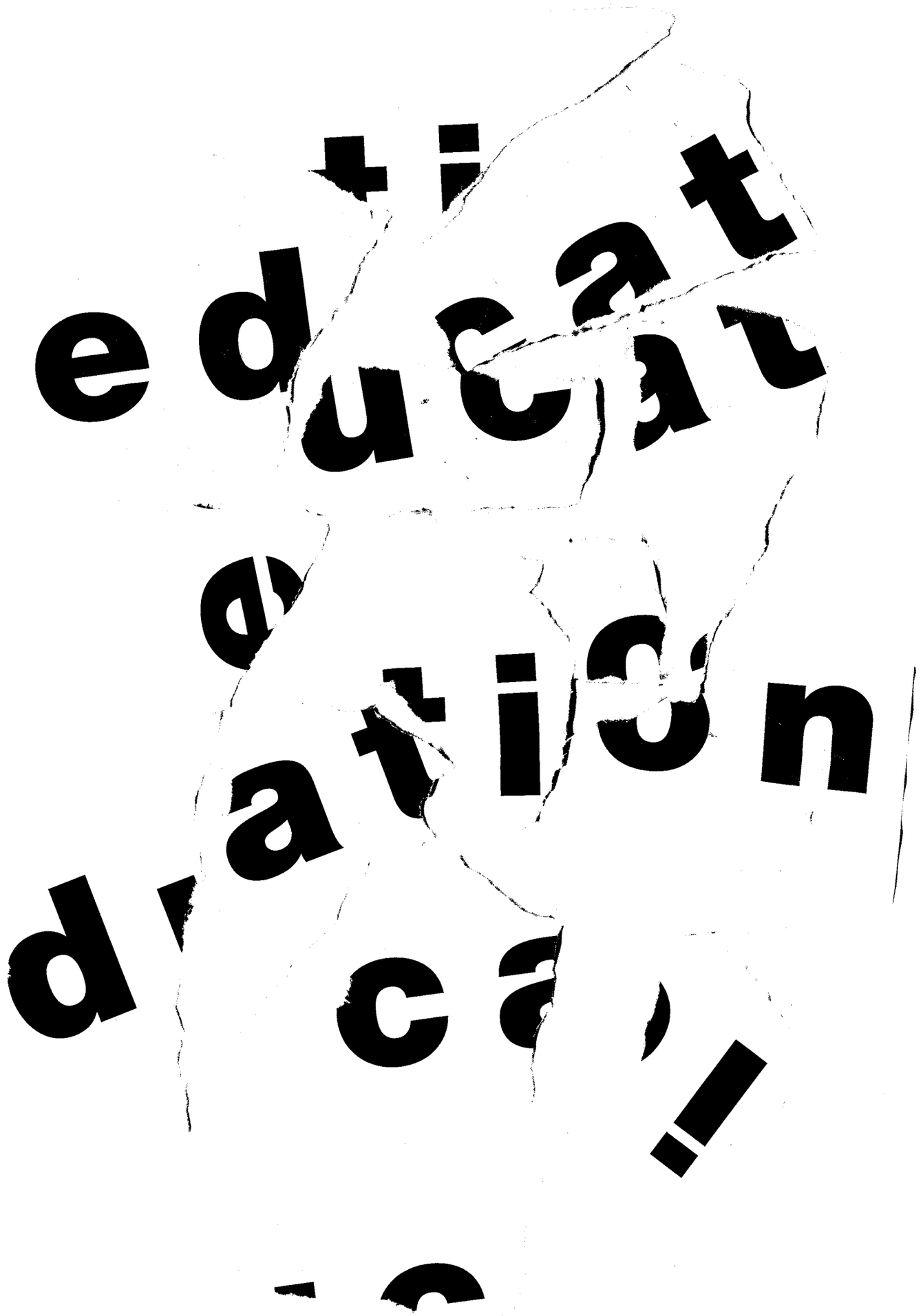

manifesto 21

education

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manifesto

the 教 education 育

issue 专 辑

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founder's notes
创始人片语

Rossana Hu & Lyndon Neri

Last year we celebrated the tenth year of our practice. It was a milestone, like graduating from school, we looked back on the work we've done over the years and for a brief moment, patted ourselves on the back. But now we are well into year eleven going on twelve, which somehow feels like yet another beginning. Transitioning from an office that has garnered success and accolades in interior design to an office that can deliver big Architecture has required some rethinking, an evolution. As we asked ourselves the critical question—what kind of architecture do we want to make—we also felt it was the right time to ask that question to a younger generation of architezcts. So we agreed to teach a graduate design studio at Hong Kong University this past spring, to draw from the circularity of learning and teaching.

去年我们庆祝了事务所创办的第十个年头。这是一个里程碑，就像从学校毕业时一样，我们回顾多年来所做的工作，有那么一个瞬间，我们拍拍背感到满足和肯定。现在我们正向第十二年头迈进，不知何故感觉又是一个新的开始。从一个在室内设计中获得了成功和赞誉的工作室向可以提供大型建筑设计的事务所过渡，我们需要重新思考、进化，由此抛出了这个关键问题—我们想做什么样的建筑?现在也是向年轻一代建筑师提出这个问题的恰当时机。因此，今年春季我们同意在香港大学教授一个毕业设计工作室的学生，亦期望从学习和教学的循环中汲取灵感。

Being in a school environment always brings back fond memories of the formative years we spent at Berkeley, Princeton, and Harvard. The words of wisdom from the various mentors that we idolized. The camaraderie of a shared intensity, wearing all- nighters like badges of honor. Those years were equally gratifying as they were painful: breaking down and rebuilding yourself with every project, establishing foundations that would later form the basis of our practice today. The brief we offered our students was a bit unconventional, weaving together threads of nostalgic tendencies with urban memories and architectural fantasies, we wanted each of them to dig deep and harness their personal obsessions into a generative force for making meaningful architecture—something that we hope they can take along with them for the rest of their professional careers.

学校的环境总是能唤起我们在伯克利、普林斯顿和哈佛成长岁月的美好回忆。那些我们崇拜的导师们充满智慧的话语；那些视通宵为荣誉的勋章的时光，和在高强度作业下产生的革命友情。那些岁月令人痛苦的同时，也同样令人满足：通过每一个项目，来打破和重建自我；奠定后来成为了我们今天的实践的基础。我们给学生的课题有点不太寻常，通过把怀旧倾向，城市记忆和建筑幻想交织在一起，让每位学生深入挖掘，把他们的热情转化为创造有意义的建筑的一种新生力量—同时我们也希望他们能将此带入今后的职业生涯。

In March we also hosted Festival of Design, many of the guest speakers are featured in this issue. The events that occurred over the span of several weeks in Shanghai were attended by more than 6000 people, with 3 million plus tuning in via live broadcasts. These audiences were able to participate in some very intimate and illuminating conversations with some of the most influential designers of this era. We got to hear firsthand, how David Adjaye navigated the highly charged political environment of his recently completed Smithsonian project, how Ronan Bouroullec considers the humanity behind every piece he designs. This is knowledge that can't be learned in school, that can only be drawn from the experiences of those leading the way. We were very fortunate to have had them with us, for them to share their stories with us.

今年3月，我们还举办了设计庆典，许多特邀嘉宾都出现在本期杂志中。活动的几周时间里，共有超过6000人到场参加活动，300万人通过在线直播观看了设计讲座和对谈。这些观众能够与这个时代最有影响力的一些设计师进行亲密、有启发性的对话，能够在第一现场听到大卫·阿贾耶在最近完成的史密森项目中，如何在高度政治的环境中游走，以及Ronan Bouroullec如何思考他设计的每一件作品背后的人性考量，这是无法在学校里学到的知识，只能从那些先行者的经验中汲取。我们很幸运能有这些设计先行者和我们一起分享他们的故事。

It has taken us over four years to prepare this issue of Manifesto; like a sabbatical, the gap years in between has allowed us time to ponder, to question, to reassess. We chose the subject matter of “Design Education” as an underlying theme, because it's actually rather complex. The design field has never been one that is hard-knowledge based, so the acts of teaching, learning, and practicing are simultaneous and co-dependent. We find ourselves constantly juggling roles as Student, as Educator, as Professional—I think many probably feel the same. It's not enough to simply work and produce; designers, as a community, we are stronger when we share. Ⓜ

距离上一期宣言杂志的出版已经过了四年。就像休长假一样，间隔岁月里让我们有时间思考、质疑、重新评估。我们选择了‘设计教育’这一主题，因为它实际上相当复杂。设计领域从来都不是基于纯粹的理论知识的，因此，教学、学习和实践的行为都需要彼此促进且相互依存。我们发现自己不断地扮演着学生、教育家、职人的角色，我想很多人可能也有同感。仅仅工作和生产是不够的；设计师，作为一个社群，我们在分享的时候会变得更强大。Ⓜ

points of view
视角

For the Design Education issue of Manifesto, we interviewed many students, educators, and professionals in the art and design fields. Through their diverse and wide-ranging answers to the same few questions, we present the voice of a new generation of designers, their thoughts about the present and future of this industry.

筹备本期设计教育特刊期间，我们以提问的方式采访了许多设计艺术行业的学生、教育家和从业者。透过他们对相同问题的不同回答，我们希望呈现新一代对行业现状及未来的思考。

摄影 Photo by Mog, Litien Poeng, Cindy Sun
采访 Interview by Mog, Cindy Sun
翻译 Translation by Cindy Sun, Jacqueline Yam (ch-en)

'point of view' series runs through the entire manifesto, you can continue reading it at p. 30, 36, 90, 130. ‘视角’ 系列贯穿整本宣言杂志，你可以在p. 30, 36, 90, 130 继续阅读。

Federico Saralvo

Architect 建筑师

Nine years of experience 工作九年

Education vs. Work, which has shaped you most as a professional today?

My studies and my professional experience were both very important in shaping me. Education gave me all the tools to deal with the more abstract side of our job. Work brought the reality.

What's the biggest challenge of being a designer today?

In my opinion there are two big challenges for designers today: In a globalized world of instant access and overwhelming information, the first challenge is to ensure design retains a clear relevance to its specific site conditions and context. Architecture exists on the border between artistry and business. The designer must positively mediate between these two elements.

教育与工作，哪方面对你成为设计师的影响更大？

学习和经验对我的塑造都非常重要。教育给了我工具来处理设计中更抽象的一面。工作则引入现实。

你认为今天从事设计工作最大的挑战是什么？

在我看来，今天的设计师面临两大挑战：在随时可获得海量信息的全球化世界中，第一个挑战是如何确保设计同具体的场地条件和背景保持清晰的联系。建筑处在艺术和商业的边界之上。设计师必须积极地在这两个要素间斡旋。

Scott Hsu

Architectural Designer 建筑设计师

Four to five years of experience 工作四至五年

Education vs. Work, which has shaped you most as a professional today?

Both, but most importantly, self-teaching.

What's the biggest challenge of being a designer today?

Designing with empathy and meaning while standing out under the constant bombardment of prefabricated images.

教育与工作，哪方面对你成为设计师的影响更大？

两者，但最重要的是自我教学。

你认为今天从事设计工作最大的挑战是什么？

处在预制图像的不断轰炸下，做有意义和共情的设计。

Nellie Yang

Architect 建筑师

Nine years of experience 工作九年

Architectural education is a lifelong pursuit, it doesn't just end abruptly with that piece of paper you get when you graduate from school. However accomplished you thought you were the moment you received your degree, passed your licensing exams, completed your first project, or even started your own practice, I think you quickly and humbly realize how much more there is to learn at every step. The architects that we tend to admire the most are the ones that have never stopped questioning, evolving, and pushing their ideas forward.

建筑教育是一种终身追求，它不会在你从学校毕业获得了那张纸后就突然结束。每当你以为自己已经完成目标了：你获得学位的那一刻、通过了许可考试、完成了你的第一个项目、甚至开办了自己的公司，我相信你很快就会虚心意识到，每走一步会多出多少需要学习的东西。 那些为我们所钦佩的建筑师，都是从未停止质疑、衍变、和推行他们主张的人。

Josh Murphy

Architect 建筑师

Three years of experience 工作三年

Education vs. Work, which has shaped you most as a professional today?

I think the real trade of architecture in its construction sense can only be taught within the market based realities of a commercial practice however for me architecture is so much more than this and the real romance of our profession lies much deeper in its inherent relationships to art and culture. In my opinion these aspects are best studied in an academic setting where the time and freedom is allowed to read, draw and form a strong personal opinion of what architecture should be. In this sense education has had a bigger impact.

What's the biggest challenge of being a designer today?

I think the biggest challenge is dealing with the speed that information travels and the quantity of media we are bombarded with in this internet driven digital age. Formulating strong opinions and staying true to founded beliefs about the position architecture should have is a constant challenge, we are all too often distracted by glossy images of forms and facades that in reality have very little substance.

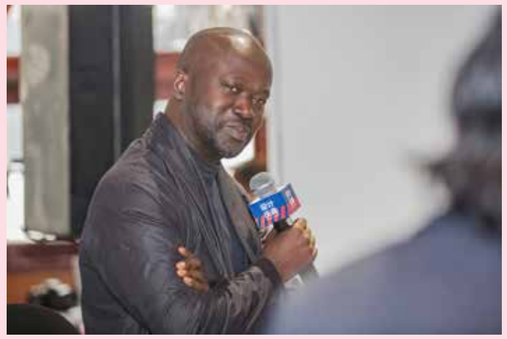
教育与工作，哪方面对你成为设计师的影响更大？

建筑做为建造行业而言，只能通过基于市场的商业实践习得。但对我来说，建筑不仅仅只是这些。这个专业真正的浪漫其实根植于它与艺术和文化的内在联系。在我看来，建筑的这些方面最好在学术环境中进行学习，因为有进行阅读，绘图，以及思考建筑到底是什么并生成鲜明意见的时间和自由。从这方面来说，教育的影响力更大。

你认为今天从事设计工作最大的挑战是什么？

我认为最大的挑战，是在互联网驱动的数字时代中，如何处理信息的飞速传播和过量的媒体轰炸。建构有力的主张，并坚持那些代表建筑应有立场的信念是一个持续的挑战，我们太容易被那些没有多少实质意义但表面光鲜的形式和外观分心了。

festival of design
设计庆典



Festival of Design is an interdisciplinary design platform curated by Design Republic. Our vision is to embrace the communal aspect of design to be inclusive, interdisciplinary and innovative. Festival of Design places an emphasis on collaborative projects and communal engagement with an interest in initiatives, exhibitions, talks and workshops inspired by the notion of community and exchange, thus reinforcing the essential character of Design Republic as an innovative platform.

设计庆典是由设计共和策办的跨界设计平台，期望能够借助公社的力量去重新诠释设计的包容、跨界以及创新。设计庆典强调跨界合作和社区参与，通过展览、演讲、工坊及研讨会来深化设计共和作为一个创新平台的本质特征。

文字 Text by Ricky Lau

翻译 Translation by Vivi Lau (en-ch)

design republic presents
设计共和·呈现

festival of design
设计庆典

2017.03.07-04.09

lecturers
演讲嘉宾

03.07 **Sir David Adjaye OBE**
03.11 **Ronan Bouroullec**
Pablo Castro
Enrico Fratesi & Stine Gam
Andra Matin
03.15 **Nader Tehrani**

roundtable
圆桌论坛

De La Espada Luis De Oliveira
Emeco Gregg Buchbinder
Magis Alberto Perazza
Muuto Anders Cleeman
Parachilna Roman Riera
Stellar Works Yuichiro Hori
Tina Frey Tina Frey
Thonet Philipp Thonet

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Misha
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Stellar Works
De La Espada
Thonet
Tina Frey
Viabizzuno
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Mohawk
八佰秀

Ronan Bouroullec

Industrial Designer 工业设计师

Photo Kleinefenn

"A Chair is a chair. It's not an invention. It's a typology we have known for hundreds of years. There are millions of ways to design a chair, so I don't see any intelligence in copying a chair. In principle, it is the solution that has to be shared. If it is a good idea, and things can grow out of it, then I don't mind being copied."

“椅子就是椅子。它不是新的发明，而是已经存在了上百年的一个形式。要设计一把椅子有成千上万种方式，所以我不认为抄袭一把椅子有何智性可言。原则上，被分享的应是解决方案。如果是好的想法，事物可以从中发展出来，那我不介意被抄袭。”

Andra Matin

Architect 建筑师

© andramatin

"When I designed my own house, I wanted to make an open living room because in Indonesia the temperature is not like Shanghai's, at ground floor it is only 23 degrees but at roof temperatures reach 34 degrees. Temperature and humidity are the first thing to consider when designing architecture in Indonesia."

“当我设计自己房子的时候，我想做一个开放的客厅。因为印尼的气候不同于上海，在底部是23度，在顶部可达到34度。在印度尼西亚做建筑设计，温度和湿度是第一个要考虑的要素。”

GamFratesi

Industrial Designer 工业设计师

© GamFratesi

“We call it evolving tradition because it is interesting to bring the tradition to another level. We don't believe that we can start creating from scratch since we are influenced by our culture, our background, and the way we live. These are things we try to bring into our product.”

我们称之为进化的传统，因为把传统带到另一个层面是很有趣的。我们不相信可以从零开始创造，因为我们受自身的文化、背景和的生活方式的影响。我们试图把这些东西融入产品设计中。

Pablo Castro

Architect 建筑师

© OBRA Architects

“We see architecture as a form of knowledge and opportunity to learn things which for us seems more interesting than a straight out professional practice. Skepticism and a kind of inquisitive disposition are what we trying to introduce in every project.”

我们把建筑看成是一种知识形式和学习的机会，这对我们来说似乎比直接的专业实践更有趣。怀疑精神，一种询问的态度, 是我们试图在每个项目中传达的。

panel discussion
对话

日期 date: 2017.03.11

地点 venue：八佰秀 800 show

participants
参与者

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建筑师, 建筑工作室andramatin创始人

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Industrial designer, founding partners of GamFratesi
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Wang Xu 王旭
Editor in chief of Architectural Digest (China)
安邸杂志(中国)主编

听写 Transcript by Jacqueline Yam

翻译 Translation by 张微伟

Wangxu: For the last ten years, Lyndon has been inviting a lot different designers and architects to China. And this year for the Festival of Design, it is a very strong panel of guest speakers. Because for me, there are big names; there are architects who I was not familiar with but I really enjoyed seeing their great work today; and at the same time there are rising young designers. How did you come up with this palette of people?

Lyndon Neri: Rossana and I have been inviting people to give lecture since 10 years ago as part of Design Republic's public initiative. Three years ago, we decided to take it more seriously by creating a platform called Festival of Design, which is an interdisciplinary design exhibition and a lecture platform series that brings different disciplines of design for a week of dialogue and discussion. I believe the Festival of Design and what we're trying to do is very important. It is very rare for a commercial platform and a platform of ideology to come together but I think we are in a country and specifically a city like Shanghai during this period that allows this to happen.

Wangxu: I came by shared bike today. As a Chinese, we have fond memories of bicycles from our childhood. Then bicycles were replaced by cars and bicycles almost disappeared, until this trend of shared bikes that puts them back onto the streets. Digital technology, like Apps, that offer shared bikes, has changed our lives. I believe that you all have different perspectives on the digital revolution so what do you want to say about the future of design or the future of architecture?

Andra Matin: I started biking when I was in elementary school, riding from one kilometer, five kilometers, to ten kilometers. In high school, I once took a trip to another city riding 180 kilometers across three days with friends and family. Because of all those memories of bicycles, I took on a project designing the bicycle lane in the small city of Lampung, to help ease cyclists around the city. I still love to bike now. Not long ago, I went to Copenhagen with my family and I biked there for three days. Every time I went to Kyoto, I would bike there. It is difficult to bike in Jakarta since it is five times more crowded than Shanghai, but I still bike anyway to reduce emissions.

Ronan Bouroullec： I don't like the word "design". It has always been a question of "object" since the very beginning. We are facing so much transformation today and everyday new issues are appearing. How do we mix all these different aspects and also find interesting solutions to them? This is the big question. The world is full of problems and we need to find a way to concentrate all our knowledge in order to propose good solutions. We need to be critical and we need to be hard when examining the past in order to find good solutions to help people survive these difficult times.

Lyndon Neri: I think our world is definitely changing. I remember coming to China 20 years ago when I was working for Michael Graves and there were no freeways, the roads were full of bicycles and not a lot of cars. In the span of 20 years, the infiltration of cars is very visible in Shanghai and the bikes have disappeared. The orange & yellow bike you see today is a new thing. This new digital phenomena of sharing economy allows technology to bring back to our everyday the very old and familiar and in many ways the tradition that is important to all of us is going to change how we live. With companies like Uber, Airbnb and many more to come, there will be major disruption in how we live and conduct business. They are changing the dynamism of what design is. All of a sudden, things that we are nostalgic for, the basic things that we thought was going to disappear are actually coming back.

Lyndon Neri: Pablo, I'm sure you have some ideas [laughs].

Pablo Castro: Yes, I … [pause]

Pablo Castro: No, I'm trying to be positive [laughs]. I fear that the optimism of faith in design... Theodor W. Adorno once said that we should be concerned about art that makes us happy. I'm actually advocating for art that makes me unhappy because that way I can think about how to improve the world rather than fall into complacency and accept things as they are without examination. I recently went back to the quote mostly because of the elections in the United States. I promised myself not to talk about this but there are a lot of progressive people in the United States that think Donald Trump is better for America than Hillary Clinton because Hillary Clinton makes a lot of sense and would make people happy in a way. Everybody would have fallen back into complacency, thinking that everything was ok when we continue to be as messed up as we've always been. The fact that Donald Trump is breaking habits in the American administration is actually a good thing because it has generated a movement of people that now want to resist and think about the possibility of bringing about real change to transform the lives of people. I was thinking ameliorism is very dangerous, yes it makes the lives of people better but at the same time there is a kind of strategy that continues to make the situation acceptable and prevent the event of real change. On one hand, we are riding more bicycles, driving fewer cars and therefore protecting the environment. On the other hand the environment is being messed up elsewhere by the same forces that give us the bicycle. We therefore go on the bicycle thinking everything is okay when we're actually being screwed. This is the danger of design. This is a commonplace that architects always like to say "Architecture should not solve problems but propose new questions". In a sense that is true, it's a sort of ambiguous profession. Of course it is a practical profession that makes people's lives better by keeping them dry and safe. But at the same time they should retain a certain amount of tension. People should be kept uneasy; we need to make people a little bit unhappy so they stay awake.

Ronan Bouroullec： They are not happy.

Pablo Castro: They are a little bit awake but it continues to be an internal war. In the case of United States, a very funny phrase by Calvin Trillin, an American comedy actor said "The only way you can believe in the American dream is if you are asleep". I don't know if this is a task that design or architecture can undertake. It's complicated and will need a big call to do.

Ronan Bouroullec： People are unhappy. I would not consider we live in a society that is well. I agree with you that people should retain a little tension so we try on a micro level to find solutions. It is the same for each discipline, all subject to


《安邸AD》
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编辑


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编辑总监

be questioned so we generate new purpose in the most honest way. I agree with you on all this complexity and duality but I do not see the point of not trying to make the small improvements. We were speaking about the bike before; it's a simple basic answer and not a design question. I'm not interested in the bike, the most interesting part is the app which reorganizes something in the simplest way 15 years after it disappeared. The design project is not in the bike itself because it is no more interesting than any other bike but the app. The exciting part of this new technology is how quickly you can reorganize certain aspects which of course bring both pros and cons.

Pablo Castro: Maybe unhappiness is a good condition in the sense that it makes life more interesting. As Jean-Luc Godard said, to make a movie you need a girl and a gun. The gun represents trouble, (and the girl too,) if you don't have trouble, life is boring. There is a magazine in New York called the New Yorker that is famous for its cartoons. In one cartoon, a naked man and woman are sitting in paradise and the woman says to the man "What should we do? Should we eat from the tree of knowledge or should we just sit here with nothing to talk about?" Eating from the tree of knowledge you get kicked out of paradise but at least then you know something; there is something to talk about. I think the interesting condition for art, for architecture and for design is in this ambiguity. The fact that you have to operate within a certain condition of negativity, that things are not so straight forward and simple.

Lyndon Neri: I agree with Pablo but I think Pablo you are living in a bubble. I'm glad that you have a practice in Seoul and Beijing and, that is the reason why I was convinced you need to come here and give this talk. Actually in Shanghai, even with my staff, there are a lot of people who are unhappy. They want to leave Shanghai because they think the pollution is not good or there is a lack of freedom or there is not enough culture or perhaps things are too expensive. I would argue, however, that this place is more real. For instance when I go to America to present, my clients say "very nice" or they are often very diplomatic and say nice things but a week later they have a number of things they want us to change. Whereas here or even in Europe when we present, they always say "this is not good enough" or generally or more critical. There's always this skepticism. That is what I like about your work, there's this unhappiness. We're always kind of unhappy but then when we leave, those issues actually get discussed and eventually get resolved. When you talk about Donald Trump, I've never seen him from that perspective but I think America seems to be the only country that creates this positive aura, maybe superficial confidence. I think it's a strength don't get me wrong, yet you sit here and sentimentalize or romanticize unhappiness while the rest of the world are quite skeptical with everything. I think that's the reason why your work in New York is very refreshing because there are a lot of architects out there who are not that good but congratulate they are praised for mediocre work so they continue to build because society allows them to. They don't even have to go out and question their work. When the Pritzker Prize was awarded to RCR, I found it interesting that people questioned how come all these American architects who are more famous were not being recognized. A lot of people in the world know but a lot of Americans don't. I think that skepticism is very important and I agree that a sense of unhappiness and being critical are crucial for us to have this dialogue.

Wangxu: Every great designer is also a great thinker. Should we also listen to the young generation?

Enrico Fratesi: We have a lot of bikes in Copenhagen, which has been nominated the happiest city in the world on numerous occasions. I don't know if it is because of the bikes but we can perform an experiment by bringing Pablo to Copenhagen. Going back to the question, Denmark is a country of six million people, it is very small compared to the cities we're talking about now so the way we live may be different and I understand that things here are much more complicated. An improvement, like the bicycle, impacts the cities in different ways, in their mentality and their approach. I think it is interesting if I can bring a bit of positivity or bring something that lets people feel a little more confident, even if our approach and the way we design may be very small. That is why we are having this discussion because there are different opinions and contrasting opinions makes the discussion interesting. We do things a certain way because it is the way we believe and live but we are always open to discussion and to understanding different points of view.

Wangxu: So successful designer should also be a good communicator?

Enrico Fratesi: Communicating through design is the most important. Of course talk and words can put everything together but at the end when we leave, what remains are our products. This is the message at the end. If our products succeed with society and with people then our mission makes sense. However it does not make sense if it's just a 50 year adventure in design making beautiful products and we disappear. That is why we have to do what we do in a good way.

Ronan Bouroullec: This morning we had a very nice walk on an old street with a flea market which was going to be destroyed in 15 days. It was quite interesting because it was old and dirty but with beautiful houses and kids outside. For me it was like paradise, this situation of people living together. There was tension and the residents were unhappy because it was clear that it was about to disappear and that they would be packed into new buildings. Things are changing and the city probably needs to be rebuilt in certain aspects but the question is how we regenerate and rebuild. Under new conditions, people may have a little bit of comfort but at the end it will not save them; we cannot preserve the existing beauty. I recently had a long discussion about comfort. Is comfort something interesting or not. It's been considered a bourgeois question for a long time. Is comfort something that will make you happy? I cannot understand when comfort is not considered something everyone can attain at a certain point. People who suffer at work can be comfortable when they return home and lie on a bit of foam instead of the floor, comfort can achieved anywhere.

Pablo Castro: We all have to be aware of the fact that we can criticize our bourgeois conditions but it is still our bourgeois conditions. Nobody would give up comfort but you still would be able to fight the injustice of comfort. As an anecdote, when Theodore Adorno (the philosopher that said he wanted art to make him unhappy) went back to Germany in 1968, the students took the university and burned cars so he called the police. This was the guy that was the main advocate of the revolution but when students actually attempted the revolution he was the first one to call the police. His excuse was I'm theorizing the revolution but they're breaking the rules and taking over the university, it was a very German reaction. I think the condition in that sense is always ambiguous but that's also what makes it interesting. I'm not advocating unhappiness for unhappiness sake but the truth is that …

Lyndon Neri: Deepdown you want to be happy?

Pablo Castro: Of course I want to be happy. But just think about it, I would say the crown jewel of world culture is the city. There is nothing that we have invented that is better than the city, or more complex and potentially more beautiful. However our cities today are a disaster; we've given up on them. They're growing exponentially, we have no control. The governments have given up and farmed out the cities to be developed by developers in whichever way they want. Nobody knows what to do and this is one of the main drivers for global warming, for pollution and also for social injustice. I would say until 1968 there were still architects; architects who were planning new cities and proposing new ideas. But since then, it's been 50 years we've given up. We've entered a time of complacency, we pat ourselves on the back because we make little changes but the big problems are not being addressed. The only hope in a situation like that is the Donald Trump syndrome. Things get so bad that people decide to do something.

Wangxu: (Asking Pablo) Do you have an ongoing project at the suburb of Beijing.

Pablo Castro: Yes, it is part of an artificial city, a new satellite city that is being created. We tried to propose a housing unit of our design for this project but our client said "No, you know the fees for this are 10 times what you will need and the requirements are very strict and these things are always the same and they need to be like that. So it doesn't require your creativity and we pay you for it. SADI (The local architect) is going to do all the towers and you just do the kindergarten". There's a bigger problem here right? In fact, you are bringing up dwelling. Dwelling in architecture and in philosophy means very specific thing. Dwelling is the description of the ideal way of living in the world, as described by the German philosopher Martin Heidegger, He talks about the fourfold of dwelling: living on the Earth, under the sky, under the gods and with humanity, meaning with other people. Look at what's happening. The Earth is contaminated and is being put up for sale, the air is polluted, there are no more gods and we are at war with other people. There is no dwelling there is no possibility of dwelling. Massimo Cacciari who is an Italian philosopher did a reading of dwelling by Heidegger said "we can't hope to dwell, we can only lodge" in other words we have to live an imperfect life. We can't live like in paradise because we invented reason. Through reason we are quantifying everything and this possibility of living under the gods is not possible. So our condition by necessity is compromised but it's our condition so we have to inhabit it with happiness. We have to make movies, make furniture, try to make buildings and use this imperfection to make life worth living. Not easy but yes we can have comfort. But also if it's very comfortable, it's boring. As a designer you probably have something to say about that, something that are very comfortable and they're ugly. Or many times when you try to make things comfortable and the first thing that comes out is terrible. So it has to be something else but what is that something else?

Ronan Bouroullec: As you said things are not simple so there needs to be a balance, a good project is a mix. There is a famous film maker in France, Jacques Tati and he had a character that was called Monsieur Hulot. Monsieur Hulot was a guy that was in his 60s and in the film Mon Oncle, he complained about architecture and about how he was living at the top of a building in a very old street. Today I see exactly where Mr Hulot lives; he is living here in Shanghai. Like the movie, there are small buildings that are on the verge of being destroyed, they're the only buildings that stay because people fight for their rights but towering behind is the monstrous new building. It's quite interesting that what Jacques Tati was depicting, this small house with a lot of charm and character versus this modernism has not changed that much in the last 50 years. As architects and designers, why don't we find a way to solve the lack of romanticism and lack of small things that make life beautiful? That is what I'm running after, to try to one day be satisfied of doing something that has enough modesty, enough beauty, enough intelligence, is well conceived and have people who are happy with it, to build it and to live with it. I consider this the subject. Of course we can laugh and say that this is a simplification of the question. However I still believe there is a simple and modern approach, probably with new technological methods, to resolve a certain type of problem.

Lyndon Neri: We are running out of time so we have to wrap this up, if you're interested in unhappiness, skepticism, beauty or proportion, please come forward and ask these respective guests the questions you have in mind. Thank you very much for coming and we look forward to seeing you next year at the Festival of Design. Thank you. Ⓜ

王旭：在过去十年里，郭锡恩先生一直在邀请许多不同的设计师和建筑师到中国来。今年是为了设计庆典，这个小组讨论会的发言嘉宾都很有重量。因为对我来说，其中有已经成名的；有我之前不熟悉，但是今天看到他们优秀的作品，感到十分喜欢的；同时还有正在冉冉升起的青年设计师。你是怎么想到将这些人放在一起的？

郭锡恩：如珊和我从十年前就开始请人来讲座了，这也是设计共和的公共计划之一。三年前，我们决定创造一个平台，更加正式地做这件事，叫做设计庆典。这是一个跨界的设计展以及系列讲座，将不同的设计学科聚集起来，进行一周的对话和讨论。我认为设计庆典和我们正在做的努力都很重要。让商业平台和意识形态的平台走到一起的例子并不多见，但我认为我们正处于这个时期的中国，特别是这个时期的上海，因此才有可能成立。

王旭：我今天是骑共享单车来的。作为中国人，我们对单车有着很美好的童年记忆。后来单车被汽车代替了，基本消失了，直到这一波共享单车的潮流，才让它们回到了街头。像提供共享单车的应用这样的数字技术已经改变了我们的生活。我相信你们都对这场数字革命有着不同的看法，那么你们对设计的未来，或者建筑的未来有什么想要说的吗？

Andra Matin：我从小学就开始骑单车了，从骑一公里，到骑五公里、十公里。高中时我还曾和朋友家人一起花三天骑行180公里到另一个城市去。因为所有这些对单车的回忆，我才接下了一个项目，在楠榜（Lampung）这个小城市设计一条自行车道，好方便城里骑自行车的人。我现在还是很喜欢骑单车。前段时间，我跟我的家人到哥本哈根，我骑了三天自行车。每次我去京都都会在那里骑单车。雅加达不太方便骑车，因为它比上海还要拥堵五倍，尽管如此，为了减少碳排放我还是骑车。

Ronan Bouroullec：我不喜欢“设计”这个词。从一开始，真正的问题就是围绕“物体”的。今天我们面对各种变化，每一天都有新的事情发生。我们该如何将这些不同的方面混合起来，并找出有趣的解决方法呢？这才是大的问题所在。世界上到处都是问题，我们必须想办法将我们的知识集中起来，好提出有效的解决办法。我们需要有批判性，并且需要苛刻地审视过去，以找到好的办法，来帮人们度过这些艰难的时段。

郭锡恩：我认为我们的世界无疑是在发生变化的。我记得20年前到中国来，当时我还在迈克尔 · 格雷夫斯（Michael Graves）那里工作，当时还没有高速公路，街上满满的都是单车，没有几辆汽车。在20年的时间里，汽车的渗透在上海已经很明显了，单车也消失了。今天你们看到的小橙车和小黄车都是新出现的事物。共享经济这个新的数字现象，让科技能够将非常老的、熟悉的东西带回到我们的日常生活中，而从许多方面来说，那些对我们所有人来说都非常重要的传统，将会改变我们的生活方式。随着Uber、Airbnb、还有许许多多公司的出现，我们生活、做生意的方式都会有一次重大的决裂。它们改变了设计的根本格局。突然之间，我们怀念的、以为慢慢会消失的非常基本的东西，其实都在回来。

郭锡恩：Pablo，你肯定有话要说吧「笑」。

Pablo Castro：嗯，我……「暂停」

Pablo Castro：不是，我是想表现得正面一点「笑」。我害怕对设计的这种乐观的相信会……提奥多尔 · W · 阿多诺（Theodor W. Adorno）曾经说过，我们应该小心让我们感到快乐的艺术。实际上我是支持让我们不快乐的艺术的，因为这样我们就能够思考该如何让世界变得更好，而不是陷入满足，从而不加思考地接受事物。我最近回去想这句话，主要是由于美国近期的选举。我已经心里决定不去讨论这个了，但在美国，有许多进步的人士认为唐纳德 · 特朗普（Donald Trump）比希拉里 · 克林顿（Hilary Clinton）对美国更好，因为希拉里 · 克林顿很符合情理，并在某种方式上能令人开心。那么所有人就都会陷入满足，认为万事大吉了，而实际上人类还是像一直以来一样糟糕。唐纳德 · 特朗普正在打破美国政治系统中的很多习惯，这实际上是一件好事，因为他催生出了一场群众运动，这些人想要抵抗，并且思考是否有可能为改变人们的生活带来实际的变化。我在想，改良主义（ameliorism）是很危险的，是的，它让人们的生活更加美好，但同时，它也让人们持续的接受现状，并阻止了真正意义上的改变。一方面，我们骑车多了，开车少了，因此保护了环境。另一方面，在其它地方，给我们这些单车的同样势力正在摧毁环境。因此，我们骑上单车，认为一切都好了，但其实我们正大难临头。这就是设计的危险所在。建筑师总是喜欢说：“建筑应该做的不是解决问题，而是提出新问题来。”这已经司空见惯了。从某种意义上来说，这是对的，这个职业有些暧昧。当然，它是一个实用的专业，保护人们干净、安全，让他们的生活更美好。但同时，建筑师们也应该保持一定量的紧张感。人们应该一直感到不适；我们得让人们有一点不快乐，好保持清醒。

Ronan Bouroullec：人们并不快乐。

Pablo Castro：人们有一点觉醒，但这是一场持续的内在的斗争。对于美国的情况来说，一位美国喜剧演员Calvin Trillin说过一句很有趣的话：“只有一种相信美国梦的办法，那就是在睡着的时候。”我不知道设计和建筑能否承担这个任务。这很复杂，需要一场浩大的号召。

Ronan Bouroullec：人们并不快乐。我不认为我们生活在一个很好的社会里。我同意你说的，人们应该保持一点紧张感，好在微观层面上找出解决办法来。对于每个行业、每个学科来说也是一样，需要进行质疑，这样我们才能以最诚挚的方式产生出新的目标。我同意你说的这些复杂性和双面性，但我找不到理由不去做这些细微的进步。我们之前在讨论单车，这个答案很简单、很基本，因为这不是一个设计问题。我对单车不感兴趣，有趣的地方是这个应用软件，它在单车消失15年之后，以最简单的方法重新将它组织了起来。设计的课题不在单车本身，它并不比别的单车更有意思，而是在应用上。这个技术激动人心的部分在于你能够多快地重新组织某些方面，当然这既有好的也有坏的影响。

Pablo Castro：不快乐让生活更加有趣，从这个意义上来说，或许不快乐是一件好事。让—吕克 · 戈达尔（Jean-Luc Godard）说过，要拍电影，你得有个姑娘，有把枪。枪代表着麻烦（姑娘也是），如果你没有麻烦，生活就太无趣了。纽约有一本杂志，叫《纽约客》，它的漫画很有名。在一幅漫画里，一男一女裸体坐在天堂里，女的跟男的说：“我们该干嘛？我们是去知善恶树上吃点东西，还是坐在这里无话可说？”如果你吃了知善恶树上的果子，你就会被踢出天堂，但至少你知道了；开始可以有话说了。我觉得对于艺术，对于建筑和设计来说，最有趣的状态就在这种暧昧当中。现实就是你必须在某种负面的状态中摸索前进，事情并不是单纯、简单的。

郭锡恩：我同意Pablo，但我认为Pablo你活在一个泡泡里。你在首尔和北京都有分公司，我感到很高兴。因此我才认为你应该来这里做这个演讲。实际上，在上海，包括我的员工在内，有很多人觉得不快乐。他们都想离开上海，因为他们觉得环境污染不好，或者没什么自由，或者没什么文化，或者可能东西太贵了。但是，我会说，这个地方才是更真实的。比如说，每次我到美国去报告，我的客户都会说“非常好”，或者说他们一般都爱用外交辞令，说一些漂亮话。但过一个礼拜，他们就想让我们改一堆东西。但在这里，甚至说在欧洲，当我们报告的时候，客户会说“不够好”，或者总体来说批评得更厉害。怀疑精神是始终在场的。这也是你作品中我喜欢的地方，这种不快乐。我们总有一点不快乐，但当我们离开的时候，客户提出的问题实际上都被讨论了，并最终得到了解决。你谈到特朗普的时候，我从来没有从这个角度看过他，但我觉得美国似乎是唯一的一个会产生这种正面光环的国家，或者说可能是表面的自信。不要误会，我认为这也是美国的优势，但正因为美国的这种乐观，你才会把不快乐感伤化浪漫化，而世界的其它地方都在怀疑一切。我认为这就是为什么你在纽约的作品都很让人耳目一新，因为外面有很多建筑师并不怎么高明，但是他们平庸的作品得到了表扬，因此他们能够一直盖项目，因为社会允许他们这样。他们甚至都不需要走出去质疑自己的作品。当普利兹克奖颁给RCR的时候，很多人在质疑说这些美国建筑师更有名，怎么没有得到认可，我觉得这很有意思。世界上的很多人知道，但是许多美国人不知道。我认为这种怀疑态度是很重要的，我同意，有一种不快乐的感觉、保持批判的态度，对我们对话的延续是非常重要的。

王旭：每个伟大的设计师都是一个伟大的思想者。我们是不是来听听年轻一代怎么说？

Enrico Fratesi：在我们哥本哈根，有很多单车，哥本哈根在许多场合被提名为世界上最幸福的城市。我不知道是不是因为单车，但我们可以做个实验，把Pablo带到哥本哈根去。回到这个问题上，丹麦有六百万人口，比起我们正在讨论的城市来说十分小了，因此我们的生活方式可能不一样，我也明白在这里，事情要更加复杂。像单车这样的进步，在它们的意识和它们的处理方式上，都以不同的方式影响着城市。我觉得，如果我能为人们带来一点积极性，或者让人们觉得更有自信一点的话，应该会很有意思，尽管我们的处理方法，和我们设计的方式都很小。这也是我们这次讨论的理由，因为有不同的意见，有相对的意见，让讨论有意思。我们做事的方式都是我们所信奉、所生活的方式，但是我们一直都欢迎讨论，理解不同的观点。

王旭：所以说一个成功的设计者也应该是一个好的沟通者？

Enrico Fratesi：通过设计沟通是最重要的。当然，说话和文字可以把事情搞定，但最后我们都不在了的时候，留下来的是我们的产品。这就是最后的信息。如果我们的作品对社会、对人们来说是成功的，那我们的任务就有意义了。但如果它只是一场50年的大冒险，做好看的产品，然后我们消失的话，就没有意义了。这也是为什么我们必须要以好的态度做自己在做的事。

Ronan Bouroullec：今天早上我们在一条老街上散步，有一个15天之后就要被拆了的二手市场。这个市场很有意思，因为它很旧很脏，但外面有美丽的房子和小孩。它对我来说就像天堂一样，人们共同生活的状态。其中有一种紧张的气氛，住户也感到不快乐，因为很明显这里就要消失了，他们就要被打包送到新的大楼里去了。事物在变化，城市也需要以某种方式来重建，但问题是我们如何再生与重建。在新的情境下，人们可能会多一点舒适，但说到底，这也不会拯救他们；我们无法把现在的美好保存下去。我最近关于舒适进行了一场很长的讨论。关于舒适是不是一件有意思的事情。在很长时间里这被认为是一个很小资的问题。舒适能让你感到快乐吗？我不能理解的一种看法是，把舒适看做并非人人都可达成的状态。被工作折磨了一天的人，可以在回家时躺在沙发上而不是地板上，从而感到一点舒适。舒适可以在任何地方达到。

Pablo Castro：我们必须明白这一点，我们可以批评我们的小资状态，但这还是我们的小资状态。没有人会放弃舒适，但你还是得能够与舒适的不公进行斗争。我来讲一件轶事，当提奥多尔 · 阿多诺（就是说想要让自己不快乐的艺术的那位哲学家）1968年回到德国的时候，学生们占领了大学，烧了车，于是他报了警。他是革命的主要倡导者，但当学生们真的要闹革命的时候，他是第一个报警的人。他的理由是，我是在对革命进行理论化，但他们是在打破规则，占领大学，这个反应很德国。我认为在这个意义上，这种情况总是很暧昧的，但这也是有趣的地方。我不是为了不快乐而倡导不快乐，但事实就是……

郭锡恩：在内心深处你是想要开心的吗？

Pablo Castro：我当然想要开心。但你好好想一想，我敢说世界文化的巅峰在城市。我们从来没有发明过任何东西比城市更好，或者更复杂、更强大、更美丽。但我们今天的城市是一场灾难；我们已经对它放弃了。城市呈指数增长，我们毫无办法控制。政府已经放弃了，把城市交给开发商放养，让他们为所欲为地开发。对于污染和社会不公，没有人知道怎么办，这也是全球变暖的主要原因之一。我会说，到1968年为止，还是有建筑师的；还是有规划新城、提出新的想法的建筑师的。但从那以来，我们已经放弃了50年了。我们进入了一个满足的时代，我们认为我们在进行微小的变化，因此自己轻拍自己的背，但大的问题都没有得到讨论。在这种情况中，唯一的希望就是唐纳德 · 特朗普综合症了。问题闹得这么大，人们该做点什么了。

王旭：（向Pablo提问）你在北京郊区有一个项目是吗？

Pablo Castro：是的，这是一个人造城市的一部分，是一个正在建设的新卫星城。我们试着为这个计划提案了一个我们设计的住房单元，但业主说：“不行，你这样做会花费10倍的费用，（建筑）规定很严格，一直都是这样的，就得是这样的。这部分不需要你有创意，而我们向你支付的是需要创意的那部分。当地设计院（SADI）会做所有的塔楼，你们做幼儿园就行了。”这里有一个更大的问题是不是?你提到了居住，实际上，栖居（dwelling）在建筑和哲学中有着非常特定的意思。栖居是对生活在世界上的理想方式的描述，如德国哲学家马丁 · 海德格尔（Martin Heidegger）所说，他提到了栖居的四重整体：地、天、神、人，也就是与这四重一起生活。如果你看实际上正在发生的事情，地球遭到了污染，正被处理待售，空气被污染了，再也没有神了，而我们正在与他人开战。没有栖居，也没有栖居的可能了。马西莫 · 卡恰里（Massimo Cacciari）是一位意大利哲学家，他曾经对海德格尔的栖居做了这样的一个解读，说：“我们无法期待栖居，我们只能寄住。”换句话来说，我们不得不过一种不完美的生活。我们无法住在天堂中，因为我们发明了理性。因为有了理性，我们把万事万物都量化了，因此生活在万神之下的可能性也不存在了。因此，我们的境况必然是经过了妥协的，但这就是我们的境况，我们必须带着快乐来过。我们必须做电影、做家具、做楼，用这种不完美来让生活值得过。这并不容易，但是我们可以有舒适。但如果太舒适了，就无聊了。作为设计师，你可能对此有话要说，当一个东西太舒适了，就变丑了。或者很多时候，你想把东西做得舒适一点，但最先想出来的东西总是很糟糕的。因此它肯定不是这样的，但究竟是什么样的呢？

Ronan Bouroullec：像你说的，事情没这么简单，因此需要有平衡。一个好的项目是两者的混合。法国有一位著名的电影人，雅克 · 塔蒂（Jacques Tati），他创作了一个角色，叫于洛先生（Monsieur Hulot）。于洛先生60多岁了，在电影《我的舅舅（Mon Oncle）》中，他抱怨建筑，抱怨自己住在一条很老的街道上的一座房顶上。今天我看到于洛先生住的地方了，他就住在这里，住在上海。像电影中一样，这里有很多小房子，正面临被拆除的危险，只有这些房子还存留着，因为有人在为他们的权利斗争，但它们身后的高塔则是怪物一般的新楼房。雅克 · 塔蒂所描绘的这种小房子很有意思，有许多魅力和性格特色，而不是50年来没有什么变化的现代主义。作为建筑师和设计师，我们为什么不想办法来解决缺乏浪漫主义、缺乏让生活变得更加美好的小事，这样的问题呢？这就是我所追求的，努力在有一天能够做一个足够谦虚、足够美丽、足够智慧，好好构思，并且能够有人满意、建造、并住在里面的设计，并为此感到满足。我认为这就是我的课题。当然我们可以一笑而过，说这是对问题的简单化。但我还是认为有一种简单、现代的方法，或许在新的技术方法的帮助下，能够解决一种特定的问题。

郭锡恩：时间不够了，所以我们得结束了，如果你对不快乐、怀疑主义、美、比例有兴趣的话，请到前面来，分别问嘉宾们你的问题。感谢你们今天的到来，我们希望在明年的设计庆典上与你们再见。谢谢。Ⓜ

Lei Wang 王铄

Third year visual communicatoin student 视觉传达专业数字媒体方向大三学生

What's the biggest challenge of being a designer today?

Conditioning from all types of design creations, inability to produce something that stands out.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

In my opinion no. As technology moves towards being intelligent our human brains are also constantly evolving. The former's learning ability is limited whilst the latter's ability to evolve is immeasurable.

你认为今天从事设计工作最大的挑战是什么?

被各种设计作品洗脑，做不出有自己特色的作品。

你认为未来人工智能会取代设计师的工作吗?

个人感觉不会，因为机械越趋向智能的同时，人脑也是在不断地进化的。前者的学习能力是有限的，而后者的进化能力却是不可估量。

Yu Dai 戴玉

Third year visual communication student 视觉传达专业数字媒体方向大三学生

What's the biggest challenge of being a designer today?

How to live in harmony with the overwhelming change requests from client.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

No, every designers work not only merges their theoretical knowledge but also their life and emotional experiences gained along the way. Design from AI will eventually be categorized and stereotyped.

你认为今天从事设计工作最大的挑战是什么?

自己的设计和客户的改改改改改如何融洽相处。

你认为未来人工智能会取代设计师的工作吗?

不会，每个设计师所设计的作品不仅是他所学的理论知识，还有加上他的人生阅历和情感思想。人工智能设计最后会归于千篇一律。

Guang Chen 陈光

Third year visual communication student 视觉传达专业数字媒体方向大三学生

What's the biggest challenge of being a designer today?

The process of transforming from the theoretical to the practical.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

No it will not.

你认为今天从事设计工作最大的挑战是什么?

从理论操作到实际操作中的过渡。

你认为未来人工智能会取代设计师的工作吗?

不会。

Yingjie Liao 廖英杰

Third year visual communication student 视觉传达专业数字媒体方向大三学生

What's the biggest challenge of being a designer today?

I'm my biggest critic. If one is already experienced and accomplished, can we still be motivated to learn?

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

AI will certainly replace part of the design process. We should embrace the trend so that AI becomes a design assistant.

你认为今天从事设计工作最大的挑战是什么?

最大的挑战来自自己，当一项工作已经熟练之后，是否还能保持一颗学徒的心。

你认为未来人工智能会取代设计师的工作吗?

人工智能肯定会取代一部分设计过程中机械繁杂的工作，但是我们应该以包容的心态对待它，让人工智能成为设计师的助手。

Yisheng Tang 唐逸晟

Third year visual communication student 视觉传达专业数字媒体方向大三学生

What's the biggest challenge of being a designer today?

Probably the change from school to working life. Things we learnt in school and the tools required to work as a designer are not quite the same. Work initially was like a blank piece of paper, starting from scratch. A professional designer needs to consider a lot of people's aesthetics, in particular the client's.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

I believe AI will not replace designers but instead support them in the future. The reason is because of emotion. I think design and emotion have a certain relationship; some colors bring up complex human emotions which AI cannot understand.

你认为今天从事设计工作最大的挑战是什么?

可能是校园设计到商业设计的一个转变，学校里教的和公司需要的是不太一样的，感觉工作初期就是一张白纸，要重新吸收学习。工作需要考虑很多人的审美，尤其要满足甲方的需求。

你认为未来人工智能会取代设计师的工作吗?

我觉得不会完全取代，只会是协助设计师工作，人之所以和AI不一样是因为有情感，我觉得设计和情感也是有一定的关系，有些颜色、事物带来的复杂情感是人工智能无法理解的。

Photographer: Mog is a lecturer at Shanghai Institute of Technology, School of Art and Design. In 2013, he founded graphic design studio Mog_design. 摄影师: Mog，上海应用技术大学艺术与设计学院讲师，2013年创建平面设计工作室Mog_design。

How does one navigate design education in the digital age of infinite knowledge and data, accessibility of information, overwhelming social media connectivity, endless upgrading of softwares and hardwares, the constant newness of everything?

数字时代下，我们应该如何在无尽的知识与数据海洋内、在越来越容易获得的信息、前所未有的社会媒体联系、无休无止的软硬件升级以及层出不穷的新鲜事物面前，完成自己的设计教育？

Clare Brass: This is a difficult question because I was not born into the digital age. From my perspective the fastest way to navigate through the'constant newness of everything' is to be as aware as you can as to what is changing, and what is out there. However much the technology advances, the most important thing is to take the time necessary to research your project well. Importantly I think that people are still people, and design techniques for really getting under the skin of any given challenge will always be useful. In a way this inability to know everything is great because it builds a dependency on relationship with others. Working together, sharing knowledge and expertise, are the best ways of addressing complex challenges. For my students I always encourage maximum participation, not only with other designers but with other professionals, and to stay very close to their users who will always provide the best insights and teach them the most. In my own work, when it comes to implementation, for me the only thing that works is to collaborate with others (younger than me!) who have their fingers on the digital pulse.

这个问题不太好回答，毕竟在我出生的时候，数字时代还没有到来。在我看来，在“层出不穷的新鲜事物”中找到方向的最快方法，就是竭力弄清楚到底是哪些东西发生了变化，变化的结果又是什么。不论技术进步得再大，花时间把项目研究透彻才是最重要的。我认为，人终究是人，为任何可能面临的挑战而设计出应对的技巧总归不会是徒劳。在某种程度上，这种无法全知的状态是很好的，因为在人与人之间建立了互相依赖的关系。共同合作、分享知识和专长，是应对复杂挑战的最佳方式。就学生而言，我总是鼓励他们尽量多与其他设计师和专业人士接触和共事，同时，也要多与用户保持密切的联系，因为用户往往能够给你带来最棒的点子和最多的知识；就我自己的项目而言，到了实施阶段，唯一有效的工作方式就是和那些数码科技达人（一定要比我年轻！）合作。

Gene Sherman: Discipline and focus are, I believe, the qualities needed to come to grips with the abundance of new and endlessly expanding information at the disposal of each and every one of us. The first year of any and every tertiary or indeed non-specialized course in design should, in my opinion, be a chronological survey of design history with electives in the history of art, fashion and film. In four- or five-year courses, one might spend 18 months on the flow of visual practice over time with emphasis on both Western and Asian paths appropriately tilted to specific countries and regions. Once students have grasped significant design moments and their relationship with the social environment in which these designs flourish, once learners are able to identify key styles and creators – further study choices need to be offered with continuing broadly-based courses coinciding with specific electives such as furniture design in Europe from the 18th century, early 20th century lighting design or hypothetically, Chinese tableware since the Qing dynasty. Design techniques could be treated in follow-on courses or could be integrated from the start as a running thread.
The key, I believe, is to offer a broad-brush visual education, which is common to all students, and then to encourage choices via more specific focus areas.

在我看来，面对这些每天都可能将我们淘汰、并且无限增长的新知识与信息时，我们应该把“训练”与“专注”放在心头。在所有的三年期设计教育的第一年或者非专业课程的学习中，我认为应该对设计史与艺术、时尚和电影史有一个整体纵观的了解。在四到五年的学习期中，我们应该拿出18个月的时间，对过去发生的视觉实践按照东西两个方向进行重点研究，并适当地涉及到一些确切的国家与地区。一旦学生能够领会到那些精彩的设计片段，一旦他们与这些让设计蓬勃发展的社会环境产生某种联系，一旦他们能够分辨出那些关键的风格与设计者，那么就可以进一步选择范围更加广泛的基础课程，以及 “18世纪的欧洲家具设计”、“20世纪早期灯光设计”或者假设来说——“中国清代餐具”等主题鲜明的具体课题。
设计技巧，或者说设计的表现技法，既可以在接下来的学习中逐渐掌握，也可以在课程开始时作为一条线索贯穿始终。
我认为最为关键的一点，是在为所有学生提供一种广泛的基础教育 培养的同时，鼓励他们按照个人的兴趣选择更加具体的课题。

文字 Text by Clare Brass，Gene Sherman
翻译 Translation by Carmen Xu (Clare), Colin Sze (Gene)

What are the irreplaceable qualities of institutionalized design education vs. self-learning? How can curriculums evolve or improve? How important is self-learning?

与自学相比，体制化设计教育中最无可替代的一点是什么?课程的设置应该怎样改进或优化?自学的重要性究竟如何?

Clare Brass: I have always believed that design education is not adapting at the right speed. We are still training designers to idolize the physical. We are still obsessed with stuff. First and foremost, we should be educating designers about how the natural world works, and encourage systems thinking with a circular mindset. We need to be asking the right questions of our design students, so we need to get better at setting briefs that allow the exploration of new kinds of solutions that are not necessarily centred on physical outputs. Maybe the traditional educational model is outdated: design is a constantly changing learning curve, so perhaps design education should be a life-long journey, where learning is ongoing, interactive and collaborative. For this reason I have always maintained my own practice, because you learn through doing and you can't impart knowledge to others unless you are learning all the time. I teach what I learn and I learn what I teach.

我一直认为，设计教育的发展速度并不理想。我们仍然在训练设计师如何去设计一个让人喜欢的物件、仍然痴迷于物件本身。但最重要的是，我们应该教授设计师有关自然世界的运作方式，鼓励循环的思维模式。我们应该向学生们提出正确的问题，所以我们应该更好地设置学习要求，激励他们去探索那些不仅仅以物质产出为目的的新的解决方案。传统的教育模式也许已经过时了：设计是一个不断变化的学习曲线，所以设计教育也应该是一个贯穿终生的旅程，在这段旅程中，学习是持续的，互动和协作的。因此，我一直保持自己的实践，通过实践不断学习，只有不停地学习，才能将自己的习得传授给他人。寓教于学，寓学于教。

Gene Sherman: Successful people in any discipline or walk of life remain life-long learners. Successful educators can only hope to provide their students with clear and consistent frameworks plus the intellectual and technical tools which, used consistently, will amplify these frameworks over time. The ability to self-discipline is extremely rare and the strength of character needed to carry through a medium- to long-term project without initial guidance, is only to be found in a small number of individuals. Most of us need a defined starting point, a sign-posted route with multiple side pathways that allow for individual interests either known from the outset or perceived in the early stages of the journey. In short, we need a structure, ample room to move and a goal or vision that may – and mostly does – adapt as we make our way towards the finish line. The key in my opinion is to have a decent understanding of what others have done previously in one's designated space and a slightly malleable template to follow. Imants Tillers, a celebrated Australian artist started off studying architecture. He completed a four-year course before turning to art – using many of the skills he had learnt early on. Steve McQueen, the 1969 British-born artist, has parallel careers in art and feature film making (starting with Hunger in 2008, Shame in 2011, and he won the BAFTA award for 12 Years a Slave 2013, with new movies in the pipeline). Japanese trained, Vietnamese architect Vo Trong Nghia (showing Green Ladder at SCAF until 10th December 2016) designs hotels, kindergartens, universities and cafes as well as furniture. He mostly prefers to landscape and select plants for his structures so as to arrive at fully integrated spaces and places.

任何学科或领域的成功人士一定都是终生学习者。成功的教育者们只能寄希望于为学生提供清晰、连贯的框架，以及不断将它们放大的知识与技术工具。自律的能力在学生们身上极其罕见，而能够在缺乏最初指导的前提下，独自游刃于那些中长期项目的学生，更称得上是凤毛麟角。我们大多数人都需要一个明确的起点，一条拥有路标和多条支径的路线。这会让我们在一开始时或旅途的早期阶段，就能了解每个人的兴趣所在。简而言之，我们需要一个精心布置、足够宽敞的空间来不断前进，以及一个也许、也确实会在我们冲向终点的过程中不断修正和调整的愿景。我认为其中的关键，在于对过去的人们在某个范围内已经达成的结果有一个相当的认识，并能找到一个具有一定可塑性的模板去跟随。澳大利亚著名艺术家伊曼茨 · 蒂勒斯（Imants Tillers）最早学习的是建筑。他在投身艺术之前，已经完成了一段四年的课程，并因此获得了许多可以从中借鉴的技能。1969年出生于英国的艺术家史蒂夫 · 麦奎因（Steve McQueen），同时拥有艺术与电影的双重生涯（首部影片《饥饿》/2008，《羞耻》/2011，以及为他赢得BAFTA（英国学院奖）大奖的《为奴十二载》/2013，更多影片正在筹备）。日本学成深造的越南建筑师武重义（Vo Trong Nghia）（其作品《绿梯》将于12月10日之前在SCAF内公开展览）的作品中既包含酒店、幼儿园与大学建筑，也有家具与咖啡馆设计。他尤其喜欢园林美化，并常常为自己的作品挑选合适的绿化，以达到最为完美的协调效果。

How do you view the relationship between teacher and student? Do you still consider yourself, today, an educator or a student?

您如何看待教师与学生之间的关系?您认为今天的自己究竟是一名教育者,还是一名学生?

Clare Brass: This is such a good question! Victor Papanek dedicated his book Design for the Real World to his students "from whom I learn so much". I could not agree more with this notion of the circularity of learning and teaching. I really do learn more from my students that I am able to teach them. Learning is a collaborative activity, so I think it is really important that the perceived difference in status between students and teachers needs to be eliminated. Many years ago, in my first teaching experience at Naples University, I ran a project about water, the purpose being for students to use their design abilities to find ways of helping people use water more responsibly. I needed to get very close to the students and I wanted them to work with me rather than to perform an educational task, so it was important for me to break down their forced respect and the distance I felt between us. Initially diffident and indifferent, they worked in groups, and to make them feel more comfortable with me I held tutorials and teaching in the most informal way possible, sitting on the floor, or one time (given the theme) in the bathrooms, where it emerged that girls had to pass through a male toilet area in order to reach their own facilities! The course was only one week long, but by the end of the course there was a great rapport and they produced some incredible results, some of which we went on to develop further with businesses and local authorities.

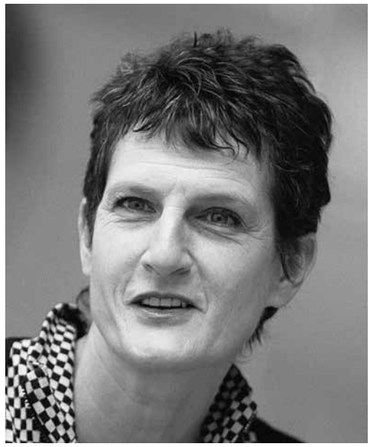
这个问题问得好!维克多·帕帕内克(Victor Papanek)在他的著作《为真实世界的设计》(Design for the Real World)中专门提到了他的学生,感谢他们"让他学到了很多"。我非常赞同这种循环学习和教学的概念。我确实从我的学生们那里学习到了更多的东西。学习是一种协作,因而我们必须要消除学生与教师之间预设的差异感。很多年前,在那不勒斯大学,我第一次带学生,做一个和水有关的项目,目的是让学生通过设计来引导人们更有责任感地使用水源。项目过程中,我需要和学生保持非常密切的关系,我希望他们能够愿意和我一起协作,而不是机械地完成作业,所以,消除学生对老师的那种被迫的服从以及我作为老师所感受到的距离感,对完成这个项目是非常重要的。一开始,学生们以小组为单位进行项目,为了让他们进入最佳状态,我总是试着以最放松的方式开展教学,大家常常都坐在地板上讨论,有一次我们甚至选择在浴室里上课(鉴于是与水有关的课题),后来发现女同学们要经过一间男厕才能进入女厕!这项课程只有一个星期,但快要结束的时候,所有人都更亲密了,课题也取得了出乎意料的成果,我们甚至得到了和企业与地方当局合作的机会,对部分研究成果进行进一步的开发和深化。

Gene Sherman: I consider myself today – as I have done over the past almost five decades in the work force – both as student and educator. I have taught French at secondary schools and run departments of Modern Languages: I have taught at two universities in different countries (Johannesburg and Sydney); I have owned and directed a commercial gallery (Sherman Galleries for more than two decades) and directed SCAF, a not-for-profit, family-funded, publically accessible exhibiting Foundation. Apart from my nightly pleasure reading, I allocate a portion each day to research across contemporary art, architecture, fashion, film and design. I confine my explorations mainly to the Asia Pacific region including Australia, the Middle East and increasingly Africa, where I was born. I focus mostly on practitioners who have come to interest me over the years, on those with whom I have worked in the past and those whom I look forward to working with in the future. I am frustrated unless I am continuously learning something new and need constantly to be sharing the knowledge I have gained. Education is at the heart of everything I do. Ⓜ

作为一个已经在职业生涯中走过了近半个世纪的人,我认为今天的自己既是一个学生,也是一名教育者。我教过中学的法语课,也负责过现代语言学系的管理与运作:我曾在不同国家(约翰内斯堡与悉尼)的两所大学内任教;我拥有自己的商业画廊——雪曼画廊,并亲自打理长达二十余载;当然还有如今的SCAF——一个家族资助、面向公众的非盈利展览基金会。除了晚上的阅读消遣,我每天都会抽出一部分时间用来研究当代艺术、建筑、时尚、电影与设计。我把自己的目标限定在亚太地区,包括澳洲、中东和我出生且日益发展的非洲。我的焦点是那些多年以来吸引过我的实践者们,那些有幸与之合作以及在将来期盼合作的人们。如果不能持续不断地学习新的东西,不断把学到的知识同更多的人们一起分享,我就会觉得非常失落。对我而言,教育是一切的重中之重 。Ⓜ

Clare Brass

Designer and Trainer 设计师, 教师



Clare Brass is a designer and trainer with product design background and expertise in using societal and environmental issues as drivers for innovation. She set up SustainRCA, a transdisciplinary training unit whose aim is to embed sustainability across the Royal College of Art. Through this role she works with a variety of commercial clients to develop circular economy solutions to global challenges using design thinking. She is sustainability advisor for the Innovation Design Engineering Programme at the RCA, driving sustainability and circular economy as a core criterion of the Programme and bringing together design and business students to embed design-led approaches to business development. Beyond Department 22 and RCA Clare works with various business schools and commercial organisations, bringing design and circular economy thinking to strategy and ideas through teaching and coaching.

Clare Brass 是一位有着产品设计背景的设计师和讲师，同时也是利用社会和环境问题作为创新驱动的的专家。她成立了SustainRCA，一个跨学科的训练单位，其目的是在整个皇家艺术学院中根植可持续性。通过该职务，她与各种商业客户一起使用设计思维来发展循环经济解决方案，以应对全球挑战。她是RCA创新设计工程专业的可持续发展顾问，推动了可持续性和循环经济作为该专业的核心标准，并将设计学生和商业学生聚集在一起，将设计主导的方法引入商业发展。除了 Department 22 和 RCA 克莱尔还与各个商学院和商业机构合作，将设计和循环经济思想通过教学和指导引入战略和思考。

Gene Sherman

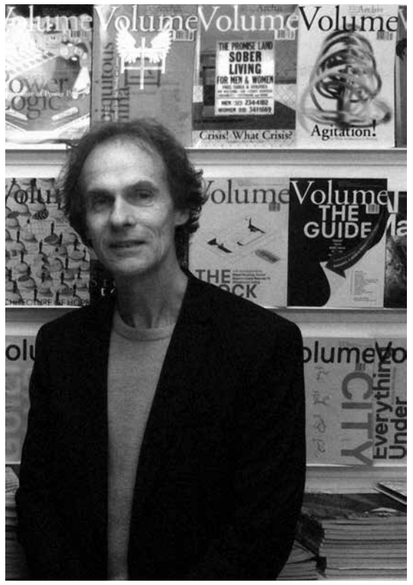
Art Foundation Director and Educator 艺术基金董事, 教育者

Photo Rita Zimmerman

Dr Gene Sherman AM, Chairman and Executive Director of Sherman Contemporary Art Foundation, formerly Director and Proprietor of Sherman Galleries (1986–2007). Inaugural patron of the Designers Circle for the MAAS Centre for Fashion; board member of The Australian Institute of Art History (since 2013) and Sydney Contemporary (since 2014). Co-Chair Tate Asia-Pacific Acquisitions Committee and a member of the Tate International Council. Awards include; Member of the Order of Australia (2010), a Doctorate of Letters honoris causa University of Sydney (2008), Honorary Doctorate of Design University of Technology Sydney (2016), the Officier de l'Ordre des Arts et des Lettres (2016), and the Chevalier de l'Ordre des Arts et des Lettres (2003) by the French Government.

Dr Gene Sherman AM 是谢尔曼当代艺术基金会的董事长和执行董事，前谢尔曼画廊(1986–2007) 的董事和所有人。MASS 时装中心 ‘设计师圈’项目的创始赞助人；澳大利亚艺术史研究所董事会成员 （自2013年），悉尼当代艺术节董事会成员 （自2014年）。泰特亚太收购委员会联席主席和泰特国际理事会成员。奖项包括：澳大利亚勋章 (2010)，悉尼大学荣誉文学博士 (2008)，悉尼科技大学荣誉设计博士学位 (2016)，以及法国政府颁发的法国艺术及文学勋章军官勋位(2016)，骑士勋位 (2003)。

21st century learning
21世纪的学习



Arjen Oosterman is editor in chief of Volume magzazine:
www.volumeproject.org

文字 Text by Arjen Oosterman

翻译 Translation by Carmen Xu

In 2000, the United Nations formulated eight so called Millennium Goals to eradicate poverty in this world. One of the action points was'universal basic education' for all children on this planet. In 2015, the year the Millennium Goals should have been realized, we still didn't have education for all children, but serious progress had been made.

2000年，联合国制定了8项“千年发展目标”，旨在消灭世界上的贫穷和饥饿。其中一个行动目标是在全球范围内普及儿童的“基础教育”。按照计划，这些目标本该在2015年全部实现，虽然目前仍旧还有很多孩子上不了学，但初等教育的普及已经获得了重大进展。

Why do I tell this when I want to explain Volume's learning research project? To indicate that education and learning are considered of major importance and are first and foremost associated with children – as a basic right, but also as an idea about society. At young age we learn in order to become able, independent, responsible and productive civilians. We're supposed to develop our knowledge and skills to the max to enter the economy at the highest possible level and develop our careers from that point on.

为什么要在讲Volume学习研究项目的时候提到这些呢?因为是想强调教育和学习的重要性，它们是与儿童相关的最重要的基本权利，也是关于社会的一个概念。年轻时期的学习是为了让我们自己成为能干、独立、有责任心和能够创造价值的公民。我们应该在最大程度上开发自己的知识和技能，跻身经济社会的最高层次，并以此为基础发展自己的事业。

As such, learning, schooling and education are part of a'rite of passage' for the individual to enter society and tools to produce a work force the economy needs. In the end, one's personal aspirations should add to the competitive power of the economy one takes part in, hence the collective investment in education.

同样地，学习、学校教育和教育本身是个人通向社会的一种仪式，也是个人进行经济生产的工具。最终，个人抱负的实现应该能够促进提升经济体的竞争力，从而增加社会对教育的集体投资。

This is very much the industrial society model with blue collar and white collar workers, life long jobs and a class of investors and entrepreneurs that create the structures to operate in, and politics to regulate and set the rules.

这是非常工业化的社会模式，其中有蓝领、白领、国有企业，以及一批投资者和企业家，由他们来创造运营结构、管理策略并制定规则。

Today's reality is no longer like that. At least not in the more affluent parts of the world. The 20th century welfare state logic of a first phase of education and learning (for 12 to 18 years or more), a next phase of'production' (some 40-45 years) and finely retirement (the long holiday as reward for a life dedicated to production) is being challenged by new models in which learning doesn't stop when work life begins, retirement at the age of 65 is no longer the norm and work in one profession (let alone a job for forty years) is becoming less and less likely.

而如今的世界已大不同。至少世界上那些比较富裕繁荣的地区已经发生了翻天覆地的变化。20世纪福利国家曾将一个人的人生定义为三个阶段：第一阶段的教育和学习（12至18年，或者更长时间）、第二阶段的“生产”（约40-45岁）和第三阶段的退休（可以看作是将一生奉献于生产工作而奖励的长假），而这种定义下的逻辑正在受到新模式的挑战。在新的模式中，人们不会在工作之后停止学习，65岁退休也已不再是标准，越来越少的人只专注于某个专业领域的工作（更别提一做就是40年的工作）。

Flexibility is the buzz word in an economy that no longer wants to or can provide earlier certainties and guarantees. So how do you educate for such an'open system', and what kind of learning is needed? In schools we still have classrooms and age groups, but schooling itself has become far more individualized. The 24/7 access to the Internet creates a different relation with information. Do we still need to learn all that we did in the past (history, geography, math, spelling, even writing by hand), or is the ability to find information on your smart phone when needed and touch type as skill enough to go about in today's society and the next economy? And what about'mechanization taking command'? Robots and Intelligent systems are taking over ever more tasks, so are we heading towards a society in which there is no longer place for workers with basic skills, a society that'll see huge numbers of unemployed people? What is the role of'learning' when the relation with work is being lost? Can we think of new ways to gain knowledge and to create, or can we use old ways in updated form to do so?

在一个铁饭碗逐渐瓦解的经济社会，灵活性的工作更加深得人心。那么如何让教育适应这样的“开放机制”呢?人们又需要如何学习呢?形式上，仍然会有学生坐在学校的教室里，但学校教育本身将变得更加个性化。全天候无中断的互联网让人们与信息之间建立了独特的关系。我们是否仍然需要学习那些曾经必须学习的一切（包括历史、地理、数学、拼写、甚至书法）?还是更需要培养利用智能手机查找信息的能力?或是学习当今社会和未来社会中足够让我们生活下去的技能?“机械化控制”怎么样?机器人和智能系统逐渐接替更多的工作，我们是否正步入一个不再需要低技能劳动者的社会，一个高失业率的社会?当“学习”与工作的关系丧失时，它的作用又是什么?我们是否能够建立新的途径去学习和创造?抑或是升级已有的学习方法来实现相同的目的呢?

Volume started to investigate this vast field by creating dedicated theme issues on'learning'. And since Volume deals with the spatial dimension in all its expressions, the role of architecture and the architect (or'the specialist formerly known as architect', as some like to call this professional) are of key interest. In Volume 45: Learning the very notion of'learning' was explored in relation to architectural education. In Volume 48: The Research Turn, the focus was on the ever increasing importance of research and in Volume 49: Hello World!, the development in and consequences of Artificial Intelligence, big data and automation are being explored.

通过若干期对“学习”的专题讨论，Volume杂志开始深入对这一领域的研究。鉴于Volume 是一本关注空间维度的刊物，建筑学和建筑师（或“曾被称为建筑师的专家”，有些人喜欢称之为专业人士）自然成为了我们最感兴趣的讨论对象。第45期Volume的主题是《学习》，结合建筑教育探讨“学习”的概念；第48期的主题是《研究转向》，重点讨论“研究”日益增长的重要性；第49期《你好，世界!》则探讨了人工智能、大数据以及自动化的发展和未来。

At the same time, the Volume Learning Network starts experimental workshops and programs with its partners to explore and test alternative modes of learning. Next issues of Volume will report from the front. There's a lot to learn! Ⓜ

同时，“Volume学习网络”正在与合作伙伴开展一系列实验性的研讨会和活动，以探索和试验学习模式的其他可能性。下一期Volume将报道更多最新的观点和讯息。还有很多值得我们去学习！Ⓜ

interview
专访

irma boom: book and beyond
书里书外

Photo Tejo Krijgsman

采访 Interview by Arjen Oosterman

翻译 Translation by Carmen Xu

We meet Irma in her recently extended office in Amsterdam South. She'll use the extra space in part to house a book library she's been compiling over the years. The collection provides an overview of books and book design over the centuries – an inspiration for her work. But the office space itself is immaculately white and clean. Every project starts with a clean sheet, a literal tabula rasa; her work space exemplifies that.

Arjen Oosterman: You are a book designer. You are always insisting on this fact that you are a book designer, right?*

Irma Boom: Yes, because otherwise people think that I am a tunnel designer, or a stamp designer, or a coin designer. But I love to make books. That's the passion. And that's the field I want to work in because of the dimensions. You don't design one page or one flat image, but you design an object; that is important to me. I like to tell stories and in printed matter the book is the ultimate medium to do that, I think. Rem [Koolhaas] always calls me a'book-maker'. That it's the whole idea! It has depth, it has different levels of reading and the fact that the book is a bound object where information is edited and compiled to make a new entity, a new piece to relate to and reflect on. If you compare it to the Internet where everything is fluxed and everything can change, a book or a magazine or something printed and bound is unchangeable. That's challenging, I think, and an big opportunity. Even more so now than ever before because of all the digital media. The book becomes more relevant because of that unchangeable entity. It's different if you place information in a book or on the Internet. A book has another aesthetics, another value, and that really interest me.

AO: Book and book design have a long history. But you are a present-day, 21th century designer, so how do those two relate to one another?

IB: Well, it's really interesting to refer to old books. I am starting a library here upstairs including old books. It's all after Gutenberg – I like the printed book, not something handwritten. The first printed books were really exiting. In retrospect, they were more experimental than nowadays books. So, in this library I have these old books as reference. Same for the 1960s, that was total freedom, also in book design. Those moments were really the moments where something happened. So for me the old book is really a reference, but I always change it because I think we need to research what a book is. And also to keep the book vital; if we only have books as in the old days that doesn't work. You need to experiment and find the limits of what a book is.

AO: Now, you work with modern technology, you work from the screen, you work digitally and all that. Does that influence your take on the book?

IB: Yeah it does, but I think I am one of the only book designers who designs books in a book. I make a model first. I want to know how big it is; if it's large, small, fat, thin, what kind of paper. So I first build the model, that's why I call it also "the architecture of the book". So I make a model and when I have the model, of course I have to know what the content is. Sometimes I make the content myself and invite authors, writers, photographers, whatever. So for me, what a book is, is important. If I would start from the screen, I would never have that experience. All these people here [waves at her designer team] work from the screen. I am the one who makes the models and says: "This is a possible book". The initial design is the thing itself. By doing you get all the ideas. This is the thing, this is it! And I did a lot of inventions because I make books like that.

AO: And is this knowledge, this experience also integrated in your teaching? How do you teach your students to design books?

IB: I am already 24 years teaching at Yale, currently in the role of thesis advisor. Nice about Yale is that everybody is doing their own thing, but they have to deliver their thesis as a book. Because the book stays. I remember at the end of the 90s everybody was into web design, animation, and so on, so they were really bored to make a book. But it's great they still had to do it, because the digital stuff they created back then has become inaccessible by now. And a book is always accessible!

I always tell them the story of this major assignment I received in collaboration with a historian. We were asked to make a company jubilee book. We wanted to base it on the notion of Internet, a book you can browse through; so, no page numbers, etc. Early 1990s, when the project started, was really the pivotal moment when people got access to the Internet. But then we wanted to be modern and young, and I said: oh, let's do a CD-ROM! So we went to New York to investigate possibilities. But then we realized that by the time we would be ready researching, writing and designing (the project took several years) the technique would be outdated. So we stayed with the idea of a book. Also because one of the commissioner's request was to make something lasting for the coming 500 years. So its better to make a book, with good paper, good glue. And this is what we did in the end, a really sustainable book.

AO: But how do you get your students started?

IB: At first they're sitting, waiting, thinking, and afraid to start … Well, if you sit there and don't do anything, nothing happens! So I encourage them to make. Because the idea is that making is something crafty, not conceptual. And I tell them that you only can do it with your head, that your hands only work with your head. It's this combination what makes things happen. If you don't start making, there is no development. The first talks are always: "…yeah I'm thinking of this and that" … and it is a nice thought, but execute it! Do it! Because if you don't do it, I don't believe it! Make it! That's what architects do, they start immediately making these rough models, they're not afraid or ashamed to do so. And that is basically what you have to do as a designer. The moment the students start doing, they see progress, and then it becomes also fun. It is not only torture, the project, but it becomes the nice project. And then they say: why didn't anybody tell us earlier? Well, yeah… I don't know! [laughs]

AO: And do you also'unlearn' them?

IB: Yes, of course. Designers are staring at the screen all day and night, because that is their main tool. I tell them to take a walk. Because the moment you move, your brain works better, the moment you sit it's really less. It's true! You have to move. They're sitting in the cubicles at school working around the clock; they almost sleep there. So the thing is how to get them out and get them to see something. For instance when they've discovered (on Google) an interesting detail of a particular book I say: "But this book is in the library, shall we go?" And they say: "Can we go?" Of course! And we go and we have a look together. So that is my thing, to move. I think moving is crucial.

AO: Do you teach them specific skills as well?

IB: Well no, I'm not the one who tells. I tell them how to make the book. Skills you learn quickly, a lot by simply doing. And also not-knowing all skills is sometimes more interesting than to know how to do it.

If I think of myself, how I started… I went to an art school (the AKI in Enschede, the Netherlands) to become a painter and it was chaos, total chaos. In the end I graduated as a graphic designer and my teacher invited me to work for the Government Printing and Publishing house, but I realized I couldn't do anything. I really didn't know anything. It made me realize that sometimes not-knowing is a bigger advantage than to know precisely how to do it. You can always recognize if students work in a big office; they know exactly how to do it, totally boring! I think it really more interesting when people try something and maybe produce a brilliant failure, which is much more interesting that all these smooth and slick designs.

AO: So, do you consider (and feel!) yourself a teacher or a student?

IB: Oh, I think that is a very nice question! I feel more a student. Also here in my own office, I am more a student. The other team members have many skills, they can touch type, they can do it all. I always try other things, I am curious.

AO: And how does this inform your teaching? Do you teach your students how to learn, do you hand over knowledge, are you'shaping' them to your image?

IB: Some teachers like their students' work only if it looks like their own work, so they want to create a school. I think what it is interesting, is really the idea that you develop yourself. Self-learning and self-investment, I think that is also important. But you need to be triggered. Some teachers are very good at that.

AO: Are you encouraging your students and are you encouraging yourself to go beyond the sort of natural boundaries of your own profession as'book maker'? Because these days you're doing so many different things: house style, interior design, public space design, wall paper…

IB: …total design! [laughs]. Book design is a very collaborative thing. For me that's interesting. So if we make Volume we meet you guys (maybe we should meet more!). And if I do an art book for someone in New York then I get to know everything about world art or more than I want to know, I guess. So the things I am doing, because of the collaboration and the subjects, make it already very interdisciplinary. For me it is in the work. And Rem suggested already, in his speech at the launch of my little red book [Irma Boom: Biography in Books] to explore another field. Because I'm always in the same field, I am always with art and architecture. He said: "Why don't you investigate if you can do something for NASA?" And first I thought: "What??!" But then I thought: "Maybe it's not a bad idea actually, maybe I should." I think I am ready to make a sort of shift. Ⓜ

** Irma Boom is the designer of Volume, the only magazine she does. The next issue, number 50, will be her 45th Volume. Issue 45 and after were done together with Julia Neller, the ones before with Sonja Haller.*

NOTE: All spreads on p.51, 52, 53 are designed by Irma Boom with Julia Neller

我们在Irma位于阿姆斯特丹南部的新办公室见到了她。她将把工作室之外的一部分空间改造成一个图书馆，用来存放自己在过去几年做过的书。她的收藏差不多概括了几个世纪以来的书籍和书籍设计，也是她的灵感来源。相反，办公室的工作区却非常干净整洁。Irma的每一个设计都开始于一张白纸，一块写字板；她的工作空间也清爽简单如斯。

Arjen Oosterman：你是一个书籍设计师，而且你一直坚持强调这个身份，对吗？

Irma Boom：是的，不然人们就会误以为我是隧道设计师、邮票设计师、或者是硬币设计师。但我最喜欢的是设计书籍。这是一种热忱。书的维度激发了我的热忱。你设计的不仅仅是一页版面或一幅平面图像，而是一个物体；这对我而言是很重要的。我喜欢讲故事，而且在印刷品中，书籍是可以实现这个目的的最佳媒介。Rem [Koolhaas]总是叫我“做书人”。这个叫法一点儿没错！一个做书人要有学识，会读书，通过将信息进行编辑和重组，制造出一本书、一个新的存在，帮助人们去理解和反思。与充满着流动信息的互联网相比，书、杂志或是其他印刷媒体中所包含的所有内容都是稳定不变的。这对我们来说无疑是一个挑战，但也同样蕴含着巨大的机遇。尤其在数字媒体铺天盖地的当下，书籍正因本身的不可改变性而变得更加重要。在互联网发布信息与在书籍中刊登信息是完全不一样的。书籍所蕴含的审美和价值都是不同的，这正是我很感兴趣的地方。

AO：书和书籍设计的历史都非常悠久。但作为当代的设计师，一个21世纪的设计师，你怎样去把这两个时代相互联系起来呢？

IB：看旧书是非常有趣的事情。我正在楼上筹备一个图书馆，其中也包括一些旧书。都是古登堡（Gutenberg）之后的书籍，我喜欢印刷本，而非手写稿。最早的一批印刷本如今几乎都看不到了，但回想起来，它们确实比现在的书籍更具有实验性。所以，在我的图书馆里，这些旧书主要作为参考的范本。二十世纪六十年代也是同样，那是一个自由的时代，书籍设计也不例外，有很多好的作品出来。所以，对我来说，旧书有着非常高的参考价值，但我从不会模仿它们，只有通过不断改变，我才能明白书的真正定义。改变也是为了留存书籍的意义；如果只是像过去一样做书，意义不大，只有通过不同的尝试，我们才能发现并打破对书籍固有理解的局限。

AO：如今，现代技术越来越多地进入我们的生活和工作，你在工作中也会使用到电脑和数字软件。这会影响您对书的看法吗？

IB：当然会，但我算是少有的几个“在书中设计书”的人之一。一般我会先做个模型，来看看这本书有多大；了解它的厚度、大小，以及适用的纸张。所以会先做模型，这就是为什么我也称它为“书的建筑”。建好模型之后，我还需要知道内容是什么。有时我自己编辑内容，或者邀请其他作者、撰稿人和摄影师来参与。所以对我来说，书的定义是非常重要的。如果只是通过电脑屏

幕去研究它，我就永远都不会有这样的体验。这里的所有人[此时，Irma向她的设计师团队招手]都是在电脑上工作的。我是那个做模型然后说："这本书可以做"的那个人。设计最初从一个实物开始，一边做，一边不断地产生新的想法。做到最后，你会发现，做出来的东西正是你想要的！通过这样的方式，我做出了很多独创性的设计。

AO：你也将这些知识和经验融入了你的教学吗？你是如何教你的学生设计书籍的？

IB：我在耶鲁大学教了24年书，目前担任论文导师。提到耶鲁大学，我很高兴的一点是，虽然每个人都在做自己的事情，但最终他们必须将各自的论文集结成一本书后上交。因为只有书才能永久留存下来。我记得90年代末的时候，人人都热衷于网页设计、动画或其他电子数码技术，他们觉得做书是件无聊至极的事情。但很棒的是，他们依然不得不做本书出来，因为当时创建的数字内容现在已经找不到了。但书却可以随取即用！

我常常会提到之前与一个历史学家合作做书的故事。当时，我们收到委托，完成一本公司的周年纪念册。我们想采用互联网的概念，做一本可以像浏览网页一样阅读的书。所以没有设计页码。等到20世纪90年代初项目启动时，互联网的发展已经进入了高潮。但后来我们又想做些时髦新颖的东西，我说：哦，那我们做张碟吧！于是我们去了纽约，做了一些研究。但后来我们意识到，等我们准备好研究、写作和设计（项目花了几年时间）的时候，这个技术也许已经过时了。于是我们决定继续坚持做书的想法。另外，由于客户想要的是一个能够留存五百年之久的纪念册，所以书是最好的方案，而且要用好的纸和胶水。最后，我们做了一本特别耐用的书。

AO：但你是如何让学生开始去做的呢？

IB：一开始他们都只是坐着、等着、想着、不敢开始...嗯，如果你坐在那里，不做任何事情，什么也不会发生！所以我鼓励他们去做。因为做书是一件需要动手的事情，而不仅仅是概念上的。我告诉他们，一定要用脑子思考，之后你的双手才能与脑协作。只有手脑结合才能真正把东西做出来。不开始做的话，就不会有成长。（当学生找到我讨论项目）谈话总是以这样的开头开始："我最近有这样或者那样的想法"……想法不错，但你要动手去做啊！快去做吧！因为如果你不做，你就说服不了我！把它做出来！建筑师就是这么做的，他们会快速地做出粗略的模型，不会畏缩，也不会觉得害羞。这是一个设计师最起码要做到的事情。学生们一旦开始动手做，就能看到自己的进步，就会逐渐对这个过程产生兴趣。对于他们来说，设计不再是一件折磨人的事情，而是会造就出一个精彩的作品。然后他们会说：为什么没有人早点告诉我们？嗯，好吧...我不知道！[笑]

AO：那你也让他们改掉了之前的设计习惯吗？

IB：当然。设计师整天盯着屏幕，因为那是他们的主要工具。我让他们去散步。因为人们在活动的时候，大脑会更好地运转，而坐着的时候，大脑的活跃度会降低。这是真的！你必须活动起来。他们24小时都坐在学校的小隔间里做功课；甚至晚上也睡在教室里。所以，我的目的是让他们离开教室，去外界观察。例如，当他们（在Google上）发现某本书上的有趣细节时，我会说："但这本书在图书馆里，要去吗？"他们会说："可以去吗？"当然！于是我们会一起去图书馆查阅这本书。这就是我的目标，要动起来，这是非常重要的。

AO：你也会教他们一些设计技能吗？

IB：不，不会。我只告诉他们如何去制作一本书。简单的制作可以帮助它们更快地掌握更多技能。然而，所谓技术，有时候"不知道"可能比"知道"更有趣。

想想曾经的自己是怎么进入这行的……一开始我去了一所艺术学校（荷兰恩斯赫德的AKI艺术学院）学画画，但那个时候一切都很混乱，甚至可以说完全乱了套。最后，我拿到了平面设计的文凭，老师推荐我去政府的印刷出版社工作，但我意识到自己什么都做不了。当时我真的什么都不知道。但我发现，有时候不知道怎么做比清楚怎么做更占优势。那些在大事务所工作的学生对任何事情都驾轻就熟，但这太无趣了！我认为尝试新的东西是最有趣的，即便错也错得精彩，比讨巧的模式化的设计好玩儿多了。

AO：那么，你把自己当作（感觉自己是）老师还是学生呢？

IB：哦，这个问题提得好！我觉得我自己更像是一个学生。即便是在自己的办公室里，我也像个学生一样工作。团队里有不少多才多艺的同事，他们会盲打，什么都会；而我自己喜欢尝试其他的东西，我总是对新的事物充满好奇。

AO：这对你的教学有什么启发吗？你会教学生如何学习吗？你会传授他们知识，然后把他们"塑造"成你希望的样子吗？

IB：有些老师只喜欢那些作品风格和自己很像的学生，他们因此会想要自成一派。但我觉得个体的自发成长更有趣。自学和自我投入也同样重要，但有时候学生是需要被激发的。有些老师就很擅长这点。

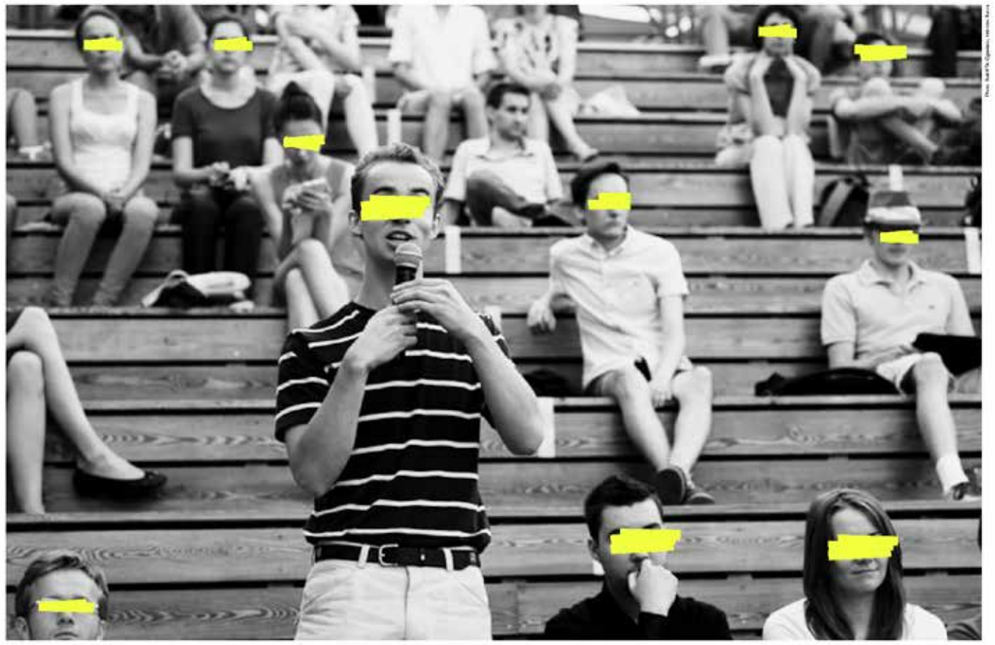
AO：你会鼓励学生和自己去超越"做书人"这个职业的边界吗？因为最近你自己也做了很多不同的工作：住宅软装、室内设计、公共空间设计，墙纸设计……

IB：...这就叫做整体设计！[笑]书籍设计是一个高度协作性的工作，这对我来说是非常有趣的。比如我们做Volume杂志，就会遇见你们这样的人（也许我们会遇见更多！）。如果我为一个纽约的艺术家做一本画册，那么我猜我就可以了解世界艺术的一切，或者比我想要知道的还要多。做一本书需要各种专业的人密切协作，不同的书主题和内容也不相同，所以做书本身就是一件非常跨学科的事情。对我来说，这是这份工作的一部分。曾经在那本小红书[Irma Boom：Books in Books]的新书发布会上，Rem做了一个演讲，当时他就建议我去尝试其他的领域，因为他觉得我总是在同一个领域创作，总是绕不开艺术和建筑。他说："你为什么不去研究下，看看自己是不是可以为NASA做些什么？"我的第一个反应是："什么??!"但是后来我觉得："也许这并不是一个坏主意，或许我真的可以试试看。"

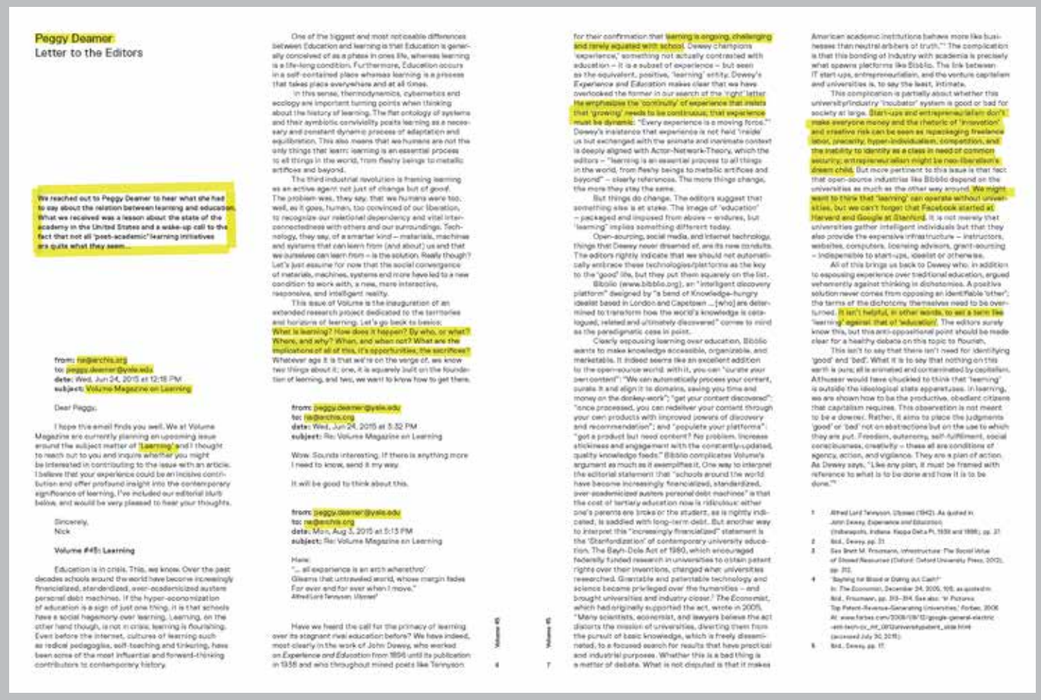
我想我已经准备好开始做一些改变了。Ⓜ

** Irma Boom是Volume杂志的设计师，这是她唯一在做的杂志。下一期，即第50期，将是她做的第45本Volume。包含第45期之后的五期Volume是Irma与书籍设计师Julia Neller合作完成的，之前则是和Sonja Haller共同制作的。*

备注：p.51, 52, 53上展示的所有页面由Irma Boom和Julia Neller设计。



Volume 45: Learning，Pages: 4-5，Image, Photo: Rudolf Ter-Oganezov, Interview Russia



Peggy Deamer
Letter to the Editors

We reached out to Peggy Deamer to hear what she had to say about the relation between learning and education. What we received was a lesson about the state of the academy in the United States and a wake-up call to the fact that not all 'post-academic' learning initiatives are quite what they seem.....

from: nic@archis.org
to: peggy.deamer@yale.edu
date: Wed, Jun 24, 2015 at 12:18 PM
subject: Volume Magazine on Learning

Dear Peggy,

I hope this email finds you well. We at Volume Magazine are currently planning an upcoming issue around the subject matter of 'Learning' and I thought to reach out to you and inquire whether you might be interested in contributing to the issue with an article. I believe that your experience could be an incisive contribution and offer profound insight into the contemporary significance of learning. I've included our editorial blurb below, and would be very pleased to hear your thoughts.

Sincerely,
Nick

Volume #45: Learning

Education is in crisis. This, we know. Over the past decades schools around the world have become increasingly financialized, standardized, ever-academicized austere personal debt machines. If the hyper-economization of education is a sign of just one thing, it is that schools have a social hegemony over learning. Learning, on the other hand though, is not in crisis; learning is flourishing. Even before the internet, cultures of learning-such as radical pedagogies, self-teaching and tinkering, have been some of the most influential and forward-thinking contributors to contemporary history.

One of the biggest and most noticeable differences between Education and learning is that Education is generally conceived of as a phase in ones life, whereas learning is a life-long condition. Furthermore, Education occurs in a self-contained place whereas learning is a process that takes place everywhere and at all times.

In this sense, thermodynamics, cybernetics and ecology are important turning points when thinking about the history of learning. The flat ontology of systems and their symbiotic convivility posits learning as a necessary and constant dynamic process of adaptation and equilibration. This also means that we humans are not the only things that learn: learning is an essential process to all things in the world, from fleshy beings to metallic artifices and beyond.

The third industrial revolution is framing learning as an active agent not just of change but of good.
The problem was, they say, that we humans were too, well, as it goes, human, too convinced of our liberation, to recognize our relational dependency and vital interconnectedness with others and our surroundings. Technology, they say, of a smarter kind – materials, machines and systems that learn from and about us and that we ourselves can learn from – is the solution. Really though? Let's just assume for now that the social convergence of materials, machines, systems and more have led to a new condition to work with, a new, more interactive, responsive, and intelligent reality.

The issue of Volume is the inauguration of an extended research project dedicated to the territories and horizons of learning. Let's go back to basics:
What is learning? How does it happen? By who, or what? Where, and why? When, and when not? What are the implications of all of this, it's opportunities, the sacrifices?
Whatever age it is that we're on the verge of, we know two things about it: one, it is squarely built on the foundation of learning, and two, we want to know how to get there.

from: peggy.deamer@yale.edu
to: nic@archis.org
date: Wed, Jun 24, 2015 at 5:32 PM
subject: Re: Volume Magazine on Learning

Wow. Sounds interesting. If there is anything more I need to know, send it my way.

It will be good to think about this.

from: peggy.deamer@yale.edu
to: nic@archis.org
date: Mon, Aug 3, 2015 at 5:13 PM
subject: Re: Volume Magazine on Learning

Here:
"... all experience is an arch wherethro'
Gleams that untravell'd world, whose margin fades
For ever and for ever when I move."
Alfred Lord Tennyson, Ulysses[1]

Have we heard the call for the primacy of learning over its stagnant rival education before? We have indeed, most clearly in the work of John Dewey, who worked on Experience and Education from 1896 until its publication in 1938 and who throughout mixed poets like Tennyson for their confirmation that learning is ongoing, challenging and rarely equated with school. Dewey champions 'experience,' something not actually contrasted with education – it is a subset of experience – but seen as the equivalent, positive, 'learning' entity. Dewey's Experience and Education makes clear that we have overlooked the former in our search of the 'right' letter. He emphasizes the 'continuity' of experience that insists that 'growing' needs to be continuous; that experience must be dynamic. "Every experience is a moving force." Dewey's sense that experience is not held 'inside' us but exchanged with the animate and inanimate context is deeply aligned with Actor-Network-Theory, which the editors – "learning is an essential process to all things in the world, from fleshy beings to metallic artifices and beyond" – clearly references. The more things change, the more they are the same.

But things do change. The editors suggest that something else is at stake. The image of 'education' – packaged and imposed from above – deserves, but 'learning' implies something different today.

Open-sourcing, social media, and internet technology, things that Dewey never dreamed of, are the new stimulants. The editors rightly indicate that we should not automatically embrace these technologies/platforms as the key to the 'good' life, but they put them squarely on the list.

Bibblio (www.bibblio.org), an "intelligent discovery platform" designed by "a band of Knowledge-hungry idealist based in London and Capetown ...[who] are determined to transform how the world's knowledge is catalogued, related and ultimately discovered" comes to mind as the paradigmatic case in point.

Clearly espousing learning over education, Bibblio wants to make knowledge accessible, organizable, and marketable. It indeed seems like an excellent addition to the open-source world: with it, you can "own the your own content": "We can automatically process your content, curate it and align it to domains, saving you time and money on the donkey-work"; "get your content discovered": "once processed, you can redeliver your content through your own products with improved powers of discovery and recommendation"; and "populate your platforms": "get a product but need content? No problem. Increase stickiness and engagement with the constantly-updated, quality knowledge feeds." Bibblio complicates Volume's argument as much as it exemplifies it. One way to interpret the editorial statement that "schools around the world have become increasingly financialized, standardized, over-academicized austere personal debt machines" is that the cost of tertiary education now is ridiculous: either one's parents are broke or the student, as is rightly indicated, is saddled with long-term debt. But another way to interpret this "increasingly financialized" statement is the 'Dentondization' of contemporary university education. The Bayh-Dole Act of 1980, which encouraged federally funded research in universities to obtain patent rights over their inventions, changed what universities researched. Grantable and patentable technology and science became privileged over the humanities – and brought universities and industry closer.[2] The Economist, which had originally supported the act, wrote in 2005, "Many scientists, economist, and lawyers believe the act distorts the mission of universities, diverting them from the pursuit of basic knowledge, which is freely disseminated, to a focused search for results that have practical and industrial purpose. Whether this is a bad thing is a matter of debate. What is not disputed is that it makes American academic institutions behave more like businesses than neutral arbiters of truth."[3] The complication is that this bonding of industry with academia is precisely what spawns platforms like Bibblio. The link between IT start-ups, entrepreneurialism, and the venture capitalism and universities is, to say the least, intimate.

This complication is partially about whether this university/industry 'incubator' system is good or bad for society at large. Start-ups and entrepreneurialism don't make everyone money and the rhetoric of 'innovation' and creative risk can be seen as repackaging freelance labor, precarity, hyper-individualism, competition, and the inability to identify as a class in need of common security; entrepreneurialism might be neo-liberalism's dream child. But more pertinent to this issue is that fact that open-source industries like Bibblio depend on the universities as much as the other way around. We might want to think that 'learning' can operate without universities, but we can't forget that Facebook started at Harvard and Google at Stanford. It is not merely that universities gather intelligent individuals but that they also provide the expensive infrastructure – instructors, websites, computers, learning advisors, grant-seeking – indispensible to start-ups, idealist or otherwise.

All of this brings us back to Dewey who, in addition to espousing experience over traditional education, argued vehemently against thinking in dichotomies. A positive solution never comes from opposing an identifiable 'other'; the terms of the dichotomy themselves need to be overturned. It isn't helpful, in other words, to set a term like 'learning' against that of 'education'. The editors surely know this, but this anti-oppositional point should be made clear for a healthy debate on this topic to flourish.

This isn't to say that there isn't need for identifying 'good' and 'bad'. What it is to say that nothing on this earth is pure, all is enmeshed and contaminated by capitalism. Althusser would have chuckled to think that 'learning' is outside the ideological state apparatuses. In learning, as we've shown how to be the productive, obedient citizens that capitalism requires. This observation is not meant to be a downer. Rather, it aims to place the judgments 'good' or 'bad' not on abstractions but on the use to which they are put. Freedom, autonomy, self-fulfillment, social connectivity, creativity – these all are conditions of agency, action, and vigilance. They are a plan of action. As Dewey says, "Like any plan, it must be framed with reference to what is to be done and how it is to be done."[4]

1 Alfred Lord Tennyson, Ulysses (1842). As quoted in John Dewey, Experience and Education, (Indianapolis, Indiana: Kappa Delta Pi, 1938 and 1998), pp. 37.
2 Ibid., Dewey, pp. 31
3 See Brent M. Frischmann, Infrastructure: The Social Value of Shared Resources (Oxford: Oxford University Press, 2012), pp. 312.
4 "Buying for Blood or Doing our Cash?" In The Economist, December 24, 2005, 105, as quoted in Ibid., Frischmann, pp. 313–314. See also: "A Pictorial Top Patent-Revenue-Generating Universities," Forbes, 2008. At: www.forbes.com/2008/09/10/google-general-electric-ent-techno-in_mf_0910universitypatent_slide.html (accessed July 30, 2015).
5 Ibid., Dewey, pp. 17.

Volume 45: Learning，Pages: 6-7，Article: Letter to the Editors，Author: Peggy Deamer

HEDWIG HEINSMAN /
DUS ARCHITECTS
INTERVIEWED BY
ARJEN OOSTERMAN
AND NICK AXEL

Arjen Oosterman: **You're engaged in research into 3D printing with plans to print a canal house. This is the kind of research that could have been done by a laboratory or university, but in this case it wasn't, it was done by an architecture firm. Why is that? And how?**

Hedwig Heinsman: [Laughs] Could this have been conducted by a university or lab or another type of agency? From its start we've called it a project. What we discovered is that the agencies you mentioned tend to focus on one aspect of a machine or material or design, whereas we, starting from our own interest in architecture, began an investigation into the entire construction pipeline, which connects the consumer to the contractor, materials, engineer, software developer, the printer and to the design itself. All of those different agents do their specific research, but we as architects can try to oversee the entire process and tie things together.

AO: **Can you illustrate this, how that plays out?**

HH: For as long as we've had the office we've been fascinated by the potential of bringing tailor-made architecture to large groups of people. We want to democratize architecture, in this sense, and we saw an opportunity to do this using digital manufacturing and the internet. We thought that if the two could be combined on an open web platform where the consumer can interact with the architect, if combined with local producers, all of a sudden we have a super efficient pipeline. Then we can talk to millions of people at the same time instead of just one-to-one yet with the same effect. That was always our dream.
At the time we started investigating digital manufacturing we noticed that there wasn't a large scale 3D printer yet. So we built one ourselves to use as a research tool in our other projects. We're not so much fascinated by the printer itself, but how we can use it as a way to scale up our ideas. We first thought it would just be like pushing a button, but now we have an entire team developing running the printers. We're moving closer to the role of the contractor! We're now going full circle with this initial fascination, in that we're currently developing software tools.

Nick Axel: **The printer is a means, but the ends need still to be discovered. What are the challenges in bringing this vision further?**

HH: There are a lot of challenges. We've collaborated closely with multinationals and large companies on our research and discovered a conflict in language. We spoke the language of an architect who thinks in terms of a research project, whereas they thought as business developers who wanted to work on market opportunities. So the last year was a sort of an MBA crash course; we started to adapt to that language and see that it is incredibly interesting when you start thinking in terms of business opportunities. From a provocative thought and research initiative, now we can become one of the players in the industry, trying to change it from within.

NA: **You've got the tool, but how is it being used? How are you engaging people with it?**

HH: We first developed the printer, and then we realized there was no good material to print with, so we started developing that. The next thing we realized is that 3D printing is a rather cost effective and sustainable solution when compared to traditional building techniques, particularly in making custom architectural products. Construction makes use of mass produced items and we can offer tailor-made alternatives. Tailor made mass housing, basically. That's what creates the fascinates us.
So we started thinking about how we could make this technique available to large groups of people, and we realized that the most important piece is how all these elements are connected. Currently, you talk to the architect and when that is satisfactorily done you go to the engineer, and if it doesn't work you have to go back to the architect again, which costs more time and money, and then the contractor follows... Normally the architect guides the consumer through this process, and we're now working on an online environment for exactly that. If you automate the process, you get a super efficient pipeline, from the consumer to the producer to the consumer. That also means that our role as architect will change.

con·nect
lan·guage
de·mo·cra·tize
in·no·va·tion
tools
stake·hold·ers

AO: **Exactly. You're organizing yourself out of the process.**

HH: No. Because we're organizing the entire process; we're designing the software that brings everyone and everything together... So we're actually... more in control.

AO: **So you're becoming software developers.**

HH: Well... In a way that's what an architect currently does: act as a platform that combines all different stakeholders. You'll still need the engineer, and the contractor, and the designer. But if you can automate how they communicate, it can be done in a much more efficient way. That's our role. We don't assume consumers will become designers. As an architect you already provide the design, the fashion, but the consumer should be able to choose what 'size' they want; there should be a direct dialogue between client and architect. We think SMLXL should become tailor-made.

AO: **The way you describe things is that it started out having all the classic components of an architectural project. But then you discovered what you were doing needed a different definition, maybe also a different kind of expertise.**

HH: Yes, and in that sense it was good that we did it for ourselves and not for an external client. This allowed us to jump freely into this next endeavor. What characterizes our practice is that we have a point on the horizon that we're headed towards, but the route to get there is not so important. The process has totally changed along the way. This image of the canal house [points at a print on the wall] was published a gazillion times, but it's just an image. The design has changed many times since, which isn't a problem at all.

AO: **Perhaps in two years time we'll see (looking out of this window) something standing that we call the 3D printed canal house, but that's maybe not so important anymore. Is the first stage, yes, to convince investors and all that, but now you're into another business, literally.**

HH: At the time we weren't aware that it was also a question of inspiring stakeholders; we were really just determined to build the canal house. And we had many good reasons to do so. We're still as determined, but the thinking that goes into the house has transformed into something much more fascinating, which was this initial dream of giving tools to the global community. But I can tell you that the house is really being built and entirely 3D printed, meaning that we'll use digital manufacturing. We've discovered that we can print molds very easily and efficiently. Normally molds are costly, so you want to preserve them. This of course has consequences on what you are able to make. The great thing about our molds is we can shred them when they're done and reuse its material up to ten times.

AO: **But you still have to reprint the mold every time.**

HH: That's true.

AO: **That doesn't take too much time?**

HH: It is a matter of innovation. There are certain shapes, for instance round ones, for which it is very laborious to make them manually or with CNC techniques. So in this way we can offer tailor-made products much cheaper. The printed canal house will be assembled from these components like this.

AO: **Sort of like Lego.**

HH: Basically a prefab building. The main difference is that prefab buildings are almost all standardized, whereas in our building every element can have a different shape.

AO: **A showcase in built form of the formal capacities.**

HH: And also a showcase of business cases. We need to demonstrate that there is a market, that it is

molding the future

JAN PETER WINGENDER
IN CONVERSATION WITH
ARJEN OOSTERMAN
AND NICK AXEL

Arjen Oosterman: **You are an architect, that became head of an architecture department and then became a researcher. Maybe we can start by asking about your relationship to education?**

Jan Peter Wingender: The roles you describe go back to a certain opinion about the profession that has developed over the years. From the start I considered architecture to be a wide profession in which the act of making buildings is only one part. There is a whole range of other things like theoretic committees, advisory committees on public developments, institutional boards, education etc. which all seem to reflect upon that act of making buildings and developing the city. For me the prime focus has been always the designing and making of buildings. That is what I like to do the most. It's the basis of the discipline. But in order to do that and to judge its relevance, you need to step away from making buildings. For me education is one of the ways to do that. By talking about design you start to reflect on your own design process and explore new topics that might come from an encounter in practice but then take it outside and work with students on it.
When we were educated as architects the idea of the concept was paramount, the holy grail. One of the things that disturbed me already while studying was that the act of making was being ignored. I was critical about the act of making as a consequence of the concept, and questioned how the act of making can influence the idea or concept. Quite soon after I started to teach at the academy with Machiel Spaan I developed projects that incorporated the act of making into the assignment. Later this developed into a program of summer workshops at the Academy of Architecture Amsterdam and Arnhem that were fully dedicated to the act of making. We took a material and started to conceptualize that, to extract spatial, technical, architectural and even cultural meaning from it. We started to experiment with basic materials: fruit crates, wooden slats, the sand of IJburg, and in the end bricks. During the brick workshops discussions started to touch upon our own practice as architects. We were building a lot with bricks but by doing these workshops we started to reflect more deeply on the application of the material. What are we talking about with brick? What is an appropriate vocabulary to discuss brick or what is the set of ideas through which we can discuss the contemporary meaning of bricks? These questions popped up during the workshop, but one evening we sat together and decided we really wanted to reflect on that. So we started to enter the field of research.

AO: **Still staying within the realm of education, is there a physical element to the idea that material knowledge is essential to the understanding of architecture?**

JPW: Absolutely. We often ask our students to start working with the material, physically. We don't give them an assignment but say: this is a brick; we have a very big stack outside, so go ahead. Then you encounter very basic questions. Like if you build a brick wall, how do you go around the corner? Or what is the difference between the bricks that sit on the ground or the ones that end the wall high-up? All these questions are addressed while actually acting, and not just reflecting. Another workshop we did with Saskia Tranning was about designing your own brick. What would you do to go around a corner, what patterns or textures can you make with bricks? If you've dealt with how something is actually constructed, the next time you encounter a new material you think differently. It could be glass or wood, it doesn't matter. It's a way of thinking

Nick Axel: **I'm quite interested in how these sorts of pedagogical exercises and learning experiences get incorporated in your professional practice.**

JPW: When we started to work with brick we knew very little about its history, but we liked its possibility for expression. For example, we started out with quite a budding approach to tectonics.

re·flect
ex·pe·ri·ence
en·coun·ter
di·gest

And for us the façade expressed that, the load bearing idea. But when we started to work with students and stacking bricks I realized what we were doing was just stacking a façade. So the question was really about expression, about texture, about light. So we started to think about ornament and decoration, but in the beginning found it difficult to fully understand and give it a place in practice. The playfulness, the lightness of the work we did with students slips into our projects, but those are in another timeframe. A student project is short, and before it influences building it has to be digested and that takes a long time.

AO: **What I like about those projects is that normally you have convention, and then you have liberation from that. But this is more about discovering freedom first to discover what the conventions are.**

JPW: That was part of our research project, to describe the convention and see what it is.

AO: **My impression is that there is not much written down on the history or even the use of brick, so in that sense you also contributed theory to practice, and in so doing, establish a stronger position for that kind of knowledge.**

JPW: We discovered that the last real attention given to brick was in an exhibition in 1941, in Boijmans Van Beuningen. There you read the essay by Van der Steur who radically dissects the application of brick, but after that it stops. In the whole controversy between traditionalists and modernists, brick was framed as a traditional material. But if you look at the history of the material you see that at exactly the time we didn't want to discuss it, technical innovations went incredibly fast. We wanted to bridge that gap of non-debate, to give a description not of what's new or what's coming but where we are at this point.

NA: **What does it mean for brick, one of mankind's oldest building materials, to be innovated?**

JPW: Back then in the Netherlands we did everything with brick: the foundation, the structural works, the load-bearing construction, the dressing, the interior... By the time we picked up again on the tradition in the nineties, everything was made of concrete. The only thing we do with brick now is the cladding. That is a fundamental transformation of the material that was hardly discussed. And when people did start to talk about brick again, they would always refer to that load-bearing tradition. The old notions still seemed to be in place, but they weren't valid anymore. The material had another role. So in that sense I completely agree with an essay by Jacque Herzog where he says that *firmitas* is a category of the narratives.

AO: **Brick has been one of the first materials to be parametrically experimented with because of its modular nature. Are you moving towards a free aesthetic play of the façade? I feel like there is something in between the one or the other where you sit.**

JPW: I had a conversation with the Matthias Kohler of ETH Zurich, who you know did this brick stacking project with robots. They used bricks though just because they were modular, not because of the intrinsic qualities of brick. The project was about digital fabrication, and they just ended up doing it with bricks. In practice you can't just stack bricks; you need bonding; not because of stability but because without it you don't know where to put the next brick; the mason needs it. But what happens with parametrics is that you can start to stack out of pattern and still produce something viable. That potential is the fundamental shift there is in the Garmazio and Kohler project.

AO: **Mies already said that to be an architect you have to know how to put two bricks together. So in that sense what does it mean to start with a brick and not with the fabrication procedure that finds brick convenient for it?**

JPW: It goes back to this discussion about fundamentals. For me buildings are made out of materials, not ideas. I can do a building without an idea if I have materials, but not the other way around. But what I said about materializing the concept or conceptualizing the material, I don't think it has to be one or the other. It's most interesting when those processes can work in parallel. But for me, the potentials for human emancipation and enslavement throughout the socius. To this end, the comportment of a machinic apprentice will become a key disposition for post-nostalgic design.

In a recent article in *Science*, Janis Dickinson, Director of Citizen Science at the Cornell Lab of Ornithology, and Pietro Michelucci, Director of the Human Computation Institute, provide a framework with which to examine the practical implications of Guattari's speculative remarks about machinic subjectivation. For Dickinson and Michelucci, 'human computation' offers a way to think about human-computer interactions as processes that involve the configuration and transformation of every component, whether human or machine. They write, 'Human computation thus requires a departure from traditional computer science methods and can benefit from design approaches based on integrated understandings of human cognition, motivation, error rates, and decision theory.'[1] Importantly, they continue:

> 'Some believe that faster computer processing speeds will eventually bridge the gap between machine-based intelligence and human intelligence. However, human computation already affords a tremendous opportunity to combine the respective strengths of humans and machines toward unprecedented capabilities in the short term.'

Thus, rather than waiting for advanced artificial intelligence, the authors suggest a more attentive *choreography* to script new possibilities of human computation, including anticipating abusive engagements within these processes. 'It is important that nefarious uses, such as disinformation engineering, which in human computation systems are designed to incite panic, steal information, or manipulate behavior, are not overlooked.' To this end, 'Community-driven guidance concerning transparency, informed consent, and meaningful choice is emerging to address the ethical and social implications of increasingly pervasive and diverse forms of online participation.' Vibrant processes of machinic subjectivation that involve various humans and machine agencies require a new culture of learning. Recognizing the co-constitutive processes of subjectivation at stake in human machine assemblages, it is vital to nurture practices of apprenticeship that support human-machine co-learning.
To develop these practices of machinic apprenticeship among digital infrastructures, three fundamental obstacles that dominate much of the current discourse on machine learning must be overcome: first, the mythology of the 'smart city'; second, the epophenia of the cloud, and third, the immaturity of a tactical diposition.

SMART CITY #FAIL

The network is an idea
that is resistant to knowing.
Tung-Hui Hu

Digital infrastructure is typically described in smart city literature as an augmentation of existing physical infrastructure. In this characterization, digital infrastructure is simply the unseen backbone of a 'smart city', coordinated through automated and integrated software systems, activating an Internet of Things (IoT), with the 'things' of the city themselves remaining largely unchanged and unchallenged. Data in the 'smart city' is a secondary structure wrapped around heavy, physical infrastructure, either as a 'skin', a 'commons', a 'stack', or an 'interface'.[2] In this euphemistically 'smart' configuration, digital infrastructure is coded away from sight, rendered imperceptible by machine-to-machine communication. In this sense, the smart city is a gloss, but rarely challenges the political status quo.[3] More consequentially, the opacity of the smart city works to prevent any form of counter-citizenship, any way of learning with digital infrastructure.
Consider this opacity from an 'offensive' point of view. On 21 February 2010, a convoy of seventy Afghani civilians on their way from Kandahar to Kabul, Afghanistan, were gunned down by two OH-58 Kiowa Special Forces helicopter gunships. Twenty-three were killed before a mistake was acknowledged. Prior to the attack, the convoy was surveyed for over four hours by a Predator drone as it traversed the desert. The series of events which led to the massacre outlines the most complete 'smart' system in existence, the Distributed Common Ground System (DCGS), better known as the United States' digital warmachine.[4] The DCGS connects Unmanned Aerial Vehicles (UAVs) and other digital intelligence with a complex system of remote pilots, officers, and analysts stationed around the globe to make decisive military operational decisions. A Predator drone, collecting aerial daylight and infrared video, wirelessly broadcasts this stream to their pilot and sensor operator who control the drone remotely, and simultaneously to remote mission coordinators and military personnel situated in US operations stations located all over the planet. The apparent transparency of this system – with sensors 'down-the-ground', enabling close-to-real-time decisions and communication from a single site to multiple locations – defines both the promise and pathology of the smart city.

in the mood for brick

Volume 48: The Research Turn (Learning 2), Page: 40-41, Hedwig Heinsman/ DUS Architects, Interviewed by Arjen Oosterman and Nick Axel

Volume 48: The Research Turn (Learning 2), Page: 146-147, Jan Peter Wingender in Conversation with Arjen Oosterman and Nick Axel

NADER VOSSOUGHIAN

THE INDUSTRIALIZATION OF ARCHITECTURE SAW LARGE QUANTITIES OF BUILDING COMPONENTS MANUFACTURED BY SINGULAR MACHINES, EACH OF WHICH CARRIED A DISTINCT LOGIC OF ASSEMBLY AS DNA. WHAT IF THE ENTIRE PROCESS OF CONSTRUCTION WAS REDESIGNED FROM THE GROUP UP, EXTRAPOLATED FROM THE GENETIC CODE WITHIN A SINGLE BEAM? THIS IS THE QUESTION ERNST NEUFERT, AUTHOR OF THE BIBLE ON ARCHITECTURAL STANDARDS, SOUGHT TO ANSWER, BUT THE REASONS BEHIND ITS BEING ASKED IS MORE IMPORTANT THAN ANY ANSWER GIVEN.
and working conditions were abysmal – extermination through labor'. *Vernichtung durch Arbeit*, was common – and the walk from one's living quarters to the construction site or factory was typically measured in kilometers, tiring the worker before work had even begun. Reliable work schedules were difficult due to the systemic racism of worker performance assessment. Coalitions of competing interests that managed the majority of construction efforts hampered communication between designers, foremen, fabricators, and workers. After 1941, Allied bombings interrupted work on a regular basis, making systematic planning and coordination of the construction site nearly impossible. Tools were in short supply, and during the first half of World War II construction practices varied significantly within the military – the *Heer*, the *Luftwaffe*, and the *Kriegsmarine* often developed standards independently of one another – which made the routinization of building practices and the efficient dissemination of practical knowhow extremely challenging. And finally, corporations were unconvinced that prisoners could be trusted to build their factories and man their assembly lines (it was, after all, in the self-interest of prisoners to commit sabotage).

Neufert addressed the 'problems' above in a series of essays and books that appeared between 1939 and 1943 that explain the importance of standardization to his management philosophy. One of his most important essays, '*Baunormung als Gonzheit*' ('The Total Standardization of Construction'), appeared in 1942 in the journal *Bauindustrie*, and began with the following observation:

> 'Until now, the standardization of construction has proceeded in an arbitrary fashion. The standardized dimensions of individual building components, windows, doors, stones, etc. are not coordinated with one another and are not compatible with one another.'[1]

HISTORIES

HAUSBAUMASCHINE assembly using prefabricated components.

Men at work inside THE HAUSBAUMASCHINE.

SARA DEAN AND ETIENNE TURPIN

TECHNOLOGY IS NOT A SPECTACLE, YET THAT'S UNFORTUNATELY HOW THE MASSES TEND TO DEAL WITH ITS MORE SUBLIME ASPECTS. IN THE WAKE OF LISBON'S CATASTROPHIC RUIN, KANT PUT FORTH THE CONCEPT OF THE SUBLIME AS THE CAPACITY AND POWER OF HUMAN REASON TO ASSERT ITSELF OVER THE UNKNOWABLE FORCES OF NATURE. IF DATA AND ITS NETWORKS IS OUR NATURE TODAY, WE NEED TO FIGURE OUT HOW TO USE US AND WHAT THE HAZARDS WHAT THE

HUMAN COMPUTATION IN TRANSITION

It is impossible to envisage the survival of the human species without considering increasing integration between human work and machinic work, to the point where assemblages of individuals and machines would supply goods, services and new needs, etc., on a massive scale. We are on a dizzying flight forward: we can no longer turn back, return to a state of nature, return to good intentions or small-scale artisanal productions.
Félix Guattari, 'I am an idiot box'

In the essay 'Postmodern Deadlock and Post-Media Transition', Félix Guattari observes a movement away from the territorial conservatism of architecture and towards other more dynamic and collective modes of 'semiotization'.[1] For Guattari, "architecture has always occupied a major place in the fabrication of territories of power, in the setting of its emblems, in the proclamation of its durability." Following a description of diffused, machinic processes, he continues:

> The production of our signaletic raw materials is increasingly dependent on the intervention of machines does not imply that human freedom and creativity are inexorably condemned to alienation by mechanical procedures. Nothing prohibits that, instead of the subject being under the control of the machine, that it is the machinic networks that are engaged in a kind of process of subjectivation. In other terms, nothing prohibits machinism and humanity from starting to have fruitful symbolic relations."

How can design provoke and sustain processes of machinic subjectivation (i.e. becoming subjects indelibly linked by and through machinic processes) while departing from architectural fantasies of power? Of primary concern in what follows are the pedagogical consequences of computation – including various epiphenomenal trends such as algorithmic governance, industrial automation, and artificial intelligence – which require a more lithe, embedded approach to enable designers to *think with* machines as they re-pattern

TACTICS

SITUATIONS

Volume 49: Hello World! (Learning 3), Page: 22-23, Article: Hausbaumaschine, Author: Nader Vossoughian

Volume 49: Hello World! (Learning 3), Page: 102-103, Article: Machinic Apprenticeship, Author: Sara Dean and Etienne Turpin

photography
摄影

infliction
强加

cell, 2014

photo and text by Heiko Tiemann

翻译 Translationby Cindy Sun

boy in camouflage, 2016

untitled, 2016

girl with shadows, 2014

vault, 2014

boy with drape, 2014

These images are part of a project which I began in 2012, they portrayed a school in a deprived area entailing with social issues. The school will be shut down this year due to a new inclusion scheme and I cannot help but lament that many individuals and communities in our society are neglected and marginalized by the mechanisms of our system. This school is an acute example of such endemic problem. I am humbled when encountering these children. I wanted to give them a 'visual' voice renders each and every child' s distinctive physique, memory and inner struggle. They are individual beings with defining personalities and their yearn for attention and conscience from our society must not fell on deaf ears.

这些图像来自于我从2012年开始的一个项目。照片拍摄于一所学校，坐落在一个有着许多社会问题的区域，由于新的容纳计划，这所学校即将关闭。社会体制导致社会中的边缘个体越来越被忽略。而这所学校正明显地反映出了这个问题。

我对这些儿童怀着深深的尊重和谦卑。我想给他们一个视觉的声音，一个可以强烈地回应他们自己独特的历史、外表、和内在情况的声音。作为具有强烈个性的个体，他们值得我们给予完全的尊重。

Heiko Tiemann was born in Bad Oeynhausen, Germany. He lives and works as an artist and lecturer in Düsseldorf and Berlin. He works mainly on long term projects that often span several years as he sees himself as an observer of the human condition.

Heiko　Tiemann出生于德国的巴特奥恩豪森。目前作为艺术家和讲师，生活和工作在杜塞尔多夫和柏林。他的摄影项目以时间跨度数年的长期项目为主，因为他视自己为人类状况的观察者。

www.heikotiemann.de

festival of design lecture
设计庆典讲座

conversation with david adjaye
对话大卫·阿贾耶

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我希望这场演讲能像是同伴之间的交流。让我们只讨论关于制造、实践和应变的话题吧。接下来我会讨论四个规模和类型都大相径庭的项目。选择这些项目，是为了表明作品无须具有轰动效应。相反，一件作品应该在其社群内部、环境背景以及特殊的政治情景下产生共鸣。所有这些都是作为设计师需要考虑的因素，即使并非我们的本意。这种意识可以让建筑具备多样性，我认为这种多样性非常有启发性。我非常享受技能发展的过程，但我总是在得到了启发之后才会开始。同时，在这个过程中，所有的事情都连成了一条线，不断强化你做下一件事的能力。

I want this talk to feel like a conversation amongst peers. Let's just talk about making things, doing things and responding to things. I will show you four projects, all of which are of different scales and different typologies. These projects were chosen to demonstrate the idea that the work doesn't have to produce a signature; rather, the work should produce an effect that has resonance within its community, within its context, and within its particular scenario of politics. All these things are considerations that, as designers, we touch even if we don't intend to. This consciousness can produce variety in architecture, which I think is continually stimulating. I really enjoy the process of developing skills, but always being stimulated to start. At the same time, as you do this, there is a thread being woven that continues to strengthen your ability to do the next thing.

KNOLL TABLE 诺尔桌

USA, 2013

© David Adjaye

大多数时候，建筑师都非常善于设计桌子，因为桌子也是建筑。当我赢得史密森学会的国立非裔美国人历史文化博物馆的委托项目后，诺尔公司（Knoll）主动找我设计一些作品。起初我拒绝了，因为我感觉不知道从何下手。我懂得如何设计建筑，但对家具的背景却不甚了解。最后我意识到，这个项目并不需要关注家具领域所发生的事情，而是看我能否制作出一件可以反映出我的心声，同时言及自己当下的思考的作品。

我想设计一件接近于无的作品。我再次回到了立方体这个从来都非常重要的几何形式，它是一种经常被扭曲、被影响的城市拓扑结构。这个作品所表现的将不是结构加上表皮，而是二者的结合。项目的挑战在于去掉叠加的手法，看我能否可以用最简单的东西来达成最大的效果。对于我而言，关注点在于抓住“光亮”（luminosity）的要领。

最后，我们的方案是将桌子的四边弯曲，以便其形状固定下来。我们没有采用厚的板材，而是一种可以在弯曲时生成立体结构，厚薄适当的板材。拼夹起来的时候，它可以同时形成结构与形式。

为了实现一种看似笨拙的设计，也是一种简单的设计，我们进行了大量的测试。由于每处接合点和夹子都是个问题，你会发现其中的困难超乎想象。最终，我选择套用当时我的博物馆项目正在使用的方法：铸造。我走访了宾夕法尼亚州北部的一些铸造工坊，和他们一起开发模具。最终，这个项目的重点变成了设计一张可以捕捉光线，并产生强度(stiffness)的桌子，并从非常简单的几何形态中，创造出具备复杂性的作品。

在某种意义上，这张桌子对我思考如何实现史密森博物馆的设计十分有启发性。你只需设置任务，让它自动为你执行。设计的成果正是过程所要求的，也是思考所要求的。现在这个作品已经属于诺尔（Knoll）系列的一部分，是一个家族中的一种形式。物体的外在可以是静默的：一个轮廓，一个鲜明的剪影，而内部充满光亮。

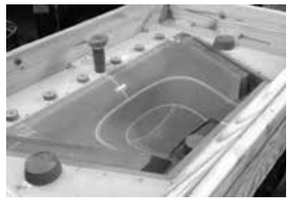
Architects are really good at designing tables most of the time, because tables are architecture. Knoll approached me to make some pieces when I had won the commission for the Smithsonian Institution's National Museum of African American History and Culture. At first I refused, because I felt that I didn't know how to do it. I knew how to make architecture but I didn't know the context of furniture well enough. In the end, I realized that this project really was not about looking to what was happening in the field of furniture. It was to see if I could make something that would reflect my voice and also speak to my current thinking.

I wanted to make something that was almost nothing. I went back to the geometry that has always been a very important form - the cube – and a topology of the city that's always distorted and always being affected. It would not be something which would express a structure, and then a skin, but rather it would be both. It was a challenge to reduce the act of adding, to see if I could create as much impact as possible with less. For me, the concern was capturing the spirit of luminosity.

In the end the way to solve it was to actually bend the four planes of the edge of the table, so that we could achieve a stiffening of the form. Rather than use a very thick plate, we used a reasonable plate while bending it to create a three-dimensional structure that, when clipped together, created both the structure and the form.

We did a lot of tests trying to achieve something "dumb" - something that was simple. You realize it becomes incredibly hard because every junction and every clip becomes an issue. Eventually I chose to employ the process that I was working on with the museum building: casting. I went to some foundries in the north of Pennsylvania and worked with them to develop molds. In the end, the project was about trying to create a table that could catch a light, create stiffness and create out of very simple geometry something that had complexity.

In a way, the table was an incredible inspiration for the way I thought about how I was going to make the Smithsonian. You just set the task and let the task deliver the performance to you. The thing that results is what the process demanded, what the thinking demanded. It's now part of Knoll's collection and it sits as a form within a family. The object can have a muteness on the outside - a profile, a silhouette that's very distinct and a luminosity on the inside.



© Knoll

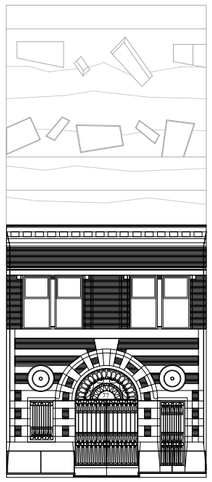
模具锻造过程/Casting process

Washington Corona™ Bronze Coffee Table © Knoll

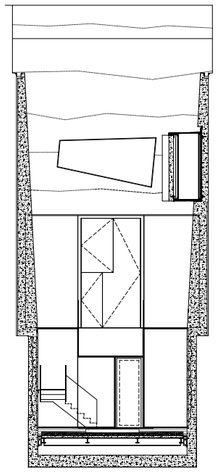
CARRIAGE HOUSE 马车房

New York, 2010

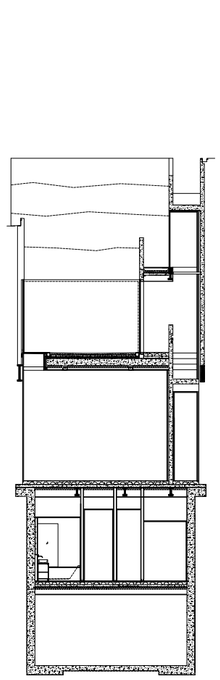
Photos Lyndon Douglas



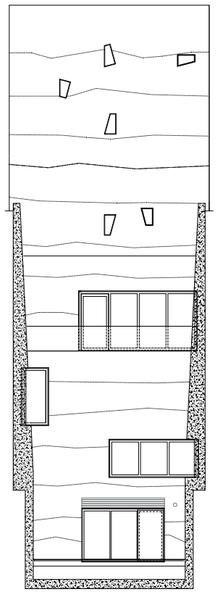
77TH STREET ELEVATION
77街立面图



SECTION LOOKING
NORTH THRU ENTRY
东西方向入口剖面图



SECTION THRU WATER COURT
东西方向喷泉庭院剖面图



NORTH ELEVATION
北立面图

作为一位伦敦的年轻建筑师，我靠锻造，雕琢，重塑建筑物来磨练自己的本领。我写了一本叫做《回收，重置，重制》(Recycling, Reconfiguring, Remaking) 的书，是关于努力理解这座在20世纪末充满了生产行为的城市的。在这种相关且重要的背景下，你该如何开展工作呢？

当我的事业步入正轨后，我来到了纽约，一位富有的客户找我设计一座住宅。建筑用地属于奥姆斯特德 (Olmstead) 规划的一部分，旁边沿着派克大街坐落着宏伟的宫殿式新古典主义别墅群。我负责设计如今令人眼馋的一座19世纪的马车房，在一块很小的土地上建造面积12000平方英尺的房子。当地建筑保护部门坚持不让我在街道可见范围内建设。我接下了这个委托，因为项目十分复杂有趣，而且迫使我不使用我通常的办法。

如何让光线照射到建筑深处的部分，这是一个值得考虑的问题。最后，我们设计了三个采光井，比现有的外墙带来更多光线，并可直照地下室。这样，在建筑内部的移动路线上，就可以了解与光线之间的远近程度，为空间的呈现方式植入一种情感脉络。当材料以这种方式对光线进行细致表达时，它就创造出了一种氛围，为住宅建立了场景。当然，这是巴什拉 (Bachelard) “空间诗学”式的策略，但在另外的背景下来看，它还是相当有趣的。

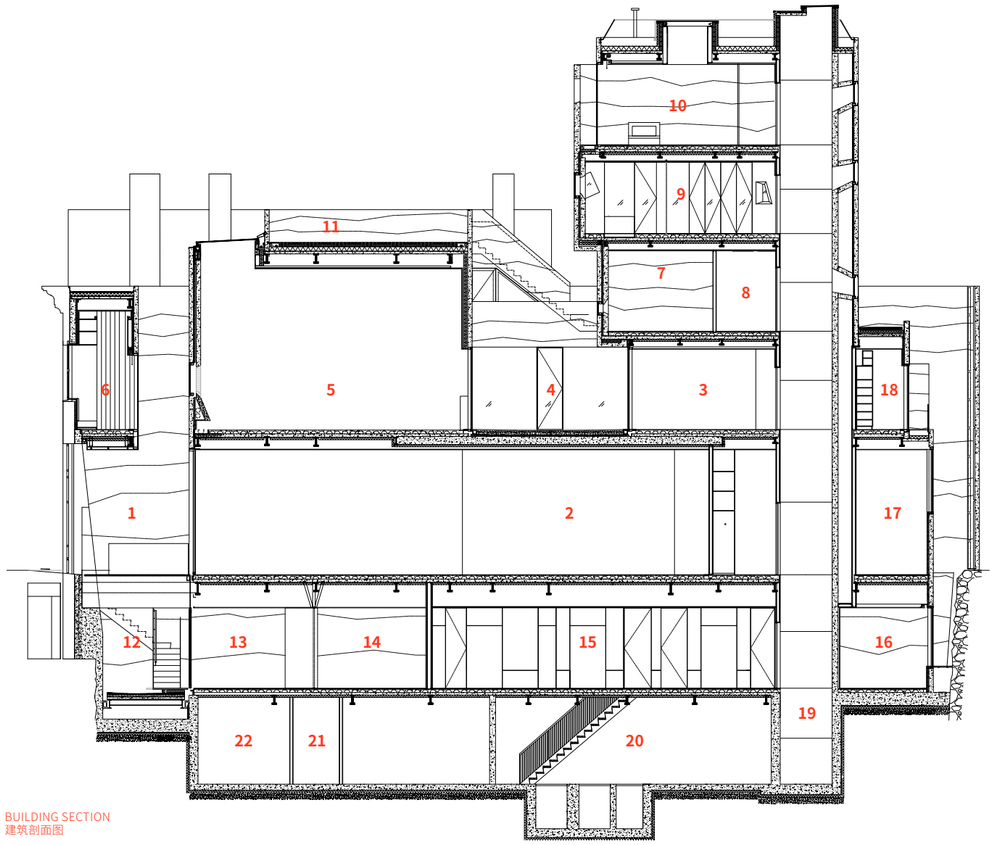
同样地，在设计三个采光井时，我对纽约的实际地面在哪儿的想法很感兴趣。我们发现它比街道还低，并且你会意识到派克大街坐落之处完全是人造的。所以我们制作了这些剖面来标明土地的实际位置。这样，我们还发现这里居然存在着19世纪的片岩碎片——在混凝土桩问世之前，片岩是纽

As a young architect in London, I really cut my teeth by baking, crafting, remaking buildings. I made a book called Recycling, Reconfiguring, Remaking, and it was about the struggle of making sense of a city at the end of the 20th century with so much production happening. How do you make work within that context that's relevant and critical?

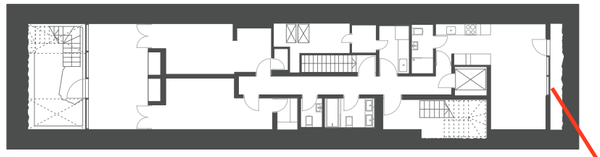
When I got to New York, as my career got more established, I was approached by a wealthy client to make a house. It is on a site that is part of Olmstead's plan, with its grand palatial Neo-classical villas lined up along Park Avenue. I was given one of the now-coveted 19th century carriage houses to build a 12,000 square foot house on a tiny plot. The conservation department insisted I couldn't build up from a visible part of the street. I took it on because it was incredibly complicated and interesting and forced me not to do what I would normally do.

It became a reflection on how to create light into sections of a very deep building. In the end we created three light wells that could give greater light than the existing façade, right down to the basement. It was a way to create within the journey of the architecture an ability to understand the proximity to light and the distance away from light, forming an emotional context for the way in which the spaces

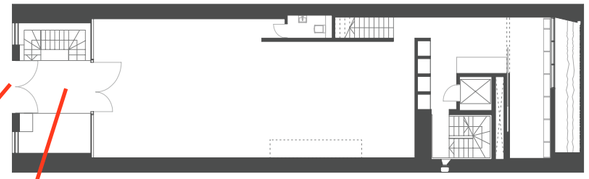
1 入口/Entry
2 画廊/Gallery
3 早餐室/Breakfast room
4 喷泉庭院/Water court
5 客厅/Living room
6 图书馆/Library
7 卧室/Bedroom
8 门厅/Hall
9 主卧盥洗室/Master bathroom
10 主卧/Master bedroom
11 屋顶花园/Green roof/Garden
12 喷泉庭院/Water court
13 休息厅/Lounge
14 卧室/Bedroom
15 走廊/Corridor
16 客房/Guest room
17 办公室/Office
18 食品储藏室/Pantry
19 电梯/Elevator
20 设备间/Mechanical room
21 接线间/Electrical Closet
22 喷泉设备间/Fountain equipment room



BUILDING SECTION
建筑剖面图



LOWER GROUND FLOOR PLAN
地下层平面图

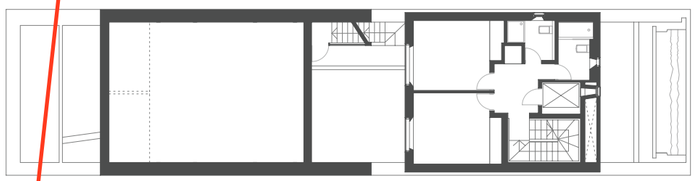


GROUND FLOOR PLAN
地面层平面图

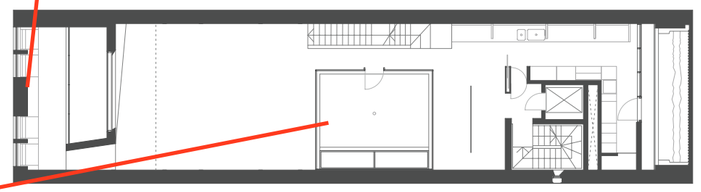
unfold. When the material articulates light in that way, it creates the atmosphere that sets up the scenario of the house. Of course that's a Bachelard "Poetics of Space" strategy, but it's a very interesting one to look at in different contexts.

Also, in making these light wells, I became very fascinated with this idea of where New York's real ground was. We discovered it was lower than the street and you realize that where Park Avenue sits actually is completely artificial. So we created these cuts that reveal the terra firma, and in doing so, we discovered that there were still fragments of the 19th century schist stone—schist is a kind of granite that most of New York was built on before concrete piling came along. In a way the project became a meditation about the grid of the city, the section of the city, the relationship to the sky and the ground and how one could use a structural system to organize this entire thing.

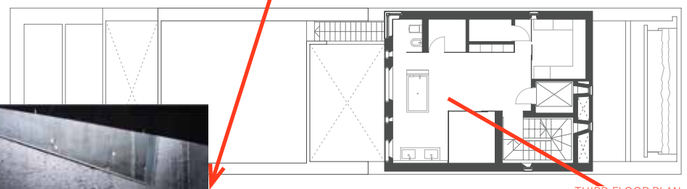
Discussing with the client, I asked if could I build the house with a material that doesn't express luxury, but instead with a material that expresses just the tension of the form. So, we went for concrete. We also wanted to remove the aesthetics associated with the pounding,



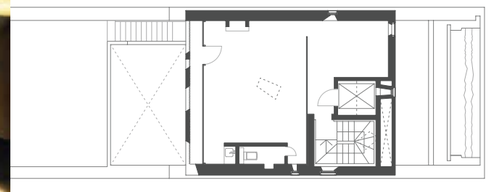
FIRST FLOOR PLAN
一层平面图



SECOND FLOOR PLAN
二层平面图



THIRD FLOOR PLAN
三层平面图



FOURTH FLOOR PLAN
四层平面图

1 大门口的长凳/Bench at gate
2 外墙后的横梁和镜面嵌板/A beam and a mirror panel behind the façade
3 俯视图/View from top
4 片岩和混凝土墙/Schist stone and the concrete wall
5 图书馆/Library
6 带有青铜轨道的青铜大门/Bronze door with bronze rails
7 喷泉庭院/Water court
8 主卧盥洗室/Master bathroom

约大多数地区采用的基座材料，是一种花岗岩。在某种意义上，这个项目变成了对城市网格、城市剖面、与天空和地面的关系，以及如何使用一种结构体系来组织全体的思考了。

在和客户讨论后，我询问是否可以采用不显得奢华，而是表现形式张力的材料来建造房屋。因此，我们就采用了混凝土。同时，我们想去除混凝土因敲击、碾磨、成形以及抛光而形成的美感。由此，我们让混凝土自由下落，只有钢筋露出来的地方才是我们唯一确定要填满的。我们想用混凝土浇筑失败之处来展现过程和结构的重量。让纽约最好的施工方之一故意给混凝土留下缺陷是件不得了的事，因为他们还有些担心自己的名声。我对那种试图忽视重力并且想看起来比较轻盈的房屋并不感兴趣。这座住宅表明了它是用何种材料建筑而成的。这是一种重力的形式。

the grinding, the shaping and polishing of concrete. So we let gravity drop the concrete in, and if we had rebar exposure, those were the only places where we made sure we filled. We wanted to expose the failure of the concrete as a way to express the weight of the process and the structure. It was amazing to try and make one of New York's best contractors not perfect the concrete because they were worried about their reputation. I wasn't interested in a house that was trying to defy gravity and to seem light. The house expressed the material content that was being used to make it. It's a weight form.

So when you come up to the house, most people have gardens. We put a bench. The bench is for anyone, creating an incredibly generous moment on the street. The façade was refurbished entirely, with a beam cast behind it and a mirror panel as you come in. So you think you're looking up but it's just a reflection. The negative of the façade casts an imprint, a second system. Approaching it, you see a very large solid bronze door with bronze rails. We put water at the bottom of this path so when you cross there's this incredible roar of water.

Programmatically, the house is for a couple who also have an extraordinary art collection. I asked them, couldn't we make a

所以当你来到马车房时，不同于大多数别墅都有花园，我们放了一条长凳。这条长凳任何人都可以坐，从而在街道上营造出一个极为大方的时刻。整个外墙都被翻新了，进去时会看到墙后是浇筑的横梁和镜面嵌板。所以你觉得自己在仰视，但其实仅仅是倒影而已。外墙背面的开口投射出印记来，这是另一套体系。随着你慢慢靠近，能看见一扇巨大、坚固、带有青铜轨道的青铜大门。在路径的尾端，我们设置了喷泉，因此，经过时可以听到水声喧嚣。

从功能上说，这座住宅是给一对拥有非凡的艺术品收藏的夫妇的。我问他们，“我们是否可以打通公众和私人空间？”我感兴趣的那种空间是：随着藏品的增加，可以被用作展示新作品的论坛，同时也是公众与艺术作品互动的场所。在我看来，它的功能和威尼斯式别墅的门廊是一样的。这是一个可以穿过的空间，一个通道，但是里面栖息的是艺术，就像是有一座博物馆或当代画廊在住宅楼下一样。这是是关于纽约艺术界的一份声明，你可以安排去拜访一所住宅，他们就会为你展现空间。在某种意义上，这创造了一种间隔的消融，也是这对富裕夫妇的慷慨之举，因为私人空间一般是对公众关闭的。我认为建立互动是一个很不错的主意，而客户也接受了。

沿楼梯上楼，来到的是主要的会客区域以及另一个可以有光线的院子。这里的家具也在不断变化——正如我所说，他们的房子里有非常出色的收藏品。卧室旁边的小房间用于陈列艺术书籍。这个藏书室的意义在于，它不是一个严肃的房间，而更像是一个人花时间阅读的空间。从那里，你会看到一扇借鉴了布罗伊尔（Breuer）透视性观看（perspectival gaze）概念的观景窗，透过它可以看到庭院的后部。你能看到整个院子，还有一扇天窗让光线照射到画廊，而反射的黑色镜墙则让光线继续向下。

最后一个光井在厨房，那里有一扇可以让你看到街道的窗户，能看到派克大街。还有一座独立钢结构楼梯，贯穿整个剖面。因为是螺旋形式，所以其没有中心轴柱。当你走到房子的上面几层、洗手间和更衣室时，有一些小的开口突出了景色。主卧室带有一个小型阳台，可以看到被遮挡的外面的街景。这种感觉很奇怪，因为每个人都在向下或者正对着看你。在这座房子里，你随时都可以被外人看见。这种设计具有透明性，但也是模糊的，以具隐密性。

这里有一座玻璃升降梯，将你从天窗一直载到地下室，在这里可以看到废墟。地下墙是一个富有活力的环境，水流可以涌进，因为它同时真的是一座地基墙。终于，你来到了最后的一个片段，客卧的开窗展示了对这座城市历史的非凡解读。

porosity between public and private? I was interested in a space that, as they added to their collection, could be used as a kind of forum for hanging the new work and as a venue for the public to interact with the work. In my mind, it functions almost like the portico in a Venetian villa. It is a space that you just pass through, a passage, but one that is inhabited with art, like a museum at the bottom of the house or a contemporary gallery. It's somewhat of a statement on the New York art world, where you can arrange to go to a house and they'll show you the space. In a way this created a dissolve, which is a very generous thing for a wealthy couple to do because usually the tendency is to close it. The idea to create an engagement I thought was strong that they took that on board.

The staircase leads you up and then you have the main living area where the second courtyard brings light in. The furniture here is also continually changing—as I said they have an extraordinary collection in the house. The little room next to the bedroom is a space for artist's books. The idea is to make a library which is not a formal room but more of a room for a single person to spend time reading. From there, you get a picture window that references Breuer's idea of a perspectival gaze, which then takes you right through to the back courtyard. You see all through the courtyards and a skylight allows light into the gallery and the reflecting black mirror wall lets light further down.

The last light well is in the kitchen which gives you one window to the street, and shows you Park Avenue. There's also a staircase that short-circuits the entire section, made out of self-supporting steel. There's no central column, it's a coil. There are little apertures that articulate the views as you go up the upper levels of the house, bathing chambers and dressing chambers. The master bedroom has a little terrace that has this masked view to the street. It's kind of strange because everybody's looking down at you and across at you. The house is a house where you're constantly being seen. The design has transparency but is also blurred to be private.

There's a glass elevator that takes you to the skylight all the way down to the subterranean where you see the ruins. The subterranean wall is really a live situation where water could come in as it's really a foundation wall. Finally you come to this last moment where the openings on the guest bedrooms reveal this extraordinary reading of the history of the city.

屋顶花园的夜晚景观/Night view from green roof

客厅/Living room

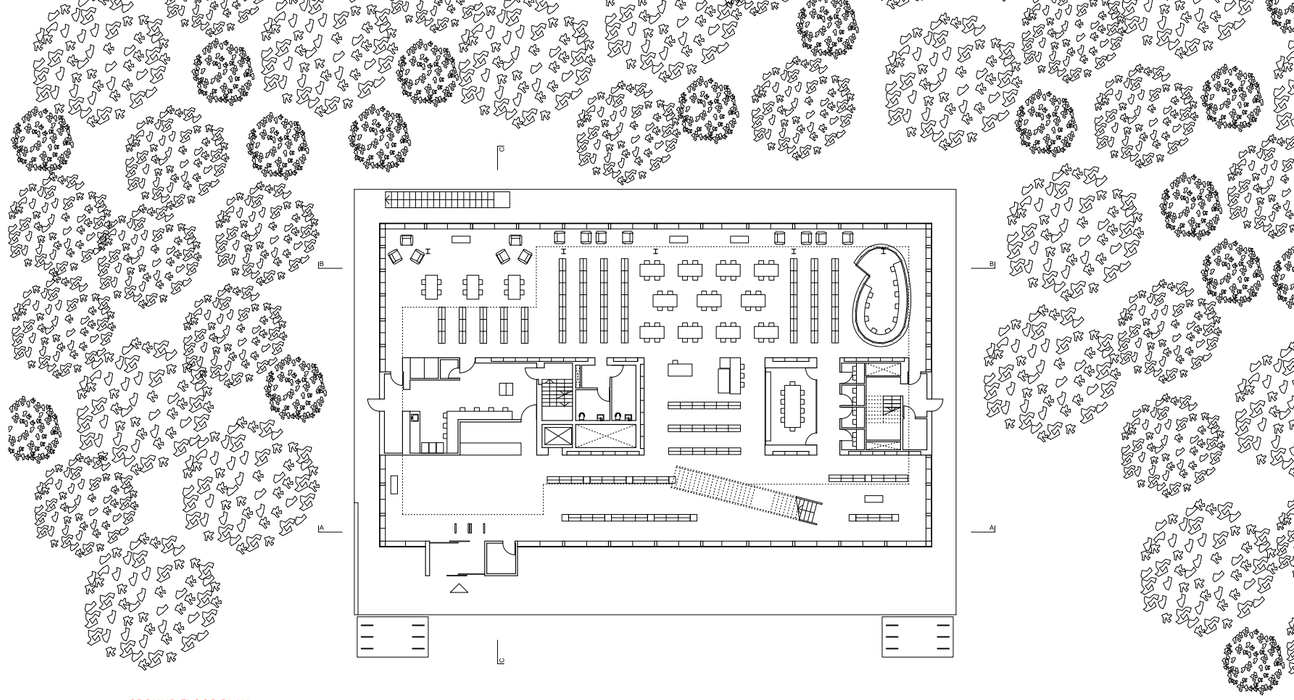
FRANCIS GREGORY LIBRARY

弗朗西斯 · 格雷戈瑞图书馆

Washington, 2012

Photos Edmund Sumner

SITE LOCATION
基地位置



GROUND FLOOR PLAN
地面层平面图

我参加了一项社区图书馆设计大赛。他们非常震惊我居然对此感兴趣，因为该项目预算有限。因为我当时正在为华盛顿国家广场设计一个非常重要的项目，所以我也对为华盛顿一个最弱势的社区设计建筑非常感兴趣。这是为了挑战我自己原有的项目路线，也是为了让新项目（史密森博物馆）所带来的机会和困难，能够与这个以社区为中心的项目，产生对抗。

如果你了解华盛顿的话，位于郊区的戴维斯堡有着与众不同的城市网格，即19世纪的花园郊区，但它还有一些真正的森林遗存。这些不是公园，而是一直延伸到城市网格面前的真正的森林。这种相互关系创造了这个奇妙的环境，而郊区的葱郁也形成了非常强烈的场地背景。

21世纪的图书馆必须要重新改造。我很理解把大型图书馆比作宫殿、知识的殿堂和启蒙之地这样的表述。然而在美国，社区图书馆是在战后约1950年左右才产生的。功能上实际就是一个砖盒子，装着联邦政府能为你提供的书籍，令人吃惊的是，这居然有作用。这就是当年的互联网。到了90年代，这种模式已经过时了。关于图书馆消失的对话时有发生，但这些对话实际上是在（什么才是合适的）信息容器的背景下发生的。而战后城市的发展意味着，每天去这种知识之地的仪式，变成了不同代群体所聚集的场所，这为图书馆增添了各种其它的可能性。

I entered the competition to make a community library. They were very shocked that I was interested in doing it as it had a very small budget. I was very interested, while I was making this very major project on the Washington Mall, to also make at the same time, a building within one of the most disadvantaged communities in Washington. It was a way to create a resistance to the trajectory of my own project, to counter the opportunities and difficulties it offered with this other engagement centered on the community.

If you know Washington, its suburb Fort Davis has an extraordinary urban grid, which is the 19th century garden suburb, but it also has these real fragments of forest. These are not parks. These are real forests that were just stopped by the urban grid. The interaction creates this incredible atmosphere, where the lushness of these suburbs creates a very powerful context.

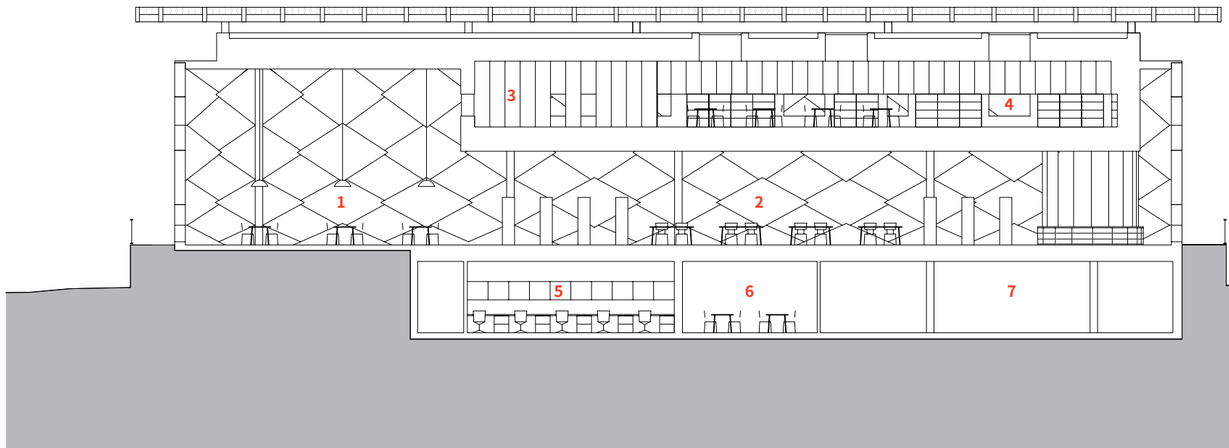
Libraries in the 21st century have had to recalibrate. I understand the narrative of the grand library that uses the metaphor of the palazzo, the temple of knowledge and the place of enlightenment. However

我的观点一直是，图书馆不能仅仅是图书馆，而实际上应该是社区的仪式性中心。我们想要尽可能多的功能来对社区进行启迪。我们同图书馆服务部门进行了合作，他们已经对一些内容进行了完全翻新。我们最终设计了两幢建筑。概念是创建一个方盒，但是是一个新的、截然不同的方盒空间。这不是一个内化的、只装了书架的砖盒子，而是蕴含了关于森林与城市，灯光与空间的想法的地方。这个空间的气氛为社区创造了一个社会活动场所。

因为建筑物临街的一边到靠近森林的一边的高度变化大约为10英尺，所以我们设计了一个混凝土基座。当你来到这个透水的基座上时，可以看到一个带有顶棚的玻璃方盒。它看起来像是一座玻璃房子，但实际上只有35

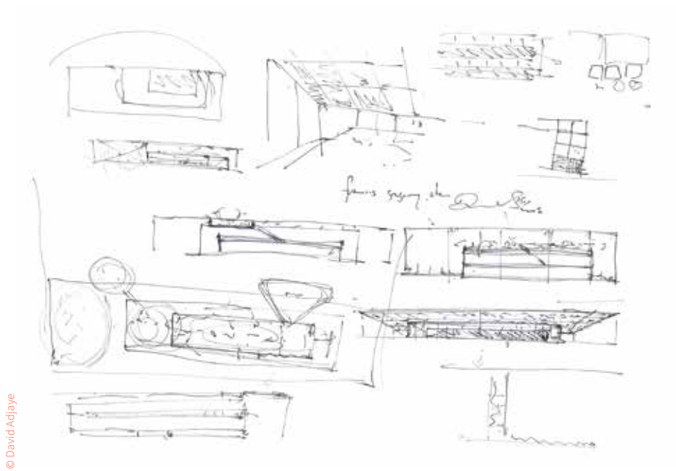
1 青少年区域/Teen area
2 成人阅读区/Adult reading
3 会议室/Conference room
4 儿童阅读区/Children's reading
5 职员办公室/Staff working room
6 职员休息室/Staff pantry
7 建筑物设施/Building services

SECTION C-C
C-C剖面图



in America, libraries for communities happened after the war around 1950. The program was really a brick box with a certain number of books that the federal government could give you. And it's amazing, it worked. It was the internet of the day. By the 1990's this model was no longer relevant. The conversations that were being held about the death of the library were really around the context of this container of information. But the evolution of the city post-war meant that this kind of ritual of continually going to this place of knowledge developed into a place where the intergenerational communities could gather, creating all these other possibilities for the library.

My argument is always to say that the library can't just be a library, it is actually a ritual center for the community. We wanted to bring in as much program as we could for the edification of the community. We worked with the library services, who did a complete refurbishment of some of the content. We ended up with two buildings. The idea was to create a box - a new box, a different box. This is not a brick box that's internalized and just containing shelves, but this is a box that contains



弗朗西斯·格雷戈瑞图书馆研究草图/Study sketch of Francis Gregory Library

%是玻璃。我们对它进行了功能设计，在中间设置了一条水电管道，它同时也起结构作用。屋顶构造和建筑外形都从中间悬挑出来，所以没有用到柱子。我们沿着建筑一周，把整个墙身嵌在了两英尺深的缝隙里。
我们保持一切开放，而在需要吸声天花板的地方设计了大小不一的房间，以达到不同的穿透性。我们还为儿童设置了托儿所、活动室、教学区、咨询室、讲习班和作业区。建筑的前一部分提供数字化服务，后一部分则是青少年游戏的空间。所以，在这个大空间中，我们尽量通过对家具的布置来设计空间的功能，而通过密闭的房间来识别不同的区域。
当你看到这座建筑，每个立面都呈现出微妙的渐变图案，由镜子和透明玻璃组成。我们与玻璃公司进行了合作，以确保菱形部件可以压缩。随着你环绕建筑一圈，菱形变得越来越瘦高，并且在转角受到挤压。在某种意义上，外形把玩的是渐变形式的概念。它不再是一个工业生产的物件，而是一个符合场地，并且与场地有关系的物体。

the idea of the forest and the city, the light and the space. The atmosphere of spaces creates a social chamber for the community. We made a concrete plinth, because the grade changes about 10 feet from the street side to the forest side of the building. You come onto the plinth, which is permeable, and there's a glass box with a large canopy. It looks like a glass building, but it's actually only 35% glass. We programmed it so that we have one bar of services down the middle, acting as structure, from which the roof structure and the form are cantilevered, so there are no columns anywhere. We hang the entire wall in a two-foot cavity along the perimeter of the building. We keep everything open and when we need acoustic ceiling, we make different sized chambers to create different permeabilities. We also created a crèche, rooms for events, teaching spaces as well as counseling, workshop and homework spaces for kids. There are digital services in front and a teenage hangout in the back. So you program the spaces through the furniture as much as possible and then the enclosed rooms identify the zones within this large plate.
Looking at the building, each elevation expresses a subtle growth pattern composed of mirror and transparent glass. We worked with the glass company to make sure that we could make compressions to the diamond, so it becomes more vertical as you go around and compresses on the corners. So in a way the form is playing with the notion of the growth form. It's not just an industrially produced object anymore, it's a site specific and site relational object.
And then when you suddenly come near the skin, you see something happening. You think it's shear and then you see the two foot cavity lined in timber. The mirrors start to play with you, so you get the idea of transparency and weight at the same time. As you come close, you see that these geometries are actually very big, kids can play and sleep in them, they're unexpected but fun.
As you come in, you see the forms splitting the light between 40% transparent and 60% solid. This starts to create the atmosphere, the shadow and the light of the environment. From there, everything really is about creating materials to deal with this suspended form.
A few meters away from the building you realize how quickly there are no paths, just forest. The building then starts to disappear. I knew

后院/Backyard

底层室内/Interior of ground floor

Photo Maxine Schnitzer

外墙面近景/Close view of the façade

Photo Jeff Sauers

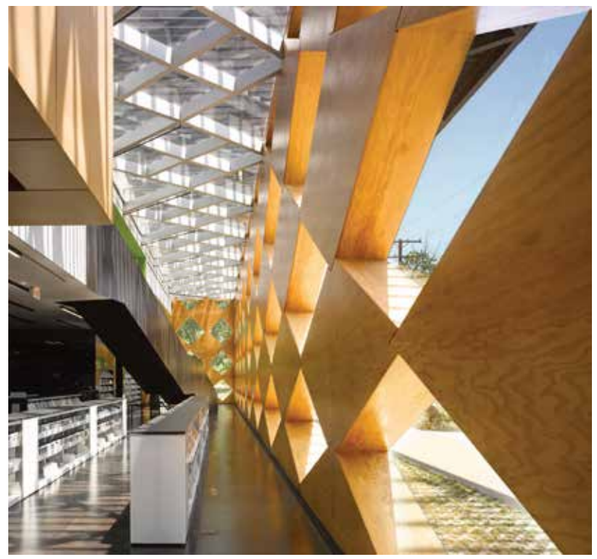
夜晚的图书馆/Library in the night

而当你突然来到外表皮附近时，你会看到有一些变化。你以为它是整齐的，但马上就会看到成列的两英尺长木制凹洞。镜子开始逗弄你，让你同时感受到透明度和重量。当你走近时，你会发现这些形状实际上非常大，甚至儿童可以在里面嬉戏和睡觉，它们出人意料而充满乐趣。

进来时，你会发现 40%的透明菱格和60%的实心菱格形状划分了透光与不透光的区域。这孕育出环境的气氛和光影。以此为基础，其它一切都在创造能够响应这种吊挂形式的材料。

仅在建筑物几米开外，你就会意识到道路消失得有多快了，剩下的只有森林。然后建筑物开始逐渐隐没。我知道我很想要这种与森林的接触，但连我也十分意外和惊喜。正午的时候，人们可以到那里去，只要站着，就感觉仿佛一切都消失了。在夜晚的灯火亮起时，这个小诡计则会被识破。

I wanted this engagement with the forest, but even for me it was unexpected and amazing the way, at midday, people could go and just stand there, and everything disappeared. In the evening, the trick is revealed when the lights go on.



木制凹洞近景/Close view of the timber cavity

SMITHSONIAN NATIONAL MUSEUM OF AFRICAN AMERICAN HISTORY AND CULTURE

史密森国立非裔美国人历史文化博物馆

Washington DC, 2016

我接下来讨论的最后一个项目是我们在2008年底赢得的一个比赛，在华盛顿广场对最后一个史密森博物馆进行设计。这个项目耗费了八年半的时间来完成，也是我做过的时间最长的项目。史密森学会是一个非常有意思的机构，因为他们有大约24个博物馆，分别专注于文化、科学、工业和艺术的各个方面。在美国文化框架的背景下，非裔美国人群体一直缺乏正式的认可，而这个项目确确实实地回应了这种缺失。

在过去的100多年里，它有过一些讨论，而在过去的20年里，已经成了一个热门话题。作为背景提示，关于博物馆，国会内部曾经有过一场很大的争论，搞得好像通过正常政治渠道已经永远不可能建成了。而实际上，布什总统离职前最后的举措便是把国家广场的最后一块土地捐赠给这个项目，这有效地遏制了政治讨论，同时也让项目瞬间有了进展。然后幸运的是，在奥巴马总统任期时，这个项目所需资金的50%得到了联邦的资助，余下的50%则通过筹款得来。这真的是一个摇曳在风雨里的项目，它恰恰遇见了难得的历史机遇，因为它本可能轻易地被扼杀在摇篮之中。

作为对这些的回应，难题就在于如何理解非裔美国人博物馆的这个概念。这座博物馆是一座新的博物馆，一座关于故事的博物馆。它并非是有着珍贵收藏品的博物馆，而是一个叙事的博物馆。它谈到了如马丁·路德·金（Martin Luther King Jr.）等伟大人物的故事，以及关于公民权利的斗争，这些带来了我们所理解的人权观念。这不仅在地方非常重要，在全世界范围内也是如此。

对我来说，这也是一个和我的家族，和非洲有着强烈关联的故事。在某种程度上，这些世界是紧密相关的。这座博物馆实际上收藏的是来自公众的物品，而不是来自之前有3000件物品的博物馆内部。通过向公众进行号召，博物馆现在已经收集到30000件物品。诸如奴隶枷锁、圣经、画像和非裔美国人的首次投票单等所有物品都进行了收藏和归档，以供学术研究。这就是当时政治领导方面的政治和感情背景，但同时还有基于事实数据的背景。纵观从14世纪开始到其奴隶制度结束的奴隶制地图，你会发现大多数的非裔美国人后裔都来自中非和西非地区。我们知道，几百年来，这个地区有1200万人被贩卖成为奴隶。800~900万人被卖往南美。巴西和巴伊亚拥有最多的非洲人数，他们被卖往内陆，有300万人被卖往加勒比、墨西哥和哥伦比亚，最大一部分则被卖往古巴和牙买加。只有40万人被卖往美国。我们在北美谈论的大话题其实是奴隶贸易频临结束的末期，是它的崩塌阶段。美国现在有3800万非裔美国人，而其中大多数是这40万人的后代。这太惊人了。

所以，在这种情况下，我觉得这座建筑不应该仅仅是一个展现形式的容器。它必须是内在暗含了叙事的容器。我觉得除了内容之外，整个项目都是为了使被逐渐遗忘的事情变得更加清晰。

我开始这个项目的方式，是通过想象14世纪的西非王子、商人或仆人在他们的生活仪式中可能见过什么样的物品。藏品中有许多手工艺品，这是非洲殖民化的一部分。我们现在有关于这种工匠和手艺人种类的记录，可以追溯到之前的世世代代，这让我们可以对他们的母题和形式进行探讨。由约鲁巴人发明的倒梯形是用于圣殿和宫殿的形式，是当时各种社区可以见到的最高形式。约鲁巴人被认为是西非的希腊人，他们发明了木材雕刻工艺，并传到了整个中部以及南非地区。他们被认为是当时创意力量的中心。

和这群人有关的趣事是，很多19世纪的学者错误地将它断定为原始主义。更具有讽刺意味的是，随着历史和年代测定的发展，我们如今已经发现，在这个塑像的一千年之前，他们就已经在刻画一种极其写实且精美的形式了。我们现在认为，这就是文明化。然而，关于14世纪究竟发生了什么，让这种具象的表现转变成了超级抽象的形式，目前引起了大家的讨论。整个社会都发生了变化，当时，整片大陆正在形成一个个帝国，一个个大都市。不知何故，用具象图形来表现大都市总觉得空乏无力。所以抽象成为了他们的母题，以阐释复杂的形状和思想。

The last project I'll discuss is a competition we won at the end of 2008 to design the last Smithsonian on the Washington Mall. It took eight and half years to complete and was the longest project I've ever worked on. Smithsonian is a very interesting institution in that they have about 24 museums dedicated to every aspect of culture, science, industry, and the arts. The project really was a response to the African American community's lack of formal recognition within the context of a cultural frame of America.

It had been in discussion for over 100 years and in the last 20 years, it became a very visible conversation. To give you some background, there was such a big debate in Congress over the museum that it seemed like it was never going to happen through the normal channels of politics. One of the last things that President Bush actually did before he left office was to donate the last piece of land on the National Mall for the project. So that effectively shut down the political discussion and allowed the project suddenly to move forward. And then fortunately under President Obama, the project received the 50% federal funding that was required, with the remaining 50% coming in through fundraising. The project really is a fragile thing that hit a perfect confluence of moments; it could easily have died.

As a response to all this, the challenge was to address this idea of an African American museum. The museum is a new kind of museum, one that is about stories. It's not a museum about precious objects, it's a narrative museum. It talks about the story of great men like Martin Luther King Jr. and about the struggle of civil rights, which has then led to human rights as we understand it. It's a very important story universally as well as locally.

For me, this is a story that has very powerful connections to my family and to Africa. In a way, these worlds were very connected.

The museum really is a collection of objects from people; it's not necessarily just from the museum which formerly houses 3,000 objects. Through calling out to the general public, the museum now has 30,000 objects. Things like slave shackles, bibles, portraits and the first voting slip from an African American were all things that were collected and archived for scholarship.

That was the political and emotional context of the leadership at the time. Then there's also the empirical context. Looking at the map of slavery from the 14th century to its end, you realize that actually most of the descendants of African Americans come from central and west Africa. We know that 12 million slaves were taken from this area over those couple of hundred years. Between 8-9 million went to South America. Brazil and Bahia really had the largest number of the African diaspora and they moved across into the interior, 3 million went to the Caribbean, Mexico and Colombia with the largest number going to Cuba and Jamaica. Only some 400,000 went to America. The big story we talk about in North America is really the end of the slave trade, its collapse. There are now 38 million African Americans in America, and the majority come from those 400,000 people. It's amazing.

So in that context, I felt like the building couldn't just be a vessel of form. It had to be vessel that implicitly had a narrative within it. I felt like the entire project, apart from the content, was about making visible something which had been made very invisible through time.

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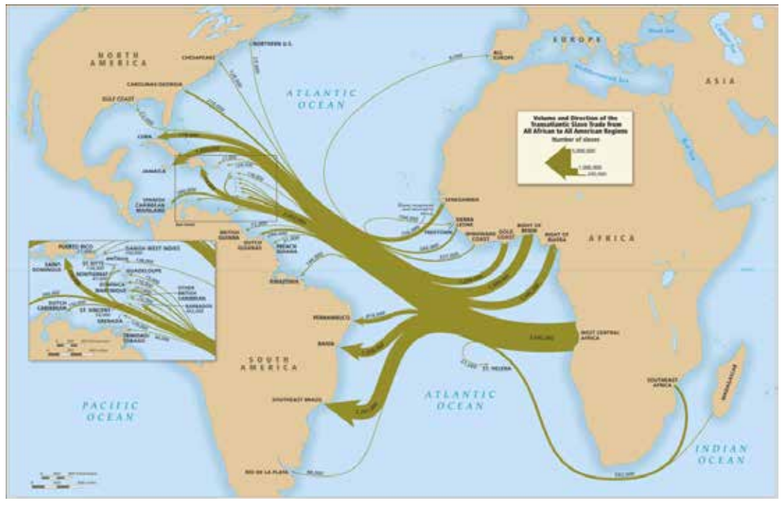
1 马丁·路德·金于1963年8月28日的「向华盛顿进军」游行期间，在华盛顿国家广场向支持者们挥手致意。资料来源：维基共享资源/Dr. Martin Luther King Jr., waves to supporters, Aug. 28, 1963, on the National Mall in Washington, during the "March on Washington." Source: Wikipedia Commons

2 加纳总理克瓦伊·恩克鲁马和马丁·路德·金1957年在加纳。资料来源：Africa.com/ Prime Minister Kwame Nkrumah and Martin Luther King Jnr. in Ghana, 1957. Source: Africa.com

3 1960年10月5日，美国非洲问题委员会集会上，马尔科姆坐在亚当·克莱顿·鲍威尔和克瓦伊·恩克鲁马之前。资料来源：纽约世纪报，查克·史东合集。/Malcolm seated in front of Adam Clayton Powell, Jr. and Kwame Nkrumah at a rally for the American Committee on Africa, October 5, 1960. Source: New York Age, Chuck Stone Collection.

4 年轻女子收到她的选民登记卡，菲亚特县，田纳西州。资料来源：史密森国立非裔美国人历史文化博物馆收藏。©Ernest C. WithersTrust/ Young woman receives her voter registration card, Fayette County, TN. Source: Collection of the Smithsonian National Museum of African American History and Culture. © Ernest C. WithersTrust.



跨大西洋奴隶贸易从非洲到美洲各地区的数量和方向。资料来源：大卫·埃尔蒂斯（David Eltis）和大卫·理查森（David Richardson），"跨大西洋奴隶贸易图集"（纽黑文，2010），©耶鲁大学出版社。

Volume and direction of the trans-Atlantic slave trade from all African to all American regions. Source: David Eltis and David Richardson, Atlas of the Transatlantic Slave Trade (New Haven, 2010).©Yale University Press.

左：约鲁巴艺术家“伊泽尔的奥罗维”(Olówè of Isè) 雕塑的廊柱。梅耶罗维茨 (Eva L. R. Meyerowitz) 1943年拍摄于在尼日利亚伊克雷的Ogoga宫殿。**右：**“伊泽尔的奥罗维”(Olówè of Isè) 所雕刻的约鲁巴廊柱，慕尼黑五大洲博物馆(Museum Fünf Kontinente)收藏，目前借给国立非裔美国人历史文化博物馆长期展出。/**Left:** Veranda posts by Yoruba artist Olówè of Isè. Photographed in 1943 by Eva L. R. Meyerowitz at the Ogoga's palace in Ikere, Nigeria. **Right:** Yoruba veranda post by Olówè of Isè, collection of the Museum Fünf Kontinente in Munich, now is on long term loan to the National Museum of African American History and Culture.

因此，这个雕塑讲述的其实是一位国王的一生、他的王国以及他所做的一切；如果你知道如何解读它，你就会理解了。龛内的物件体现了一种用抽象形式来揭示深层信息的方法。有趣的是，毕加索早在20世纪初就把抽象作为了一种处理现代世界的复杂性的办法。具象已经不足以，也不能够描述它了。

非裔美国人不单单是采棉人；他们还是运河建设者、建筑工人、木匠和冶金工人。他们逐渐精通了木材和锻造方面的工作，并基本上建设了整个美国南部。但是这却是一个少为人知的故事。英国人和法国人带来的黑奴，利用铸造法建造了路易斯安那州和查尔斯顿的许多房屋。在没有工具的情况下，他们迅速地开始组建，并创造出了令人称奇的形式。这是一个关于种族融合的十分有力的故事，我以此为荣。

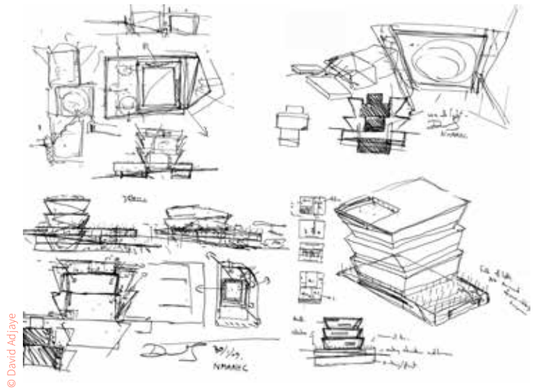
博物馆的选址是华盛顿国家广场上最后一块建筑用地，它的面积大概是附近大多数场地面积的一半，所以大家都认为这是我们能拿到的最糟糕的场地。大多数史密森博物馆是宫殿，是长条形建筑。但也有几个例外，一个是由戈登 · 邦夏 (Gordon Bundshaft) 建造的赫希洪博物馆与雕塑园，另一个是由贝聿铭 (I.M.Pei) 建造的美国国家美术馆东馆，他把建筑旋转了，从而把入口从正面移到了侧面。所以我明白，这些20世纪的传统和18世纪、19世纪的建筑的传统截然不同。在我和国会以及美术委员会争辩为什么我想建一座非宫殿类型的建筑物这件事上，戈登 · 邦夏 (Gordon Bundshaft) 和贝聿铭 (I.M.Pei) 帮了不少忙。

国会广场的景观受到了法国的影响，其余则受到英国的影响。所以在这里，你会发现英式田园景观的浪漫花园和纪念性建筑；而在山上的白宫则

I started this project by imagining what a West African prince or trader or servant from the 14th century would have seen as part of their ritual of life. As part of the colonization of the continent, many artifacts were collected. We now have records about the kind of artisans and craftsmen that date back generations and we are able to talk about their motifs and forms. Invented by the Yoruba, the inverted trapezoidal form is one that was used for shrine houses and palaces; these were the highest forms that any kind of community would see. The Yoruba are understood to be like the equivalent of the Greeks of west Africa. They developed the craft of timber carving that spread through the entire central region down to South Africa. They really are seen as the epicenter of creative power of that time.

What's interesting about this group is that a lot of 19th century scholars mistakenly said this was primitivism. Ironically, with history and dating, we now realize this community was crafting realistic and delicate forms a thousand years before this statue. We now equate that with being civilized. However there's a discussion that's going on about what happened in the 14th century that created this shift from literal representations to hyper abstraction. The entire community changed. It was the time when the continent was forming into empires, becoming metropolitan. Somehow, the representation of the metropolitan with literal figuration felt inadequate. So abstraction

左：“透过铸铁花纹，远景中的新奥尔良” 阿诺德 · 金特 (Arnold Genthe) 摄。资料来源：国会图书馆；**中：**一块阳台窗铸铁板，查尔斯顿；**右：**“新奥尔良建筑。路易斯安那州，圣查理大街的李圈 (Lee Circle) 附近的铸铁花格房子，由沃克 · 埃文斯 (Walker Evans) 拍摄于1936年。资料来源：纽约公共图书馆。/ **Left:** “A vista through iron lace, New Orleans.” by Arnold Genthe. Source: Library of Congress; **Middle:** A verandah cast iron window panel, Charleston; **Right:** "New Orleans architecture. Cast iron grillwork house near Lee Circle on Saint Charles Avenue. Louisiana" by Walker Evans, 1936. Source: The New York Public Library.



© David Adjaye

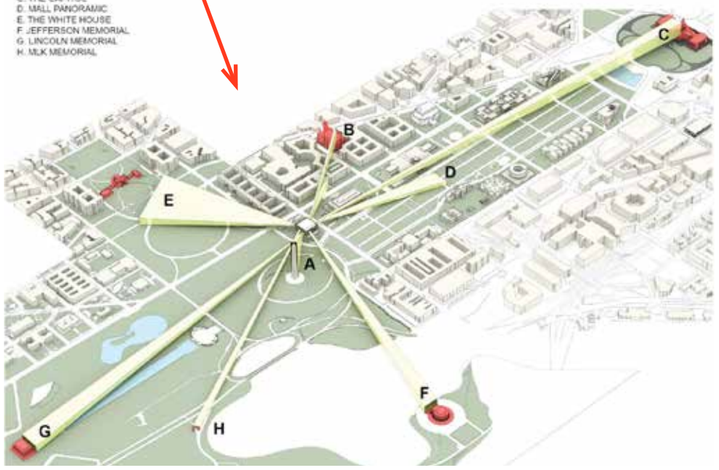
非裔美国人历史文化博物馆早期研究草图/Early study sketch of the National Museum of African American History and Culture.

是最有力的物体了，它俯视着一切。所以这个景观不是作为一种典礼形态建造的，而是一项展现民主的装置。一边是纪念碑、先烈祠，另一边则是活生生的事物。这倒也有趣。

我非常幸运地被邀请去到外交部官员在白宫的一间办公室，那里有一扇窗户，可以俯瞰整个华盛顿广场。这个窗户与广场的景观之间形成了一种环视的关系。这也使我清楚地意识到这个项目不仅仅是一个博物馆，它还必须是对所处地理关系的一种强有力的叙述与体现。我挑选了九个可以从博物馆看到的重要景观，包括国会、华盛顿广场、华盛顿纪念碑、国家档案馆、白宫、杰斐逊纪念堂、林肯纪念堂和马丁 · 路德 · 金纪念碑。这9扇窗口必须成为这座建筑物的永久性部分。

功能设计将展览内容非常恰当地分成了三部分，因为约鲁巴剪影形态也是三层的。所以我们设计了一列三个方盒状的空间，一个在地下，两个在地上。访客可以在两个系统之间穿行，历史已深埋入土，而未来还未来临。整个场地占地五英亩，建筑面积为210英尺。这个展馆对周边的建筑保持了尊重。华盛顿是少数几个进行了建筑限高的城市之一，但这个高度限制是一个数字。在坡上的任何地方都是同样的数字。因此，是丘陵的高度，而非建筑物的高度产生了一种多样性。建筑群并不是统一的。这很有意思，同时也塑造出一个美丽的拓扑形态。所以虽然我们的建筑必须遵守那个高度，但由于博物馆是建在国家广场的一个土丘上，所以它看起来比实际上要高得多。

SITE VIEW ANALYSIS
视线分析图



became the motif for these communities to explain the complicated geometries and ideas.

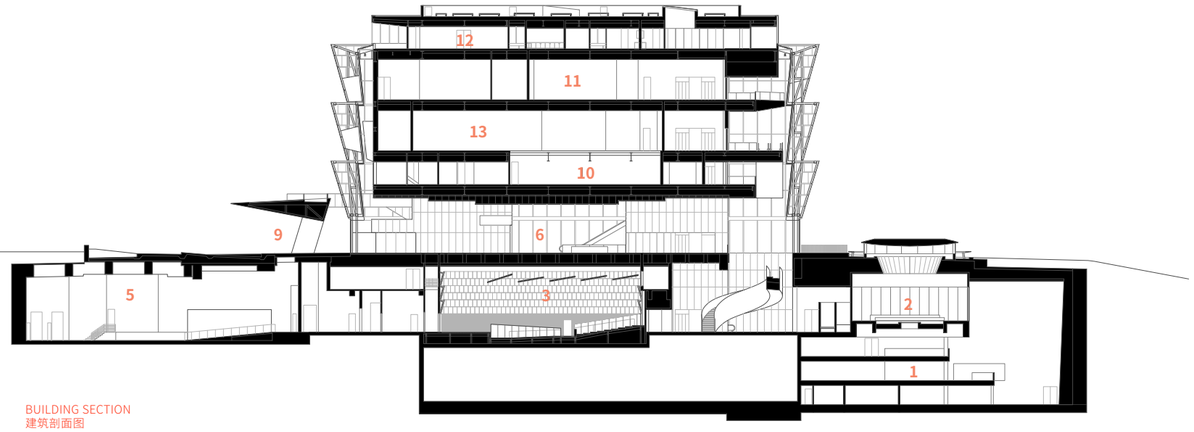
So this sculpture really speaks to the life of a king, his kingdom and everything he did; it's encoded if you know how to read it. The shrine objects embody the idea of using abstraction as a way to uncover deep amounts of information. It's interesting that Picasso talks about abstraction at the beginning of the 20th century as a way to deal with complexity of the modern world. It was no longer enough to use figuration to describe it, it was inadequate.

The African Americans were not just cotton pickers; they were canal builders, the architectural workmen, timber craftsmen and the metal workers. They became very skilled at timber and at metal work and more or less built the early south. It's a story that is never told. A lot of houses from Louisiana and Charleston were built by black slaves who did this with the casting method, which was brought over by the British and the French. They quickly made up their own and started to create these incredible forms without having the tools. It's a very powerful story about hybridity and I wanted to honor that.

The site that was given was the last to be built along the Washington Mall. It is about half the size as most nearby sites so everybody thought this was the worst site we could be given. Most Smithsonians are palaces, long bar buildings. The exceptions are the Hirshhorn by Gordon Bundshaft, who made a form with a sculpture garden, and the National Gallery Eat Wing by I.M.Pei, who made a rotated form, with an entry from the side, not the front. So I understood that these 20th century traditions were playing a different game to the 18th and 19th century buildings. Both Bundshaft and Pei helped me argue my case with Congress and with the Fine Arts Commission on why I wanted to make a building that was not a palace.

The landscape of the Mall is influenced by the French, while the rest is influenced by the English. So you have the English romantic garden that is all about the bucolic landscape, with its monuments, and the White House is the most powerful object of all, on the hill, looking at everything. So it's a landscape, not built as a ceremonial form, but as a device to play out a democracy. Monuments, dead people, on one side, and living things on the other side. It's very interesting.

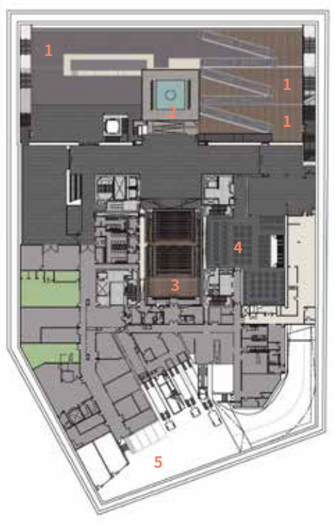
I was lucky enough to be taken to a special window in the White House where the foreign office dignitaries are taken and which



BUILDING SECTION
建筑剖面图

1 历史画廊/History Gallery
2 沉思庭院/Contemplative Court
3 奥普拉·温弗瑞剧院/Oprah Winfrey Theater
4 餐厅/Cafeteria
5 装卸码头/Loading Dock
6 文物馆/Heritage Hall
7 礼品店/Gift Shop
8 简介剧院/Orientation Theater
9 门廊/Porch
10 教育中心/Education Center
11 文化画廊/Culture Gallery
12 办公室/Office
13 社区画廊/Community Gallery

一层平面图/GROUND FLOOR PLAN



地下层平面图/CONCOURSE LEVEL PLAN

OVERALL SECTION
整体剖面图

总平面图/MASTER PLAN

Photo Brad Feinknopf

从麦迪逊路上看到的博物馆远景/Vista of the Museum from Madison Drive

由于这里处于空置状态，所以穿行的人们在草坪上留下印记，形成了一条自然的道路。和景观设计师凯瑟琳·古斯塔夫森（Kathryn Gustafson）合作时，我们在讨论后决定保留这些足迹，并把它们规划成正式的道路。入口处是正厅，但并无奇特之处。这里也没有博物馆，而只是一个可以让你浏览周围风景的房间，然后你可以选择向下或者向上参观。大多数策展人说这个博物馆会失败，因为你必须让人们往下走又往上走，然后还要转弯。在这个意义上，宫殿类型就更简单了，因为你走进后，所有一切尽收眼底，人们可以立即置身其中。

但我坚持认为这就是正确的方法。因为我想建设一个光之建筑。在一个镜头之内，这三种展览功能就可以从地下室到达顶层，让你沐浴在阳光中。所以，在你去往顶层的途中，感受这些惊人的展览内容时，光的气氛也酝酿了一种置身其中的气氛。

该建筑的结构是和盖依·诺德森结构事务所（Guy Nordenson）合作的，被十分奇妙地简化了。我只想要四根柱子，以挑出悬挑结构，其中包含了服务和移动等各种系统。借此，整个建筑外墙都可以被解放出来，透过玻璃幕墙，来连接外部的花纹结构。这是一个很重要的举措，让我们赢得了比赛，因为在根本上，这让我们可以在房间四周布满展览空间。我想设计一个让你永远不会觉得正在走向内部的建筑，一个总是透使访客走向边缘，绕着外墙来游览的建筑。作为访客，你一进来就会感受到这种透明度，以及这种让你充分置身于景色之中的外墙系统。

建筑的外表皮是根据建筑的形式外形铸造的，改编自菲利普·西蒙斯（Philip Simmons，一个被释放的奴隶，后来在查尔斯顿地区非常有名）制作的模具。我想向他的工作表示敬意，而非创造自己的图案，但是我也不想做一个仅仅是模仿的设计。这个方法好比是通过测量和描绘来制作肖像画，我测量了关键的组件，即构成了整个装饰面的水平线和垂直线，然后把它做成花纹，重复四次形成的面板就成了建筑的外表皮。在某种意义上，西蒙斯的形式就是我们形式的DNA。

外立面由6种透光度不同的面板构成。作为立面研究的一部分，我们需要画非常大的图纸来阐明其表皮和表面起伏。红色是最透光的，它们沿着移动路线布置，这也是公众聚集之处。绿色属于第二透光的，紫色则最不透光。要知道的是，外墙并不是一块平板。我们使用了可追溯到200年前的相同的砂模铸造方法来生产130毫米厚的板材。因此，我们使每种面板都可以捕捉光线，拥有厚度的质感，并捕捉重量的分布密度。表皮把建筑变成了光线的媒介，同时体现了华盛顿的光线。随着颜色和亮度的不断变化，没有人可以看到一种单一的颜色。

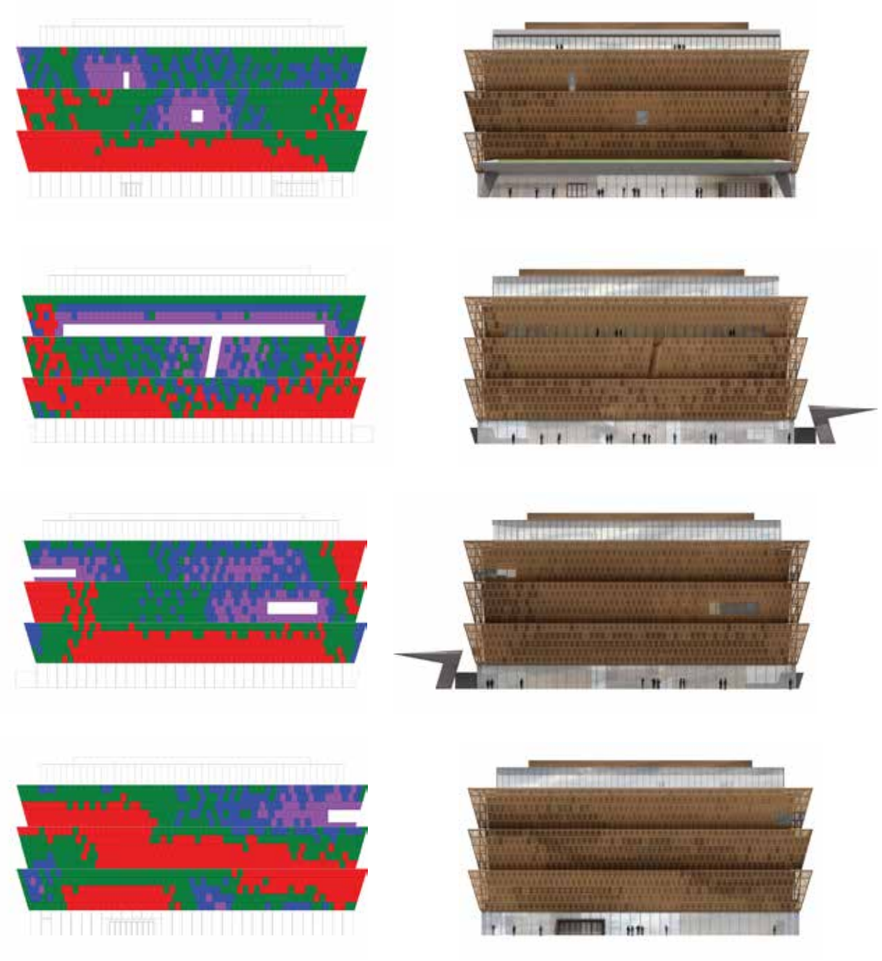
overlooks the Mall. The window has a panoptic relationship to this landscape. It made me very aware that this project could not just to be a museum. It also had to have a powerful narrative and to be a register of this context I picked up on nine critical views including Congress, Washington Mall, Washington Monument, National Archive, The White House, and the Jefferson, Lincoln and Martin Luther King memorials. These nine windows had to be part of the permanent architecture of the building.

The program broke down the curatorial content into three, which fit perfectly because the Yoruba silhouette form I was looking at was also about a triptych. So we created a series of three boxes, one underground and two above ground, with the visitor coming between the two systems. History is buried into the ground with the future being above your head.

The building is a 210-foot square on a five-acre site. It's a pavilion which lines up respectfully with all its neighbors. Washington is one of those few cities that have a height limit but the height limit is a number. Wherever you are on the hill, you have that number. So there is variety that happens because of the hills and not because of the height of buildings. It's not uniform. It's really interesting and makes a very beautiful topography. So our building had to be that height but it looks much higher because it's on a mound in the Mall.

As the site lay vacant, people traversing it had left lawn marks, natural paths. So working with landscape architect Kathryn Gustafson, we said that these must be kept and scribed to become formal paths.

The entrance itself is a formal room, but one where nothing happens. There's no museum there, it's a room to see the views around you and then you dive either up or down. Most curators will say this museum would fail because you have to make people go down, and then up, and then turn around. In that sense, the palace typology is easier because you go in and it all unfolds, people engage immediately. But I insisted that this was the way to do it. Because I wanted to make an architecture of light. The three curatorial programs would be moving from underground with only one lens moment, then to the top floor which would be bathed in light. So by the time you've dealt with this incredible content while getting to the roof, the atmosphere of light has also curated an atmosphere of engagement.



左：表皮透光度分布图；右：建筑立面图/Left: opacity variation of the skin; Right: building elevations.

CAST IRON FILIGREE PANEL
铸铁花纹结构面板

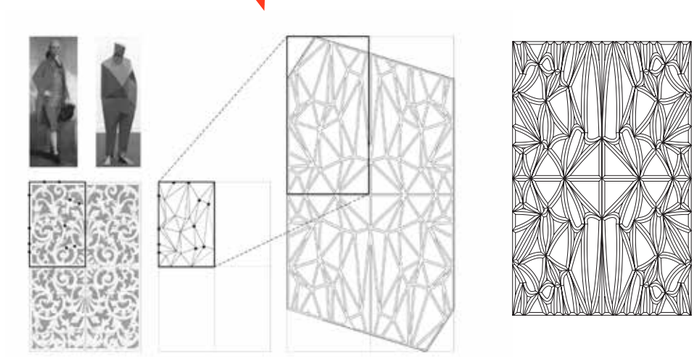


Photo Brad Feinknopf

The structure of the building, on which we worked with Guy Nordenson, is amazingly reduced. I wanted four columns only, with all the structure cantilevers stemming from these four columns, which contain all the systems, e.g. services and circulation, within. By doing this, we were able to release the entire perimeter, tie back the structure through the curtain wall on the outside as filigree. That was an important move to make in order to win the competition because essentially it freed the ability to put exhibition spaces all around the perimeter. I wanted to create a building where you never felt like you were going into an interior, one that always forces the visitor to the edge, circulating the perimeter. As a visitor, you come in and you encounter this transparency and this perimeter system which allows you to engage with the view.

The skin of the building follows the profile of the form and is made of cast iron, based on forms made by Philip Simmons, a freed slave who became very famous in Charleston. I really wanted to honor his work and not make up my own pattern, but I also wanted to make an intervention that was not mimicry. Similar to the way you do a portrait by measuring and plotting, I measured the key components—the horizontals and verticals—that make his ornament, and then I tessellated it four times to make the panel which then becomes the skin. Simmons' form becomes, in a way, the DNA of our form.

The facade is made with six different panels of varying opacity. As part of the facade studies, we had to make very large drawings to explain the skin and its modulation. The red is the most transparent, and these trace the circulation and where the public mostly are. The green is the second most and the purple the most opaque. You also have to realize that the skin is not a flat plate. We used the same sandcasting process dating back 200 years to create 130mm thick plates. So each form was shaped to capture the light, create thickness and capture the density of the weight. The skin turns the building into both a mediator of light but also a register of the light of Washington. The color and the luminosity are continually changing and nobody can point to a single color.

Photo Brad Feinknopf

悬挑顶盖和倒影池/Cantilevering canopy and the reflecting pool

Photo Brad Feinknopf

悬挑顶盖近景/Close-up view of the canopy

走近建筑物，我们会看到一个70英尺的悬挑顶盖，它的前面还有一个倒影池。来自水池的光线反射到顶盖上，在白天的时候可以产生一种移动的倒影。不过实际上，顶盖并没有和建筑物本身相连。它是独立支撑的，所以它本身是单独的物体。出于移动的原因，我们在结构上并不希望将两者连接起来，此外，建筑物和顶盖间的偏斜（deflection）和间隙也会产生缓和效应，像烟囱一样散热。与水面之间的角度也使内外温差达到了5度。

进入建筑时，你就置身于大厅之中，能见到令人难以置信的景观。其方向布置让各个方向都有自然光。这里非常美丽，让人愿意进来逗留；这是人民的客厅。穿过下层的大厅时，会看到一个独立支撑的柯尔顿钢制楼梯。向下40英尺，你就来到了历史展区，并回到了400年前。你可以在画廊里回顾多年来奴隶贸易的演变。这个博物馆呈现的不是一种时间序列，而是历史的堆叠。

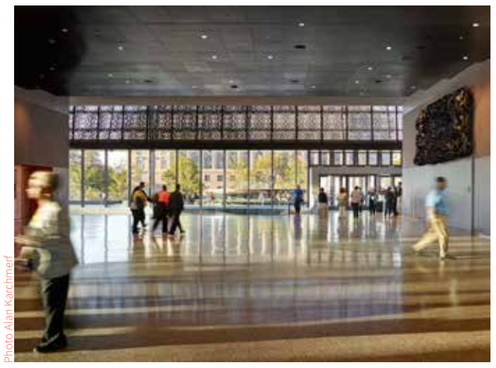


Photo Alan Karchmerf

大厅/The hall

Walking up to the building, we have a 70-foot cantilevering canopy and also a reflecting pool at the front. The light from the pool reflects onto the canopy and during the day creates a moving reflection. The canopy is actually not connected to the building. It's free-standing so it's a single object in its own right. Apart from structurally not wanting to connect them for movement reasons, the deflection and the gap between the building and the canopy creates a slack effect, cooling like a chimney. The angle with the water creates an 5-degree temperature change from the outside.

When you enter the building you're in the hall and you're met with this incredible vista. The way it's orientated, you get true light from all directions. People just come in and spend time, it's really beautiful; it's a living room for people. People come through the lower level concourse, where there is a self-supporting Cor-ten steel stair. A 40-foot drop takes you down to the history gallery and back in time by 400 years. You see how the slave trade plays out through the years, in the galleries. The museum unfolds not as a sequence, but as a stack of history.

Photo Brad Feinknopf

楼梯俯视图/Top view of the stair

Photo Alan Karchmerf

独立支撑的柯尔顿钢制楼梯/Self-supporting Corten steel stair

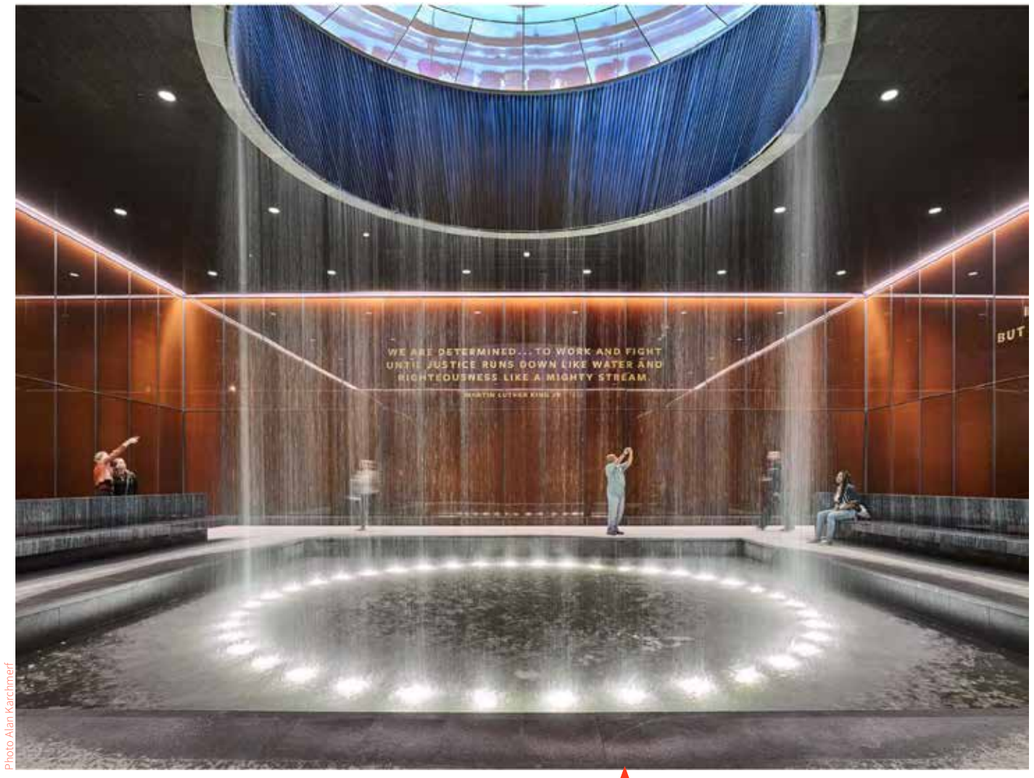


Photo Alan Karchmerf

沉思庭院/The contemplative court

穿过所有的画廊之后，你就会抵达沉思庭院。它的正中央布有大型玻璃天窗，还有一个瀑布，其灵感来自马丁·路德·金（Martin Luther King）的话，“我们决定努力奋斗，直至公正似水奔流，正义如泉喷涌”。我想把这句话变成建筑的一部分，赋予它一种形式。大多数人在体验了画廊的叙事之后，都会觉得郁结难抒。水的轰鸣会让访客互相听不到彼此的声音。这带来了一种静谧。这个沉思庭院是唯一一个光线穿透天窗的房间，然后温柔地射入画廊。光线从北面外部射入，那就是天窗的位置。当你来到这里，可以在旁边等待。你看不到房间的内部，因为它也有28英尺。它太深了，以至于你只能看到水流奔泻。

After going through all the galleries, you arrive in the contemplative court. In the middle is the large lens skylight, and a waterfall, inspired by the words of Martin Luther King 'We are determined to work and fight until justice runs down like water and righteousness like a mighty stream". I wanted to make it into part of the building, make it into a form. Most people are quite upset after having gone through the narrative of the galleries. The roar of the water means visitors really can't hear each other. This creates a kind of quietness. And it's the only room with a light that comes through a skylight and then very softly into the galleries. And then from outside in the north, that's what the skylight is. When you come, you can wait by it. You can't see into the room because it is also a 28-foot room. It's so deep that you only see the water rushing down.

沉思庭院的天窗坐落于建筑北面外部/The skylight of the contemplative court is located at the north side of the building.

Photo Alain Karchmerf

Photo Alan Karchmerf

从环视窗口观望华盛顿纪念碑广场/Viewing the Monument grounds from the panoramic window

在这个可以环视华盛顿纪念碑广场的窗口，你可以把城市中的山丘景观尽收眼底，这是非比寻常的一处地点。城里的人们也为此而来，这是一种概览的感觉，一种可以纵观全局的感觉。

由于与华盛顿纪念碑之间的关系，最终我把花纹立面的角度设置成与华盛顿纪念碑顶端一致，即17.5度。这就是这两者结合在一起的时刻。Ⓜ

At the panoramic window, which looks to the Monument grounds, you get this incredible moment where you have this view right down to the hills of the city. People in the city come for this view. It's the idea of being given the overview, being given a big picture.

The relationship to the Monument, I made in the end the angle of the filigree façade the same as the angle at the tip of the Washington Monument, so it sits at 17.5 degrees. There are moments where the two things come together. Ⓜ

Photo Alan Karchmerf

独立支撑的柯尔顿钢制楼梯/Self-supporting Corten steel stair

CREDITS

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从空中看到的国立非裔美国人历史文化博物馆/Aero view of the National Museum of African American History and Culture

Photo Alan Karchmerf

在国立非裔美国人历史文化博物馆旁边，可以看到美国历史博物馆和国立自然历史博物馆/Beside Smithsonian National Museum of African American History and Culture, Smithsonian National Museum of American History, and Smithsonian National Museum of Natural History can be seen side by side

Photo Alan Karchmerf

绿树掩映中的博物馆远景/Vista of the museum, surrounded by lush vegetation

© Adjaye Associates

白天的博物馆和纪念碑/Museum and the Monument duriing the day

Photo Alan Karchmerf

博物馆远景/Vista of the museum

Photo Brad Feinknopf

夜晚的博物馆和纪念碑/Museum and the Monument at night

Leyue Chen 陈乐乐

Architectural Designer 建筑设计师

One and half years of experience 工作一年半

Education vs. Work, which has shaped you most as a professional today?

Work

What's the biggest challenge of being a designer today?

To meet both the client's requests and laoban's standard. Sometimes they are conflicting and you have to find the perfect solution.

教育与工作，哪方面对你成为设计师的影响更大？

工作

你认为今天从事设计工作最大的挑战是什么？

满足客户的需求和老板的要求。有时候二者是矛盾的，而你必须找到解决方案。

Xiaowen Chen 陈晓雯

Product Designer 产品设计师

Six years of experience 工作六年

Education vs. Work, which has shaped you most as a professional today?

Work has probably had the biggest effect. Through working with different project teams, architects and developers across a variety of projects I've been able to participate in discussions and learnt through trial and error as part of the production process, slowly improving myself.

What's the biggest challenge of being a designer today?

Keeping up with the pace of a project whilst trying to juggle requirements from different stakeholders but also adhering to restrictions.

教育与工作，哪方面对你成为设计师的影响更大？

工作吧， 通过跟不同的项目组、设计师和工厂，合作一些不同类型的项目，就各类方案深入探讨和交换意见，在制作的过程中发现问题，通过反复测试、改进逐渐积累了经验。

你认为今天从事设计工作最大的挑战是什么？

一些项目的进度、节奏相对较快，也有很多方面的要求和限制。

Simin Qiu 邱思敏

Product Designer 产品设计师

Three years of experience 工作三年

Education vs. Work, which has shaped you most as a professional today?

A good education not only shapes and influences a person but also guides them through their career choices. Work helps to consolidate things we learnt in school and develop a person overall.

What's the biggest challenge of being a designer today?

Designers are graduating every year but few persevere due to lack of respect in the market and piracy is not uncommon. Insufficient design awareness in society and a reluctance to pay for design hinders the development of this industry.

教育与工作，哪方面对你成为设计师的影响更大？

教育，良好的教育环境和资源在更早期的塑造和影响一个人，教育在很大程度上会影响工作的选择。工作作为后来者会进步一巩固教育的影响。工作能更好的在此基础上提高一个人

你认为今天从事设计工作最大的挑战是什么？

设计师层出不穷，但真正能坚持下来的微乎其微，由于市场没有很尊重设计，盗版屡见不鲜。大众对设计的认知不足，不愿意为设计买单。这些会阻碍设计的发展。

Utsav Jain

Architectural Designer 建筑设计师

Two and half years of experience 三年建筑教育，工作两年半

Education vs. Work, which has shaped you most as a professional today?

While working in a practice has had a significant impact on my architectural sensibilities, I must say that my first few years in education lay the foundation for my career as an Architect. It gave me the platform to look at architecture in a different light, and therefore allowed me to dream.

What's the biggest challenge of being a designer today?

Staying true to your design principles in spite of the various pressures that come your way. It is certain that not every individual will agree with your method or design intent. However, I strongly feel that behind the finest works of architecture are the most stubborn designers.

教育与工作，哪方面对你成为设计师的影响更大？

工作实践对我的建筑感知力有重大影响，但我必须说是我头几年的教育为我作为建筑师的职业生涯奠定了基础。它给了我一个看待建筑的不同角度，因此允许我为之梦想。

你认为今天从事设计工作最大的挑战是什么？

在各种各样的压力下，坚持自己的设计原则。当然不可能每个人都赞同你的设计方法或意图。但我非常坚信，最好的建筑作品背后有着最顽固的设计师。

Mark Zhang 张雅斌

Interior Designer 室内设计师

Six years of experience 工作　六年

Education vs. Work, which has shaped you most as a professional today?

Work has changed the way I think, instead of applying abstract ideas I now design based on the specific conditions of each project.

What's the biggest challenge of being a designer today?

The biggest challenge is how to keep a unique perspective on things.

教育与工作，哪方面对你成为设计师的影响更大？

工作改变了我思考的逻辑，不再用抽象的视角看待设计，而是就项目本身的状况研究设计。

你认为今天从事设计工作最大的挑战是什么？

最大的挑战是如何保持看待事物的独特性。

Litien Poeng 彭立恬

Graphic Designer 平面设计师

Six years of experience 工作六年

Education vs. Work, which has shaped you most as a professional today?

I think half and half. Work is the way to practice my creativity and execution but education is the root which still influences me from time to time.

What's the biggest challenge of being a designer today?

Following the schedule!

教育与工作，哪方面对你成为设计师的影响更大？

我觉得是一半一半的。工作锻炼我的反应力和执行力，但教育是我的根源依然时刻影响着我。

你认为今天从事设计工作最大的挑战是什么？

按照规划表进行！

Kim Choy

建筑实习生 Architectural Intern

One year of experience 工作1年

Education vs. Work, which has shaped you most as a professional today?

Work has always influenced me more because the forces, constraints and clients are current and real. Although, the concept may be more pure in architecture school, in my opinion, the design solution generated in the real world is more multi-faceted.

What's the biggest challenge of being a designer today?

I think the biggest challenge today as a designer is delivering more with less. Diffused by technological development, many industries such as motion graphics, art, film e.t.c. are overlapping each other more than ever. As a designer I think one has to have a holistic understanding of many world issues as well as current topics within the industry.

教育与工作，哪方面对你成为设计师的影响更大？

工作一直对我影响更大，因为各方面的因素、制约、以及客户都是当下的真实的。尽管概念在建筑学校会更纯粹，但在我看来，现实世界中产生的设计解决方案更具有多面性。

你认为今天从事设计工作最大的挑战是什么？

我认为当今设计师的最大挑战是用更少来传递更多。技术发展带来的边界模糊使得很多行业，例如动画、艺术、电影等等，越来越相互重叠。我认为一个设计师需要对许多世界议题和行业内的当前话题有一个全局性的理解。

Haiou Xin 辛海鸥

Graphic Designer 平面设计师

Five years of experience 工作五年

Education vs. Work, which has shaped you most as a professional today?

I've always had an interest in painting which is why I chose to study graphic design at university. I think school is the place to develop your interests and work is the place to fine tune your design skills, both are important.

What's the biggest challenge of being a designer today?

Graphic design is not only a career that requires design sense but also a rational approach. Trying to maintain your original design intentions whilst satisfying the client's needs is always the biggest challenge.

教育与工作，哪方面对你成为设计师的影响更大？

最初是对绘画有兴趣，所以大学选了平面设计学科，我觉得学校里主要还是发展兴趣，工作中则是更多的掌握设计技巧，都非常的重要。

你认为今天从事设计工作最大的挑战是什么？

设计师并不是一个感性的职业，往往需要理性的判断，在坚持自己设计初衷的同时，可以巧妙地解决客户的问题，一直以来都是很大的考验。

festival of design lecture
设计庆典讲座

nader tehrani: the tectonic grain
纳德·特那尼：建构的纹理

日期 Date: 2017.03.15

地点 Venue: 设计共和 Design Republic, Shanghai

时长 Length: 57:39

听写 Transcript by Brendan Kellogg, Nellie Yang

编辑 Edit by Nader Tehrani

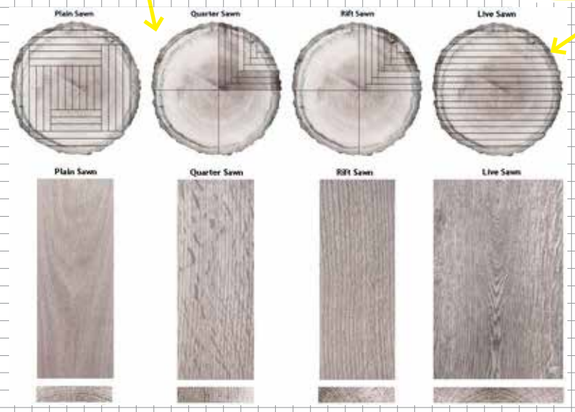
翻译 Translation by 张微伟

我说的纹理（grain）指的是什么呢？纹理是一种物质的构成，它产生组成形式，比如说花纹、条纹，或者棋盘格。当我们看到斑马时，会认为它身上有竖条纹是理所当然的。而当我们观察自然时，一般也如此识别纹理。但如果你仔细看第一幅图，你会发现这是不对的。因为斑马天然的纹理一般是与其躯干和四肢的方向垂直的。只有当我们开始操控纹理的方向时，才会发现建筑师在技艺背后所耍的技俩。建筑与

自然无关，而完全要看我们想让它怎样。因此，当路易斯·康（Louis Kahn）问砖想要变成什么时，他实际上正是指出了建筑师的这种主动性，能够为砖块的组成自由地赋予形式。建筑师清楚地知道，虽然砌砖有其限制，但推动新的构造、装饰、组成的演化形式得到发明的，还是设计师之手。

对立的纹理

我们知道，木头自然的纹理有其自己的影响和作用。但实际上，产生我们所熟悉的各种纹理图案的，还是来自对锯的使用（如径切法（rift-sawing）、刻切法（quarter-sawing）、弦切法（live-sawing））。各种切割方式都适应于木材的不同等级，并区分木材的用途，是用于铺地、零件，还是装修加工。它们对原木的利用都多少有自己的效率，而费用也是依此计算的。



不同切割法下的木头纹理/Different cuts of wood

就这张桌子来说，使用到了两种相互关联但又相互对立的建构方法。一种是木纹贴片（veneer grain）的技术，像伊姆斯（Eames）的椅子一样，薄薄一层。而另一种就是砧板的技术，通过胶合板（laminated plywood）演化而来，坚固、紧实，有体积感。砧板胶合的层次和木纹贴片的刻切法纹理在转角处相遇，在斜角上产生了由两种对立的技术形成的对

What do I mean by grain? The grain is the constitution of matter that produces organization, such as a pattern, a stripe or a checker board. When we look at the zebra, we take for granted that it has stripes. As we look at nature, we commonly identify grains much like this. However, as you look carefully at the first image, you realise that something is amiss. The natural grain of the zebra tends to go perpendicular to the orientation of its torso and limbs. It is only when we manipulate the orientation of the grain that we understand the artifice behind the architect's craft. Architecture has nothing to do with nature and everything to do with that which we force it to do. So when Louis Kahn asks what the brick wants to be, he is actually pinpointing the architect's agency in giving willful form to the organization of bricks, knowing fully well that while brick aggregation offers some constraints, it is in fact the designer's instrumentality that pushes the invention of new forms of structural, decorative and organizational adaptations.

CONTRASTING GRAIN

We know that the natural grain of wood has an agency of its own. But it's actually our use of the saw (rift-sawing, quarter-sawing, live-sawing) that produces the graining patterns familiar to us. Each sawing method is adapted to different grades of wood, differentiating its use as flooring, hardware or millwork. Each is more or less efficient in its use of the log, and the expense is calculated accordingly.

In the case of this table, two corresponding yet contradictory tectonics were used. One was the technology of veneer grain, thin and laminar much like the Eames furniture, and the other was the technology of butcher block technology, here adapted through laminated plywood, which becomes solid, compressive, and massive. The striations of the butcher block laminations, and the grain of the quarter-sawn veneer come together on the corner producing an oblique symmetry between contrasting technologies. When the butcher block is cut diagonally along the inside of the leg, a figurative aspect of the grain is revealed. The folly in book-matching striping on the oblique is that one cannot simultaneously retain symmetries along every edge. There will always be a moment of asymmetrical rift, one edge where the butcher block grain and veneer grain run perpendicular to each other. This piece of furniture is a kind

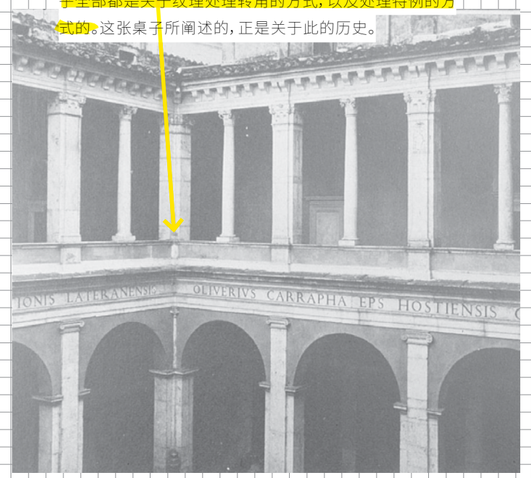
称。当砧板造的桌脚内部沿对角线斜着切开时，就露出了其纹理上有形态的一面。

NADAAA设计的戈麦斯咖啡桌/Gomez Coffee Table by NADAAA
Photo by Dan Bibb

译者注：又称书页式拼板，指相交的两个面上的纹理沿接缝向两边对称伸出，像打开的书页上的文字方向一样。

斜角上的对纹拼合（book-matching）条纹的荒谬之处，在于无法同时在每个转角上都保持对称。必定会有一个非对称的断裂之处，在这个转角上，砧板的纹理和木纹贴片的纹理相互垂直。这件家具是一篇文章，讨论的是将事物统合起来，以及设法让纹理互洽的不可能性。外面是刻切法的核桃木，里面是斑马木（zebra wood），而结构则是堆砌的胶合板，这三种条纹状的花纹在斜角上开始互相对话。

如果这个论点的出处看起来离建筑太过遥远，那么不妨想想罗马的和平圣玛利亚教堂（Santa Maria Della Pace）吧。古典式的柱头在向转角处前进时，产生了一种有韵律的节拍，直到它们被吞没、埋入到转角本身的内部去。这是违背常理还是疏忽大意？到底出了什么事？究竟布拉曼特（Bramante）是个诙谐幽默的家伙，还是玩忽职守了？如果你用帕拉迪奥（Palladio）后来转译布拉曼特的方式，以及数辈之后，密斯·凡德罗（Mies Van der Rohe）在伊利诺伊理工学院（IIT）中转译他的方式来遍观历史，你就会开始意识到，纹理的重要之处并不在于如何在平面上创造纹路，而几乎全部都是关于纹理处理转角的方式，以及处理特例的方式的。这张桌子所阐述的，正是关于此的历史。

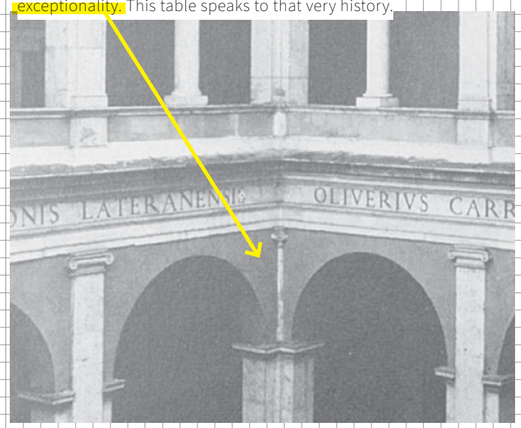


of essay on the impossibility of bringing things together and finding ways for the grains to cohere. Quarter sawn Walnut on the outside, zebra wood on the interior and stacked plywood as structure, the three striated patterns come into conversation on the oblique.

斑马木平行于与顶端垂直的柚木纹理/Zebra wood runs parallel to the teak grain perpendicular to the top.

木纹贴片/Veneer grain

If provenance of this argument all seems remote to architecture, think of Santa Maria Della Pace in Rome. The classical orders produce a rhythmic cadence as they march towards the corners, until suddenly they are swallowed up and engulfed within the corner itself. Perversity? Negligence? What happened there? Was Bramante a witty and humorous guy or did he simply fall asleep at the wheel? If you look through history at the way in which Bramante was subsequently translated by Palladio --and generations later by Mies Van der Rohe in the IIT, you begin to realise that the importance of the grain is not so much about the way in which the striping is created on one face, but almost always about how it turns the corner and deals with exceptionality. This table speaks to that very history.



通透的纹理

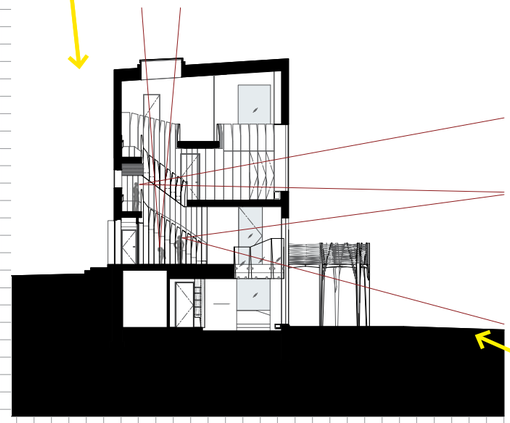
在这个背景下，岩溪宅（Rock Creek House）就有一种主动的批判性了。这个项目是对华盛顿哥伦比亚特区的一座有半地下室和屋顶阁楼的四层历史建筑的改造。我们的任务就是让半地下室和屋顶都可以供人使用，以借此将平面面积最大化，让房子扩大而不增加占地面积。

正如你所见，这座房子看上去还是相对温和的。它尊重了建筑的砖造结构，窗户有些向内凹陷，有些与表面平齐，有些凸出墙面，但除此之外并没有什么特别之处。

我们客户的主要要求之一，便是最大程度地增加南面的日照。在对平面进行研究之后，困难就变成了如何在维持建筑承重结构秩序的同时，打开它的跨度，以至于可能需要砖砌以外的其它形式的结构支撑。因此，我们设计了一种混合结构，在北面配合建筑的承重墙，而在南面打开，形成一种“自由平面”式的组成形式。这对建筑的结构有着彻底的影响。南面玻璃的跨度自然地要求钢结构，因此我们让南侧立面变成了玻璃幕墙。建构上的困难在于，如何让（北面）的承重砖墙转换到（南面）的玻璃幕墙上，以及在连接两者的东西侧墙上的转变区域里，这会意味着什么样的结果。因此，建筑的平面必须发生变化，好让北面的承重墙能够转换到既有的支撑南面玻璃幕墙的南北向结构砖墙上。

建筑的南立面有其精心设计的细节，在平齐、内凹与外凸的状态之间交替，但同时也有转角处，它让建筑的各翼能够插入到环境中去。在东南角上，纤细的室内钢柱支撑着外面的砖墙，让玻璃墙形成一幅画面，揭示出其内部的建构策略。这个转角窗便变成了能够深挖可居住面积的一次机会，也让室内装饰能够做成像是胶合板纹理伸展的效果，正是这种纹理组织起了整座建筑。

在剖面上，从一楼到地下室形成了一个通高空间，向南面的花园开放，同时通过一个中庭空间，连接起二楼的儿童作业室和顶楼的游戏室，让原本的阁楼也在剖面上打开了。在入口层有一间冬季客厅，而下方的夏季客厅与花园相连。斜向的视线可以穿过整座建筑，将各个空间连接起来，用自由平面创造出承重墙系统所无法允许的联系。在进入室内时，还有一扇特别的窗子，让人能够通过多格的眼窗（oculus）窥探通往下方花园层的楼梯。



南北向的室内木装修（millwork）的条纹状逻辑，像承重墙一样，都增强了南侧墙面与房屋北侧的各个内部空间之间的连续空间的通透性，让阳光能够照射到房屋深处。与之相对，东西侧墙面都不透明，表现为坚实的木贴面，让卧室和其它室内区域有自己的隐私。所有的木装修都与电气、照明、散流器等设备协调过，好让南北轴的逻辑更加明显。这座建筑的零件也隐藏在这一逻辑当中。厨房、家庭活动室等服务空间可以通过大型推拉门隐藏起来，好让它们看起来没有门扇，完全实心。

POROUS GRAIN

Within this context, the Rock Creek House has a certain kind of critical agency. An adaptation of a four story historic structure in Washington DC, with a half -basement and a roof attic, our job was to maximize the square footage of the house by making both the basement and roof occupiable: expanding the house without adding onto its footprint.

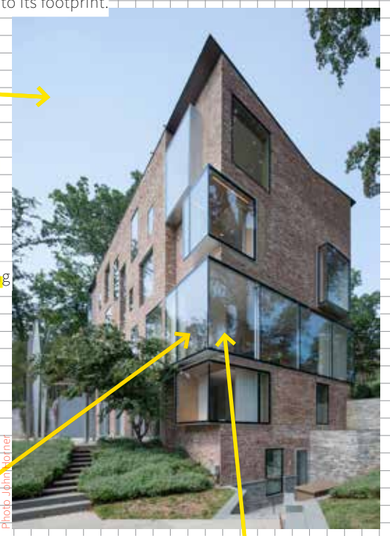


Photo: John Horner

As you inspect it, the house seems relatively benign. It respects the brick structure of the building, with windows that are either carved out, flush, or popped out, but it's nothing extraordinary beyond that.

One of the main requests of the client was to maximise the sunlight on the southern face; on studying the plan, the challenge became how to maintain the load bearing structural order of the building while opening it up to spans that would require other forms of structural support, beyond masonry. For this reason, we developed a hybrid structure accommodating its load-bearing walls on the north, while opening up the south to a'free-plan' organization. This had a radical impact on the structure. The expanses of glass on the south, naturally, necessitated steel, and as such we transformed the south face into a curtain wall. The tectonic challenge was, how do you turn a loadbearing brick wall (on the north) into a curtain wall (on the south), and what that would entail in the transition zones of the east-west wall that bind them together.

As such, the building plan has to evolve in such a way that the load-bearing wall of the north is translated to the existing north-south structural brick walls which support the curtain wall on the south.

The southern façade has its moments of articulation, alternating between flush, inset and popped out conditions, but also the corners, whereby the wings of the building exert themselves into the landscape. In the south-east corner, delicate inset steel columns suspend the brick on the outside, using the glazing as a picture plane to reveal the tectonic ruse. The corner windows become opportunities to carve deep areas of occupation, allowing for furnishings that appear as extensions of the plywood grain that structures the house.

In section, a new double height space from the ground floor to the basement opens out to the garden to the south, and the former attic is opened up in section with an atrium connecting the kids' homework room on the second floor to the playroom on the top floor. A winter living room is located at entry level, while a summer living room below connects to the garden. Diagonal views pass through the building connecting spaces to the each other, using the free-plan to create connection that a load-bearing wall system would disallow. Upon entering, there is also unique window which peers into a cavernous oculus revealing a descending staircase to the garden level below.

Photo: John Horner

The striated logic of the millwork, runs north-south, much like the bearing walls, reinforcing the porosity of spatial continuity between the southern façade and the nested spaces within the northern portion of the house, allowing sunlight deep into the house; in contrast, the east-west faces are opaque and expressed as solid wood veneer, giving privacy to bedrooms and other domestic areas. All of the millwork is coordinated with electrical, lighting, diffusers and other fixtures, such that the logic of the north-south axis becomes apparent. The hardware of the building is also concealed within this logic. Services like the kitchen and family room can be concealed by large sliding wall panels so that they appear to be without doors, and completely solid.

Photo: John Horner

Photo: John Horner

容差的纹理

在我们在韩国首尔完成的一个项目中，条纹的概念成了这个项目的武器，虽然我们并不懂韩语，和当地的建筑业也并没有什么特别的联系。从核心上来说，我们用了四种细部来控制这个项目。

这是为三星设计的一个“样板间陈列馆”项目。和既有的样板间陈列馆一样，这种建筑类型看起来像是豪华的文化设施，但实际上却是零售部门。现代、三星等公司都利用陈列馆中展出的样板间来贩卖公寓单元，这些公寓遍布首尔各地。在底层，他们为整个小区提供公共设施，其中就包括这些“长期”的临时建筑。

这个建筑的概念十分简单：制造一个玻璃底座，吸引人们从周围的街道、公园、地铁系统进来，同时与上方的零售空间产生一处垂直的视觉联系。

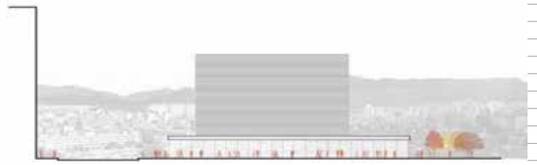
从类型上来说，这不过是在底部放一个玻璃方盒，上面顶着一个笨拙的黑匣子：不多不少，仅此而已。我们认真地思考了如何定义这种建筑类型，它的一边面对的是空无一物的景色，而另一面却在一座新建的公园边上，一座地铁站将它与整个大都市区域连接起来。一开始，他们保证这里将会变成繁华的都市一角，但我们并未想象过这要花多久：不到一年，公园边上就盖满了楼房。

我们画了这个项目的施工图，包括数字建造一些可能有些复杂性的细部的程序说明（protocol）。我们在十月底提交了整套图纸，但并没有得到客户方的回应。但在一月份，我们却突然收到了一张来自施工现场的照片。他们已经打好了地基，并建好了上面的楼板，但由于遇到了一些几何问题，因此打电话来寻求关于如何转角的建议。实际上，并没有任何部分是数字建造的。最后我们发现，这些基本都是在韩国工程师和现场监理员的协调下，由中国工人手工建造的。因此，我们就回到了项目中来，好说清楚项目各部分的进行。幸运的是，这栋楼是构想成由四种基本的材料装配，以及它们所需的细部组成的。花岗岩的地面穿过整座建筑；垂直的玻璃外墙（storefront）按照日照的性质形成了一种

TOLERANT GRAIN

This idea of striping becomes ammunition for a project we completed in Seoul, Korea — where we didn't speak the language, and had no special connection to the construction industry. We essentially used four details to control the project.

The project was for a "model home gallery" for Samsung. As precedence goes, the model home gallery is a building typology that has the appearance of an extravagant cultural institution but is, in fact, a retail outfit. Companies like Hyundai, Samsung, and others use the model home displays in their galleries to sell apartment units all over Seoul. At ground level they provide public amenities to the communities within which these'long-term' temporary buildings are built.



The idea of the building was very simple: produce a glass base that draws people in from the adjacent streets, the park and subway system, while offering one vertical moment of visual connection to the retail above. Typologically, it is simply a glass box at the base with a dumb black-box at the top: nothing more, nothing less. We pondered how to give definition to this building type that found itself in between an empty barren landscape on one side and on the edge of a new park with a subway station linking it to the larger metropolitan region. It was promised that the site would become a dense urban corner, but we had not imagined how fast that might happen: within one year, all of the buildings around the park were built.

We developed the working drawings for this project, including the protocols for the digital fabrication of the details that required some complexity. We sent off the package at the end of October and we didn't hear from client group. In January, abruptly, we received an image from the job site. They had built the foundations and were already building the slabs above but they called us to ask advice about how to turn the corner because they had run into some geometric issues. In fact, none of it was being built digitally. It was all being done manually, as it turns out, predominantly by Chinese labour, coordinated by Korean engineers and site job captains. Thus, we were reintroduced back into the project to bring clarity to the various working parts of the project. Luckily, the building was conceived from four basic material assemblies and their requisite details. A granite floor that runs right through the building, a vertical storefront that has a certain cadence in relationship to solar performance, a series of louvers that break up the compound curvatures of the aluminium panels into discrete pats, and a plaster interior.

Conceptually, the project is about developing the lowest possible communicative denominator to build the structure without knowing the local language. Due to the lack of detail in this building, there was nothing that could go wrong. That wasn't the case of course, but you wouldn't know it because it's detailed for maximum tolerances such that misalignments just don't matter.

Photo: John Horter

Photo: John Horter

韵律；平行的格栅断开了铝板整体形成的曲面，将其分成不连续的部分；而室内则是粉刷处理。

从概念上来说，这个项目的目的在于开发一种最低程度的交流标准，好在不懂当地语言的情况下也能进行建造。由于这座建筑缺乏细节，因此也不会犯错。当然并不是说真的不会有差错，而是细部的设计允许最大限度的容差，这样对不准也不会有问题了。

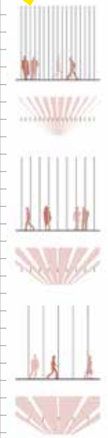
在底部，深深的木遮阳板（fin）让玻璃外墙不受东西向阳光的照射，北面的玻璃竖框间隔要空得更大。而竖框间玻璃上的纵向条纹（fritting）则保护室内不在南向立面上暴露出来。建筑的底座也有两种结构。一种较为粗壮，支撑着上面的建筑，而另一种则是更为纤细的钢框架，支撑着玻璃幕墙。在上方，横向的格栅在几处被拉开，好让光线照进室内的公共空间里。

从概念上来说，建筑的底层是开放的漫步空间，供公众穿过这座建筑。平面大体上吸收了柱式大厅（hypostyle hall）的意思，报告厅、贵宾室、会议室等主要的功能空间变成了整块的建筑体，仿佛粗柱一般。而剖面的大体意思是让天窗、柱子、楼梯从上方的建筑体吊挂下来。所有的照明、机械设备都隐藏在天花板上的条纹中。

有几处主要的地形变化。比如说，我们将向下通往车库的坡道与报告厅阶梯状地面的斜坡对接起来，并去掉了报告厅的后墙，这样就产生了一个360度的剧场，以及一座可以从台上望向四周外部景观的舞台（proscenium）。当它不用作陈列馆时，就变成了充满新鲜的相遇与各种功能体的舞台，将内部与外部连接起来。

Photo: John Horter

Photo: John Horter



At the base, deep vertical fins protect storefront glazing from east/west sunlight, on the north the mullion bays are spaced with larger spans. Vertical fritting in between the mullions protects the interior from the southern exposure. The base of the building has two forms of structure. One is a robust structure that supports the building above, and the other is a finer steel filigree that holds up the glazing. Above, horizontal louvers are pried open in the few moments where light is permitted into interior public spaces.

Conceptually, the ground level is an open promenade that allows the public to filter through the building. The plan diagram is that of a hypostyle hall where primary programs such as auditorium, VIP rooms, and conference rooms become monolithic masses, as if thick columns. The section diagram is such that architectural elements like skylights, columns, and staircases suspend down from the mass above. All of the lighting and the mechanical equipment are hidden within the striations in the ceiling.

There are key moments of typological transformation. For instance, we aligned the ramp down into the garage with the slope of the auditorium's stepped floor and eliminated the back wall of the auditorium such that it produced both a theatre in the round and a proscenium with a view from the stage out towards the landscape. When it is not a gallery it becomes a theatre for novel encounters and programs bridging inside and outside.

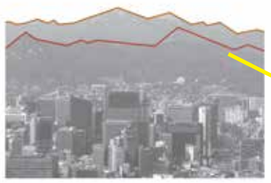


Photo: John Horner

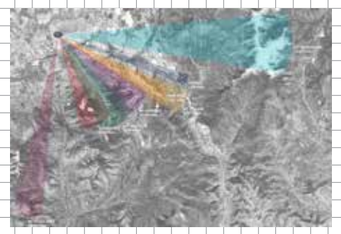
建筑的外形是一个多米诺框架结构（domino frame）削去转角，再紧紧裹上条纹状的表皮形成的。建筑上方体量光滑的形状是在斜面起效的，应从四周环绕观看，与周边天际线上立方体的公寓楼们形成了对比。相反，底座却是由三角形的形状构成的，大致围绕下方公共领域的功能需求形成。两者以不同的方式回应了首尔的景观：一方面与典型而重复的公寓大楼形成对比，另一方面则呼应了围绕整座城市的山地景观。

从根本上来说，这座建筑是对施工过程中发生的各种事件抱有弹性而建造的，但还是能够忠实地保留四种关键的细部，让它能够不执着于精确度。这座建筑的动态示意图揭示了它彻底的简约性：玻璃外墙上建构性纹理的形态是按照日照的特性来排布的。当它叠加在下方的各种功能空间上时，就开始压紧、框出底部的公共功能空间了。顶部的格栅将黑匣子隐藏了起来，但在某些地方又睁开眼睛，向你眨眼。

The massing of the building is the result of a domino frame with sliced corners and subsequently shrink-wrapped with a striated skin. The smooth figure of the building mass above operates on the oblique, and is meant to be viewed in the round, in contrast with the prismatic apartment buildings of the neighbouring skyline. In turn, the base is formed on triangulated figures that are formed around the approximate programmatic requirements of the public realm below. Each speaks to the landscape of Seoul in a different way: on the one hand in contrast to the repetition of conventional apartment buildings, and on the other the mountainous landscape that frames the city.

In essence, the building is built with a sense of resilience to all of the things that happen in construction, but maintains its commitment to the four key details that protect it from precision. The animated diagram of the building demonstrates its stubborn simplicity: a patterning of a tectonic grain at the storefront distributes itself in relation to the solar performance. As you stack that with different programs underneath, it begins to compact and enframe the public programs at the base. The louvers at the top conceal the black box but then, at moments, they open up to wink back at you.

连续的纹理



材料的这种纹理形成与不同的建造技术有着直接关系。在新罕布什尔州住宅（New Hampshire house）项目中，我们有幸能在山顶设计一座俯瞰总统山脉（Presidential Range）的房子。每间房都设计成与一座山峰形成轴线关系，包括华盛顿山、林肯山、拉法叶山等等。每间房都是放射状平面上的一个预制单元，中间围绕着一个中央庭院。不妨想一想历史上的诸多圆形建筑，比如说环形监狱，还有你可能熟悉的中国土楼（位于福建的圆形泥土建筑），再与狗跑屋（dog-trot）这种建筑类型结合起来吧，后者在两个关闭的房间之间留出了空间，形成了横贯前后的室外通道。

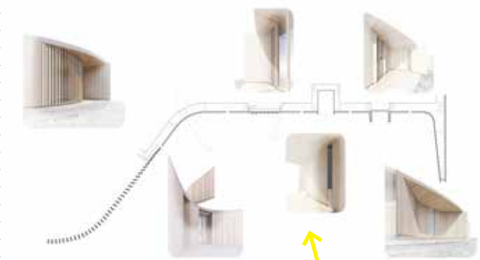
RELENTLESS GRAIN

This graining of material has a direct relationship with different construction techniques. With the New Hampshire house, we had the good fortune of designing a house on a mountaintop that overlooks the entire Presidential Range. Each room is designed to be on axis with one mountaintop, including Mount Washington, Lincoln and Lafayette, etc. Each room is a prefabricated unit laid out in a radial plan that protects a central court. Think of the many circular building precedents, the Panopticons, the Tulou (round earthen buildings in Fujian) that you may be familiar with in China, in combination with the dog-trot building type, whose void between two enclosed rooms provides for lateral outdoor connections.

这个项目是以我们从新英格兰地区住宅学来的板条造（board and batten）[3]做法建成的。请注意这里没有用到五金件，因为车库门是将多层胶合板条伸长、弯曲做成的。建构的纹理彻底地挪用了所有建筑的元素，让所有的五金件都被吸收到纵向条纹的纹理中去了。

[3]译者注：由木板和板条交替拼贴的做法。

在新罕布什尔度假屋中，遮阳板、榫舌（tongue）、企口板（groove board）、木板、板条与原木的纹理通过互相对话，共同构成了一种建构策略，还在关键之处创造出一片直纹曲面（ruled surface）。曲面的造型对应的是本项目中漫步道的高潮：一架楼梯，通往视野开阔、能够环望四周的屋顶平台。直纹曲面的下方也是进入房子内部的入口。

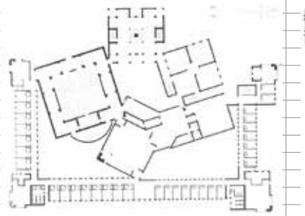


关于这一纹理的主题，这个项目构建了一种局部到整体的关系。所有的房间共同在宏观层面制造出了一种纹理，而结构、栅栏、表皮元素的纵向纹理则在微观层面起作用。这些部分一起变成了一种工具，让人能够制造出内部与外部之间的终极联系。

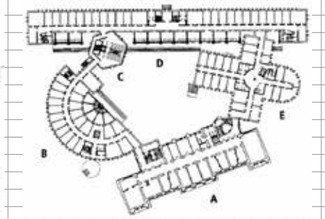
这种构成的技术并非没有先例。路易斯·康的多明我会修女院（Dominican Motherhouse）和詹姆斯·斯特林（James Stirling）的社会科学中心（Wissenschaftzentrum）都展现了互不相关的建筑类型是如何通过重叠、碰撞、铰合而联系到一起的。我们的探索就建立在这个难题之上，但我们发明的是流动的技术，将不同表面嫁接到一起，让不连续的空间融合成连续的领域——成功地将形式与空间合并到了一起。

This project builds on the board and batten tectonics that we adopted in the New England House. Note the lack of hardware, as the garage doors are formed from a delaminated and bent extrusion of the battens. The tectonic grain stubbornly appropriates all architectural elements, causing all hardware to be absorbed by the grain of the vertical striation.

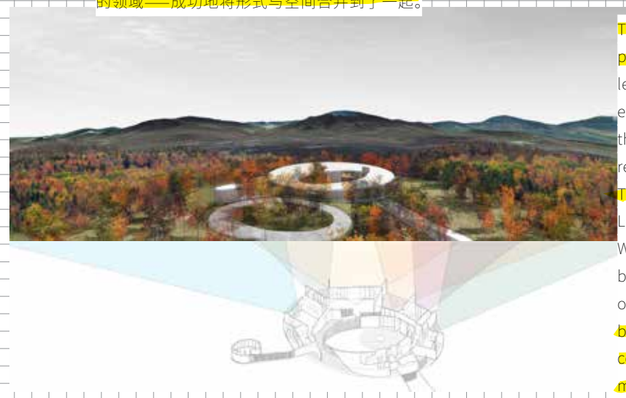
For the New Hampshire Retreat, the grain of fins, tongue and groove boards, board and batten, and logs all amount to a tectonic strategy in dialogue with each other, and in one key moment, producing a ruled surface, whose figure corresponds to the culmination of the project's promenade: a stair to the roof deck, where the entire panorama is available unconfined. This ruled surface also vaults over the main entry into the house proper.



路易斯·康的多明我会修女院/Louis Kahn's Dominican Motherhouse



詹姆斯·斯特林的社会科学中心/James Stirling's Wissenschaftzentrum



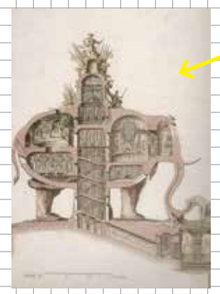
The project builds a part to whole relationship of this graining proposition. The rooms together produce a grain at the macro level while the vertical grain of the structure, pickets and skin elements operate at the micro scale. Together, these become the vehicle around which one is able to produce the ultimate relationship between the inside and the outside.

The technique of composition is not without precedent. Louis Kahn's Dominican Motherhouse and James Stirling's Wissenschaftzentrum both demonstrate how the connections between disparate building types are brought together through overlaps, collision and hinging. We build on this predicament, but instead develop fluid techniques that graft surfaces together, conjoining disparate spaces into continuous realms –effectively melding forms and spaces together.

波纹状纹理

CORRUGATED GRAIN

勒克(Lequeu)的这幅历史图片表明了大象的形状与其容纳的空间的功能之间的直接联系——比如说，象鼻处正好是一座喷泉。在威斯顿宅(Weston House)中，我们的任务是在既有的住宅顶部增加一层。我们用波纹金属板当作这两层的墙面材料，并赋予了这座建筑一个有机且统一的形象。我们并未满足于改换建筑的表皮，而是想要探索这层表皮的可能性，让它产生空间性，在客厅与花园之间创造出一个凉篷，甚至能够放进几级新台阶来。

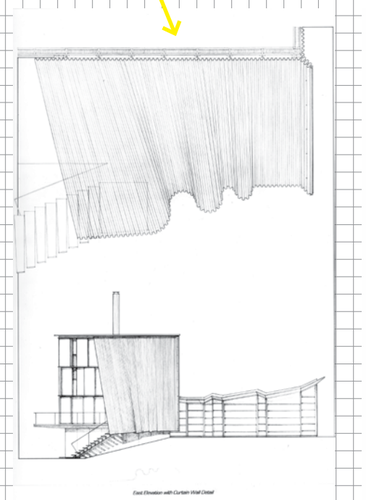


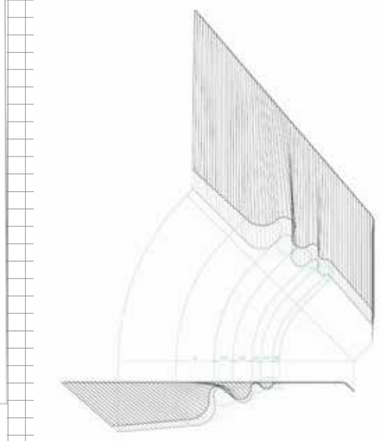
巴士底狱大象/ Elephant of the Bastille

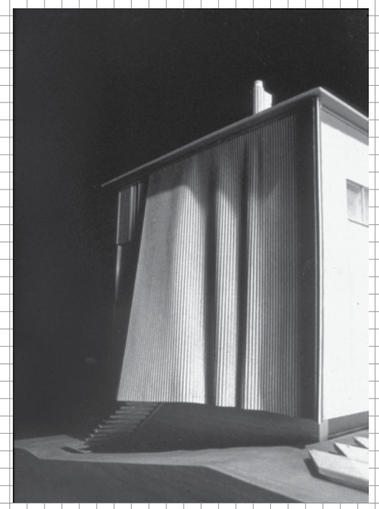
This historic image by Lequeu conveys the direct relationship between the figure of the elephant and the programs of the spaces that it sponsors --such as the trunk which serves as a fountain. For the Weston House, we were tasked to add another floor on top of the existing building. We used corrugated metal as a cladding surface to wrap both floors, and offer an organic and singular identity to the house. We were not content to just re-skin it. We wanted to explore the possibility to expanding that skin so that it becomes spatial, to produce an awning between the living room and the garden and even allow for the insertion of a new flight of stairs.

The idea of graining in architecture takes on much a more spatial proposition in this project, and in designing it, we discovered something that we had assumed but could never fully articulate: in architecture, drawing is not merely illustrative or pictorial. It is always already an act of construction. If corrugation is oriented on a vertical axis, that means it is also malleable on its horizontal axis. Note that the line at the top is exactly the same length as the line at the bottom. That is what proves the theorem of a ruled surface, alternatively called a developable surface. In inspecting the drawing, we already know this is buildable, because the geometric principle that guides the drawing is based on a constructive idea, both physical and representational. At the same time, the very principle that geometrically delaminates the surface produces the possibility of depth within the surface: a skin that envelops space. Beyond geometric abstraction, we also become aware of a semantic aptitude that is embedded in the idea of this'curtain wall', something that creates associations, builds referentiality, and begs interpretation.

An apparently similar derivation of the curtain wall in Casa la Roca prompts a completely different set of discoveries. While drawing this project, we were focused on the work of



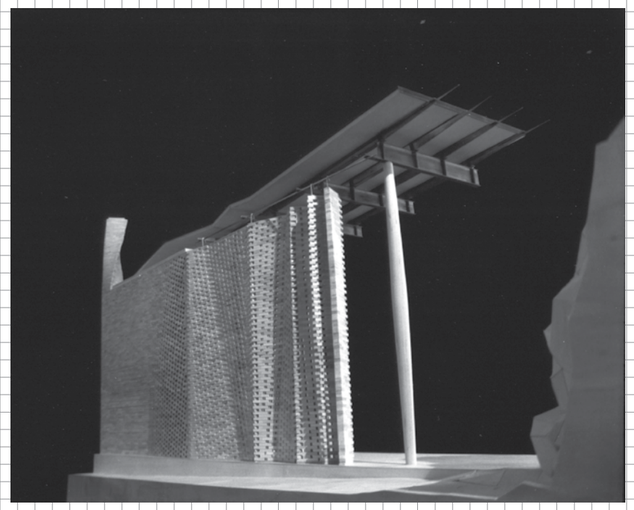




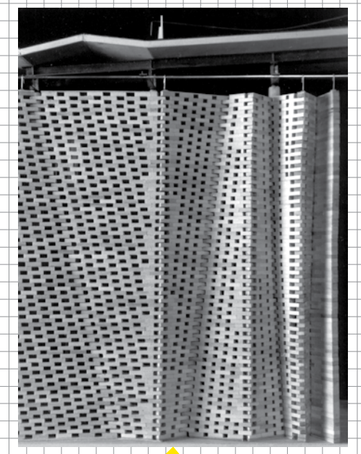
威斯顿宅/Weston House

在这个项目中，建筑中纹理的概念有了更加空间性的主题，在再设计的过程中，我们发现了我们一直默认，但从未完整表达出来的一点：在建筑学上，图纸并不仅仅是用来说明，或者形象化地表达的。图纸本身就已经是一种建造的行为了。如果说波纹板的波纹是沿纵轴方向的，那就意味着它在横轴方向也是有延展性的。请注意波纹板顶部的线条和底部的线条是长度一样的。这便是直纹曲面，也称可展曲面(developable surface)原理的证明。在审视图纸的过程中，我们已经知道它是可以建造的，因为主导这幅图纸的几何规则就是基于物理与表现双重意义上的建造概念的。同时，也正是在几何上让曲面分层的原则，为曲面赋予了厚度存在的可能性：成为了一张能够将空间围合起来的表皮。在几何抽象之外，我们也在这种“幕墙”的概念中认识到了一种潜在的语义学能力，它能够创造联系，架构指涉性(referentiality)，并且期盼解读。

岩石住宅(Casa la Roca)中的一处看上去相似的幕墙变体，却引发了一系列完全不同的发现。在绘制这个项目的图纸时，我们正在关注西格鲁特·劳伦兹(Sigurd Lewerentz)的作品，特别是他对砖砌的专注，是如何在全



岩石住宅模型/Model of Casa la Roca

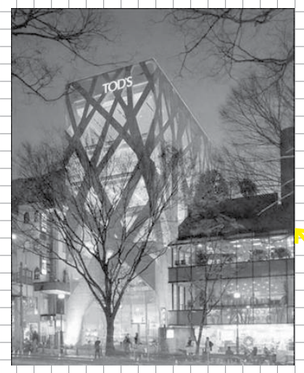


岩石住宅模型细节/Detail of Casa la Roca model

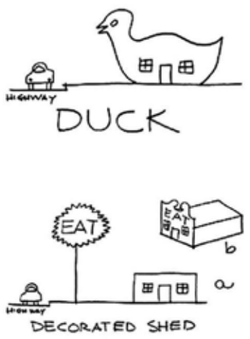
西格鲁特·劳伦兹作品细节/Detail of Sigurd Lewerentz's work

顺砌法(running bond)或梅花丁(Flemish bond)等传统的砖砌方式之外，带来了一些新的创造的。我们发现，劳伦兹并没有将注意力放在砖块本身上，而是更加关注砂浆所占的空间，将其视为探索之处。在某些地方，砖块看上去像是漂浮在“砂浆场”中，以非建构性的方式吊挂着。这一发现让我们提出了“可变灰缝(Variable Bond)”的概念，即砂浆灰缝的尺寸可以随墙面的长度变化，在纵轴和横轴上产生贯通的变化，并且可以反过来，让光线和空气有穿透砖砌表面的可能性。对灰缝的控制，也让我们能够沿着砖砌花样的对角线，对一层厚的砖面进行折叠，为十分轻薄的墙面带来结构上的厚度和横向的稳定性，延续杰弗逊在弗吉尼亚大学(UVA)的蛇形墙面的传统。这一项目延续了艾拉迪欧·迪斯特(Eladio Dieste)和弗兰克·盖里(Frank Gehry)等人的作品中的探讨，他们的造形墙面分别是非常不同的做法的结果。迪斯特创新性的结构，在本质上是混合的，是砖块、钢筋与砂浆协力堆叠，形成结构壳体的结果：是纯粹的结构。而在另一方面，盖里的墙体是不同层次叠加的结果。表皮起的是墙纸的作用，是一件有象征意义的外衣，而并不寻求墙面的局部与整体之间的直接联系。在岩石住宅中，砖块、砖砌的组成，墙面的结构性折叠，其通风与采光等环境问题之间的联系，都推动了让它局部与整体间的关系发生相互作用。

Sigurd Lewerentz and, in particular, how his monocular focus on brick aggregation coerced certain inventions that would escape conventional bonding procedures such as the running or Flemish bond. Instead of centering his attention on the brick itself, we discovered that Lewerentz was more targeting the space of the mortar as the site of play. In some instances, brick can be seen floating in a'field of mortar', a-tectonically suspended. This discovery led us into proposing the "Variable Bond", whereby the dimension of the mortar bond can vary over the length of the wall, creating lateral shifts on the X and Y axes, and in turn, introduce the possibility of light and air through the brick membrane. Controlling the bonding also enables us to fold a single wythe of brick along the diagonal axis of a bonding pattern, giving structural depth and lateral stability to a substantially thin wall, extending the tradition of Jefferson's serpentine walls at UVA. The project extends this discussion through the works of figures like Eladio Dieste and Frank Gehry, whose figural walls are the results of significantly different procedures. Dieste's inventive structures are hybric in nature, the result of the layering of brick, rebars, and mortar acting in tandem to structural shells: pure structure. Gehry's walls, on the other hand, are the result of the layering of varied laminates, with the skin serving as wallpaper, a symbolic vestiture that seeks no direct relationship between the walls parts and its whole. In the case of Casa La Roca, the relationship between the brick, its bonding organization, the structural folding of the wall, the environmental aspects of its ventilation and illumination all contribute to creating reciprocities in its part to whole relationships.



TOD'S表参道大楼/TOD'S Omotesando Building, by Toyo Ito & Associates, Architects

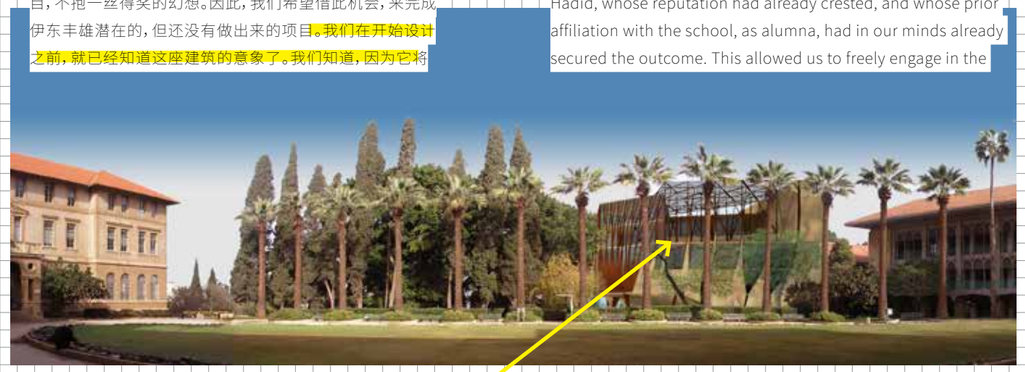


丹尼斯·斯科特·布朗(Robert Scott)和罗伯特·文图里(Robert Venturi)的"鸭子"和"装饰棚子"的图形描述。《向拉斯维加斯学习》。麻省理工学院出版社,剑桥大学,1972年,1977年修订;©MIT Press. /Graphic depiction of a "duck" and "decorated shed" by Denise Scott Brown and Robert Venturi. *Learning from Las Vegas*. MIT Press, Cambridge MA, 1972, revised 1977, © MIT Press.

分叉的纹理

当我最初看到数年前伊东丰雄(Toyo Ito)发表的托德斯大楼(Tod's)时,我在其中看出了一些并未建造出来,但潜藏在其组织中的可能性——这些特性能够佐证我的论述中的一些论点。我当时认为,从组成的角度来看,这栋楼裸露在立面上的结构,也应该同时表示了其内部空间的分隔,它实际上就是一片柱丛,越往楼顶去越是分叉。此外,我还注意到了其立面上的形状与面前的树之间的语义学关系,似乎这栋楼试图通过它的建筑来映射周围的自然环境。当我终于实地参观了这座建筑的时候,我才发现它的内部实际上并不包含我所想象的那些解读。组成立面的那些切片并不透露其内部布置的情况;它实际上起到的更加是装饰性棚屋(decorated shed)的作用。

当时,我们也入围了美国贝鲁特大学(American University of Beirut)伊萨姆·法利斯学院(Issam Fares Institute)竞赛的决选,决选名单由一些崭露头角的新人和已经大名鼎鼎的扎哈·哈迪德(Zaha Hadid)组成。她作为该校的校友,令我们认为她与学校的关系已经为她锁定了胜利。这也让我们得以自由地参与到竞赛当中,把它当作学术上的项目,不抱一丝得奖的幻想。因此,我们希望借此机会,来完成伊东丰雄潜在的,但还没有做出来的项目。我们在开始设计之前,就已经知道这座建筑的意象了。我们知道,因为它将

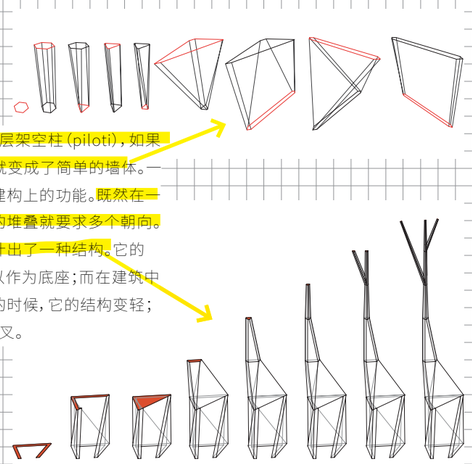


会身处树丛之中,因此不会与校园中的其它历史建筑发生直接的关系,而是隐藏在这些植被之间,在那些棕树、雪松、松树,以及巨大的榕树背后。我们知道,实际上,我们的项目应该将榕树作为一种空间与结构系统,来研究它的形态学。问题就是:"我们该如何设计这棵树?"请注意,如果一个六边形经过裁剪,就变成了三角形,如果经过拉伸,就变成了

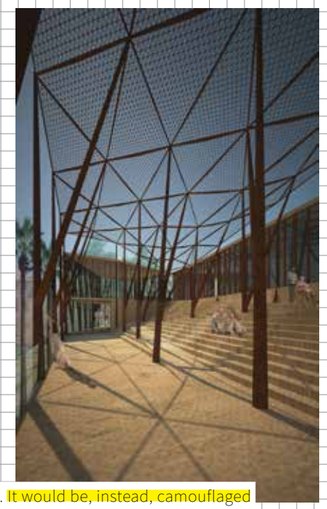
BRANCHING GRAIN

When I first saw Toyo Ito's Tod's published some years ago, I read into it certain possibilities that were not actually built, but latent within its organization –aspects that reinforce some of the arguments in this discussion. From an organizational point of view, I thought that the structure of this building, as evident on its facades, was also a diagram for the spatial subdivision of its interior, effectively a bosk of columns branching up towards the building's top. By extension, I also noted the semantic relationship between the figuration of the facade and the trees in the foreground, whereby the building attempts to somehow mirror its natural context through architecture. When I finally visited the building, I realised that it's interior is actually devoid of the interpretations onto which I had projected. None of the organizational tropes of the facades are indicative of its interior layout; It operates more as a decorated shed.

Concurrently, we were shortlisted for the Issam Fares Institute competition at the American University of Beirut. The shortlist was composed of a few emerging names, alongside Zaha Hadid, whose reputation had already crested, and whose prior affiliation with the school, as alumna, had in our minds already secured the outcome. This allowed us to freely engage in the competition as an intellectual enterprise without the illusion of victory. For this reason, we wanted to use the opportunity to complete Toyo Ito's project in a way that was latent, but never yet adopted. We knew the image of this building before we started designing it. We knew that because it would be amongst these trees, it would not be in dialogue with the campus'



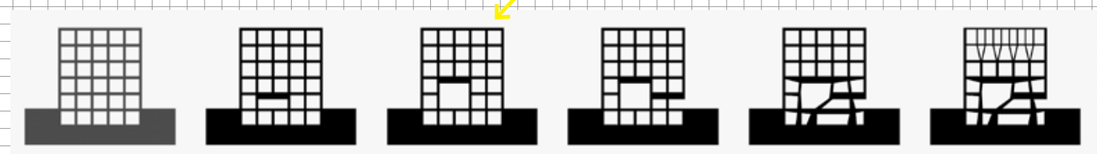
柱子,如果将顶部扩大,就变成了底层架空柱(piloti),如果经过旋转,就可以承重,如果拉直,就变成了简单的墙体。一种简单的几何形态,可以承担许多建构上的功能。既然在一个开放的场地进行设计,不同功能的堆叠就要求多个朝向。因此,我们利用不同的几何形态设计出了一种结构。它的底部沉重,厚实的剖面(poché)可以作为底座;而在建筑中部,由一种组成转变到另一种组成的时候,它的结构变轻;而在建筑的顶部,它的结构打开、分叉。



historic architecture, per se. It would be, instead, camouflaged within its flora, behind the palm trees, the cedar, the pine, and the monumental ficus. Effectively, we knew that our project needed to develop the morphology of the ficus as a spatial and structural system.

The question was, "How do we design that tree?" Note that a hexagon, when truncated, becomes a triangle. When extruded it becomes a column, when expanded at the top it becomes a piloti, when rotated it can transfer loads, when straightened up a simple wall. A simple geometry can take on many architectonic functions. Operating on a site in the round, the stacking of programs required multiple orientations; for this reason, we used the variable geometries to develop a structure that could be heavy at its base using its poché as the foundation, then lightening the structure as it transfers from one organization to another in the middle of the building, and then branching open at the top of the building at its top.

If viewed as a domino frame, the building organization allows for deformations that absorb its variations as part of an organic system. The system allows for the cantilever of the structure

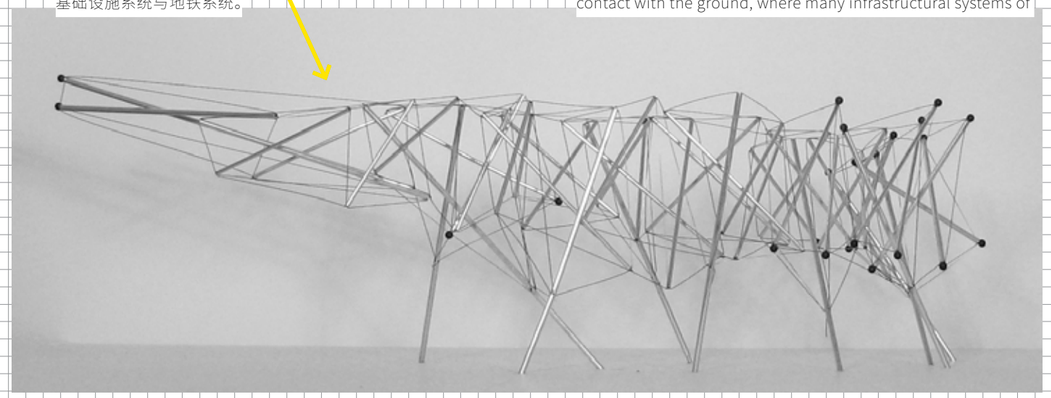


如果视为多米诺框架式结构,那么这座建筑的组成形式就允许了变形,将各种变体吸收到一个有机系统中来,作为它的一部分。这个系统允许结构中包含悬挑成分,令西侧的榕树根得以保留,它允许在底部的报告厅剖面中包含对角斜梁和转换梁,也同样允许顶部柱网减重。建筑的地面变成了一张结构性的隔膜,不光是作为固定荷载,也作为建造了整个结构体的动态三角形系统的一部分,承载张力和压力。这样,这座建筑就成为了其结构作用方式的一份直接索引。功能、表皮、结构之间发生了直接的对话。这座建筑的纹理并不在其表面上,而是攀登架(jungle gym)形的整个立体结构,它所创造的空间,以及它产生的自治性(autonomy)。

to allow the Ficus roots on the west side to thrive, it allows for diagonal and transfer spans in the auditorium section at the base, and so too the lightening of the column grid at the top. Its floors become a structural diaphragm, not only acting as dead-loads, but acting in tension and compression as part of the dynamic triangulated system that builds the overall structure. Thus, the building becomes a direct index of the way that the structure is performing. Program, skin, and structure come into direct dialogue with each other. The grain of the building is not its surface, per se, but the entire three dimensional jungle-gym structure, the spaces it creates, and the anatomy it produces.

分散的纹理

如果说我们操作的主要程序偏重于建造单元与建筑外形之间的局部—整体间关系，那么也并不是所有项目都允许这种相互关系发生的。在后者的场合，我们努力将另外的设计方法发挥到极致。在光州双年展（Gwangju Biennale）上，我们原本设计了一架轻盈的整体张拉结构，并通过组成形式，令其与地面的接触点降到最少，因为地面有许多街道的基础设施系统与地铁系统。



我们较早地提交了施工图，并发现由于与容差相关的事项十分复杂，这个项目在工时和造价问题上可能都无法克服。在检视我们的施工套图时，客户提出："我们非常满意！但可不可以只用压力构件，不用张力构件？"这就意味着我们只有一个星期来完成一个新项目，并且需要承担最大限度的容差。我们认为，既然我们非得进行重新设计，那么就必须经济地、有策略地思考，并在构成（configuration）与造形（figuration）这两个领域之间作出区隔，好推翻我们一般建造的局部与整体之间的相互关系。

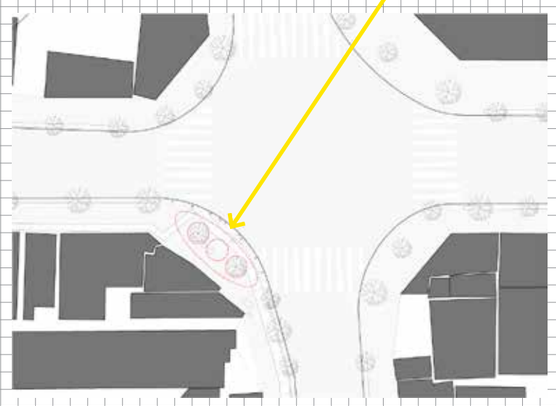
因此，我们就在尊重树木的位置，并且尽量减少地面结构支撑数量的前提下，找到了这个场地所能允许的最大的单体形状。

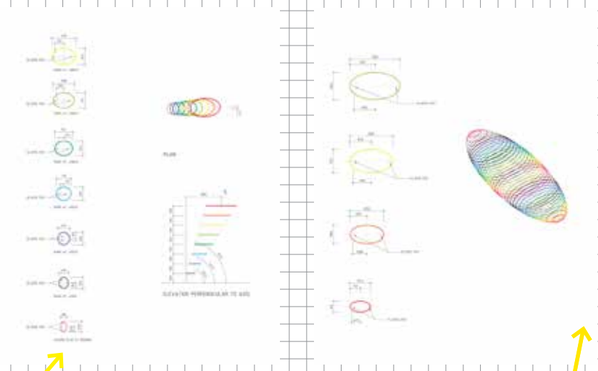
SCATTERED GRAIN

If the dominant protocol for our operations bias a part to whole relationship between the constructive unit and the building's figure, not all projects allow for that reciprocity; in those instances, we have sought to radicalize an alternative approach. For the Gwangju Biennale, we initially designed a light tensegrity structure, whose organization allowed for minimal points of contact with the ground, where many infrastructural systems of the street, and subway system, were at play.

With an early submission of our working drawings, it became clear that the complexities associated with tolerances created a project that would be unsurmountable in terms of both schedule and cost. In reviewing our CD package, the client remarked: "We love it! Do you mind if we just introduce compressive elements instead of the tensile ones?" This meant that we had one week within which to establish a new project, a project that could thrive under maximum tolerances. We thought that if we were going to really have to redesign this, let's think of it economically, strategically, and produce a divide between the configurative and the figurative realm, such that the reciprocities we conventionally construct between part and whole are overturned.

Thus, we identified the largest single figure the site could take, respecting the location of trees, while minimizing the structural struts that meet the ground.





我们并没有想好一个建构系统，因此，困难就变成了设计一种由相连的部件组成的系统，并符合我们提出的"云形"构造。我们用不锈钢门把手作为圆形的支撑构件，并设计了一种结构方法，令它"撑满"我们所提出的展馆形状。它由三角形组成，以在密度最小的情况下，获得最大的横向强度。支撑构件的分布是认识到柱子、柱头、顶篷的受力不同而设计的，在不同的地区密度不一，有效地达到了要求的可靠的结构性能。

Without an a priori tectonic system in mind, our challenge was to develop a system of connecting parts for the proposed'cloud' structure. Working with stainless steel door handles as round extruded struts, we developed a structural approach that would'fill' the proposed figure of the pavilion, triangulating to gain maximum lateral strength, while minimizing density. Acknowledging that columns, capitals and canopies react to different forces, the densities of struts in different areas varied, effectively swarming to reliable structural performance as required.

就建造来说，我们给施工方的只有展馆整体形式所产生的外形，每个部分中必须达到的结构密度，以及将每根杆件焊接三次的施工方法，以保证结构是三角形的……还有一条注意事项，即定期震动结构体，以测试其稳固性。在没有每个支撑构件准确参数的情况下，这种新的程序可以在没有技术图纸的条件下进行建造。局部与整体先被分隔开，然后又通过一个随机应变，调整测试，然后找出容差的过程，将两者重新连接起来。

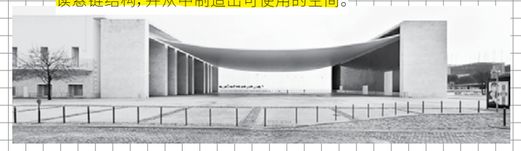
For the construction, all we gave the builders was the figure that was produced by the overall form of the pavilion and the requisite density of structure in each of its parts, with the construction method of welding each stick three times to ensure triangulation…… and then with a note to shake the structure periodically to test its sturdiness. Without precise coordinates for each strut, this new process allowed the structure to be constructed without technical drawings as such. Part and whole were divided and reconnected through a process of improvisation, testing, and teasing out of tolerances.

一方面，我提出了一个关于造形的论点；而另一方面，也有一个关于构成，以及两者之间关系的论点。构成是造形的前提。碗和巢看上去像是两种不同的东西，但实际上是一枚硬币的两面。一个人可以从下往上，追寻一片玻璃可以建成什么。而另一个人则可以从柏拉图式的理想形式开始，并抹去其中建造的纹理。

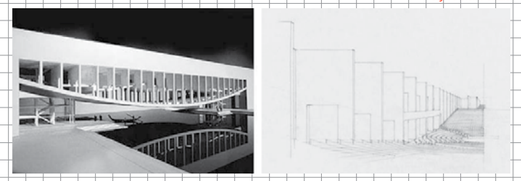
On the one hand, I'm making an argument about figuration, and on the other hand, an argument about configuration as its pre-requisite, and the reciprocity between the two. The bowl and the nest seem to be two different things but are in fact two sides of the same coin. One starts from the bottom up and asks what can be built with a blade of grass? The other begins with a platonic ideal, and erases the grain of construction within it.

吊挂的纹理

我们对材料研究的兴趣，很大一部分都转移到了更大、更加复杂的建筑中去。我们在亚特兰大、墨尔本和多伦多的三所建筑学校，都为推进其中的一部分想法提供了机会。想一想阿尔瓦罗·西扎（Alvaro Siza）的葡萄牙世博会展馆中吊挂的混凝土顶篷吧；想一想路易斯·康未建成的威尼斯议会宫（Plazzo dei Congressi）中，绞索造的桁架是如何变成议会大厅的可使用空间，同时其倾斜的形状是如何成为报告厅基座的吧。也可以想一想高迪（Gaudi）的悬链实验，是如何成为优化结构的方法的吧。对我们来说，“压缩悬链（Compressive Catenary）”项目让我们得以试验该如何解读悬链结构，并从中制造出可使用的空间。



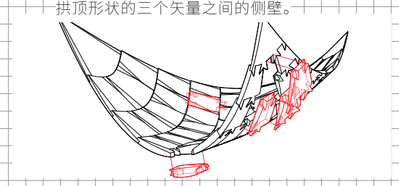
阿尔瓦罗·西扎的葡萄牙世博会展馆/ Expo'98 Portuguese National Pavilion by Álvaro Siza



路易斯·康未建成的威尼斯议会宫/Louis Kahn's unbuilt Palazzo dei Congressi in Venice

我们的想法源于对埃斯科里亚尔修道院（El Escorial）下方平拱的迷恋，它来自受到挤压的空间，对跨度的需求，以及拱顶上方对水平地面的需要。其实，建筑的历史上产生过许多非同寻常的拱顶，同时它们也因为各自的所在地而闻名，但它们基本不会影响到彼此。埃斯科里亚尔修道院极端的限制条件，为这种微小的操作提供了借口，将拱顶石（keystone）的逻辑延长到了整个拱顶的长度，仿佛只是为了将结构受力横向分散到两端的终点上。

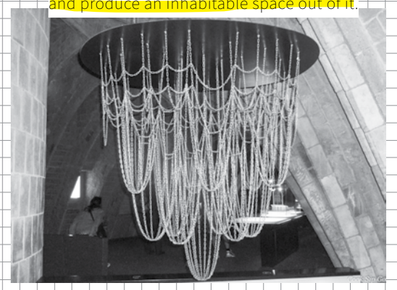
如果说拱券的标志是其顶部的拱顶石，那么对于我们的吊挂式拱顶来说，就必须通过制造联锁的拼图碎片，以将拱顶石翻转过来，保证受压的块体变成受拉。反过来，随着拱顶石结构被转移到两边，其中心就变成了一扇眼窗，作为定义拱顶形状的三个矢量之间的侧壁。



压缩悬链项目/The Compressive Catenary project

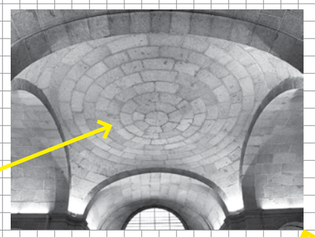
SUSPENDED GRAIN

Much of our preoccupation with material research translates itself into larger and more complex buildings; our three schools of architecture, in Atlanta, Melbourne and Toronto offered opportunities to advance some of this thinking. Consider the suspended concrete tarp of Alvaro Siza's Expo Pavilion in Portugal; consider Louis Kahn's unbuilt Palazzo dei Congressi in Venice and how the bowstring truss becomes an inhabitable space of the congress hall, with its raked figure as the base of the auditorium. Consider also the catenary experiments by Gaudi and how they become the mechanism by which to optimize structure. For us, the "Compressive Catenary" project became a way to test out how we could take the structure of the catenary and produce an inhabitable space out of it.



高迪的悬链实验/The catenary experiments by Gaudi

圣家堂拱顶/Arch of Temple Expiatori de la Sagrada Família



埃斯科里亚尔修道院的下方平拱/The flat arch that lies underneath the monastery of El Escorial

The idea we had was born out of a fascination with the flat arch that lies underneath the monastery of El Escorial, the result of compressed dimensions, the necessity to span, as well as the need for a flat floor above the vault. Indeed, the history of architecture has produced many extraordinary vaults, and yet they are also all characterized by a corresponding ground, but rarely does one impact, or determine, the other. The radical constraints of El Escorial produce an alibi for this subtle invention, extending the logic of the keystone along the length of the entire vault, if only to defer to the structural forces laterally to their ultimate destination at their edges.

If an arch is marked by a keystone at the top, for our hanging vault, we needed to invert the keystone by making interlocking puzzle pieces to insure that the compressive blocks could act in tension. In turn, as the keystone elements are displaced to the side, the central point is overtaken but an oculus, serving as a reveal between the three vectors that define the vault.

不管这个想法有多么不合常理，它的意图还是设计一种轻型的受压结构，作用于张力与压力之间，而且同样重要地，可以作为一种人造的地面。这一原则被直接转译到了亚特兰大与墨尔本的项目当中去，在那里，关于吊挂的研究成为了具有革新意义的教学工具。

Photo: Jonathan Hillyer

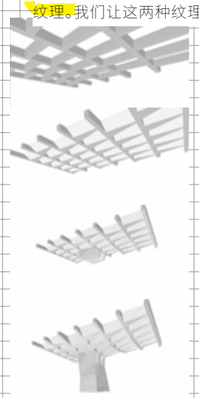
Photo: Jonathan Hillyer

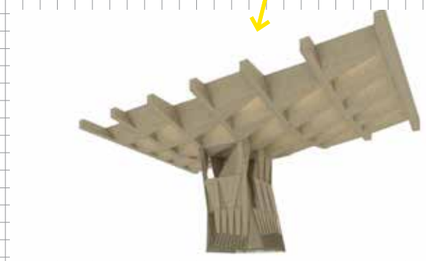
吊挂在乔治亚理工学院建筑学院里的工作室空间/Suspended studio space at the Georgia Tech School of Architecture

在佐治亚理工学院（Georgia Tech）的建筑学院中，我们在上方用到了桥式起重机结构（gantry crane），巧妙地吊挂了一整个工作室空间，它被称作“摇篮”，以保持底层最大程度的灵活性。在墨尔本建筑学院（Melbourne School of Architecture）中，并没有建造专门的工作室空间的经费，我们就让22米长的单板层积梁（LVL）横跨了整个中庭空间，建造了一个图腾柱般的吊挂空间，作为仅有的一系列专用工作室空间。结构的顶部体量巨大，以浅浮雕（bas-relief）的形式沿工作室墙面向下延伸，并向底部变薄，最终变成了木纹贴片。在底部，贴片的表面创造出了方格形的吸音天花网格，悬挂在大厅的上方。这种建构系统的变化可以看作是对古典系统的颠倒。在传统上来说，重量应该在底部的粗石面（rustication）上，而随着向主层（piano nobile）和上层的上升，再为墙壁赋予轻盈感。

墨尔本设计学院（MSD）构件的结构纹理作用于造形与表面两个层面上。一方面，屋顶结构的体量厚壮而广阔，而它向一种精细轻盈的状态的转化，也是一种整体的造形策略的一部分——这或许可以称作其形态学纹理。同时，天花反向图中方格系统的木纹贴片表面是包裹在吊挂的工作室的纵向表面下方的，成功地制造出了一种同样像皮肤一样薄的纹理。我们让这两种纹理开始互相对话。

However contradictory it is to intuition, the idea was to develop a light-gauge compressive structure that operates between tension and compression, and equally importantly, something that can serve as a constructed ground. This is a principle that that translated directly into the Atlanta and Melbourne projects, where the research on suspension becomes a transformative pedagogical tool. At the Georgia Tech School of Architecture, we used the gantry crane above to delicately suspend an entire studio space -the'crib'-- in order to maintain the flexibility of the ground level. In the Melbourne School of Architecture, where there is no budgetary allocation for a dedicated studio space, 22 meter LVL beams span the atrium and form the structure for a totemic suspended structure that served as the only dedicated series of studio spaces. The structure is massive and volumetric at its top, extending down the studio walls in a kind of bas-relief, and eventually thinning out to plywood veneers at its base, where the surface of the cladding serves to create a coffered acoustic ceiling that hovers above the great hall. The transformation of this tectonic system can be seen as an inversion of the classical system, whereby weight is traditionally given to rustication at the ground, with ascending thinness attributed to the walls of the piano nobile and the upper floors. The structural grain of the MSD members operated as both figural and surficial. The volumes of the roof structure are robust and spatial on the one hand, and yet their transformation to a state of delicate thinness is part of an integrated figural strategy; this could be called its morphological grain. At the same time, the wood veneer surfaces of the coffering system in the reflected ceiling plan are wrapped down the vertical surfaces of the suspended studio, effectively producing a grain that is also skin deep. The two grains are brought into dialogue with each other.





墨尔本建筑学院里图腾柱般的吊挂空间/The totemic suspended structure at the Melbourne School of Architecture

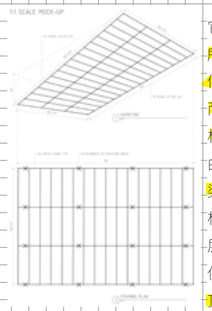
Photo: John Gollings

丹尼尔斯大楼，多伦多大学建筑学院/Daniels Building，John H. Daniels Faculty of Architecture, Landscape, and Design, University of Toronto

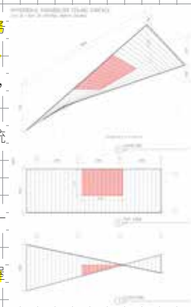
在多伦多的丹尼尔斯大楼 (Daniels Building) 中，虽然吊挂的概念并非设计的推动力，但亚特兰大和墨尔本项目的整体要求和教训在设计中起到了重要作用。当混凝土壳体屋顶结构受到否定时，这个项目也基本上被击垮，到了最关键的时刻。实际上，当时已经马上就要牺牲掉这座建筑最优秀的特点了。对我们来说，问题是这个屋顶究竟是由材料所推动的概念，还是只是结构、照明、环境与水文性能的结合。随着后者逐渐占据了我们的想法，我们用更加经济的钢材重新设计了结构，而维持了最核心的形状和性能不变。然而在此时，施工队还是拒绝了这个方案，称其无法建成，再次将

For The Daniels Building in Toronto, while the idea of suspension was not a motivating force, the integrative mandates –and lessons-- of the Atlanta and Melbourne projects became instrumental in the transformation of the design. When the concrete shell roof structure was challenged, the project was virtually brought to its knees in a moment of truth, as it were, effectively on the verge of compromising the building's most salient feature. The question, for us, was whether this roof was a materially driven idea, or rather just about the integration of structural, illumination, environmental and hydrological performance; as the latter became to dominate our thinking, we

我们在事务所里建造了一座足尺模型证明设计的可建性/We built a full scale mock-up in our own studio proving our design is buildable.



它推到了断头台上。因此，我们在事务所里建造了一座足尺模型，不仅向他们证明，直纹曲面是完全可以建成的，而且证明了它可以内嵌辐射供暖楼板，作为本建筑的环境系统。这个系统由多个层次叠加而成，底层是工字钢梁和波纹钢板，表面覆盖了轻量支撑构件、石膏板和辐射供暖板，最后上一层漆。因此，表面的油漆并没有纹理，但是建筑最有特点的性质就存在于屋顶的形态学纹理中。



redesigned the structure more economically in steel, while keeping its essential figure and performance intact. Even then, the construction team rejected the proposal, claiming it unbuildable, putting it once again on the chopping block. For this reason, we built a full scale mock-up in our own studio, proving to them not only that a ruled surface was completely buildable, but that it can also be embedded with a radiant slab that can serve as its environmental system. Composed of a layered system of parts, the steel I-beams with corrugated steel deck, covered with light gauge struts, gypsum board sheets with radiant panels, and a coating of paint. Thus, the paint shows no grain, as such, the most characteristic feature of the building resides in the morphological grain of the roof itself.

Photo: Peter MacCallum

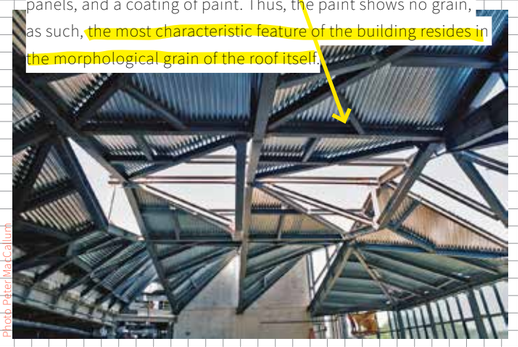


Photo: Peter MacCallum

混凝土纹理

如果说我们在多伦多没能建成混凝土的纹理，那么它在拉马蒂埃尔 (Ramatuelle) 回到了我们身边。我们在那里设计了一座俯瞰地中海的独栋别墅。它原本是一座带有庭院的住宅，我们在剖面上对它进行了错位处理，为房子的上下两

翼都创造出了景观。这座房子错开的剖面是通过角落上的两座楼梯间连接起来的，而中央带游泳池的庭院则是视线的焦点。这座房子由三片混凝土楼板组成，分别是底层、主层和屋顶，并被构想成是景观的延伸。实际上，景观从建筑的南侧立面下方直接穿入中央庭院，全面地穿过住宅的客厅区域，并沿坡而上，到达一座顶层平台。

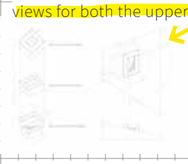
实际上，南侧立面与其说是立面，不如说是一根梁，从泳池的挡水墙上方巧妙地悬挑而出，并与挡水墙垂直相交。在这里，混凝土的结构性纹理成为了这座房子重要的主角，它实现了大幅的跨度，但看上去还是一个统一的整体，与地形融为一体 。如果没有这种结构性纹理，这座混凝土住宅就无法成立。

从材料的角度来看，我们也同样好奇，混凝土作为一种材料，是如何产生“建构的纹理”的?在研究中，我们发现，关于建构性纹理的问题其实可以用两种方式提出，因此我们也探究了两种形态。首先，我们发现所有的模板都会根据其材料性质 (铝、木材、竹子等) 产生自己的纹理，因此，表面纹理就指明了模板材料本身。其次，我们发现混凝土本身是各种元素的组合，包括水泥、骨料、掺料、水和其它成分。因此，我们实际上可以通过改变配比来改变其纹理，不光在表面上，也在其内核深处。因此，这两种形态都包含了一种人为性，有一些可以操控的变量，以创造出一面可以同时去物质化，而且重新构想的混凝土墙来。通过案例研究，我们研究了主入口区域，以推动数字模板的设计，它能在实际上是一整块混凝土的情况下，显示出一种

粗糙的碎石墙面的效果。同时我们也研究了混凝土中骨料的密度和大小，是如何使建筑室内平滑的完成面，慢慢转变成花园部分的景观中一堵真正的挡土石墙的。关于建构的纹理究竟意味着什么，围绕混凝土的这两种想法有着完全不同的含义。

CONCRETE GRAIN

If the grain of concrete escaped us in Toronto, it was reintroduced as a challenge in Ramatuelle, where we designed a single-family house overlooking the Mediterranean. What was initially a courtyard building is slipped in section to enable views for both the upper and the lower wings of the house. The slipped sections of the house are held together by two staircases on each corner of the house, while a central court, occupied by a pool serves as a focal point. Composed of three concrete slabs –a lower floor, a main floor and a roof—the house is conceived as an extension of the landscape; indeed, the landscape flows right under the southern facade of the structure into the central court, seamlessly navigating through the living are of the house and up the hill towards an upper terrace. Indeed, the south façade is not so much a façade as it is a beam, cantilevered delicately by the pool retaining wall that intercepts it in a perpendicular fashion. Here, the structural grain of concrete serves as a significant protagonist for the house, enabling long spans, though apparently monolithic and integral to its typological figure. Without this structural grain, this concrete building that would not stand.



At a material level, we were also curious how concrete, as a material, produces a "tectonic grain"? In our research, we realized that, in fact, the question about tectonic grain can be posed in two different ways, so we investigated both modalities. First, we realized that all formwork produces its own grain, depending on its materiality (aluminium, wood, bamboo), and thus the surface grain serves as an index of the formwork itself. Second, we realized that concrete itself is the result of a combination of elements, including cement, aggregates, admixtures, water, among other materials; for this reason, one can effectively alter its recipe to consider alternative grains that are embedded within its core, not only its surface. Thus, both modalities involve a level of artifice, with certain variables that can be manipulated to create a concrete wall that is at once dematerialized as reconceptualised.

By way of case studies, we researched the main entry area to serve as a catalyst for the design of digital formwork, which can serve to insinuate a rusticated rubble wall, while in fact being monolithic concrete. At the same time, we researched how the density and size of aggregate within the concrete can serve to transform from a smooth finished surface on the interior of the building to a veritable stone wall serving to retain earth in the landscape in the garden areas. These two ideas about concrete have totally different implications about what is meant by the tectonic grain.

最后的纹理

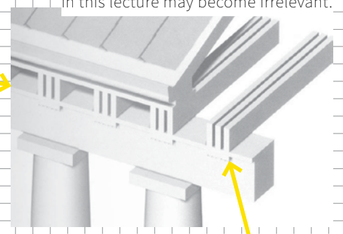
第一次去罗马时，我被街道的建构性纹理和鹅卵石的组成形式所迷惑了。我没有发现拱券的纹路与身体有着直接的联系。建造者应该是跪在地上，展开双臂，来确定每个拱券的半径的。2000多年来，在建造物与身体之间一直有这种直接的联系。甚至连墙面上的涂鸦都是臂展的直接印记。然而，我们正见证着一个非常奇妙的时间段，3D打印已经开始消除建构单元的界限了。我们不再被四片或者八片工业制造的产品所限制。在将来，我们或许能够在3D打印的微粒结构中，打印出各种功能来。现在最有意思的是，我在这次讲座中所说的，以后可能都已经不再重要了。

我在此以帕提农神庙的一幅图片，以我对实际的结构、概念上的结构，以及象征性的结构的迷恋作结。最早进入建筑学院时，我完全不知道三陇板 (triglyph) 是怎么起作用的。我以为这些只是装饰。后来，我才发现它们其实表示的是背后梁末端的纹理，它布满了整座建筑的跨度。突然间，它们获得了一种共鸣，对我产生了深刻的影响。梁的存在印刻在了神庙的石头表皮上。但如果我们知道实际上的跨度结构是木头组成的，为什么木制的梁还要用石头来表现呢？木材尾部纹理的石质化，以三陇板的形式隐藏起来，这正是建筑的作用的一部分——我应该补充一下，这是建筑做得最好的一部分。这暗示着，结构是可以服务于装饰的，而非相反。这暗示着建筑的真相是印刻在它的故事中的，由虚构和现实融合而成。

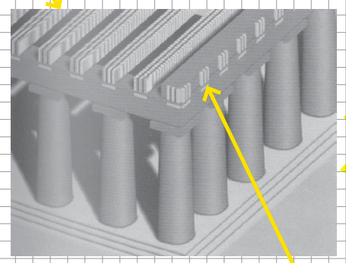
而且，就在你以为你弄懂了的时候，建筑又向你丢了一个弧线球。在三陇板母题的转角处，架构起这种虚构的真相的故事崩塌了。我们很清楚地知道，这些三陇板背后的梁无法同时向两个方向延伸。这便是建构性纹理的神奇之处，真实与虚幻的结构走到了一起，这便是我们所称的“建筑”。Ⓜ

END GRAIN

When I first went to Rome, I was mystified by the tectonic grain of the streets, the organization of the cobble stone. I didn't realise that the pattern of arcs had a direct relationship to the body. A builder presumably sat on his or her knees and the reach of their arm length defined the radius around which each arc would be defined. For over 2000 years there has been this direct relationship between what is constructed and the body. Even the tagging of graffiti on the side of the wall is a direct imprint of the reach of the arm. However, we're now witnessing a very special moment where 3D printing is beginning to eradicate the limits of the tectonic unit. No longer are we necessarily defined by 4-by-8 sheets or other industrially manufactured products. We may yet to be able to print out different functionalities within the cellular structure of the 3d print, no longer limited to the laminar layering of constructed wall systems. What seems interesting right now, is the possibility that everything I've said in this lecture may become irrelevant.



I end here with an image of the Parthenon, and my fascination with actual structure, purported structure and symbolic structure. When I first came to architecture school, I had no idea how the triglyphs functioned. I thought they were just ornaments. Later, I discovered that they are, in fact, an index of the end-grain of the beams just behind, spanning the entire structure; all of a sudden, they acquired a resonance that had a profound impact on me. The beam's presence is imprinted in the temple's stone skin. But why would the wooden beam be registered in stone when we know that the actual spanning structure is composed of wood. The petrification of the wood end grain, in the guise of a triglyph, is part and parcel of what architecture does—and what architecture does best, I should add. It suggests that the structure might be in service of the ornament, not vice versa: that, somehow, the truth of the building is imprinted in this narrative, composed of a blend of fiction and actuality.



And just when you think you've understood it, it throws you another curve ball. As the motif of the triglyph turns the corner, the very narrative that upholds the truth of the fiction collapses. We know perfectly well that the beams behind these triglyphs cannot be spanning in both directions at once. This is the magic of the tectonic grain, where both the actual and fictional structure come into a dialogue in that we call "architecture". Ⓜ

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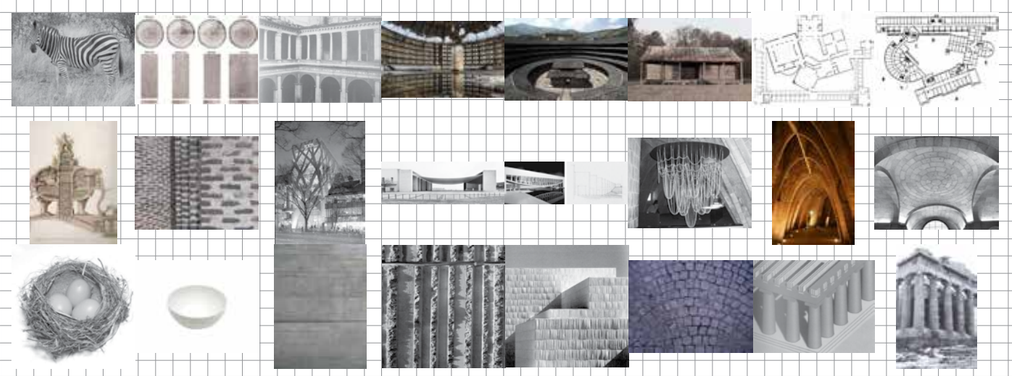
p. 127 Photos of concrete grains produced by different formworks.
p. 128 Photos of Rome street, triglyphs and Parthenon.



Xiaohui Song 宋晓慧

Third year graphic design student 平面设计专业大三学生

What's the biggest challenge of being a designer today?

The need to understand all facets of design. For example graphic design may need to need to understand product design and interior design as part of their work.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

No, the emotion and the innovation in design cannot be replaced by a machine.

你认为今天从事设计工作最大的挑战是什么?

需要了解各方面的设计，比如我们平面的也要去学习产品设计，室内设计等相关内容。

你认为未来人工智能会取代设计师的工作吗?

不会，设计中的情感表达和创新性是机器取代不了的。

Haiyang Chen 陈海洋

Third year graphic design student 平面设计专业大三学生

What's the biggest challenge of being a designer today?

Thinking creatively and having my own ideas and opinions.

Will A.I. (Artificial Intelligence) replace the work of designers in the future?

I don't think so; humans cannot be replaced by machines in the future.

你认为今天从事设计工作最大的挑战是什么?

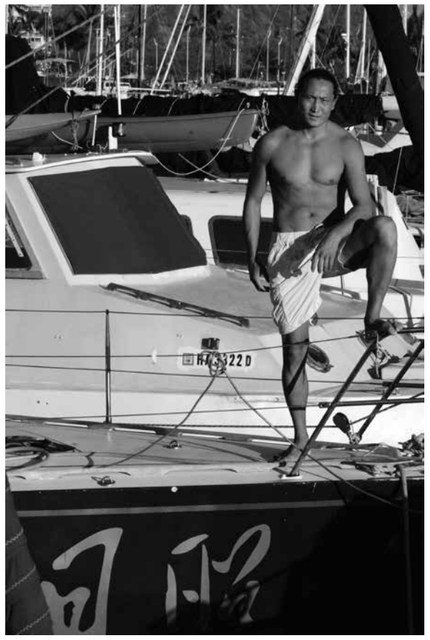
思维创造力，有自己的想法和思路。

你认为未来人工智能会取代设计师的工作吗?

我认为不会，人类的未来不会被机器所取代。

sailing towards the unknown

翟墨：前往未知数



采访 interviewed by 许意

翻译 Translated byJacqueline Yam

Zhai Mo looks tanned and speaks with a Shandong accent. When we met him at his studio in Beijing, he had just finished a voyage. The man spends almost half of the year at sea. Looking back at his experience over the last decade, it's a real action blockbuster: he has faced armed U.S. soldiers, was trapped overnight on a desert island "prison" and besieged by heavily armed Somali pirates. He has also stumbled upon indigenous communities in the South Pacific that have to date been concealed from modern society. Most people will never have such incredible experiences and surprisingly, Zhai never knew about marine expedition until his ocean ventures. Zhai, who couldn't swim, bought a boat by chance over ten years ago and has since sailed this boat to the far reaches of the ocean. This incident explains Zhai Mo's character well: a true adventurer pushes by momentum, who has the courage to face the unknown, not based on others' experience.

Zhai was not born a "tough guy". Growing up he had health issues and suffered from asthma. His brothers are all tall and strong while he's the youngest "needing care". He resented all this extra attention, secretly took cold showers all year round and ran along the railway tracks to train his body everyday. In other words, Zhai Mo had set his mind to fight against this inherent weakness since his early childhood. During this time, painting became an outlet for him since he was not allowed to physically exert himself or play with others. His early efforts of painting practice and training paid off and he eventually became a painter. Whether it was training from a young age or learning to sail, Zhai Mo is always looking to improve himself.

In his studio hangs a map of the world. Zhai says "we always enlarge the land artificially but overlook the ocean that occupies about 70% of the world." He can talk about his knowledge gained through sailing incessantly, including "the lack of tides at the equator" or that "places along the 45th degree Northern Latitude develop the richest culture with four distinct seasons". On one hand, it's the adventurous nature of the navigation itself; on the other, he becomes more and more captivated by the different cultures and peoples his sailing adventures have shown him.

Advantures undoubtedly demonstrate a primitive experience era. Like the Europeansexploring the New World with no prior knowledge of the seas and no any guidance from previous explorers, Zhai's experiences were hands-on, not by the books. Although he is already brimming with experiences and all kinds of information from his explorations, Zhai still shows boundless curiosity about that unknown 70% of the earth.

Q: Your experience in New Zealand in the 2000s sparkes your interest in sailing so much that you decided to buy a boat to sail. Are you always a quickly decision-maker? In your opinion, what will you do if you didn't choose sailing?

Zhai Mo: I yearn for freedom and initially wanted to be a backpacker. However passport and visa restrictions made it difficult for me to achieve this. I found out accidently that through sailing I could obtain visas on arrival. I decided that I would use sailing as means to travel everywhere. I see the boat as a means of transport, which takes me further and gives me greater freedom than travelling on land. If I didn't go to New Zealand that year, perhaps I would continue what I was doing, being a painter or a director. I grew up at the foot of Tai Mountain and the change from land to sea is a big turning point. But life is interesting because of the variables, just like the weather at sea.

Q: You had no contact with sailing before your first expedition learned as you sailed. This means you had "zero experience" and when faced with unexpected situations. Could you share the mostmemorable experience that you "learned from failure"?

Zhai: On my first sailing expedition, after buying the boat in New Zealand in 2000, I drifted alone at sea for 28 days. Back then, I did not have an electronic chart. I used the most primitive GPS made markings on paper charts with a ruler, compass and pencil. I then encountered a level 10 typhoon which lasted three to four days. The sea was dark grey and I really regret my actions. I decided, if I survived and landed on an island, I would open a Chinese restaurant there locally. I truly felt the struggle between life and death. The storm seemed to have "opened my third Eye" and showed me my inner strength. I mastered all things related to navigation, including how to steer a boat in bad weather and how to control the anchor.

Q: How do you usually start sailing? What preparation is needed?

Zhai: Before every departure, I first design a route, monitor the ocean current and collate information of the coming decade on weather conditions and the culture and customs of the countries that I may encounter. The weather forecast is generally accurate for the first three days with variables in the weekly weather pattern that requires me to master the law of nature. For example, there are no typhoons in the North Pacific during the winter months as May to December is the typhoon season, so winter sailing is safe there. In addition, regional culture is also extremely important. The conflict between people is often a contradiction between religious beliefs. The most fundamental reflection of religion is in the diet and living habits. In sailing, it's necessary to obtain extensive knowledge of astronomy and geography as otherwise it will be dangerous. I learnt them by memorizing books during my teenage years but these can be easily picked up when sailing.

Q: Is this "practice makes experience"?

Zhai: It has been said that fishermen are half meteorologists who can predict the weather through the change of clouds. Only by sailing at sea, can one feel the shift in tide from south to north, including the astrological changes. In the past, people navigated using the location and height of the stars, known as "navigating by the stars". The sextant in the compass also originates from this technique. These ancient explorations were based on practical experience. Sailing also made me acquirelots of skills, including being a carpenter and a mechanic. I repaired the damaged sails, as well as the machinery and electricity myself. Anything inconspicuous may damage the boat and may even have deathly consequences. I have learnt a lot of life skills on board.

Pacific Ocean 2009.09.23, 23"x20", Oil Painting, Zhai Mo
太平洋 2009.09.23，23"x20"，油画，翟墨

Q: How do you usually summarize your sailing experience? Do you record some of the experience in a notebook, or dependent on the memory and habits more?

Zhai: I log every day, normally in the morning, afternoon, and evening, which records the location, time and navigation problems. This is the basic requirement of the voyage and each boat will have a log. Other large ships will record hourly. The logbook is recorded as soon as the crews change shifts every two hours. Logbooks help to document the accumulation of experience.

Q: It seems that sometimes you will also record the maritime process in the painting. How is this different from your painting in the studio? How does objective environment affect your creations?

Zhai: Painting in the studio is a mere "creation", but painting at sea is a record. I must document real time, of my mentality at sea. Because after the moment has passed, the sentiment is lost as well. Sailing also affects my painting. I now add more ocean elements into my work. Whether painting portraits or still life, I incorporate the variations found at sea.

Q: Sailing study relies more on practical experience. At the same time, you are involved in the identity of the sailing "educator", have you ever considered developing professional teaching by recruiting apprentices or in any other ways?

Zhai: I intend to set up six sailing schools across China. Currently I already have one in Sanya. The main training is about navigating large sailing boats, as yachts can be divided into power yachts and sailing yachts with the latter known as sailboat. Most Chinese people only know the small sailboats in the Olympic Games, but the larger boats are also used in games such as the Copa America. These international events currently lack Chinese participation. In addition to making it professional, I also want sailing to be popular amongst the public. I believe after finishing my voyage around the world, I have influenced people to a certain degree. A family of three in Shandong saw my program on CCTV, and subsequently sold their house and began to sail. That is influence. I see competitions as a way to promote sailing to the general public. Through competitions, I hope more people will understand sailing.

Q: What's the concept of this competition?

Zhai: The idea of the competition is to cross the Pacific Ocean, from China to Los Angeles without stop halfway. In the past, westerners did not participate in this Chinese tournament because officially we could not host events of high challenge due to liability concerns. Until last year, the State Council released an official statement to "just record the competition, but no need for approval". We set the level of difficulty ourselves. It's rather challenging to complete more than 8 thousand nautical miles over 20 days with mostly 8-10 knots of wind in the coldest winter season. Similarly, Everest still attracts people all over the world to climb the peak even if it's in China. We'll be the first to start this tournament in the Pacific. People are enthusiastic about sports and I hope will be attracted by the event, which will further promote interests in sailing.

Q: Do you have an "end point" for navigation?

Zhai: I have a story. An 80-year-old American sailed to the Pacific Ocean, but when he was found off the shores of Japan, he had already died on board. I wanted to buy that ship at the time but it was transported back to the United States by his son. The age for people to sail is basically 5-80 years old. Children aged 5 can take the OP sailing in the Olympics. Unlike the national age requirement for driving, sailing has no age restrictions and depends on one's physical conditions. Just like the old American, as the ultimate goal, I hope to continue sailing when I am in my seventies or eighties. Ⓜ

翟墨说着一口山东腔，晒得黝黑，当我们在他北京工作室见面的时候，他刚结束一趟航海旅行。这个男人全年几乎一半多的时间都在海上。翻开他这十几年的经历，堪比一场真实的探险大电影：他面对过荷枪实弹的美国大兵，被关押在小岛的“监狱”里一夜；或是被索马里海盗们围追堵截，对方全副武装虎视眈眈；也曾在南太平洋的陌生小岛误入远离现代社会的土著村落…这番人生不是常人可多得，而最让人意外的是，在正式进入海洋之前，翟墨完全对航海一无所知。当十几年前一次偶然买下小船，不会游泳的翟墨就上了船，驶向大洋深处，这一航就是十几年。这很好解释了翟墨的特质：凭着冲劲，不以他人的经验做基础，敢于面对未知，是位十足的冒险者。翟墨并非生来的“硬汉”，童年体质欠佳患有哮喘，几个哥哥高大威猛，自己是那个“需要被照顾”的老幺。他内心拒绝这种来自众人的呵护，暗地里，从夏天到冬天都冲冷水澡，每天沿着铁轨跑步强身健体。可以说，翟墨从童年开始就有了一种自我意识，要与天生的弱点做对抗。与此同时，因为被要求不上体育课、或是无法和小伙伴们尽情地玩耍，画画成为他的出口。当全凭自我调整增强了体质，并在自幼的画画习作中最终成为一名画家，无论是早年变化，或是开始航行，翟墨始终在一种自我开拓的脉络上。

他的工作室里有一张世界地图，翟墨看着说，“我们总是人为地把陆地放大，却忽略了那占据百分之七十多的海洋”，说起大海，翟墨非常兴奋。无论是“赤道不会有潮起潮落”，或是“南北纬45度四季分明，一定有着最丰腴的文化”，透过航海建立的认知，说起这些翟墨也滔滔不绝。一面是航海自身的冒险性，另一面，翟墨也因为航海，愈发对这个世界真实而原始的差异、文化、各色人种充满痴迷。

翟墨的航海经历无疑展示了一种原始的经验论。试想当欧洲人探索新大陆时，带着对地球完全陌生的未知，在毫无前者指引的摸索中亲身获得对世界的了解，翟墨也重复了相似的过程。亲手实践与摸索，而非纸上谈兵，翟墨所展现的也是如今各式经验信息充斥的当下，对地球上那70%的未知数——永不泯灭的好奇心。

Q：千禧年后在新西兰打开了你的航海兴趣。当时你很快就做了决定买下小船出海，你从来就是当机立断的人吗?如果没有选择航海，你觉得自己会在做什么?

翟墨：我向往自由，原本我就想背包出行，但当时办理护照的限制让这一想法难以实行。意外得知航行都是办理落地签，我就想把航海作为一种载体，让自己前往任何地方。我更愿意把船看作一种交通工具，只不过会比陆地上走得更远，更自由。如果当年没有去新西兰，或许现在我还是按部就班地继续早前的事情，画画，做导演。我是泰山脚下长大的人，从陆地转向海洋，其实这种变化是个很大的转折。但人生本来就是因为变数才有趣，就像海面上的天气一样。

Q：首次航行前你对航海没有任何接触，而是边航边学。

Atlantic Ocean 2014.11.15, 23"x20", Oil Painting, Zhai Mo
大西洋 2014.11.15，23"x20"，油画，翟墨

这意味着突发状况来临时，你是“零经验的”。可否分享一次最深刻的“吃一堑长一智”的经历？

翟墨：我第一次出海，就是千禧年在新西兰买下船之后，一个人在海上漂了28天。当时我没有电子海图，拿了一个最原始的GPS，用尺子、圆规和铅笔在纸海图上做记号。结果当时就遇到了十几级的大风，刮了三四天，海面上是黑灰色的，当时特别后悔。我当时就打算如果自己可以活着到一个岛上，就留在当地开一间中国餐馆。切实感受到处在生死之间的边界上。经历过那次风浪之后，我似乎像被“开了天眼”一样，有种无师自通的感觉，几乎把所有航海有关的事情都掌握了，恶劣天气下如何掌舵，控制海锚等，都掌握了。

Q：你通常如何开始一场航行？会做怎样的准备？

翟墨：每次出发前，我会自己先设计好航路，以及洋流如何，或是整理出未来十年的天气、可能抵达的国家的文化及民俗。天气预报一般是三天为准，一周的天气就存在变数，因此必须掌握规律。比如北太平洋的冬天没有台风，5-12月是台风季节，所以冬天航海是安全的。此外地域文化也很重要，人与人之间的冲突往往是宗教（信仰）之间的冲突，宗教最基础的体现就是饮食和生活习惯。航海你必须要上知天文下知地理，否则会遭遇危险。少年时期死记硬背书本上的地理知识，航海本身却轻易让人习得这些。

Q：这正是“实践出经验”？

翟墨：都说渔民是半个气象学家，可以透过云的变化，预知接下来的天气。只有真正航行在海面上，你才能感受到从南到北的潮差，包括星象变化——古人们都是通过星星的位置和高度进行导航，即“牵星术”，指南针罗盘的六分仪就源自牵星术。这些古老的、前人的探索都是基于实际实践中的经验。航海还让我掌握了许多技能，木工、钳工，帆坏了要自己修，包括机械、换电等等，出了问题都要自己去解决，因为任何一件小事都可能造成船毁人亡。我在船上学会了很多生活技能。

Q：你通常如何总结自己的航海经验？你是否会将一些经验记录在本子上，还是更多通过记忆和习惯去完成？

翟墨：我每天都会做航海日志，正常的话早、中、晚各记录一次，这包括所在的位置，时间，以及航行出现的问题。这是航行的基本要求，每条船上都会有航海日志，其它那些大船会每小时做一次记录，船员们多是两小时换一次班，换班时就要记录日志。航海日志有助于一种经验的积累。

Q：似乎有时你在绘画中也会记录航海过程。这与你在画室的绘画有何不同？客观环境会对你的创作带去影响吗？

翟墨：在画室画画更多是“创作”，但是在海洋上的绘画则是一种记录。我必须通过即刻的记录，把海洋上的心境记录下来，因为过了那个时间，感觉就会失去了。航海也影响了我的绘画，现在创作时我会更多海洋的元素，无论是画人或物，会融入如海浪的深邃多变。

Q：航海更多是靠实践经验中完成学习的。你同时在向航海“教育家”身份的扩展，未来是否考虑以招收学徒跟船之类的方式、或其它方式做专业性的教学？

翟墨：我打算在中国从南到北开设6所航海学校，目前已经在三亚建立了一所。课程主要是培养以大帆船的航海为主，因为游艇分为动力和风帆游艇，后者即帆船。多数中国人只知道奥林匹克中的小帆船，但是诸如美洲杯等都是大帆船，这些国际赛事缺少中国人。但职业是一方面，我想要实现全民推广，自从环球航行回来后，我或多或少影响了一些人，之前就有山东一家三口在看了我在央视的节目后，卖掉房子开始航海——这是一种影响。因此，还有举办赛事也是全民推广的途径，让更多人透过关注比赛了解帆船。

Q：这个赛事大概是怎样的一个概念？

翟墨：比赛的想法是横穿太平洋，从中国出发一直前往对岸的洛杉矶，中途不停靠。以往中国人举办赛事为什么西方人不参加？因为我们的体制无法实现高难度的赛事，高难度会造成伤亡。直到去年国务院下了批文，“赛事报备不报批”。我们自己设定难度，20天，8千多海里，在冬天这个最寒冷的季节，大多是8-10级的大风，非常有挑战性。这就像珠穆朗玛峰在中国，但是吸引了全世界的人来攀登高峰一样。过去太平洋没有赛事，我们开创这一航线，而人们对体育竞技都有热情，吸引大家关注赛事，也进一步推动对航海的兴趣。

Q：你自己对航海设有一个“终点”吗？

翟墨：曾经亲历过一件事。有个80岁左右的美国老头航行到了太平洋，在日本外海被人发现时，他已在船上身故。当时很希望可以买下那条船，最终被他儿子运回美国。人可以接触航海的年龄段基本是5-80岁，5岁的话可以上奥林匹克等级的OP级帆船。就像国外对开车的年龄没有限制，不像国内对驾驶年龄有要求，而是取决于你的身体状态。就像那位美国老头一样，我觉得这是最高境界了，我希望自己到七八十岁也依旧在航海。Ⓜ

sul sole va

by Viabizzuno

designed by Neri&Hu

The lantern has always had a literary and mythological meaning of great importance for the history of Asia – it is the element that guides in the dark, pointing the right way, and that marks the beginning and the end of the journey.
It was actually the concept of the lantern to inspire Neri&Hu for the project of the conversion of a five-storeys building site in Seoul, into the flagship store of Sulwhasoo, the leading Korean cosmetics brand.
The building had been built in 2003 on the project of the Korean architect Iroje. In order to celebrate the roots of the brand, Neri&Hu developed a design aimed to emphasize the references to Asian culture and traditions, as a path for the customers to discover the richness of Asian wisdom behind the philosophy of Sulwhasoo.
The idea has been developed around the three pillars defined at the beginning of the project - identity, journey and memory.
Neri&Hu wanted to create a space that could stimulate all the five senses, in order to capture the customers' attention since their first step into the building and create an experience that continues all the way into the store, remaining impressed in the mind long after the visit.
That's how the architects arrived to the concept of the lantern, symbolically recalled by a brass structure that covers the entire store, creating cohesion in the space and guiding the customers in their journey of exploration.
From the same concept, Viabizzuno, top-end Italian lighting company, developed the design of the collection "Sul Sole Va", a new family of luminaires born to respond to precise aesthetic and functional needs. Symbols of materiality and light, suspended in the space as modern and sophisticated lanterns, they are able to adapt to all the suggestions offered by this modular architecture.
The visitors experience the structure of the lantern through a series of voids and openings that embrace each space of the building and accompany into the different display areas. In an environment dominated by wood, volumes of mirrors reflect and amplify the brass structure, which appears to be without a beginning and an end.
Sulwhasoo products are displayed, as they were precious jewels, on solid wooden counters with stone panel on top.
The primary function of the structure-lantern is actually not only to guide the customer through the space of the building, but also it serves as a light source, where the custom made luminaires "Sul Sole Va" are suspended to preciously enlighten the sulwhasoo cosmetics.
This new system of suspended light fitting for interior IP20, designed by Neri&Hu and engineered and manufactured by Viabizzuno, is composed of a luminaire and a leather suspension element.
Three types of luminaires are available: "sul" is made of an extra-clear glass ball of 175 mm diameter and a metal disk, "sole" has an extra-clear glass bulb of 210 mm diameter, "va" is a metal bell diameter of 60 mm.
All these light fittings feature a refined satin brass finishing, precious materials and warm colours. The lighting body is wired with LED 3000K 2,5W 24Vdc and fitted with lenses in crystal for maximum luminous efficiency.
In their path throughout the five floors of the building, the guests are immersed, time after time, in different atmospheres. In the basement, the spa, with its dark brick walls, the treatment rooms with grey stone and warm wooden floors, provide a feeling of security and intimacy. Going up the building, the colours become more and more clear and open, inviting to interact with the spaces, till up to the roof terrace, where the view of the city is framed by the top offshoots of the brass structure.
All along the way, we move, from contradiction to contradiction, between opposite elements: open and closed, light and dark, impressive and delicate. The holistic approach of the concept of the lantern is spread over each floor – the volumes, the lighting, and the displays - and it succeeds in intriguing the visitors and guiding them in an exciting and enjoyable exploration of the space and the merchandise.
The Sul Sole Va collection has won the 2016 A&D trophy award, certificate of excellence, best lighting.

灯笼，作为黑暗中为我们指引正确方向的引路者，标志着旅程的开始和结束，历来对亚洲历史具有极其重要的文学和神话意义。
事实上，正是灯笼的理念激发了如恩设计（Neri&Hu）的创作灵感，并将此主题运用在韩国高端化妆品品牌—雪花秀位于首尔的五层楼旗舰店改造工程中。
该大楼于2003年由韩国建筑师Iroje建设完工。为纪念品牌的起源，如恩设计（Neri&Hu）推行的设计理念旨在宣扬亚洲传统文化，这将作为传播途径为广大用户发掘蕴藏在雪花秀品牌理念之后的亚洲睿智。
设计思路围绕着项目初期确定的三大主题即身份、旅行和回忆展开。
如恩设计研究室（Neri&Hu）意在创建一种可激发五官，一个只要顾客一踏入大厦时就吸引其注意的空间，并在店内的通道上创建一种持续不断的体验，在参观后留下深刻印象在顾客的脑海里。
正因如此，建筑师们想到了灯笼的概念，覆盖整个店面的黄铜结构起到了符号性的作用，在空间上创建凝聚力并引导客户的探索之旅。
源于同一理念，意大利高端照明Viabizzuno公司开发了“Sul Sole Va”的设计系列— 一个响应精确审美和功能需求的新生灯具家族。材质与光的交织成为富有现代感而又精致的灯笼，悬挂于空中，它们可适应此项目中所有的模块化结构。
顾客通过充斥大楼的每个区域的结构空档来体验灯笼的结构。感受这个以木材为主，利用大量镜子反射来无穷延续黄铜结构的环境。
雪花秀系列产品犹如珍贵的珠宝，在顶部覆盖石板的实木柜台上展出。
事实上，结构化灯笼的主要功能为引导顾客穿越大厦空间，又可作为一种光源，即定制吊灯“Sul Sole Va”给予雪花秀化妆品精准的照明。
该吊灯系列为室内使用防护等级IP20，如恩设计研究室(Neri&Hu) 设计，Viabizzuno细化结构并制造，由光源和皮革悬吊件组成。
三种类型的灯具包括：“Sul”由一个直径为175毫米的超清玻璃球和金属盘组成，“Sole” 由一个直径为210毫米的超清玻璃灯罩，“
此系列灯具均以拉丝铜面，精致的材料和暖色调为特色。灯体配有LED芯片 3000k 2,5w 24VDC并配有最大发光率的水晶镜片。
在整个五层楼的通道上，顾客会不断地沉浸于不同的气氛当中。地下室与水疗中心为深色砖墙，医疗室为灰石与温暖的木地板，给人一种安全亲密感。随着登上大厦的顶部，色调变得越来越清晰明朗，邀您与空间互动，一直延伸到屋顶露台，那里黄铜结构的顶部犹如城市风光的画框。
一路上，我们在相互矛盾的元素中前行：开启与关闭，光明与黑暗，深刻与微妙。整体运用灯笼的设计概念体现于每一楼层 — 体积，灯光和显示器 — 成功地吸引了顾客，并引领他们在空间和商品探索中处于一种兴奋而又愉悦的氛围。
Sul Sole Va 系列已获得2016年 A&D透视设计大奖，灯具设计组别，杰出设计奖。

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