



**A typical warehouse would need to lease an additional 1,072 ft<sup>2</sup> of space annually to equal the money saved by upgrading to LED lighting.\***

Not only can warehouse facilities save energy by using energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the facility. By simply upgrading LED lighting and energy efficient HVAC systems, your warehouse could see the following benefits. \*

- Enhanced staff and customer comfort, safety and satisfaction.
- Lowered maintenance costs.
- Increased staff productivity.
- Decreased equipment failure.
- Decreased inventory stocking cost.

\* Based on a 2017 DNV GL study

**“Beyond the energy savings, LED parking lot lights improve safety, enhance light qualities and significantly reduce labor costs associated with replacing burned out lamps.”**

**- Steven Leuty, Property Coordinator,  
Bronson Facility Planning  
and Development**

Consumers Energy offers rebates, technical services and more to help warehouses like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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March 2020

# Warehouse Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Warehouses

The following non-energy improvements can result from upgrading to energy efficient equipment:

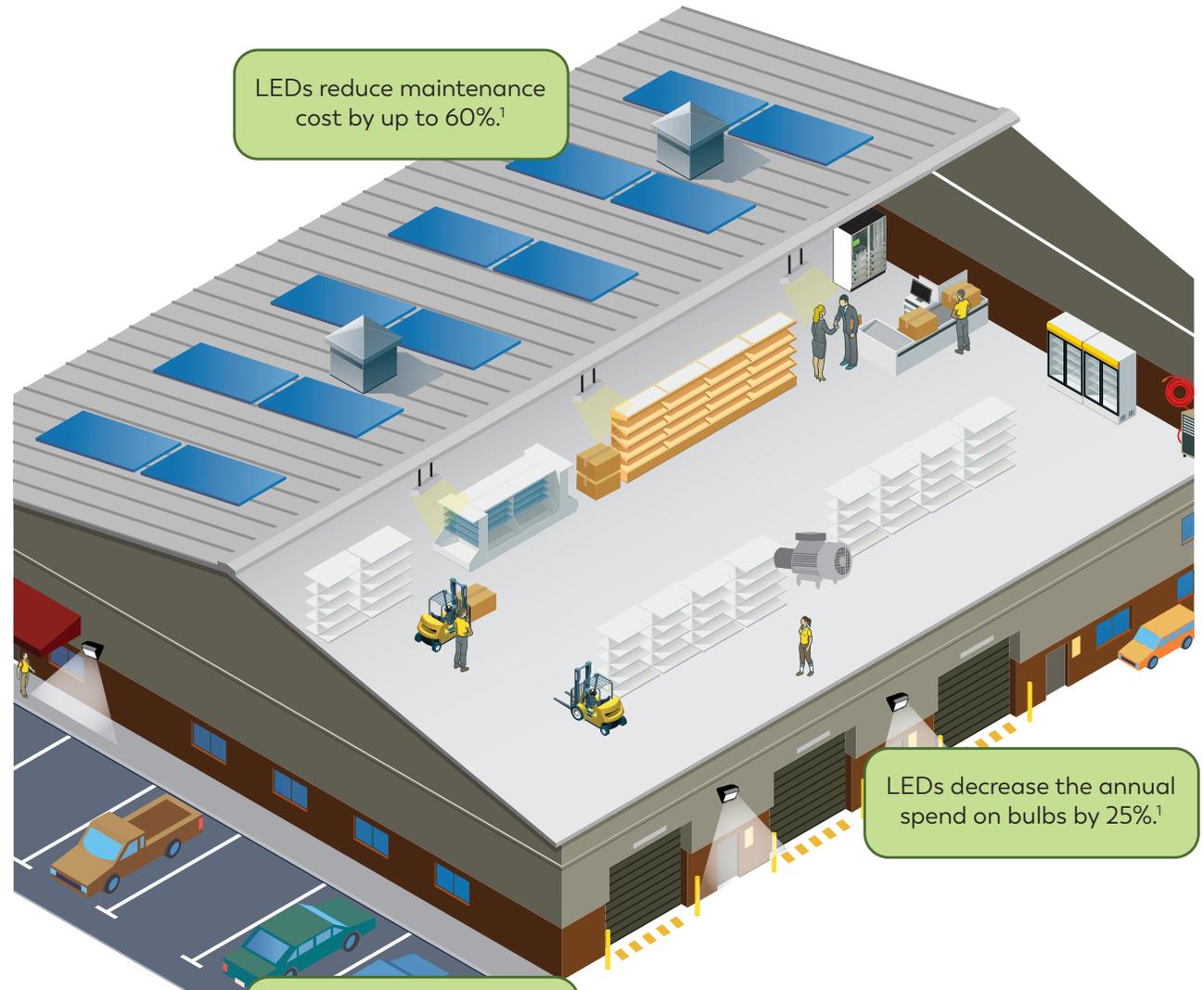
## O&M Cost Savings

The longer life of LEDs provides lower maintenance resulting from fewer bulb changes. This means full utilization of the warehouse and employees. When compared to warehouses without energy efficient lighting, cost for maintenance is up to 60% higher than facilities with energy efficient lighting.

LEDs have a longer life, so warehouses no longer need to purchase as many lighting supplies, reducing costs on bulbs by 25%.

## Increased Safety

LEDs improve employee visibility, minimizing the risk of slips and falls. LEDs illuminate parking lots creating a safer atmosphere for night shifts and can also contribute to decreased parking lot theft. Upgrading to an energy efficient HVAC system allows better control of space temperature and improves indoor air quality. This will increase staff comfort and safety by up to 10%.<sup>2</sup>



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$7,158	\$42,072	\$49,230	2.22 yrs.	0.32 yrs.

Switching to LED lighting in parking lots improves staff and customer safety.<sup>1</sup>

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area[PPT]. (2014). DNV GL.  
 2. Capturing the Multiple Benefits of Energy Efficiency. (2014). IEA.



**A typical university would need to add an additional 42 credit hours a year to equal the money saved by upgrading to a higher efficiency HVAC system.\***

Not only can universities save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the campus. By simply upgrading to LED lighting and energy efficient HVAC systems, your campus could see the following benefits. \*

- Enhanced student and faculty comfort, safety and satisfaction.
- Lowered maintenance costs.
- Increased faculty and student productivity.
- Decreased illness by improving the indoor air quality.

\* Based on a 2017 DNV GL study

**“...We have installed over 1,000 LEDs to our site lighting across our different campuses. This has provided security and safety in addition to the normal energy and maintenance savings.”**

**- Terry L Pahl, Facilities Engineer,  
Grand Valley State University**

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# University

## Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Universities

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Improved Environment

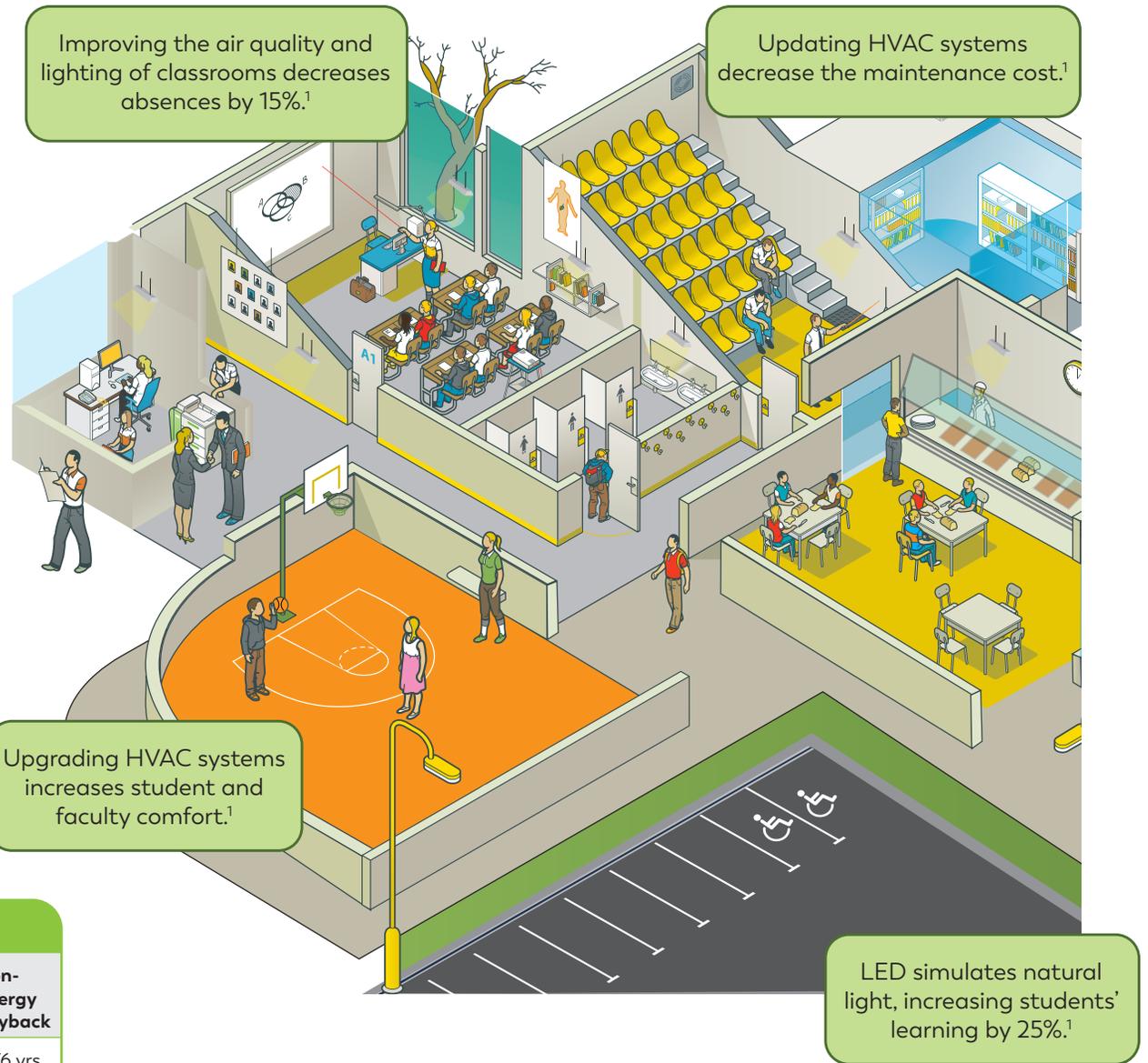
A failure of any component of the HVAC system may expose students and faculty to airborne pathogens. Relative humidity levels greater than 60% promote fungal growth. Upgrading your HVAC system reduces these risks, improves student and faculty health and decreases absences by 15%.

## Increased Productivity and Comfort

LEDs can improve the mood and attention of students in the classroom. LEDs simulate daylight and increase student productivity by 20% and learning by 25%. HVAC systems in university buildings are designed to maintain the indoor air temperature and humidity at comfortable levels for everyone. Updated HVAC provides a cleaner, quieter and healthier environment for students, instructors and staff.

## O&M Cost Savings

Energy management systems and HVAC controls have lower maintenance requirements and reduce repair costs. The longer equipment life of energy efficiency products frees up time to accomplish other tasks or large projects.



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$2,431	\$5,106	\$7,538	2.37 yrs.	0.76 yrs.
HVAC & Heating Equipment	\$25,497	\$0	\$25,397	5.17 yrs.	5.17 yrs.

1. Local government climate and energy strategy series: Energy Efficiency Programs in K-12 Schools: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs. 2011. U.S. Environmental protection agency.



**A typical small retail store would need to earn an additional \$9,518 annually to equal the money saved by switching to LED lighting.\***

Not only can small retail stores save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the store. By simply upgrading to LED lights and energy efficient HVAC systems, your small retail store could see the following benefits. \*

- Brighter lights to highlight products and increase sales.
- Improved customer and staff safety, comfort and visibility.
- Increased staff and operational productivity.
- Reduced maintenance, product handling and waste disposal.

\* Based on a 2017 DNV GL study



**“...LEDs should last 13 years longer ... Making maintenance easy. The temperature difference is amazing as well. The air conditioners no longer have to run all the time. So glad we were able to make the change”**

**- Brian Mester, Maintenance Supervisor,  
Arnie's Arts and Crafts**

Consumers Energy offers rebates, technical services and more to help small retail stores like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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## **Small Retail Store** Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Small Retail Stores

The following non-energy improvements can result from upgrading to energy efficient equipment:

## O&M Costs Savings

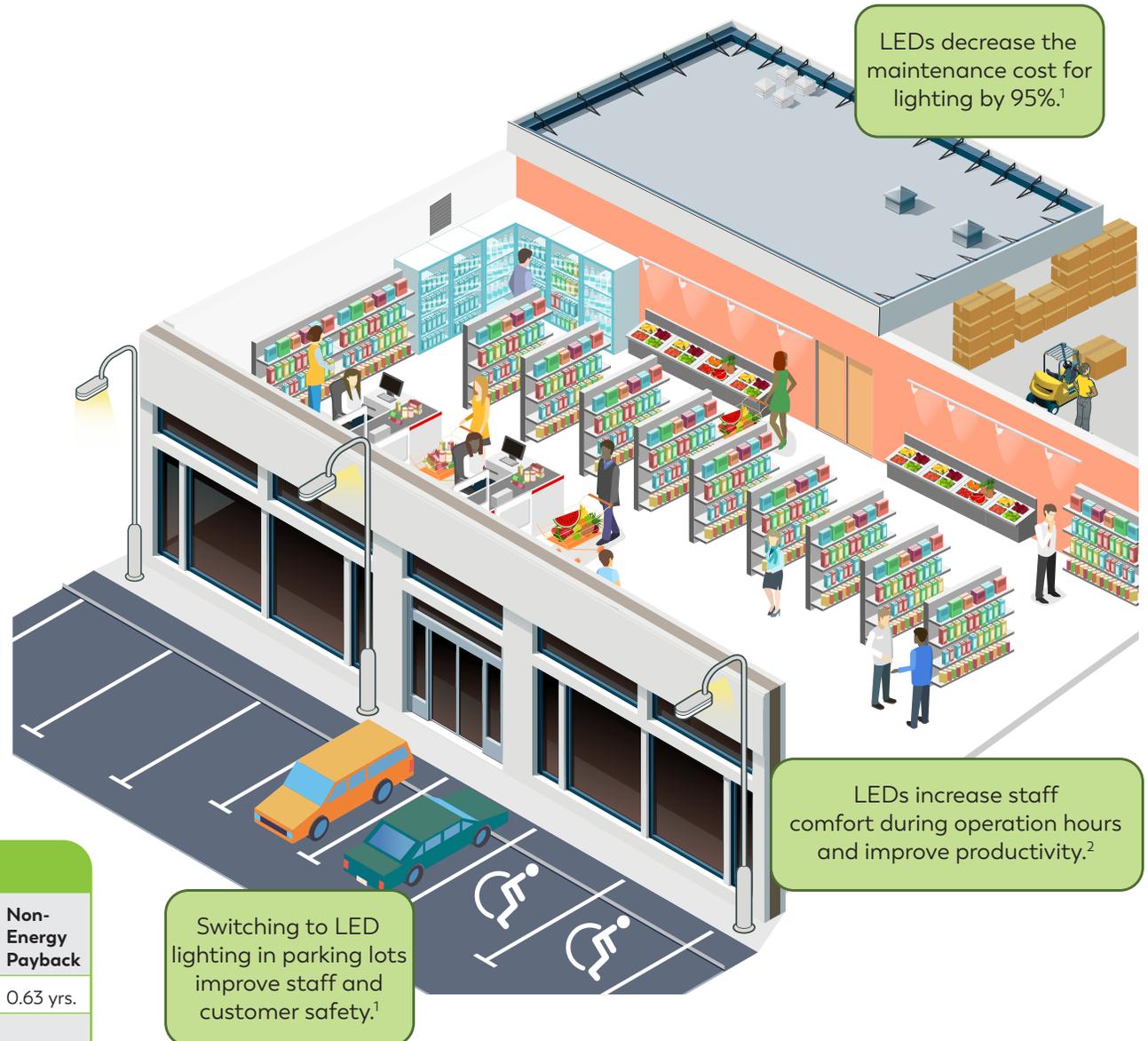
Every time a store requires maintenance, shelves have to be cleared to complete it. By installing energy efficient products, stores make fewer maintenance calls and spend less time restocking and reorganizing shelves. Given the long life of LEDs, maintenance costs can decrease by 95%.

## Increased Productivity

LEDs improve staff visibility and increase their performance by reducing fatigue. Shoppers are more alert causing them to be more active and interested in shopping. LEDs can improve display lighting and the appearance of products, resulting in an increase in sales.

## Increased Safety

Poorly lit parking lots at night are dangerous for staffs and customers. LEDs provide an increase in safety and can contribute to decreased theft in stores and parking lots.



O&M Cost Savings					
Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$2,651	\$6,867	\$9,518	2.26 yrs.	0.63 yrs.
Kitchen/Refrigeration/Laundry	\$2,092	\$60	\$2,152	2.47 yrs.	2.40 yrs.
HVAC & Heating Equipment	\$1,321	\$0	\$1,294	2.24 yrs.	2.24 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area[PPT]. (2014). DNV GL.  
 2. Family and Farm Case Study. DNV GL.



**A typical school would have to save the equivalent cost of 127,584 pencils annually to equal the amount of money saved by upgrading to LED lighting.\***

Not only can school districts save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the school. By simply upgrading to LED lighting and energy efficient HVAC systems, your school districts could see the following benefits. \*

- Enhanced student and faculty comfort, safety and satisfaction.
- Lowered maintenance costs.
- Increased faculty and student productivity.
- Decreased illness by improving the indoor air quality.

\* Based on a 2017 DNV GL study



**“We have spent far less time maintaining the boilers and they are running at a significantly higher efficiency rate.”**

**- John Fattal,  
Assistant Superintendent/  
Curriculum Director,  
Corunna Public Schools**

Consumers Energy offers rebates, technical services and more to help school districts like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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# **K-12 School** Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Schools

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Improved Environment

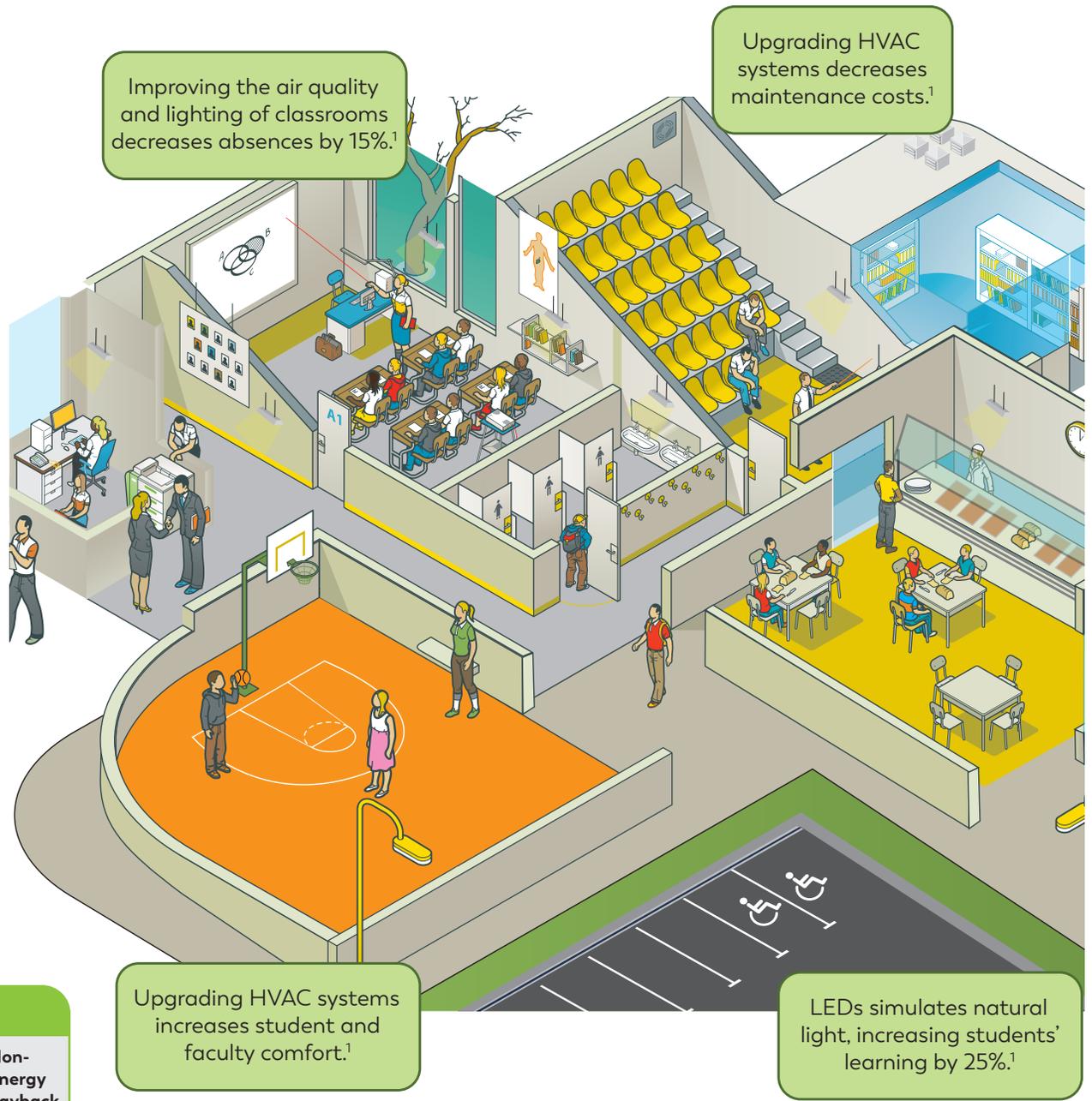
A failure of any component of the HVAC system may expose students and faculty to airborne pathogens. Relative humidity levels greater than 60% promote fungal growth. Upgrading your HVAC system reduces these risks, improves student and faculty health and decreases absences by 15%.

## Increased Productivity and Comfort

LEDs can improve the mood and attention of students in the classroom. LEDs simulate daylight and increase student productivity by 20% and learning by 25%. HVAC systems in school buildings should be designed to maintain a comfortable indoor air temperature and level of humidity. An updated HVAC system does this and provides a cleaner, quieter and healthier environment for students, teachers and staff.

## O&M Cost Savings

Energy management systems and HVAC controls have lower maintenance requirements and reduce repair costs. The longer equipment life of energy efficiency products frees up time to accomplish other tasks or large projects.



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$2,961	\$7,670	\$10,632	3.10 yrs.	0.86 yrs.
VFD	\$906	\$0	\$906	2.11 yrs.	2.11 yrs.

1. Local government climate and energy strategy series: Energy Efficiency Programs in K-12 Schools: A Guide to Developing and Implementing Greenhouse Gas Reduction Programs. U.S. Environmental Protection Agency. 2011.



**A typical restaurant would need to sell an additional 1,087 burgers annually to equal the money saved by upgrading to LED lighting.\***

Not only can restaurants save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the restaurant. By simply upgrading to LED lights and high efficiency refrigeration equipment, your restaurant could see the following benefits. \*

- Enhanced staff and customer comfort, safety and satisfaction.
- Lowered maintenance cost.
- Increased staff productivity.
- Decreased equipment failure and product loss.

\* Based on a 2017 DNV GL study

**“I believe the **fish tastes better!**  
We had replaced cooler motors  
that keeps items fresher.”**

**- Scott Hilgendorf, Co-Owner,  
Whitey’s Restaurant**

Consumers Energy offers rebates, technical services and more to help restaurants like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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# Restaurant

## Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Restaurants

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Productivity

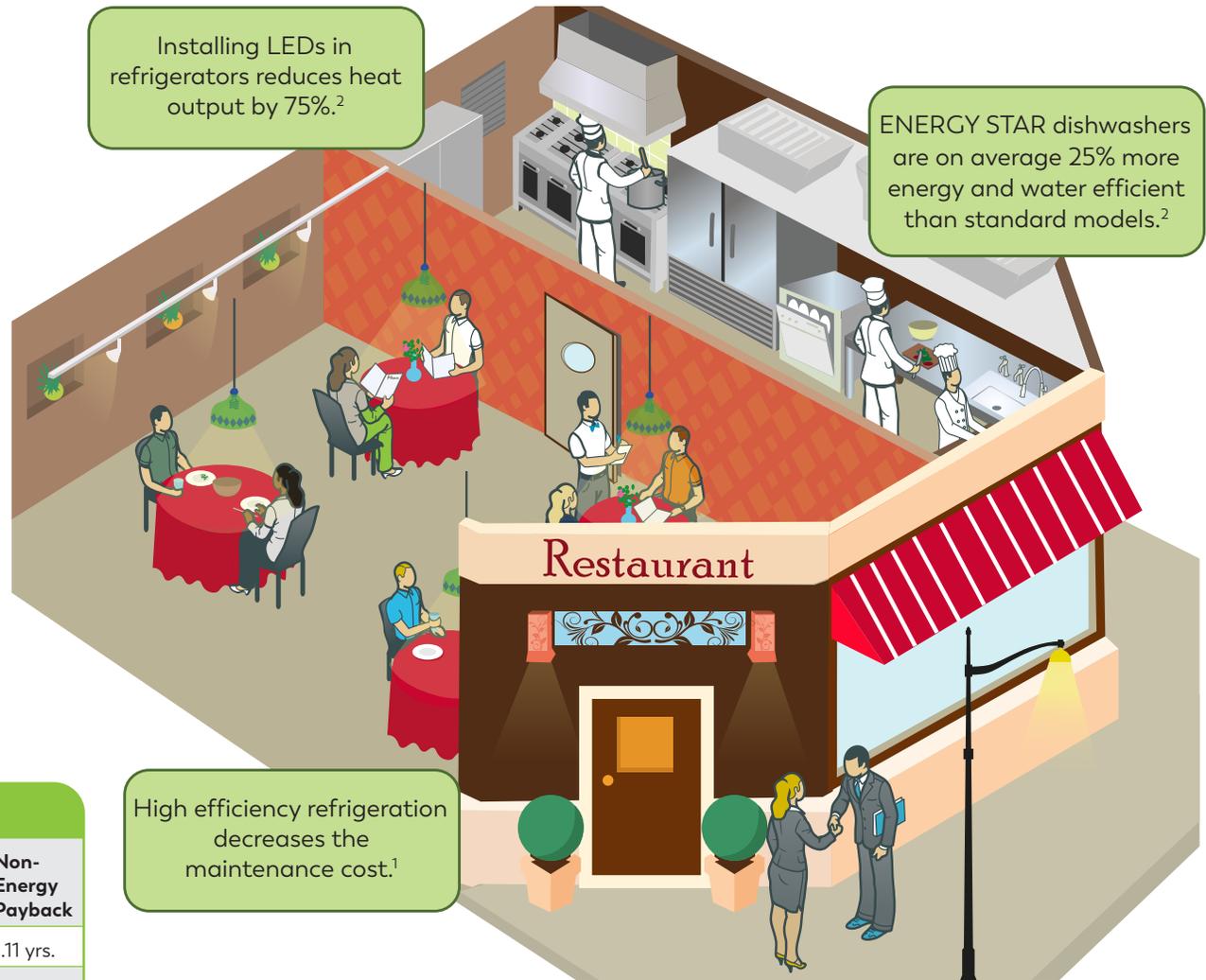
Commercial dishwashers that have earned the ENERGY STAR® rating are on average 25% more energy and water efficient than standard models. These dishwashers heat water quickly and clean dishes faster and more effectively, saving servers and bussers time.

## Reduced Product Loss

Restaurants could save thousands per year in product loss by preventing temperature fluctuations in refrigerators and freezers. Swapping lighting inside of refrigerators reduce heat output by 75%!

## O&M Cost Savings

Efficient HVAC systems and refrigeration units require less maintenance and fewer visits from contractors to fix problem units. Upgrading to high efficiency appliances also cuts operation costs by 15 to 70% compared to standard equipment.



O&M Cost Savings					
Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$855	\$1,003	\$1,858	2.42 yrs.	1.11 yrs.
Kitchen/ Refrigeration/ Laundry	\$497	\$14	\$511	2.47 yrs.	2.40 yrs.
Pipe & Ductwork Insulation	\$32	\$0	\$32	2.50 yrs.	2.50 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area [PPT]. (2014). DNV GL.  
 2. ENERGY STAR Guide for Restaurants [PDF].



**A typical public assembly would have to feed 137 attendees for a week to equal the money saved annually by upgrading to LED lighting.\***

Not only can public assemblies save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the facility. By simply upgrading to LED lights and energy efficient HVAC systems, your public assembly could see the following benefits. \*

- Enhanced staff and attendee comfort, safety and satisfaction.
- Lowered maintenance costs.
- Decreased equipment failure.
- Cleaner halls that are inviting to attendees.

\* Based on a 2017 DNV GL study

**“The staff has praised the brightness and color improvement of the interior lighting upgrade. Our maintenance staff will also appreciate not having to replace ballasts and fluorescent bulbs on a weekly basis.”**

**- Mack Solomon, Facility Manager  
Arbor Circle**

Consumers Energy offers rebates, technical services and more to help public assemblies like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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March 2020

# Public Assembly

## Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Public Assemblies

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Comfort

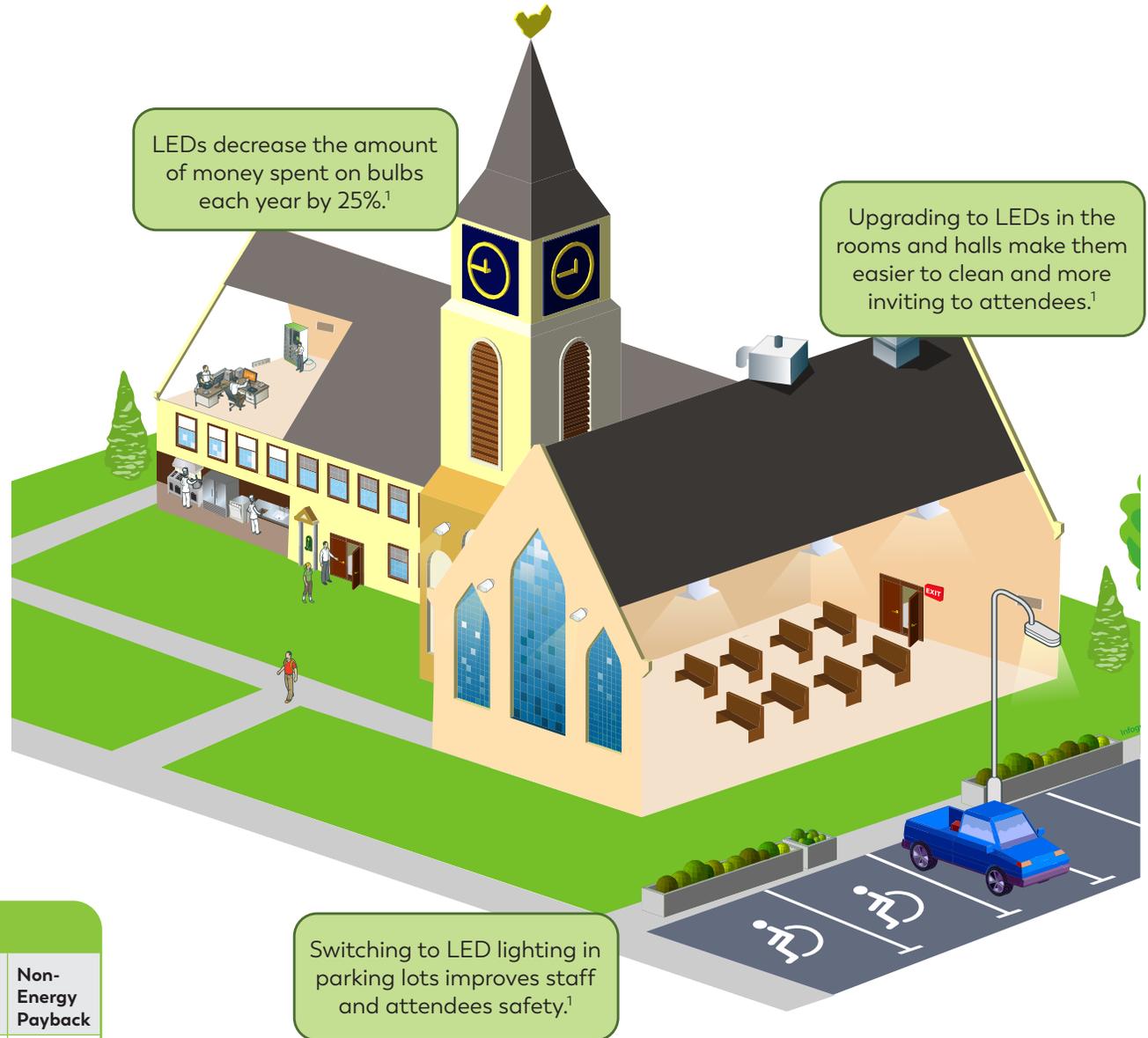
Public assemblies want to ensure attendees' comfort. Energy efficient HVAC systems improve air circulation. LEDs enhance visibility making the building easier to clean and more inviting to attendees.

## Increased Safety

Poorly lit parking lots can be dangerous for staff and attendees. LEDs illuminate parking lots, creating a safer atmosphere and can also contribute to decreased theft.

## O&M Cost Savings

Upgrading to energy efficient products reduces the need to hire outside contractors by 12 visits a year. It also saves an office manager 80 hours annually on inventory management. LEDs have a longer life cycle than other bulbs, minimizing the amount of bulb replacements and the money spent on bulbs each year by 25%. Furnace tune-ups reduce the need for repairs and maintenance costs.



O&M Cost Savings					
Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$1,259	\$4,202	\$5,461	2.61 yrs.	0.60 yrs.
VFD	\$263	\$0	\$263	2.11 yrs.	2.11 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area [PPT]. (2014). DNV GL.



**A typical office would save the equivalent cost of 3,250 reams of paper annually by upgrading to LED lighting.\***

Not only can offices save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the office. By simply upgrading to LED lights and energy efficient HVAC systems, your office could see the following benefits. \*

- Enhanced staff and visitor comfort, safety and satisfaction.
- Increased staff productivity.
- Lowered maintenance costs.
- Decreased equipment failure.

\* Based on a 2017 DNV GL study

**“... [With] the lighting upgrade we don't worry about lights being accidentally left on, so nobody has to do a light check at the end of the day.”**

**- Cheryl Postma, Director,  
AuSable Valley Animal Shelter**

Consumers Energy offers rebates, technical services and more to help offices like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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March 2020

# Office

## Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Offices

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Productivity

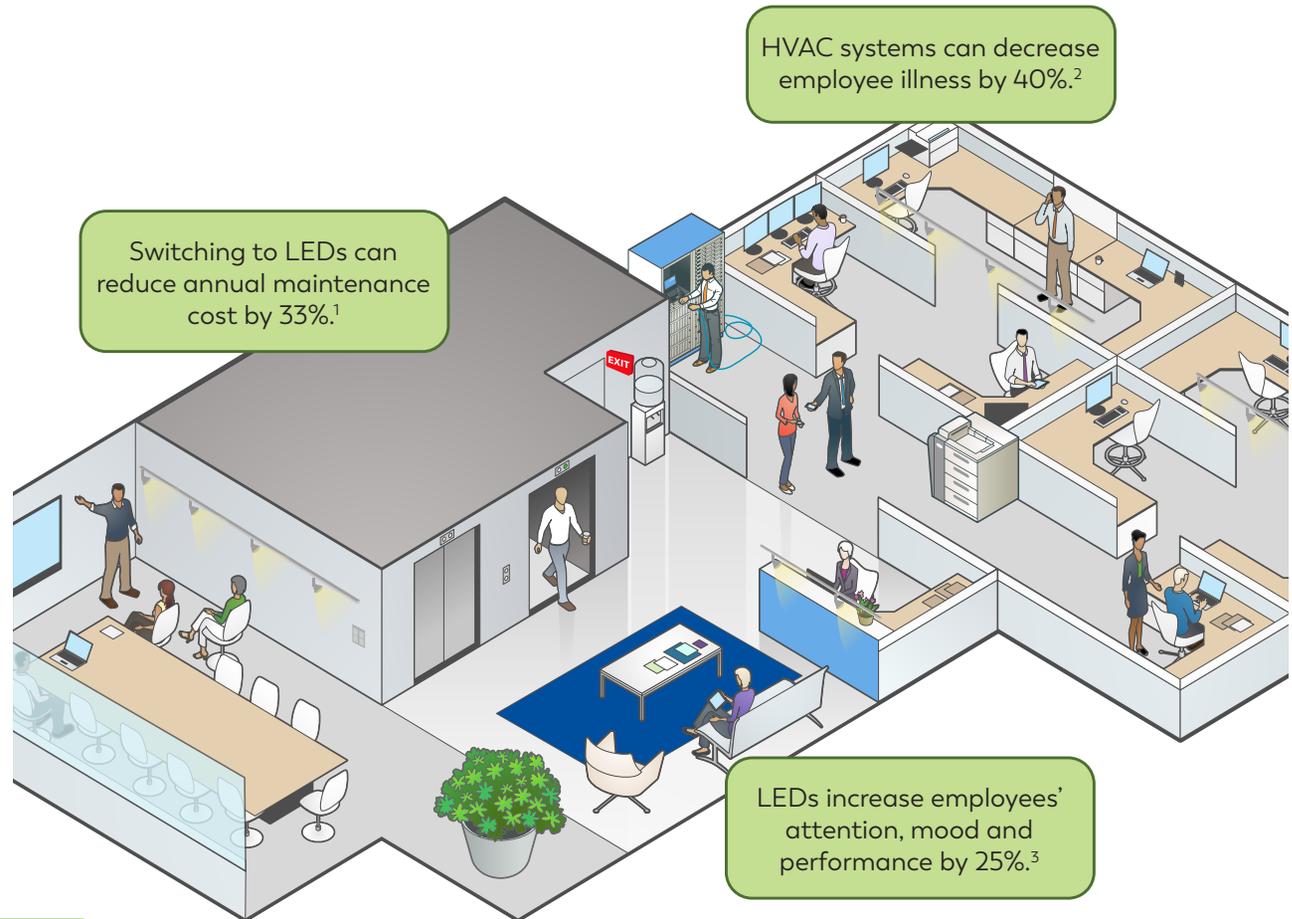
Research proves light influences alertness, mental focus and cognitive performance. Replacing bulbs with LEDs can increase employee attention, mood and performance by 25% because they simulate natural light.

## Increased Health

An outdated HVAC system can spread airborne pathogens. Switching to an energy efficient HVAC system improves the indoor air quality and reduces the number of office illnesses by 40%. Want an added bonus? Research shows a 74% increase in employee morale and satisfaction from improvements to temperature controls.

## O&M Cost Savings

Maintenance visits can be distraction for employees. LEDs have a longer life, require less upkeep and save 33% annually on maintenance cost while using less energy than fluorescent bulbs.



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$1,631	\$11,459	\$13,090	2.08 yrs.	0.26 yrs.
VFD	\$53	\$0	\$53	2.11 yrs.	2.18 yrs.
HVAC & Heating Equipment	\$3,892	\$0	\$3,892	2.24 yrs.	2.29 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area [PPT]. (2014). DNV GL.

2. Carnegie Mellon, 2005.

3. Natural Light and Productivity: Analyzing the Impacts of Daylighting on Students' and Workers' Health and Alertness Int'l Journal of Advances in Chemical Engg. & Biological Sciences (IJACEBS) Vol. 3, Issue 1 (2016) ISSN 2349-1507 EISSN 2349-1515 N. Shishegar, M. Boubekri



**A typical material manufacturing plant would need to produce an additional 130 steel pipes annually to equal the money saved by upgrading their existing compressed air system.\***

Not only can material manufacturing facilities save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the facility. By simply upgrading to LED lights and compressed air systems, your material manufacturing could see the following benefits. \*

- Increased staff and customer comfort, safety and satisfaction.
- Decreased maintenance cost.
- Increased staff productivity.
- Improved product quality.

\* Based on a 2017 DNV GL study

**“The upgrade to the humidification system in our knitting department helps our machines run better, causes less defects and improved the quality of our product. It’s a win from all aspects.”**

**- Katie Chapman, Sustainability Specialist, Duro - Last Inc.**

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# Material Manufacturing Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Material Manufacturing Facilities

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Productivity

Energy efficiency upgrades for material manufacturers support fewer production interruptions, decreasing system downtime and increasing staff productivity.

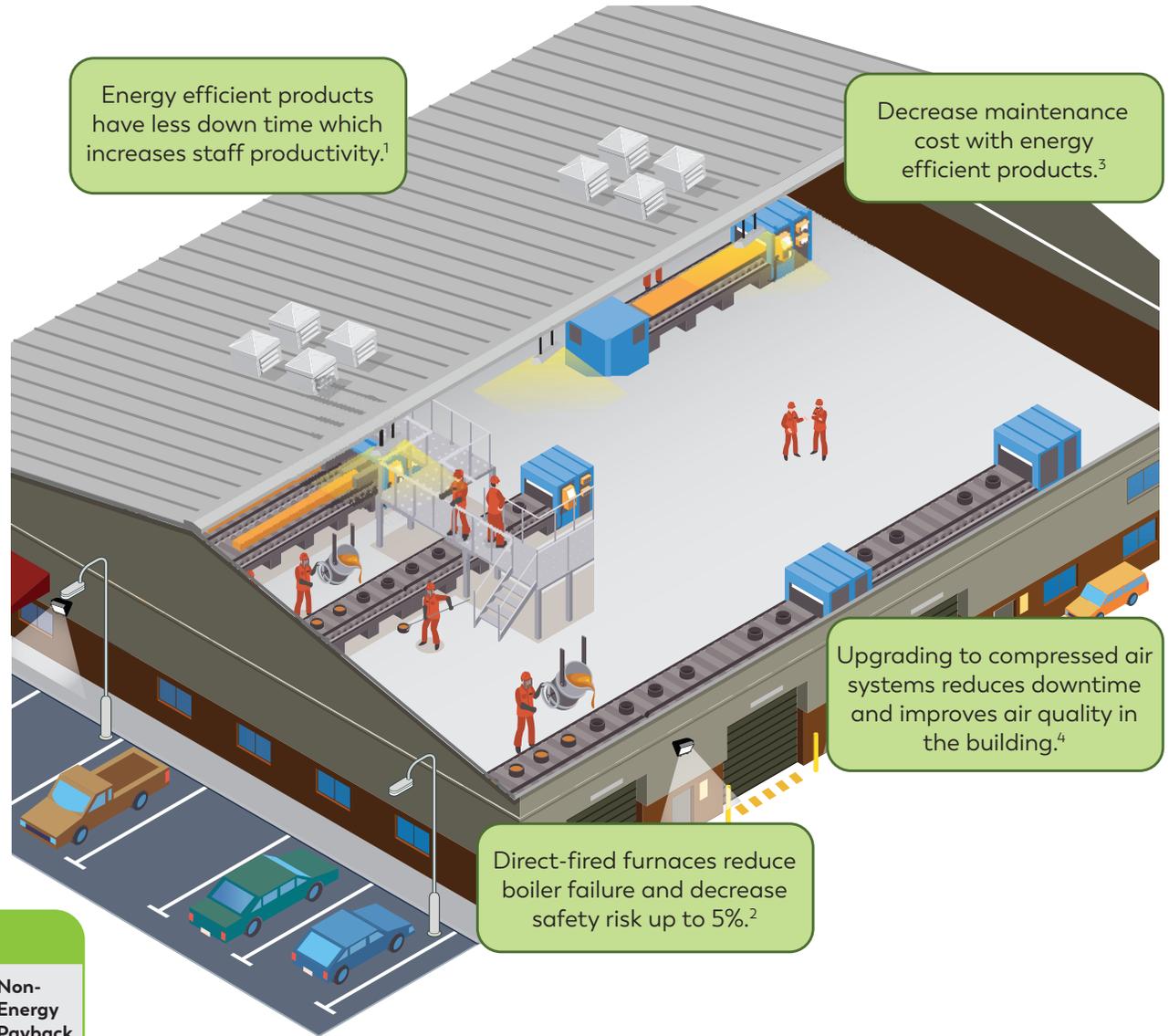
Upgrades to compressed air systems have less downtime and improve the air quality in the building. LED lights increase visibility that results in fewer product defects during production.

## Increased Safety

Energy efficient equipment can reduce the incidence of work-related accidents or negative impacts on staff health. LEDs improve employee visibility, minimizing the risk of slips and falls. Installing direct-fired furnaces does not overheat the steam boilers, reducing boiler failure and decreasing safety risks by up to 5%.

## O&M Cost Savings

Energy efficient projects can lead to investments in new equipment, system optimization and changes in production resulting in lower maintenance needs and costs.



Energy efficient products have less down time which increases staff productivity.<sup>1</sup>

Decrease maintenance cost with energy efficient products.<sup>3</sup>

Upgrading to compressed air systems reduces downtime and improves air quality in the building.<sup>4</sup>

Direct-fired furnaces reduce boiler failure and decrease safety risk up to 5%.<sup>2</sup>

## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$6,846	\$24,644	\$31,490	2.46 yrs.	0.54 yrs.
VFD	\$3,559	\$0	\$3,558	2.11 yrs.	2.11 yrs.
Compressed Air	\$3,202	\$92	\$3,293	2.47 yrs.	2.40 yrs.
HVAC & Heating Equipment	\$54,407	\$0	\$54,304	2.50 yrs.	2.50 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area[PPT]. (2014). DNV GL.  
 2. Capturing the Multiple Benefits of Energy Efficiency. (2014). IEA.  
 3. Including non-energy benefits in investment calculations in industry; empirical findings from Sweden. ECEEE Industrial Summer Study Proceedings 2014.  
 4. "Ancillary savings and production benefits in the evaluation of industrial energy efficiency measures." Proceedings of the 2005 ACEEE Summer Study on Energy Efficiency in Industry, Vol. 6, West Point, 19-22 July 2014, ACEEE.



**A typical hotel would need to sell an additional 3,920 deluxe room stays annually to equal the money saved by upgrading to LED lighting.\***

Not only can hotels save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and of the hotel environment. By simply upgrading to LED lights and energy efficient HVAC systems, your hotel could see the following benefits. \*

- Enhanced guest and staff safety and comfort.
- Increased staff productivity.
- Higher guest satisfaction scores.
- Increased returning guest rate.
- Lowered maintenance costs.

\* Based on a 2017 DNV GL study

**“Customers feel the location has been visually upgraded, creating a more positive experience and maintenance staff enjoy not having to dedicate their time to simple lighting change outs.”**

**- Minesh Patel, Operations Manager,  
Grandville Comfort Suites**

Consumers Energy offers rebates, technical services and more to help hotels like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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# Hotel

## Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Hotels

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Safety

For a hotel, staff and guest safety is a major priority. Installing LED lighting increases environmental visibility and reduces the chance of slips and falls by up to 60%. Upgrading to an energy efficient HVAC system improves indoor air quality by reducing damaging dust, mold and mildew.

## Increased Comfort

The simplest way to improve staff and guest comfort is upgrading to energy efficient products. Studies show LEDs improve environmental light quality and improve productivity. In addition, hotels with newly upgraded HVAC systems report a 75% reduction of guest complaints.

## O&M Cost Savings

Energy efficient HVAC systems and LEDs have a longer life cycle and decreases annual maintenance expenses by 15%.

### O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$5,678	\$29,846	\$35,524	2.12 yrs.	0.34 yrs.
Air Distribution & Energy Recovery	\$11,898	\$0	\$11,898	2.04 yrs.	2.04 yrs.



1. Grand Traverse Resort and Spa Case Study, 2017. DNV GL.



**A typical grocery store would need to sell 550 party platters annually to equal the money saved by switching to LED lighting.\***

Not only can grocery stores save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the store. By simply upgrading to LED lights and high efficiency refrigeration equipment, your grocery store could see the following benefits. \*

- Highlight products and increase sales.
- Increased staff and operational productivity.
- Reduced maintenance and waste disposal.

\* Based on a 2017 DNV GL study

**“The LED lights have been installed for nearly two years and have not required any maintenance.”**

**- Brad Thorsby, Owner,  
Riverside Market**

Consumers Energy offers rebates, technical services and more to help grocery stores like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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# Grocery Store Hidden Benefits of Energy Efficiency

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# Energy Efficiency Impacts in Grocery Stores

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Productivity

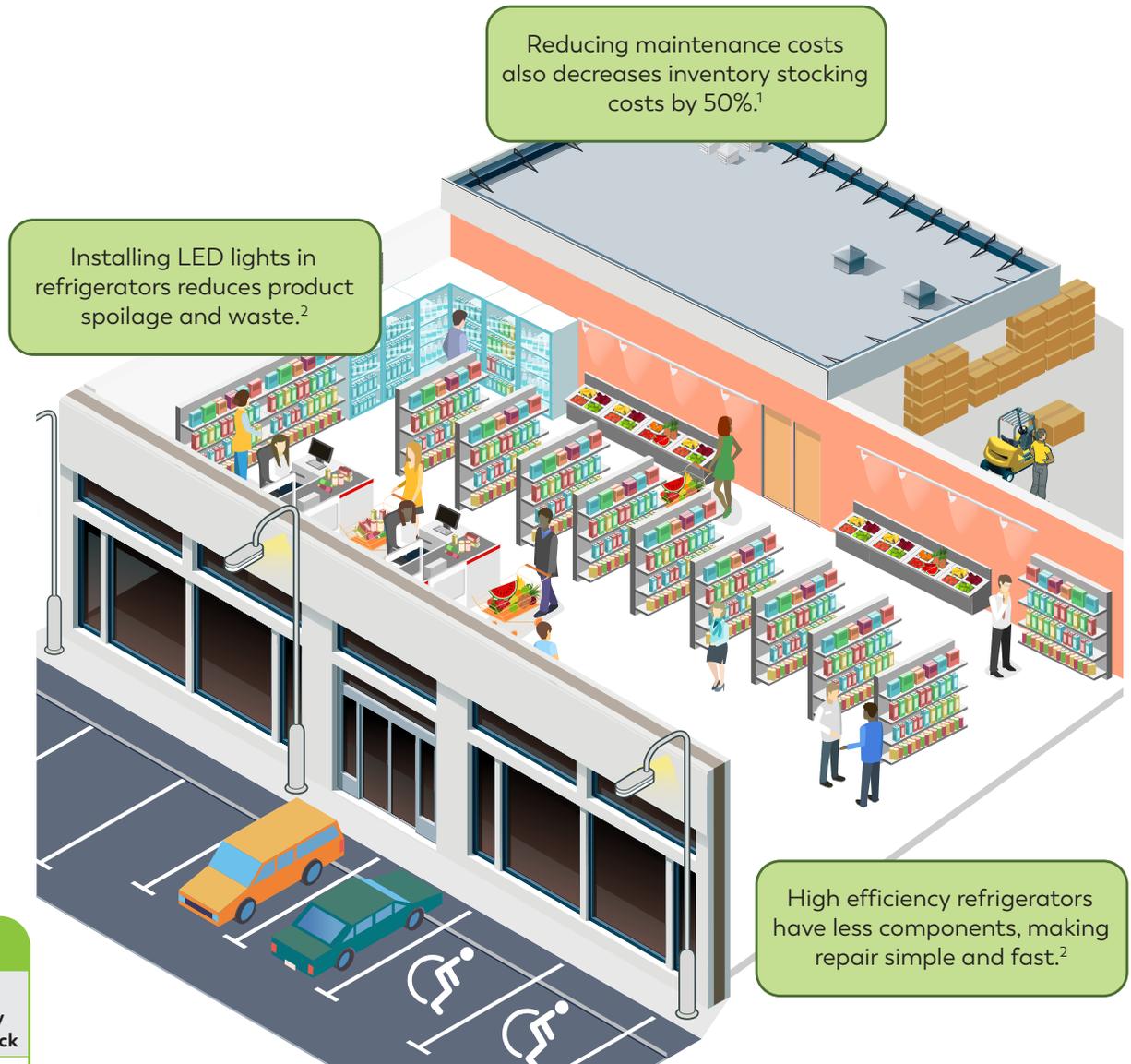
Every time a store requires maintenance, shelves have to be cleared to complete it. By installing energy efficient products, stores have fewer maintenance calls and spend less time restocking and reorganizing shelves. Their inventory stocking costs can decrease by 50%.<sup>1</sup>

## Reduced Product Loss

Grocery stores around the country reported saving over \$10,000 per year on product loss as a result of improved store temperature from their new HVAC system. LED lighting can also reduce food spoilage by helping staff identify “sell by” dates easier to push product rotation in coolers.<sup>2</sup>

## O&M Costs Savings

High efficiency refrigeration systems have fewer components to replace and operate using less Freon than standard equipment, resulting in less repairs. They are able to pinpoint problems easier and faster. LEDs don't have to be replaced nearly as often, which decreases the cost of purchasing bulbs and paying someone to change them.<sup>2</sup>



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$1,269	\$1,384	\$2,653	2.66 yrs.	1.27 yrs.
Kitchen/Refrigeration/Laundry	\$3,010	\$86	\$3,096	2.47 yrs.	2.47 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area[PPT]. (2014). DNV GL.  
 2. Riverside Market Case Study. DNV GL.



**A typical big box retail store would need to sell 1,776 \$20 shirts annually to equal the money saved by switching to LED lighting.\***

Not only can big box retail stores save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the store. By simply upgrading to LED lights and energy efficient HVAC systems, your big box retail could see the following benefits. \*

- Brighter lights to highlight products and increase sales.
- Improved customer and employee safety, comfort and visibility.
- Increased staff and operational productivity.
- Reduced maintenance, product handling and waste disposal.

\* Based on a 2017 DNV GL study

**“...Energy efficiency can reduce maintenance expenses and [increase] sales.”**

**- Brad Thorsby, Owner,  
Riverside Market**

Consumers Energy offers rebates, technical services and more to help big box retail stores like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

**Contact us**

877-607-0737

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[ConsumersEnergy.com/startsaving](http://ConsumersEnergy.com/startsaving)

March 2020

# **Big Box Retail**

## Hidden Benefits of Energy Efficiency

**Consumers Energy**

*Count on Us®*

# Energy Efficiency Impacts in Big Box Retail Stores

The following non-energy improvements can result from upgrading to energy efficient equipment:

## O&M Cost Savings

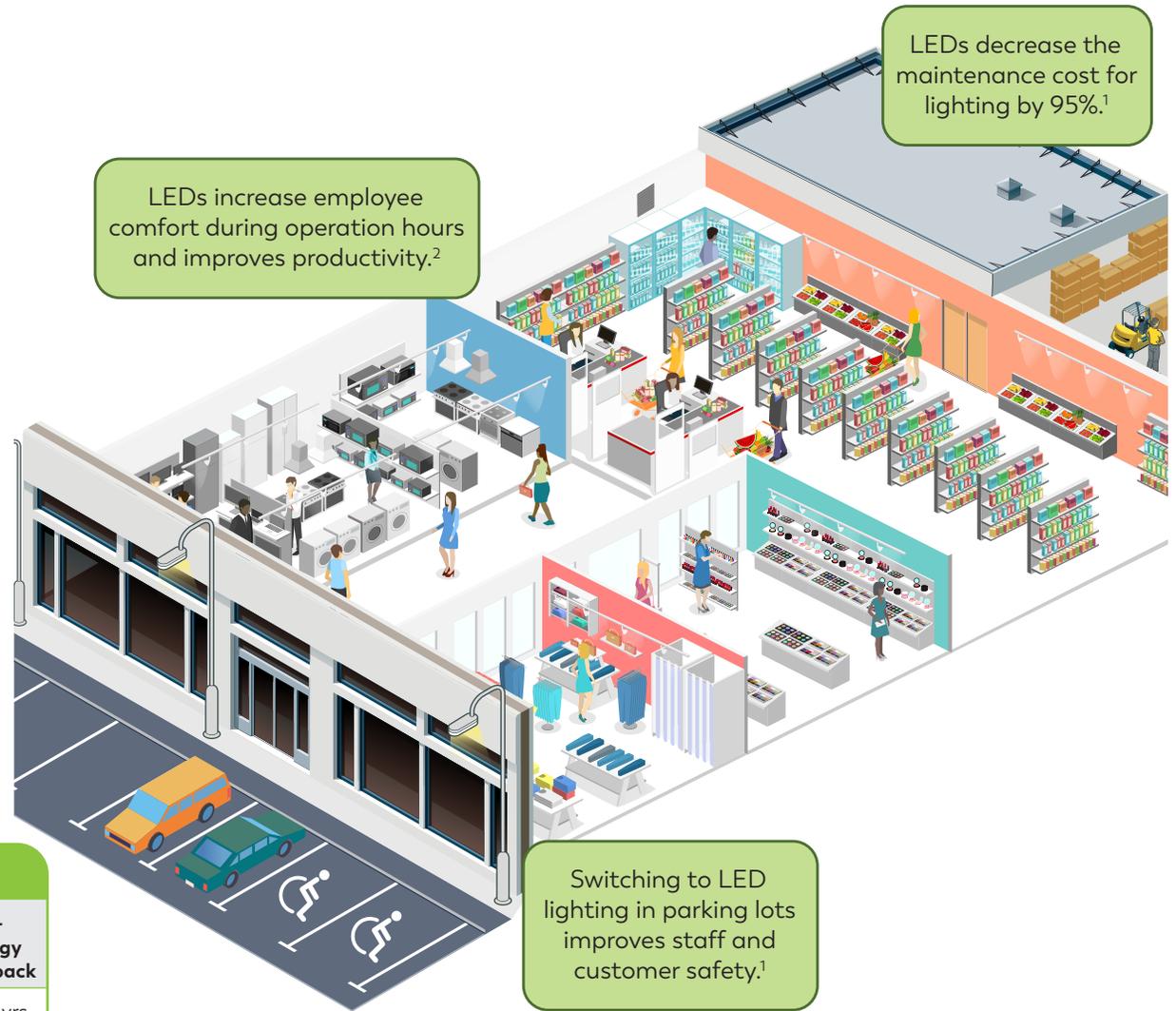
Every time a store requires maintenance, shelves have to be cleared to complete it. By installing energy efficient products, stores make fewer maintenance calls and spend less time restocking and reorganizing shelves. Given the long life of LEDs, maintenance costs can decrease by 95%.

## Increased Productivity

LED lights improve visibility and increase staff performance by reducing fatigue. Shoppers are more alert causing them to be more active and interested in shopping. LEDs can improve display lighting and the appearance of products, resulting in an increase in sales.

## Increased Safety

Poorly lit parking lots can be dangerous for employees and customers. LEDs provide an increase in safety and can contribute to decreased theft in stores and parking lots due to improved light levels.



O&M Cost Savings					
Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$5,678	\$29,846	\$35,524	2.12 yrs.	0.34 yrs.
VFD	\$4,028	\$0	\$4,028	2.11 yrs.	2.11 yrs.
Kitchen/ Refrigeration/ Laundry	\$3,202	\$92	\$3,293	2.47 yrs.	2.40 yrs.
HVAC & Heating Equipment	\$10,146	\$0	\$10,137	2.54 yrs.	2.54 yrs.

1. Non-Energy Impact Marketing Analysis by Industry, Special Cross Sector Research Area[PPT]. (2014). DNV GL.  
 2. Family and Farm Case Study. DNV GL.



**A typical automotive manufacturing facility would need to make an additional 27 cars annually to equal the money saved by switching to energy efficient direct-fired heating equipment.\***

Not only can automotive manufacturing facilities save energy by using more energy efficient equipment, but there are additional positive effects on the overall revenue and environment of the facility. By simply upgrading to LED lights, HVAC and compressed air systems, your automotive facility could see the following benefits.\*

- Staff and customer comfort, safety and satisfaction.
- Decreased maintenance costs.
- Increased staff productivity.
- Decreased equipment failure.

\* Based on a 2017 DNV GL study



**“... Direct-fired heaters [increase] our ability to better maintain the desired process temperature which results in more high quality products.”**

**- Ian Stone, Energy Manager,  
Ford Motor Company**

Consumers Energy offers rebates, technical services and more to help automotive manufacturing facilities like yours become more energy efficient. Our team is here to walk you through the program requirements and available resources.

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# Automotive Hidden Benefits of Energy Efficiency

**Consumers Energy**

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# Energy Efficiency Impacts in Automotive Manufacturing Facilities

The following non-energy improvements can result from upgrading to energy efficient equipment:

## Increased Productivity

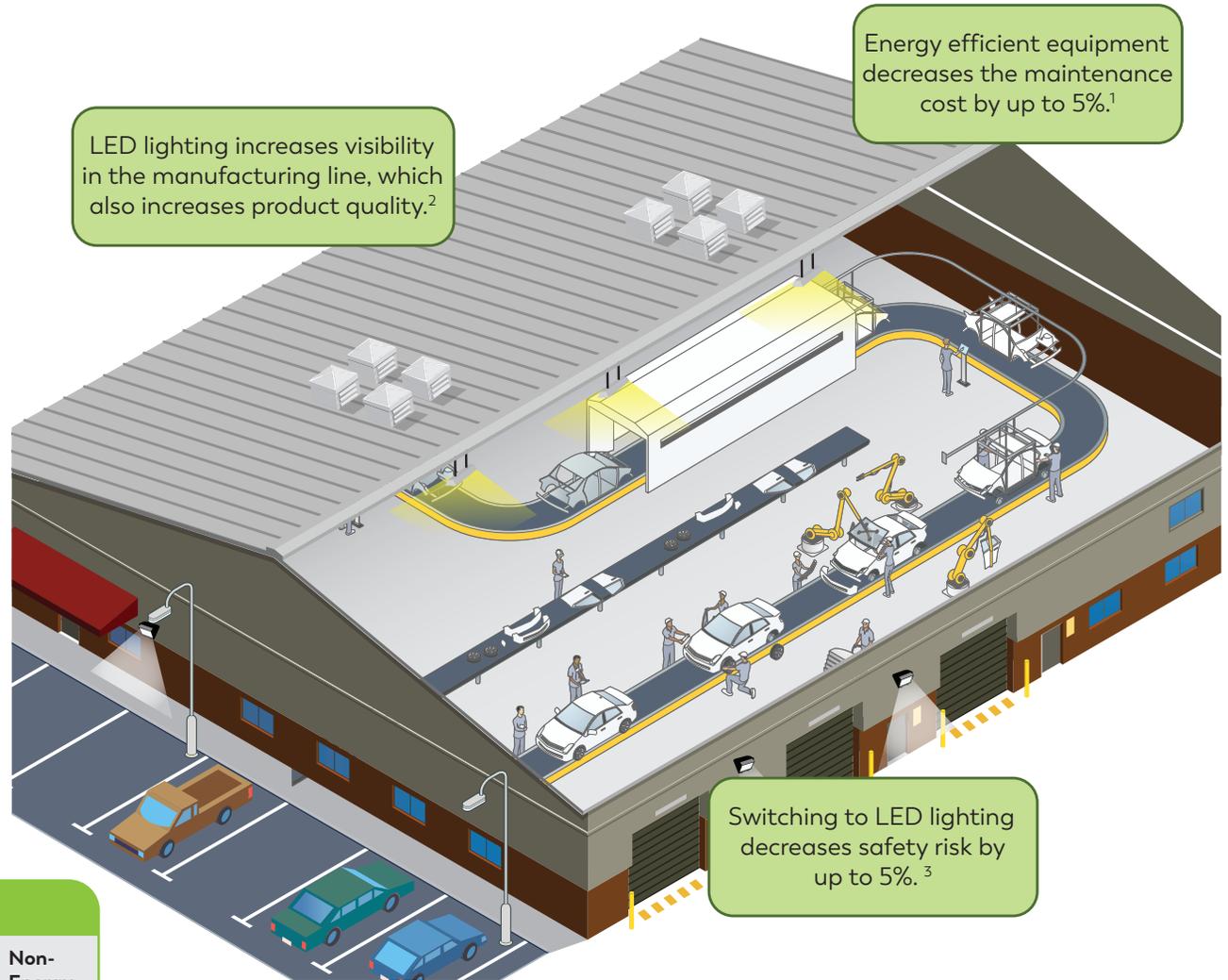
In the automotive manufacturing industry, preventing product defects are a top priority. Installing LEDs can increase visibility and improve quality control, reducing the number of defective parts by 1 to 5%. An efficient compressed air system will stabilize the pressure and air flow to all pneumatic devices, causing them to work more consistently and reduce scrap rates.

## Increased Safety

Employee safety in the automotive manufacturing industry is essential and installing energy efficient products can reduce the risk of accidents. LEDs improve employee visibility, minimizing the risk of slips and falls. Installing direct-fired furnaces does not overheat the steam boilers, reducing boiler failure and decreasing safety risks by up to 5%.

## O&M Cost Savings

Energy efficiency investments in new equipment, system optimization or change of processes can lead to reduction in costs for maintenance by up to 5% and an additional 30 to 50% in maintenance materials.



## O&M Cost Savings

Equipment	Energy Savings	Non-Energy Savings	Total Savings	Energy Payback	Non-Energy Payback
Lighting	\$6,846	\$24,644	\$31,490	2.46 yrs.	0.54 yrs.
VFD	\$3,559	\$0	\$3,559	2.11 yrs.	2.11 yrs.
Compressed Air	\$3,202	\$92	\$3,293	2.47 yrs.	2.40 yrs.
HVAC & Heating Equipment	\$54,407	\$0	\$54,407	2.50 yrs.	2.50 yrs.

1. Ford Motor Case Study. DNV GL.

2. Nexteer Case Study. DNV GL.

3. Capturing the Multiple Benefits of Energy Efficiency. (2014). IEA.