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中国建筑师的未来是什么？

在21世纪的头十年，世界大部分地区各自聚合为区别明显但又非完全不同的两大阵营，而这两大阵营似乎都不是很需要建筑师的存在。一方面，在发展中国家里，多年来由农村向城市的移民造成了毫无城市规划和建筑监控可言的巨型城市。这些城市的规模取决于有多少人涌入，而丝毫不会考虑至关重要的城市基础设施的建设问题。另一方面，在发达国家中，建筑的重要性渐渐降低。新技术的发展，把越来越多的居民带入不需要身体接触和仅需要最少基础设施的虚拟世界。从这两方面看来，建筑师作为社会的重要成员，作为蔽身之所和城市总体规划的设计者的角色似乎是越来越弱了。

中国常被认为是处于同时脚踏两大阵营的位置。中国是贫穷的也是富裕的，是发达的也是发展中的。目前建筑师在中国还是处于优势地位的，社会需要他们的工作，他们也受到多数人的推崇。但这一点能维持多久？中国的建筑师距离像他们的外国同行一样面临迷失威胁的那一天还有多久？

在2010年的访谈系列中，《Domus国际中文版》将研究技术、生态、政治等领域的发展如何改变城市运转的方式。在这12个月里我们将和科学家、城市规划专家、学术界人士、企业家和发明家们对话。这些对话的话题可能各不相同，但会有同一个关注点，即建筑和城市生活的未来。我们希望，通过提前想象激进的变化，让建筑师们做好准备。如果我们能把着眼点放在目前的创新和对未来的预测，那在变化面前就不会措手不及。我们就能提前制订战略，也能认识到现代性的痛苦中包含着的机遇。

## domus<sup>china</sup> INTERVIEW / 访谈

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**2010年11月3日**  
**苏黎世-北京**

在这一系列访谈的第九期，我采访了Markus Schaefer，一位获奖建筑师以及信息领域的设计师。Scaefar合作创办了位于苏黎世的Hosoya Schaefer事务所，该事务所从事建筑设计、策略以及研究的工作，为大众汽车等公司提供了有关城市未来的战略服务。我们在访谈中谈到了数码工具在实体空间、电影、游戏设计领域中的应用，以及目光短浅的规划可能给中国带来的危机。

For the ninth installment in the series, I spoke with Markus Schaefer, an award-winning architectural and informational designer. Schaefer is the co-founder of Hosoya Schaefer, a Zürich-based studio for architectural design, strategies and research. The firm has developed strategies for investigating the future of urbanism for companies such as Volkswagen. We talked about the role of digital tools in the design of physical space, film and game making, and the danger of short-sited planning in China.

**B M:** 在这个系列的访谈里，我们讨论的是城市生活在接下来的一百年里如何变化。有个话题在每一期访谈里都出现了，即所谓的现实与虚拟世界的相互关系。我对你的工作很感兴趣，因为你以实践建筑师以及研究者的双重身份参与了这个话题。首先，我想听听你对这个问题的看法。

**B M:** 是的，但是在很多人看来，随着虚拟世界影响力和复杂程度的提高，它将不可避免地剥夺现实世界的力量。在早些的访谈中，我们谈到了一个公共空间的例子：由于社交网络在虚拟空间的大量普及，人们对城市中实体公共空间的需求在缩减。

**B M:** 你是在如何在建筑实践中发展出这种新的认识角度的？

**M S:** 对我们来说，**现实和虚拟并不是对立的**，这种情形不是非黑即白，而是渐变的，也就是说它们相互产生作用。我们是被物质性刻画生物——实际的物质，所以现实永远都是我们的基础。但与此同时，我们早就具备了用符号进行思考和交流的能力，所以现实与虚拟之间的对话只是一种老模式以最新的方式再度出现。

**M S:** 在90年代，在两群建筑师之间产生了这样的论断：一群认为耗费巨大、无所不包的虚拟空间将会成为所有建筑师的新领地，另一群则认为它不会成为建筑师的用武之地，建筑学是关于场所精神、现象学、触感等等的学科。很长一段时间以来，这些观点都被视为针锋相对的，但我认为有趣的是，在接下来的时间里，尤其是随着新千年房地产业的繁荣，建筑是现实空间和物质产物的观点明显占据了上风。建筑的美学规则、产生的体量都深深根植在现实中。然而，这些产品是通过3D、渲染、动画软件这些虚拟的工具产生的。

**作为一门学科，建筑与现实密不可分，因为我们的经济在蓬勃发展。我们现在可以看到，并不是人们走进了虚拟空间，而是虚拟空间走向了人们。**

我日常生活的每一个瞬间，几乎都与虚拟空间的元素发生着互动。我们现在在Skype上谈话，我用iPhone在城市里定位和寻找服务。这种联结数字与现实的能力将会在接下来的几年中得到强化。所以我认为，我们不必认为虚拟或数字世界正在剥夺现实世界的力量，而是将它们视为我们认识现实世界的另一种角度。

**M S:** 我认为有三个方面，首先，这种现实与虚拟的混合是你的工作内容，一个全新的领域。这几乎是一种新的训练，就像人们在巴洛克时期发明了图像和空间融为一体的设计一样。

其次，现实与虚拟的概念贯穿在整个工作中，它作为一种工具，赋予你一系列新的能力。这就导致了第三点，训练的融合。作为建筑师，你控制“数字链”的能力会日益增强——它包括你在桌面上完成的概念、草图、原型、产品。这些训练将会融合成一个更大的领域。

**B M:** In this interview series we've been discussing ways in which urban life will change over the next hundred years or so. A topic that has recurred in every interview so far is the increasing interrelation between the so-called real and the virtual. I think your work is interesting, because you've engaged this issue both as a practicing architect and as a researcher. To begin, I'd like to hear some your thoughts on this topic.

**M S:** For us, **the real and virtual are not opposites**. It's not an either/or situation. It's rather a gradient, meaning that the real acts in the virtual and the virtual acts in the real. In the end, we will always be beings that are inscribed in materiality – in real matter – so the real will always be where we are grounded. But, on the other hand, we are also beings that have the power to think and communicate in symbols, and we've had that power for a very long time, so the dialogue between real and virtual is simply the newest iteration of a very old paradigm.

**B M:** Right, but, among some people, there does seem to be a perception that, as the virtual grows in influence and sophistication, it inevitably extracts power from the real. An example that came up earlier in this series is the status of public space: because there are so many social networking applications through which people can connect in virtual space, the need for physical, urban public spaces could be perceived to decline.

**M S:** In the 90s there was this big discourse in architecture between those who believed that cyberspace will be this all-consuming, all-enwrapping new reality into which all architects will migrate and those who said, no architecture makes place, it's about genius loci, it's about phenomenology, tactility, and so on. For a very long time, these views were seen as total opposites, but I think what's interesting is that in the ensuing years, especially with the real estate boom at the beginning of the new millennium, the notion of architecture as the production of real space and the production of matter absolutely won. The architectural discipline, in terms of the kinds of aesthetics it generates, the kinds of volumes it generates, is now firmly grounded in reality. However, it achieved this huge production by using the kinds of tools that have been honed in the realm of virtuality, that have been honed in experiments in 3D software, renderings, animations, and so on.

**Architecture, as a discipline, became deeply engaged in reality, because we had a huge economic boom. And what is now visible is not that everybody is moving toward cyberspace, but rather that cyberspace is coming to us.**

In almost any moment of my daily life, I am interacting with a component of virtual space. I'm now talking to you over Skype. I use my iPhone for locating myself in the city and accessing services. And that kind of ability to access the digital with the real will increase exponentially in the coming years. So I think the point is not to see the virtual or the digital as something that sucks strength from the real, but to see it as something that fundamentally alters our perception of the real.

**B M:** How do you develop that altered perception in your practice as an architect?

**M S:** I think there are three areas. On the one hand, this new hybrid of real and virtual is something you work with. It's a new field. It's almost a new kind of discipline, like during the Baroque period when they invented a new approach in which the image and space could fuse into a total designed reality.

On the other hand, this notion of real and virtual is something that you work through. It's a tool set that gives you a new range of abilities.

As a result of these two, we find a third component, which has to do with a fusing of disciplines. Because as a designer you're increasingly able to control the complete digital chain – everything from concept to working drawings to first prototypes to production you can now do on a desktop – many different kinds of disciplines, all of which can control this digital chain, begin to fuse together into a larger field.

所以，我总结了这三点：数字-现实作为工作领域、工具，以及一种新的训练。毫无疑问，现在的我们可以流畅地在不同的尺度和媒介之间切换。比如，我们正在做斯洛文尼亚首都230公顷的规划项目，同时又在进行建筑以及室内的设计。我们同时还为大众汽车制作影片，甚至设计（电脑）游戏。

有趣的是，当我们与合伙人以及顾问合作时，我们仍然将工作成果以三维的形式呈现出来，包括3D工作成果和关键的动画框架，然后再交到其他人手中。对于城市设计，我们做出巨大的数码城市模型；对于影片，我们设计出元素，然后再进行制作和后期处理；对于游戏也是如此，我们设计出将要放入游戏引擎中的3D物体。

**B M:** 能否多谈一谈这些游戏产品？我对你的这一部分工作不太了解。

**M S:** 我们对信息的可视化一直很感兴趣，它是一种交流研究成果和理解事件的手段，表面上很复杂，但如果能够将它清晰地阐释出来，就会显得容易很多。对于我们建筑师来说，信息化的设计为我们提供了系统化理解城市和建筑运作方式的窗口。很早以前，我们就开始进行一个游戏引擎的开发，因为它能够深入、互动地以三维形式表现这些信息。我们在大众汽车一个名为“移动全球”（Mobiglobe）的项目中进行了这个尝试，即在全球的尺度上探索活动的可能。我们用这个游戏引擎来解决城市设计的问题，因为它表现的城市不是静止的，而是有机生长、可以互动的。为了更好地理解使用这个游戏引擎的方法，我们为德国的公共电视台ZDF开发了一个线上应用程序，它包含所有我们在城市层面上作出决策所需的工具。

**B M:** 用户如何体验这些应用程序？你有没有设计供游客使用的程序？

**M S:** 那就更简单了，如同线上游戏一样。它的美妙之处在于，这并不是非常炫或者高科技的东西：它和其他的应用程序一样，用起来的感觉非常自然。

**B M:** 你作为建筑师设计实体空间的技能，是如何应用到虚拟环境中的？

**M S:** 这又回到了我之前的话题。我认为我们面临着一个新的工作领域——现实与虚拟的混合体。我们有新的工具来帮助我们控制从概念到成品的数字链，也有了兼容并包的工作方式，你是建筑师、平面设计师还是媒材装置师已经不再那么重要，重要的是你产出了怎样的内容。

So, there are basically three points: the digital-real as a realm of work; the digital-real as a tool set; and, therefore, the digital and real as a new kind of transdisciplinary field. Now, very concretely, this means that in our office we work fluidly between different scales and different media. For example, we're working on a 230 hectare masterplan in the capital of Slovenia; at the same time, we are working on architecture and interior architecture. We are also working on films, fairly large productions for Volkswagen, and we are even working on [computer] games.

The interesting thing is that, while we of course work with partners and sub-consultants, we still complete the work up to three dimensional delivery. Basically we do everything up to and including the 3D work and animation key frames, and then it goes off to other people. That is true for the urban design, where we make big, digital urban models; it is true for the films, where we produce the ingredients that then go to production and post-production; and it's also true for the games, where we produce the 3D objects that will go into the game engine.

**B M:** Could say a bit more about the production of these games? I'm not familiar with this part of your work.

**M S:** Basically we have always been interested in the visualization of information, as a way to communicate research and to express issues that could be seen as complex but when illustrated well are actually not so complicated. For us as architects, information design provides a way to communicate systemic insights into how cities work, how a building operates, etc. Fairly early on we started experimenting with a game engine, because it allowed us to show this information in a three dimensional, immersive and interactive way. We did that in a project for Volkswagen called Mobiglobe, which was about mobility on a global scale. We then used the game engine for urban design questions, because it allows us to show cities not as something fixed and designed, but to rather show cities as things which can organically develop and be interacted with. In order to better understand how to use the game engine in this way, we just did an online application about the oceans for ZDF, the German public TV station. In that application we could play which all the tools that we need to then do things on an urban level.

**B M:** How does a user experience these applications? Do you design a physical component that visitors enter?

**M S:** It's really much simpler, like an online game. The beauty of it is that it is not something incredibly fancy or technological: it's like using any other application on your computer. It feels natural.

**B M:** How exactly do the skills you acquire as an architect in pursuit of physical space apply to these sorts of digital environments?

**M S:** That goes back to what I was saying earlier: I think we have a new field of work - this hybrid of the real and digital. We have a new toolset that allows us to increasingly control the digital chain, from conception to production. And, therefore, we have a new merging of disciplines where it is no longer so crucial whether or not you are an architect or a graphic designer or a media installation person. It matters much more what kinds of content you are bringing.

当然，这种建筑师的能力中，有一部分依靠着三维工具。但是建筑师的有趣之处在于：他是个经过训练的通才。建筑师的工作不仅包括项目的成果，也包括他需要表达的抽象内容——将建筑和城市的模型、空间抽象化。当然，建筑师也需要具有在不同事情之间协调的职业能力，就像电影制作人一样。

我认为，如果你将建筑师视为用现实手段来产生有趣的建筑、空间，而非处理二维图形和实体建筑产品的人，那么你就不会将虚拟和现实视为两种截然不同的东西，而是为建筑师定义了一片新天地的事物。

**B**M: 就像新的建筑材料一样。  
**M**S: 对，一点没错。

**B**M: 据我所知，你从事过几年的教学工作，现在你还活跃在教学领域吗？  
**M**S: 我们仍然在维也纳艺术学院担任教职，但目前我的搭档Hiromi在负责那里的工作。

**B**M: 我很想知道，你提到现实与虚拟融合的这三点，是如何影响你对新一代建筑师的教学的。

**M**S: 我担任教职的时候，做了两个尺度较大的项目，因为我对城市系统很感兴趣。第一个项目位于维也纳周边一个名叫Centropo的地区，在这里，一系列城市正在突破以前（冷战期间东西欧）划分的界限，并且形成网络。这些界限在89年过后变得开放了，因此涌现了类似维也纳和布拉迪斯拉法之间的这种合作关系。第二个项目位于布加勒斯特，我们要处理城市的尺度，以及它如何有机运行的问题。

在两项研究中，我们都使用了能够让学生更深入地了解这些领域“生理特征”的工具，而不仅仅是城市的形式。例如在布加勒斯特的项目中，我们就使用了一款伦敦Space Syntax公司出品，名叫Depth Map的软件。

这款软件的有趣之处在于，它能够让我们分析街区的格局，让我们看到哪些街道可达性强，哪些难以到达（这里的可达性完全是街区几何布局的结果）。街道是相对恒定的东西，可能几百年才会出现一次改变，甚至更久。因此，街道格局在设计中无比重要，需要缜密的考虑。

在布加勒斯特的案例中，我们可以分析（南斯拉夫社会主义联邦共和国前总统Josip Broz）Tito对位于布加勒斯特中心的历史街区所做的变动。我们并没有生成炫目的3D城市效果图，而是使用软件工具来分析城市的现状，评估学生提出的方案。所以，问题的关键并不在于通过数码或虚拟手段产出绚丽、高科技、三维、深入的成果，而是数码工具让我们能够更好地理解和分析现实，对城市的未来进行更为精准的预测。

Of course, the skill of the architect lies partly in the fact that he is able to work with these new three dimensional tools. But, just as much, what is interesting about the architect is that he is a generalist by training. The architect is trained to usually work not on the final project itself, but on an abstraction of it which he needs to communicate - the plan set is nothing but an abstraction of a building and three dimensional urban model is nothing but an abstraction of that actual urban space.

And, of course, the architect is also necessarily a transdisciplinary professional who has to interact with many different disciplines, almost like a film producer.

If you look at the architect not necessarily as someone who deals with two dimensional drawings and the production of material architecture, but more as someone who uses interventions in the real to make interesting new kinds of buildings and spaces, then I think, all of a sudden, you don't have to look at the real and the virtual as two different things, but simply as something that defines a new pallet for the architect.

**B**M: Almost a new building material.  
**M**S: Yes, exactly.

**B**M: I know that you taught for several years, is that still an active part of your work?

**M**S: We still have a chair at the Academy of Fine Arts in Vienna, but it's currently run by Hiromi, my partner.

**B**M: I'm curious about how these three points about the hybridization of the physical and the virtual that you mention influence your approach to educating the next generation of architects.

**M**S: When I was running the chair we did two projects that dealt with the larger scale, because I was very interested in cities and city systems. The first project looked at the region around Vienna called Centropo, where a series of cities are putting themselves into a new network that extends beyond the border that was originally set by the East-West [Europe] divide [during the Cold War]. That divide opened up after '89, so there is now an entirely new kind of synergy emerging between, for example, Vienna and Bratislava. The second project looked at Bucharest and dealt with the city scale and how the city operates as a kind of organism.

In both of these studies we tried to use tools that would allow the students more of an insight into the physiology of these areas, rather than just the urban form. For example, at the scale of Bucharest, we were working with a software called Depth Map, which is produced by Space Syntax, a company in London.

The interesting thing about this piece of software is that it allows us to analyze the topology of the street grid. It allows us to find out which streets are very accessible and which streets are not (those accessibilities being purely a consequence of the geometry of the street grid). The argument is that streets are something that is relatively permanent; they only change once every, let's say, hundred years or so and in certain cases much less frequently. Therefore, the street grid is something which is incredibly important and needs to be designed well.

In the case of Bucharest we could analyze the changes that were made by [former President of the Socialist Federal Republic of Yugoslavia Josip Broz] Tito to the historic street grid in the center of Bucharest. Again, it is not that we produced any kind of fancy 3D visualization of the city, but rather that we used a software tool that allowed us to analyze the city as it is now and also analyze and evaluate the proposals of the students. So the point is not that the digital or the virtual needs to be fancy, technologically complex, three dimensional, immersive; the point is simply that the digital tools allow us to understand and analyze reality better and forecast more precisely how an urban intervention would play itself out over time.

**B M:** 理论上, 这些工具能够比当地人提供更加快速和准确的反馈。

**M S:** Space Syntax软件的有趣之处在于, 它是所谓“基于证据”的软件, 也就是说, 它通过公式计算街道网络中的可达性, 并且通过经验观察进行验证。从这个角度来说, 它十分科学。所以, 当这款软件得出某个预测结论时, 我多少可以认为它是接近事实的。这也与建筑工程很相似。在整个讨论过程中最有趣的, 就是区分城市设计和其他的领域。城市设计的领域具备精确性和可预测性, 可以看做科学; 其他领域则更多地涉及代表性、品位、历史、美感, 可量化的特性更弱。

我认为当下思考城市的时候, 一个关键问题就是: 不存在关于城市的科学。我们没有城市工程学。在城市设计的领域, 我们还停留在炼金术时期, 引导我们超越这个层面的(伊萨克)牛顿还没有出现。

**B M:** 难道这不是因为你在科学和艺术之间建立的二分法——如果我可以这么简化的话——并不容易统一? 一部分艺术的力量就在于它不是量化的, 呼吁一种更加黑暗、更难从效率、持久性或其他工程方面的指标来衡量的意识。

**B M:** 是的, 我认为这个想法很有趣——你可以将城市规划放到一系列压力测试里来, 就像测试建筑结构构件的强度一样。

**M S:** 在建筑师应该如何实践的问题上, 我认为最终的目标应该是弹性。它定义了一套系统的强健性; 它定义了你的设计能否经受住大环境的改变。在具有弹性的城市中, 即使油价上涨, 人们也能自由出行; 在具有弹性的城市中, 即使人口结构出现变化, 它也能够继续被人们利用; 在具有弹性的城市中, 即使世界经济走向衰弱, 它也可以保障经济的正常运转。弹性从定义上来讲, 是一个系统化的特征。为了定义它, 你要以系统化的方式理解自己所做的工作, 明白自己正在设计一个系统, 比如: 一项规划——它处在一个更大的系统里——一个更大的城市, 地区或全球系统等等。为了系统化地思考, 并且定义弹性, 我相信这需要满足我们之前提到过的所有方面。我们需要科学地思考我们工作的某些方面, 因为糟糕的设计会在未来出现问题。我们也需要从美学和历史的角思考, 否则人们就不会适应它, 与它融合。最后, 我们还需要我所提到的那一套工具, 为城市未来的弹性探讨解决方案。

我对弹性感兴趣的原因在于: 我相信改变不可避免——交通、人口、经济系统的改变都是不可避免的。在城市化的万年进程中, 改变在不断地发生。问题是: 我们如今以低成本和廉价能源建造的这些结构, 如何优雅灵活地应对资金和能源都变得昂贵的未来?

**B M:** And, theoretically, these tools would also allow for much faster and more precise feedback from the local population.

**M S:** The interesting thing about this Space Syntax software is that it is so-called "evidence-based", meaning that it uses algorithms to calculate the accessibility in a street network and these are then verified with empirical observations. It is very scientific in that sense. So when a particular prediction is made by this software, I can assume more or less that that will be the reality enacted in the end. It is more like engineering than it is like architecture. What interests me very much in this whole discussion is to differentiate between areas of urban design that have a certain precision and predictability and can be treated like a science and other areas that have more to do with representation, taste, history, beauty and are perhaps less quantifiable.

I think one of the key problems when you think about cities right now is that there is no science of cities. There is no engineering of cities. In the designing of cities, we're very much still in the state of alchemy and the [Isaac] Newton who would allow us to transcend this stage of alchemy has not yet appeared.

**B M:** But isn't that also because this dichotomy that you seem to be setting up, between science and art if I can simplify it to that extent, is not easily reconciled? Part of what makes art powerful is precisely that it isn't quantifiable and it appeals to senses that are murkier and more difficult to validate in terms of efficiency, durability, or some of the other priorities associated with engineering.

**M S:** Just as in the discussion of the real and the virtual, I think it should not be thought of as a dichotomy. There should not be exclusivity between the engineered and the designed, because in the end I think an intelligent architect will always design something that is also engineered well and a good engineer will always engineer something that also looks beautiful. For me, what is interesting about applying some of these engineering tools and principles is that we can finally critique some of the excess that we see in urban design right now, and some of the pure waste, inefficiency, and downright dangerous production of areas that are doomed because they simply cannot work.

It is like the discovery of sound engineering in architecture: that did not make architecture worse; it actually gave it more abilities.

**B M:** Right. I think that's a very interesting idea - that you could submit an urban plan to a kind of stress test in the same way that a structural member of a building might be.

**M S:** In this mosaic of how architects should operate, I think the final component is to aim for resilience. Resilience basically defines the robustness of a system; it defines whether what you design and build is able to withstand change in the larger context. A resilient city is a city which can still transport its people even when oil prices go up. A resilient city is a city that can be re-used even if its demographics change. A resilient city is a city which can still operate economically even when the worldwide economy shifts toward certain areas simply having less money.

Resilience, by definition, is a systemic feature. In order to define resilience you need to understand what you do in a systemic way, meaning you design a system - for example, a masterplan - within a larger system - a larger urban area or a regional or global system, etc. In order to think systematically and define resilience I believe we need all of these components that we've been talking about. We need the ability to think scientifically about some aspects of what we do, because if something is badly designed, it simply will not work in the future. We need to think also in terms of beauty and aesthetics and historicity and context, because otherwise people simply will not adopt it and grow into it, and last we need the toolset that I described earlier in order to analyze and communicate resilient solutions for the future. The reason that I'm interested in resilience is because I believe that change is inevitable. Some kind of change in terms of our mobility, our demographics, our financial system is inevitable. It has always changed in the 10 thousand years of urbanism that we have behind us. The question is: how elegantly and resiliently will the structures that we are building now, in an era of cheap money and cheap energy, react to a time when cheap money and cheap energy are no longer given?

**B**M: 这个说法很有趣，因为我与预测师Paul Saffo的对话中，谈到过让城市优雅老去的话题。他尤其谈到了基础设施的问题，认为建筑师和城市规划师面临的最大挑战之一，就是设计可以随着时间变化，不需在老旧时进行彻底更换的系统。

**M**S: 完全同意。在对弹性的考虑中，元素之一就是生命周期的区分。在城市中，有一些元素具有很长的生命周期，比如街道布局，另外一些则变换得更快，比如基础设施管线，人行道，照明等等。当然，你设计的建筑以及里面的元素都具有自己的生命周期。**危险之处在于，整个规划的产出都是永久性的。它只会变旧，而你不能对它进行二次开发、改造等行为。**

**B**M: 你有没有设定一些城市必须满足的硬性指标，来保证它经得起时间的考验？还是它很大程度上依赖于每个城市的位置、性格？

**M**S: 如果我们把尺度从全球缩小到当地，那么弹性就从位置开始，城市的位置是弹性的落脚点。有些城市坐落在可持续发展的地方，比如德国的科隆一直繁荣昌盛，因为它是众多贸易的发生地。还有一些城市依靠着某些特定的物流，这就决定了它们的脆弱。比如，迪拜只有在国际航班系统的支持之下才能正常运作。如果有一天，迪拜突然被限制在陆地运输中，它将瞬间失去魅力。这是第一点。第二点是如何在更大的尺度上组织城市。比如，一些城市很大程度上依赖于汽车——尤其是美国和澳大利亚的城市。还有一些城市主要依赖公共交通，比如香港、东京和新加坡。欧洲的城市则介于两者之间。**现在，我们有了科学的结论——它是由Jeff Kenworthy和他的团队得出的——城市越是依赖私家车，效率就越低，因为这对城市提出了匀质的要求。**城市不能出现密度过高的地区，中心也需要空旷一些，因为汽车会占用大量的空间。于是不可避免地，在这样的城市里，人们需要大量的出行才能满足互动的需求。而密度更高的系统中具有足够的密度，而且有多种用途——人们不需要任何技术上的交通系统，就能以不同的形式进行交流。因为城市是产生互动的地方，可达性和互动性是城市的关键元素，用更少的能量和时间提供有效的互动，是城市的关键。

之后就可以谈谈街区层面的问题了。一些城市拥有有效的街道布局，有些则不然，这还是可以以科学手段来界定的。再往下就是房地产的层面——哪种财政体系能够让城市经济繁荣，这同样是城市的一个关键问题。然后，是城市规划中对绿化带，以及其他具有区分性、识别性元素的考虑，接下来就是建筑层面了。这些尺度从大到小的元素一起决定了城市是否具有弹性。**我认为，这种接近达尔文式的思考方式正是我们会在不久的将来体会到的。**我相信，某些城市将受到飞涨的油价等因素的不良影响，而另一些能够从从容应对，大体上安然无恙。

**B**M: It's interesting that you say that because in a previous interview the forecaster Paul Saffo talked about this notion of designing cities that can be elegantly altered. He was speaking about infrastructure in particular and saying that one of the great challenges that architects and urban planners face is designing systems that can adjust over time and do not require wholesale replacement whenever they wear out or become obsolete.

**M**S: I totally agree. One component in this resilient thinking is a separation of life cycles. There are some elements in the city which have a very long life cycle, for example the street grid, and there other things that change more rapidly, for example how infrastructural lines are fit out with pavement, lighting, etc. Then, of course, you have the buildings which have their own life cycle and the components inside the buildings which themselves have a certain life cycle. **The danger is that, in the wholesale masterplan production that we are seeing right now, you are producing urban substance that is simply immutable once it has been built. It can only grow old, because you cannot organically redevelop it, adapt it, change it, and so on.**

**B**M: Have you identified a set of concrete qualities that a city should possess in order to be able to withstand change over time? Or is it largely dependent on the location and personality of each place?

**M**S: If we go from the global to the local scale, then resilience basically starts with location. Where a city is located is the primary point of resilience. And that location is contextual: there are some cities that are located in a place that will always be somewhat sustainable. For example, Cologne in Germany is a city that has been thriving for millennia, simply because it is a place where a lot of exchange happens naturally. There are other cities that depend on particular flows and are thus vulnerable because these flows might or might not continue. For example, Dubai only works if you have a functioning system of international flights. If, for some reason, you need to go back to land-based transport, all of a sudden Dubai is not interesting anymore. This is the first component.

The second component is how a city is organized in a larger scale. For example, there are some cities that are car-dependent - especially American and Australian cities. There are others that are mass transport-dependent, like Hong Kong, Tokyo, Singapore. Then there are European cities, which are kind of in between. **Now, you can show scientifically - this has been done by Jeff Kenworthy and his team - that cities that are more car-dependent are inherently less efficient, because they have to be flat.** They cannot have large concentrations of density and their centers have to be hollow, because cars consume a lot of space. Inevitably, in a car-based city you have to move people around a lot in order to generate interaction. In a more density-based system, there is enough physical and programmatic density - ie mixed use - that people can interact in different ways without having to use any kind of technological transport system. Because cities are places that generate interactions - it's accessibility and interaction that are the key attributes of cities - the ability provide those interactions efficiently, with little energy and little time waste, is key.

Then you can go down to the level of the street grid. There are cities that have efficient street grids and cities that have not so efficient street grids. Again, that's something you can define scientifically. Then you can go down to the level of real estate cycles - what kind of financial system is in place to allow for a city to thrive economically, because that's of course also key. Then there is the urbanistic scale where you consider green spaces and other elements that generate differentiation and identity and so on, and then of course the architectural scale. All of these components together, from the very large scale to the very small scale, define whether a city is resilient or not.

**I think that this almost Darwinistic way of thinking about cities is something that we will experience in the near future.** I do believe that currently we have cities that will be hurt substantially by, for example, rising fuel prices. And we have other cities that will take that change in stride and will not be affected that much at all.

**B M:** 咱们谈谈那些不稳定的城市吧。你所提到的因素能够让一座新建的城市更加美好,但是大部分城市的决策,尤其是关于位置的决策,在很久以前就已经一锤定音。以北京为例,你会发现它的气候和可用资源对于一个大型城市来说并不理想。但它是中国的首都,也是一个快速发展,大量依赖私家车的城市。对于这样的情形,建筑师和规划师应该做些什么?

**M S:** 交通决策的问题关键,最终还要回到政策方面——政治和意识形态的决策——它们不仅改变了你看待城市的角度,也改变了城市生长的方式。交通系统决定了城市的形式。以东京为例,它的市郊化是由铁路完成的,因为市郊化恰好发生在铁路兴旺,新技术和商机出现的时期。这样的城市以线性的方式组织起来,会出现密度很高的时刻,因为公共交通会造成极高的人员密度,引导开发商建造高层建筑,从高密度地区的人群中获利。如果一个城市的主角是私家车,比如亚特兰大或者凤凰城,那么它将不可避免地趋于同质。

关于你的问题,我会试着在规划策略中采用一些方法,增加地铁周边区域的密度,最大程度地避免只有汽车可达的地区出现高密度人群。当然,建筑师无法改变规划的政策,所以我们可以做的就是公共交通的周边争取更高的建筑密度。

回顾历史,我认为一个残酷的事实是:城市服从于生命周期。城市终究是有机的系统。因为我们是自然的产物,所以城市也和我们一样,具有生命周期。

城市化从美索不达米亚的新月沃土开始,最初的城市文化在那里萌芽、腐朽。它萌芽后散播到了克诺索斯这样的外围城市,克诺索斯再将它层层传递出去,传到位于希腊北部的迈锡尼等城市;迈锡尼再将它传到希腊的其他城邦,就这样,城市文化薪火相传。这种城市化的浪潮波及全球,城市不断地萌芽、腐朽。有趣的是,在历史记录中,那些核心城市——那些经历了大规模发展、发挥了巨大影响的城市都在某个时刻消亡了。

我认为,认识到城市终会腐朽、消亡是极为重要的。这是生命的事实。问题是:我们可以避免它的发生吗?我们必须抛弃城市吗?我们如何以智慧的方式让城市复兴?也就是说,只要大环境发生改变,只要廉价能源的时代宣告结束,某些生活的模式就无法继续——我们如何面对这个不可避免的事实?这是个开放性的问题。

**B M:** 是的,但是我们很难以冷静、理性的方式来思考这些问题,因为城市也是带有情感的。运作不良的城市的确会,也应该消亡,但我认为人们出于怀旧情结,哪怕仅仅是对失败的拒绝,会有强烈的意愿延长它的生命。

**M S:** 我认为怀旧的情绪,或者可以称为对身份或代表性的意愿,是保持城市生命力的强大理由。以罗马为例:它曾是世界帝国的中心,耀武扬威过后,出于一些在Jared Diamond的《坍塌》一书中详尽描述的原因,走向了瓦解的命运。但是另一方面,人们可以在从前公共集会上放羊了;都市农业现在非常流行,衰落后的罗马就是如此。之后,文艺复兴城市出现了——尤其是佛罗伦萨,罗马周边的城市突然找到了重新焕发生机的方法,当年的罗马回来了。这样,罗马就在怀旧中得以生存,保持着重要城市和首都的身份,尽管米兰应该是一个更重要、更国际化的城市。

我认为,我们不必对城市的腐朽感到绝望。我们看一看Philipp Oswalt所做的“萎缩城市”项目,就会发现城市的萎缩是非常棘手的事情,但本身也蕴藏着一线生机。

**B M:** Let's talk about those more precarious cities. What you're saying makes perfect sense if you're starting a new city, but for most places those decisions, particularly about location, were made long ago. If you take, for instance, Beijing, you'll find that in terms of climate and available resources, it is not an ideal place to position a large city. Nevertheless, it is China's capital, a rapidly growing and in many ways car-dependant city. What can an architect or planner do in a situation like that?

**M S:** The key problem of transport decisions, which in the end are always policy decisions - political and ideological decisions - is that they not only change the way that you use the city but they also change the way that the city grows.

Transport systems define the form of the city. Tokyo, for example, was suburbanized by rail, because the suburbanization happened at the time when railroads were the hip, new technological marvel and business opportunity. Such cities tend to be organized in linear corridors and have moments of very high density, because with mass transport you are able to generate extremely high densities which allow developers to build very high houses and make money from the people who are streaming through the area. If you have a city which is suburbanized by cars, like for example Atlanta or Phoenix, then inevitably that city has to be flat.

In answer to your question, I would try to find ways of increasing densities in Beijing around areas that do have access to the subway and I would try to avoid, as much as possible, spreading out to areas that are only reachable by car as a kind of planning decision. Of course, as an architect you cannot proclaim planning policies, so what you would try to do is argue for increased density around spots of mass transport, for example.

When looking into history, I think the cruel truth is that cities are also subject to life cycles. In the end, cities are organic systems. They are products of nature, because we are products of nature and, therefore, cities are subjected to life cycles.

Urbanization started south of the Fertile Crescent, basically in Mesopotamia, and the first city cultures there blossomed and decayed, but while they blossomed they spawned peripheral cities, like Knossos, and then Knossos spawned its own peripheral cities, like Mycenae in the north of Greece, and then Mycenae spawned other cities like the Greek polis states, and on and on. This shockwave of urbanization traveled the globe and always cities blossomed and cities decayed. What is interesting is that, when you look at the historical record, the core cities - those which experienced the biggest growth and the greatest expansion of their spheres of influence - those cities always at some point collapsed.

I think it is important to recognize that cities can decay, cities can collapse. That's just a fact of life. The question is: Can that be prevented? Do we have to abandon cities? Can we renovate cities in an intelligent way? In other words, how do we deal with this inevitable fact that as soon as the larger context changes, as soon as the era of cheap energy is over, certain modes of living won't be able to continue as they are now? It's an open question.

**B M:** Right, but it seems difficult to consider these issues in a cool, rational way, because cities are also emotional. It makes perfect sense that poorly functioning cities will and should collapse, but I think there is an impulse to keep them on life support for as long as possible, out of feelings of nostalgia or simply a refusal to accept defeat in a way.

**M S:** But I think a sense of nostalgia, or you could also call it a will to identity or a will to representation, is also a very powerful reason to keep a city alive. For example, when you look at Rome: It was the center of a world empire. That empire possibly overreached and for an entire set of reasons that is very well described in Jared Diamond's book Collapse, that city had to fall apart. But on the other hand, that allowed you to have sheep grazing in the Forum; a lot of the urban agriculture that is now so fashionable, you had in Rome after the fall. Later, you of course had the Renaissance cities - Florence, especially - which were Rome's peripheral cities that all of a sudden found a clever way to grow again and eventually pulled Rome back up. So, Rome was always kept alive for nostalgic reasons and it remains an important city and the capital, even though now Milan is arguably the more important, global city.

I think that a decaying city is not necessarily something that we need to despair about. When you look at the shrinking city work that Philipp Oswalt has done, you see that shrinking is something very difficult to deal with but it is also not without its own opportunities.

**B M:** 我想回到之前你提到的一点，就是廉价能源和资金的时代。如你所说，这个时代在世界各地促进了房地产和建筑的繁荣，但这样的繁荣似乎在2008年末遭遇了重创，而且尚未恢复。当资金不再唾手可得，志向也不再远大宏伟的时候，你如何看待建筑师近期和中期的未来？

**M S:** 我认为，我们还没有走到穷途末路。我们来看一下全球经济危机；这场危机当然与房地产泡沫的发生与破灭有关，但与不良的政策也不无关系。在世界的其他地区——在中国尤为明显——建筑的热潮还在继续，大量的资金还在寻找投资地产的渠道。只要资金还在，房地产还被视作相对安全的投资渠道，我们就还会建造或好或坏的建筑，只是为了花掉这些资金。

在瑞士也是这样。建筑行业仍然蓬勃发展，因为依然存在大量的可用资金。这基本上不是坏事；如果资金被花在鼠目寸光的地方才是悲剧。如果没有灵活、聪明地在长期持有的领域使用资金，它可能会消耗在过快的投机性需求中。

我认为中国正面临着这样的巨大问题。许多房地产投资都缺乏有力的财政政策和商业模型支持，因为人们认为市场总会继续扩大，需求和用户总会存在。工程常常无计划地进行，在中途改变用途和所有者，我认为这是一种机会的浪费。我认为在当下，我们需要在能源和资金依然廉价的时候明智地使用资金。

比如，中国应该抓紧现在的时机建造具有弹性，能够持续到下个世纪的基础设施——不是为21世纪，而是为22世纪。这是关键。我还认为，建筑师应该参与到确保资金能够明智使用的工作中来，强调弹性的重要。他们应该避免资金由于政治或经济原因被用在短期投资上——我认为这个陷阱是当前最危险的。

现在，我们就好像正在进行失重训练的宇航员一样。我们正在飞机上进行抛物线飞行，目前还处在抛物线的顶端——一切都处于失重状态，一切都很容易，但恰恰也是现在，我们开始感受到飞机向下坠落时的压力。我相信，我们应该在这样一个轻松的时刻，将资金投入到一个可以让我们和平、智慧、优雅地在艰难的未来生存的结构当中。

**BRENDAN MCGETTRICK** 独立撰稿人、编辑、设计师。他的作品曾刊登于二十多个国家的刊物上，包括《WIRED》、《ART REVIEW》、《DOMUS》以及《CASA BRUTUS》。他的最新作品包括：《桌布》（MORY PRESS, 2008）；《疯狂的晚餐》（LACTAR, 2008）等；他的最新作品将在近期出版《桌布（EAT UP）》（2002-2008年，由荷兰AMO展览工作室作为伴展）。

**BRENDAN MCGETTRICK** IS AN INDEPENDENT WRITER, EDITOR, AND DESIGNER. HIS WORK HAS APPEARED IN PUBLICATIONS IN OVER TWENTY COUNTRIES, INCLUDING WIRED, ART REVIEW, DOMUS, AND CASA BRUTUS. HIS RECENT PROJECTS INCLUDE THE BOOKS BECOMING (MORY PRESS, 2008) AND MAD DINNER (LACTAR, 2008), AS WELL AS 桌布 / EAT UP, A MAGAZINE ABOUT CONSUMPTION FORMATTED AS A TABLE CLOTH. FROM 2002-2008, HE SERVED AS HEAD WRITER AT THE RESEARCH STUDIO AMO.

**B M:** I'd like to return to a point you made earlier about the era of cheap energy and cheap money. As you said, this fueled a boom in real estate and architecture in many parts of the world, but it seems that that boom came to a violent end in 2008 and still hasn't really recovered. How do you see the near and midrange future for architects now that the money isn't as freely available and the aspirations aren't as

**M S:** I don't think we've reached that end yet. When you look at the global financial crisis: that crisis was, of course, created by a housing boom and the collapse of that housing boom, but it was very much generated by bad policy. In other parts of the world, China being an obvious one, you still have that building boom. And you still have a huge amount of money that is floating around and that is trying to find investments. As long as that money is around and real estate is still perceived as a comparatively safe investment then you will have production of buildings, good or bad, simply to get that money spent.

It's something that we are seeing in Switzerland right now. The building industry is still booming, simply because there is so much money available. In principle that is not bad; the difficulty is if this money is spent in a short-sighted way. Instead of spending it intelligently and resiliently on things with a longterm perspective, the money might be spent too quickly on something that just serves an immediate need and usually a speculative need.

I think it is a huge problem in China right now. A lot of real estate is being built without a sound financial strategy and business model, simply because you assume that the market will grow anyway, so you'll find uses and tenants for it no matter what. Projects proceed very haphazardly and often change occupancy and use midway through their development and I think that's simply a lost opportunity. I think what we would need to do now, while energy still is cheap and money still is cheap, is to spend the money wisely. For example, now or never China will build a resilient infrastructure that will carry it into the next century - not the 2000s but the 2100s. That's the key horizon. And I think architects should very much be involved in insuring that the money spent right now is spent wisely and intelligently, with an emphasis on resiliency. Architects should try to avoid the trap of money being spent simply because it has to be spent for short term political or financial reasons. I think that's the key danger right now.

At the moment, we are very much like astronauts in weightless training. We are on one of those parabolic flights in an airplane and we are still somewhere around the peak of that parabolic flight - so everything is weightless and everything is easy - but only right now are we beginning to feel the pressure building as the plane is beginning its eventual descent. I believe that while we are in a time of ease and levity it is key that we invest in the kinds of structures that will allow us to exist peacefully, intelligently, and beautifully in a time when we don't have this levity and when everything isn't so easy.



**MARKUS SCHAEFER** 拥有哈佛大学建筑硕士学位，以及莱茵斯大学神经生物学硕士学位。在哈佛，他与建筑师搭档 HIRSHI HOSOVA 合作编写了由雷姆·库哈斯和彼得·埃森曼编辑的 TASCHEN 于 2004 年出版的《哈佛购物指南》。在成为 HOSOVA-SCHAEFER 工作室之前，MARKUS SCHAEFER 在鹿特丹 AMO 非为设计总监职位；（AMO 由雷姆·库哈斯和彼得·埃森曼创立并领导）以及研究机构。

**MARKUS SCHAEFER** HAS A MASTERS OF ARCHITECTURE FROM HARVARD UNIVERSITY IN BOSTON. HE ALSO HAS A MASTERS IN NEUROBIOLOGY FROM THE UNIVERSITY OF ZURICH. AT HARVARD, HE FIRST COLLABORATED WITH HIS CURRENT PARTNER HIRSHI HOSOVA ON THE HARVARD GUIDE TO SHOPPING, EDITED BY REM KOOLHAAS AND PUBLISHED BY TASCHEN IN 2004. PRIOR TO FOUNDING HOSOVA-SCHAEFER, MARKUS SCHAEFER WAS A DIRECTOR OF AMO IN ROTTERDAM, AND IS THE THINK TANK AND RESEARCH DEPARTMENT OF OMA, THE ARCHITECTURE OFFICE ESTABLISHED BY REM KOOLHAAS.

**MARKUS SCHAEFER**  
**NOVEMBER 3, 2010**  
**ZURICH - BEIJING**

**MARKUS SCHAEFER**

**2010年11月3日**

**苏黎世-北京**

WHAT IS THE FUTURE FOR CHINA'S ARCHITECTS?

TEN YEARS INTO THE NEW CENTURY, LARGE PARTS OF THE WORLD SEEM TO BE COALESCING INTO TWO DISTINCT BUT NOT COMPLETELY DIFFERENT CAMPS, NEITHER OF WHICH APPEARS TO HAVE MUCH NEED FOR ARCHITECTS. ON ONE SIDE, IN THE DEVELOPING WORLD, YEARS OF RURAL-TO-URBAN MIGRATION IS PRODUCING CITIES WITHOUT URBAN PLANS OR ARCHITECTURAL OVERSIGHT, AD-HOC MEGALOPOLISES THAT MUTATE ACCORDING TO NEED, INDEPENDENT OF THE INFRASTRUCTURE ONCE CONSIDERED ESSENTIAL TO URBAN LIFE. ON THE OTHER, IN WORLD'S MOST MODERN SOCIETIES, THE IMPORTANCE OF THE BUILT ENVIRONMENT IS STEADILY DIMINISHING, AS NEW TECHNOLOGIES ENTICE MORE AND MORE RESIDENTS INTO A VIRTUAL REALM THAT REQUIRES NO PHYSICAL PROXIMITY AND MINIMAL PHYSICAL INFRASTRUCTURE. IN BOTH CASES, THE NOTION OF THE ARCHITECT AS AN ESSENTIAL MEMBER OF SOCIETY, A PROVIDER OF SHELTER AND URBAN COHERENCY, IS GROWING MORE TENUOUS.

CHINA, AS IS OFTEN POINTED OUT, HAS A FOOT IN EACH CAMP. IT IS SIMULTANEOUSLY POOR AND RICH, DEVELOPED AND DEVELOPING. HERE THE ARCHITECT IS ASCENDANT; HIS SERVICES ARE NEEDED AND, FOR THE MOST PART, APPRECIATED. BUT FOR HOW LONG CAN THIS CONTINUE? HOW LONG BEFORE CHINA'S ARCHITECTS FACE THE THREAT OF IRRELEVANCY THAT NOW CONFRONTS THEIR PEERS ABROAD?

FOR ITS 2010 INTERVIEW SERIES, *DOMUS CHINA* WILL EXAMINE HOW DEVELOPMENTS IN TECHNOLOGY, ECOLOGY, POLITICS, ETC. WILL ALTER THE WAY CITIES WORK. OVER THE NEXT TWELVE MONTHS WE WILL SPEAK WITH SCIENTISTS AND URBANISTS, ACADEMICS, ENTREPRENEURS, AND INVENTORS. THE CONVERSATIONS WILL VARY IN SUBJECT BUT WILL RETAIN A SINGLE FOCUS: THE FUTURE OF ARCHITECTURE AND URBAN LIFE. OUR HOPE IS THAT, BY IMAGINING RADICAL CHANGE ADVANCE, ARCHITECTS CAN PREPARE THEMSELVES. BY FOCUSING ON CURRENT INNOVATIONS AND FUTURE FORECASTS, WE CAN MAKE CHANGE LESS SURPRISING, DEVELOP STRATEGIES, AND RECOGNIZE MODERNITY'S INEVITABLE DISRUPTIONS AS A SOURCE OF OPPORTUNITY RATHER THAN PAIN.

- BRENDAN MCGETRICK