光意象

——照明设计草图

IMAGINATION - DESIGN SKETCH

栋梁国际照明设计中心

TORYO INTERNATIONAL LIGHTING DESIGN CENTER

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光有时是私有的,有时是公共的,无论如何光就是信息。在 人们心目中,光是引发想象力的绝好介质。

Under most circumstances, light is information, though it is sometimes private and sometimes public. In any case, light, in people's mind, is an absolutely desirable medium to ignite imagination.

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光写意

Free sketch on light

纸上谈兵指后人对战国时赵国名将赵奢之子赵括只知兵书不知变通的评价病诟。后人也常对读书之人作如此讥讽: "毕竟书生之见,全是纸上谈兵。" 可见纸上谈兵并非是什么好意词。不过纸上谈兵作为一种方法步骤,之后却从来没有停歇过。

近代电影中的作战指挥部,仍然多有纸上 谈兵的镜头。一张地图,一个沙盘,讨论作战, 基本上离不开这两项工具。且无论是国民党的 部队,还是八路军的指挥所,只有土匪除外。 我们今天看到都能理解,认为纸上谈兵只是作 战的一个步骤而已。

著名的 SONY 公司能有今天,得益于被人们称为"索尼巫师,随身听之父"的工程师木原信敏。木原信敏回忆其第一款 WALKMAN 设计图时说:"在我们那个时代,我们只能在纸上画出产品设计图,我会闭上双眼想象产品的样子……"

著名当红女建筑师扎哈·哈迪德曾纸上谈建筑城市构想 10 年余, 奇思异想超乎现实, 但几乎只能停留在方案草图这个步骤, 未能实现, 成为现代纸上谈兵的高手。后来一炮打响.

"Engaging in idle theorizing" is the critical remark made by later generations to refer to Zhao Kuo, the son of a famous General Zhao She of the Zhao Kingdom in the Warring States period (475-221 B.C.), for Zhao Kuo was ignorant of using tactics flexibly although he had good command of tactics written in books. The later generations also mocked intellectuals by saying, "After all, they are scholars' opinions, who are armchair strategists." Obviously, "being an armchair strategist" is not a laudatory expression. However, as a method of expression, idle theorizing has never stopped.

Many scenes on engaging in idle theorizing in military headquarters are shown in modern movies. A map and a sand table are indispensable in discussing battles no matter in the army of Kuomintang or the command posts of the Eighth Route Army. All of us can understand that idle theorizing is nothing more than a step in strategy.

Present achievements of the celebrated Sony Company profited from an engineer named Nobutoshi Kihara, who was entitled "the Wizard of Sony" and "Father of the Walkman". When he recalled his blueprint for the first pattern of the Walkman, Nobutoshi Kihara said, "In my age, we could only draw the blueprint on the paper. I would close my eyes to image what the product look like ..."

The extramely popular female architect Zaha Hadid once talked about architectural design on blueprint for more than ten years. Her odd and bizarre ideas went beyond reality. As a result, the majority of her ideas

使方案逐步成为现实,走进了设计的全过程,成为设计界的超级女。日本著名建筑师矶崎新出了一本书叫"未建成/反建筑史",登载的全是画在纸上的,未实现的建筑,针对这些个草案,他还说出一套书面理论,可谓纸上谈建筑的高手。

今天从事设计的大都是从专业院校毕业的学生,当属于知识分子书生,因此注定逃脱不了纸上谈兵的所谓"书生之见"。只是时代有变,大多书生用电脑谈兵取代了纸上的写和画。用电脑画图脱离了握笔的力感,笔和纸摩擦的触感,图板与身体的尺度感,却大大提高了效率,增加了无限的设计可能性和处理复杂问题的能力,当然品味设计构思时的乐趣就下降了。不过最近出现了电脑中的草图大师软件,又有盖里,扎哈等大师的深入发掘,电脑中的草图似乎也要迎来有感性的时代。

我上学的时代还是很学院派的,没有电脑的时代,画画(素描,钢笔画,水彩,水粉画)作为美学素质培养的基本途径或主要途径和作为绘图的练功手段。曾经因为不用尺谁的线条画得直画得长而与同学比来比去,得闲时私下猛练线描徒手画。像现在很有名望的建筑院校的老师,有大师院士头衔的几位长者,画草图的水平其实不比画家差多少,有的甚至称为画家亦不为过。记得上大学老师曾对我们说要不

had to rest only in sketches. Hence, she is recognized as a master in idle theorizing. After she became well-known, her ideas became to reality gradually, making her a dynamic in the design field. Isozaki Arata, a famed Japanese architect, wrote a book entitled "Unbuilt", in which all the buildings are unconsummated, only being drawn on paper. Isozaki Arata also expounded a series of theories for those drafts, which proved him a master in idle theorizing.

Nowadays, all the designers are the graduates from universities belonging to intellectuals. Hence, they are doomed to hold so-called "Scholar's Opinions". Due to the changing times, the only difference for the majority of intellectuals is that they use computers instead of pencils to write and draw. Although drawing with computers takes away the feeling of holding a pencil, the frictional tactility between pencil and paper, and sense of spatial scale between drawing board and body, these boost efficiency greatly, increase design possibilities as well as improve the abilities of addressing complicated problems. Of course, the fun from taste design will decrease. Yet, as Sketchup software has come into the market recently, as well as the in-depth studies of masters such as Gehry and Zaha, it seems that computer-aided sketching will enter a more sensatory age.

Academism filled my school days when there were no computers. Drawing techniques such as sketching, pen drawing, watercolor and gouache were the fundamental channel for the cultivation of aesthetics accomplishment as well as the approach for the practice of making blueprints. Classmates once competed with one another to see who could draw a straighter and longer line without using ruler. We would practice freehand drawings assiduously in our spare time. As a matter of fact, for some professors or academicians in prestigious architecture academies or

断地画反复地画,画多了,感觉就出来了。草图这种形式,出名的当属画家。米开朗琪罗、达·芬奇、伦勃朗的草图,价值达到与正式作品等同的地步。有些画家干脆把草图当作品。广泛应用的,却是在建筑工地上的普通工人,开木料,画切割图,商量如何安装的尺寸,只是随时随地不限于纸上。

对于我来说,从事照明设计工作,从纸上谈兵开始是必须的。我画草图,其实是公司内部对项目方向的一种指令手段,属于内部交流的手稿,因此表达的参差不齐。有的像画,有的像建筑景观速写,有的是细部说明,有的纯粹是灯光畅想,有的就是要实施的设计方案说明,还有的是设计过程中沟通时画下的,有点胡乱涂抹的感觉。时隔有日,回头看时,有些觉得仍新鲜。几个项目对比,有时会发现设计对于同一个人而言有惯性,其风格手法也多类同,此时的草图记录成了促进自己进一步创新的鞭策。

照明设计师是用光对载体进行再创作的专业工作者。载体有既存的自然景观、人文景观,也有待建的项目。前者为现场调研后作纸面构想,后者为索取图纸在图面上想象布光。建筑载体的美来自于结构、空间、造型及有意识的细部,用草图表现很能抓住布光的要害之所。

照明设计的范围很广, 有城市照明规划,

universities, their levels in rough drawing are not lower than real painters, and some of them could be entitled as painters. I still remembered how my professor at university asked us to draw repeatedly. He told us that our artistic senses would be revcaled as well as nature if we drew more.

The well-known sketches are those of painters. The quality of sketches made by Michelangelo, L. da Vinci, and Rembrandt can even reach as high as that of final works. Some painters even simply use sketches as their final works. Actually, sketches are widely used by workers at construction sites when they were calculating timber consumption, making incision drawings, and discussing the dimension of installation. What is more, sketches are not only drawn on paper but anywhere, and pencils are readily posed behind more than a few ears.

As far as I am concerned, it is essential for lighting design to start with idle theorizing. My sketches are actually the internal discussions or instructions created for the specific orientations of the projects, belonging to the manuscripts for internal communications. Hence, the expressions conveyed by the sketches are irregular. Some look like paintings, some look like literacy sketches of architectural landscapes, some are interpretations for specifics, some are pure freethinking of lighting, some are explanations for design proposal to be implemented, and some are drawn during communications. After a few days, some would be still novel for me when I reviewed them. When making comparisons among several projects, it could be found sometimes that a design has inertia for the same designer, because the designing style and tact are similar. In this circumstance, the sketch records become an incentive to encourage designers to conduct further innovation.

景观建筑、市政设施和不同用途的室内照明设计。为载体外观服务的,成果直接变为城市的 夜景,为出行、工作、生活需要的照明成为保障夜间生活的功能性照明,同时也是城市夜间景象的一部分。

画一幅城市照明规划的总体草图时,就像把城市浓缩在 A4 纸里,只能抓其精髓。比如郑东新区的如意城与人工湖,杭州的西湖、钱江、运河、山、城,赣州的城池与三江六岸,又比如德州的叉河与新老城区,徐州的小南湖,常州的怀德广场,又比如鄂尔多斯乌兰木伦湖前的康巴什新城。大场面的光构思草图完成,也是对载体选择表现的过程,其行为本身就是在做光环境的规划。

画建筑外观的装饰照明时,一般不会超越 建筑的原初设想与造型,多采取理解尊重其建 筑结构空间的做法。但只把灯光表现作为主体 时,思维方法就不一样了。

2001 年 7 月 13 日北京申奥成功,2006 年 媒体谈到的很多话题是奥运会开幕式庆典。心 血来潮,拿出草图本,画下了畅想把灯光从永 定门、前门、天安门、故宫、景山、奥运村、 昌平点亮到长城的草图,后来看2008 年 8 月 8 日的开幕式,还真看到利用了中轴线的大创意, 只是烟花脚印仅仅走了城区中轴的一小段。

为了创作灯光秀的作品也曾在纸上勾画多

Lighting designers are professionals who re-produce carriers with light. Carriers are the existing natural scenery, human landscapes, and newly-built landscape constructions. For natural scenery and human landscapes, designers need to make concept drawings after site investigation; for newly-built landscape, designers need to make light arrangements through drawings. The beauty of constructional carriers stems from structure, space, shape and conscious details. Sketches can indicate the vitals of light layout.

The scope of lighting design is very extensive, ranging from urban lighting planning, landscape architecture, civil facilities to interior lighting for different uses. The lighting designed for the exterior of carriers eventually becomes the nightscape of city. The lighting designed for traveling, working and everyday life becomes functional illumination to guarantee the night life as well as a part of the larger city nightscape.

When drawing a general sketch of lighting planning, it seems to condense the whole city into a sheet of A4-sized paper. Therefore, stress can only be put on essential points, for instance, Ru Yi Town and the manmade lake in Zhengdong New District, the West Lake, Qianjiang River, canals, hills and town in Hangzhou City, the city and river banks in Ganzhou City, the Chahe River as well as the old and new town proper in Dezhou City, the Small South Lake in Xuzhou City, Huai De Square in Changzhou City, the new region in Ningbo City, and Kangbashi New Town in Erdos City. The completed sketch of the area's lighting design is the planning of light environment.

When designing the decorative lighting for the exterior of various architectural structures, designers usually would not exceed the original imagination and shape of those structures. Instead, they always adopt the original methods to understand and respect the

日。当时设想做一条闪电跨过地坛拜台,启发 人们思考现代与古老对话的行为状态,后想想 不妥,随缩至一角落为之。谁知摇滚乐舞台却 高高架在了拜台上面,又谈又唱又跳,还是他 们够狠。

有时会想试做一款灯具吧。用草图勾勾画画,笔触过去,思路顿开。于是就想能不能只用一根棍儿,一头接电,一头发光,细部隐去,做成灯具这样的产品该多帅啊,这种诉求其实就是得益于画草图时的手感。

光的概念建立于对光的想象与感受,然后在纸面上把意象保留下来。还有一种体验是在实际环境中,用光介入去感受,去发现。这就好像是在载体上用光画草图,也是蛮有意思的行为。笔者曾在威尼斯的海滩用 1W 的手电筒的光画画,在黎明来临前的黑暗中,光的效果却是无比的震撼,光的意象会突然显现。在京都的寺院里,同样的一束手电光也给院子留下了光的烙印。

在全国范围内做设计, 出差坐飞机是经常的。机舱内的灯光很专业, 有空间背景光, 安全指示灯光, 阅读灯光, 功能划分明确, 于是用草图记下, 颇感受启发。航站楼的公共空间, 火车站的站房, 甚至列车中的用光有时也会有启迪。一次旅途乘坐大型局部双层的飞机, 在二楼我曾看到照亮顶的光是蓝色的。在国外乘

structure space. Yet, when considering light as the focal point, designers would have very different ideas.

On July 13th, 2001, Beijing sucessfully won the bid for the 2008 Olympic Games. In 2006, the majority of topics in the media were about the opening celebration of Olympics. Seized by a whim, I took out my sketch book, drawing a sketch, in which lights were illumined from Yongdingmen, Qianmen, Tian'anmen, the Place Museum, the Olympic Games Village, Changping to the Great Wall. In the opening ceremony on August 8th, 2008, the originality of using Beijing as the middle axis was seem as expected, but the footprints of fireworks just covered a short segment of that axis.

To create the lighting show, I drew sketches on paper for many days. At the beginning, I imagined creating a flash of lightning striding over the obeisance dais in the Temple of Earth as an expression of the connection between modern times and ancient times. But after a second thought, I did not think it appropriate and gave up the idea. Yet, it never occurred to me that the rockand-roll arena was eventually set up on the obeisance dais where people were singing and dancing there.

Now let me make a similar illustration using a lamp. My mind opened when I drew sketch on the paper. How attractive it would be if the lamp is like a stick, one end connecting with electricity and the other end giving off light. This sense of appealing to the practical benefits from what the hand feels when drawing sketches. The concept of light originates from the imagination and feeling towards light, and expresses the image on the paper. Another aspect of lighting is in the practical environment, where people try to feel and discover with the intervention of light. It seems to draw sketches on carriers with lights, which is quite interesting. I once made drawings with a 1W flashlight on the beach of Venice. The effect of the light was a kind of unparalleled

游轮长途时,日出,日落,海天一色,玄窗内透出温暖的光,远处光斑点点,体验更不一般。

在照明设计过程中,草图不仅是创意的第一步,而且在项目实施的每一个阶段都会用到,特别是沟通时用到草图的机会更多一些。

照明设计一般分如下几个阶段:准备交流 阶段,概念规划阶段,方案设计与深化阶段, 实施设计阶段,施工图纸及现场实验确认阶段, 最后到达竣工验收。

如果是城市夜景规划,准备阶段首先要研究地图与勾画脉络节点,框架意象,然后与城市管理者交流,与城市规划专家交流。

如果是建筑及景观,就要以建筑景观为底, 勾画出需要表达的光构思,与建筑师、景观设 计师或室内设计师进行交流,得到其理解与赞 同。同时通过调研把握现场情况,得到心目中 的光意象。

概念规划设计阶段是基于上述现状分析及设计师理念的理解而得出的光的概念效果。除了对色温(色彩)、照度等设定,灯位示意,灯具示意,造价估算,用电估算等技术的环节外,草图是构想方案的开始。设计师也有利用给光纤模型打灯的办法,效果图的方法,参考案例的类比等间接的办法等。

方案设计与深化阶段主要手段就是效果图, 计算书, 节点图, 电路与控制系统计划

convulsion and the image of light would emerge abruptly in the darkness before the dawn. The same beam of light was branded in a temple in Kyoto.

Traveling by air is very frequent for me, for my business spreads all over China. The light in the passenger compartment is very professional, involving space background light, safety indicator lights, and light for reading; whereupon, I noted them down in my sketch book. The public space in terminals, the station houses in railway stations, and even the light on the rain offer enlightenment for me. In one of my journeys, I took a double-deck airplane. On the second floor, I witnessed that the ceiling lights shined bule. My experience on a long journey in ferry was also extraordinary, for I witnessed the sunrise, the sunset, the sea melting into the sky, the warm light penetrating the windows, and spots of light afar.

During the course of lighting design, sketch is not only the first step of originality, it is frequently used in the communications of every stage of the project.

Lighting design is usually divided into the following stages: preparation and communication, concept planning, deepening of design, implementation design, working drawing and site experiment confirmation, and completion and checking.

In the preparation stage for city nightscape planning, the city map must be studied first then an outline of venation and node as well as the framework image drawn. Designers should communicate with city managers and experts in city planning.

In the preparation stage for construction and landscape, designers should sketch out the ideation of light with the construction and landscape as the background, then communicate with architects, landscape designers

等,其中节点图的沟通手段主要是徒手草图的 笔谈。

实施设计阶段,施工图纸阶段是 CAD 绘图的天下了,不过徒手修改施工图的错误和追加不完善的节点时草图也会派上用场。灯具安装大样也是先画草图开始的,不同的专业以草图进行交流。

现场施工管理阶段设计师会将节点安装的方法用草图绘在工地的结构墙上或石膏板上,与施工技术人员在墙上笔谈。此时与单纯意象草图不同的是要有尺寸多少的准确概念,虚无的成分不能多,也不允许多,这就是工程技术与纯绘画写意的根本性区别。

本来夜景的画纸应该是以夜色为底表现比较贴切。如深蓝色纸,就像夜晚的天空,用白色等铅笔去布光,理出行经路线,标出功能空间,强化节点,结果从画面看就是一张夜景画,当然也是一张接近实际的照明规划设计意象图。

我没有找到蓝色纸的速写本,只有黄色 牛皮纸的。牛皮纸是我们这一代人最熟悉的, "文化大革命"前就是通用纸,包装纸信封、 档案袋一直是牛皮纸做的。牛皮纸纸质粗, 易着铅笔蜡笔色,只是与夜色相距较远,就 像照相的底片,有点颠倒黑白。单看画面, 也有不错的,记得一幅为恐龙园创作的灯光 意象草图,就被东芝照明的社长索去当画挂 or interior designers to explain the design and have their approval. At the same time, designers should pay a site visit to get a light-image sketch in mind.

The concept-planning stage is based upon the concept effect of light after analyzing the above condition and the idea of the designers. Apart from the setup of color temperature illumination, indication of lamp position and lamp devices, cost estimation, and electricity consumption, the sketch is the beginning of project ideation. Designers sometimes adopt other indirect methods, such as employing fiber optic light to illuminate models, effect drawing, or making analogies through referring to other projects.

The major work in deepening of design stage is to refine effect drawings, calculation books, node diagrams, electricity and a controlling system plan. The expression of node diagrams is made through sketches.

CAD drawing plays a significant role in implementation design stage and working drawing stage. Yet, sketch can be also used in correcting working drawings and supplementing incomplete nodes. The making of detail drawings for the installation of lamp devices also starts from drawing sketches, and people with different specialties communicate through sketches.

In the site construction management stage, designers would draw a sketch on the installation method of nodes on structural wall or plasterboard and communicate with technicians through that drawing sketch on the wall. The dissimilarity with a pure idea sketch at this juncture is that the accurate dimension is added, which is the fundamental difference between engineering technology and pure free sketching.

The paper used to draw nightscape should be night color to make it true to nature. For example, use

在了自己的办公室里。看自己的草图,随时 间的推移,发现许多不尽合理的标注: 用什么光源, 多少灯, 多大瓦数, 是 400w, 250w, 150w, 70w, 还是 35w, 等等只是 草图阶段的想法。实际方案深化时、会有计 算检验,发生变化甚至颠覆。 有些标注,也 可能是错误的,不能作为读者作方案时的参 照依据。近几年, LED 发展迅猛, 使用方法 在不断的变化, 草图中的标注内容随时间变 化会落后于时代。从事建筑景观照明的设计, 对于我自己来说也是在工作中学习, 学习中 认知, 认知中完善。每个阶段的工作只能代 表当时的思想,至今日,有的想法也发生了 变化。比如对光信息的意义发掘与做法,比 如对低碳时代的设计探索。

光的美学经验感受来源首先是自然光。日 出朝霞,日落晚霞,阴晴雨湿,日月交辉。光 写意的出发点是美学的,如何使载体在夜间更 美是思考的出发点,或使丑的载体不再现身于 光之下也是目的之一。

不知不觉,随着照明设计业务的开展,项目一个接一个做起来,构思过程中草图也画了不少,速写本用掉数册。从中挑出一部分,编成册,还挺像本书,拿去出版,也许是个不错的主意,在中国建筑工业出版社的大力支持下,于是就有了这本草图册子的出版。

navy blue paper, for it looks like the sky at night, and use white pencil to lay out light, indicate pathway and functional space, and intensify the nodes. As a result, it looks like the nightscape on the paper itself. Of course, it is also a blueprint for lighting planning.

I failed to find a blue sketch book one time and only found a brown paper one, which is the most familiar to the people of our generation. Before the Cultural Revolution, brown paper was quite popular and widely used as packing paper, envelopes and archive bags. As the texture of brown paper is coarse, it is easy for pencils and crayons to write on its surface. But its color is not at all like the night's color. Similar to the negatives of photos, black and white are converse. However, some of them look good. One of my light image sketches made for Dinosaur Land was admired by Hakamata, General Manager of Toshiba Lighting, and hung in his office.

When reviewing my own sketches, I found that not all notes were reasonable. For example, what light source should be used, how many light devices needed, how many watts needed such as 400W, 250W, 150W, 70W or 35W. All these were just ideas when I drew sketches, and they would be calculated and examined during in-depth practical assessments. Some notes might be mistaken and could not be used as the reference when working out the proposal. In recently years, LED has been developing dramatically, and its usages are changing constantly. The notes in sketches would fall behind the age with the changing of the times. I am also learning to be engaged in architectural landscape lighting design, to cognize that learning, and to perfect that cognition. The work in each step can only represent the ideas of that time. Today, some ideas have changed, such as study and execution of the significance of light information, and the design exploration in this low-carbon era.

草图排列并无特别顺序,只是相对随意地穿插整理而已。书中同时插入了少量几年来设计的部分项目的实景照片,并配以文字,算是对光意象草图的补充说明。本书的英文翻译由张松先生完成。

The aesthetic feeling of light originates from natural light itself, such as a rosy dawn, a sunset glow, an overcast day, a sunny day, or sun and moon shining upon each other. The start of free sketching light is aesthetic. How to make the carrier look beautiful at night is the starting point of consideration, or how to make the ugly carrier invisible under light is also one of the purposes. Therefore, beauty is the starting point of all sketches.

Unconsciously, with the opening of lighting design businesses, projects have been implemented one after another. Accordingly, numerous sketch books have been used to express ideas and communicate with designers. I selected some sketches and compiled them into a volume, which looks somewhat like a book. I thought it would be a good idea to have them published. Thereupon, with the support of China Architecture & Building Press, this sketch book was published.

The array of sketches has no particular order, only a random arrangement. A few example pictures along with captions are provided as the supplementary interpretation to the sketches of light imagery. The English translation of this book was accomplished by Mr. Zhang Song.

光的 1W

光的 1W 产生的效果确实是不好估量的。关键看在何种意境之下。

有回到了威尼斯,心血来潮,一行数人 4 点早起乘公交船到威尼斯的离岛——利多岛看日出。船很快到了小岛,徒步至沙滩,时值冬日,沙滩上渺无人影,水冷风寒,漆黑漆黑的,只有启明星在天上挂着。为了驱寒,众人在沙滩上奔跑了起来。带来的照相设备没有闪光灯,只有怀中 1W 的 LED 手电筒。也想看看黑夜里光的能量感受,遂对准雀跃于海滩的众生,摁下快门。瞬间一幅海滩迎日出的照片立即呈现,意想不到的光轮盖沙滩,使众人惊讶望外。

给场地一束微光介入,竟会有不一样的收获。仅仅的 1W, 却换来壮观无比的大尺度场面。如不泄露天机,读者定会以为是天外来光。

威尼斯的光造景行动, 起名叫做"1W行动"。

1W of light

The effect of IW of light is hard to evaluate. The key is to see if in a specific circumstance.

After returning to Venice again, seized by a whim, a group of people including myself got up at 4 a.m. and ferried to Lido Island to see the sunrise. The ferry reached the destination quickly and we walked to the beach. As it was in the wintertime, few people could be seen on the beach; only the sun hung in the dark sky. To drive away the cold, we began to run on the beach. Our camera had no flash, we only had a 1W LED electric torch. To feel the effect of the light in the darkness, I took a picture of the gamboling people on the beach. Instantly, a warmly-welcoming photo of the sunrise was before us. To everybody's astonishment, an unexpected halo pavilioned the beach.

A single glimmering beam of light brought about quite an unanticipated result. Just 1W of light produced such a spectacular scene. Readers might think that it was some extragalactic light if I did not disclose the secret.

The landscape design of light in Venice is named "1W Action."





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