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Create the Livable City

workshop in EUREF Campus, Berlin

Introduction

Berlin, a city always in the making. Facing the challenges of dealing with the challenges of the transition from the heavy industrial past and hyper-eclectic styles, the German capital is once again reinventing itself from its roots to prepare for a future of European leadership and new sustainable paradigms.



		ACCENT ON INDIVIDUALS		ACCENT ON GROUP	
		IDENTITY (Who I am)	EXPLORATION (Where I am)	BELONGING (Who am I with)	SUSTAINABILITY (How I live)
FOCUS ON TIME	ACCELERATION (Doing/learning better/faster)	Liquid city	Brandscape city	Eclectic city	Open city
	MEMORY (Remembering what is shared)	Classic city	Repurposed city	Regionalized city	Geometric city
FOCUS ON PLACE	SEMIOtics (Arranging urban objects)	Integrative city	Augmented city	Storytelling city	De-mineralized city
	CONNECTIVITY (Developing inter- links)	Playful city	Hybrid-system city	Themed city	Agricultural city

The Philips' Create the Livable City workshop enables professionals in urban development to discuss, explore and anticipate the future of urban design and lighting in European cities. The workshops have already brought together more than 150 architects, urban planners, lighting designers and city representatives in completely different settings during co-design workshops across Europe. The workshop includes a seminar and a practical workshop, ending with prototype design and presentation of the prototype installations by the participants.

The workshop's challenge is to envision, create and implement a lighting concept with the support of a proven urban future approach (matrix) that is being used by Philips since 1996. The Urban Future matrix plots social-cultural drivers versus city strategies, providing 16 alternative urban scenarios of looking at and comprehending the urban design of the cities we live in.

Within this dynamic framework, the latest in the series of Philips Create the Livable City workshops took place at the EUREF Campus in the middle of Berlin. This new mixed-use development area represents a

vision of an "intelligent city" of tomorrow. Ecologically and economically sustainable ideas are harnessed to make the EUREF Campus office and science location the only urban district of its kind in Europe.

The aim of the EUREF Campus is threefold:

- To build by 2018 a coherent and consistent "creative class" cluster of 25 objects (15% residential) focused on energy challenges at media, academic and business levels;
- To realize its development by matching the highest gold and platinum eco-standards for carbon neutrality;
- To complement industrial heritage stock from the early 1900's with post-postmodern architecture by means of innovative mixed leisure, work and education programs, supporting start-up culture and knowledge economies.

At the very heart of this complex, the 1910 Gasometer Schöneberg is an iconic landmark in search of its soul. Within this spatial context, a number of landscape architects, urban planners and lighting professionals came together to explore site-specific variations on co-development of creative lighting concepts and the potential role of artificial light in identifying the future of the Campus.

The workshop location

The EUREF Campus office and science location includes around 165,000 square meters of floor space and around 5,000 new jobs, all powered by locally-generated renewable energies. Architect and Designer Johannes Tücks of the EUREF Campus / REM+tec Architekten gave a detailed presentation about the EUREF Campus which was used as background information for the workshop.

The first new building on the campus, with 15,200 square meters of floor area and LEED Platinum pre-certification, is an example of the combination of high-quality office and residential occupation with a largely carbon-neutral energy and heat supply. Energy-saving insulation materials, triple-glazed windows and intelligent façades have been combined with healthy environmentally-friendly materials.

An Instabus system is utilized for energy management. The existing brick buildings are carefully restored with consideration given for preservation and energy efficiency. All new buildings will receive the internationally recognized LEED Gold certification and will be implemented as "Green Buildings". In the coming years, all buildings will be connected to the local area network by smart metering. The intelligent clustering of listed brick buildings, sophisticated new office and residential buildings and attractive parks, greenery and open space are set to provide a truly modern environment in which to work and live.

At its current state of the development, the site includes new and renovated office buildings and an intriguing selection of old industrial brick buildings. An imposing old Gasometer is located at the center of the site creating a focal point and a landmark visible across Berlin. The Create the Livable City workshop took place in and around the Wasserturm building near the Gasometer.

All four façades of the Wasserturm building were available as potential sites for temporary lighting interventions created by the participants. Changes in the detailing and the character presented by the architecture offered a range of opportunities. One side of the building had a terraced section with timber decking and seating groups adjacent to a tall water tower with modern spiral staircase. Another included

an asymmetric modern section of rendered finish next to the original brickwork. From two sides, large windows looked into the main interior workshop space with around six meter ceiling heights, steel gables and internal brickwork. Two of the groups chose to work inside the building experimenting with lighting treatments that create an attractive glow from within.

One side of the Gasometer was also available for the lighting workshop experiment. This section, approximately 30 meter wide, included large steel plated solid structures, external staircase as well as vertical steel trusses rising up over the roofs of Berlin.





The workshop lighting concepts

1) Team Green: “Slow Light”

Themed city scenario: an urban future scenario where urban design will explore and highlight archetypical architectural and vernacular motives.

This concept envisioned a stratified interpretation of the spatial area of the Campus. The three main clusters at the level of landscaping will include:

- a) The Gasometer, thematically standing as the icon marking the former industrial geography;
- b) The central layer of leisure programs, playing orientation functions and attracting citizens and visitors to their activities, and therefore to the site;
- c) Natural elements of green.

This hierarchical organization of themes becomes the aesthetic palette to lighten up a former dark corner at the edge of the city with natural night light, e.g. resembling the soft and slow cycles of moonlight. Natural analogies constitute a catalogue of shades that the design places in cultural context, with different elements and modules being communicated and at times highlighted by subtraction in a minimalistic manner: the preponderant icon becomes the mere silhouette of a Gasometer, while the façades

of the heritage buildings are treated with the greatest formal respect. Within this context, the main leisure attractor, the Wasserturm (central restaurant and café), is assigned the warm role of a fireplace, with lighting producing animated fire effects to appeal to visitors from a distance. The reflection on archetypical functions and forms of the urban experience, combined with the attention paid to sociability factors, positions the concept as a potential manifestation of the Themed city urban futures scenario.

Lighting design notes

The concept sought to create a subtle attractor for people visiting the area by introducing a warm glow from inside the building. The group chose the façade with the main entrance to the restaurant. The façade had two large windows symmetrically flanking a set of double doors. As a conscious design decision the external brick wall and the door were left unlit, allowing the spill light from the site to provide the required definition. The windows became the central focus for experimentation with colored moving light. The idea of fire was integral to the groups' thinking in the context of attraction. One participant noted “One is drawn to fire; it offers warmth and indicates a space to socialize in”. To achieve this effect for the right side window, two clear glass water bottles were sourced and half filled. Narrow-beam LED spotlights with RGB color mixing technology were positioned against the base of the bottles. The combined optical distortion from the glass and the moving water created a relatively successful fire effect. Light amber colors were mixed with saturated reds to achieve the tonality. Finally the customized “fire spots” were focused from inside towards the window reveals and the frames.

For the second window the fire effect was simulated with a linear wall grazer fixture fitted with asymmetric collimator lenses and RGB LED light sources. Again the light color was set to reds and ambers. A white colored roller blind curtain was lowered behind the window and the fixture fitted between the glazing and the blind. A ripple effect was achieved by manually moving the fabric.



Lighting concept sketch



Lighting concept installation

2) Team Yellow: “Dictatorship of Awareness”

Storytelling city scenario: an urban future scenario where urban design will leverage objects and places to trigger stories and narratives.



Lighting concept sketches

This concept explores the original, primordial elements of fire, water and gas, aspiring to seek new contemporary balance while illustrating processes of past production. In this game of analogies and metaphors, the Gasometer is central as “the” place where once the coal was burnt to transform its stored energy into fluid gas for distribution.



Within this context, the concept portrays the past as a narrative with the focus on the actual systemic limits as demanded by future-oriented sustainability. The wind becomes therefore key in providing iconic distinction and storytelling profiling to the design choices operated by the team. Within the formal economy of the site-specific solutions envisioned to support the narrative in its unfolding, wind-based generators activate interactive lighting indicators that simply dictate to the local grid the possibilities of the moment. Depending on the strength of the winds and on the movement of people in the area, the effect resembles the light dynamics of a torch, where power generation directly impacts lighting output and aesthetics outcome. While sustainability and ecological awareness are paramount, the focus is on narrative power and storytelling.

Lighting design notes

The team chose to work on a tall vertical section of the exterior brick façade adjacent to a galvanized steel staircase. This part of the building was historically a water tower serving the industrial function of raising and lowering the water levels within the Gasometer. The reference to water and function of the building formed the basis for the lighting concept. The light was to become a communication device for the whole development indicating the available energy harvested from the on-site windmills. With low wind conditions no energy would be generated and hence the behavior of the residents would be dictated by this fact. The light was to create awareness and to teach people to live in a more sustainable way.

For the technical solution, eight medium-beam RGB LED spotlights were selected and installed onto the steel staircase. The stairs themselves had no role in

the concept so great care was taken to avoid lighting up the stairway; instead all the light was focused onto the brick façade. At each landing a single spotlight was positioned near the central supporting column and focused across towards the wall. This allowed the luminaires to be relatively concealed and the focus of the observers drawn to the façade itself.

A subtle shift of blue tones were programmed and timed to cycle slowly from one tone to another to represent the changes in the available energy.

Additionally, a set of linear uplights was positioned at the base of the adjacent façade, grazing the brick wall with neutral white tones.



Lighting concept installations



3) Team Orange: “Visible Energy”

Storytelling city scenario: an urban future scenario where urban design will leverage objects and places to trigger stories and narratives.

Within this second Storytelling city concept, the functional role of indicator is played by the stairs inserted in the skin of the Gasometer. Transformed into a powerful communication object with iconic impact, the Gasometer becomes one of the poles of attraction of a master plan aimed at revealing the energy infrastructure in its most delicate, almost intimate reality.



Lighting concept installation



Lighting concept sketch

Within this context, the pavement is transformed into the canvas displaying the underlying infrastructure and underground networks of energy production and distribution. In parallel, a different story is being told by the greenery made visible and transformed from its passive and anonymous ancillary presence to accent and even become a protagonist of the thematic treatment. Within this highly connected “new place”, not only are all elements and modules interdependent but new “energy hubs” are clearly identified in the leisure program, such as the restaurant and the parking lots, enriched by the electric vehicles’ charging stations, sometimes

integrated with the poles and the luminaires. On a bigger scale, the choice to revamp the energy flows is first of all a choice for mental energy, where the self-production of energy pertains both to the carbon neutral strategies at architectural level as well as personal lifestyles.

The scenario of Storytelling city is pushed to its extreme possibilities by turning the ambient communications into urban signage for all the people in the neighborhood, who can perceive the light levels and dynamics as a system of signs referred to the key topics of energy, ecology and environment.

Lighting design notes

The enormous steel staircase leading all the way to the top of the Gasometer frame was chosen as the site. This imposing mesh of diagonal steel bars, stairs and landings reaches an imposing height of what must be close to one hundred meters.

The lighting concept sought to convert this structure into an urban communicator with saturated blue and red tones indicating the power generated by an imaginary large windmill positioned at the center of the frame structure.

Since access to the staircase was forbidden by safety regulations, the lighting intervention had to be carried out from the ground level only.

The main “barometer” effect was created with two high-power LED spotlights. One fixture was positioned approximately 15 meters away from the structure. It was fitted with narrow-beam optics, set on blue color and focused to the top part of the staircase. The second spotlight was offset approximately 5 meters, fitted with medium-beam distributor, set to red color and focused to the lower section of the structure.

Linear LED media tubes set in red color were laid on the floor parallel to the stairs creating a sequence of graphic red lines to draw the eye upwards.

In order to create depth to the visual composition, four warm-white narrow-beam LED spots were used to accentuate the vertical trusses flanking the stairs.

Lighting concept installation





Lighting concept sketch

4) Team Red: “Inverted Shadows”

Eclectic city scenario: an urban future scenario where urban design will include diversity of styles as a symbol of progress.

This is a scenario built around the dynamics of the creative process, hence not in linear or functional fashion. On the contrary, random self generation regulates the flows of lights and shadows, with the key icon, the Gasometer, standing as the center of the scene, yet lit only from the inside in a sculptural definition of profiles.

In spite of the deliberate avoidance of a volumetric approach, the Gasometer remains the key to navigate the scenery visually, with other buildings providing design details in constant mode. The fundamental inversion at the heart of this concept provides a plastic exchange of light reflexes for shadows and their muted presence: it is up to the latter shadows to attract and appeal the eye, while spotlights and white lights are systematically, consciously rejected. The ultimate

goal is to transform the eclectic landscape, including styles from the 1910's / 1920's, into future-oriented zero emission objects in a socialization hub for the benefit of people who might want to gather and network. The final concept originally displays the rendering of a small portion only of this larger plan, offering a synecdoche or thumbnail to express the visionary power of an idea that ties the city together, transforming its diversity into richness and texture.

Lighting design notes

The façade on the side end of the Wasserturm building is parallel and relatively close to the Gasometer. The right of the façade has been treated with contemporary plaster rendering with a depiction of diagonal and vertical shapes found on the nearby steel trusses. Intricate decorative brick details cap the asymmetric façade with a single glazed door fitted to the left hand side.

Conceptually the team wanted to express the vertical trusses of the Gasometer as projected light patterns emanating across the site. These shafts of horizontal light would appear and disappear like rays of light leading to the central focus.

Technically, the concept represented a challenge. Gobo projectors and other high definition projection equipment did not form part of the available fixtures. Imagination was called for and this group did not disappoint. Using linear LED fixtures as building blocks, the team

constructed a vertical and horizontal depiction of steel truss. In true spirit of experimentation, the vertical and diagonal beams were fitted together with cable ties and supported by steel pipes fitted with concrete bases. The resulting sculpture was positioned about one meter off the brick façade allowing the light beams from the linear LED's to draw the truss pattern onto the wall. Another set mirroring the vertical assembly was placed horizontally on the floor extending towards the Gasometer.

During the final design refinement and analysis it was decided to remove the horizontal section as it seemed to distract too much from the façade. Only the vertical sculpture remained. The position was adjusted so that an attractive reflection appeared on the dark glass door. The combination of strong light projected onto the façade, the silhouette of the sculpture and the sharp reflections on the glass created a strong three-dimensional effect that shifted depending on the viewing position.



Lighting concept installation



Lighting concept installation

5) Team Purple: “Invisible Sun”

Brandscape city scenario: an urban future scenario where urban design will adopt and leverage the tools of Marketing Communication and Imagineering.

This concept celebrates the Gasometer as the ideal source of energy of the entire complex, with the analogy of the sun. In this vision, light radiates from this energy center to the entire cluster of objects and spaces.

The purpose then becomes the creation of an artificial light experience that -in the months and days of cloudy, heavy weather- can offer the comfort of a sociable experience in the outside terrace of restaurants and bars. To complicate this scheme, the available on-site terrace is at the opposite site of the building to the actual silo, hence generating the necessity

to carefully plan the direction and the power of artificial light in its travel from its source to its destination. This daytime application of atmospheric lighting also offers the opportunity of connecting smart, mobile solutions enabling the flows and behavior of people to influence the scenery and the experience. While the chimney is an icon in its own right, it is up to the calculated



Lighting concept installations



Lighting concept sketch

effects through windows to achieve the ambition of a scalable concept for Northern European applications, where a simple cafe is identified and amplified as key item in the streetscape by supporting its sociability with high-quality effects. This dynamic lighting application is ideal in the context of creative class, knowledge and economy clusters hence the association with the Brandscape city urban future scenario.

Lighting design notes

On the façade after the water tower the building's height is reduced, creating a smaller scale façade. Symmetrical clerestory windows are set in pairs within a large arched recess with double doors directly underneath. On front of the façade is a timber deck structure with elongated timber seating section. A few tables and chairs are scattered across the decking terminating with large potted plants.

The group wanted to create a feeling where warm sunlight is oozing through the building (originating from the Gasometer) and bathing the timber deck in its glow. The light was to be directional and largely disassociated with the façade itself. This was not an architectural façade lighting concept but rather a narrative-driven lighting intervention looking to achieve identity and mood.

A notable detail was the desire to work with white light only, negating the common tendency to underline urban lighting narratives with color.

Due to site constraints that dictated that no light could be positioned inside the building, the sense of a warm glow had to be created from outside.

The clerestory windows were lit with warm white linear LED fixtures fitted onto the window sills, allowing for a strong accent and attractive spill onto the brick arch. Additional uplights were positioned at the deck level and focused upwards, reflecting light back from the double doors. These small-scale LED fixtures were fitted with linear spread lenses to create a flat beam skimming across the illuminated surfaces in a controlled fashion. To underline the “light emanating from the sun” concept, two spots were laid on the floor and focused across the timber decking. This gave the desired directionality to the scheme. Finally a table and set of chairs were positioned as a silhouette on front of the installation.

6) Team Blue: “Inner Light”

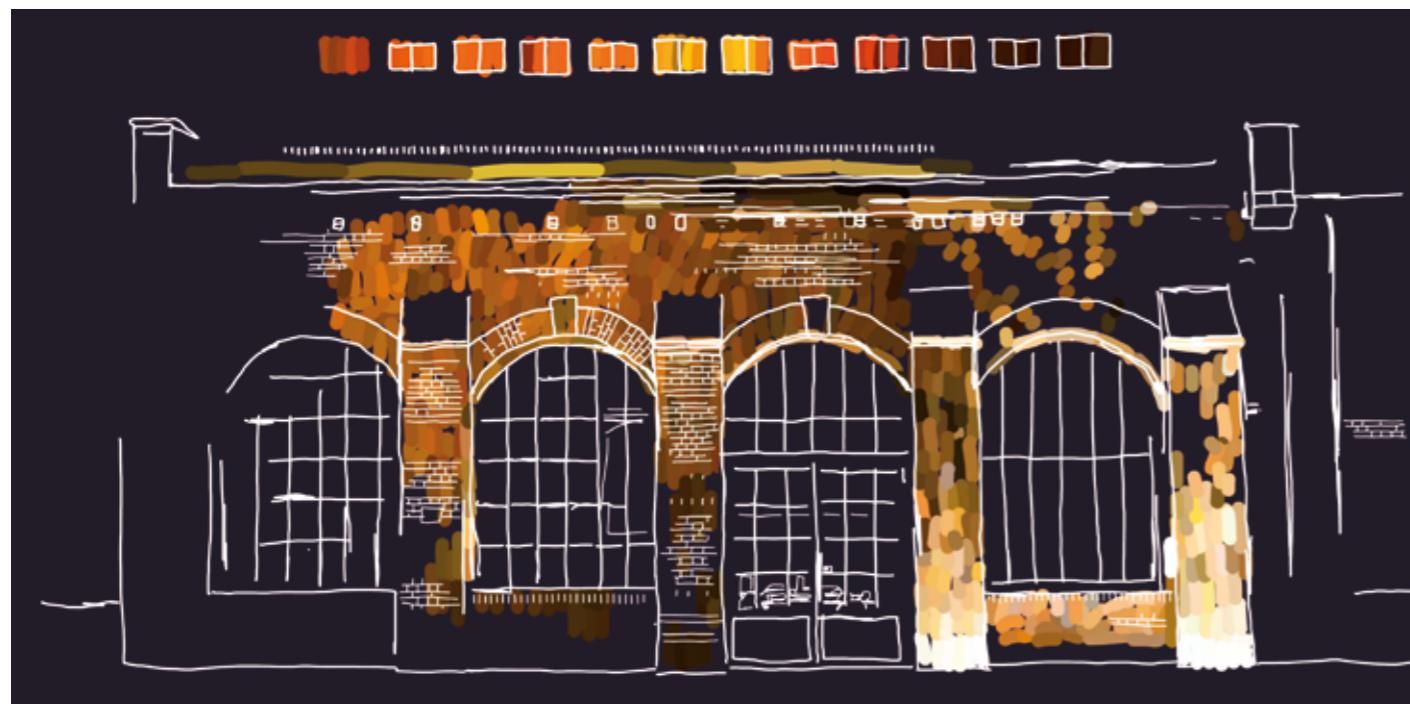
Repurposed city scenario: an urban future scenario where urban design will recuperate old objects by reprogramming them with new functions.

The focus of this last scenario is cultural heritage, with the 1910's / 1920's, being repurposed into a leisure program while maintaining the integrity and aesthetic authority of past history. The most compelling challenge to the design team is the transition and connection with the urban fabric that represents the city around the icon.

A preliminary analysis of the area displayed a high degree of actual chaos, with an acute need for the design of an orderly public space with a structure, hierarchy and focus. The concept represents therefore a balance point between consolidating history and new dynamics, with the design imperative of keeping an atmosphere of warm invitation articulating the heritage. The floor, on the contrary, represents an experimental space where color effects flow at a slow pace, respectful of the context and the history that comes with it. The resulting concept takes an extreme step in terms of simplification, with 50 shades of white adopted as the functional asset to amplify the natural presence of the heritage. The absence of actual dynamic lighting represents a passive yet powerful leveraging of the “spirit of the place, with a process of discovery of the actual interior of the building. By focusing on the window, the team proposes the



Lighting concept installation



Lighting concept sketch



Lighting concept installation

counterintuitive message: “Let’s turn down the lights”.

Lighting design notes

This group chose to work primarily inside the building, concentrating on the effect created on the two large windows and the high level clerestory. The concept sought to create a respectful and subtle lighting intervention with a focus on structure of the windows and general warm glow. The scheme represented an interesting low key approach further strengthened by the notion of “50 shades of white”.

Several attempts were made to achieve a specific lighting effect for the glazing structure. The idea was to have white light skimming the small glazing bars from inside the building and thereby to appear accentuated when viewed from outside. At the same time a set of small LED spotlights was rigged to the high level gantry inside the building lighting up onto the apex of the ceiling. This glow was then reflected through

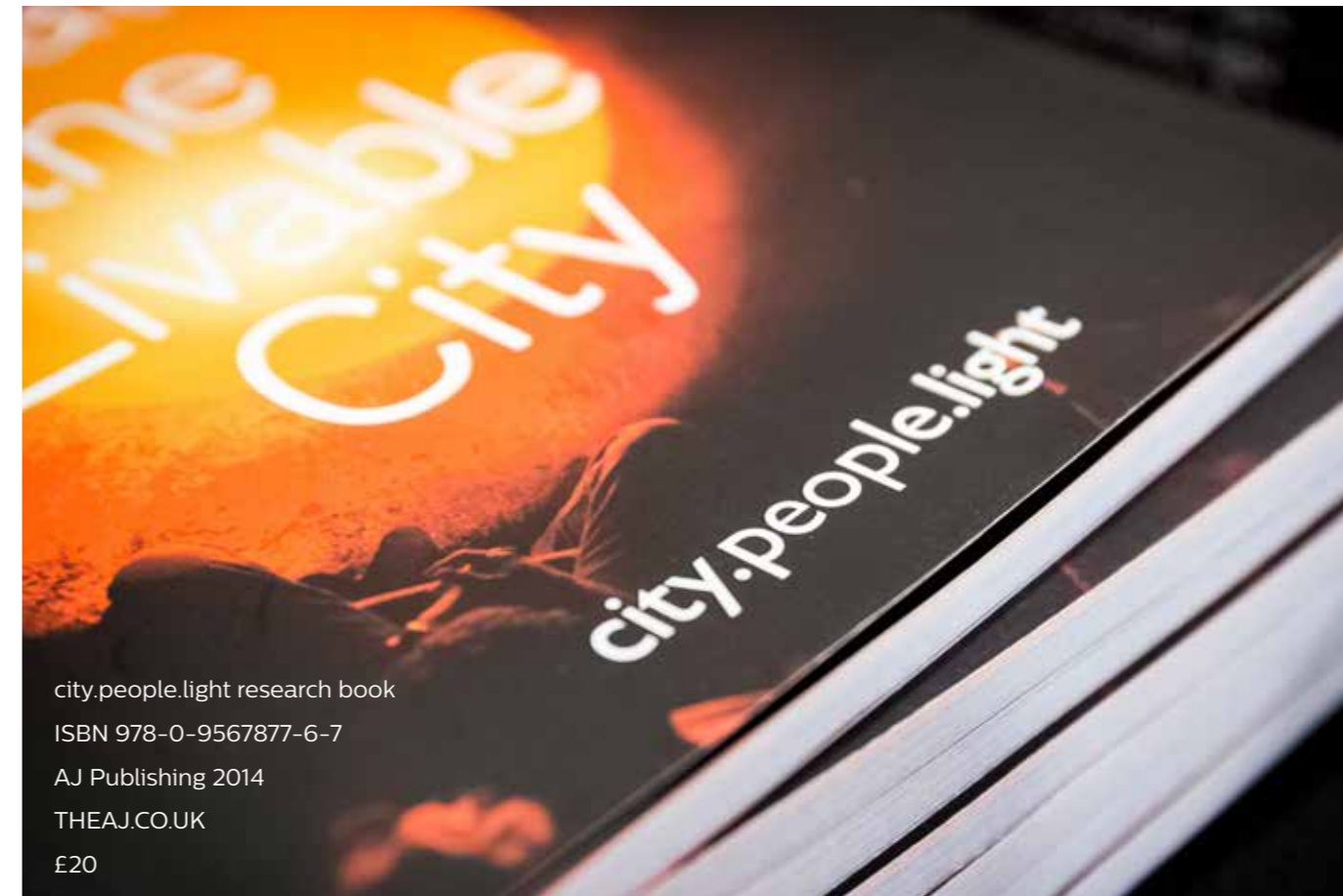
the clerestory windows to outside. Warm candle-like tonality was achieved by a color shift towards amber.

Outside, two small exterior spotlights with medium-beam distribution and warm white LED were placed on the floor with an approximate four meter offset from the façade and focused diagonally towards the brick wall. The resulting flat, soft light was then broken with leafy branches (presumably removed from a nearby tree) positioned on front of the lights. Gentle breeze moved the leaves creating a soft play of light and shadow. The low light intensity and the frontal positioning of light with no strong effects appeared to give the building more of a historical, dignified character and allowed the interior to shine through, exactly as intended.

Conclusions

The 2014 “Create the Livable City” workshop took place in a landmark of future energy production, looking at energy as transformation of latent opportunities into new opportunities. Within this iconic geography where landmarks of decades ago meet top-notch sustainability, landscape architects, lighting designers and creative talents applied socio-cultural insights and teamwork to explore the possibilities of light stretching beyond the plain functional illumination of the former industrial site. It might come as no surprise that themes like “Themed city”, focusing on archetypes and recurring motives, or “Repurposed city” emerged as strong directions in this context, given the nature of the site. At the same time, the striving towards Storytelling and Brandscaping scenarios might be seen as a genuine outcome of the discussions, desires and drives of the various multicultural participants. In this common grammar of narratives and actionable orientation towards the “place”, seen as a context where design interventions give life to new possibilities and crisscross functions and programs, one might find a first sign of potential developments in the wider European context.

A particular ability was displayed at conceptual level in the brainstorming phase of the workshop, when new combinations of functional, aesthetic and interactive lighting were explored and defined, leading to unconventional use of technology to express lighting in daylight or light from shadows. In this context, it might be said that this Berlin workshop of the “Create the Livable City” series established a number of questions and potentially opened a number of discussions about sustainability, decoration and the meaning of experience design in general.



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