

iLamp



# iLamp Illinois Report for Harwood Heights

This document offers an outline for the main benefits of installing iLamp in Harwood Heights, Cook County, Illinois.



Harwood Heights Population

**8,722**

Median Property Value

**\$306,500**

Estimated Streetlights

**758**

Street lighting is the largest single source of carbon emissions from local governments, typically 30-60% of their total emissions.

Enhanced lighting leads to significant and sustained reductions in both night and daytime outdoor crimes with a benefit cost ratio of 5.1-10.8.

On residential roads 3.1% of accidents are fatal in lit conditions, rising to 4.9% in areas without street lights.

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Harwood Heights represents a prime opportunity for iLamp to enhance community safety, well-being, and quality of life. With a population of approximately 9,000 and a commitment to maintaining low crime rates, Harwood Heights provides an ideal environment for integrating iLamp's innovative street lighting and smart city solutions.

**Enhanced Public Safety:** Although Harwood Heights is known for its safety, iLamp's advanced street lighting technology can further enhance this by improving visibility throughout the village. Studies have shown that enhanced street lighting leads to sustained reductions in crime rates of over 40%. Implementing iLamp will help maintain low crime rates, deter potential crimes, and contribute to a stronger sense of security for all residents.

**Increased Property Values:** Enhanced street lighting has been shown to correlate with increased property values. A 1% reduction in crime can lead to an approximate 0.5% to 1% increase in property values. For Harwood Heights, improved street lighting in underlit areas could boost property values, driven by improved perceptions of safety and higher demand for housing in well-lit, secure neighborhoods.

**Community Engagement:** iLamp's solutions foster a greater sense of community by improving neighborhood aesthetics and creating safer, more welcoming public spaces. Enhanced lighting in parks, streets, and communal areas encourages outdoor activities and social interactions, strengthening community bonds and promoting a higher quality of life.

**Sustainability:** iLamp's smart city solutions contribute to environmental sustainability by being completely self powered reducing energy consumption and carbon footprints, aligning with global and local sustainability goals. This commitment to sustainability benefits both the environment and future generations of Harwood Heights residents.

**Low Maintenance:** iLamp is designed and built to last using robust materials designed to withstand harsh weather and wear and tear. iLamp's modular design allows for easy upgrades, future proofing each iLamp. Additionally iLamp offers generous warranties and has low maintenance requirements.



*Creativity is the power to correct the seemingly unconnected.*

- William Plomer

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# The iLamp

## What is iLamp?

iLamp is a groundbreaking, self-powered, modular, and enhanced lighting solution designed to address multiple urban challenges. By integrating autonomous power generation capabilities, and monetizing them iLamp alleviates grid strain and contributes to energy sustainability while generating its own revenue. Its modular design supports a wide range of smart city applications, offering further monetization opportunities and revenue streams and making it a future-proof solution for urban infrastructure.

Equipped with low profile, cylindrical solar panels, iLamp harnesses renewable energy, storing it in batteries for efficient distribution. This setup powers street lighting and supports various smart sensors and modules, eliminating transmission costs and reducing emissions to near zero.

Each iLamp is customizable to meet the needs of different neighborhoods—supporting add-ons like 5G WiFi, traffic management, CCTV, environmental sensors and a plethora of other modules, sensors and software. This modularity ensures a quick, plug-and-play setup, making it adaptable and future-proof.

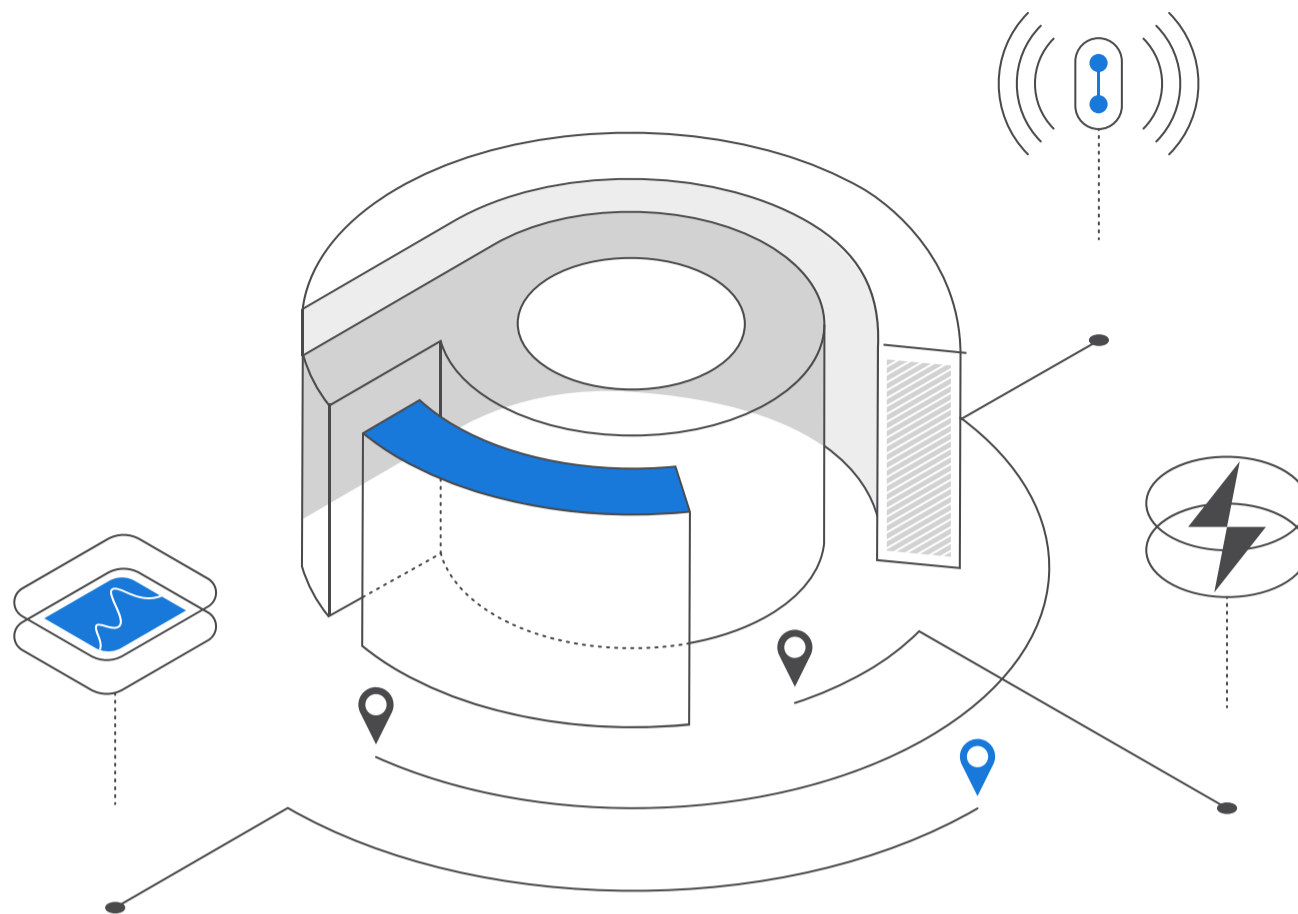
iLamp qualifies as enhanced street lighting, which has been shown to reduce crime by 20-40%. Implementing iLamp can therefore significantly reduce various crimes, improve public safety, improving quality of life and stimulating the local economy.

Through its App and Module Stores, iLamp is a dynamic framework for hardware and software ingenuity, similar to Google Play and Apple App Store. It transcends its primary function, offering a comprehensive urban solution.

iLamp is not just a streetlight; it is a comprehensive urban solution designed to enhance safety, sustainability, and economic growth. By leveraging advanced technology and modular design, iLamp offers neighborhoods across Houston a future proof infrastructure that adapts to evolving needs, making neighborhoods safer, more attractive, and better connected.

Whether through crime reduction, economic stimulation, or health and environment benefits, iLamp stands as a beacon of innovation in urban development, illuminating the future around it.





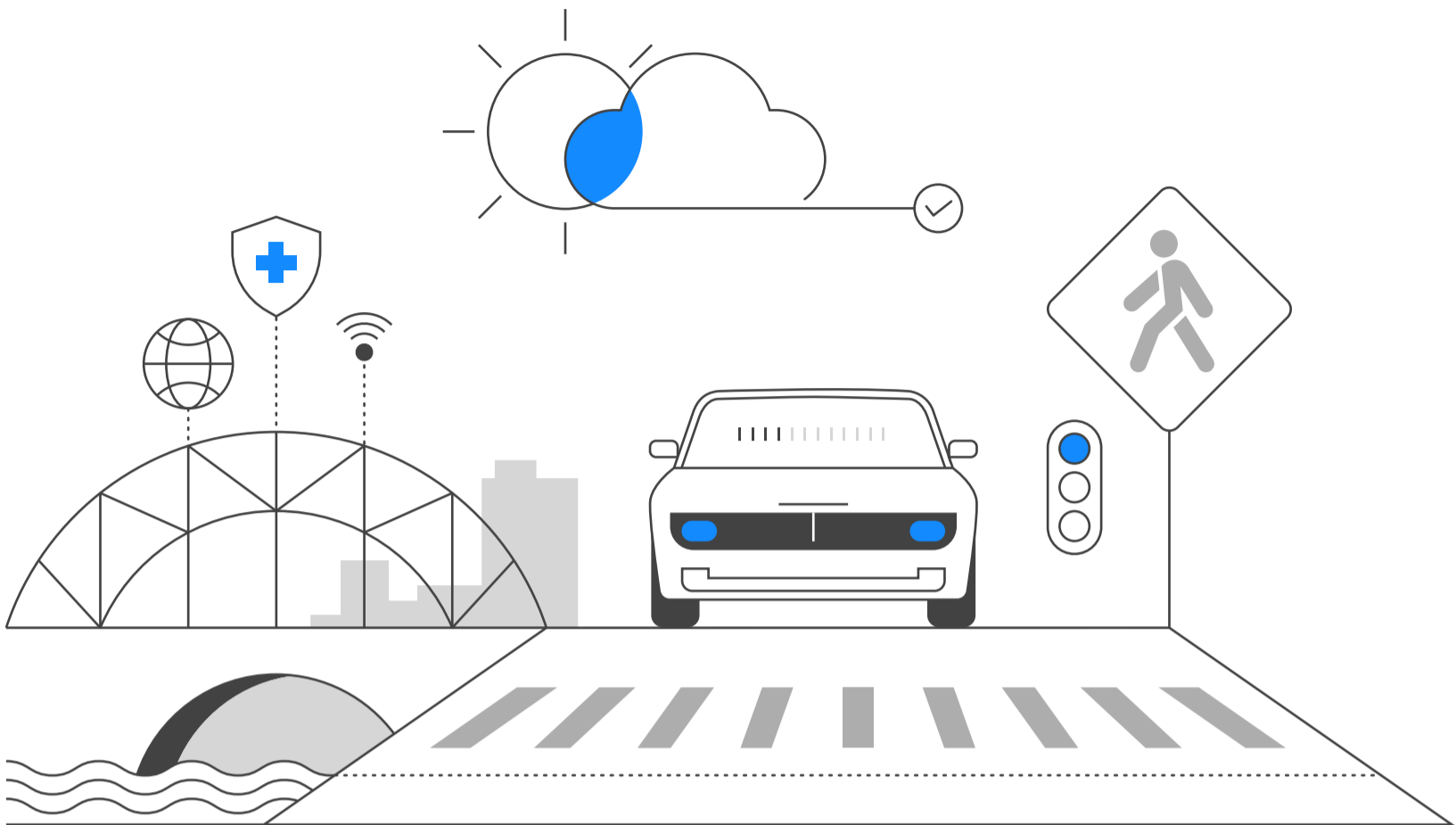
## The Power of Conflow

### Flagship Product of a Global Technology Aggregator

iLamp is a groundbreaking product of the Conflow Power Group, a company with extensive global manufacturing capabilities, producing up to 8,000 units per month. With years of experience in product development and electronics, Conflow Power Group focuses on IoT and smart city solutions. They own several key technologies that make iLamp possible, ranging from advanced electronic modules and power management systems to battery monitoring, automatic lighting, and LED technologies. Their expertise also extends to cylindrical glass solar panel manufacturing.

Conflow Power Group collaborates with several external developers to adapt their technologies for iLamp, providing a comprehensive development kit to support these innovations. This collaboration has led to a robust, established ecosystem surrounding every key aspect of streetlighting. Additionally, iLamp integrates a variety of smart city applications, making it the most comprehensive streetlighting solution available.

The company is committed to the long term support of iLamp as well as future innovation, with several new products in development, continually enhancing the capabilities and applications of iLamp. This dedication ensures that iLamp remains at the forefront of smart city technology, offering unmatched performance and versatility in urban lighting solutions.



## Add-ons and Modules

### A Modular Approach to Technological Integration

iLamp's modular design is its cornerstone, allowing developers to create custom hardware and software modules that seamlessly integrate with iLamp's power and data management systems, ensuring a quick, plug-and-play setup.

Modules are backwards compatible, and so can be built in at manufacture or added at any time in the future, future proofing each iLamp and allowing upsells at the time of sale and any future point.

As new hardware modules are continuously developed by iLamp and its partners each iLamp becomes a perpetual revenue generator, creating a never ending cycle of recurring revenue and sales fees.

Each of these add-on modules consumes power, data and rack space, for which the module is billed via Power as a Service. A module development kit is openly available to all third party developers.

From environmental sensors to advanced communication tools, the iLamp platform is not just about illumination; it's about revolutionising urban infrastructure and providing a robust, future proofed product that becomes the backbone of the smart cities of the future.

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## Add-ons and Modules



### Road Safety

iLamp positively impacts road safety by providing optimal lighting conditions on roads and highways. Its adaptive lighting capabilities can adjust brightness according to traffic conditions, enhancing safety during peak hours and adverse weather conditions. Additionally, camera and communications modules support apps to monitor traffic, detect potential hazards, and improve response times to accidents, further improving road safety.



### Pedestrian Safety

iLamp improves pedestrian safety by providing enhanced streetlighting in areas such as sidewalks, crosswalks, and public transportation stops. Modular cameras can be used to monitor pedestrian movement and help identify crimes and hazards, ensuring a safer environment for walking and other outdoor activities.



### Weather Monitoring Module

Weather sensors can detect changing- weather conditions, such as fog, rain, or snow, and adjust the intensity and distribution of light accordingly. This adaptability enhances visibility for drivers and pedestrians in adverse weather conditions, further improving public safety.



### Environmental Sensors

Air quality monitoring can help track air quality, pollen and pollution levels in real time for proactive data driven responses that limit exposure and maintain a healthy environment. By monitoring and addressing air quality concerns, iLamp contributes to improved broader public health and well being.



### Communications

Communication modules can both expand telecoms coverage and facilitate the transmission of critical information to the relevant authorities and emergency services in case of accidents or security incidents. This real time communication improves response times and overall public safety.

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 **Communications**

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 **Adaptive Lighting**

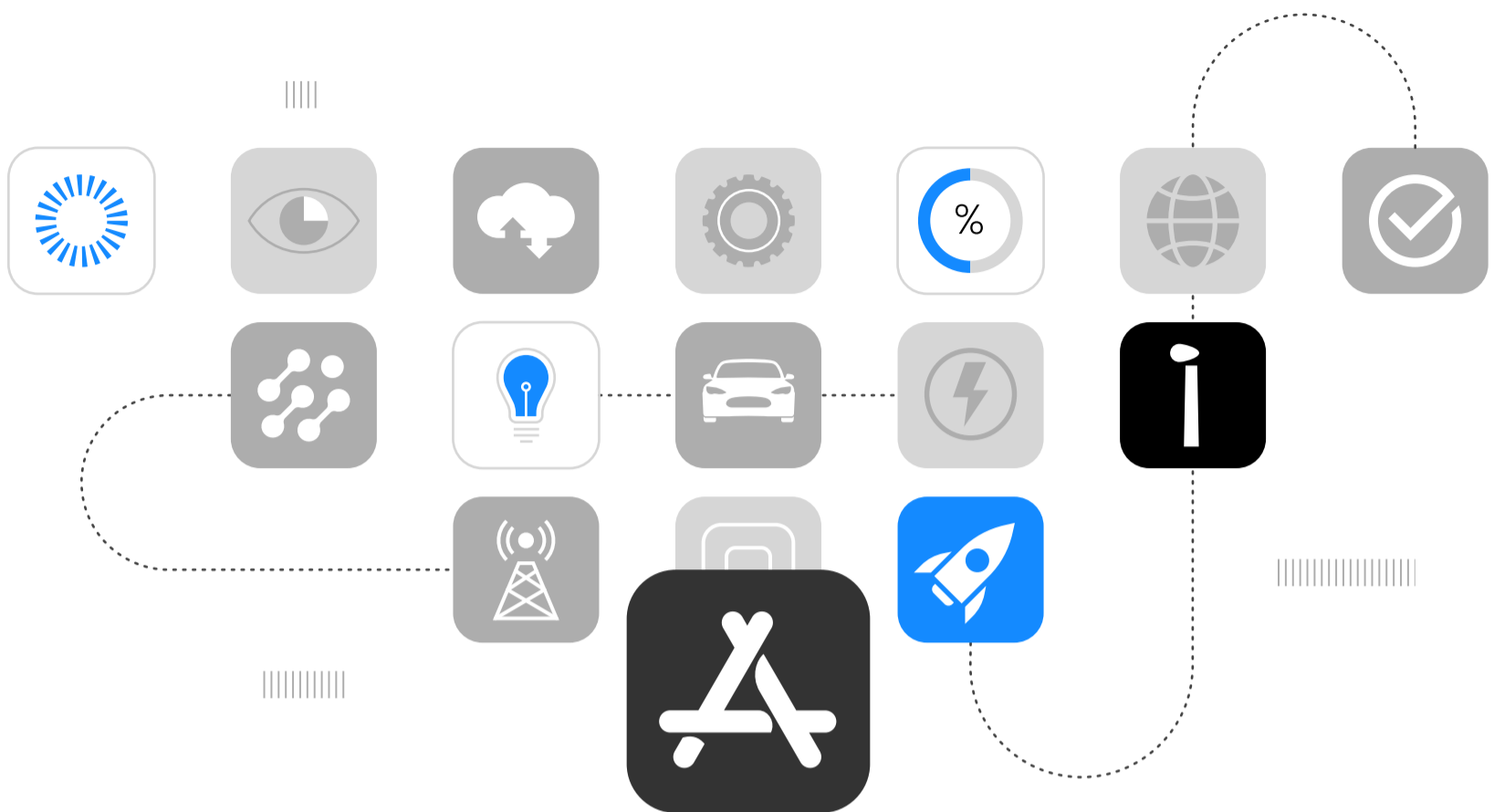
The adaptive lighting capabilities of iLamp can minimize light pollution by adjusting brightness levels according to the time of day and surrounding conditions. This can contribute to a better night-time environment, reducing the impact of artificial light on wildlife and human health.

 **Integration with Existing Infrastructure**

iLamp technology can integrate with existing sensors and infrastructure, allowing for enhanced data collection and analysis. By connecting iLamp with sensors a modules facilitating parking, traffic management, telecommunications structural, UV and noise monitoring, fire, leak and flood detection, grid management and many more.

 **Interconnectivity**

Hardware modules can open their sensors to software apps, facilitating real-time data transmission between sensors and software, creating a comprehensive and interconnected network that monitors and manages various aspects of urban living more effectively.



# iLamp App Store for Urban Innovation

iLamp stands at the forefront of urban technological evolution, akin to how the Google Play and Apple App Store redefined the landscape of software applications. iLamp transcends its primary function, unfolding as a dynamic framework for both hardware and software ingenuity.

## Innovative Solutions

In the iLamp ecosystem combinations of hardware and software create transformative solutions for urban challenges. For instance, integrated microphones in iLamps enable a software application for gunshot detection and triangulation, providing precise location data for rapid law enforcement response, enhancing public safety. Similarly, iLamps equipped with smoke and heat sensors can detect early signs of forest fires, allowing for prompt alerts to residents and emergency crews, significantly mitigating fire damage and safeguarding communities. Motion sensors and cameras on iLamps optimise traffic flow through AI-driven analysis of traffic patterns, reducing congestion and accident risks, and contributing to a more environmentally friendly urban environment. These examples exemplify iLamp's potential in revolutionising urban living through smart, integrated technology solutions.



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## Custom Solutions For Harwood Heights

The iLamp App Store allows for customization of solutions tailored specifically to the needs of Harwood Heights. This means the community can benefit from the latest technological advancements designed to address local issues and enhance quality of life.

### Improve Quality of Life

The diverse range of applications available through the iLamp App Store enhances daily living for residents. From improved public safety to better traffic management and environmental monitoring, these innovations collectively contribute to a higher quality of life and ensure that Harwood Heights remains at the cutting edge of urban technology. This future proofing approach not only addresses current challenges but also prepares the community to adapt to evolving technological trends.



#### Intelligent Lighting

iLamp's intelligent lighting app ensures the correct lighting level for the area it's positioned in, adapting to visibility and weather.



#### Power As A Service

PaaS redefines how energy is generated, distributed, and monetized on each iLamp.



#### Communications Billing

Communications billing enables each module to pay only for the data it uses, as well as for open WiFi network billing.



#### Batteryware Monitoring And Optimisation

BatteryWare conducts comprehensive monitoring, and real-time analysis to ensure optimal battery conditions.



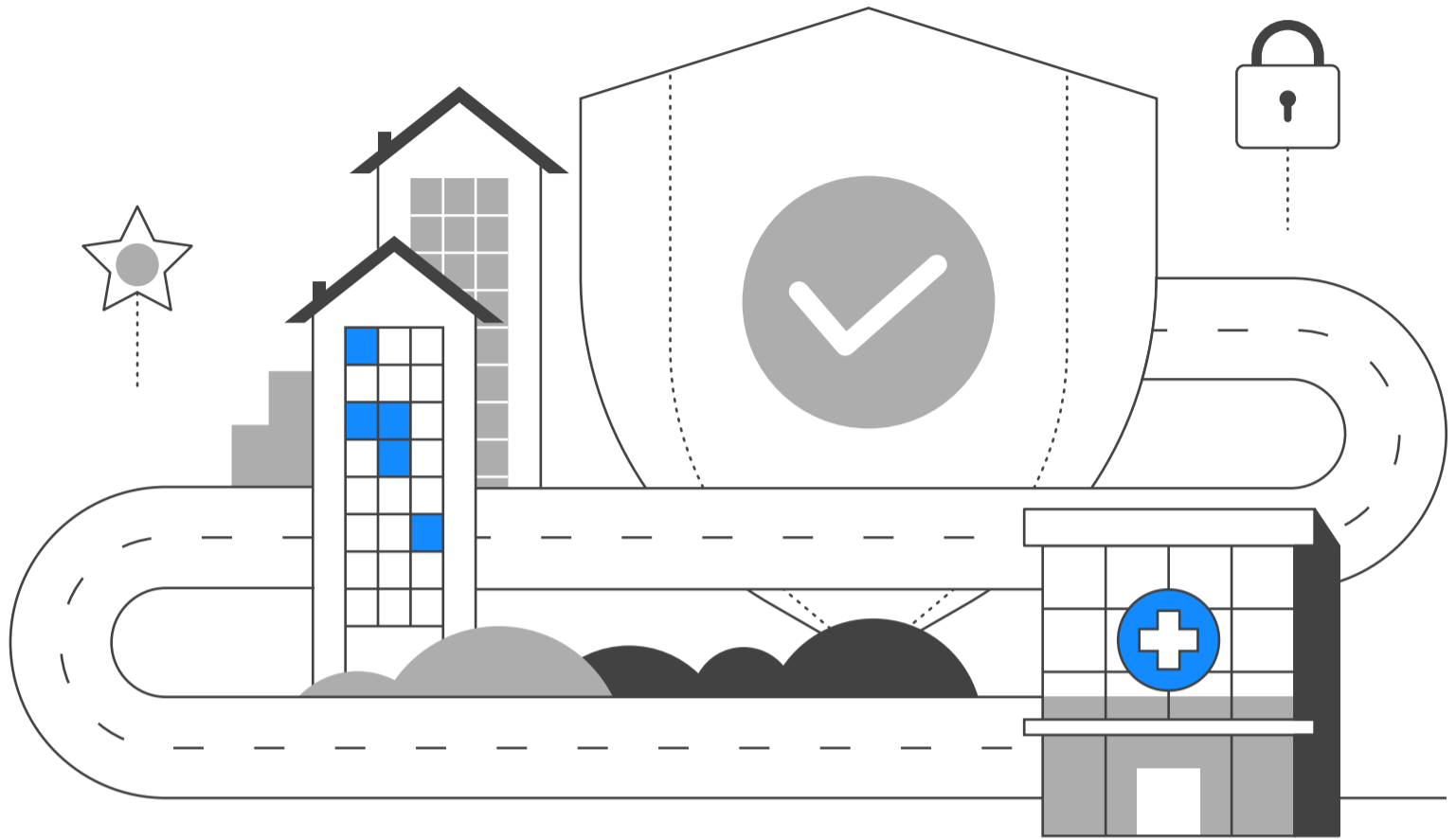
#### Video Surveillance

Video surveillance enables remote real time monitoring, motion detection, high definition video, smart alerts and integrations.



#### Weather Monitoring

Weather monitoring uses environmental sensors to act as a local weather station, relaying real time data to stakeholders.



## Enhanced Street Lighting

National increases in outdoor index crime make it crucial to implement effective crime prevention strategies.

Studies have shown that improved/enhanced street lighting reduces crime by 20-40%, making enhanced lighting the single most effective way to lower crime while also increasing pedestrian and road safety.

Specific studies indicate:

**UK Home Office:** 20% reduction in crime, including vehicle-related crimes.

**U.S. Study:** Published in *Criminology & Public Policy* showed 45% reduction in nighttime index crime and a 39% reduction in daytime index crimes following enhanced lighting installation.

Enhanced street lighting could lead to a significant reduction in crime rates, potentially by 20-30%. This includes reductions in various types of crimes such as vehicle theft, property crimes, and violent crimes.

A 1% reduction in overall crime can lead to a 0.5% to 1% increase in property values. A 10% reduction in crime can result in a substantial increase in property values, potentially up to 8%.

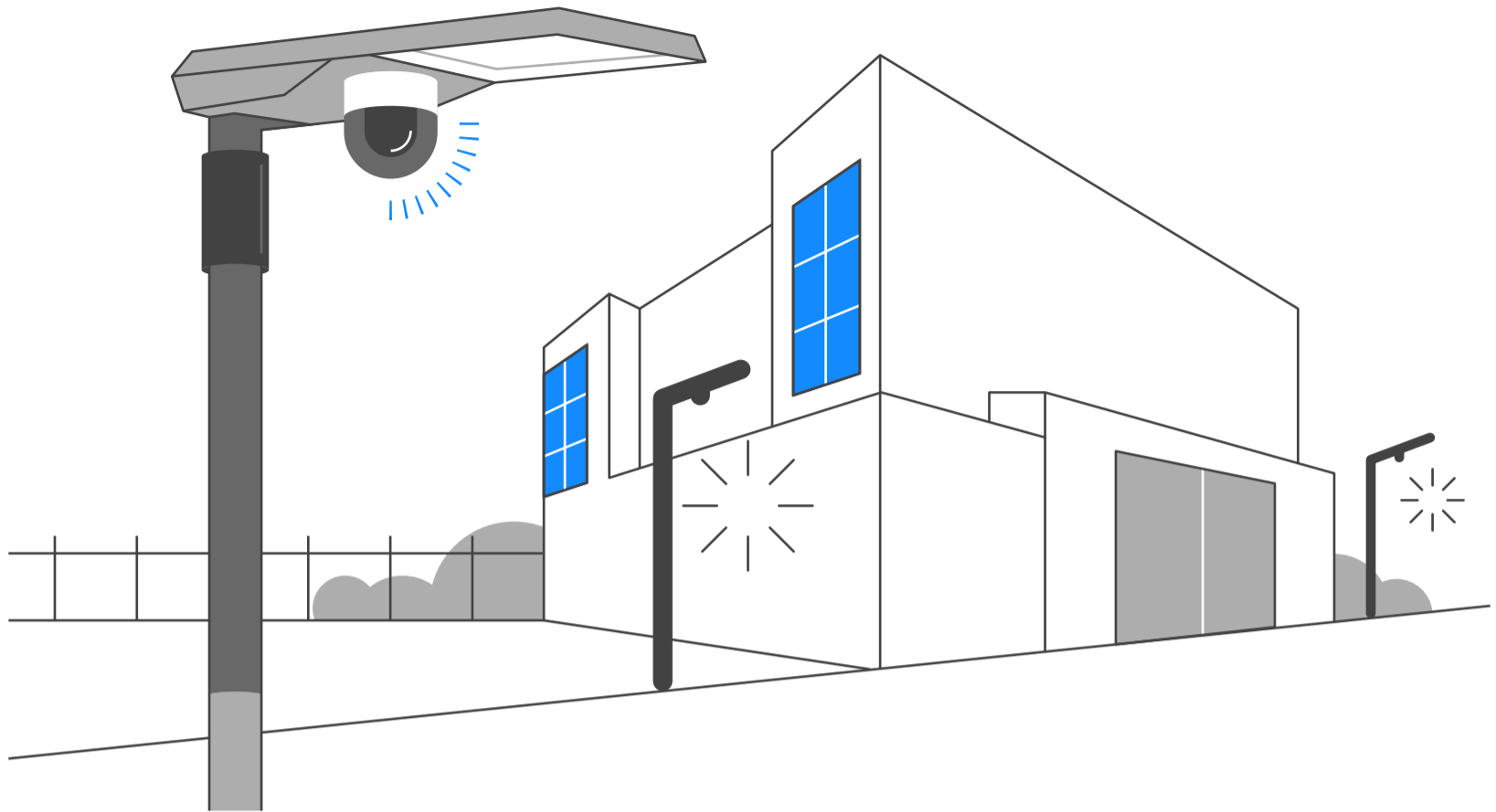
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Enhanced street lighting can further lead to economic stability and growth by attracting businesses and improving the quality of life. The increase in property values and improved safety drive more investments in the local infrastructure and services.

Better lit streets can improve the perception of safety, leading to increased outdoor activities and community engagement. Improved lighting can also enhance the effectiveness of other crime prevention measures, such as CCTV surveillance.

To support the implementation of enhanced street lighting, a comprehensive database containing data on crime rates and property values has been compiled. This helps in identifying high-crime areas that would benefit most from enhanced lighting, evaluating the cost-effectiveness and impact of enhanced lighting projects and monitoring the long-term effects on crime rates and property values.

Enhanced street lighting presents a promising strategy for Houston to improve public safety, reduce crime, and boost property values. Given the city's rapid growth and active real estate market, investing in such infrastructure yields substantial benefits, making neighborhoods safer and more attractive to residents and businesses.



## The iLamp Effect

Imagine a neighbourhood where after dark the streets feel unsafe and are inadequately lit.

People avoid the area, the perceived danger deters people from frequenting local businesses, which in turn close earlier or shutter permanently. The neighborhood loses its vibrancy and appeal, leading to declining property values and further disinvestment. People leave for brighter pastures.

Now imagine iLamp's are installed, their enhanced lighting and cameras begin to deter crime, first due to the lighting, monitoring, and then due to the larger presence of people who now feel safe walking the streets.

This reduction in crime leads to a domino effect: as people feel safer, they are more likely to walk around, visit local businesses, and participate in community activities. This increased presence of people further deters criminal behavior, creating a safer and more welcoming environment.

Better street lighting also contributes to road safety. Well lit streets significantly reduce the likelihood of traffic accidents and pedestrian casualties. Emergency services, including police, firefighters, and medical personnel,

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benefit from improved visibility, allowing them to navigate the area more efficiently and locate incidents quickly. This enhanced response capability saves lives and mitigate the severity of emergencies.

As safety improves, the community begins to experience a revival. People start to move into the area, attracted by the now safer and more appealing environment. This influx of residents drives up property values and stimulates the local economy. Businesses extend their operating hours, taking advantage of the increased foot traffic and nighttime activity. Public transportation becomes more accessible and reliable, allowing residents to shop, socialize, and commute safely after dark. This increased mobility to a higher quality of life and a more vibrant community atmosphere.

iLamp is not only functional, but aesthetically pleasing. They can be positioned to highlight architectural features and are designed to minimize light pollution, creating a pleasant nighttime atmosphere.

iLamp modules make each lamp future proof, and can tailored to the community's needs. For instance, environmental sensors can help allergy sufferers by providing real-time air quality data. Other modules can offer early warnings for forest fires, gas leaks, and weather events, enhancing overall safety and preparedness.

This story is backed by the hard evidence of communities that have integrated enhanced streetlighting:

The Impact of Street Lighting on Crime, Fear, and Pedestrian Street Use - by Kate Painter - Institute of Criminology, University of Cambridge, UK

[https://popcenter.asu.edu/sites/default/files/137-painter-the\\_impact\\_of\\_street\\_lighting\\_on\\_crime\\_fear\\_an.pdf](https://popcenter.asu.edu/sites/default/files/137-painter-the_impact_of_street_lighting_on_crime_fear_an.pdf)

College of Policing - Improved Street Lighting <https://www.college.police.uk/research/crime-reduction-toolkit/street-lighting>

Can deterrence persist? Long-term evidence from a randomized experiment in street lighting - Criminology and Public Policy