

## *The Visitor Experience*

**How lighting can be used as a tool to enhance the visitor experience in cultural buildings, respecting visual and conservational factors while also meeting new challenges posed by changing human behaviour and modern architectural approaches.**

Cultural buildings and museums are built to share knowledge and cultures with the general public. These institutions bring together and present pieces of art and performances in a way that enables an appropriate and authentic visitor experience. The perception of the objects shown is clearly a fundamental part of this experience, as interactions between the exhibits and their surroundings shape the perception of the observer. Architectural and focussed lighting play an important role in helping to reveal the true meanings of these objects and spaces. In addition, cultural buildings and museums are also built to preserve valuable goods and resources for the future of humanity. Several norms regulate the conservation of artworks, which means that light (as radiant energy that can cause irreversible changes, either through radiant heating or photochemical activity) has to be handled as sensitively as possible to ensure the safe and proper appreciation of the pieces.

*“The choices for accentuating and contextualising are illustrated by different types of staging available today, making light both a curator and a scenographer.”<sup>1</sup>*

For precisely the reasons mentioned above, it is clear that these buildings play a social role in the life of a city. They represent a focal point for the cultural urban scenario, a meeting point for society and, more often than not, a landmark in the cityscape.

The growing number of temporary exhibitions and events also demonstrate this growing trend. These cultural offerings shape the social life of a city and can further boost the appeal of a museum or performance space.

The structure and layout of these buildings are naturally built around the visitors and the artworks that they come to experience. As a result, light has to adapt its qualities to reflect these parameters and fulfil the needs of the user.



Museo del Duomo (Milan)

## WHY DO PEOPLE GO TO MUSEUMS?

*“[...] how long will a museum visitor typically stand before a masterpiece? About twenty-eight seconds, according to a recent scholarly study. This average has held steady during the past fifteen years, though the behavior of museum visitors has changed. Today many aren't there just to gaze; they've come for selfies.”<sup>2</sup>*

Although these buildings are primarily intended to share and preserve works of art, we now have to ask ourselves a key question: Why do people visit museums? These places often have a long history, having started out as private art collections before being opened to the public from around the end of the 18th century. Nowadays there are thousands of museums with specific architecture and particular ways of exhibiting arts. This evolution demonstrates how the architectural language of these places has changed, along with the nature of visitor behaviour. People normally go to museums to be enriched by the information that these places seek to present. Individuals want to improve their knowledge by studying exhibits and learning about artists, history and everything that a museum may contain.

As we are currently experiencing a period of social and technological change, there are also other reasons besides the ones mentioned above. There is often an emotional aspect, incorporating feelings such as love. People regularly want to impress their loved ones in front of a piece of art by showing and sharing their specific knowledge.

Being part of a community is another reason, with a trend towards sharing art with others – either in person or through social media. Indeed, the status associated with being a member of a certain association can make people feel integrated into a cultural community.

And then there is the weather. While it may be raining, cold or even extremely hot outside, the temperature in a museum is often controlled, making it a pleasant place to refresh both the mind and the body.

Alongside solid cultural reasons for visiting a museum, church or exhibition centre, it therefore seems to fair to conclude that people now recognise these kinds of places as social meeting points in which (or outside which) they like to spend time. This aspect has led to a change in expectations. For example, the results of a recent survey showed that 47 per cent of the visitors to the Tate Modern go there for social



New ways of experiencing museums (from Kunsthistorisches Museum, Vienna)

reasons. The Telegraph, commenting on the New Tate Modern's building, stated that

*"[...] it will focus on creating spaces for visitors to meet and talk, after 47 per cent of those they surveyed said they would like the gallery to have "space for encounters".*<sup>3</sup>

Then there are museums like the Guggenheim in Bilbao or the MAXXI in Rome (and many others), where the "archi-stars" have taken an almost sculptural approach to designing the buildings, changing the character of a neighbourhood or an entire city and at times even establishing the architecture as the main reason for people to visit.

A contemporary cultural building has become an object to be shaped and crafted by architects, who sometimes take on the role of a sculptor and create their own piece of art to contain other artworks – with the resulting construction more attractive for some than the actual contents. Visiting these places from an architectural point of view, both outside and inside, and seeing the way they interplay with daily life and interact with outdoor public spaces has indeed itself become a fascinating experience. That is why these buildings increasingly have a social and visual impact on urban life, during the day and at night.

## THE VISITOR EXPERIENCE

Given the fact that visitors want to feel enriched by their experience in a cultural building, it is possible to imagine a journey that starts outside and leads right up to the artwork. Each step on this journey has to meet the specific needs and behaviour of the individual.

### PERCEPTION OF THE BUILDING

The first impression of a cultural building is generally made from outside. As museums are seen as social and architectural landmarks in an urban environment, the way this initial perception is formed is of fundamental importance. Light already starts to play a key role outside the building, sending a message to visitors about what is inside, focussing on architectural details or enhancing the impression of exhibits that may be visible from the exterior.

### PERCEPTION OF THE ARCHITECTURE

The interior architecture may also be an important reason for the visit. New and old architectural details can give rise to



MAXXI (Rome)



Städel Museum (Frankfurt)



Liebighaus (Frankfurt, outside) © S. Appelt, 2016

significant emotions, so a flexible lighting system enables designers to enhance the perception of the space by focusing attention on the illuminated objects. Tailored architectural lighting can significantly help the visitor to move through the space and appreciate the art with high visual quality, balancing the contrast of luminance between different surfaces and tuning the colours to maintain material and structural authenticity.

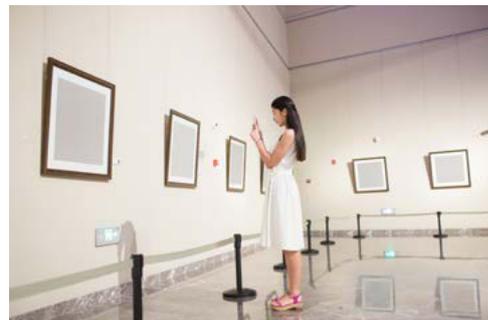
#### CONNECTIVITY

Innovative technologies of today allow us to use lighting fixtures not only to provide light, but also to direct information to people. One system can support individuals as they navigate through the space, transmitting information to their personal devices and helping to create a customised visitor experience. On average, only 5 per cent of the total art collection owned by a museum is shown to the public. A “digital connection” between the museum archives and the visitor can help to share more knowledge and “unknown” artworks via multimedia devices.

#### PERCEPTION OF THE ARTWORK

In a world of globalisation, standing in front of “the real thing” is a rare and unique experience. That is why light plays a fundamental role in experiencing art, enabling the visitor to feel and interpret the message sent by the original creator via his or her work and simultaneously respecting the history of the exhibit and the environment in which it is presented. High visual quality, glare control, accurate colour rendition and appropriate luminance contrast with the surroundings are all ways of ensuring a proper lighting microclimate for every piece of art, taking into account its specific history, sensitivity and interpretation.

The visit comes to an end when the people, inspired and enriched by the art that they have just experienced, exit the building with fresh knowledge in their cultural rucksacks.



Gaining information about artworks from connected devices.  
© Getty Images



Possible ways to illuminate a painting: from soft and homogenous to sharp and focussed. a) Wallwasher. b) Wallwasher and spotlights (with different beam angles). c) Spotlights (with different beam angles). d) Wallwasher and picture-framing.

## NEUROSCIENCES APPLIED TO ART AND CULTURE

In the recent years, after gaining a greater understanding of LED technology, the lighting industry has started to think about a new way of illuminating pieces of art. Museum stakeholders can now work with more sensitive and adaptable light sources that blend miniaturisation of the fixture with flexible and dynamic control of the luminous flux.

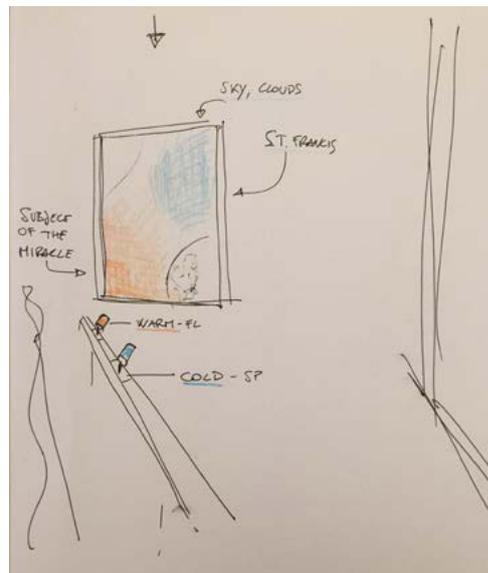
At the same time, as outlined previously, both individual behaviour and the nature of a visit to a museum are changing. While the focus should still be on ensuring a sensitive approach to lighting an exhibit, we also need to think more about the expectations and views of the visitor.

New thinking has inspired new ideas about how to attract attention to an artwork, how to help an exhibition appeal to a defined target group and how to focus on a specific theme.

Lighting designers Francesco Iannone and Serena Tellini (Consuline, Milan) have already carried out several experiments involving the application of neuroscience findings to lighting design for artworks. They have developed the so-called “Monza Method”. This concept is based on the relationship between colours and the human perceptual system, accurately changing and mixing lighting sources with different spectral distribution curves and thereby emphasising the perception of specific pigments (based also on the paints and materials used by the artist). This design approach can improve the overall perception and interpretation of an exhibit.

*“The Monza Method is based on a new concept which addresses the neural system of the viewer, allowing him and his imagination to comprehend the way the work was conceived and the message it communicates.”<sup>4</sup>*

A slow dynamic change of colour temperature may also represent a way of creating various phases of perception in front of a painting, helping to shift attention to different colours or figures and to tell multiple stories. This method facilitates a “narrative through the lighting”.



A sketch of the lighting concept developed for the workshop “Immersive Art” at the Kunsthistorisches Museum in Vienna. The combination of two colour temperatures directed towards specific areas of the painting can be clearly seen.



The pictures above show an experiment carried out to support this theory. The experiment took place during an “Immersive Art” workshop in the Kunsthistorisches Museum (art history museum) in Vienna. <sup>5</sup>

The result of this experiment was that visitors were impressed by the artwork and therefore spent more time in front of the exhibit. From a technical perspective, we can also say that a tuneable white system is an effective tool for this kind of lighting approach. The miniaturisation of the actual luminaires is also crucial, as this enables designers to tailor and subtly “pixel” the light precisely towards one painting – providing a defined light quality for a specific part of the painting.

“The Miracles of St. Francis Xavier, modello”, Peter Paul Rubens, 1616/17. Kunsthistorisches Museum, Vienna. Photographs © Moritz Gieselmann  
 This sequence of pictures shows how light can change the subjective interpretation of a painting by diversifying and mixing different light spectrums.  
 a) Current general illumination. b) One spotlight (Zumtobel SUPERSYSTEM II midi, 34° beam angle, 3000 K) focussed on the bottom left. c) One spotlight (Zumtobel SUPERSYSTEM II midi, 20° beam angle, 4000 K) focussed on the top right.  
 d) A combination of situations b and c. e) The situation shown in d with an additional blue filter on the 4000 K spotlight. Concept developed by Nelson Jiang and Dario Maccheroni.



The final result of the workshop in Hall 14 at the Kunshistorische Museum in Vienna. Photographs: Moriz Gieselmann

## ACTIVE LIGHT IN MUSEUMS

*"[...] What museums have to do now is to be much smarter in helping people to understand the art pieces. [...] reduce the barriers and give people an easier access to museums. [...] People have to be connected to the art, connected to each other and when they exit from a museum, they should feel enriched."*<sup>6</sup>

The aim of the Art & Culture lighting application is to enable visitors to perceive arts and cultures in the best possible way, helping people feel enriched after cultural visits. Active Light in museums focuses on visual comfort and preserving sensitive materials, while at the same time taking all conservation and visual aspects into account. This creates a unique experience, emphasising the appreciation of art and architecture, as well as underlining the importance of a dynamic and precise lighting system.

As a premium partner in the Art & Culture sector, Zumtobel can make this possible by providing specific lighting solutions tailored around works of art and their surroundings, adopting sensitive approaches with an extremely high quality of light and using innovative technologies to maintain, manage and interact with the lighting system.

BLE (Bluetooth Low Energy) devices integrated into the LED module improve the way individual fittings or groups of luminaires can be remotely controlled. This enables exhibitions to be managed in a simpler and more efficient way, while also supporting the conservation of individual pieces through a network of sensors. In addition, the possibility to dim the luminous flux down to a flicker-free level of 1 per cent is vital for sensitive materials that have to be appreciated with very low lux levels.

The Zumtobel portfolio for the illumination of Art & Culture applications offers a complete toolbox of flexible lighting instruments with a wide range of optical solutions for every kind of exhibit. The miniaturisation of these devices and the ability to adapt to a variety of architectural situations help designers integrate the lighting system effectively and discreetly into the architecture.

Finally, the state-of-the-art lighting solutions and the high quality of the light sources mean that museums can safely preserve artworks and accurately reveal their original artistic message – both now and for generations to come.



The National Maritime Museum (Amsterdam).

An interactive lighting solution allows visitors to learn about a specific part of the painting by combining touch-screens (on the tables) and focus lighting (on the painting).



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- <sup>1</sup> Max Hollein (curator) on the role of light in museums, “Light for Art and Culture”, Zumtobel.
- <sup>2</sup> Tom Rachman, “Nice Museum. Where’s the Art?”, The New Yorker, article, 13 May 2016.
- <sup>3</sup> Hannah Furness, “Tate Modern to become social space as it unveils £260m revamp”, Daily Telegraph, article, 22 September 2015.
- <sup>4</sup> Francesco Iannone, Serena Tellini, “The Monza Method: Light and three-dimensionality in the Galleria dei Carracci in the Palazzo Farnese in Rome/I”, PLD Magazine, n°100, p. 28-33.
- <sup>5</sup> “Immersive Art” workshop, 20-22 June 2017, Kunsthistorisches Museum, Vienna. The “Immersive Art” workshop held at the Kunsthistorisches Museum (KHM) in Vienna was organised by the VIA Events division of the VIA group. Participants included lighting designers, museum and gallery curators and early career researchers. The workshop was coordinated by KHM staff, with freelance lighting designer Veronika Mayerböck as the Technical Head.  
VIA has led over 40 practical lighting workshops in interior and exterior spaces over the last 25 years, originally in collaboration with a lighting designers’ association. The heads of the KHM workshop, Francesco Iannone and Serena Tellini, are continuing with their neuroscience-based lighting design techniques and expanding their field of application to include hospitals and care homes.
- <sup>6</sup> Florian Pollack, “The museum of the future – the museum of the world”, talk at TEDx Linz, 17 October 2015.