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Projects

Imagining The Future of the City At Night

Roger Narboni uses his 30 years of experience to envision the city of tomorrow and its relationship to both light and darkness.

By [Roger Narboni](#)



Antoine Doyen

Roger Narboni on the rue de Robert de Flers in Paris' 15th arrondissement.

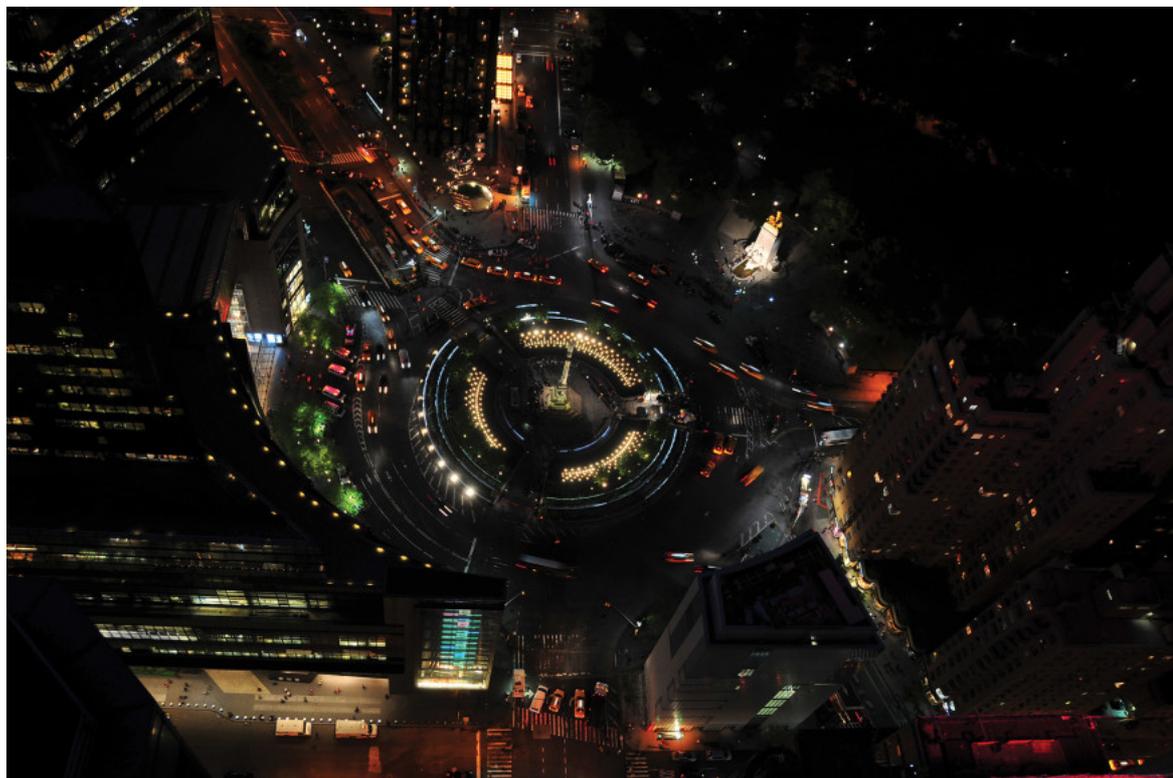
original essay by Roger Narboni, translated from the French

Thinking about the city of today and the transformation of our urban environment is a way to think about the larger issue of public lighting. As cities grapple with a complex set of concerns such as changing demographics, housing, and infrastructure, how will lighting respond? Imagining what the city of tomorrow looks like is a starting point for imagining new forms of illumination and the future of the urban nightscape.

The scenarios outlined here are not "scientific truths," but instead my personal hypotheses; subjective, and by no means exhaustive. Nevertheless, they are ideas to be considered as we contemplate ways of addressing the issues pertaining to public lighting and light environments.

Over the course of my 30 years of professional work as a lighting designer, I have observed, on many occasions, people's ability to envision the future and propose new concepts and new lighting products that might resonate with city dwellers even before the need for those concepts or products are requested. These proposals then have the unexpected effect of opening up new ways of appropriating nocturnal space, and encouraging activities for those spaces that no one had previously envisioned.

Just as studying, measuring and observing an experience in quantum physics (whose laws, you will recall, do not match the laws of general physics) alters both content and outcome, giving intellectual and technical shape to a possible future for the nighttime city could, paradoxically, bring it about.



Felix Lipov / Alamy Stock Photo

The urban nightscape as illustrated by an aerial view of Columbus Circle in New York City.

The Changing City

Almost all functional lighting that we see today in every city is a product of the post-World War II period, installed in response to the increase in the number of vehicles in urban centers to help drivers see more clearly at night. This was particularly important, given that automobile headlight technology was not very advanced at the time. In fact, functional lighting, intended primarily for vehicular traffic and systematically imagined and deployed by municipal engineers, is still one of the most commonly applied illumination strategies in developing megalopolises.

These functional lighting needs have resulted in the methodical installation of lampposts in orderly processions along the roadway, at regular intervals determined by their height, to achieve the sacrosanct lighting uniformity that—abstract though it may be—is prescribed by lighting engineers. These principles and doctrines have produced all the daytime and nighttime images of streets, and all the patchwork landscapes in cities today. The tonalities of light, following on successive technological developments in its sources, have only incrementally altered these spangled nocturnal tableaux.

For several years, in most of the densely populated cities in the world, new urban policies have been adopted to reduce the number of cars in a city, the speeds at which vehicles travel, and the amount of space automobiles take up. In turn, the regained public space is being reintroduced to encourage public transit, soft modes or personal forms of transportation such as bicycles and scooters, and pedestrian areas.

These major urban developments must encourage us to revolutionize the way we think about public lighting in cities. Examining the possible future (whether dreamt of or dreaded) of urban lighting means tracing and understanding the

changes cities are undergoing today, and, in turn, how these major shifts can transform the nocturnal city and lead to different ways of thinking about how to illuminate it.



imageBROKER / Alamy Stock Photo

A nighttime view of New York City.

The City by Night: Welcoming and Dedicated to Urban Dwellers

Lighting for vehicles is one of the first areas to consider when discussing the urban nightscape. Whether it stems from reducing the numbers of personal vehicles, and even possibly their absence in the long term, the gradual disappearance of traffic lanes will transform the design of public space. I imagine that we will see proposals for uninterrupted pedestrian walkways between buildings that will no longer need orderly lines of regularly spaced lampposts to illuminate the roadway that once was there. The city will thus, little by little, be returned and dedicated to its people.

The pole lighting offered today, once it has become obsolete, will also have to be transformed, and evolve into modular lighting structures that are able to create intangible “rooms” defined by light and nocturnal spaces of different kinds and varying sizes. For this, we need to invent another type of urban light, different forms of lighting with diverse functions, in order to respond to this morphology in the future development of public space.

These new types of lighting systems will mean that the city can be lit differently, not just so that we can see and move around, but also so that it invites, even urges people to stop for a while, creating new boundaries, whether narrower or broader, and puts a certain end to the regularity and rigidity of the public lighting of yesterday.

These congenially lit spaces, which are also capable of offering shelter from the weather, will be dedicated to the well-being of inhabitants (stress-reducing environments, attention paid to biological rhythms and light therapy) in order to encourage dialogue and encounters between people in the public realm. These exchanges and interactions with one another will generate nocturnal places, intangible “rooms” that can transform and shape the lit environment and visually interact with the surrounding space, further expanding its use. These new places will offer passersby the opportunity and freedom to direct and choose their lighting atmosphere using a variety of available components such as intensity, color, lighting sequences, types of lighting, arrangement in the space, effects, volumes, and so on.



Roger Narboni

A luminous building façade in Tokyo.

Lighting Materials and Luminous Architecture

Since the birth of public lighting (which, in Europe, can be traced to the Middle Ages), public spaces—the empty spaces in the city—have always been lit, in particular by lanterns attached to the surrounding buildings. (Nearly two-thirds of the luminous points in large French cities, which are built up and dense, are attached to brackets on the fronts of buildings.) Today, the systematic planting of trees along roadways has significantly altered this classical approach. Historic, modern, or contemporary architecture is sometimes illuminated, decorated with lights or, on occasion, adorned with lit signs or advertising. But all of these lighting systems are dependent on buildings, and virtually never contribute to the lighting of public spaces. (There is one exception to this rule, in Las Vegas, with its intensely lit buildings along the Strip.) Public lighting is thus still totally indifferent to the architecture it shares space with, whether or not the architecture is illuminated.

As the morphology of the city evolves, we can imagine a new urban future, one in which there is a new relationship between private and public spaces, that creates a new role for building frontages, and new forms of architecture that incorporate structures that project above a public space, lampposts that make room for light-emitting surfaces, and lighting equipment attached to walls or incorporated directly into building façades, structures, the undersides of infrastructure, and the ground to illuminate the adjacent public space from below without needlessly occupying it. The materials used for our ground surfaces along with building façades could become luminous surfaces at night to create this new perception of nocturnal space.

This change, one that I think is inevitable, from the lit city to the luminous city, requires a new set of guidelines and responsibilities to be defined and allocated among building owners and municipal authorities that must ensure public safety at night. It also calls for the training of architects and engineers going forward, in order that the lighting needs of adjacent public spaces are taken into account in architectural design, and perhaps, ultimately, the evolution of the work of the architect into that of a lighting architect.



Courtesy Technilum

Narboni designed Extimity with French lighting company Technilum. It is a modular system that addresses urban design trends and incorporates street furniture elements with smart lighting functionality to foster the creation of a nocturnal urban environment.

The advent of luminous materials for both horizontal and vertical surfaces will bring about a profound change in the way architecture is designed. The architecture/space/light relationship, when considered first in terms of natural light, will be transformed. Architecture will no longer be designed, as it is today, solely in terms of its solar orientation (and the gain from natural light); rather it will be designed on the basis of the internal arrangement of luminous vertical structures that generate artificial light, and that contribute fully to the daytime composition of buildings. Transparent panels will become luminous at night. Opaque walls, that will have become extremely thin, will be luminous, starting with low light levels by day (to supplement solar gain) and increasing in intensity as night falls. They will be arranged in the areas of a building that today are considered to be in secondary daylight. This will change the daytime and nighttime uses of our built structures, and ultimately the design of current floor plans for all building types from offices to schools to hospitals, hotels, and housing.

It is estimated that by 2050, 40 percent of city buildings will be new construction, to meet the rising needs and continuous growth of urban populations. (Two-thirds of the 10 to 12 billion inhabitants of the planet will live in cities by then.) We can see the future size of this new market for structural lighting systematically incorporated into buildings.

The new luminous city will establish a different relationship with public space, one that will increasingly become home to luminous modes of transportation, luminous clothing, and portable devices for pedestrians.

Luminous Clothing and Autonomous Luminous Objects

Today, walking with a cellphone or smartphone is a fact for city dwellers the world over. But 30 years ago, these now-familiar objects did not exist. Their availability and use has had a profound impact on our behavior and the way in which we interact with one another, buildings, and public space. The nocturnal urban décor of the future will also be transformed by the emergence of luminous objects and accessories. Light-emitting clothing and autonomous portable lanterns, for example, will give users the opportunity to manage their nocturnal environment based on their own needs and wishes.

Although smartphones today are already equipped with a lighting system that lets people see at night (they have become our de facto flashlights, both from the basic screen light output and the use of a flashlight app), their light is rudimentary and does not allow for the creation of a quality illuminated environment. Luminous clothing and luminous accessories incorporated into footwear, such as roller skates or skateboards, that are made possible by the development and miniaturization of LEDs, batteries, and their energy autonomy capacity, are also providing urbanites with a great degree of personalization and the first forms of nocturnal autonomy.

The recent emergence of civilian drones that can be remotely piloted or programmed to follow a person as well as early experiments with using them to carry lighting both prompt me to imagine a future where illuminated environments and lighting for landscapes and architectural sites can be accomplished using these aerial devices rather than from the ground or pole luminaires at intermediary heights. These new flying luminous objects will very quickly be incorporated into the arsenal of lighting options available to designers, perhaps first to create event lighting, and then, more certainly, to further the possibilities offered for nighttime lighting in cities. We can then easily imagine that the initial function of public lighting, which was to enable people to see and be seen, will gradually be challenged by the freedom that city dwellers are given to decide when and how their nearby nocturnal space must and may be illuminated.

The voluntary creation of a network of autonomous portable luminous objects will enable passersby to re-create a collective luminous space, or to illuminate an architectural or landscape component on demand. These autonomous portable lanterns could be thought of in the same way as existing systems for open access or rental bicycles or electric cars.

Urban lighting will then no longer be public, but shared, and could function only when users are present. This revolutionary transformation, from urban lighting that must be tolerated to active urban light, could open the way to rediscovery of the dark in the city and experiments with sharing and pooling the urban darkness.



Courtesy CONCEPTO

A proposed (but not realized) lighting scheme for the city of Lille, France, suggested the use of portable lighting elements such as lanterns, so that residents could engage with the city's public spaces based on their own needs.

Managing the Dark

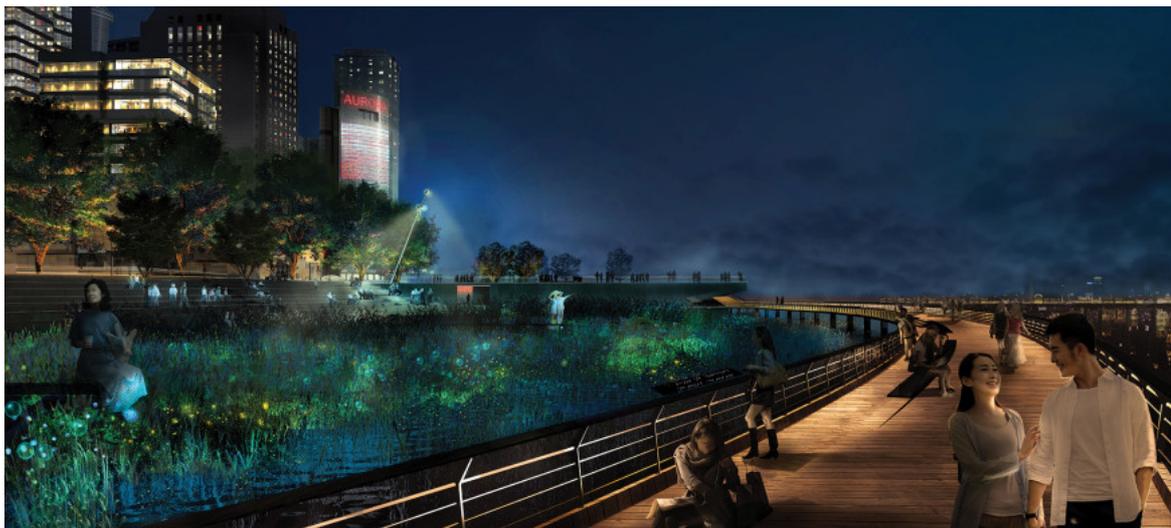
The first study of a "dark infrastructure" was initiated by the city of Rennes, France, in 2012. When it prepared its lighting master plan to accompany the implementation of its climate plan, city officials sought to reduce its electrical consumption for public lighting by 20 percent by 2030. This was the origin of a new lighting strategy, one based on creating a plan to protect and preserve darkness that could be applied throughout the city, and to support the "green" and "blue" areas in the city.

This elimination approach based on darkness was studied by theorizing the respective roles that public lighting and darkness should play in the city. It was developed in response to the residents of Rennes who had clearly expressed their belief at public meetings and on exploratory nocturnal walks that there was too much lighting in the city. They desired to preserve darkness, particularly in the city's large natural spaces.

The resulting “dark zones” in Rennes has made it possible to define and delineate geographic and temporal areas of partial or temporary darkness, and where they are connected and may be crossed. Today, the idea is being applied in all major developments located on or near the large natural spaces in Rennes, and to generate in-depth conversation about preserving ordinary nocturnal biodiversity in relation to light pollution.

Preserving the darkness of the night in urban areas calls for information, cooperation, and clearly identified processes to allow for urban dwellers to move around at night in safety, across or alongside the dark sites. In that way, the development of this type of darkness strategy will be understood and accepted by adjacent landowners and residents. This educational work must be carried out in the long term, by experimenting with different types of soil treatment, the boulevards along roadways, and arrangements that allow for identifying surroundings through contrast in very low light levels, below 1 lux. When darkness is no longer automatically synonymous with irrational fears or feelings of insecurity, new urban scenarios can be imagined in response to energy crises and the global desire to combat climate change and reduce air pollution. This experimentation will allow for rediscovering the night in the city and inventing new ways of lighting that allow for darkness.

The development of environmental networks and green zones around major metropolises will serve as engines for changing the nocturnal landscape in cities and on their outskirts. Areas of darkness can then be gradually extended, to contain and delineate the luminous islands that are formed by megalopolises at night. These new vast expanses of dark areas will allow the human eye to develop and rediscover new night vision capabilities, and this will encourage city dwellers to re-adapt, mentally and psychologically, to walking around in the dark at night. When urban populations gradually abandon autonomous self-carried lights, this will open the way to learning about the night and new therapies based on the pleasure of being and moving in profound darkness. This gradual rediscovery of the dark and of twilight will also come about through the development and deployment of bioluminescent materials and future generations of LEDs.



Courtesy CONCEPTO

CONCEPTO's competition-winning lighting master plan design for the banks of the Huangpu River in Shanghai incorporates bioluminescent lighting elements in the water.

The Advent of BioLEDs

LEDs are gradually and systematically replacing lighting's legacy sources, and by 2030 they will be installed everywhere. But there are also other important areas of research such as optoelectronic and bionic discovery of new and even more powerful illumination sources, as in the case of BioLEDs, which is the product of hybridizing LED technology and genetically modified bioluminescent bacteria, with energy efficiency. It is hoped that this technology can achieve 400 lumens per watt and will make way for a revolution in non-energy-consuming urban lighting that will adapt automatically, in real time, to new uses of urban space (analyzing the ambient light and urban form, flows and density of users, lighting needs, temporary conditions) and will operate for city dwellers on demand.

These futuristic sources, whose characteristics and potential are still undefined today, will lead to the creation of new nocturnal landscapes, both natural and urban, that are totally synchronized with and exist in symbiosis with the environment, and that will be the catalyst for the birth of a new profession: biolighting designers.

The ideas, proposals, and examples outlined in this essay are based on my work in lighting, lighting master planning, and the public realm the past 30 years. Urban illumination as a field is still very young, but as lighting evolves, coupled with general advances in technology, there are great opportunities and potential for illumination strategies to shape and take center stage in the development of the nighttime environment. In fact, the complexity of our urban world necessitates a greater awareness by all design professionals about how we use light and dark in shaping the built environment. We must also accompany the city's developments to its night territories. Light urbanism and lighting master planning as we have known it for nearly three decades, is still too focused on the illumination of the city. This approach will, however, start to gradually disappear and as our cities transform, and evolve into what we can call "a nocturnal urbanism." •

ABOUT THE AUTHOR

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Roger Narboni is an independent French lighting designer, who launched a new discipline called Light Urbanism in 1987. In 1988, he established his practice, CONCEPTO lighting design studio, near Paris. During his more than 30 years of practice, he has realized more than 130 lighting master plans and numerous landscape, urban, and architectural lighting projects in France and abroad. Recognized as a leading expert on lighting master planning and city lighting strategies, he regularly teaches and lectures at conferences around the globe.

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