Can lighting reduce vandalism? Protecting public property from damage

There are different types of environments in the city. Identifying places where vandalism occurs more often has an effect on how to organize the urban lighting.

Photo: Shutterstock

Vandalism: *the act of intentionally damaging property belonging to other people – "physical damage," "intentionality," "owned by someone else."*

Public lighting and vandalism

Municipalities are confronted with material damage on public properties. Damages are caused not only towards public luminaires but also to "city furniture" and private property, at train and bus stations, in pedestrian/cyclist tunnels and fountains (with luminaires), etc.

Lighting is a key factor for the safety of our daily life. It is required to prevent crime and identify potential risks. For many years, public utilities and municipalities have been using luminaires to help eliminate the problems of vandalism.

However, brighter does not mean safer. A lit-up ground does not necessarily mean a bright sky. Smart lighting that directs light where it is needed creates a balance between safety and starlight. When risks are carefully considered, local authorities can safely reduce street lighting, saving both economic costs and energy without necessarily impacting negatively on road traffic collisions and crime.

BRIGHTER DOES NOT MEAN SAFER

According to a study of London Street lighting and crime in 2011[1], there is no evidence that increased lighting reduces total crime. Bad outdoor lighting can, in fact, decrease safety by making victims and property easier to see. Similarly, the Chicago Alley Lighting Project[2] showed a correlation between brightly-lit alleys and increased crime.

Key factors for responsible lighting: **eliminate the cover of darkness**

Site and building considerations to minimise crime:

- **Lighting at valuable points:** If total lighting around entire building, stations, or tunnels is not affordable, lighting can be concentrated around exterior openings, such as entry doors, ticket booths, intersections, windows, intake/exhaust louvres, grills, panels, ladders, etc.
- **Security lighting around buildings:** lighting should be provided all around the buildings – a well-lighted building prevents attempts at unlawful activities
- **Lighting for parking bus stations, bicycle and car parkings:** establishing a good lighting layout allows light to be well-spread throughout public lots, protecting public property from vandalism/damage and making users feel safe.

Damage on public property has several causes, e.g. general spatial planning – monotone housing areas; "dark" corners, huge shopping malls in peri-urban areas, etc. Check areas within your city with high rate of damage and identify problems. Integrate and encourage public participation and sensitise the inhabitants for their areas' safety concerns.

See next page for more information

Solutions for public places often affected by damage

Different public services require different solutions. Examples of this are public elevators, toilets, public transport, public tunnels, parks, narrow pathways, etc.

- Place lights in strategic locations around the property, to lower the chance of criminal activity in an area and serve as a deterrent with the implementation of automated motion sensors.
- Install LED based white-light illuminators to deliver perfect light for use with colour cameras. LED white-light simulates daylight unlike most standard incandescent sources and will illuminate images, brightening chosen areas.
- Use taller light poles to avoid damage to the luminaires.

Example: *In Hamburg, the minimum of 2 m height is required for the light-pole. Knee-high luminaires are not suitable to use in Hamburg due to the high probability of damage.*

Photo: Michael Zapf

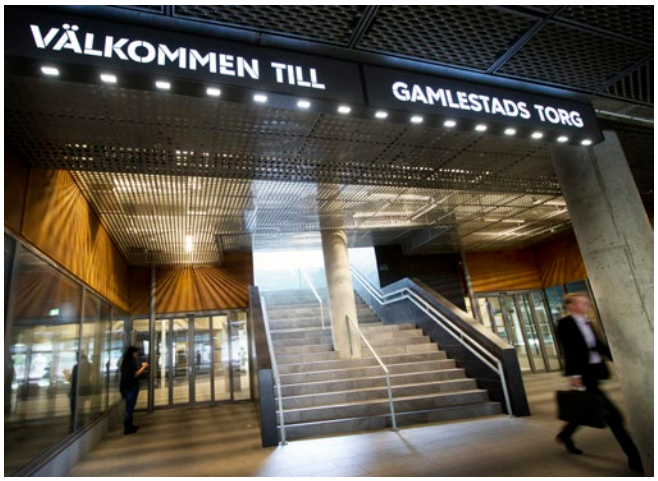
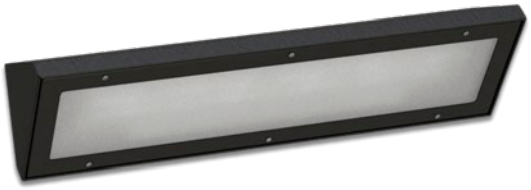


Photo: Göteborgs Stad

Top: Alter Elbtunnel, Hamburg, Germany. Public historical tunnel for cyclists and pedestrians under river Elbe.
Bottom: Public transport hub Gamlestads Torg, Göteborg, Sweden.

Choosing durable luminaires

- Check how producers "test" their lights.
- Check the "safety class" of lamps which might indicate "sustainability".
- Anti-vandal luminaires: vandal-resistant luminaires have mechanical properties that allow it to be protected against break-in (e.g. anti-tearing, difficulty to disassembly, specially shaped screws, strong mechanical resistance) – intended for specific applications such as public passages or penitentiaries.
- Lighting for "high vandal risk" areas (e.g. subways, waiting areas, parking garages etc.) typically have features like: stainless steel or aluminium housing, impact resistant covers and secure locks, fast and easy installation (adjustable cable channels that can be fitted to any architectural environment).



References:

1 Steinbach, Rebecca; Perkins, Chloe et al. (2015): London Street Lighting: https://jech.bmj.com/content/jech/69/11/1118.full.pdf

2 Morrow, Erica N.; Hutton, Shawn A. et al. (2000): Chicago Alley lighting Project: https://www.csu.edu/cerc/researchreports/documents/ChicagoAlleyLightingProject2000_000.pdf