



香港大学上海中心的入口流露出其现代的气息

The modern entrance to the HKU campus in Shanghai

香港大学上海中心以其宽敞的空间和灵活的照明设计而吸引着莘莘学子。设计师旨在为学生提供一个宽敞、舒适的学习空间，并尽可能多地利用自然光。然而由于预算的限制，设计师的创造力和解决方案受到了极大的挑战。一方面要求舒适、简单，另一方面又不能忽视质量

从教育概念中汲取灵感

2008年，著名的学府香港大学在上海外滩区域新建了一所校园。本文将会对该校园的室内设计 and 照明设计进行分析，设计师分别由如恩设计研究室的郭锡恩先生和胡如珊女士以及黎欧思照明有限公司的李太和担纲。地板的结构细长，这是为了与毗邻的苏州河相协调。整个空间开放而且通风，为求知的学子们创造了一个舒适的环境。这种开放的空间和照明设计师为了方便民主式教育和自由发散思维。因此，所有的设计都尽可能地开放：从地板到天花都使用了玻璃隔板，以保证整个空间的通体透明（图1）。

上海的教育之光

Educational Lighting in Shanghai

文：缇尔·利蒙布克
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The Shanghai campus of HKU fascinates through its light and open spaces. The aim was to build a comfortable space for students and studying by employing generous and if possible natural lighting. Due to budget constraints, the designers had to be creative and resourceful, focusing on comfortable simplicity while never leaving quality out of sight



图1：院长办公室，玻璃隔断营造一个宽敞、明亮的空间

图2：使用原木作为主要材料，教师的工作室温暖、舒适

Picture 1: The director's office demonstrates how glass partitions make the building open and transparent

Picture 2: By using wood as the main material, rooms such as the teachers' workstations become warm and cozy

Inspired by the notion of education

The renowned University of Hong Kong (HKU) has opened a campus in Shanghai near the Bund area in 2008. This article will analyze the lighting and interior design in the campus, developed by Lyndon Neri and Rossana Hu (Neri & Hu Design and Research Office) and Tiger Li (LEOX design partnership). The interior of the building is meant to be in harmony with the adjacent Suzhou Creek, as the configuration of the floor plate was thin and long. The space is open and airy, creating a comfortable surrounding for eager students. The open and light space is intended to display the democratic notion of education and freedom of thought. Hence, everything is as open as

possible: glass wall partitions are used from floor to ceiling, guaranteeing an overall transparency (picture 1). Overall, the project is intended to develop mainly functional facilities, including classrooms, a canteen, a studio, a workshop and meeting rooms, as well as a number of offices. With the aim of creating a functional space of openness and creativity in mind, the designers decided to use very simple materials. This prevents the space from feeling overwhelming and oppressing. Wood as opposed to color was used to define the available space and create a particular atmosphere of intimacy (picture 2).

整个项目主要强调了功能性，包括教室、一间评估展示室、一个工作室、一个工作间、会议室以及办公室。为了营造一个宽敞的功能性空间并充分发挥创造性，设计师决定使用简单的材料。这样不会给学生带来压抑的感觉。木料采用了天然的色调，既定义了空间，又营造了亲密的特殊氛围（图2）

预算受限，迂回前进

由于预算非常紧张，设计师不得不忍痛割爱，放弃最初的一些设计，譬如吊顶，就是因为预算不够而被削减下来的。这给设计师提出了一道难题。通常来说，敞开的天花板可以通过暗色调将其隐藏。而在大学校园中，由于照度的要求非常高，这种方法行不通。于是设计师提出将天花与开放空间融为一体的方案。天花被刷成白色，这样观察者就不会因为看到裸露的天花而感到不安，他们看到的天花，已经成为整个空间的一部分。此外，设计师还一致认为应该做一个仔细的调查，将每一根管道、水管和供气装置的位置标识出来。尽管工作量很大，但是值。

为了达到节能的目的，保证成本效率，并欣赏到良好的照明效果，室内设计师与照明设计师的合作便成为了关键。这在材料的选择上显得尤为重要。室内设计师可选择材料很多，但是最好能与设计师一起挑选最合适的材料，尤其是在教室的规划上，对照明提出了严格的要求。

由于预算的限制而未能实现的其他方案还包括照明控制系统以及自然光与人工光的平衡方法。不过，设计师巧妙地运用窗帘，达到了类似的效果。

Budget constraints and how to circumvent them

The project had a very tight budget, and some of the original designs, including dropped ceilings, had to be abandoned due to cost considerations. This proved to be a major challenge. Usually, open ceilings can be hidden by darkening them. In a university campus, where illumination levels need to be high, this was not an option. A solution was found by integrating the ceiling into the open space and painting it white, so that its exposedness did not irritate the viewer, but instead became part of the whole (picture 3). Furthermore, all designers agreed that they had to perform meticulous researching and picturing of the position of each pipe,



图3：天花被涂成白色，与整个空间融为一体，成为整个空间的一部分（图片提供：黎欧思照明有限公司）



图4：会议室里可以享受到充足的自然光

Picture 3: By painting the ceiling white and integrating it into the space, it became part of the whole (courtesy: LEOX design partnership)

Picture 4: The meeting area benefits of a great amount of natural light

室内照明

由于对公共机构的要求通常会有很多，照明设计师的角色显得尤为重要。因此，从项目一开始，设计师就参与到了项目当中。

河水带来的眩光及相关解决方案

室内照明遇到的最大的挑战是房间外河面上的水带来的眩光。为了解决这个问题，每个窗户都安装了编织帘（并没有将光线完全遮住，自然光仍然能透过窗户进入房间）。编织帘的作用主要有两个方面：避免了眩光，光线依然能从窗外透过房间，室内的人仍能欣赏到室外的风景。对任何一间教室来说，黑板的照

明尤为重要。本案采用了洗墙灯的方式，避免了侧面采光可能引起的眩光。

自然光及人工光的使用

如果缺少自然光，任何一个空间都不会显得宽敞、通畅。在本案中，利用宽敞、明亮的空间和玻璃隔板，房间的各个角落均能得到充足的阳光（图4）。设计师最初提出的方案是靠墙和窗户的地方安装线性荧光灯，但后来灯具采用了简单的格点分布方式，安装了悬挂或吸顶的圆形紧凑型荧光灯。如此，尽管室内空间被玻璃隔开，仍然构成了一个整体的空间（图5）。

表 1：不同房间的光源、照明设备以及照明技术

Table 1: Lighting sources, light devices and lighting techniques in different rooms

地点 Place	光源 Lighting source	灯具 Light devices	照明技术 Lighting technique
评估展示室 Crit room	1. T16 24W 4000K 2. QR 111 100W 3000K	1. 奥德堡 Arcade T16 Zumtobel Arcade T16 2. PLC	垂直照明：环境照明/重点照明 Vertical: Ambient lighting/ accent lighting
教室 Classroom	TC-TEL 26W 4000K	奥德堡 Panos A-LM 200配置毛玻璃光学仪器 Zumtobel Panos A-LM 200 with frosted optic	水平照明/垂直照明：普通照明 Horizontal/Vertical: General lighting
工作室 Studio	1. CFL 23W 3000K 2. CFL 20W 3000K	1. IKEA Septim 吊灯 IKEA Septim Pendant 2. 与家具结合的台灯 Desk Lamp specified to be integrated with the furniture	垂直照明：普通照明/任务照明 Horizontal: General lighting/Task lighting
工作间 Workshop	TC-TEL 26W 4000K	奥德堡Panos A-LM 200配置毛玻璃光学仪器 Zumtobel Panos A-LM 200 with frosted optic	水平照明：普通照明 Horizontal: General lighting

conduit and air supply devices. While this is a lot of work, it is most definitely worth it.

To guarantee future cost efficiency by saving energy, while all the same enjoying certain light effects, it is crucial that the interior designer and lighting designer cooperate closely. This is particularly true when it comes to the choice of material. Interior designers will have a lot more choice of materials, but it is important to work with the lighting designer to choose the most apt material, especially when planning classrooms, where strict lighting requirements apply.

Other proposals which were not realized due to budget restrictions were the lighting control system and a sophisticated way to balance artificial light and natural light. However, simpler options are available, such as the use of curtains.

Room Lighting

As there are many requirements which are specific to institutional projects such as schools, the position of the lighting designer is crucial, and he was brought into the planning from the very beginning.

The challenge of the river glare and its solution

The greatest challenge concerning the lighting of the rooms was the glare coming from the river outside. To deal with this problem, woven shades (not black-out ones, as natural light was still supposed to enter) were installed at each window. Woven shades are useful in two ways: they cut off the glare, but light still comes through and you can still enjoy the outside view. To avoid glares from the window when lighting up the blackboard, the centerpiece

of any classroom which needs excellent lighting, wall washer were used.

The use of natural and artificial light

No space would feel open and airy if it did not let in a decent amount of natural light. In this project, the natural light was taken advantage of by designing wide and bright spaces and adopting glass partitions, which brought the light deep into the space (picture 4). At first, linear fluorescent lights, fitted parallel to the side walls and windows were proposed. Eventually, however, it was decided to create a pure and simple grid system for light fitting and install pendant round CFL fittings. That way, all interior spaces separated by glass still seemed to merge into one single space (picture 5).

Different rooms and their purposes

不同的室内空间及其作用

为了平衡白昼与黑夜的光线，需要提供一个介于其之间的色温：4000K。设计师为了给 学生提供一个舒适、友好的学习环境，采用了暖白色的3000K色温。环境照明的照度维持在500勒克斯，能为阅读、写作和画画提供充足的照度。由于没有吊顶，整个房间采用了直接照明的手法。关于灯具的安装位置，照明设计师与室内设计师进行了密切的合作，在满足审美要求的同时，满足了所有技术上的要求。

不同的房间总的来说有两种不同的功能。第一种功能主要是为了方便交流，这主要体现在评估展示室和教室。这些房间主要采用了垂直照明的手法，利用不同的光源和色温，营造出很好的展示效果。整个室内设计的手法与传统相悖，简单、透明的光线能引导学生的发散性思维，而不会局限在小小的教室内部。

第二种功能是提供一个自学的空间，这主要体现在工作室和工作间。此处主要采用了较低照度的水平照明作为环境照明，并为每张课桌提供任务照明（由于受到预算的限制，工作间没有采用任务照明）。利用不同的光源和色温为学生提供一个充满朝气、舒适的环境。由此可见，工作室的环境与教室全然不同。工作室的环境能吸引学生呆上更长的时间（图6）。

结语

由于预算紧张以及对功能性的关注，设计师在诸多方面受到限制。然而，通过发挥设计师的创造力和灵活性，设计师成功地挑战了整个项目。照明设计师需要与室内设计师密切合作以选择合适的材料。利用编织帘，自然光恰如其分地穿过窗户进入室内，避免眩光的同时降低了成本。不同的房间要求采用不同的照明方式：教室需要垂直照明，而工作室则采用了水平照明和任务照明。■

While it was the intention of the designers to create an intimate and enjoyable environment for the students using warm white color temperature (3000K), the right balance between daytime and nighttime made neutral white (4000K) a necessity. The general lighting level is maintained at 500 lux, the illumination level considered adequate for intensive reading, writing and drawing. As there are no dropped ceilings, direct lighting was installed throughout the rooms. The places of the lighting fittings were chosen in close collaboration with the interior designer to appeal aesthetically, after making sure that the technical requirements had been met.

In general, there are two different functions fulfilled by the different types of rooms.

图5：教室与会议室分属两个不同的地方，但是仍然感觉是一个整体

图6：工作室的一般照明采用了较低照度的水平照明。任务照明可以让学生停留更长的时间

Picture 5: Despite being separate from the classroom, the meeting room still seems to be part of one single space

Picture 6: The Studio employs both general horizontal lighting in a mid-low level and task lighting, inviting the students to stay for a long time

所有图片提供（图3除外）：如恩设计研究室

All the pictures (excluding number 3) courtesy: NHDRO (Neri & Hu Design and Research Office)



项目信息 Project Information

项目名称 Project Name:

香港大学上海中心
Hong Kong University Campus, Shanghai

照明设计 Lighting Design:

黎欧思照明有限公司
LEOX design partnership, Shanghai

照明设计团队 Lighting Design Team:

李太和 Tiger Li、郑芸 Eisa Zheng、
顾菁 Jing Gu、赵双明 Cassie Zhao

主要照明设备供应商 Main Lighting Devices supplier:

奥德堡 Zumtobel

室内设计 Interior Designer:

如恩设计研究室，郭锡恩、胡如珊
Lyndon Neri and Rossana Hu, NHDRO
(Neri & Hu Design and Research Office, Shanghai)

总面积 Total Gross Surface:

1,500m²

The first function is to facilitate communication and exchange and applies to the canteen and classrooms. Thus, in those rooms mainly vertical illumination with different light sources and color temperatures were applied, creating a good display and presentation atmosphere. The ambience is a non-traditional one, and the simple and transparent lighting entice the students to think beyond the confines of the classroom. The second function is to offer a space for individual self-study, and applies to the studio and workshop. In these places, in addition to general horizontal lighting in a mid-low level, task lighting was applied on each desk and location (but not in the workshop due to budget), with different light sources and color temperature to create both an energetic working environment and cozy surroundings. The atmosphere at the studio, for instance, is

hence different from the classrooms and invites the students to stay for a long time (picture 6).

Conclusion

The focus on functionality and the budget constraints placed certain restriction on the designers. Nevertheless, the challenge was met by planning creatively and showing flexibility. Lighting designers have to work in close cooperation with the interior designers to choose the right material. Woven shades help to reduce natural light without blocking it out completely, and are cost-efficient at the same time. Different rooms require different lighting, hence the use of vertical illumination in classrooms, but horizontal lighting and task lighting in the studio. ■