



**Politecnico  
di Torino**

# **Honors Thesis**

---

**Master's degree Science in Architecture Construction City**

## **Abstract**

***Lighting as infrastructure supporting urban mobility. Guidelines and design ideas in the context of the Turin Metro Line 2 project.***

**Tutor/Correlator**

**Anna Pellegrino, Massimo Crotti**

**Candidate**

**Lorenzo Cappellano**

**September 2025**

---

**Testo abstract (4000 caratteri max) (Century Gothic 12, interlinea 16 pt). Usare lo stile "Testo Abstract".**

**Max 3 immagini da 96 dpj.**

---

During the day, urban space appears clear, legible, and functional. Its forms, paths, and uses are defined by a system of signs and references that find in natural light a unifying element. But what happens when the sun sets? Night transforms the city: new dynamics emerge, perceptions shift, and different modes of use are activated. In this context, artificial light becomes the essential tool that enables us to inhabit urban space after dark. It does not simply illuminate: it shapes, guides, protects, reveals, and sometimes conceals.

Despite this, architectural and urban design continues to focus almost exclusively on daytime reality, overlooking the expressive, functional, and identity-building potential of light in the nocturnal environment. The night constitutes an important urban condition in which light assumes a strategic design role, capable of profoundly influencing spatial perception and mobility practices.

This thesis explores the relationship between artificial light, mobility, and urban space, examining how this relationship has evolved over time and how it can be reinterpreted today in light of contemporary urban transformations. The analysis begins with a historical reflection retracing the evolution of the illuminated city and its transit spaces, focusing particularly on the metro as a place where mobility, infrastructure, and public space intersect.

Through a selection of case studies—from the London and Paris metro systems to less well-known yet significant contexts—the research highlights how lighting can be a decisive design element for enhancing the quality and usability of urban spaces related to mobility. The focus then shifts to the context of Turin, where the interaction between public space and underground infrastructure plays a central role in recent urban transformations. From the redevelopment of Via Roma to Metro Lines 1 and 2, including the light metro of the 1980s, Turin becomes a testing ground for the use of light as an urban infrastructure.

In particular, the "Verona" station, planned along the future Line 2 and located in a neighborhood undergoing profound transformation, was selected as an exemplary case to concretely test the theoretical hypotheses. The analysis of the surrounding urban space—especially the two boulevards crossing Largo Verona—made it possible to understand how light can not only support mobility but also define the nocturnal identity of a place, fostering social cohesion and perceived safety.

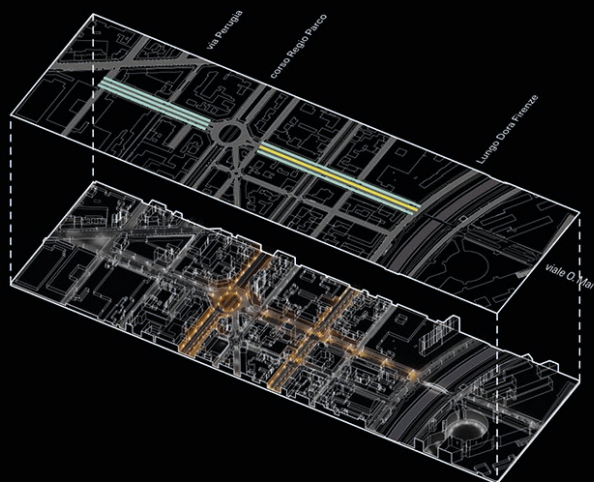
Light does not merely "make visible": it constructs atmospheres, shapes the sense of safety, guides flows, and highlights (or conceals) elements of space. In complex environments such as metro stations—used both by day and by night—lighting can improve the urban experience without altering the site's character.

The thesis concludes with a methodological proposal for lighting design in public spaces, suggesting solutions that integrate accessibility, comfort, safety, and urban identity. In this sense, lighting is not only a functional complement but an active design tool, capable of reinterpreting the relationship between architecture, mobility, and the city.

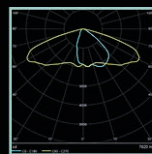
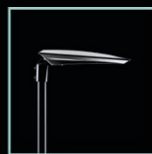
---

**For info:**  
**([lorenzo.cappellano@outlook.com](mailto:lorenzo.cappellano@outlook.com))**

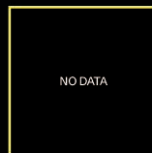
## 6.3.2. Analisi e rilievo dello stato di fatto del sistema di illuminazione



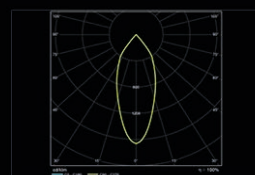
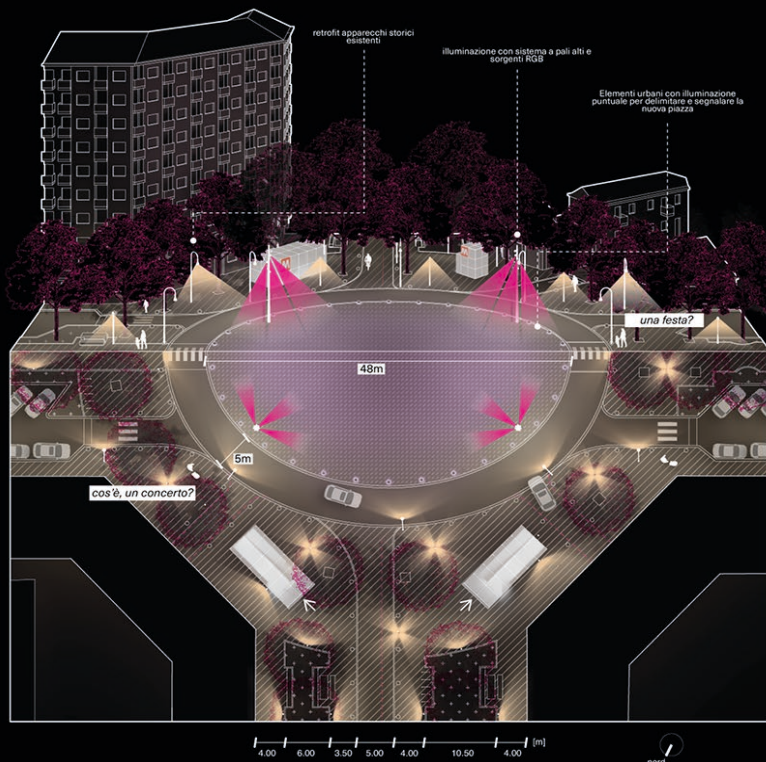
[Fig. 130] Lettura di corso Regio Parco: sistema d'illuminazione pubblica. Elaborazioni dell'autore.



MODELLO: AEC Italo  
 TIPOLOGIA: Apparecchio stradale con piastra LED  
 SORGENTE: 38.5-89W  
 FOTOMETRIA: Stradale  
 Percentuale stimata di flusso disperso verso l'alto: 0%



MODELLO: AEG Mediorettangolare  
 TIPOLOGIA: Lampada ioduri metallici  
 SORGENTE: 120-250 W HID-Q  
 FOTOMETRIA: Stradale specifica per installazione su testata  
 Percentuale stimata di flusso disperso verso l'alto: 2%



Possibile soluzione: SELUX OLIVIO con sorgente RGB, adatto a grandi spazi aperti.

La proposta progettuale A: piazza per eventi suggerisce una soluzione tecnologicamente innovativa e coerente con il contesto storico-urbano in cui si inserisce. Lungo l'asse storico di Corso Regio Parco, gli apparecchi storici saranno sottoposti di un intervento di riqualificazione la sostituzione delle ottiche con sistemi a LED, caratterizzati da fotometria specifica e direzionata, in grado di garantire un'illuminazione efficiente e controllata, riducendo al minimo la dispersione luminosa.

In considerazione dei cantieri previsti nell'area della piazza, si propone la sostituzione degli attuali apparecchi "Santa Teresa" con modelli "Gonnella" installati su pali ad ala, sui quali verranno montati corpi illuminanti capaci di garantire un'illuminazione estesa e omogenea della piazza, delle sedi stradali circostanti e delle porzioni di marciapiedi, evitando al contempo la creazione di ostacoli visivi.

Le aree residue della piazza saranno illuminate mediante tecnologia a LED coerente con quella adottata sui pali principali, assicurando uniformità percettiva e luminosa sull'intero spazio pubblico. Tale approccio integra innovazione tecnologica, qualità percettiva e rispetto per la memoria storica del contesto.

Lo studio dell'illuminazione attorno alla piazza permette di studiare l'illuminazione dei singoli accessi, la quale illuminazione si adatterà a quella del contesto.

[Fig. 156] Proposta progettuale A per largo Verona: piazza per eventi. Elaborazione dell'autore.

