



Human centric lighting for indoor night applications in prison wards

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Introduction



Lukiškių Prison case

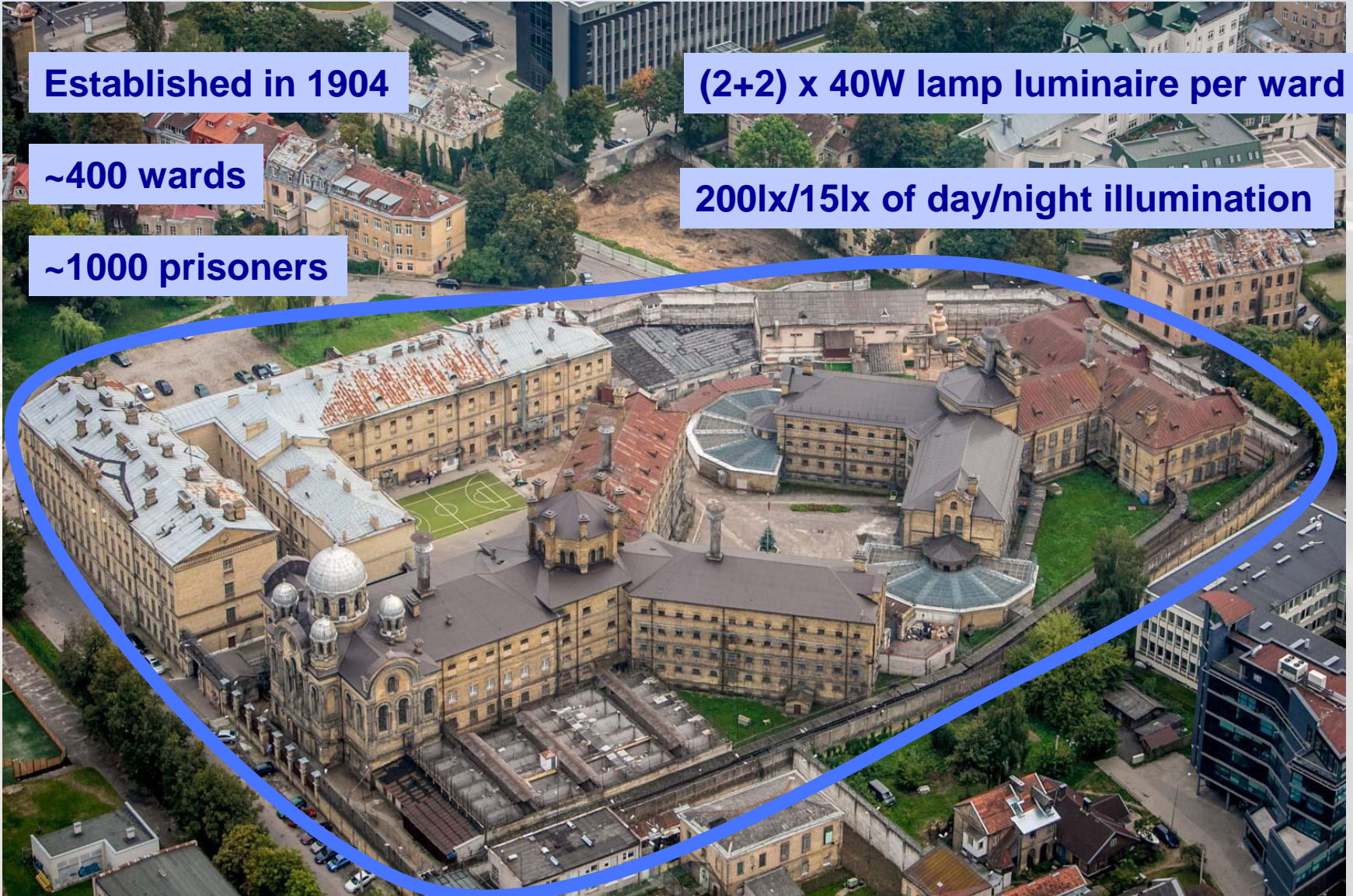
Established in 1904

~400 wards

~1000 prisoners

(2+2) x 40W lamp luminaire per ward

200lx/15lx of day/night illumination



Anti-vandal luminaires



External power supply

4000 K / 1800 K for Day / Night use.

30W / 5W power consumption.

Anti-vandal case

SSL Luminaire

Prison illumination I



**Pay-back time due to
energy saving <12 months !**

Prison illumination II

- **Energy savings: 160W → 30W, 80W → 5W for day/night scenario.
Payback time in less than 12 months.**
- **Malanopic illuminance at night time decreased ~65 times of magnitude, satisfying illumination requirements (15 lx);**
- **Sleep quality and psychological comfort of the prisoners increased significantly (assessed by subjective reflections of the prisoners).**
- **Removal of high voltage mains from wards, eliminated the illegal connections and crime acts inside the wards.**

Vilnius city



Population ~600 000

Area ~401 km²

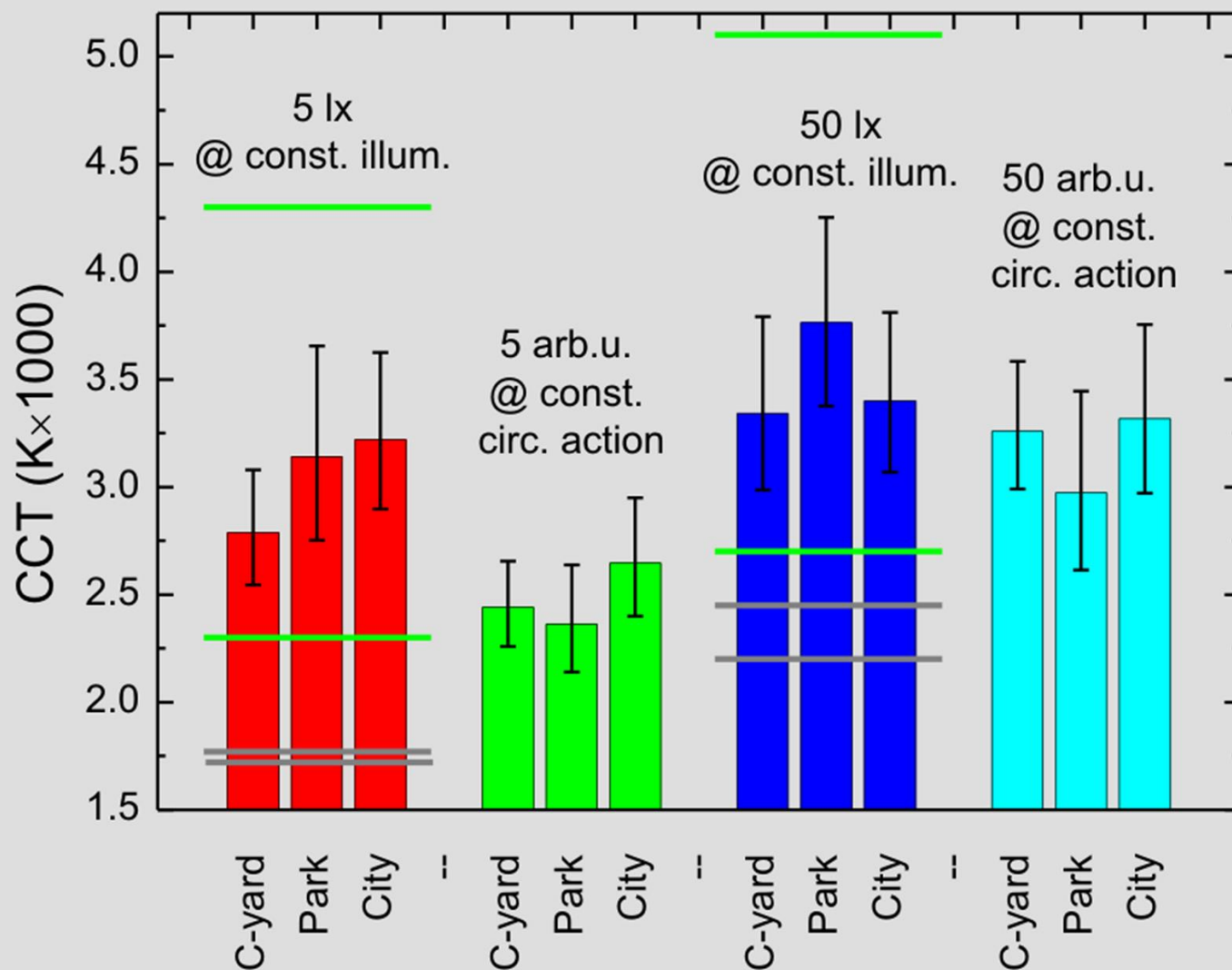
Density 1,392/km²

No. of private cars 250 000

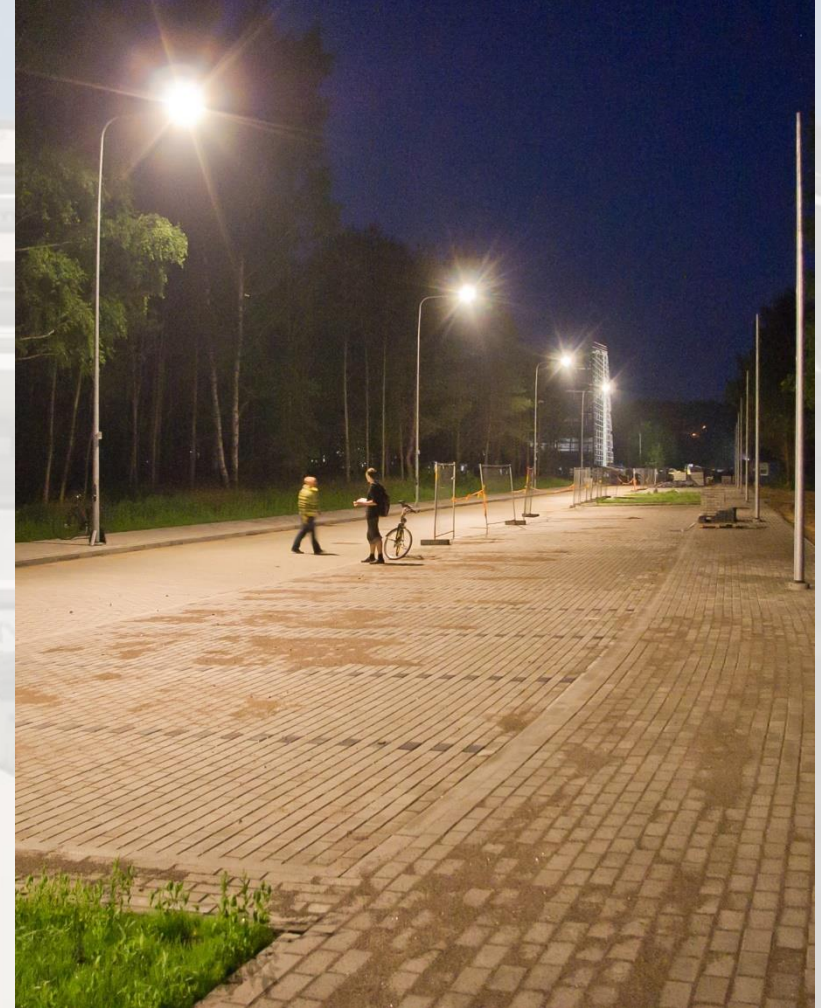
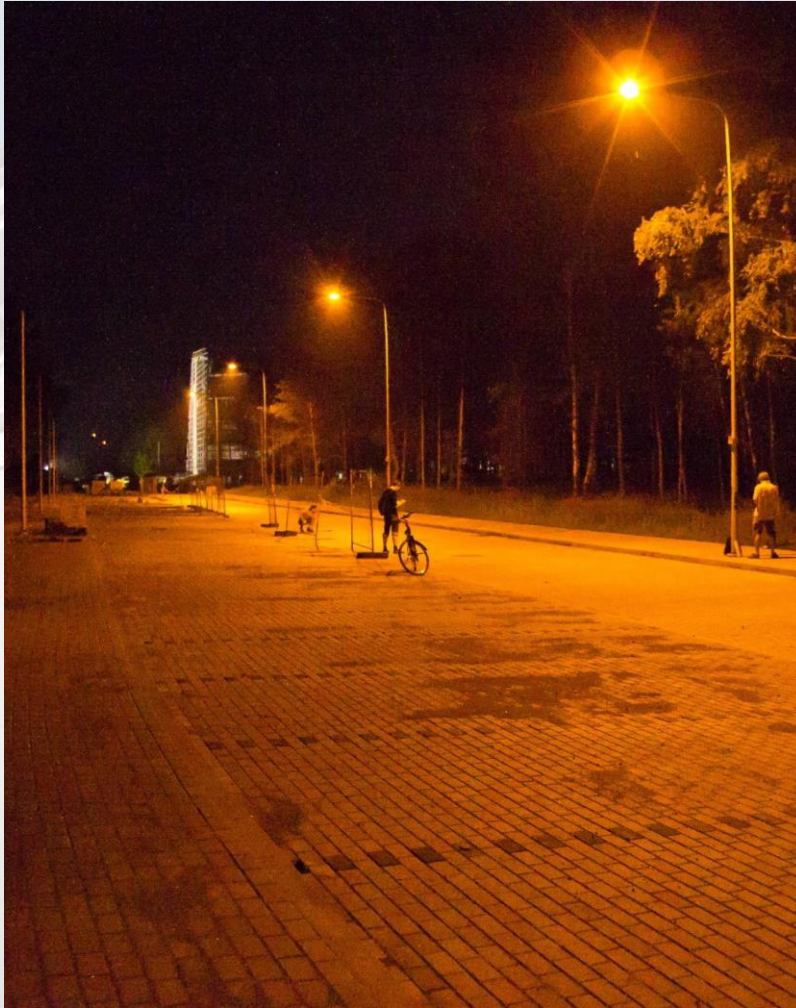
CCT for the outdoor lighting I



CCT for the street lighting II



3000K vs 4000K field study



Biologically friendly outdoor lighting

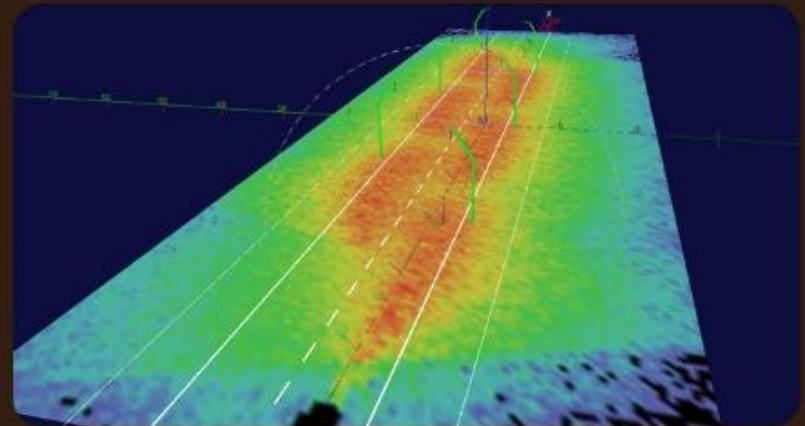
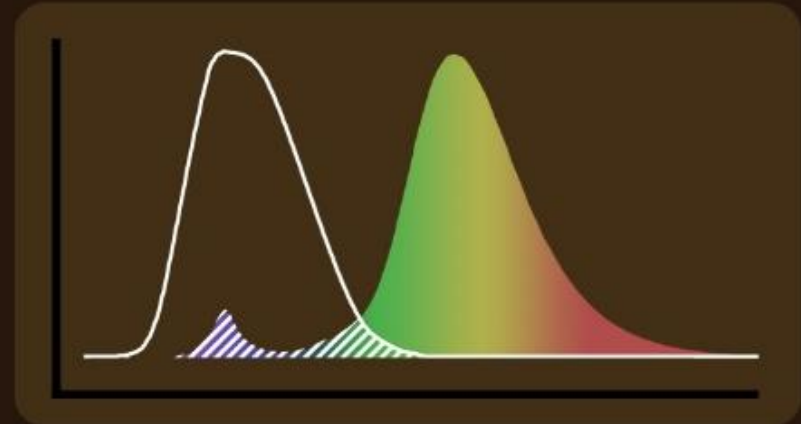


FIRELIGHT 45G

The colour and atmosphere of High-Pressure Sodium Lamp seems to be appropriate for you but everybody tries to convince you to replace HPS with LED outdoor luminaires?

Right what you need is a solid-state substitute of HPS lamp, an LED based outdoor luminaire FIRELIGHT 45G with pleasant ultra-low colour temperature, increased efficacy, improved colour rendering, and smart control ability. Also, the blue component is drained from the spectrum of FIRELIGHT 45G, which is optimized for the lowest possible circadian efficacy in order to prevent health hazards due to the suppression of melatonin production in the human organism.

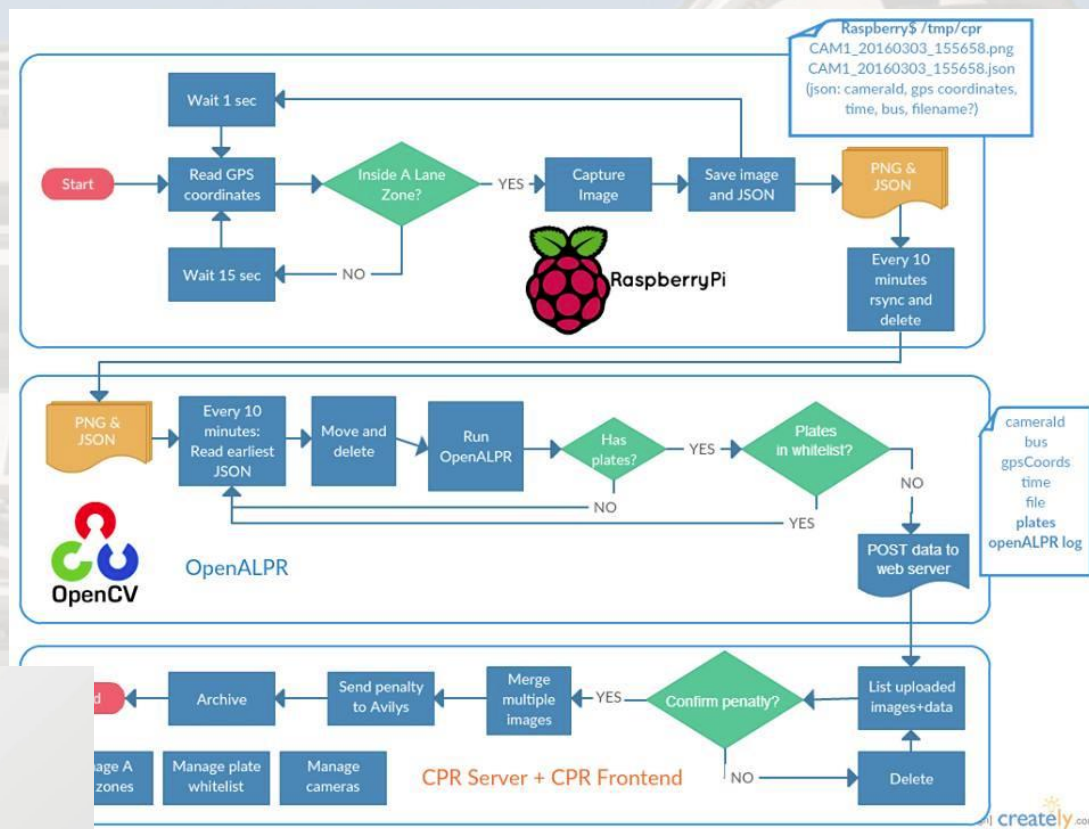
Voltage
36 V (DC) or 220 V (AC)
Electrical power
45 W
Light distribution
Optimized shape
Luminous flux
2900 lm
IP class
IP64
Weight
5 kg
Body colour
Grey



Vilnius open-data initiative

Aim – employ, geographical, financial, functional and other data owned by municipality for the public and commercial interest.

- Open data;
- Big data;
- Open software;
- Open hardware;
- Volunteers;



**CODE FOR
VILNIUS**

Vilnius Tech Park

Tech Park



BEST PLACE FOR STARTUPS: ALL IN ONE PLACE

1	teo	4	STARTUP HIGHWAY	7	Invest Lithuania	1	Eco farming	5	Tv Play	9	Trinitarian Church
2	GameInsight	5	Practica Capital	8	imi	2	Community center, conference halls	6	Café, relax lounge	10	Advertisement block
3	SMART VILNIUS	6	BALTICAP	9	Vinted	3	Daycare center	7	The Sapiegos palace conference center	11	Car sharing
						4	Sport zone	8	Asian art and Tibetan health center	12	Cyclocity node

<http://www.vilniustechpark.com/>

Thank you !

