## LIGHT DRAMATURGY AS AN ELEMENT OF AN INTEGRATED APPROACH TO THE CREATION OF MUSEUM EXPOSITIONS AND EXHIBITION PROJECTS

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## **ABSTRACT**

Architectural and artistic construction of museum is one of the most complex genres in environment development and design, with its inherent qualities, means of expressiveness, principles of environment and image development, scientific concepts, in the context of historical development, artistic styles and trends. The author of the article considers the artistic lighting design in isolation from the integral dramaturgy of the project to be deeply flawed, and the setting of accent lighting at the final stage – to be simple, but not outstanding. Based on extensive hands-on experience in the construction of museum expositions, the author of the article reveals some peculiarities, especially significant to the participants of the lighting system setting for museums and other cultural facilities.

**Keywords:** integrated approach, design, dramaturgy, light setting

The sun changes its colour and position infinitely, but we can't control it. The painting technique of depicting items in natural light and conditions, familiar to all artists as "plein air", literally "open air", always gives a breath of inspiration, a freedom of thought, a sense of harmony. This term is also used to refer to the true reflection of the colourful richness of nature, all colour changes in natural conditions, with the active role of light and air. And the "open air" is nothing but the LIGHT with its endless transformations. Each artistic project becomes for us a kind of "plein air", which feeding the imagination gives some clues, helps to develop the fu-

ture composition. Each lighting solution has its own style, "material", shape. Architectural lighting, land-scape lighting are similar to monumental art, light "sculpture"; artistic accent lighting is like the painting; the light of lanterns on the city streets is much like a clear expression of graphics. Setting accent lighting at the exhibition requires special knowledge, skills and experience, as there are many specific features that lighting designers should bear in mind.

Each accent lighting project should not consist only of a "mandatory technical part" for us. The main thing is immersion in creative thinking, leading to a special vision of IDEA.

Technical and creative approaches are the components of complexity, ensuring the fusion of artificial light with art, integrating them.

And if for the artist, an artistic means is a tool of creation, then for the lighting designer these tools are a variety of lamps, light sources, as well as a great desire to find and emphasize the invisible, on the first glance, nuances and enhance the perception, achieving the admiration of the viewers. The immense possibilities of LIGHT, the subduing of its inexhaustible power and the directing of its fluxes to the purposes of the art make the transformation of any space viable.

We are well aware that no artificial light source can be compared to the Sun. But it can teach us a lot. The lighting is one of the most difficult tasks for designers. Remember, the light is not to be seen, the light is colossally theatrical and dramatic! Artistic construction of the light balance with all light sources, all multimedia elements, all reflections

from the items present in the field of view, deliberate creation of bright and dimmed dominants – this everything, in my opinion, is the light dramaturgy, and it is the key aspect influencing the integrity, the emotionality, and the relevance of the project.

It is obvious that by the time of this article publication, the number of questions will grow and the answers to them will be different, but the situations presented below will allow us to look at the habitual in a slightly different way.

I draw attention to the fact that I am not a theorist, but a practitioner. I have worked for 18 years in the State Tretyakov Gallery, 7 years – in TRINOVA, 2 years – in TOCHKA OPORY. Taken altogether, 20 years of development, not without emotional explosions in standing the own ground, led to recognition by the best exhibition designers, the directors of museums, galleries, exhibition centres, private cultural institutions and top officials of ministries and departments.

The understanding of the museum environment, the ability to communicate in the language of art and literature, and the experience of discoveries led to the inclusion in the project as co-author and the team movement to achieve the goal.

A person who claims to be a performer of museum conceptions needs to be an art critic, a curator, an architect, a designer, and an economist (it should be born in mind how difficult to gain funding when "There is no money for anything!"). One should be an expert in the exhibited items, and also participate in the exhibition arrangement, in the discussion of colour layouts, in the choice of architectural forms and textures, and much more.

To create the light dramaturgy, as well as any other one, you need money. As an artist needs canvas, easel, stretcher, paints, brushes, so the lighting designer needs brushes, but light brushes, and they are not always cheap. You could limit yourself to theoretical reasoning, write about how good it would be if..., but that is not our way.

I will try to reveal a number of relationships in order to explain where it is necessary to begin. If you have already decided on the goal, made the necessary choice, there is a slight problem – where to take the money?! This is a topical question in all spheres of life.

To save is pointless, because the "pipe" will necessarily break somewhere, and the accumulated money will flow into it. So what? So – That! And the head of the cultural institution addresses for additional funding to the Department/Ministry, writes

applications for sponsorship programs, forms targeted programs, etc.

So, here we go.

- What do they want in the Ministry of Culture? The Ministry of Culture strives to increase the role of the museum in our society. But due to lack of budget, it also calls the museums for being more self-reliant, which should lead to an increase in extra-budgetary revenues. Since entrance fees are one of the most significant ways in receiving the extra-budgetary revenues, an increase in the number of visitors is required. Attract, lure, smearing the front door with honey!
- What do museums want? The museums strive to promote the art, educate the target audience. To have enough funds for the implementation of the first three five points specified at the beginning of the average Charter of the budgetary institution, it is necessary to properly expend the funds. At the same time, there is no other way but to minimize the cost of the purchase of this or that equipment, as a rule, technical one, including, the exhibition lighting equipment. Indeed, why buying some lamps, when "we have any already bought ten years ago".
- What do the visitors want? Some of them want nothing but to take a photo of yourself (selfie) in the museum space. How should we treat them? You can send them out or reprove a little, but you can preset the labels, landmarks on the floor with the arrow of the direction, and make special lighting zones for "photo selfie".

If the exhibition is thought out, attracts and fascinates, believe me, any visitor will come again and bring his friends. Starting with traditional photos on the background, those who have already visited will pull the newcomers to watch the most memorable moments. And yes, there is a giant world audience eager for new cultural discoveries. This audience is educated and picky. And chic exhibitions by the content will not remain without criticism, if made catch-as-catch-can.

Involving a huge audience in museums, galleries, exhibitions are our common way to increase the profitability of a budget institution. The lighting in this case is crucial. After all, it is guiding.

How do the light designers work now? What will the "lighting technician" is interested in? He will ask a customer for technical task on the lighting, which as usual is absent and not mentioned. Then he will be interested only in the budget, the distance to the exhibition surfaces, the height of the ceiling and a little more.

What will happen next? The bus bars, the luminaries are installed, everything is connected, checked. We're waiting. Oh, thanks the Gods, finally the paintings are hung, and, my God...

The tapered glass wall with graphic works appeared to us in all its glory and all the luminaries illuminating it are reflected on it, playfully blinding! Familiar situation, isn't it?

The only solution in this situation would be the remote installation of the lighting fixtures with narrow beams, and there was appropriate place, but who knew that it would happen...

After all, in the design project the area was clearly and laconically defined as "paintings" and that's all. Well, yes, there was an intermediate version with three paintings, but it was rejected for "somehow empty looking".

Thunder, lightning, ashes and excuses in this case could be any, but still resembled by famous Russian satirist Arkady Raikin: "Well, it really does not matter that the suit doesn't fit! Do you like the buttons? Yes! They're fine".

So, what is the museum lighting? As an expert, I can say: The museum lighting is the most sophisticated of all existing artificial ones. It can only be compared in emotionality with a theatrical light in static, climax scenes.

The museum lighting psycho-emotionally affects the public. It can cause delight, and create unconscious dislike. The dramaturgy of light can transmit the musical sounds.

Narrow oblique rays will convey Rachmaninov's spirit in the moments of writing the "2nd concert", and the weak light with small flashes of brightness will reflect Chopin's nocturnes.

At the location of the graphic works the flute and the piano will hardly be heard, and the location of the picturesque battle scenes is consonant with the light oboe and horn.

Technical education only is not enough to achieve this understanding.

The museum lighting should be of a certain intensity, desired shape and chromaticity or colour. Various light filters, lenses, gobo filters, screens, lens shades, masks can be used.

The museum lighting is to reveal the advantages and conceal the losses.

There is multifunctional lighting equipment ensuring the universality of application, but is far from being low-budget. Alas.

Ask if you can get decent visual results using conventional equipment?

I will answer unequivocally: Yes! But in achieving the goal one should have 100 % psychological training, self-efficacy and the ability to defend your decision at the highest level of reviewers.

Most of the works were created on the plein air, in natural light, but then no one thought about their preservation.

Time passed, and the creations of the great masters of the "first brush" level, turned into masterpieces, into works of art.

Today, all museums, both public and private, as well as the collectors, ask questions not only of exhibiting, but also of ensuring best conditions for the preservation.

There are two main compromise concepts that are beauty and preservation, the solution of which is in the spatial matrix of perception and appreciation.

Ah, these Standards, GOSTs, lux, after all... With the new generation of lighting equipment – the LED one, with parameters worthy of the Museum, the research has been resumed to amend the existing standards.

What illuminance level in lx is permitted?

As a lighting designer, I'd say: "Forget about the lx! Let it be as many as necessary for the beauty!", but as a person of the museum community, who is to protect objectively, I will answer that the standards of illumination are essential.

Standard lighting techniques and the regulations in force specify only the right direction, but do not provide ready-made answers to engineers or designers. Their task is to find the only unique way to transmit information about the exhibited item, whether it is a unique painting or a piece of modern technical thought. The situation is complicated by the fact that, in each case, many other factors have to be taken into account alongside the rules. For example, the architectural features of the room, its colour, texture of walls, height of ceilings, windows arrangement, are of great importance in creating optimal conditions for the perception of exhibited items, and if the room lets in the natural light, then – the daily and meteorological changes in the illumination of the exhibition space. The size of a work of art and its location relative to the windows and other exhibited items play a significant role, not to mention that it is impossible to adequately represent any work of art without deep insight into the author's conception. The ideal environment for each exhibited item inside the exhibition is always created by the efforts of a group of professionals, which

includes lighting technicians, installation specialists, art critics and designers.

In the artistic lighting of the halls of museums, galleries, it is necessary to:

- Select the optimal colour rendering, which will emphasize the colour composition of exhibited works of art and mitigate the losses caused by the time:
- Create high-tech lighting for exhibitions of contemporary art or for exhibiting any other items (jewellery art, technology, etc.); arrange the accent lighting fixtures in such a way that, if possible, avoid shadows, glare, looms what is particularly difficult to achieve when the part of the exhibited items is behind the glass and the other is in deep massive frames;
- Another key aspect to consider in the museum lighting concerns the preservation of exhibited items, because Museum values, sometimes dating back to more than a hundred years, are extremely sensitive to ultraviolet radiation, which has a direct destructive effect, disintegrating the molecular bonds; the adverse impact has a so-called cumulative effect the ability to accumulate, and this also applies to infrared radiation, which indirectly contributes to the aging of materials by accelerating chemical reactions through increasing temperature.

Therefore, one of the requirements for accent lighting fixtures located inside the hall to illuminate the works of art and other exhibited items is that their radiation should, if possible, be free of ultraviolet and infrared components.

The ideal conditions for exhibiting the works of fine art under the regulations still in force mean the room fully closed for natural light. In the buildings constructed specifically for museums, they adhere to this rule. However, the vast majority of depositories of world art masterpieces are historical buildings: Palace buildings, mansions and even railway stations, where this principle cannot be consistently maintained. Here it should be advised to close or curtain the light openings – to use the reflective film absorbing ultraviolet rays, although it will not give a full protection.

In determining the illuminance level, many museums use the devices, in the museum language called "luxmeters". What and how do we measure? Distance is up to the glass, if there is one. After all, you can't put a sensor under it. And non-reflective glass may be of 6 degrees, to add ordinary and "ultra view", that is, ultra transparent. And their thickness may be different. The light, passing through

the glass, is partially reflected. And in oblique incidence, the light passes through a greater thickness and is even more quenched. It is important to know both the time of daily exhibiting and the time of rest (when the light is off). And the duration of the exhibition project should be kept in mind (permanent or temporary exhibition). It is the cumulative impact, not instantaneous, that should be taken into account. The light pulsations in the adjustable equipment should not exceed 5 % in the entire adjustable range, as they cause the fatigue of visitors and "curses" of correspondents trying to capture the movie-photo moments. When developing modern lighting standards, such aspects should be considered.

I want to share the joy because having gained the knowledge and experience, I had the opportunity to present, like Prometheus, an exquisite artistic light to everyone who needs it.

Great hands-on experience in all genres of exhibition concepts allowed to fully satisfy the ambitions, but I always wanted to achieve something more, comprehensive, integral.

And finally, I found it. And, in fact, returned to the museum world. In the team of the best architects, designers and exhibition constructors, who solve exhibition problems only in a complex manner, I learn to create something unprecedented, I teach and advise.

For a specialist free of fear or clichés, able to explain, inspire by an idea and bring it to realization, to make a thunderstorm cloud, which fills the exhibition with the artificial Sun rays, is no longer a problem.

I emphasize that only complex design, necessarily including lighting solutions, can meet the multitasking of the museum environment and its dramaturgy.

I will give a few hands-on examples, the emotional description of which will show everything exactly as it was, or shouldn't be, but it became.

• I recall that once, in one of the halls of the world-famous museum, I saw dirty thick black cables under the vaulted ceilings, and all in the dust of centuries. And under that wire bundle there was a nice little door of the Middle Ages, forged, with a cast iron hand-ring — exactly the subject of the project about the knights and their valour. And behind the door there were all sorts of utility and museum boxes from modern era. After five-minute persistent requests to remove this out of sight — they did so. Focusing a soft diffused light, I achieved an architectural fill of the corner, light shine of metal

on the bindings. Then, yes, the director came and asked:

- Why did you, dear man, make an exhibited item of a non-exhibited one?
  - Do you like it? answered I in a poor manner.
  - Very much! But why, tell me?
- Psychologically shifting the bright accents,
  I urged your brain to pay attention to what I need.
  And I need to keep all this stuff out of sight.

And I pointed upwards. Everyone looked upwards. A soft-voiced whoopee raised in the air: "Oh, Gosh..."

• Once at the exhibition, a part of the works provided by the museums of Great Britain, the upper threshold of luminance on the paintings was defined as 180 lx. I have two portraits of the 16th century – the king and his wife. The Queen i so slim, in a light dress, and the King – in the black caftan. There was no problem with the queen – shining, and as for the king, these 180 lx showed only the face and hands, and nothing else could be seen. I asked how and with whom it is possible to agree the illuminance level increase? They replied: You have to get it approved in the following order: Chief Custodian – Deputy Supervisor – Supervisor – Ministry of Culture – Embassy – Consulate of Great Britain – British Museum, and back. At least, two weeks. And the opening is tomorrow! In short, your humble servant preferred a different solution. I began to increase the brightness until the details of the king's clothing became visible. The tails appeared and even a red scarf became visible! I came nearer, measured the illuminance – 215 lx. I leave two luminaires – one adjusted to 180 lx, the other one to 215 lx and called the English custodians. Closing with the palm one luminaire, then another one, I show the difference. Naturally, they made a choice in favour of a brighter scenario! We come nearer to the painting, show the custodians the figures on the device. On the King -215lx, on the Queen -45lx! Why 45 and no more, you ask? Because it is at such proportions of visual light balance, they became a real married couple!

The British quickly have dialled some mobile number. One minute of conversation. And the approval was received. And in contractual documents in five minutes there were all necessary signatures of the two parties.

• From the II'ya Glazunov's collection, the curator took two works of Roerich – painting and graphic. According to the composite decision, they were placed side by side, close to each other. The

visual contrast is such that the light on the graphic work is not visible at all, and the maximum level has already been reached, and even slightly exceeded 75 lx (relative to 50 lx). All experiments led to the same - it's dark there, it's light here. But the solution was found: The high-power luminaire was focused on the painting with a slightly higher angle of light distribution than originally. In the centre of the light spot there was a painting, and the edge of the beam illuminated the graphic work. The mistake, in this case, was in a non-comprehensive approach to the exhibition design. As for the arrangement of museum pieces with low light resistance you can always make a kind of snug, some architectural form, to protect them from the bright space with a kind of "umbrella".

- Light marble floor or white ballet floor can be used as a mirror to illuminate the lower exhibition area.
- Stop criticizing the shadows of the frames! The audience is not interested in them. But ridding the item of glare through the oblique light would be necessary.
- Glass ceiling-high showcases will always reflect artificial light and space elements. Does the designer or the light engineer think about that? The answer is very rarely, and in reality only a few. The distance of built-in luminaires in such showcases cannot illuminate the lower exhibited items. It is necessary to provide additional external light at the design stage and explain why it is needed where it is already available. Besides, the exhibition should be made so that no exhibited item blocks the light to another.
- Is it possible to illuminate numismatics with spotlights? If you want to convey the delight of the treasures found during the excavations, then yes. The heap is shining, no details to see, and no need. If we talk about the detail, the historical value, it is possible to achieve visual details only through a matt floodlight. The distance from the light source to the exhibited item and the illumination are better to determine not in a calculated way, but by means of an experiment and necessarily with specific works of art or their analogues.

Precious stones and diamonds are in the counterbalance to metal exhibited items that do not stand the spot light. If you do not want to turn them into nondescript glass, you should set micro-spot lights, or focus external spotlights on them. Keep in mind such decisions are not made at the stage when the architect/designer thought about the lighting at the last

moment, but at the very early stage when the content of the exhibition is being elaborated.

- And how to place a cameo next to a 17th century engraving? The Curator: "We will hang it in the showcase, on the wall." You can, but! The showcase is installed in the centre of the hall, the power supply is not connected, the beam from the external luminary is blocked by the upper opaque cap, and the allowable levels of illumination differ multi-fold. Again, a mistake in a non-comprehensive approach! Solution: it is possible to correct the situation using a framing (contour) luminary, which from the outside, with all its power will penetrate the body of the cameo without damaging the graphic artefact.
- Lighting of interior exhibitions. Very often, not wishing to come up with the new, the lighting designer uses traditional ways, using track lights, busbars, etc. Would we highlight the painting: this one, there that and the next one. But what about the rest? Gentlemen, remember: The interior exhibition does not imply the public access to the "Sancta Sanctorum". And if we cannot come nearer and scrutinize everything, then there is no need to increase the cost of the project, creating a fair over-lighting. Imagine, once the sunbeams, passing through the windows, illuminated the part of the interior, and the rest was illuminated by the backlight. Therefore, when designing, speaking about its complexity, focus a narrow beam on the table, under the table lamp, and highlight the largest exhibition items with other light brushes. And remember that illumination of giant paintings, from floor to ceiling, is very difficult, but the glare exclusion techniques in such cases is a particular challenge.
- Intelligence task: How to expose a huge, up to one and a half meters in length and 75 cm in diameter, polished to full gloss Easter egg lying on a red podium of 70 cm high? The issue of lighting mirrors and similar items is too exciting to reveal all the "military" secrets of the staged genre in this article. Calling for imagination, always ready for open meetings to exchange experiences.
- Almost every modern exhibition project has multimedia equipment. Even at the design stage, it is necessary to determine the zoning of the exhibition, semantic and title accents. The experience shows that at the stage of implementation the media equipment does not provide the saturation and brightness originally presented in references and visualizations. Since it is unacceptable to divide the project into "mine not mine", all lighting equipment for exhibition a priori should have sufficient power with

mandatory light regulation function. The border areas of exhibited items/multimedia should be thoroughly elaborated, as ambient light can destroy the plans of the curator and the media artist.

• I do not know why, but many people make mistakes, probably again by reason of the lack of a comprehensive approach to the construction of a uniform project dramaturgy. Once I took part in the anniversary project of *CHANEL* Trading House. The French project, as to the design is great, but the lighting, there were serious problems with the light. If analyzing, it will be a separate article. Let me give you just one example. Imagine, on a half-meter podium there is a two-and-a-half-meter cage, as for parrots, but the rods are encrusted with large pearls. Inside the cage there are mannequins in silk and diamonds. The French installed the illumination of the cage rods from the inside... Did you imagine?

"Sorry," I say, "but the pearls will never be transparent! In the backlight they will lose the sophistication, turning into cast iron balls!" "Oh, yes", they said bewildered, "and what should we do?"

Since the central accent was still the contents of that cage, I suggested building a light circle of low-power spotlights with a half-meter shift, from the outside. And, voila (!), here is a laconic solution! In addition, for full practical persuasion, always carry a flashlight with a variable beam angle! It is a light pointer and a universal luminaire without an electrical outlet, and your companion in a dark alley. When by the movement of the flashlight you show how the angles of the item change, how the shadows change the architectural images, how the beam of light, slipping on the eyes, changes the mood, immediately there is a complete mutual understanding. I call my flashlight "a light drama in my pocket."

• The task is the architectural illumination of a large pavilion, the walls of which are made of a wavy mirror, requires a giant piece of frozen blue jelly. Did you imagine it? One specialist without hesitation (not an artist - a craftsman of our light affairs), immediately offered subsurface lighting. Persuasion, appeals to common sense and threats did not yield the desired result. And all the experimental techniques were sent by plane to another city, by far away. They built a fragment of the wall, dug in the luminaires and turned them on... Please, doesn't laugh, but the replica of the responsible specialist struck down everyone: "It seems that something went wrong... Maybe improperly dug in?!... Don't worry, we will bring other luminaries, these are, probably, defective, the light in them is some-

what wrong!" The silent scene from "Auditor" play by Gogol was like that pause...

And it would be possible to surround the building with blue flags on flagpoles (territory and dramaturgy allowed) and illuminate them in the direction from the building. The surface would appear, reflecting the fluttering flag cloths, but wouldn't get a blue tint.

Therefore, your humble servant proposed to install along the perimeter of the building with an indentation of 4 meters and a step of 4 meters 6-meter poles (building height of about 20 meters) with slit vertical illumination of blue glow. Whether a man is walking, whether he is driving a car, whether he is sailing on a ship past the building – wave-shaped mirrors break the linear form of reflection of LEDs, and he can see exactly the iridescence that the architect has planned. And since the level of the man's view in any of the positions does not exceed the height of the position of the LED luminary on the support, the illumination of the proposed height and stylistics would become quite sufficient for achievement of a given drama.

Since the idea was mine and the head of the project was another person, everything ended with a "zealous" result – "nobody will get it"! The customer liked the idea very much, but... the builders installed on the four corners of the building 25-meter poles with industrial lamps. We wanted to do the best, but it turned out, as always.

• The designer with the curator, the art director and the producer of the project chose the colour of the floor covering. They chose purple, according to *RAL*, cursing each other for any shift on the scale, sitting in a cosy atmosphere, with a cup of coffee and cookies in the afternoon and by the window while the museum spaces are closed to natural light, and the museum luminaires are all, though chic, but with a correlated colour temperature 3,000K.

I'm not going to continue. The colour of the floor turned out chic, but different, sea-green, from the fairy tale of the Little Mermaid. I just suggested not to make such mistakes in the future, that is, I called the colleagues for using the complex approach.

• In one of the international exhibition projects, the director asked me: "Don't you think that Stradivari violins are lighted somewhat weakly?" – I say: "They are highlighted exactly as it should be. The line between "dark-light" is determined not by luxmeter, but by the eyes, through the mind and in the heart. When your skin crawls, then "stop" – it is the same." – Director, insisting: "Oh, let's set

the brightness of the luminary at 100 %, and then we'll start to reduce it smoothly, and I'll tell you "stop"!" I answer: "All right, and I'll tell you stop. We agreed, right?"

The assistant regulating the light, with trembling hands, in pursuance of smoothness, began to reduce the illumination. Two opponents fastened their gaze upon the lacquer surface, longitudinally crossed out with four strings, silently, almost breathless, prepared for the classical director's "Stop! Cut!".

What was next? We said the word synchronously, and then we looked at each other with surprise. Then I added: "Here it is. It was the level set."

Let me add a few words about objectivity. What do you mean by that? May be it is an attempt to examine the same subject, fact, or phenomenon at different angles, preferably with a 360-degree rotation. The view from the outer space will not improve the situation, because in this scenario at least 180 degrees remain "behind". Installation of mirrors will only worsen the situation, because distortion is inevitable contrary to all the laws of physics, and not "in accordance", but just contrary. For the simple reason, that laws change over time. By the way, who can determine the time and prove its existence? Everything remains at the level of hypotheses, which with all the will in the world are impossible to be treated objectively.

Objectivity is just a concept that is used to reconcile multiple points of view and establish common rules.

These examples, without claiming exclusivity, are only part of the vast hands-on experience of the author of the article. I will be glad if for you they become fertile ground for nurturing individuality in approaches, boundless fantasies based on the foundation of knowledge, and aspirations to make our world beautiful and bright.



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