to open and close automatically to maintain the optimum indoor climate regardless of season and time of day. The new solar-powered blinds and shutters require no external power supply.

In 2014, the VELUX Group launched a new energy blind, a multi-functional pleated blind that insulates and offers a practical blackout effect. The new energy blind improves a roof window's insulation performance by up to 34% due to the built-in insulating air pockets in the honeycomb structure between the blind's two layers of pleated cloth. In addition, the thin, light-tight aluminium coating blocks out the light and makes the blind particularly suitable for rooms where periodic blackout is required.

## Case: New design award launched



In 2014, the VELUX Group launched the VELUX International Design Award, VIDA. The purpose of the award is to spot tomorrow's trends and talents and to discover new, inventive blinds for the roof window.

The competition was rolled out in 24 markets by the local VELUX sales companies to drive innovation through experimentation.

"Design students will be among tomorrow's trendsetters who will influence the future of the blinds industry. The design award is an alternative way of working with innovation and product development and we are very excited to see what's moving in the minds of the creative young designers and to see what a blind could also look like," explains Kent Holm, Director of Global Product Management, the VELUX Group.

In May 2014, the VIDA winners were announced at an award ceremony in Berlin. Hyunjeong Kim from Berlin University of the Arts won first prize. The second prize went to Iris van den Brink and Anneloes de Koff from the University of Technology in

Delft in the Netherlands. Besides the first and second prizes, the jury awarded five projects with honourable mentions. At the award ceremony, all seven finalists – from design schools in Germany, the Netherlands, Spain, Poland and Hungary – presented prototypes of their designs. All in all, design students from 20 countries submitted entries for the award.

#### About the 1st prize winning project

The inspiration for the project Ferro Fluid Scales came from the liquid ferrofluid, which in its natural state resembles black water but becomes condensed when placed between magnetic fields. Ferro Fluid Scales integrates this scientific knowledge into an original design by containing the opaque liquid as well as a clear suspension liquid in each transparent glass blade, allowing the user to easily increase or decrease the strength of the magnetic field, thereby controlling the amount of light that enters through the blind.

A jury of internationally acclaimed designers reviewed all design entries. The members of the jury comprised the initiator of the Red Dot Award, Professor Dr Peter Zec from Germany, the Dutch textile designer Petra Blaisse, and the Italian-Danish furniture design duo Gamfratesi. With so many talented teams and exceptional project ideas, finding the winners was a difficult task for the jury.

"To me, every finalist is a winner, as they all managed to shed new light on the vast possibilities in the area of blinds design. They really made it hard for the jury," said Petra Blaisse, known herself for continuously challenging the status quo with her designs.

## VELUX Modular Skylights



VELUX Modular Skylights are a new business area launched in 2012 and based on the same high-quality and sustainable approach as traditional VELUX products. The new skylights mark a shift in skylight evolution and can be used in many building types including offices, public buildings and educational buildings.

Co-created with renowned architects Foster + Partners, VELUX Modular Skylights are an innovative new daylighting solution for commercial buildings. The large amount of daylight obtained through longlights, ridgelights, northlights or atrium solutions reduces the need for electrical lighting. At the same time, built-in solar shading reduces the need for cooling on warm days.

VELUX Modular Skylights can be opened to create a stack effect for natural ventilation of the building. The complete skylight solution can be automatically controlled by a Building Management System synchronised with season and time of day, outdoor weather conditions and use of the building at different times of the day.

Since their launch, VELUX Modular Skylights have gained a strong foothold in an increasing number of markets. The new solution is praised by end-users and professionals for its positive contribution to energy efficiency and indoor climate. The high energy performance of VELUX Modular Skylights comes from the use of low-energy panes and frame materials with high insulation properties.

## Case: VELUX Modular Skylights support vision for modern building



Siemens' new headquarters in Denmark has been awarded LEED Gold for its sustainable and highly energy-efficient design. LEED stands for Leadership in Environmental and Energy Design and is a useful tool for planning a new building design based on five basic parameters: location, water consumption, energy consumption, materials and resources, and indoor climate.

Daylight is an important element of the LEED principles. 228 VELUX Modular Skylights (VMS) placed in six rows were used in the Siemens project to create an indoor plaza allowing plenty of daylight and a direct view to the sky in the middle of the atrium construction. At the same time, the insulation properties of the modules outperformed competitors' solutions when it came to avoiding cold bridges in the glass construction to save energy for heating.

"Daylight is a central part of being LEED certified, the skylights are there to make the building pleasant and sustainable. It tells us that it is possible to design a bright building and remain sustainable at the same time," said Michael Gøtz, Project Manager at Siemens Real Estate, Denmark.

All 228 modules were fitted with fully integrated white roller blinds to protect from glare and overheating during summer, while still allowing daylight to filter through the blinds for a pleasant daylit environment in the atrium. During winter, the skylights provide free solar heat gain to the entire building, reducing the total energy consumption of the building.



In 2014, the work continued to fine-tune the model for life cycle assessment (LCA) of VELUX products. The assessments consider all product phases from raw materials through production, and use – all the way to recycling and final disposal. Transport is included in each of the phases. The LCAs show that the main environmental effect of a VELUX roof window is in the use phase.

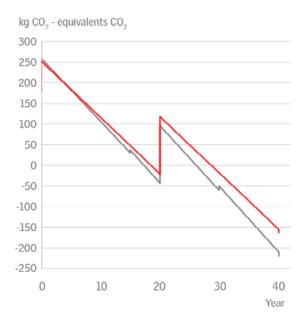
In many cases, a VELUX roof window provides net  $CO_2$  savings over its complete life cycle. The  $CO_2$  emissions from the raw material usage and the production of the window is lower than the  $CO_2$  savings from passive solar heat gained from the use of the window.



 $\label{eq:likelihood} \text{Life cycle CO}_2 \text{ emissions calculated for a VELUX roof window GGL with one change of the pane, installed in an typical house in Würzburg, Germany. Transport is included in each of the steps from raw material to disposal. } \\$ 

The energy contribution of a roof window can be optimised by adding blinds and shutters to improve insulation during winter and to avoid overheating in the summer. The example in the graph below shows that energy blinds can improve the net  ${\rm CO_2}$  savings over the life cycle of the window by 36%.

## Life cycle CO<sub>2</sub> emissions for a VELUX roof window with an energy blind

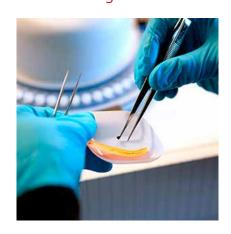


Life cycle  $\mathrm{CO}_2$  emissions calculated for a wooden VELUX roof window in a typical house in Würzburg, Germany. The pane is changed after 20 years and the energy blind is changed every 15 years. Over the life time, the roof window saves  $162~\mathrm{kg}~\mathrm{CO}_2$ . When adding an energy blind, additional  $58~\mathrm{kg}~\mathrm{CO}_2$  is saved.

- Roof window
- Roof window with energy blind

LCAs are completed for all major products for use in Northern Europe. LCAs are the first step towards Environmental Product Declaration of windows and accessories. VELUX Environmental Product Assessments have been developed on the basis of the international standard methodology for assessment of LCA (ISO 14040) in cooperation with the Danish FORCE Technology Institute, which specialises in Life Cycle Assessment. VELUX Environmental Product Assessments are designed to comply with the methodology of the European Standard EN15804 (Environmental Product Declaration for Building Products and Materials).

## Documenting the use of chemicals



The VELUX Group controls and documents the use of chemicals in our production and our finished products. We are continuously improving our documentation procedures through a systematic approach to mapping of chemical substances.

The procedures include close dialogue with our suppliers about chemical compounds in the components used in our products.

France is the only VELUX market that has a labelling system for emissions of chemicals to the indoor climate. All our tested products (roof windows, flat-roof windows, Modular Skylights and Sun Tunnels) have an A+ rating, which is the best category.

## **Packaging**



In close cooperation with our logistics partners, we continuously search for ways that will optimise the loading of trucks and reduce the environmental impact of transport.

Using our cube packaging system, the windows are wrapped with stretch foil and stacked horizontally in the trucks to allow as many windows as possible in each load. The windows travel from production site to point of use in the same packaging with only the stretch foil being discarded. The packaging is optimised in a way that makes opening easy and minimises the number of heavy lifts required by the installer.

All cardboard used for packaging can be recycled. In Europe in general, approximately 80% of all cardboard is recycled.



Quality is a cornerstone of the VELUX business, essential to fulfilling our vision of leading the development of better living environments with daylight and fresh air through the roof and to be rated as the best in the eyes of our customers. Our roof windows are developed to last and to have a service lifetime of 40 years or more.

Quality has top priority at all levels from purchasing through development and production to after-sales services. We govern quality in products and processes by the VELUX Group Quality Policy and the VELUX Quality Management System, based on the ISO 9001 standard.

In our customer survey carried out in 2014, 98% of the installers and dealers agreed that products from the VELUX Group are reliable and of high quality.

## Purchasing



The VELUX Group applies a global procedure for qualifying new suppliers. Before contracting, careful screening takes place to ensure that suppliers are able to meet our requirements in terms of quality, sustainability and logistics.

The screening includes supplier self-assessment, auditing of quality processes, testing of the materials they will supply and careful risk assessment.

### Development and testing

The VELUX product development organisation designs new roof windows and supplementary products or modifications to existing products in close dialogue with the local markets.

In 2014 alone, the 300 engineers and designers at the VELUX development departments came up with more than 20 major improvements to existing products or new products.

With an expected product life of 40 years, testing of our products is an important part of the development process to make sure our products are durable and live up to our quality standards. In the course of product development, new products typically go through at least 40 tests, including:

- Wind tunnel tests, where windows and flashings are tested in full scale and exposed to some of the world's most severe rain and wind tests to make sure they are able to withstand extreme weather conditions, e.g. caused by climate changes
- Climate tests, where windows are exposed to extreme temperature changes from very hot to very cold, as well as snow, ice and high humidity
- Solar tests that simulate intensive sun impact and its effect on windows and accessories
- Mechanical tests of strength, durability for wind load and heavy snow load, or long-term use of windows, such as the 25,000-times
  opening and closing test
- Technical features of great importance in terms of CO<sub>2</sub> reduction are also tested, such as U-value, air permeability and ventilation.





What happens when a hurricane with winds up to 35 m/s hits a roof with a VELUX window? And how do we make sure the window holds tight even when the hurricane brings torrential rain? The answers to these questions and many more are found at the VELUX test laboratory in South Carolina in the US.

Recently, the test laboratory installed a new wall of wind that can generate winds up to 35 m/s and rain up to 250 mm/hour. The wall of wind is used as part of our product development to test new windows and skylights under extreme weather conditions.

"We use the test facility as a development tool when we propose major changes to a window or if we have to design a new window. The test results may point out potential material or construction issues that we have to consider or even redesign," says Greg F. Collins, Senior Quality Engineer at VELUX America Inc.

Similar test facilities are operated by the VELUX Group at the Østbirk plant in Denmark.

## High-quality manufacturing

The wide range of VELUX products is manufactured at production sites in ten countries. All production sites are certified to the ISO 9001 quality standard.

The ISO certification means that our production sites are regularly audited by an independent third party. Our global quality team audits our production sites regularly to ensure that windows and accessories leaving the factories meet the required specifications and VELUX quality standards. During 2014, 36 quality audits have been conducted throughout the VELUX Group.

We apply a structured approach for materials, components and finished products to be sent from the factories to the VELUX Group Quality Lab to ensure that the quality level is maintained at all times. Process controls built into production equipment or performed by operators, combined with inspection and testing of finished products, are all part of the quality management system, ensuring consistent, high standard of VELUX products.





#### The test programme for components includes:

- Corrosion resistance of metal parts
- Wood impregnation
- Wood humidity
- Glass quality and lifetime.

#### The test programme for finished products includes:

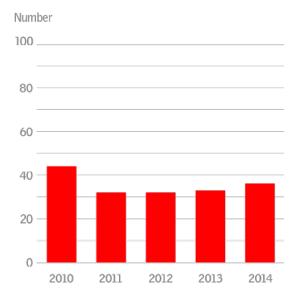
- Durability tests
- Resistance to rain and snow at different wind speeds
- Airtightness
- Low temperatures
- Sound proofing.

#### Continuous improvements through the VELUX Manufacturing Model

To deliver value to our customers and continuously improve the company's productivity, the VELUX Group applies a formalised approach to continuous improvement of the manufacturing processes. The approach is inspired by the Lean methodology and termed the VELUX Manufacturing Model (VMM), which has been one of the cornerstones of our production since 2004.

Every production company goes through a VMM assessment once a year. It is carried out by 12 internal VMM assessors, and the results provide a good basis for internal benchmarking and continuous improvement.

#### Number of quality audits



## Case: Reducing change-over time with VELUX Manufacturing Model



Today, it only takes four minutes to change over from one product to the next at the lamination line at one of the Danish VELUX factories. That has not always been the case. Before the VMM focus on change-over was applied at the factory's lamination line, the process took almost 23 minutes. In other words, the change-over now takes only one fifth of the time it used to. And the line can handle three times as many change-overs as before. How did the department achieve such an improvement?

"We filmed the earlier process and operators and managers looked through the footage. Step by step, we analysed the processes at the line and, based on the findings, we wrote down a new procedure for the work. We tested and fine-tuned and then we filmed again to make sure things were done in the best possible way. In that way, we brought down the change-over time to less than four minutes, and the operators continue to find new ways of making further improvements. Before the project, we could handle about 20 change-overs per week, now we can easily do 60," explains VMM coordinator Kim Diabelez.

In a time when customers increasingly demand a large number of product variants, efficient change-over from one product to the next is decisive for the VELUX Group's competitiveness. Change-overs can be very time consuming, involving change of materials, equipment, settings and competences. Optimising change-over is therefore a key concept in the VELUX Manufacturing Model.

#### Installation and use



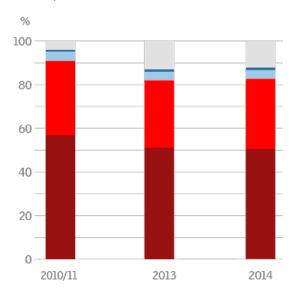
Our goal is to make products that last a lifetime, are easy to install and use with minimum need for maintenance. Our customer satisfaction survey shows that 98% of installers and dealers agree that the VELUX Group offers reliable products of high quality.

Because of our focus on quality in development and production, only around 0.5% of all VELUX roof windows sold require warranty service in the first three years.

As stated in the Model Company Objective, the VELUX Group wants to treat its customers better than most other companies. Therefore, we offer an extensive service/ support network in the event that service or repair is needed.

The annual survey of customer satisfaction shows that 83% of installers and dealers are satisfied with the after-sales service provided by the VELUX Group and agree that our products are synonymous with high quality.

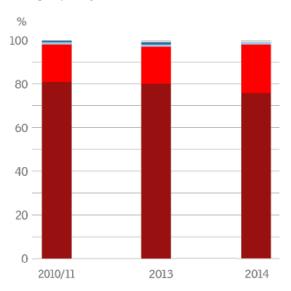
## The VELUX after sales service meets the required needs



Dealers' and installers' feedback through third party satisfaction tracking survey



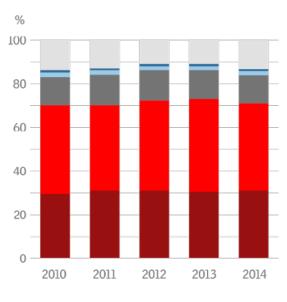
## The VELUX Group offers reliable products of high quality



Dealers' and installers' feedback through third party satisfaction tracking survey



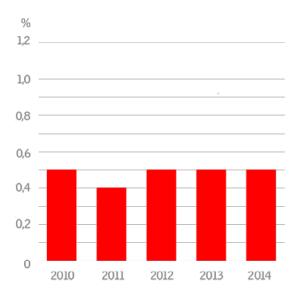
### The VELUX brand equals high quality



General public feedback through third party brand tracking survey



#### Products warranty service



Percentage of sold VELUX roof windows that require warranty service within the first three years.

## Product recall and warnings



One aspect of being a Model Company is to maintain high quality levels at all times. Despite the unrelenting focus on quality, things may go wrong; in 2011, the VELUX Group had to issue a rare product warning due to the risk of glass breakage in certain small roof windows. The warning is still in effect.

Even though the risk of personal injury in connection with glass breakage is marginal, we take the safety of our customers very seriously. We have therefore set up local task forces and offered the affected customers a replacement pane ex gratia. There may, however, be some local deviation from the global ex gratia offer.

No product warnings or recalls have been issued since 2011.



# Interaction

We strive for the highest standards of business practices in our interactions with our customers and business partners. We promote responsibility and respect for human rights in our supply chain.

## Interaction with customers

In accordance with the Model Company Objective, the VELUX Group aims to treat its customers better than most other companies, and it is part of our vision that we want to be perceived as the best in the eyes of our customers. We support our customers before, during and after their purchase of a VELUX product.

Our customers span widely from end-users to specifiers, dealers and installers. We maintain close dialogue with our customers and partners to provide up-to-date, high-quality products supported by unsurpassed service. We continuously promote the vision of Sustainable Living in Buildings by sharing knowledge and tools.

Our customer interaction is continuously improved through the company-wide sales system, Accelerating Sales Effectiveness (ASE). The ASE approach gives us a better understanding of the customers' needs and supports best-practice sharing between VELUX companies to help improve our services. The sales system has been implemented in most markets.

## Close cooperation with specifiers



Specifiers (architects, contractors, engineers and developers) are close partners of the VELUX Group. We engage in dialogue and knowledge sharing about daylight, energy and indoor climate. We are also involved in research projects and demonstration houses in many parts of the world.

#### We share a large number of tools targeted at specifiers, for instance:

- Information about Active House specifications, including in-depth knowledge of designing with daylight, fresh air and high energy efficiency
- Design tools such as VELUX CAD, the VELUX Daylight Visualizer, the VELUX Energy and Indoor Climate Visualizer and technical documentation
- The daylight site with recent research results and articles
- The global Daylight & Architecture magazine
- The global International VELUX Award for Students of Architecture
- The Daylight Symposium for researchers and specifiers worldwide.

## Distributors are satisfied with the cooperation



The knowledge and experience we have gained through the Sustainable Living in Buildings project is used actively in our dialogue with dealers and distributors by sharing our insights on the global challenges we experience and showing them how this knowledge can be turned into business opportunities in terms of distribution.

In late 2014, our key account managers were introduced to how to engage in discussions with distributors on how we can provide energy-efficient solutions that reduce  ${\rm CO_2}$  emissions and ensure better comfort and well-being in buildings. The purpose is to address the global challenges and find opportunities that ultimately create value and more growth for our distributors as well as the VELUX Group.

Our Satisfaction Tracking 2014 survey shows that 93% of the distributors we interact with are satisfied or very satisfied with the cooperation. 93% would recommend VELUX products to colleagues or customers. The tracking also reveals that distributors are satisfied with the quality of our products and that they perceive us as a reliable supplier.

Distributors have close interaction with the end-users and building professionals when it comes to choice of roof window brand and solution. We actively support the dealers and distributors in their dialogue with the customers by supplying training of sales staff, demo windows, information materials and other tools for a good sales process.

The VELUX Group has an extensive distribution network, making our products available at distributors. We provide efficient logistics services that make products easily available at the distributor's stock or at the building site.

## Case: Interaction with distributors in Central and Eastern Europe



During the spring of 2014, our New Generation windows were launched in Central and Eastern Europe with a large-scale promotional campaign aimed at distributors. As part of the campaign, more than 30 Market Impact Teams (MIT) visited more than 500 distributors in ten countries – from the Baltic states to Bulgaria – to attract as much attention to the new products as possible. Each MIT team consisted of VELUX employees from different parts of the organisation, e.g. local sales companies, headquarters and production.

"The purpose of the MIT campaign was to make sure that our New Generation windows were positioned in the product programme of the top distributors in each country and to gain maximum visibility in the Do-It-Yourself markets," explains Mick Schou Rasmussen, who led the MIT campaign.

A secondary benefit of the campaign was to build team spirit in VELUX companies, not only among the sales people but also involving back-office staff and colleagues from production. All in all, nearly 200 VELUX people took part in the MIT campaign that lasted a week per country.

"The campaign made the strength of the VELUX Values clear across borders and functions. The MIT campaign also increased our common understanding of the close integration between sales and production. One cannot live without the other, and the MIT teamwork will make the internal dialogue much easier in the future," says Beata Öz, General Manager of the Hungarian sales company.

#### Close interaction with installers



Interaction with installers is a very important activity of the VELUX Group from product development to after-sales services. Installers are often the primary adviser on the choice of roof window solution and brand. Moreover, the perceived quality of VELUX products depends very much on the quality of the installation.

During product development, installers give valuable input to make sure aspects of installation are an integral part of the new product. Moreover, we offer training, onsite support, installation instructions and online tools and videos to train installers in the best possible way.

In 2014, more than 50,000 installers participated in installer training in connection with the launch of the New Generation roof windows in Central and Eastern Europe.

The VELUX Satisfaction Tracking 2014 survey shows that 95% of installers working with the VELUX Group are satisfied or very satisfied with the cooperation. 93% of the installers would recommend VELUX products to colleagues and customers.

## Case: New Generation launch in Eastern and Central Europe



During the spring of 2014, the New Generation roof windows were presented to installers in ten markets in Central and Eastern Europe. Information, fun and celebration of the new products were combined in colourful launch events to give the new products a good start in the markets.

In Poland, the New Generation launch took place over two evenings at cinemas across the country, gathering thousands of building sector representatives.

In the Czech Republic, installers were the first to meet the new products. They took a huge interest in the New Generation installation courses that took place throughout the country.

In the Baltic states, hundreds of guests participated in festive launch events. Following the VELUX events, the new products were exhibited at prestigious building fairs in each of the three countries.

In Hungary, the introduction of the New Generation windows took the form of a TV show, inviting installers and other guest to test their knowledge of the new products in a quiz, followed by dinner and music.

In Bulgaria, the installers got a chance to try out the New Generation windows at the launch event, before the evening ended with dinner and dance.

In Serbia, installers and other guests invited to the launch event were treated to a special New Generation cocktail, commemorating the benefits of the windows: more daylight, more fresh air, less energy.

In Bosnia-Herzegovina, installers were invited to a special event where they got the chance to get hands-on experience with the New Generation windows.

## Engaging with end-users



As one of the strongest brands in the global building materials sector, we aim to give end-users a positive experience before, during and after their purchase of a VELUX product. Making a hole in the roof and carrying out an installation that will last 40 years or more is a matter of trust in terms of quality, reliability, comfort and sustainability. It is the philosophy of the VELUX Group that we want our customers to feel they get more than they pay for.

The VELUX Brand Tracking survey reveals that 76% of European end-users know the VELUX Brand. Among those people who know at least one manufacture of roof windows, 62% would choose a VELUX window if they were in the market for a roof window.

We offer after-sales service and support, guidance in the inspiration and decision phase with architectural showcases and advice, as well as a list of recommended installers to put the products in place. After purchase, our service engineers are there to assist, repair and service the products if something goes wrong. In general, it is VELUX policy to offer spare parts for our roof windows for 25 years.

## Case: "My healthy home" – a new inspirational catalogue for end- users



2014 saw the preparation of an inspirational catalogue for end-users with lots of ideas for healthy living in healthy homes. The content of the catalogue is derived from the research, experiments and building reviews performed by the VELUX Group as part of the Sustainable Living in Buildings initiative.

With a room-by-room approach, the catalogue encourages people to take responsibility for their own health by following simple routines in their everyday life and by paying attention to daylight, fresh air and energy efficiency in home renovation projects.

"We want to draw people's attention to some of the primary and free comfort factors of the home. For instance, how daylight can lift people's mood, give new energy and save expenses on electric lighting. And how fresh air through the windows provides healthy homes with optimum conditions for learning and playing," says Lone Feifer, Programme Director of Sustainable Living in Buildings.



The VELUX Group works with suppliers who share our commitment to responsible business practices. Supporting high standards for labour, environment, human rights and anti-corruption is an integral part of the VELUX way of doing business, founded on the Model Company Objective.

We form long-term partnerships based on the requirements set up by the VELUX Code of Conduct for Suppliers and our procurement principles. We monitor compliance and develop the partnership through regular audits and assessments.

## Fair treatment of suppliers

In accordance with the Model Company Objective, the VELUX Group aims to treat its suppliers better than most other companies.

## Our procurement principles define our interaction with suppliers. As a Model Company, we:

- cooperate with our suppliers in a way that will be beneficial in the short and long term for both parties
- work with our suppliers to ensure continuous improvement in terms of products, competiveness and sustainability
- deal fairly and honestly with all suppliers and in all aspects of the procurement principles
- · keep negotiations between the supplier and us strictly confidential
- make requests for quotations as clear and precise as possible
- respond promptly to supplier correspondence and inquiries
- seek suppliers who can deliver consistently high-quality goods and services in accordance with VELUX Group standards in terms of environment, sustainability, competitiveness and safe production methods.



## Code of Conduct for Suppliers

All our product-related, tier-one suppliers are required to sign the VELUX Code of Conduct for Suppliers. The Code of Conduct for Suppliers is based on the Universal Declaration of Human Rights and the core labour conventions of the International Labour Organization. The Code of Conduct is also an integral part of our approval process when we contract with new suppliers, not only our product-related suppliers, but also our logistics partners.

#### The Code of Conduct for Suppliers concerns three main issues:

- Employee conditions: specific requirements such as standards for healthy working environment and treatment of workers within applicable legal and non-discrimination policies
- Environment: all suppliers must have a written environmental policy or statement
- Monitoring: the VELUX Group reserves the right to monitor our suppliers to assess their compliance with the Code of Conduct.



The VELUX Group carries out a large part of its production in-house – from hinges to window panes. We source the majority of components and product-related materials (wood, glass and aluminium) from raw materials suppliers rather than buying finished components from manufacturing and assembly companies. This enables a high level of control throughout the major part of the supply chain.

Our Code of Conduct requires tier-one suppliers to communicate and use the Code of Conduct with their own suppliers for materials and components delivered to the VELUX Group. We reserve the right to audit sub-suppliers to assess compliance with the Code of Conduct.

## Monitoring compliance with the Code of Conduct policy

An audit programme monitors supplier compliance with the VELUX Code of Conduct policy. The focus is on countries and suppliers where risk of social or environmental non-compliance is assumed high in manufacturing units.

Looking at our global purchase of materials in relation to high-risk countries, our major spend is with suppliers in China. The VELUX Code of Conduct policy demands the conduct of an onsite audit at least once every two years by VELUX auditors or third-party auditors.

During 2014, we continued our two-year rollout audit programmes at all active suppliers in China. In 2014, ten supplier location audits were in scope among our 41 Chinese suppliers. Six audits were carried out, two audits were put on hold, and two audits were postponed to 2015 for various reasons, such as changes in factory setup and re-scheduled time.



In the event of a non-compliance situation with our Code of Conduct policy being discovered, a corrective action plan will be launched with deadlines and required improvements. In the event of serious non-compliance cases, immediate action will be required. A successful completion of all corrective actions will be checked through an unannounced follow-up audit.

Three of the six audits in China in 2014 revealed non-compliance with our Code of Conduct policy. The three suppliers did not comply for various reasons:

- Working-hour attendance records for workshops were unavailable
- Fines were used as a disciplinary measure
- Juvenile workers (16-17 years) working in the factory were not registered
- Wages were reduced as part of a disciplinary process
- Based on working-hour records, it turned out that the workers in the equipment department had worked continuously for too many days in August

These cases are violations of human rights or examples of discrimination and have been treated accordingly. In all the above cases, the VELUX Group has offered support and advice to help suppliers improve their performance and achieve full Code of Conduct compliance. Together with the three suppliers, we have prepared and approved action plans to correct the non-compliance areas found at the audits. If, however, a supplier fails to implement the required corrective actions, the VELUX Group will terminate the contract. Follow-up audits will be conducted at the three suppliers by June 2015.

Since the launch of the Code of Conduct in 2001, we have not yet terminated a relationship solely due to Code of Conduct non-compliance issues. We have, however, terminated relationships due to a mix of Code of Conduct non-compliance and business reasons.

### Wood certification



The VELUX Group recognises the importance of sustainable forest management as part of our efforts to protect the environment, ensure biodiversity, tackle climate change and protect the rights of local communities in the forested areas.

All wood suppliers of the VELUX Group are certified according to PEFC, FSC or both. No tropical hardwood is used.

The aim for 2014 was to continue sourcing a minimum of 95% of the required wood from forests certified to FSC (Forest Stewardship Council) or PEFC (Programme for the Endorsement of Forest Certification) international standards. We met the 2014 goal by sourcing 96% from certified sources. The remaining 4% is from wood defined as "controlled" by the FSC or PEFC international standards. This means that the origin of the wood is known and that the wood comes from non-controversial sources. The goal for 2015 is to continue the high level of certified wood in our production, so that 95% of the wood comes from certified sources.

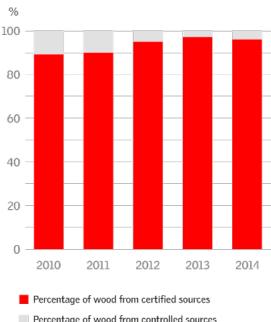
All VELUX windows are manufactured at our own factories, and all VELUX factories in Europe are FSC or PEFC certified. We maintain close cooperation with the FSC and PEFC organisations in order to ensure effective, sustainable and well-documented sourcing of wood throughout the complete chain of custody.

The wood used in VELUX windows is primarily Pinus Sylvestris, also known as Scots Pine or Redwood, from boreal, herniboreal and temperate forest types. The majority of wood is sourced from Sweden, Finland, Russia and Poland, and to a lesser extent from the US, France, Norway, Estonia, Hungary, Denmark and Germany, all countries where FSC and PEFC certification schemes are widely used

In spring 2014, an issue of non-conformity was discovered related to the FSC Controlled Wood standard. The issue concerned the interpretation of the requirements to documentation and traceability of the wood. The issue was resolved by implementing an extended verification programme for the origin of wood at a few wood suppliers.

The VELUX Group was assessed by the Danish authorities in December 2013 as complying with the EU Timber Regulation (EUTR). No assessment or audit was carried out during 2014. It is the policy of the VELUX Group to comply fully with the EUTR regulation at all times.

#### Sources of purchased wood



- Percentage of wood from controlled sources
- Percentage of wood from non-controlled sources

## Interaction with indirect suppliers



The VELUX Code of Conduct is in the process of being implemented for current and future indirect suppliers, who make up about 50% of suppliers to the VELUX Group.

The majority of the indirect suppliers are based in Western Europe and supply a wide range of goods and services, from machine spare parts to office equipment and marketing services.



The VELUX Group is committed to respecting human rights as defined by the International Bill of Human Rights and the core labour rights set out by the International Labour Organization's Declaration on Fundamental Principles and Rights at Work. We fully acknowledge our independent responsibility to respect human rights – i.e. to avoid infringing the rights of individuals, groups and communities through our business activities and relationships.

Respect for the individual is central to the way we work and is part of the Model Company Objective.

## Human rights due diligence



The Model Company Objective ensures responsible treatment of employees at all levels in the organisation and protects employees against adverse human rights impacts. The health and safety of VELUX employees have top priority. We apply the OHSAS 18001 management system for occupational health at all production sites.

Human rights compliance among the suppliers to the VELUX Group is monitored through the VELUX Code of Conduct for Suppliers, signed by 99% of direct suppliers.



Striving for the highest standards in the way we do business is a key part of our efforts to be a Model Company. We take a zero-tolerance approach to corruption and have a long history of commitment to responsible business practices, guided by our values and continuous focus on maintaining the trust of our business partners.

The VELUX anti-corruption policy provides guidance to employees about what is considered appropriate in various business situations. The policy requires management to ensure that bribery does not occur and to formulate local guidelines to avoid facilitation payments and for restrictions on gifts and entertainment.

### Anti-corruption training



We train managers and employees in the VELUX anti-corruption policy and guidelines. In 2014, 98% of our senior managers completed the anti-corruption e-learning course.

The objective of the course is to ensure that the policy is understood and to facilitate reflection on how the policy relates to day-to-day situations.

We continue to work with guidelines and tools to improve local work with anti-corruption.



# Behaviour

Creating a workplace built on innovation, teamwork and mutual respect helps us to attract and retain the talent we need. We work to reduce environmental impacts of our operations and to achieve our goal of zero accidents at work.

The VELUX Group works systematically to attract and retain the talent we need, to reduce the impact of our operations on the environment and to optimise our use of natural resources.

Our organisation, culture and leadership is inspired and guided by the VELUX Values. Together with our Model Company Objective, the values help us navigate and serve as a basic guide for behaviour rather than a formal set of policies and rules.

Our organisation and management principles ensure that managers across the organisation know why and how we operate to execute our strategy.

## A safe and motivating workplace for talented employees

Our market leadership depends on our ability to attract, retain and engage the best people. We strive to provide a safe and motivating work environment where people are treated with respect and offered opportunities for developing their skills and advancing their

We believe that daily business operations are best handled locally. Therefore, we apply only a limited number of corporate policies and programmes. The decentralised approach, however, means that group-wide data for some employee-related indicators are not available.

## Developing for the future – [Re]vitalising our VELUX culture

As part of our strategy, we have introduced a strategic initiative to revitalise our unique VELUX culture. The purpose of the initiative is to enhance the performance of the VELUX Group by ensuring passion and performance in the organisation.

To boost that passion and performance, a number of initiatives were launched in 2014. The initiatives are grouped in four main areas:

- [Re]vitalise our core values
- Revise our organisation and leadership principles
- Develop and implement new performance and talent management processes
- Develop and implement leadership development programmes.

The core thinking behind the [Re]vitalise initiative is to boost passion and performance through improved leadership and global collaboration. At the same time, leadership and collaboration are more important than ever as the company grows and becomes more globalised.



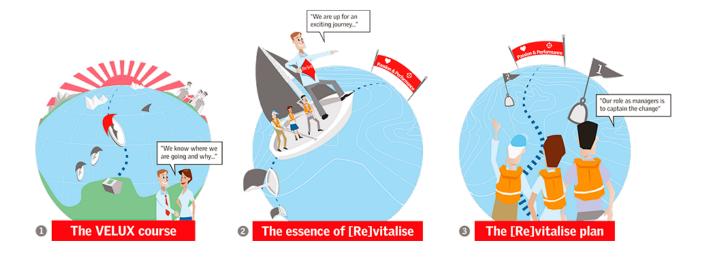
We believe that passion is the main driver for performance. In line with the Model Company Objective, we focus on performance by passion and not solely by key performance indicators (KPIs).

#### How do we implement [Re]vitalise?

The first year of [Re]vitalise has primarily seen the involvement of our top managers. We have carried out structured People Reviews of top managers, introduced bonus schemes and kicked off a new leadership development programme in the top layers of the organi-

Going forward, [Re]vitalise will increasingly evolve and become more tangible to all VELUX Group employees. A Global Employee Survey was carried out in November 2014 and all employees will be involved in the follow-up process. A new Performance and Development Process and tool for the annual dialogue has been developed and will be rolled out during 2015 and 2016. People Reviews will increasingly be used not only for top managers, but also for middle management and key people in the organisation.

To support communication of [Re]vitalise, we have developed a global communication platform explaining the why, how and what of the project. In order to show real-life examples of the culture we aspire to, we have also produced a series of short films with VELUX people telling stories that reflect our VELUX Values in practice.



#### Developing our managers



As an important part of the [Re]vitalise initiative, we have initiated Light Up Your Leadership, a top management development programme that was launched in 2014 and will continue into 2015. The next step is to launch a new general management development programme, Passion for Leadership, in 2015.

Light Up Your Leadership is a 3x3-day leadership development programme designed for the top 100 VELUX managers. The purpose of the programme is to:

- Ensure a common understanding of the group strategy
- Ensure a common understanding of the [Re]vitalise initiative
- Train constructive value-based leadership competences.

Passion for Leadership is a 3x3-day leadership development programme with the purpose of developing common mind-sets and competences to live out the VELUX Values and live up to our Organisation and Leadership Principles. Both leadership development programmes take their starting point in the Model Company Objective.

## Case: What do our managers say about Light Up Your Leadership?



We have asked five managers about the benefit of the first module of the Light Up Your Leadership programme:

"It's very important that we discuss culture and leadership across national and disciplinary borders. There is no doubt this will ultimately support international collaboration and our objective to become One VELUX team." Thomas Schaar, Logistics Region Manager.

"I believe there is great potential in our becoming more aware of the feedback we give our employees. We must sharpen our feedback, and I am sure this will result in much more relevant dialogue and allow us to reach decisions faster and act faster." Jerzy Peczak, General Manager, NB Polska.

"The managers of the American companies all look forward to implementing the shared concepts that will enable us to produce still better results by boosting motivation and passion among the employees." Tim Miller, President, VELUX America.

"Competition is tough in Eastern Europe, as it is in many other regions. To achieve the best possible results, we will need to be innovative and flexible. Our organisation is only as strong as the weakest link – and the VELUX Values and culture put us in a very strong position that can become even stronger. And that is where the new focus on feedback, passion and performance can help us." Beáta Őz, General Manager, VELUX Hungary.

"Putting culture and management at the top of the bill again after a couple of years of concentrating on rationalisation has had a major impact. It is much needed and it gives us a springboard, throughout the organisation, to discuss culture and fine-tune it to meet the objective of passion and performance." Claus Holm, Head of Research & Development.

## Diversity in management



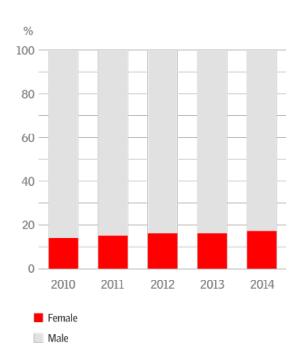
Our ambition to act as a Model Company implies a natural focus on diversity and on being a rewarding workplace for all employees. It is our fundamental belief that the composition of the workforce should reflect the composition of society.

In recent years, the VELUX Group has worked to encourage more women in management. Among other things, we have introduced a new recruitment policy as well as a general focus on gender diversity in the employer branding activities.

The VELUX A/S Board of Directors has set up targets for the number of women on the Board. The target is to increase the representation of women on the Board of Directors over the next two years, always founded on the principle of suitability and qualifications of the candidates.

In 2014, 17% of our senior managers were female. We recognise that women are underrepresented at senior levels in the company. When recruiting new managers, internally as well as externally, trecruiters are requested to present both male and female candidates.

#### Gender distribution, senior managers



## Case: Meet Kristine Belska, VELUX sales company manager



In Central and Eastern Europe, six out of ten general managers of our sales companies are women. Kristine Belska is one of them. She joined the VELUX Group in 2006 and today leads the sales companies in the Baltic States, a team of 20 people selling roof windows and accessories to home owners and public institutions in Estonia, Latvia and Lithuania

Distance management is one of Kristine Belska's challenges – she has to lead three teams in three countries. How does she manage to be close and available when she is not present in person?

"It is always a challenge to be sufficiently present when you don't have your team around you. In a recent workshop with all colleagues from the Baltic sales companies, it was confirmed once again that face-to-face dialogue is one of the most motivating factors for people. Therefore, we have to find ways to be together to release the potential of the team. We already have the annual summer camp where we meet for 24 hours' team building and other social and outdoor activities. And we will find other ways,"

says Kristine, who stresses how development of people in her team and constant learning inside the team and with other VELUX companies have first priority in her leadership.

Kristine believes in diversity, especially in personality types, when she puts together her team. Diversity ensures that any challenge or opportunity is viewed from different angles, which makes solutions more robust and viable. When it comes to gender diversity, Kristine is not personally in favour of quotas, and it is always a question of choosing the most qualified person. But how can leadership positions become more attractive to women?

"I think it is important that managers at all levels display a positive attitude to flexibility in the planning of the work life. I know from my own experience that when you have small children, it is important to have time for the family. I also have a feeling that men are more daring when it comes to stepping up the career ladder. Women tend to be more uncertain about their own capabilities and sometimes hesitate to apply when manager jobs are open. Just the other day, I saw a job posting from one of the UN organisations. In the wording they stated explicitly that female candidates were encouraged to apply. I think this kind of direct encouragement – yes you can! – may help women overcome the first hesitation to apply," says Kristine Belska.

## Organisation and Leadership Principles



Our Organisation and Leadership Principles ensure that managers across the organisation know how we organise and lead to execute our strategy.

We have a long tradition for paying attention to how we organise and lead according to the Model Company Objective. Over the years, we have developed our Organisation and Leadership Principles.

The principles were revised at the VELUX World Conference in September 2013 and have been implemented during 2014 through a number of activities.

#### **Organisation Principles**

The Organisation Principles explain how the VELUX Group is organised and why.

#### **One Company**

We organise and operate as One Company with a dual focus on:

- Local customer interface to retain local market responsiveness
- Global integration and processes to enhance global efficiency

One company is the overarching principle for our organisational design.

On the one hand, our success is driven by our ability to exceed customer expectations in the many markets where we operate today.

On the other hand, we deliver high-volume standard products for the mass market, which means that we take advantage of global scale and processes to stay competitive.

We apply three sub-principles when we adapt and improve our organisational structure:

- · Business focus
- Matrix organisation
- Transparent roles and responsibilities

#### **Leadership Principles**

The behaviour of our managers is critical. We believe in value-driven leadership. This means that our managers strive to act as role models, demonstrating the values in every action, every decision and in the questions asked and the answers given.

We have three focus areas when we lead the way:

- Passion for our business to execute
- Passion for people to reach our potential
- Passion for our performance to deliver on our promises

### Global Employee Survey



In autumn 2014, after previously having conducted several local and company-specific surveys, we conducted our first Global Employee Survey. The purpose of the survey is to gain fact-based insight into how the employees evaluate the working conditions in the individual companies and in the organisation as a whole. The survey reveals strengths and weaknesses and provides insight into how we can improve the company's results through highly-engaged employees.

96% of the employees in scope answered the questionnaire. At the beginning of 2015, the managers will discuss the results with their teams and set up action points. The goal for the local involvement process is to have 100% participation in all functions and companies.

It is essential that feedback and follow-up are carried out locally, as there are large variations in the results and in the recommendations as how to improve this when looking across functions and companies in different countries.

For the VELUX Group, the aggregated result for satisfaction and motivation is in the medium range at index 67 (on a 1-100 scale where +70 is considered high), and above the comparable external benchmark. In our guest to fulfil the Model Company Objective, also in terms of our working climate, the ambition is to do even better as we move forward.

Regarding loyalty and commitment, the result is in the high range, at index 75, and above the external benchmark. The survey confirms what we believe to be one of our key strengths: that we are fortunate to have loyal and highly committed people working for the VELUX Group.

It is our plan to repeat the Global Employee Survey every second year.

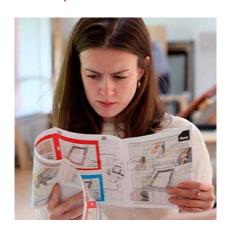
## Performance and Development Dialogue



For many years, it has been our ambition that as many managers as possible conduct an annual dialogue with their employees. The results from the 2014 Global Employee Survey show that 84% of all employees had an annual dialogue in 2014.

The annual dialogue covers topics such as feedback on performance and behaviour, discussions on motivational factors and development needs and targets for the next year. A new mid-year review will give manager and employee a chance to discuss progress on the targets and development plans and to evaluate the targets for the year. Apart from the more formal dialogue sessions, the manager follows up with on-going feedback and coaching as part of the everyday work.

## Development activities

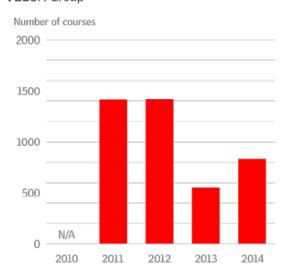


VELUX employees are offered on-the-job training and development opportunities in order to build the personal and professional skills required to succeed in their careers and to navigate in the ever-changing business environment.

Our training approach is based on on-the-job training, knowledge sharing, collaboration, internal and external training programmes, workshops, e-learning and job rotation.

In 2014, 831 internal courses were completed at the VELUX Learning Centre, compared to 548 internal courses in 2013.

## Number of completed courses, employees VELUX Group

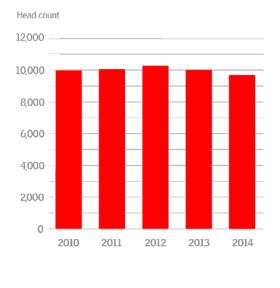


## Employee turnover

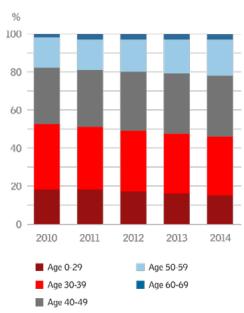


In 2014, the turnover of production workers fell to 18.9% compared with 19.1% in 2013. The turnover of non-production workers fell to 10% compared to 12.4% in 2013. This means that our employee turnover was on a stable level in 2014.

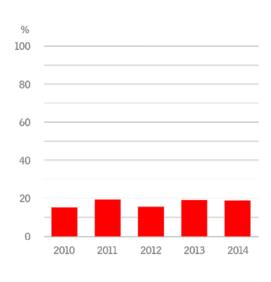
#### Number of employees, VELUX Group



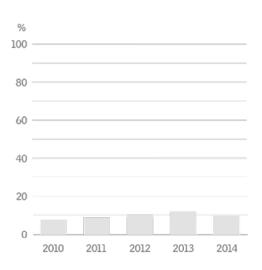
#### Age distribution, all employees



#### Employee turnover, production workers



#### Employee turnover, non-production workers



## Strategic transformation of production in the VELUX Group



During 2014 and 2015, the VELUX Group is undertaking a strategic transformation of its manufacturing and logistics functions in order to improve the Group's competitive strength.

Our manufacturing and logistics systems have grown organically, in line with the development of markets and product ranges. The result has been an increasingly complex production and transportation set-up that is no longer optimal in today's market. We will therefore concentrate our production at fewer factories.

Consequently, we are in the process of closing two factories: one in Bagsværd, Denmark and the other in Glenrothes in Scotland, and shifting their production to our factories in Poland, Slovakia and Hungary. Unfortunately, this means that we will lose very competent people in both countries, all of whom have made an invaluable contribution to the VELUX Group.

With these changes, we are developing a globally more coherent manufacturing and distribution network that will be more competitive, without compromising on quality and delivery reliability. When fully implemented, the changes will lead to a reduction of internal component flows by up to 30%.

We announced the intended changes at the beginning of October 2014 and immediately went into negotiations with the employee representatives at the affected factories. When the negotiation phase was finished, the decision was final and the planning phase was initiated. The two production sites will be closed down in 2015 and the production volume will be moved to our other factories. Right now, the affected employees are being helped to move on in their working lives.

### The Employee Foundation

The Employee Foundation of the VKR Group was established in 1991 to support present and retired employees of the VKR Group and their immediate families.

#### The Employee Foundation of the VKR Group has three main objectives:

- 1. To support employees and their close families, typically in the event of unfortunate situations or for educational purposes
- 2. To support charitable projects related to VKR Group companies
- 3. To present the Villum Kann Rasmussen Award.

Between 1992 and 2014, more than 2,800 people received financial support from the foundation, either for themselves or for their families. In the same period, more than 1,400 charitable projects related to the VKR Group's companies received support.

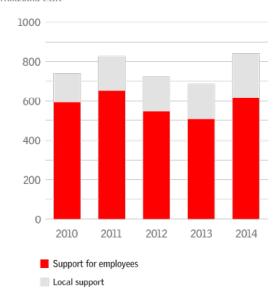


#### Some examples of donations made in 2014:

- 1. In France, the Employee Foundation supported the establishment of a library
- 2. In Poland, support was given to renovation of a playground
- 3. In the Czech Republic, the Foundation gave support to street workout
- 4. In Belgium, a home for physically disabled youngsters was supported
- 5. In Germany, support was given to an association organising events for children with cancer
- 6. The disabled child of a German employee received support for riding therapy
- 7. The child of an employee in Hungary received support for training as a pastry cook
- 3. A Hungarian employee received support in connection with a biking accident
- 9. The disabled wife of a Dutch employee received support to install a lift in their home
- 10. A Scottish employee received support in connection with brain cancer.

## Grants from The Employee Foundation of the VKR Group





#### The Villum Kann Rasmussen Award



The Villum Kann Rasmussen Award is presented to employees who, each in their own way, contribute to meeting the Model Company Objective.

In 2014, ten employees of the VKR Group received the VILLUM KANN RASMUSSEN AWARD, also known as the KR Award. The Award pays tribute to the values and vision of the company's founder and was first granted in 1996. Since then, more than 200 employees have been honoured. In selecting the recipients, the emphasis is on commitment, loyalty, high-value and quality work performance, imagination, initiative, helpfulness towards colleagues and enthusiasm for the job.

"The objective of the KR Award is to honour employees who live out the values that were important to Villum Kann Rasmussen in 1941 – and are still important to our global organisation today. In other words, it is when we live by our values and through good results and a positive attitude that we build strong relationships with customers, business partners, suppliers and colleagues. Each company has a recommendation com-

mittee that may suggest a candidate. Among all nominees, the Employee Foundation board selects the employees who will receive the award," explains Hanne Raun from the Employee Foundation Secretariat.



In accordance with the Model Company Objective, the VELUX Group aims to treat its employees better than most other companies and to provide a safe and healthy work environment. Moreover, the VELUX Group believes that time invested in safety has significant positive impact on business performance through increased employee empowerment, reduced accident-related costs and generally improved productivity.

The VELUX Group applies the OHSAS 18001 management system for occupational health at all production sites. Moreover, the rollout of a comprehensive four-year Safety Excellence Programme has been completed in 2014 at all factories to build a strong safety culture and to continuously bring down the number of work-related injuries.

Upon the completion of the Safety Excellence Programme, a new safety programme TAKE CARE will follow in 2015 in order to continue improving our safety performance. In the TAKE CARE programme, we continue to have focus on safety leadership, employee commitment and risk assessment in our manufacturing and logistics operations.

## Policy, principles and standards

The VELUX Group is determined to create and sustain a safe working environment. The long-term vision is to have zero accidents and incidents.

#### The VELUX Safety Policy consists of five guiding principles:

- Working safely is a condition of employment
- Management is accountable for preventing accidents and injuries
- We will always take the time to ensure safety at work
- We are all responsible for our own safety and for ensuring the safety of our colleagues
- We will ensure that all employees are involved, trained and competent in safety.

As part of the Safety Excellence Programme, we completed the implementation of the corporate safety standards across production sites in 2014.



## Case: Systematic safety approach led to new product development

A new procedure for escalation of safety issues has been put in place throughout the VELUX Group. During 2014, the procedure was tested in practice when a new clip mechanism on the New Generation windows turned out to be sharp, causing employees in manufacturing to cut themselves.

Incidents with the clip were reported from three factories within a short period. The potential danger of cuts was quickly communicated to all factories, and the first reaction came promptly when all employees were requested to wear gloves when working with the windows.

"The solution with the gloves was not ideal – we seek to eliminate risks if possible. So when the safety committee discussed the problem, they decided to request the product development department to come up with a solution that would remove the risk of cuts. Product development took action and now the clip has been coated with a thin plastic film to prevent sharp edges and protect employees, but also installers fitting the window in the roof," explains VELUX Safety Manager Kim Jonas.



The new escalation procedure ensures that safety issues are quickly communicated from one factory to all other production units. Line management can now more effectively execute their responsibility to take action and make sure preventive steps are implemented as fast as possible.

### Improving our safety culture

In 2014, employees at 14 VELUX factories were trained in Safety Excellence. These training sessions marked the completion of the implementation of the Safety Excellence programme with primary focus on:

- Safety training for managers, safety managers and employees
- Safety walks with observation and dialogue to maintain a proactive safety culture
- Incident investigation to further qualify the safety work
- Safety assessment to systematically develop the group-wide safety culture.

In 2014, new guidelines for incident investigation were introduced at all production sites. The guidelines strengthen the skills and effectiveness in identifying root causes, taking corrective and preventive actions, and securing clear accountability and knowledge sharing across the sites.

During the year, safety assessments were carried out at ten VELUX sites by our trained internal assessors. The assessments showed a clearly positive development of our safety culture.



A strong safety culture involves all employees in their own personal safety and in the safety of their colleagues. As part of the Safety Excellence programme, employees have been encouraged to contribute with suggestions for safety improvements. In 2014, a total of 1,690 safety improvements were documented at our production sites.

## Case: Four years without accidents at VELUX factory in Russia

The reputation as a safe working environment in the local community is unique and attracts employees. At the same time, a safe working environment has a positive impact on employee commitment, retention, creativity and productivity. These were some of the main reasons for a dedicated focus on building a safety culture at the VELUX roof window factory in Russia.

"It is my firm belief that a safe workplace is an attractive workplace. In order to build an enduring safety culture, you have to show commitment to your people; if you do that they will commit to you and to the subject of safety. In our safety work, we have instilled a mind-set that all accidents are preventable and that we can always do better. And we make sure to recognise achievements and celebrate success," says Georg Walker, General Manager of the plant.



#### He has a very simple recipe to succeed with building a strong safety culture:

- · Clearly define the standard you want
- Set the goals
- Lead by example
- Engage and empower people
- Follow-up regularly and provide feedback.

After four years without accidents what is the next step at the factory?

"Basically, we will sustain what we have already achieved and try to be pro-active in our risk assessment and continuous safety improvements. We have also kicked off a new initiative promoting health and well-being at the workplace. And we encourage people to take care of both themselves and their families outside the company as well, mainly by briefings and newsletters," says George Walker

## Safety performance

The long-term safety vision is to have zero accidents and incidents. In 2014, we had 11 work-related accidents compared to 33 in 2013. This means that the accident frequency was reduced from 2.4 to 0.9 accidents per million working hours at the VELUX factories and among Danish administrative employees.

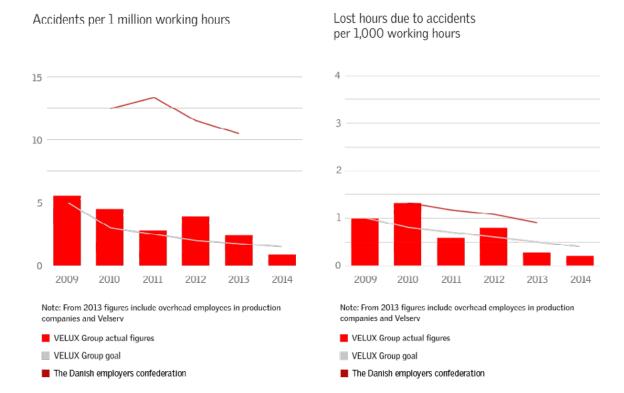
We are pleased to see the number of work-related accidents decreasing from one year to the next, and 0.9 is the lowest number of accidents per million working hours we have ever registered. The target for 2014 was 1.5 accidents per million working hours, so we are well within our expectations. The target for accident frequency in 2015 is 1.3.

The lost-work-hour frequency for accidents was 0.2 lost hours per 1,000 working hours, slightly under 2013. The level is very low and below our 0.4 maximum target. The decreasing trend in lost-work-hour frequency shows that the work-related accidents have become less serious, which is a very positive development.



#### Sites without accidents for at least two years - by end of 2014

	Latest accidents	Years without accidents
Velterm A/S, Denmark	2008	6 years +
European Central warehouse, Denmark	2009	5 years +
VELUX Greenwood Inc.	16 April 2010	4 years +
MD-RUS, Russia	3 June 2010	4 years +
Partizánske, Slovakia	7 March 2010	3 years +
Skærbæk Bygningsindustri A/S, Denmark	30 March 2011	3 years +



## Case: Building a robust safety culture at VELUX factories

During the last couple of years, the Safety Excellence Programme has ensured a strong focus on safety in the VELUX organisation. Gradually, a strong safety culture is being built at the factories, and the results are now becoming increasingly evident from China to Russia and from Denmark to the US, where factories are increasingly reporting zero work-related accidents.

Let's take a look at some of the results achieved:

#### One year without serious accidents in Hungary

In September 2014, the VELUX factories in Hungary celebrated a full year with no accidents that led to loss of work days. Two huge posters on the factory walls told the story of safety to the surrounding community, and all employees received a T-shirt with the text "One year without accidents – I was part of it".

General Manager Zoltán Vincze was proud of the result, but the safety work does not stop here:



"The next step will be, I hope, to celebrate that we not only operate without accidents that lead to loss of work days, but also that we have no injuries at all," said Zoltán Vincze.

#### 3,000 + 2,000 work days without accidents in Poland

During the autumn of 2014, the logistics centre in Poland celebrated 3,000 work days without accidents. At the same time, the Wood and Reinforcement plant in Poland celebrated 2,000 work days without accidents and the NM Poland plant celebrated 1,000 days without accidents. Everybody agrees that the good results were achieved by the strong safety culture that characterises the plants and the approach that safety is the common responsibility of everybody.

#### Five years without accidents at the central warehouse in Denmark

The VELUX Safety Excellence Programme is deeply embedded in the daily work at the central warehouse in Denmark, and the safety behaviour of the employees has become very proactive.

"We are good at focusing on details and identifying the little things that can go wrong – and take care of them right away," says Marianne Jørgensen, who works on one of the evening shifts.

The milestone of five years with no accidents was celebrated with speeches and cake at the factory.

Also the factory in Skærbæk, Denmark celebrated an important safety milestone in 2014, when 1,000 days passed with no accidents.

#### 365 days with no accidents at VELUX China

12 July 2014 was a special day in the history of the VELUX production company in China, when the 267 employees celebrated one full year with no accidents. This great achievement was made possible by the structured programme of Health, Safety and Environment implemented at the factory. The main focus areas of the safety work are: safety walks, working with forklifts, isolation of machinery, working at heights and roles and responsibilities.

#### 1,000 days with no accidents at the Bourbonne plant in France

Despite the launch of the new window generation, the Bourbonne plant in France is proud to report 1,000 days with no accidents. The result achieved, despite the high activity level and many new and temporary hirings, shows how well the safety culture has developed over recent years.

#### Four years without accidents at VELUX Greenwood

VELUX Greenwood has completed four full years with zero accidents and received the Safety Award of Excellence from the State of South Carolina. The safety culture has changed the factory.

"We have engaged the work force and moved from thinking about how a specific machine or tool could be a hazard to thinking about our behaviour," says John Pillman, President of VELUX Greenwood.

The State of South Carolina recognised that four years with zero accidents is a great accomplishment and awarded VELUX Greenwood with the Commendation of Excellence at the Chamber of Commerce Annual Safety Award luncheon.

#### 2,500 days with no accidents and a high safety score in the Czech Republic

In 2014, BKR-CZ achieved excellent results in the Safety Assessment with 3.6 points on a 5-point scale; that means the safety excellence program has been successfully implemented and helped create a safe working environment for all employees. Moreover, the logistic centre at the factory reached the milestone of 2,500 days with no accidents.



Since 1997, the environmental management system of the VELUX Group has been certified to the international environmental standard ISO 14001. All VELUX manufacturing sites have achieved this certification.

The VELUX Group is committed to protecting the environment and we work systematically to reduce our impact on environment and natural resources. Tackling climate change has high priority in society and, by developing sustainable building solutions and by constantly minimising the environmental footprint of the VELUX factories, we seek to contribute to sustainable development.

## **VELUX Environmental Policy**

The VELUX Environmental Policy consists of six guiding principles that all seek to minimise the environmental impact throughout the product life cycle and the supply chain.

#### The six guiding principles are:

- Design our products so that their environmental impact during manufacture, use and disposal is diminished
- Use raw materials, water and energy efficiently in order to diminish our effect on the environment
- Reduce emissions, waste and discharges from our activities
- Maintain high standards of safety at work for our employees and encourage sound attitudes toward the environment in our field of activities
- Cooperate with our suppliers, customers and other business partners to achieve higher environmental standards
- Remain alert to new opportunities to enhance the environmental soundness of our products and manufacturing methods beyond what is generally expected.



## Climate strategy - reducing our Group's carbon footprint



The Life Cycle Assessments performed on VELUX products have shown that the greatest impact of VELUX products on the climate is in the use phase, where roof windows can have a positive carbon footprint.

For the internal processes of our supply chain, we have set targets to reduce  $\rm CO_2$  emissions. The goal is to reduce emissions by 50% in 2020 compared to the 2007 level of 107,000 tons  $\rm CO_3$ .

The VELUX Group's  $\mathrm{CO}_2$  emissions were slightly lower in 2014, with a total emission of 76,000 tons  $\mathrm{CO}_2$  compared to 87,000 tons in 2013. This means that we have reduced our  $\mathrm{CO}_2$  emission by 29% compared to our 2007 baseline. The reduction is due to better use of our waste wood for heating at the factories, many local energy efficiency initiatives and the implementation of an energy management programme at our German factory.

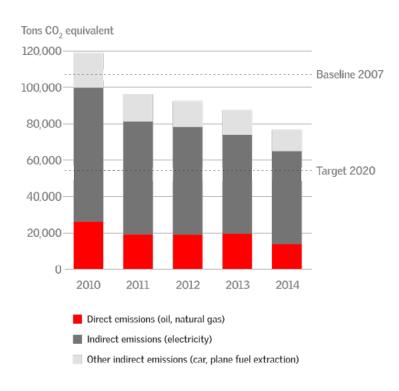
#### New energy management system will help reduce the carbon footprint

In 2014, the VELUX Group decided to implement ISO 50001, a certified energy management system, at all European VELUX locations, factories and sales companies. The purpose of the energy management system is to reduce the VELUX Group's carbon footprint.

The new system will be integrated in the ISO systems already in place at all VELUX factories, i.e. ISO 9001 (quality), 14001 (environment) and 18001 (occupational health).

During 2015, the ISO 50001 energy management system will be rolled out and cover our European locations.

#### CO<sub>2</sub> emissions inventory



### Case: Energy management at VELUX factory in Germany



In 2013-14, the new ISO 50001 Energy Management system was implemented and certified at the VELUX factory in Sonneborn, Germany. Among others, the systematic monitoring, analyses and actions resulted in substantial energy savings in, for instance, stand-by energy, leaks in the air supply system, optimised transportation of wood chips and heat recovery at the plant.

Based on the work and results with energy management at the Sonneborn factory, the ISO 50001 standard has now been chosen as the common platform for energy and carbon reductions at all VELUX sites.

"The Sonneborn factory was one of the first factories in Germany to implement the ISO 50001 Energy Management standard. Energy management has become an integral part of our work with the ISO standards that we already have in place for quality, environment and occupational health. In this way, we have all procedures in place, and we can see that there are great gains to be made when it comes to energy savings and reducing our carbon footprint by using the standard," says Frank Gerloff, who is respon-

sible for Energy Management at the Sonneborn factory.

### Waste management

The VELUX Group works continuously to reduce resource use and waste in accordance with our environmental policy and supported by our ISO 14001 systems on factories. At all factories, waste is systematically minimised by means of source separation, ensuring that waste fractions are handled for optimum recycling. There are, however, still certain minor waste fractions in production where the waste material is not suited for recycling due to the nature of processing. Regarding glass waste, for example, about 96% is recycled and 4% is sent to landfill (laminated glass and damaged panes that can currently not be recycled due to contamination risk). Recycling opportunities are continuously explored together with suppliers and recycling companies.

Most of our production waste is wood, steel, aluminium and glass. In 2014, our waste was disposed of in the following way:

- 72.4% was recycled
- 25.3% was used to produce energy by incineration
- Around 0.7% of our waste contains varnish and is classified as hazardous waste and sent for special waste treatment
- The remaining 1.6% is sent to landfill.



### Water management



In 2014, water consumption at our factories was 128,000  $\mbox{m}^2$  compared to 140,000 in 2013.

The VELUX Group does not register general waste water production from factories. However, due to the nature of our production, waste water from production companies is predominantly sanitary waste water sent to sewage treatment and to a minor degree waste water from cleaning and washing of components. A very small amount of waste water/sludge, e.g. collected from periodic special cleaning processes of equipment, is included in the 0.6% waste we disposed of as special waste treatment.



# Performance

To get the overview of how we have done in selected areas, our performance is measured by a number of key indicators and progress is tracked against these indicators.

## Performance

Citizenship	Key indicator	2010	2011	2012	2013	2014	Target	
Sustainable Living in Buildings	Demonstration Buildings with Active House Radar Diagram	N/A	N/A	5	15	23	21 in 2014	•
Fair competition	Management compliance with Annual Management Declaration (annual signature confirmation)	100%	100%	100%	100%	100%	100%	•
Public Affairs	EU member states which have either national legislation or energy labeling on windows based on Energy Balance	15%	19%	19%	21%	21%	100% (Long term)	•
	EU member states which have daylight factor requirements in their national legislation or guidelines	26%	30%	30%	29%	32%	100% (Long term)	•

Products and Services	Key indicator	2010	2011	2012	2013	2014	Target	
Product quality	Production sites certified according to ISO 9001	100%	100%	100%	100%	100%	100%	•
	Product recalls or warnings	0	1 warning	0	0	0	0	•

Target reached

Target ongoing

Target not reached

Customers and business partners	Key indicator	2010	2011	2012	2013	2014	Target	
Customer interaction	Reputation on RepTrak <sup>TM</sup> Pulse Score (Reputation amongst our customers)	76	78	79	78	78	> 75	\(\ell\)
Supply chain	Sourced wood from FSC or PEFC certification	85%	90%	97%	97%	99%	95% in 2014	
	Sourced wood from FSC or PEFC certification	89%	90%	95%	97%	96%	95% in 2014	
	Sourced wood from controlled sources	11%	10%	5%	3%	4%		
	Sourced wood from non-controlled sources	0%	0%	0%	0%	0%		
Anti-corruption	Senior managers completing the VELUX Anti-corruption e-learning course	N/A	N/A	88%	90%	98%	95% in 2014	•

Organisational behaviour	Key indicator	2010	2011	2012	2013	2014	Target	
Health and safety	Accidents per 1 million hours (production workers)	4.5	2.8	3.9	2.4	0.9	1.5	•
	Lost hours due to accidents per 1,000 working hours (production workers)	13	0.6	0.8	03	0.2	0.4	
	Production sites certified according to OHSAS 18001	100%	100%	100%	100%	100%	100%	•
Environment	CO <sub>2</sub> emissions in tons	118,000	96,000	92,000	87,000	76,000	54,000 tons in 2020 (Long term target)	
	Production sites certified according to ISO 14001	100%	100%	100%	100%	100%	100%	

Target reached

Target ongoing

Target not reached

## About the report

This is the VELUX Group's fourth annual Corporate Responsibility Report.

#### Purpose of the report

The purpose of the VELUX Corporate Responsibility Report is to provide stakeholders with an overall transparent, fair and balanced picture of the VELUX Group as a Model Company, which is the foundation of how we work with Corporate Responsibility. Corporate Responsibility reporting is a journey and we believe we are making good progress towards achieving the purpose of the report.

#### **Target groups**

The Corporate Responsibility Report is targeted at our international customers, politicians and authorities, interest groups, journalists, CR professionals, as well as current and potential employees globally.

#### Scope

Unless otherwise stated, the data and reporting relates to the entire VELUX Group, i.e. production sites, distribution centres, administration and sales offices. Suppliers and other third parties are included only in the specific reporting on business partners. The report covers the 2014 calendar year.

#### Reporting principles

The report was compiled using the principles of the Global Reporting Initiative (GRI), Sustainability Reporting Guideline as guidance.

#### Stakeholder analysis

The topics that are important for us to report on to our audience were identified through a number of activities. Most of these activities are part of daily operations and reflect an understanding of and response to stakeholder concerns. Other activities were conducted with the purpose of developing the understanding of our Corporate Responsibility performance. These include surveys and benchmark studies.

#### **Defining key issues**

To define our most important areas in Corporate Responsibility, we have identified the issues - based on where the organisation has economic, environmental and social impacts - that significantly impact the success of our business and are of great importance to our stakeholders. This includes risk management, legal matters and market prediction as well as an assessment of Corporate Responsibility in relation to our business strategy.

#### **Data processing**

The environmental and health and safety data in the report was collected, compiled and validated by the VELUX Group's HS&E function, the human resource data by the VELUX Group's Human Resource function. Data on anti-corruption and anti-competitive behaviour has been collected by the relevant internal issue owners, whereas brand and satisfaction tracking was carried out by an external party. The data is collected annually according to a fixed reporting procedure. Data was compiled for the calendar year 2014 as end-of-the-year data with the exception of brand and satisfaction tracking, which was compiled during the year.