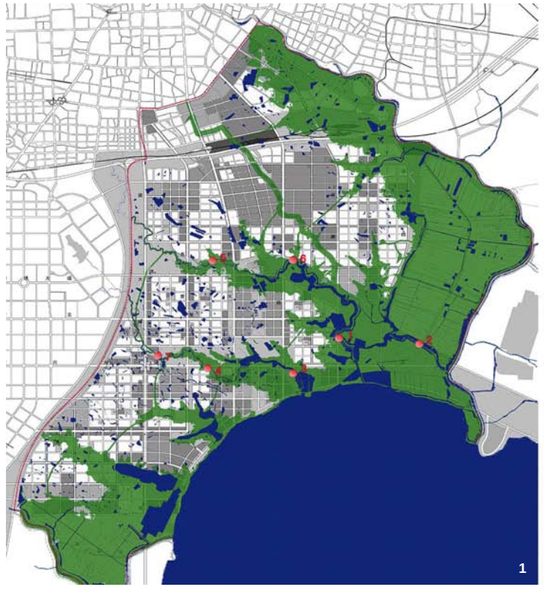

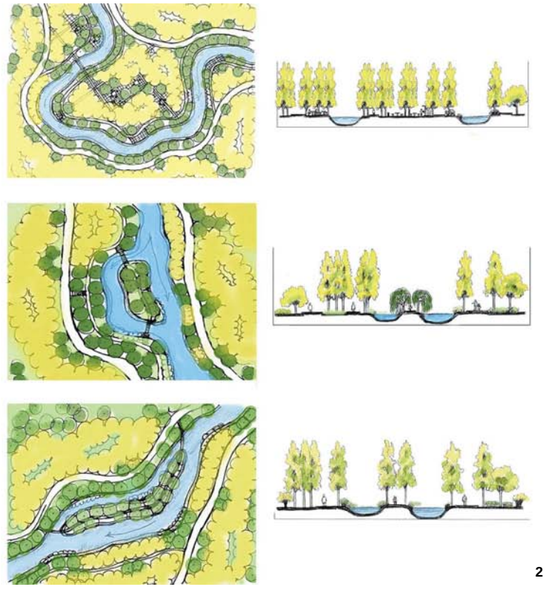

建设主题是什么，还需要通过新一轮设计研究来确定。

（4）安徽省合肥市新城区生态基础设施规划

2006年为合肥市进行新城区生态基础设施规划，利用地理信息系统（GIS）发现，该区域洪水水位从50年一遇（12.75m）提高到100年一遇（13.3m），在总面积近200km^{2}范围内，洪水淹没面积只增加6.77km^2，据此规划方案建议放弃修建防洪堤的传统防洪模式，以该淹没区为主体，建立贯穿新城区并连接合肥市现状城区的生态基础设施，结合“白鹭之城”概念，把新城区规划成为湿地生态城市（图1，2）。

（5）四川省卧龙国家级自然保护区地震后重建规划

卧龙国家级自然保护区在2008年汶川地震中道路基础设施破坏严重，穿越卧龙的303省道在地震发生半年后才重新开通，获香港特区政府援助重修。重修303省道的信息公布后，不少生态学者对该工程的环境影响，尤其对大熊猫栖息地的连续性表示担忧。为此，笔者和同事们利用地理信息系统，结合地震后的多次现场调查资料，提出重建该道路若能够在4处对保持大熊猫连结性关键的4处位置修建生物通道或者隧道，对大熊猫季节性迁移的影响可以降至最小（Hailong Li，Dihua Li，2010），并将该成果及时提交给了四川省相关主管部门和香港特区政府负责四川援建的相关部门。

北京大学景观设计学院完成的每一个案例都有这样的故事，希望以上5个例子可以帮助理解研究与规划与设计问题解决方案的关系。

4 研究与设计的共同目标

研究和设计的关系，渗透到了研究和设计过程的各个方面，学科发展到今天，刻意区分研究与应用是徒劳的。正确的理解应该是，科学研究的最前沿就是实际应用，实际应用的最前沿就是科学研究的最前沿。

无论是科学研究，还是规划与设计，都把创新作为终极目标，在创新目标上讨论研究与设计的关系是才最有意义的，基于研究的规划与设计创新才能够最大可能摆脱人为主观因素的影响，才是体现今天设计应该追求的逻辑。■

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Logics of Design & Reasearch for Design

Dihua LI [Vice Dean of Landscape Architecture Graduate School of Peking University, General Secretary of the Urban Ecology Professional Committee of Ecological Society of China, Member of the Urban Eco-development Professional Committee of Urban Planning Society of China]

Abstract…

The proposal of this essay based on analysis suggests that the logics of planning and design should be excavated through social responsibility, site, users, knowledge and design itself to produce rational and innovative designs. Demonstrated as the analysis of the undergone/undergoing cases, the integration of research and design has been proved as the identity and commonness in contents, objectives and approaches.

Key words…

Design; Research; Cities; Landscape; Education

1. **绿色部分为具有防洪蓄洪功能的生态基础设施；生态基础设施构成的河流湿地廊道网络是“白鹭之城”的骨架；为了实现“白鹭之城”，新城区建设模式都按照生态恢复和生态工程的模式进行。**
2. **典型河段改造示意图及断面图**

设计作为研究论坛
Forum on Design as Research

被乌托邦绑架的设计
Design in a Utopian Durance

周榕：清华大学建筑学院副教授，建筑评论家。

Rong ZHOU: Associate Professor, School of Architecture, Tsinghua University; Architectural Critic.

因为您多重的身份——教师、市长助理、设计师，您对于“设计与研究”这个话题一定有很独到的见解。您在今年6月“艺文中国设计论坛”中提及过一个发人深省的观点：“当建筑与艺术沦为设计之后，产生了若干分离：设计者与现场的分离，设计者与使用者的分离、设计产品与文化传统的分离”，您是否认为设计与研究之间也存在分离？

周榕（以下简称周）：要想谈设计和研究这个话题，必须要搞清西方文化的特点，尤其是西方现代文化的特点，才能理解西方为什么如此重视研究。西方现代文化有一个特别重要的特征，就是以“解决问题”为目的，这已成为它的一个文化范式，一个驾轻就熟的思想套路，也就是说西方文化是一个“解决问题的文化”。它在面对任何一个认知对象时，无论大小，都必须先找出一个或一组问题来，然后将这些问题——“解决”，或貌似“解决”，一个思想周期就结束了。在这种“解决问题”的思想范式下，所谓的研究就是找到问题，然后解决问题。

2003年我刚跟张永和合作的时候，就明显感觉到，他的工作方式基本是西方的寻找问题–解决问题的方法模式。所以张永和有一句名言：“建筑不是创作”。他认为设计就是研究，这是他最核心的设计观。其实我个人并不完全赞同这样的一个设计观念，因为我认为面对这个世界的态度、思想和行动，并不仅仅只有寻找问题和解决问题这么一种单一的途径，还有很多自由创造的可能。我觉得不能简单判断说研究型设计就是正确的，非研究型的设计就是错误的，这里没有高下之分，对错之别，只有选择不同。这个世界理应是一个丰富多彩的世界，作为创造世界的设计师，并不需要把自己的设计方法统一在一个固定的模式里面。

“设计作为研究”这种思想套路，我觉得对于以前不经研究和思考，甩开膀子就干的“中国式设计”来说，起了一个很好的纠偏作用，但也不能矫枉过正，对其奉为圭臬，应该给那些自由思想的设计师留下一些个人空间。

“研究型设计”有一个好处，就是它适应模式化的大生产，西方的现代建筑教育是与建筑的现代生产体系相一致的。设计的目的与建筑生产的目的高度一致，都是作为解决问题的手段，问题解决了，设计也完成了，设计的成功与否取决于问题解决的巧妙程度。20世纪90年代中期之前的西方现代建筑史可以被称为一部“问题史”，而当西方社会从“问题社会”逐渐转型，“问题供给”开始匮乏时，习惯于解决问题的西方设计师只好自己给自己设立问题，“没有问题创造问题也要上”，这时的设计就开始沦为一种思想的打靶游戏。

研究型设计更多关注的是客体的规律，这样无形之中就把主体的情感与设计过程分离开了，设计者不再是富于情感、性灵、机趣，并且充满瑕疵、软弱与盲点的凡人，而是一部以问题为原料，并不断生产出解决方案的神性机械。外部世界因研究而变得越来越透明，但我们的内心却因为研究而越来越模糊，这是科学解决不了的事情。

跟您刚说的研究模式有点差异，也有一些学者的研究，只为发现问题，目的不是去解决问题，而是为研究而研究，不是为设计而进行，设计师能够借鉴这些研究成果，这样一个过程不是由设计师一人来完成的。

周：的确，设计师所谓的研究基本上属于“二手研究”，更多的是通过书刊报章、媒体网络等渠道获得一些间接信息，这种“图书馆模式”的研究代表着研究者与现场的分离，在客观上也加剧了设计者与现场的分离。不过，二手研究也总比不研究要好一些。

通过这样二手研究方式，我们失去了对本真的直接认识，所以我们会发现很多设计师通常会抛出很多似是而非的观念，比如天人合一、绿色等等，您如何看待这种现象？

周：我跟你们的想法有点不太一样，我并没有一个先在的判断，我觉得这是很危险的，我不能用预设的判断去污染对现象的观察。所有现象的存在，我都觉得蛮有意思的，我只是喜欢去观察这个现象，去分析这个现象，当然也有可能会利用这些分析的结果。

建筑师自从学了建筑以后，就慢慢地跟现实社会脱开了。建筑师们其实不太了解这个社会的真实运行，他们熟悉的是一套理想的、乌托邦化世界的构成规律。这样的世界只是极少数精英一厢情愿的理想世界，但现实社会的血肉之躯注定无法栖身于高度理想的水晶框架之内。设计师越想营造一个理想世界，他越努力工作，就离真实世界越远。我敢保证多数建筑师们并不懂真实世界，因为他们只关注于现实世界庞大链条体系里面微不足道的一个环节，他们所研究的所谓“建筑本体规律”，跟众生所迷恋的这个红尘世界有什么关系吗？我们处

身的这个世界是如此的乱七八糟，如此的丰富多彩，如此激动人心也如此让人失望，但是跟建筑师的工作都没什么关系。我觉得中国设计师的问题，第一是脱离社会，第二是没文化底蕴。因为建筑师绝大多数都是从工科院校培养出来的，中国的理工科院校第一是脱离社会的乌托邦情结最浓厚的地方，第二是最缺乏人文熏陶的地方。

您觉得建筑师为什么会跟社会孤立、跟文化脱节？

周：我觉得主要是教育。

这是不是您选择除教师外其他各种不同身份的一个根本原因？

周：是啊，就像一个游戏里面多种角色扮演。我经常尝试戴上不同的面具，用各种不同的角度，观察这个世界，时间长了，你会看到世界逐渐呈现出一个立体的状态。我觉得每一次角色扮演看到的世界都不太一样。所以不要带着目的去研究，不然你就会忽略目的之外的那么多好玩儿的东西。不管中国的还是西方的当代教育，其实都是急功近利的教育，因为就是在不断告诉你各种目的。目的性太强的过程，就会失去了趣味，失去了更多的可能性。所以我现在既不赞同中国的方式，也不赞同西方的方式，特别是对西方的方式越来越警惕，因为它貌似科学和理性的范式却更具有欺骗性。

您刚刚已经解释过西方的范式，能再概括一下中国的范式是怎样的逻辑吗？

周：中国范式我觉得还是很典型的——就两个字：对付。所以中国文人最大的特点就是陶渊明的“好读书，不求甚解”。知道东西很多，但不执著，也没有一个超越性的终极关怀。中国为什么没有出现科学？就是功利层面能够把它对付了就行了。所以中国人最喜欢的叫做“摆平”，摆平不是解决问题，摆平是一种对付着的平衡态。中国式“摆平”和西方的“解决”有着本质的区别。

您为什么非常赞成一种无目的的学习方法？

周：因为有目的的学习方法会把你束缚住，把你的视野限定在很小的一个地方。所以最好的办法是忘掉这些方法，或者你知道这些方法但并不完全依赖于它。尽管有一些基本的方法必须掌握，但关键是在这过程中，你并非把自己刻板地固定在一个轨道上，而是保持一个开放状态，而且要不断积累、不断改变。否则的话，只是盖了房子而已，并没有提升什么。盖了10年、20年，房子都差不多，当然技巧可能熟练了一点儿，工程问题解决得更好一点儿，但是对于世界的认识并没有提高。而且，量变会引起质变这个观念我是不同意的，因为量的积累根本不会增加质的变化，质变依靠的是内心的觉悟。

所以您早在1997年与栗德祥先生合写的《建筑教育中有关创造性问题若干误区的探讨》就提出了设计师需要具备创造性思维。

周：虽然这是十几年前的研究成果了，但是我觉得还是非常重要的。我特别反对在建筑设计里面提概念，概念是一种思维，而非想象。只有想象才能把情感、把非理性的东西调动起来，然后把它变成一个“生命状态”。只有当一个概念衍生、创造为真正的实体，才可以称为真正的设计，而对学生来说，从创造性思维到创造性想象之间存在着一条难以逾越的鸿沟，现在学生最大的问题，就是想了一个主意，然后就觉得设计已经做完了。

这个鸿沟的形成，是不是由于创造性想象力的匮乏？

周：当然！创造力和想象力不是一回事。唯有想象力才能让我们凭空创造一个世界，这个世界里面所有的东西都是有生命的，特别是有着生命细节的。就像米开朗琪罗到一个采石场去，看到一块大理石，他说我能够看到我要雕刻的那个对象就睡在这块大理石里面，而我所做的工作就是去掉那些多余的部分。这是什么能力？这是想象能力，跟创新没关系。

让我们看看窗外，这窗户外面感人的东西是什么？绝对不是对面庞大的楼房，而是这几片叶子还没有掉，在11月末的风中飘来飘去，光线穿过树叶缝隙透进来，那光映在墙上，有点儿枯黄，有点儿绿，这是一个掺混了复杂暖色的冷冷的秋日。如果一个建筑师失去了对生活的感悟能力、失去了想象，就失去了如何把一个生命世界的细节变得丰满起来的能力，没有这种能力，概念再多，也只会是枯燥无味的概念。

物化能力，是不是也是属于鸿沟之一？

周：物化能力就是从你的脑子到手头表达的能力。建筑师随着实践过程的增多，这个问题大多能比较好地解决。物化问题主要针对教育，尤其是低年级的学生可能对此有些障碍。

您曾经说过，因为80后、90后是生活在消费社会中的一代，所以他们缺乏生猛的批判劲头。在您的教学过程中，怎样把他们的生猛劲挖掘出来？

周：我并不依靠一个固定的套路，而是因材施教。90后从小的物质生活已经相当丰富了，精神上没受过摧残，没受过打击，尤其考上清华的孩子，一路上都是天之骄子。我的办法就是先打掉他们的自尊，打掉这些虚幻的自尊，用不可阻挡的方式让他们彻底丧失掉对自己已有经验的那点自信心，把自己先倒空了，然后再反复揉搓他脑子这块抹布。这个过程就是要激发他生命中本能的东西。

消费社会最大的问题就是你无论有什么欲望都可以通过消费的方式得到满足，商业社会是有需求就有供应，而消费社会是通过超量供应煽动需求。在消费社会中，就连人的欲望都成为稀缺之物，现实生活不能满足你的欲望，还可以通过虚拟的方式超量消弭，所以现在的年轻人对社会没有什么不满，他们的青春期是平静的。我觉得对现实的不满和野心对年轻人来说不是什么坏事。批评、社会批判的思想是西方现代文化的一个基础。没有愤怒的社会，没有批判的社会，听不到多样声音的社会，是最恐怖的社会，哪怕看上去是再光鲜亮丽也是腐朽的，一切乌托邦都是腐朽的。而我的思想内核是反对一切形式的乌托邦的。乌托邦就是以一种虚构的理想状态的名义，去抹杀一切与理想状态有偏差的不同状态。

您读过乌托邦三部曲的小说吗？

周：当然。

我认为社会发展到最终，就是像小说描述的那样，也许只是我们现在正走在通往乌托邦的路上而已。

周：很有可能是这样。因为整个所谓的现代化就是一个乌托邦化的过程。为什么？现代化的基础是什么呢？是理性主义。认为人可以通过理性安排自己的命运，但理性能够关注的范围是极其有限的。因为现代科学不关注人类的内心，它关注的是客观存在，乌托邦发展的结局就是高度科学化的生存，控制你的技能，控制你所有的想象力，那你还有什么意思？你活着还有什么尊严？所以我是觉得科学给我们提供的是完美的世界，这就直接导向乌托邦。到什么时候人类才能彻底省悟，我们需要生活其中的其实是一个不完美的世界。

我认为设计师是除哲学家以外最接近乌托邦的人。

周：可能得反过来，哲学家是除建筑师以外最接近乌托邦的人。建筑师是乌托邦的缔造者和维护者。乌托邦是静态的、完美的、不容更改的，这是古今中外最残忍的、以最美丽的名义但却造成了最大破坏的一种学说和理想。

设计这个行业就带有一定的乌托邦的理想性质。

周：建筑师不说100%，99%都是乌托邦主义者，因为他要创造一个完美的小环境，不管大的社会、城市环境如何，他所建造的那个建筑都要具备所谓的完美性。但真实的生活不是这样的，生命本身并不完美，有健康的时候，也有生病的时候，你不能否认生病的时候就不是你生命的一部分。乌托邦仅仅为这个社会极少数一部分精英的极少数最佳状态而准备。比如巴西利亚号称是一个完美的乌托邦城市，但是仅仅离它10km就有一个巨大的贫民窟，为什么？就因为必须牺牲一大部分人的利益来满足一小部分人的乌托邦梦想。所以现代设计被乌托邦绑架了，对不完美的世界视而不见。乌托邦是完美、合理、纯净的，但是不完美的世界该由谁来负责呢？（佘依爽，涂先明 采访）

从学生向设计师的跨越
Leaping from Academic Students to Practical Designers

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学生时代培养的研究能力能否在设计实践工作中得以发挥？当年的优秀毕业生在参加工作若干年后回顾曾经的学习生活，又会有怎样的感想？带着这样的问题，我们有幸聚齐了2002年第39届UNESCO-IFLA国际风景园林学生设计竞赛大奖的获得者们，他们参与并以此获奖的项目“寻找远去的西湖”在近年得以建成，同时，由杭州园林设计院、北京林业大学园林学院和北京多义景观规划设计事务所完成的相关研究“再塑天堂——杭州西湖的景观更新”获得了2010年ASLA的分析与规划类荣誉奖。

现在北林研究生参加IFLA竞赛是一门必修课，你们那个时候也是这样吗？

张璐（以下简称张）：是的，有学分的。

你们觉得竞赛的方式对学生研究能力的提高有帮助吗？

张：最关键还是得看个人，因为同样是作业，有的学生可能不会特别关注它，也可能没有找到门路，在研究的方法和过程上缺乏主动性，不去与导师交流，只一味的闭门造车。首先当时我们参加这个竞赛非常好的一点是依托一个实际的项目——杭州西湖西进可行性研究——前期积攒了很多的资料，使得整体的思路很清晰。第二，我们是以团队的形式参与的，所以我觉得我们最大的特点就是把各种优势能够结合在一起。

刘彦琢（以下简称刘）：竞赛对我们的帮助还是很大的。首先我们每个人在设计前期都要阅读很多与竞赛题目有关的国内外相关资料。其次要消化这些资料，针对题目对这些资料进行一个初步的分析与汇总，在最短的时间内形成一个针对项目的比较好的理论基础。在研究方法、信息归纳总结上都有了比较大的提高。同时设计方案要思维发散地想事情，我们4个人进行了很多次头脑风暴。有了理论基础和头脑风暴，这样在一个比较短的时间内，能取得一个比较好的结果，同时也通过这次竞赛形成了一个比较好的工作方法。

我觉得你们团队很特殊，第一，你们是第一个以团队的形式获得了很好成绩的参赛者。第二，在你们之前也有获得IFLA大奖的学生，他们几乎全都留下做老师了，但是你们4人现在都在设计第一线。所以我想你们对在学校锻炼的研究能力是否对设计实践有帮助这个问题特别有发言权。

张：我们几个其实都是“带发修行”——在读研之前都有过工作经历，只有刘彦琢是本科直读研究生的。但4个人的经历都不太一样，我是北京林业大学的，李正平是中央工艺美术学院的，韩炳越之前在中规院做过很多规划项目，刘彦琢是北京林业大学的保送研究生。每个人的特长都不太一样，正好像一个特种兵团，我们互相弥补。所以我们形成了各取所长的合作关系。后来得奖了，感觉这样一个成绩是给自己留了一个非常美好的回忆。我们毕业的时候正好赶上社会比较缺人才，所以还是想到社会上再多学学。

这次的经历给我启发挺大的，我到单位以后就想组织这样一个民主合作方式的团队。现在很多公司的项目模式基本上是“一言堂”的方式，而我希望的团队里每个人都有比较大的自由空间。团队的建设首先需要自我牺牲，你

可能在某一方面的能力特别强，但是你为了能够配合这个团队，你要暂时的或者是局部的克制自己的一些东西，这样大家才能够融合在一起。团队里的每一个人都对这个项目很熟悉，每个人都能说出自己的看法，而不是整个项目只有你一个人知道，剩下的人全是打杂、描图的。

在实际的项目中还会做类似IFLA竞赛那样的分析和研究吗？还是更注重创意？

李正平（以下简称李）：做任何一个项目都需要分析与研究的过程，并都需要注重创意。在一个正常的工作周期里，研究是不会少的，因为做任何一个设计都不是空穴来风，所以我认为实际项目与竞赛项目是差不多的，在分析研究与注重创意上没有太大的区别。最大的区别可能是：实际项目都是要建成的，而类似IFLA竞赛的项目只是做到某一个阶段，离实际实施还有很大的空间要去逾越，要去解决更多的实际问题。

在EDSA我遇到的第一个项目是“北京欢乐谷”主题公园中的一个独立的主题园区。针对这个项目，需要考虑的问题的广度缩小了，而对其中一些问题的深度变深了（比如这个项目从概念方案到施工图阶段，是一个逐步深入至实施方案的过程）。这个主题公园的大主题已经有了，那么我接手的这个分区的主题只需要呼应大主题，而分区里的任何设计也都需要符合分区主题。

学校里面和工作实际上的模式都是这样吗？

李：一样的。回答一个设计主题，会有非常多的答案可供选择，在一些既定条件的约束下，我们选择更贴切的答案。

IFLA竞赛的研究成果在西湖改造实践项目中有应用吗？

李：我们只是选取《杭州西湖西进可行性研究报告》规划范围中一条溪涧“龙泓涧”作为试点。尝试了与现在已实施的西湖改造方案不同的解决思路。现在已实施的方案很好，给了普通老百姓绿色的生态景观环境。

普通老百姓最在乎的是得到更多的绿色、更好的生存环境，至于景观的形态选择倒是其次。换种说法，普通老百姓对于绿色环境的渴望是主动的，对于景观环境形态的选择相比之下是被动的。无论是现代还是古典，无论是欧式、日式，还是中式，对普通老百姓来说，能获得更多的绿色才是重要的。

王向荣老师曾经在为某届学生上的最后一节设计课中，对学生说，我知道你们每个人的梦想就是成为一个很优秀的设计师，但中国不缺好的设计师，缺的是好的甲方，所以我希望你们都去当甲方。

李：当甲方、当乙方都不错，但甲方、乙方在工作立场、职责、具体工作内容上当然会有所不同。如果甲方乙方能达成越多的共识，那么越有可能促成一个好项目的实施。一个项目最终实施的好坏，是甲乙双方共同努力的结果。能遇到了好甲方，我觉得是一件非常幸运的事情。现在甲方的职业素质也越来越高了，有些比设计师的素质还要高。

由于甲方的素质提高，设计师自身能力提高的压力是不是越来越大，不能靠以前所谓的“忽悠”了？

李：其实从来就没有“忽悠”过甲方，只是说那么一个说辞，因为有的时候是为了把项目推下去，你需要在一定的场合用一定的说法。

张：这个就是在社会上和学校里完全不一样的地方。

李：学校里面的孩子都会觉得我自己就是老大，有些资历稍微浅一些的设计师也是这样的。他会觉得为什么会是这样？！你约束了我！你不懂得设计！其实是没有反省自己。

张：我觉得一味把责任推给甲方的人，通常自己也会很多自身的问题。但是我觉得某些时候甲方是很好相处的，如果你掌握了技巧。首先要换位思考，我想这个非常重要的。你要站在甲方的角度去想这个事怎么做。然后再思考，作为一个设计师怎么样达到目的。如果只站在自我的角度考虑，一定会碰的头破血流，但如果事事都迎合甲方的话，实际上做出来的东西，也不好。

李：对，那样甲方也不会喜欢，甲方也不想这样，这时他会问：“到底你是设计师还是我是设计师？”

张：其实就是如何实现的问题，因为在学校跟在社会上就是不一样，我们为了实现自己的想法，以前可能是碰到障碍我就生打硬撞，要打不通我就不干了；现在我们会绕一点弯去做，但最后目的是一样的。

李：我们所从事的设计不是纯艺术。你画一张画，画什么都行，画成怎样也都行，有没有人买没关系。但设计不同，设计最后是要被使用的。其实设计是一个服务行业，首先要有这样的意识。

我们其实也可以跟甲方说不，当你觉得他要求完全不合理、不符合相关法律规范要求，比如有的甲方在没有许可的情况下随便把一些耕地或一些农田变成可建设用地，这时候你就应该对他说不，因为没有办法做的事情你就要诚实地跟他说。为了避免这种非常不好的结果，你可能一开始的时候对项目、对甲方都要有所选择。

相应的，甲方素质的提高了，对于设计师的压力在哪里？设计师也要不断提高。一个好的单位应该给设计师一个空间，让他有很多新的资料可以吸收。

张：我觉得年轻的时候，尤其是30岁之前，如果出国去看一看的话，这样会对自己今后的改变特别大。

李：看书和实地的去看案例是不一样的，书上可能只是摘取最好的那么几点。

这点我很同意，书刊上表达的通常都是最好的状态，但真实的状态是什么样，得实地去体会。我感觉你们都对设计、景观非常敏感，而且有很深的感情，那么这些是你们学习这个专业以后才培养的，还是从小就比较有这方面的天赋？你们为什么选择这专业？

张：原来在上学的时候老是被安排成宣传委员，画黑板报、画插画，可能自己也挺喜欢画，报考的时候，我就想找一个类似建筑或者是风景园林专业，当时不知道风景园林是干什么的，就觉得前面有个“风景”好像挺好玩的，我喜欢到处玩，然后就报了。我是1993年参加高考，1997年毕业，那时候香港刚回归。

那毕业之后的3年你做什么？

张：上班，我当时分配在林业局，住在单位集体宿舍，因为公司是设计施工一体的，我们的宿舍里面住了好多司机，他们每天要接货、拉货做工程，我每天就跟他们在一起，会了解很多，很多细节的东西都是在一种痛苦的状态中学习了。那时候北京也没有什么特别大的项目，最多就是道路绿化，古建、家属大院的绿化。当时做的东西很琐碎、很普通，但是打了一个非常好的基础，学习了乔、灌木要怎么修剪、怎么维护。当时也没有电脑画图——我毕业两年以后才开始有了电脑——相当于第二次教育，重头学电脑。后来读研以后才开始跟导师真正做一些自己喜欢的东西。我们这个年代的人其实也挺幸运的，经历了这个行业发展加速度最大的时期，我们就要不停地更新自己、不停地升级，使自己跟上这个社会。

李：我们4个应该是最早的“北飘”。我是中央工艺美术学院环境艺术设计系毕业的，学校里的园林课程很薄弱，寥寥几节课，就结束了园林课程的学习。而对于景观设计来说，植物是非常重要的景观要素，对植物没概念，那谈景观环境必将片面。本科毕业后，觉得自己什么都不懂似的。于是就想补补最薄弱的园林课程，然后考到了北京林业大学王老师名下的研究生。王老师对我建议：“你的学习背景不一样，你最重要的一件事就去补植物的课。”所以我印象当中已经不记得有什么硕士的课程了，但我至今印象深刻的是我跟着本科生上树木、花卉的课。

刘：我是1996年进入北京林业大学风景园林专业学习，2000年本科毕业后直接上的本校的城市规划与设计（含风景园林）专业的研究生，师从王向荣老师，研究生的时候做了很多实际项目，科研能力和实践方面都有了大的提高。我很喜欢这个专业，学起来还算比较得心应手。

你们每个人的经历都有很大的差异，那你们工作以后在和其他专业的人合作的过程中，有什么样的感受？

刘：首先是思维的差异，我们和其他专业的思维还是有一定的差异的。我觉得风景园林行业的人思维相对规划建筑、结构等专业来说还是比较发散的。需要向其他专业的人学理逻辑推理的能力。第二是规范性的差异。其他行业的规范比较多，包括行业规范和制图规范等，制订规范会有助于提升风景园林设计的说服力和执行力。

张：我们上学的时候并没有一个老师或者一个专门课程来教授一个完整的项目推导的过程。这些必要的逻辑的学习都是我们在无数次的失败中自己体会来的。其他专业，比如规划、建筑，他们的思路很清晰，很有条理。

李：我们比较缺乏设计方法论的训练。

张：这也与以前的现实情况有关，以前没有多少大型的项目，一些景观项目都很独立、很具体。

所以在实践中逻辑性很关键。

李：跟规划师合作会发现他们的逻辑思维比较清晰，这与他们的知识背景有关，城市规划、城市设计时考虑问题的广度远比景观要多。

你们认为景观设计师应该具备城市规划师一样的眼界和思维方式？

李：对，在国外，规划、建筑、景观同设在一个学院下，对三者的跨越式掌握，势必给我们一个比较全面的考虑，然后能够迅速做出判断，哪些是项目中的重点和关键，哪些是次要的后续考虑的。但凡缺少哪个环节的知识面都会导致思考问题的不全面。各行各业能形成交流的平台，能考虑到其他行业所思考的问题。

总结起来，团队、眼界、思维方式，这三点是你们工作7年来最大的感悟，如果这三点在学校期间就能有所培养，是不是就意味着能更好地适应社会需要？

李：没错。要当一个较好的设计师，自己的个性一定要坚持，但是在团队中一定不要太过于强调自己的个性。在团队中，彼此的协作非常重要。

刘：我觉得还有一个因素，虽然相比于其他的作品我们做的时候已经考虑了很多实际的问题了，但是相比现实的项目来说，实际的项目涉及的因素更多，需要考虑的问题更多，因此学生时代的作品还是缺乏考虑一些实际的东西。

张：我觉得还是挺好的，就是像实验电影一样，你在导演系的时候实验一下。但是等到真正当导演的时候，你就会发现很多东西不是那样的。

但大学学习生活只有4年或者5年，对于那些刚步入工作的设计师来说，也许没有足够的时间或资金出国参观考察，只能依靠书刊和网络资源来获取信息，在这样有限的条件下，对哪些方面的关注会对他们今后设计带来帮助？

李：在你人生的发展中，实际上你选择的态度已经决定了你的经历。因为我选择了做设计这一行，即便是在吃饭睡觉或者是上街购物、看电影，我都会对相关的东西特别敏感。

张：现在的孩子有点急功近利，到单位两年后，如果没有得到单位的认可，就开始焦虑、换工作，急于求成可能有时候会适得其反，让自己的压力太大了以后，反而会找不到学习的方向。

刘：在工作领域不仅要关注一些精品项目或知名设计师的方案，看设计的成果，也要思考这些设计为什么这么做。 也要关注设计师如何用图纸和文字组织表达给业主的，就是设计文件的编制。跟工作年限比较丰富的设计师学习也很重要，被点拨一下有时候会少绕很多弯路。在工作中也要非常注重表达能力和跟别人的交流能力。对于刚毕业的学生来说下工地、配合施工也很重要的，能得到很多现场的经验，同时反过来也会对设计有很好的指导。

韩炳越：《景观设计学》编辑部组织我们当年参加IFLA竞赛的小组讨论时，很可惜我因为有事未能到场。回想起来当时参加IFLA的竞赛过程是愉快而辛劳的，导师王向荣教授安排我们4个人组成一个小组参加，因为我们有不同的学习、工作背景，大家可以在专业和技术上互补。记得当年参加竞赛时距上一次我国大学生获得大奖已经11年了，虽然年年有学生参加，可是都没有拿到大奖。所以我们也没有报什么希望，但希望能把这个竞赛做好，因为这也是课程作业，作业必须要完成好的。

导师敏锐地为我们推荐了他刚完成的“西湖西进可行性研究”这一内容，我们都参与了相关工作，对设计地块的情况都比较熟悉，也进行过一些思索；导师对西湖西进地块进行了认真深入的研究，得出了科学的成果，并毫无保留的把他的研究思路、过程、成果讲给我们，这些对我们的帮助是巨大的。但因为一开始没抱什么拿奖希望，大家总是拖拖拉拉地进行工作，可能这也是设计人员的通病。记得导师要求每周碰一次方案，前几次因为没有完成安排的阶段成果，大家都挨了批评，于是都认真了起来，设计也越来越成型，我们自己也逐渐的发现了亮点。可以说4个人各展所长，各尽所学，毫无保留，而且不争不抢，互相尊重，加之导师的适时指点，得以很顺利的完成了工作。记得交作品前导师看了我们最后完成的成果后说：“你们应该能拿一个奖”。当时心里其实也开始有了期盼，没想到真的拿了第一名。

得这个奖对以后的学习和工作有一定的影响，最主要的是让我感受到一种对项目进行创新尝试的追求。也是受跟随了老师5年的影响，每拿到一个新的项目，都在想有些突破、有些创新，从理念上、手法上、技术上、构图上、表达上等多个方面，总在尝试不走从前路，当然这也需要颇费脑筋。但看到出来的一个个项目有了或多或少的新意，感觉有了进步，也促进了自己专业的进步。

毕业后辗转来到了中规院风景园林所，接触到了一些较大的项目，类型变得丰富起来，

思路需要不断的调整。一些项目很让人兴奋，与其他一些受到很多限制的专业比起来，感受到了风景园林的魅力与乐趣。

当然在工作中有许多的无奈，有太多的遗憾，很多好的思想、好的方案不能实施，有创新的、理想的，而且是合理的、具有操作性的方案经常甲方不敢用，做出的普通的、领导看着熟悉的反而容易被接受，也是我们当代体制的原因。好的方案只好存起来，敝帚自珍，间或写一写，希望不被埋没。

今年11月在重庆一年一度的风景园林规划设计学术交流会上，我谈了自己在完成北川新县城园林绿地规划设计的遗憾。确实是很遗憾，现场调研时的兴奋、树木被砍时的痛心、方案没有坚持下来的无奈时时涌现。《中国园林》主编王绍增先生在发言时谈到，我国的园林事业确实今非昔比，现在我们中国园林界缺少研究理论的大师，缺少对新的时代风格的探索，缺少对风景园林发展方向的研究。我们有着悠久博大的传统园林艺术，但如今我们该怎样走？怎样形成时代的特色或者大师自己的特色？很多的园林景观设计还处于学习，抑或叫做模仿阶段，希望是量变到质变，再过一两年、两三年会出现我们新的园林理论。

距我们2002年得奖已经8年多了，这些年我国获得的IFLA奖越来越多，今年更是囊括前三甲，令人振奋。希望我国的园林规划设计事业携大奖之东风蓬勃发展，在下一个十年中更创辉煌。（佘依爽、田乐、周明艳、涂先明 采访，佘依爽、涂先明 整理）

建造有益于弱势群体健康的空间
Landscaping for Disadvantaged Groups' Health

H ¤ ¤ δ爱丁堡艺术学院、爱丁堡大学景观设计学研究教授，OPENspace与I'D GO创始人、负责人。
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您从何时起开始关注于户外环境，那些对老年人、儿童和青少年有益健康环境的景观设计呢？这一点与其他景观设计师有很大的不同。

凯瑟琳·沃德·汤普森（以下简称汤普森）：我对于人在环境生活关系中的这一部分的研究从十多年前就开始了，但是重要的转变是在2001年，我得到了苏格兰政府的研究经费，一笔大学的基金，因为如果研究对于国家而言是很重要的开发项目的话，政府就会划拨给研究中心资金。在当时，这个课题是一个新的领域，而且非常重要，但却从没有人做过这方面的研究，所以我们建议成立研究中心，这也就是后来的“开放空间”研究中心（OPENspace）。我们在2001年筹建的研究中心对我们的研究很重要，我们也很关注那些对健康、旅游业、对残疾和边缘人群，以及为儿童和青少年亦很重要的景观。而我们得到了相当多的经费，在3年内获得了差不多50万英镑的资助，来发展我们的研究中心，以健全我们的研究体系，并培养工作人员和博士生。这使得我们的研究环境大为不同，我们获得了施展空间，我们可以就这一课题开始进行更广泛深入的研究。

而我最初对与儿童相关的景观产生兴趣的时候，是当我成为母亲之后，看着孩子玩耍的学校操场并不够好，我想：“为什么不为孩子们设计一个更好的游乐场呢？”所以，我对此开始研究。当我受邀做英国林业委员会的一些关于城镇附近的林地工作时，我们和当地人聊了聊他们如何使用林地后才意识到，景观对于各年龄层的人们、对于那些失业的人们而言是非常关键的，我也意识到景观对于那些处于社会底层的人们是何等的重要，包括贫困的人们、无处可去的青少年和年轻人。我对此越发感兴趣，后来我们有机会得到了一些资金，于是便进行了更深层次的研究。

据我们所知，您是两个重要组织——“开敞空间”（OPENspace）和“户外空间易达设计”（I'D GO, Inclusive Design for Getting Outdoors）的负责人，您的研究和目标都在关注为每个人提供方便易达的户外空间，并提高人们的生活质量。那么，我们想了解您的观念推广对象是谁？您期望公众更为关注户外空间对其生活的重要性，还是更期望其他景观设计师也多多关注这一问题？

汤普森：其实，都不是。我们主要在于说服国家和地方各级的政府官员、政策制定者和规划者，使他们认识到人们居住于良好景观之中的重要性。人们大概都会觉得每天外出时能有一个不错的去处很重要，当我们与人交谈时，他们也大多表示希望能有一个外出的好去处，所以这似乎是民生所愿。但是当我们决定城市服务设施的财政支出时，景观却往往得不到重视。虽然景观设计师应该去关注这些事情，但我的工作在一定程度上是要说服其他人必须为使人们住所的附近有良好景观而投入资金，不光是那些市中心的重要公园，而应当包括所有地方。这是我们的目标之一。

您出版的著作似乎在着重强调“体验”，而您也进行了相当多的研究，以了解人们在游览时的感受。您是如何获取和处理结果的？

汤普森：事实上，这两部分工作通常我们都会进行。我们始终认为，重要的是要了解你的设计对象，或者你关注的人们，所以我们一直同当地居民进行交谈，我们研究的是他们如何看待景观，有时候我们会组织小组进行重点问题讨论，并进行大规模的问卷调查。而且我们也会亲自踏勘场地，有时只是进行专家调查，有时与当地的居民一同外出，列出一些我们想去考察的地方，并向他们询问对于环境的看法。所以，我们通过专家的意见和当地居民走访两种途径获取信息，有时得到的结果非常相似，有时又有所不同。

如果在某地有一些好的经验结果，您会将其应用在其他地方吗？

汤普森：是的，我们总是在吸取我们先前已有实践中的经验。因此，比如说，我们做了一些林业委员会的研究工作，也在英国开展了一些有关开放空间的工作，对当地居民我们采用类似的调查问卷、类似的场地调查和方法，所以我们每一次做项目时都在尝试从最近的项目中所获得的经验。

那么您如何看待设计师的灵感同参观者的体验的关系？

汤普森：我们做的大部分工作不是比较设计师的灵感，而是比较专业的景观设计师们同当地居民对于场地的评价。通常情况下它们是非常相似的，除了一些安全观念——当你使用景观时，你对其安全性的一些感受，这是人们有否使用景观的一个重要原因。我们发现，当地人们的看法往往不同于来自外部的专家，人们了解当地情况，他们会感到什么是更安全的，或者什么是不安全的，他们在这方面要比专家更有发言权。但在品质较高、看起来很漂亮和维护得良好的区域，当地居民的看法则与专家十分相似。

我们主要研究的并非是那些最近设计的，或者有着非常高设计水平的公园或开放空间，而是经常关注那些当地的公园，它们可能并非有着时髦的样子，它们或许仅是有步道贯穿其中的乡土林地，也没有什么突出的设计特点。也就是说，我们不谈论那些有必要进行时髦设计，或者精心设计的区域。但对于因历久原因而需要设计投入的区域，我们较少关注设计意图，而更感兴趣的是人们对于场地、绿色空间的认识，人们如何使用它们，以及人们想做的事情是什么。因此，我们不问当地居民对于设计意图的看法，我们并不注重这一点，我们更感兴趣的是他们对环境的想法、他们想要做什么，以及他们的感受。尽管我认为设计的确很重要，但我们不关心使用者是否理解设计人员的理念，我们关心的是使用者对设计的感受，关心的是这些设计是否满足了使用者的需求。这就像当你开车时，你不会去想设计师在设计汽车时想要的是什么，你只会去想如何来使用这辆车，你能不能用这辆车做你想做的事情。这和使用公园是一样的。

您的目标是找到确保户外环境适宜于每个人的途径，不论老少。那么您是通过很好的结合方式以使设计适用于不同年龄层的使用者，还是根据不同的年龄层来分别进行设计？

汤普森：首先，应该说，我们进行的政策指导和场地研究要多于设计。虽然人们使用的大多数地方并不是新的，多为老旧的公园、林地，或其他类似的地方，但我们面临的挑战不是完全去做新的设计，往往却是如何去管理、去改变这些老旧的地方。虽然什么是人人皆宜的设计是一个有趣的问题，的确，必须得有一些公园是每一个人使用时都能感觉舒适的，特别是在城市或城镇中心，你需要有这么一些地方，老人、青年人、带着小孩子的人、游客……每个人都能感到宾至如归，舒适自在。但我们也意识到，如果你是一个十几岁的男孩，你想要有闲逛的去处，也许在同一个场地中时有些老人会感到不舒服，可青少年仍然需要可以释放活力的地方，他们需要有地方可以同朋友们出去玩儿，小孩子们想玩山地自行车或干其他什么事情。因此，我们需要一些空间能让这些年轻人可以来做这些事情，因为这是有益健康的，是成长的一部分。然而，你可能会说，并不是任何地方都欢迎他们的到来，（如果他们没有可玩耍的空间）那么他们就会觉得无聊，他们就会出去惹事，打破窗户，或者酗酒滋事。因此，我认为我们需要多样性，我们需要使人能够独处的场地，它们可以很荒野，而并非是那些维护得很好的景观和场地，它们可以包容每个人，不同的年龄层都可来此做他们想做的事情。我们应该给予青少年这样的空间来干一些冒险的事，因为这是健康的，尤其是在一定年龄阶段时，这是一个孩童向成人的过渡中必经的事情，而场地只是一个你可以闲逛、打破东西的地方。因此，我深信在城市中心应该同时拥有荒野凌乱的空间，以及美丽的公园。

您能否请解释一下关于有益的环境和人体健康的理论？

汤普森：基本上，在整个历史以及西方文化中，人们已经认识到，拥有不错的景观或有一个美丽的花园是有益于身心健康的。19世纪时，人们认为公园是逃离压力、城市生活和工作的好去处。因此，在西方传统中，公园以及景观是被视为健康的。但在20世纪，人们的注意力集中在空气污染和其他环境问题上，似乎户外环境由于受到污染也变得糟糕，人们关心的是环境所带来的疾病，以及与之相关的药物、手术、高科技的东西，但我们看到在20世纪末期，人们的想法实际上是如何来保持健康，而不是如何去治疗疾病，你需要一些特定的环境，所以易达的景观对于保持健康是很重要的。有越来越多的证据表明，居住在绿色环境附近要比其居住在没有绿色环境的都市区更为健康，特别是对那些贫穷的人、困苦的人而言。所以，我们进行的研究就是，如果你评判健康与环境的关系时，你需要考虑环境可以给我们带来的积极意义，而不仅仅是消极的方面。这就是景观何以重要的本质原因。再回到政策制定者和政府机构这方面来，如果他们想让我们保持健康的话，并不必（事后）为生病的人们支付那么多医药费，而需要（提前）为景观设计投入更多的资金。

我们了解到您有一本专著叫做《户外环境对人的生理活动的影响，特别是步行》（*The Influence of Outdoor Environments on People's Physical Activity, Particularly Walking*）。您能否就此为我们进一步地阐释？

汤普森：嗯，我一直在和运动科学家及医疗保健者一同工作，也许在中国还没有这么多的问题，但在西方国家，在那些不爱活动、运动不够，且过度饮食的人们，或者那些已超重又惯于久坐的人们身上已经存在了问题。这些都是不健康的生活方式，比如说会导致心脏病和糖尿病。而每个人几乎都会做的运动就是步行。并非人人都骑自行车，但几乎人人都可以步行。因此，健康学家说，如果你想找到一个方法让大家的身体状况比现在更具活力，使各年龄段的人们都保持健康，我们可以做的就是更多的步行。所以在西方国家，欧洲和美国等，都在强调人们应该多走路！步行上班，不坐公车或汽车，或在午餐时间散步等等。要多步行传达的就是这样的思想。

那么接下来的问题是为什么有人不喜欢走路，这里的原因是什么？环境和场地如何让人们觉得“是的，我们爱走路！”、“我会走下去，不再开车”或“不，我不希望到那里去”？这就是为什么关注环境状况和步行的原因。在西方国家我们面对这么严重的健康问题，因为我们过度饮食，并且惯于久坐。而在21世纪解决这个问题的唯一途径就是少坐，并进行更多的活动。再一次强调的是，景观是很重要的。我们可以促成一些变化——当然，不是所有变化——我们把糟糕的街道改造得更宜人，促进人们去散步。如果每个人的住处附近都有一个环境优美的地方，他们就更有可能说，“让我们去散步吧！”

最近我们对老年人进行了一些调查，询问他们对其而言什么（在景观中）是最重要的，我们有一些调查方法，并从中找出答案。例如我们知道，如果使用者到公园的路上车流量很大的话会是件很糟糕的事情。但是，人们确实喜欢树木、植物、自然环境、鸟语花香……所

以你可以造一个非常有吸引力的环境，人们也喜欢去那里，但是如果那里被大量交通所包围的话，人们就会想“我不想去那里了。”所以，我们鼓励人们使用这些空间，就应该把这些方方面面都考虑到，并要做得很周全。

您能更好地解释一下关于“为少数民族，以及对经济或社会弱势群体而设计的户外环境”的理念吗?

汤普森：不同的少数民族有不同的文化和传统，而并没有很多学者在研究少数民族的特有文化和环境，了解他们想要什么，他们会喜欢什么。所以我们最近做了一些研究，特别是在英国，在伦敦、曼彻斯特和一些英格兰中部大城市，并对不同种族群体进行了大型的调查、访谈。对于特定文化族群，我们努力去找出其如何使用环境，以及他们希望从环境中获取什么，因为——不是所有的——但各族裔群体中的多数是很贫穷的，他们没有能力去他们想去的地方，常常只能使用他们居所附近的环境。因此，如果我们想使他们也保持健康和良好品质的生活，那么需要考虑在公园中提供一些其他对当地的这些人群有益的东西。因此，我们一直在进行研究，试图找出每个群体各自注重的事物。

更广而言之，我们的部分工作是研究健康的空间形态，我们一直与流行病学专家合作，他们研究总人口的卫生健康格局。因此在全国各地，或地区范围、或城市范围内，他们研究人口总体健康状况，而非个体的健康状况。他们已经测绘出健康或非健康民众所在的区域。我们知道穷人的健康情况没有富人那么好，这在英国和其他西方国家是毋庸置疑的，如果你是穷人，你在一个贫穷的环境中生活，那会更可能导致你不健康。因此，如果你想确保全国每个人都有更好的健康水平，那么你关注贫困人口的话，将会带来最显著的改变。因此，整个欧洲的政策是试图提高最贫困人口的健康水平。因此，《苏格兰多重贫困指标》（*The Scottish Index of Multiple Deprivation*）指的是那些就业状况不佳的人们、生活环境质量较差的人们……在其中还有许多相关的说明。流行病学专家表示，至少在英国，居住在绿地附近的穷人比居住在较少绿色空间的穷人更健康。所以这就是为什么我有兴趣去了解最贫困人口的健康状况，以及我们如何将其与是否有一个良好易达的景观绿地联系在一起的原因，因为这将造成不同的影响。

我们观察贫困人口和少数民族群体，以及绿地中哪些（设计干预）是有效的，哪些是收效甚微的。当然，社区花园和给人们分配的可以种植自家食物的土地，都是非常受欢迎的方式。社区花园或这些分配的土地可以种人们自己的食物或花草，这可能会有助于那些有压力的人群，并促进他们的邻里关系。

不过，我认为我们必须面对现实，景观不能解决一切问题。如果你贫穷，解决你健康问题的最好办法是让你变得富有一点儿——给你一份工作，使你有收入——所以我们必须面对现实，问题是社会如何为——比如说——为青少年提供适合他们去做的有用的事情，他们中有些很贫困的，家庭背景也不好。这是社会问题，这超出了景观的范畴，但我们可以对此提供帮助。

当然，如果我们为处于压力之中的人们提供机会可以在自然环境中得到放松，这似乎是有效的。最近在苏格兰，很多人一直在做相关研究，我们同那些居住在大量绿地，或居住的地方绿地量很少的穷人们交谈。如果这些人感到紧张或烦躁，他们的居住条件有时会十分拥挤，也会有家庭争吵纠纷，喊叫声常常在耳，大家都没钱或是没有工作……如果他们拥有大量绿地，他们可以出去走走，会冷静下来；如果他们没有绿地，他们只能待在家中，或许只能呆在狭窄的空间中，因此这是不同的行为方式。我们认为，拥有大量绿地有助于健康，是由于它给人们提供了一个放松、舒缓的空间。

我们最近在苏格兰进行了一些研究，试图理解绿色空间和健康之间的关系，通过进行唾液测试，以得到皮质醇——一种反应人压力状况的荷尔蒙。因此我们要求人们来做这个测试，从而比较拥有大量绿地和无绿色空间对穷人的荷尔蒙的影响情况。我们也问他们一些问题，以了解他们的看法，同时我们也通过做这种荷尔蒙测试来客观衡量他们的压力水平。到目前为止，我们只能发现一些细小的差别，所以我们正在做一个更宏观的抽样调查测试，试图找出真正影响其背后关系的原因，因为对绿地的关注已经开始影响政策和实践工作。

目前我们正在做一些研究，以寻求绿地改变前后的差距会有多大、看到绿色空间或者到绿色空间中去是否重要。我们不太知道这些变化的差异究竟会有多大，所以我们还没有去改变景观，但我们鼓励规划者、决策者去考虑应该如何改变它们。因此我们还没有处于根据研究结果来兴建绿地的阶段，我们仍在发掘一些证据，以说服规划者、政府官员在他们的政策或方案计划中考虑改变景观。

您所谓的健康和不健康的标准是什么?

汤普森：我们使用了一系列不同的衡量标准，其中包括专家设置的健康和心理评估问题。评估都是单一的问题，比如你的年龄、你认为你的健康状况如何、你最近的非健康状况持续了多长，等等。然后有对于心理健康、生活满意度的询问，比如：你对目前生活的满意度如何；当你再获得一次生命，你是否会改变很多事情。我们也询问人们在最近一周或一个月内进行了多少运动，或有多少天做了运动，而使你的心跳加速。所以有大量的不同衡量标准，我们视特定的研究、特定的群体来运用我们的问题。

您还写过另一部专著，《野外探险空间对青少年生活的作用》（*The Role of Wild Adventure Space in Young People's Lives*）。然而，如今在一些像北京这样远离林地或山谷的大都市，或孩子的父母都很忙，没有时间带他们去野外探险，孩子们根本没有太多机会接近野外。那么您认为景观设计师应如何应对这个问题呢?

汤普森：我认为，城市环境需要大量的绿色基础设施，因为有越来越多的证据表明，年幼时期的经历会影响人的一生。从直觉上讲，我认为这很有道理。如此看来，如果你希望人们关心环境，也能在有压力时利用环境来放松，在景观中享受运动，可如果他们在年幼时没有这方面的经历，他们在长大后也可能不太很积极。因此，我们需要让我们的孩子进入到景观中去。

在英国，现在有时候一些社工会将年轻人带到乡野去，但如果能在他们住处附近拥有一些场地会更好。有些项目提供的或许是一片废弃场地，或许是建成一个社区花园，以使年轻人可以参与其中，在里面种植东西。这类项目看来是成功的，我们需要更多的地方供年轻人使用，并使他们感到自在。

显然，对于小孩子而言，需要与大孩子稍微不同的空间，这同时也是一个挑战，因为你需要一些带小孩的父母可以去的地方，但也要让年龄稍大的孩子可以在那里淘气玩闹，并确保不影响他人。孩子们需要在离家近的地方有些场地，他们可以到那里玩耍，家长也能感到放心，这样孩子们或许就可以感到自由自在。但是如果他们附近的场地条件很差，那么家长们就会不愿意让孩子们到那里去玩耍。景观设计师在这方面有着重要作用，但这又不仅仅是景观设计师的问题。这是一个更大的规划问题，也是城市设计问题。但是，我们必须让他们了解城市区域需要我们（景观设计师）介入的意义。

（田乐 等 采访，唐慧超 译，田乐 校）

When did you start giving more attention to the inclusive access to outdoor environments, landscape design for older people, for children and for teenagers, and salutogenic environments? It is quite different from other landscape architects.

Catharine Ward THOMPSON (THOMPSON hereafter): I have been interested in the “people” part of the environment-behaviour relationship for over ten years, but what made difference was, in 2001, I got research funding from the Scottish Government, their funding council for universities, who had money give to research centers for developing research capacity that is considered important and strategic for the country. And this topic was something new and very important, that no one had covered before, so we proposed the research center which became the OPENspace research center. We proposed the research center in 2001 as important for inclusive access and also focused on the landscape as important for health, for tourism, for disabled people and people who are excluded, and for children and young people. And we got quite a lot of money, nearly half a million pounds over three years, to develop our research center, to get some research staff for our research center and some PHD students. So that made big difference. We could build some capacities, and we could start much more research on the subject.

I suppose initially I was interested in children’s landscape when I was a parent, and I looked at the playground my children played in at school that was not good enough, and thought “so why do we not have better playgrounds for children?” So I started researching that. And when I was asked to do some work for the Forestry Commission about woodlands near towns, we talked with people about how they use woodlands and we realized that landscape is very important for people, for different ages, for people who do not have a job or are unemployed, and I just realized how important landscape could be to people who are disadvantaged, including the poor, teenagers and young people who have nowhere to go. I had the initial interest and then we had the chance to get some funding so it enhanced the interest.

As we know, you are the director of the two great organizations, OPENspace Research Centre and the I’DGO research consortium, and your research and aims are concerned with inclusive access to outdoor environments for everyone, to improve their quality of live. Well, we would like to know whom do you prefer to promote your perception to? Do you prefer that the public place more focus on the outdoor environments in their life or do you prefer other landscape designers to focus on this subject?

THOMPSON: Actually, neither of them. Principally, our work has persuaded policy makers and planners, and government officials at national and local levels about the importance of good landscape design where people live. In their everyday lives, people probably recognize the importance having a nice place to go outside; when we talked with people, mostly they said they like to have a nice place to go outside, so it seems to be a common factor. But when we decide how much money we spend on services in our city, often the priorities are not for landscape. Although landscape architects should pay attention to these things, partly my interest is to persuade other people that we must put money into good quality landscape near where people live, not just the important parks in city center but everywhere. So that is one of the aims of our research.

Having an awareness of your publications, it seems there is a lot of emphasis on the “experience”, and you undertook quite a lot of research to understand how people feel during visits to open space. How do you gather and interpret the results? Do you survey people or analyse landscape designs?

THOMPSON: Actually, we usually do a little bit of both. We always believe the important thing is to ask the people you design for or are interested in. So we always talk to the people who are the local residents where we are researching about the perceptions they have of the landscape, and sometime we do a combination of focus groups to discuss the issues, and then do a big survey by questionnaire. But we also go out to look the site ourselves, sometimes we do just an expert survey, sometimes we go out with the local people. We have developed some checklists, and ask them to tell us what they think about the environment; so we get an expert view and the local people tell us their views as well. Often is the two are quite similar, but sometimes they are different.

If there is some experience that is identified as good in one place, will you use it in considering other places elsewhere?

THOMPSON: Yes, we always build on what we have learnt before. So, for example, we had done some Forestry Commission research work on open space experience in Scotland, and when we were asked to do some research on open space in England, we used a similar questionnaire, similar site surveys and methods with local people. In this way, we try each time when we do a project to build what we learnt from the last one.

And what is your view about the relationship between designers’ landscape inspiration and the visitors’ experience?

THOMPSON: Mostly what we have done is not to compare the designers’ inspiration but to compare the professional landscape architects’ assessment of a site with the local people’s assessment. They are often quite similar, except for some perceptions of safety — how safe you feel when you use the landscape, which is an important part of why people want to use landscape or not. We found that the local perception is often different from the expert coming from outside; people know the local area and they will feel safer or less safe, and they will feel it more than an expert trying to assess that. But in terms of the high quality places which look attractive and well maintained, we found their assessment is very similar between the local and the expert.

Mostly we research parks or open space that does not have recent design input or a very high level of design; often we study local parks which may not be very high style, or local woodlands which just have paths through but not big design features. So we do not talk about areas that have necessarily being recently designed, or have a very elaborate design. But in places that have been developed over time and where there is a design input, we are less concerned about what the design intentions was, and more interested in how people think about the site, the green space, how they use it and what do they want to do. We do not ask people what they think about the designers’ intention, we do not worry about that, and we are much more interested in what they think about the environment, what they want to do and how they feel about it. Although I think the design is important, we do not worry about what the users think the designers wanted, we worry about how the users think the design works for them. It is like when you use a car, you do not think about what the designer wanted when he designed the car. You just think how does it work for me, could I do what I want to do with this car? So it is the same with parks.

Your target is to identify the ways of ensuring the outdoor environments are designed for everyone, including seniors, children and young people. And my question is, do your designs combine the different groups together in a way, or do each of your designs vary according to each of the groups?

THOMPSON: Firstly, we should say we inform policy and do site research more than design. Most places that people use are not new, they are old parks or woodlands or something similar, and often the challenge is how to manage, how to change, these places, but there is less interest in completely new design. It is an interesting question however to ask about what is design for everybody, and yes, there must be some parks that should feel comfortable for everybody to use; particularly in center of towns or cities, you need places where old people, young people, people with children, visitors, where everybody will feel welcome and comfortable. But we also recognize that if you were a teenage boy, you might want some places to hang out, and maybe some old people will feel uncomfortable in the same place. Teenagers still need places to be energetic, to hang out with their friend or whatever; and some kids want to be energetic with mountain bikes, etc. So we need the space so that these young people can still do those things because it is healthy, and it is part of growing up. However, if they are not welcome anywhere, then they will feel bored, may go out and break windows, or get drunk. So I think we need variety: we need places where people can be alone, and where they can be quite wild, not in very highly managed landscape; and we also need places that are inclusive of everybody, where different age groups are welcome and can find space for the things they want to do. We should allow teenagers opportunities for more risky activity because it is actually healthy, and particularly at a certain age when you go from being a child to being an adult, you need a place you can hang out, break things like tree branches without it being considered vandalism, make the space your own. So I greatly believe in having wild

messy spaces as well as beautiful parks in the center of the cities.

Could you explain the theory of yours about salutogenic environments and human health?

THOMPSON: Essentially, in the western culture as well throughout history, people have recognized that having a nice landscape or having a nice garden is good for your physical health and mental health. In the 19th century, people also talked about parks being good to get away from the pressures of their city lives and work. So there is a western tradition of seeing the park as well as the wider landscape as healthy. But in the 20th century, attention became focused on the air pollution and other bad things in the environment, and it seemed that the outdoors was viewed as bad because of the pollution and all the illnesses associated with polluted environments, and attention was on treating illness, medicine, surgery and high-tech things, all of which were important. But we saw, in the latter part of the 20th century, the idea that in order to stay healthy rather than to treat illness, you need certain kinds of environment, so that was when good access to landscape was seen again as important to stay healthy. There is a growing evidence that it makes a difference to people, especially poor people and deprived people. If they live near a green environment, that can help people stay healthier than they if have an urban area with no green space. So what we are doing in our research is trying to say: if you are looking at links between health and environment, you need to think about the positive things the environment can offer, not just the negative, that is why landscape architecture is really important. When that ties back to the work of policy makers and government agencies, we are saying if you want us to stay healthy, not to have to pay so much for ill people, you need to spend more money on landscape architecture.

We read one of your publications is on *The Influence of Outdoor Environments on People's Physical Activity, Particularly Walking*. So could you offer us more about this?

THOMPSON: Well, I have been working with people who are sports scientists and medical health people, and there may be not so much of a problem in China yet, but in the western world there is a problem with people who are inactive, not physically active enough, and they eat too much so they are overweight, and sit too much. All of them are really unhealthy and can lead to cardiopathy disease and diabetes, for example. The one activity nearly everybody does is walk. Some people bicycle but not everybody, but almost everybody can walk. So the health scientists say that if you want to find one way to make everybody physically more active than we are now, which we need to do to stay healthy into old age, then the one thing we could do more is walk. So there is a lot of emphasis on trying to increase it in the western world, in Europe and the US, getting people to walk more! Walking to work, not taking the car, or taking a walk at lunchtime and whatever; just walk more is a big message.

So then the questions are: why do people not like walking, what are the problems, what makes the environment a place where people say "Yes, we like walking!" or "I will walk, I will not take my car" or "No, I do not want to walk there." That is why there is such an interest in walking and the environment. The recognition is that we face such a big health problem in the western world, because we eat too much food and we sit too much; the only way we are not going to have a big, big problem in the 21st century is if we sit less and undertake more physical activities. And again, landscape architecture is important there, because we could make the difference — not all the difference — but some of the difference between whether walking down the street is horrible or walking down the street and in parks is pleasant. If everybody has a very beautiful place near where they live, they are much more likely to say "Let us go for walk!"

Well, we have done some surveys most recently with old people, asking them what is the most important thing, and we have some survey methods to help us see which is the most important. So, for example, we know that heavy traffic between users and the park is a very big deterrent. But people like trees, plants, the natural environments, hearing the birds... So you can have a very attractive environment and people would love to go there, but if there is a lot of traffic around, people will think "I do not want to go there." So you should get all of these things right to encourage people use these spaces.

Could you explain more about the idea of "making outdoor environments for minority ethnic groups, and for economically or socially disadvantaged groups"?

THOMPSON: Different minority ethnic groups have different culture and traditions, and there is not a lot of research looking at specific cultures within minority ethnic groups and the environment to see what they want, what they would like. So we have recently done some research, particularly in England, in London, in Manchester and some of the big cities in the English Midlands, doing some large surveys with different ethnic groups and talking to them in focus groups. In particular minority ethnic groups, we try to find out how they use the environment and what they would like from it. Because not all, but many, of the ethnic groups are very poor and they do not have the ability to go anywhere they want, and often they just use the environment near where they live. If we want to support them also to be healthy and have good quality of life, then we need to think about what other things we should be providing in a local park that would be good for these local groups. So we have been doing research, trying to find out what things are important for each of the groups.

More generally, some of our work is on spatial patterns of health and environment. We have been working with epidemiologists, who do health research looking at patterns of health for the whole population. So they may study across the whole country or a regional or urban area, and they look at overall population health but also individual health, and they have been mapping where people are healthy or unhealthy. We know poor people are less healthy than rich people. It is certainly true in the UK and other western world countries that, if you are poor, if you live in a poor environment, you more likely to be unhealthy. So if you want to ensure that everybody in the country has a better level of health, then you focus on the poor people because that is the way you can make most difference. The policy across Europe is trying to lift the health levels of the people who are poorest. *The Scottish Index of Multiple Deprivation* identifies people who have a poor level of employment, poor quality of life, poor environment, etc., there is a range of things included in the index. And epidemiologists have shown that, in England at least, poor people who live in near lots of green space are healthier than poor people who live near less green space. So that is the reason why I have an interest in understanding the poorest people: what is their health like, and can we relate it to whether they have a good landscape and access to green space or not, because it seems to make difference.

We are looking at poor deprived people and minority ethnic groups, and looking at what works and what does not work in green space. Certainly, community gardens and allotments where you can grow your own food, seem to be very popular. Having a community garden or allotment where you can grow your own food or flowers seems to help stressed people, and may help you to have a good relationship with your neighbor.

However, I think we have to be realistic, as landscape cannot solve everything. If you are very poor, the best way to improve your health is to make you less poor — give you a job, give you income — so we have to be realistic. The problem of teenagers and young people in society, for example, is partly an issue of how society treats them or finds useful thing for teenagers to do. Some of them are poor teenagers and their backgrounds are disadvantaged, so there is a social problem, which is beyond the landscape to resolve, but we can help.

Certainly, if we do provide opportunities for people to engage with the natural environment, to relax when they are stressed, that seems to help. We have been doing some research recently in Scotland, where we talked with poor people with lots of green space and poor people with little green space. If such people are feeling stressed or fretful, sometimes they are living in very crowded conditions, with family arguments, people shouting, no one has money or no one has a job, if they have lots of green space, they go out and have a walk, and calm down; if they do not have green space, they just stay inside and maybe sit in a small room, so the behaviors are quite different. We think maybe it is partly why having lots of green space helps health, because it gives you a space to release tension and stress.

We are currently doing some work in Scotland to try understand the relationship between green space and health, where we take tests from people's saliva, to get a measure of cortisol — a hormone that shows how stressed they are. We ask people to do this test, and we compare poor people with lots of green space or with no green space in relation to their hormone levels. We also ask some questions about what their perceptions and experiences are, but we also do this hormone test to measure objectively how stressed they are. So far, we just could see a little difference, so we are doing a bigger sample to find out and understand more about what is behind the relationship making a difference because interest in green space has started to influence policies and practice.

At the moment we are doing research to find out how much difference green space could make, and whether it is important to be able to see green space, or to be able to visit the green space. We do not quite know how much difference such things make, so we have not changed the landscapes, but we try to encourage planners, policy makers to think about how they should develop or change them. We have not yet gone to the stage where people have put more green space in, on the basis of our research; we are still developing the evidence to persuade planners and government officials thinking about changing their policies and plans.

What is your criterion of healthy and unhealthy?

THOMPSON: We use a number of different measures. Some of them are validated questions on health and psychology which experts produced. There are single question ones, such as what is your age, how good do you think your health is, and how many days have you been unhealthy recently. Then there are scales that ask about mental health, satisfaction with life: for example, asking how satisfied you are with your life so far, or whether, if you could live your life again, you would change lots of things. We also ask about how much physical activity you do in last week or month, or how many days have you done physical activity that gets your heart rate going faster. So there are a number of different scales we use in our questionnaires, depending on the particular research, and the particular groups we are working with.

There is a publication of yours: *The Role of Wild Adventure Space in Young People's Lives*. However, nowadays in some Metropolises, like Beijing, which are far away from woodlands or valleys, or where the children's parents are too busy to take them to go someplace for wild adventure, the children do not have many opportunities to get close to wild nature. What do you think landscape architects could do about this issue?

THOMPSON: I think we need to argue for much more green infrastructure in our urban environments because there is growing evidence that your early children experience makes difference for the whole of your life. I mean, it makes sense intuitively. It seems that, if you want people to care about the environment but also to be able to use the environment for relaxation when they stressed, to enjoy being physically active in the landscape, if they do not have that experience when they were children, they are less likely to be positive about it when they are older. So we need to pay attention to our children getting access to landscape.

Sometimes what is happening at the moment in the UK is that social workers take young people out to the countryside. This is good, but it is even better if they can have some place near to where they live. There are some projects that provide areas for children and teenagers where there may be waste land, perhaps make a community garden where young people could engage in growing things. These kinds of projects seem to be successful and we need more of them that young people can use and feel comfortable with.

Obviously, for little children, you need slightly different spaces from for older children, so it is also a challenge because you need places where parents with little children can go, but also places where older children can mess about and make sure it will not be a problem for other people. Children need places near home where they can go and parents could feel it is OK, and they can have a little bit of freedom to be themselves, but if the nearest places are bad, we would have problems to let them run freely. The landscape architect has an important role, but not just landscape architect. It is a bigger planning issue, an urban design issue as well. But we have to produce the evidence of why these urban areas need our intervention. (Interviewed by Tina TIAN etc, Translated by Huichao TANG, Proofread by Tina TIAN)

保护、恢复与重组：就气候变化的影响访谈克里斯蒂娜·希尔
To Protect, Renew, and Re-Tool: An Interview with Kristina Hill on Managing the Effects of Climate Change

' □ ¤ ♩˜ δ博士，美国景观设计师协会成员，弗吉尼亚大学景观设计系主任。
Kristina HILL: PhD, Affiliate ASLA, Chair of the Landscape Architecture Department at the University of Virginia.

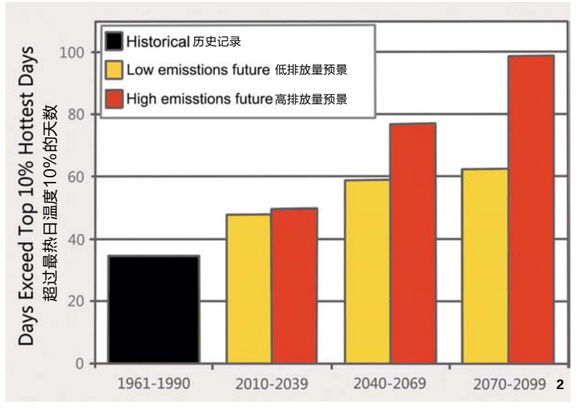
ASLA：在最近的野生动物栖息地设计会议上，您提到由于城市热岛效应，城市总是比其周边地区气温更高。于是城市就成了气候变化的预警。事实上，“气候变化的影响在城市中体现得最为突出”。那么能否结合城市应对温度升高方面的经验教训，为我们提供一些减轻和适应气候变化的建议呢？

克里斯蒂娜·希尔（以下简称希尔）：事实上，我觉得我们现在知道了解的“教训”还真的太少——也许除非我们想要打一场无准备之仗！在美国，我们生活在我称之为“美国媒体泡沫”的时代——与加拿大和欧洲的媒体同行不一样，美国媒体不靠刊登有关气候变化的东西来增加销量。由于他们并不在乎世界其他地方刊载了什么头条新闻，以至于普通的美国民众也不知道什么是岌岌可危。这样做的结果就是，他们选出的官员也不积极采取行动。然而，世界上其他国家都已经开始准备。我们的经济前景、健康、安全以及我们许多公民的福利，都要靠从美国以外的其他地方的优秀实践中学习经验。

我倒可以谈谈经验有哪些。我知道的最佳方式可以简单描述为通过3类行动，即保护、恢复和重组来实现。这是指，保护最脆弱的人群和地区，特别是那些在未来将会具有最丰富的多样性和最大灵活度的地方；恢复我们的基础资源，比如土壤肥力、水质和水量、空气质量，以及人类健康；重组是指改变城市系统——建筑物、交通、景观——使之耗用较少的能源（因为能源的消耗仍然是以CO_2排放量为指标，除非你只使用清洁能源），并且在当地产生较少的不可回收废弃物。我将会提供一些案例，因为这所有的3类行动都需要空间战略规划，并可以为那些引导城市改造的景观设计师起到重要作用。大多数美国城市还都只停留在观察、估算气候变化的影响程度上，但欧洲城市已经采取了行动，并成为了我们参照的对象。

城市在许多方面体现了其受气候变化的影响。首先，在这个意义上说，太多的人们的生命和财产受到威胁，这迫使他们采取行动来适应这些变化。作为欧洲最大的货运港口城市，鹿特丹正致力于使其成为“气候证据”，它为

1



2

日益增加的大部分荷兰人口提供着住所，而且荷兰人相信他们具备与不断变化的水共同生活的能力。他们认为不仅在荷兰本国会这样，在其他国家亦是如此——他们可以同世界上所有城市共同分享这种知识和能力带来的益处。伦敦在泰晤士河上修建了世界上最著名的风暴屏障之一（图1），因为市中心的土地非常宝贵，而且人口众多，他们不能不加以保护。汉堡应用了不同的策略——这也是由于局限在它城市内部的货运港口位置所决定的。它可以允许洪水入城，但是在城市中设计了的一项可以适应高水位的重要的新部分：防水车库、一个位于街道上方约6m处的紧急步行通道网络，而且地面上没有住宅单位。甚至海港城市新区的公园也被设计为或随着水位上升而漂浮，或设立大量只需要在水退之后便可撤走的硬质铺装，来抵御海浪和风暴的种种侵害。

这些例子属于适应性行动的“保护”范畴。因此，要努力保护朝北的斜坡，因为现今在那些斜坡上的许多乡土植物物种可能在面对更极端、更普遍、持续时间更长的夏季热浪和干旱时会存活得最久。北坡，可能就是我们的诺亚方舟，带领我们和物种进入未来，如果可能的话，它可以为物种在习性上或遗传上适应未来环境争取到时间。

但是，从道德的角度来讲，保护城市的最重要的途径是保护生活在城市中的最脆弱的族群：低收入家庭的孩子和他们的照料者（通常是单身母亲）、病人和老人。在世界各地，中产阶级及以上的人们都有能力保护他们自己。他们会买较好的空调，支付由于燃料价格上涨造成的更多的电费，当洪水到来时可以住在酒店里，当他们需要时便可获得医疗保健，甚至可以在脆弱度较低的地方购置房屋并迁去居住。出生在贫困家庭的孩子则处于一个非常不同的情况，他们的母亲在没有钱请人帮忙的状况下，不得不一边工作一边照顾他们。新奥尔良的许多月光族，在卡特里娜飓风来时还没有撤离，不是因为他们非常固执或者还没意识到危险，而是因为到月底了，他们支付不起住汽车旅馆的费用。或者有的人没有自己的车以在第一时间撤离。世界上大多数人都是这么穷困。如果说我们要去适应，我们就需要帮助他们去适应。这些儿童是我们未来创造力的希望。不保护儿童的城市适应不仅是不道德的，也是不明智的。

ASLA：纽约、伦敦等主要城市已制定了详细的气候变化适应行动计划。您认为在发展这些计划时，城市最需要关注的是什么？那么如何以非常有限的资源来对较小的社区进行规划呢？

希尔：我可以就这个问题谈谈恢复和重组行动的案例。在美国，芝加哥拥有最详尽也是最具有战略意义的气候适应计划（图2）。理查德·戴利（Richard Daley）市长将环境问题列为他优先考虑的事项之一，并且他和他的同事在这方面已经做得非常出色了。即便如此，他们大多可以很好地指出问题是什么——但是无法提出解决方案。这主要是因为问题会随着时间的推移而出现，而在我们的气候政治中，在某个问题成为市民日常生活的一部分之前，你很难花费众多的公共财产去提前预防。过去的一年就是一个很好的例子——冬季，像华盛顿之类的城市都遭遇了不同寻常的大暴雪，还有人说“全球变暖”是一个骗局。而到夏天，我们则发现我们仿佛经历了地球有史以来最热的一年。它甚至超过了2005年的那场高温。人们很难理解真正的问题不是一个逐渐变暖的趋势；真正的问题是我们正面临着极端气候事件的增加——从暴雪到高温，从洪水到干旱。今年巴西、巴基斯坦的洪水已经侵害了千百万人的健康和安全，其中大多数都是儿童。城市必须认识到这并不是针对夏季温度平均高出2~10℃而做的规划；降雨、洪水、干旱，以及热浪持续时间各方面都出现了新的极端现象，这才将是真正挑战基础设施且影响我们生活的事情。城市需要把重点放在这些极端事件上，从而在这些极端环境的持续时间和规模面前，使我们的投入变得更加有弹性。

这就是我说的“重组”的意思。城市系统意味着庞大的公众投入，一旦建成，在这些昂贵的系统在获得显著改变之前，由于建设而造成的债务增长将会产生一个长时间的滞后期。景观设计师必须介入这些围绕公众投入的政策和规划的讨论中去。如果我们为自己和那些我们关心、在乎的每一个人去设计房子和景观，从现在开始的30年后，我们并不会以我们今天的收入和需求为基础而进行考量。在城市建设基础设施，或发展/重新发展大面积的土地时，这些项目都意味需要具备价值或功能，需要为其后至少30年的运行而做筹备；许多项目还打算运作50年或70年，也许更长时间。在极端气候不断增加的时代，我们需要对这些城市空间和体系能否真正按照设计目标运行进行质疑，因为在世界各地，我们和几乎我们关心的每一个人都生活在其中。我们需要知道关系着未来的债务与其运营的投入决策。如果不能增加我们未来的适应能力，那么我们就不应该令那些会使社会背负30~40年的公共债务的项目通过；如果这些项目无法增加我们的应变力，那我们将仅支付其今天的费用，或者说，这样的项目根本就不该建设。

从经济和新的土地利用抉择方面来说，将因反复维护而耗资高昂，却得不到充分利用且有污染的道路撤掉是有一定道理的。南布朗克斯（South Bronx）对清除谢里丹（Sheridan）高速公路所做的努力就是一个很好的例子：它可以改用作由公共和市价居住用地、可以提高该地区防洪能力并可以在天气炎热时可作为清洁之地供人游泳的公园所组成的混合用地。其他城市——从波特兰到旧金山，从密尔沃基（Milwaukee）到普罗维登斯（Providence）——都已撤掉了高速公路。这种资本投入在短期内是昂贵的，但相较于不远的未来而言，随着应变力的提高，则可能会节省公共资金。如果我们想要城市避免将自己推入死胡同的命运——生活质量有所降低，经济竞争力也不如以往，那么我们必须将关于公共基础设施的想法从早期的“多多益善”的态度中做非常彻底地改变。

城市做公债决策的时候，需要对应变能力进行关注。如果他们投资新建高速公路项目，但并不在交通方面增设重要的可选方案（例如公共交通），那么他们可就大错特错了。这些城市将会长久地为这些非适应项目担负费用，他们也不再会有什么资金可用于适应性项目上。另一方面，对于不断发展的城市而言，像公共交通这样的项目应该延长其偿还债务的时间，使它们不至于被债务压垮，因为它们将使未来居住于其中的人们有更多的选择自由。这些是具有未来灵活性的投入，并提高了我们应对诸如燃料价格的上涨等趋势的能力。这也是对适应能力的一场投资。设计师、公共宣传团体、行政官员、政府机构和债券评估机构应该使用这样的标准，从而在应对气候变化的问题上做出更明智的决策，并改变设计人员在城市中的工作类型。相对于过去150年中基础设施仅作单一职能，在不久的将来这种职能只是现今基础设施的一部分。

我认为大城市必须将集中和分散的基础设施都纳入其投入之中。另一方面，就小城镇而言，将不得不做出选择，要么鼓励高密度居住，要么使更多的人以经济的、健康的方式生活在格网空间中。若选择高密度居住的话，我们则可以使用集中式系统，使这些小城市更加宜居（包括较少的车流、更适于步行的街区、相对不太昂贵的基础设施服务）。若选择后者，则会采用能源、水和垃圾户户独立的方式，并使用较为清洁的交通技术（如电动车），那么小城市可以减少提供的服务，并通过抑制它们的费用增长使其更具有应变能力。相较之下，后一个策略显得过于乐观：将来会出现那些更加清洁的、入户式的、人们也能够负担得起的技术，而且人们也愿意接受它们所带来的局限。而我不是这样的技术乐观主义者，所以我主张前一个战略——高密度。

俄亥俄州的扬斯敦市（Youngstown）为小城市提供了一个“恢复”行动的范例。“恢复”，我的意思是恢复基础资源，例如土壤肥力、水和空气质量、健康及粮食安全。我通过媒体得知的这一报道：当选的官员决定使用空间战略收购废弃的房产，创造一个公园系统，以便为今后的居民提供较高质量的生活。通过制定连续的植物规划方案（采用有限的维护干预措施）和利用生物过程来帮助净化土壤和水，该公园系统的植被和水资源将随着时间慢慢“增长”。采取长远计划的小城镇，能花费50年的时间来比较和取舍那些可供选择的不同战略，并在更为健康的环境下关注他们的生活质量，在地域角度上灵活变通的未来经济中，这些小城镇将会成为吸引人前来居住的地方。如果土地收购规划得好，并且短期用途也适应今天的需求——就是说，本土粮食生产，或甚至于多功能地形车的娱乐活动，只要其能有助于植物演替——那么同样，这些面向未来的绿色基础设施也能在短期内使市长获得连任。

ASLA：气候变化可能会造成动植物的大规模迁移。您说过，为了躲避逐渐升高的气温，物种与其向北迁移，不如以抬高生存海拔的方式来得有效。不幸的是，对于许多物种来说，没有更高的海拔可供迁徙。那有什么样的设计方案可以对之有所帮助呢？

希尔：那些针对一级保护地（区）生物多样性的最重要且延用至今的规划设计策略有两个途径：第一，在这些土地边缘增加缓冲地带，限制或阻止其发展。这一点对北向坡面尤其重要，因为在北坡上，有特色的地域性物种在干旱和极端温度不断增加的时代更容易存活下来。第二，教育公众有关减少被景观生态学家称为“基质”——包括自然保护区之外的所有已被开发的景观——的负面影响的重要性。这是一种战略，生态学家有时称之为“减少基质对抗”。这基本上意味着即使那些被开发的景观也可以促进一个地区的整体能力，以供开发前就存在于那里的敏感物种继续在此生长。例如，当每块开发用地能管理着自身雨水径流的质量和数量时，它有助于建立一个更加健康与可持续的区域生物多样性。如果这些土地中包含可供乡土昆虫生长的肥沃土壤和植物，甚至还混杂有一些直立的枯木的话，就更有可能为本土鸟类的“驻足歇脚”或栖息提供环境。改善空气质量可以使昆虫有可能在开发景观中栖息和传授花粉。减少道路噪声有利于湿地附近的青蛙使用声音进行交配。建立野生动物的地上地下通道可以让动物穿越过度开发的景观进行迁移和扩散。

此外，为了确保缓冲区可以维持被保护的斑块，并减少该地区的“基质对抗”，气候变化创造了在所有的空间尺度上增加廊道和阶梯的必要——包括南北（跨纬度连接）和上下（连接海拔梯度）（图3）。生态学家斯图尔特·皮姆（Stuart Pimm）在最近的一篇文章中曾指出，在获得相同温度降低效果的基础上，动物通过在侧坡上移动几千英尺以使海拔提升几百英尺，要比它们向北迁移数百英里更为有效。但要沿着海拔爬行如履薄冰，因为这意味着物种越来越多，空间也就越来越少——这样的解决方案也会受到山的高度所限制。

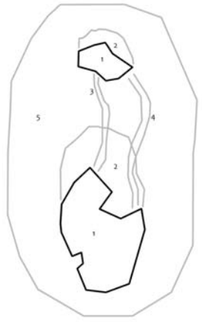
我发展这个概念是为了帮助学生们理解在越来越暖的气候中，气温较低的山坡可能会扮演的特殊功能角色。我们现在认为乡土植物将在北坡存活最久，而将最先从那些气温最高的坡面上渐渐消失（图4）。

最大的问题在于时间。如果一个地区的特有物种开始消失，那么幸存下来的物种还能够随着新的季节变化条件继续存活，并在自己的区域内找到合适的地点栖息，而且可以在自己消亡之前成功地繁殖后代吗？当地什么时候才会出现它们所需的食物呢？新的捕食者、寄生者以及竞争者又会在什么时候加入到它们的食物链中来呢？这是一种非常复杂的四维博弈，而不是朝北迁移或者海拔上升这样的简单问题。这就是为什么没有人能够真正预测到底哪些物种将会幸存在哪些地方，这场存活之剧又最终将以何种结局收场。

潜在的新空间战略中包括保护北向坡面，通过水路和山脊将它们彼此连接。我希望我们

1. **泰晤士河风暴屏障** © Steve W. Harris
2. **芝加哥气候行动计划。芝加哥预计在50~60年内的极端高温天气将会是目前经历的两倍，并将会对当地的经济、基础设施，甚至旅游产生影响。**© Chicago Climate Action Plan

1. Thames Storm Barrier © Steve W. Harris
2. Chicago Climate Action Plan. Chicago expects to experience more than twice as many extreme heat days within 50-60 years than it does now, with impacts on its local economy, infrastructure, and even tourism. © Chicago Climate Action Plan



5 basic adaptation strategies for conservation reserves
5条基本的自然资源保护适应策略

1 maintain exsting reserves
维持现有资源
2 enlarge reserves northward
扩大北向资源保护
3 add high-elevation corridors
增加高海拔廊道
4 add riparian corridors
增加滨水廊道
5 reduce matrix hostility
减少基质对抗

patches with northern aspects may act as corridors and stepping stones ("ladder rungs") within regional landscapes
北向的斑块可以作为廊道和跳板（地域景观中的“阶梯”）

3

4

3. **自然保护区的5种适应性策略** © Kristina Hill
4. **我发展的这个概念是为了帮助学生们理解特殊温度较低的斜坡可能会在较暖气候中所扮演的功能角色。我们现在认为原生植物将在北坡坚持时间最长，而且最先消失于最温暖的坡度上。** © Kristina Hill
3. Basic spatial interventions being discussed in the conservation literature as ways to adapt existing conservation reserves to climate change. © Kristina Hill
4. This concept is one that I developed to help students understand the special functional role that cooler slopes will probably play in a warmer climate. What we now think of as native plants will persist longest on north-facing slopes, and be lost first on the warmest slopes. © Kristina Hill

将在未来10~20年内看到法律的制定，在气温升高加剧和干旱事件不断增加的时期，这些坡面能够为生物多样性提供潜在的庇护场所。但是即使没有法律，设计师和规划者也可以将之纳入他们自身以及他们的客户的考量之中。像阿巴拉契亚（Appalachia）的海湾森林，这些温度较低的保护区将在气候变化之时成为许多地区的特有物种的生存庇护之地——使它们成为将来栖所多样性，也可能或是性状多样性的关键因素。

ASLA：您曾讲到气候变化将带来动植物的分布和特点的变化。此外，有些植物和动物还可能受益于气候变化。那么气候变化将会如何影响物种分布？什么样的性征会使一些植物和动物更好地去适应呢？

希尔：生态学家斯图尔特·皮姆已关注到了上述问题，并且在《当代生物学》（*Current Biology*）杂志2009年7月刊登了非常详尽且通俗易懂的文章。他为这些复杂动态的可能变化提供了很好的例子，这也是我见过的最好的举例论证。斯图尔特·皮姆举了英国蝴蝶的例子，这些蝴蝶最近扩大了其生存范围，因为它们改变了寄主植物（这些蝴蝶曾局限于一种寄主植物）；也有可能，蝴蝶还仍只和一种寄主植物产生联系，但由于气温的升高扩大了其寄主植物的地理范围，因而也就扩大了蝴蝶的生存范围。他提出当某些物种灭绝时，物种如何能够利用这种生态系统“空缺”优势的问题——该地是否已具备了新物种所需的资源？比如，某种鸟在出现在某地之前，那里是不是已经就有了它所捕食的昆虫了呢？昆虫会被新的竞争者吃掉，可能导致这种鸟无法找到足够的食物吗？这些变化将涉及到很多具体的时机问题，物种分布的新格局可能需要几十年、甚至几百年才能决定。

生物学家预测一些物种受益于气候的干扰，而其他物种可能因气候紊乱而灭亡。例如，我的一个弗吉尼亚大学同事迈克尔·佩斯（Michael Pace）最近发现，哈得逊河（Hudson River）中的淡水壳菜（zebra mussel）数量似乎在随着气温的上升而下降。几十年来我们一直担心这一引进物种带来的影响。淡水壳菜数量增长的问题实际上是可以因水域变暖而被抑制的。不幸的是，世界各地的许多物种都将由于这些复杂的变化从地球上灭绝。另一个例子就是美国西部的一些重要树种的种子已经成为灰熊的主食，这加剧了人与熊之间的矛盾冲突。最近，在黄石国家公园（Yellowstone）的北部，一个野营者被杀害，这归咎于灰熊幼崽得不到充足的食物营养，同时，白皮松——一种灰熊的重要食物来源——的数量也已由于旱灾和虫害等原因有所下降。我们可能想知道为什么熊变得更加危险，然后便发现这与气候破坏形成的相关压力之间存在着一种联系。

直接些讲，当周围环境发生变化时，我们无法预测捕食者、被食者、寄生者、共生者与竞争者之间的相互作用。我们不能只通过一张耐寒适应地图，就把今天的物种向北平移几个州。这不会是件如此简单的事。比如，当你考虑病菌对某个树种的侵害的影响时，认为气候变化能导致一场向北平稳迁徙便似乎显得有些可笑。如果荷兰榆树病（Dutch Elm Disease）的发生是随着气候变化而产生的，又将会怎样？我们可能最终得出结论：关键物种将从某一区域的“适宜”植物新组合中消失。它们的种子可能会到新的地区，但即使气候合宜，它们也可能无法生存。

在性状方面，许多人没有意识到这实际上存在更丰富的性状多样性——而不是物种多样性——使生态系统具有了更高的生产率。如果未来的物种较少，但具备同样或更多的性状，生态系统产生功能性能的水平（例如净化空气和水，或者通过光合作用提供能量）可能不会改变。但是，我们还不能很好地预测性征是否会、或者将以怎样的速度去增加和丰富物种或生态系统中的性状多样性。因此，大多数人用物种多样性的“指标”来表达性状多样性，也许我们应继续这样做下去，直到我们有更好的方法来预测性征如何发生变化。

ASLA：在芝加哥市区和其他城市中心，人们发现郊狼和其他野生动物在地铁、超市里面翻挖垃圾箱来觅食。什么样的设计可以帮助由于自然环境改变而开始“城市生活”的动物们呢？

希尔：从战略角度来看，这是一个有趣的问题。已经、或刚刚开始在城市环境中立稳脚跟的物种可能不需要我们的帮助，因为它们找到了自己在人类主宰的环境中的生存方式。然而，它们可能会激发人们新的观点、伦理讨论和管理关系。我认为这是真正有趣的部分——我们对这些动物的文化观点改变了吗？也许，我们关于其他动物对于人类意义的认知可能改变了。如果一种会对我们的孩子造成威胁的动物能够在城市中茁壮地繁衍生息，我们该怎么办？

郊狼在城市中的队伍不断壮大，这可能不仅是因为它们失去了城市外的栖身之所——尽管在某些地区这可能是一个因素——但也是因为它们行为习性上的变化。当它们以人类的残羹冷炙和猫作为赖以生存的食物之时，它们正在变得习惯于人类的存在。动物幼崽向它们的母亲和同伴学习如何去寻找食物和巢穴，以及哪些危险要去避免。城市郊狼似乎已并不需要在公园中修建洞穴，尽管研究人员尚不清楚怎样的建筑环境因素对它们是适合的。郊狼们还发现那些刚学会走路的小孩子对其而言并不会构成威胁，甚至还有可能成为它们的猎物。在

未来的几十年里，我们可能要学会设计障碍物和围地——围栏或是具备同等功效的东西——使得郊狼远离孩子们游乐的地方，而不是为郊狼设计城市中的栖息地。我们最终可能需要猎捕郊狼，从而将其数量控制在小规模之内，并警慑它们应对人类敬而远之。在美国本土人民中，郊狼已是他们故事表达的一个重要部分，充当着告诉人们要如何“吃一堑，长一智”的老师的角色。而当这种“老师”来到城市并在此蓬勃繁衍时，这种“师生”关系又会发生什么样的变化？城市中的人们会从与其他物种的关系中学到新的收获吗？在这种长期的互动作用中，我们很难完全了解它们究竟可以对我们作为城市人的自我形象改变多少。

乌鸦和其他鸦科的鸟类为我们提供了类似的例子。乌鸦可以在城市中茁壮成长是因为它们可以从人类的垃圾箱中找到食物。随着它其数量的增长，它们对野外食物来源的影响似乎也在增加——特别是对鸣鸟而言，因为乌鸦会吃掉鸟巢中的幼鸟。我们可以设计防御乌鸦的围地，用金属丝或塑料网结构将较大体积的乌鸦阻拦在外，同时又可以允许小的鸣鸟飞进来。在产卵季节安装网架会是一个有趣的公共艺术行为，这还会改变城市树木和灌木的生态性能。乌鸦是另一种不畏避人类的聪明物种。YouTube上有一段视频，有人走过人行道旁有乌鸦巢的树时，乌鸦俯冲攻击人类。和郊狼一样，乌鸦也是一位告诉人们应如何警觉机敏地与北美其他生命形式共存及互动的传奇“老师”。乌鸦与西尼罗河病毒（West Nile Virus）的潜在传播有关，这也可能是在告诫我们与作为疾病寄主的其他物种（或人）生活的危险，并引发了一场新的关于我们如何能够使城市在由动物传播的传染性疾病面前具备更强的抵抗力的道德讨论。这虽然说来话长，但同样，基础性资源的更新，例如健康如同生态系统一样，会因应长远趋势而产生变化。

ASLA：城市雨洪也为周边地区的天然鱼类栖息地带来了严重问题。您提到的在西雅图的项目，如SEA Street项目（Street Edge Alternatives Project），可以有助于确保鱼卵不会在暴雨期间被冲走。那么如何设计对野生生物友好型的基础设施呢？

希尔：今天为人类和野生动物设计的基础设施项目，都可以比我们过去100年里所做的更好。一旦我们当选的领导人和他们的智囊团将审视基础设施的投资是否会增加我们的适应力作为其首要任务，规划师和设计师就有必要同土木工程师一起参与到这些项目中来。这就是为什么我们需要提倡对公共资金的投资优先次序进行改变的一个额外的、利己性的原因。

在我列举回答这个问题的案例之前，我想指出，除了作为把资源根据需求从充足的地方传送到短缺地方的传输网络，“基础设施系统”还可以包括资源的点状使用（例如会消耗电力的建筑物内部）。这些系统还包括了市区内外的那些不仅能自给自足还可以供给其他地方的自然资源——比如向水库供水的源头与交流。当我们构想基础设施时，我们关注于这些传输的网络——管道、高架电力线、高速公路和海堤，这严重降低了我们的想象力，使我们难以构建出能使城市及其周边地区更具灵活性的方案。

当设计师正致力于基础设施项目，旨在帮助城市适应新的极端气候（也包括人口增长和经济发展趋势），涉及到社会公平和支持生物多样性的问题时应该会更容易整合。然而，从功能的角度看，相较于物种多样性，性状多样性与生态系统性能的关联更为重要。性状多样性与我们的利益直接相关，人类对性状多样性进行保护和促进，从而提高我们周围生态系统的能力，使之为我们提供基本服务——如通过生物过程来净化空气和水。在我们看到政府 “濒危性征法案”出台之前，其立法过程还有很长的路要走，然而这也正是生态系统的运作问题。

第一个需要解决的问题是基础设施项目是否保护的是那些脆弱的人——特别是贫困家庭——和一些特别的地方，如北坡、或水域的源头、或鱼类和贝类所在的河口“鱼圃”。第二个问题是这些项目应有助于基础资源的重建（土壤肥力、空气质量、水质量等），而不是减少它们的供给。最后，第三个问题是它们应该有助于我们改变我们的应对方式，使我们更能适应极端环境事件和燃料成本的上升。

交通、公园，以及新海岸线结构在提供新栖息地的同时也保护了资产，看来使用我上面提到的标准而建的公共事业都是很好的投入。对我来说，“野生动物友好型”还不是重点——它的意义在于支持生态系统的适应能力，使公众意识到这些生态系统所组成的是一个不可分割的整体。经验观察和模型使我们得到这样一个结论，即无论设计师现在做什么，许多物种将在未来几个世纪内因气候的干扰和城市化的加剧而消失殆尽，或濒临灭绝。真正的法宝是这些大趋势中的人的道德行为：提倡保护我们可以保护的，并随着时间的推移，增加我们生态系统的应变能力。

安特卫普（Antwerp）港口实施的一项战略是基础设施和野生动物方面的有趣案例。生物学家和规划者的合作确定了永久湿地的“生境骨干”系统，以为黄条蟾蜍（natterjack toad）提供栖息环境。但他们补充说，对港口景观多变的、临时性的使用也可使之起到临时栖息地的重要作用。这也正是景观生态学家理查德·福尔曼（Richard Forman）提出的景观中“变化的镶嵌体”（shifting mosaic）的一部分。许多其他物种有可能在城市和周围地区生活，因为它们得到了核心栖息地（“骨干”）和不同季节或不同时期的临时可用区域（“变动的镶嵌体”）。

旧金山海湾地区保护与发展委员会正在用人工湿地和加固海岸线结构的混合方法，研究如何应对海平面上升，同时维护生活在海湾的物种。荷兰正在试验他们称之为“沙滩马达”（Sand Motor）的策略，即他们将疏浚而来的沙放在海岸旁的一个小型人工半岛上，通过波浪和沿岸水流的作用使大量沙丘重新冲散，形成大量沙丘，从而保护其海岸。我认为，这种结合了人工和自然过程的“半人工的景观”战略，为维护生物多样性的同时实现人类目标提供了最佳可能——至少，在这样的过程和改变中获得了审美体验。如果人类能将改变视为美的，那么适应过程将会更加容易。

ASLA: 最后，在近来《Topos》杂志中的一篇文章指出，景观设计师实际上可能对气候具有负面影响，因为他们设计了不可持续的作品。部分问题在于，在许多情况下，使作品可持续的方案都是无法实现。那么景观设计师和其他设计师可以为帮助减少温室气体排放做些什么呢？

希尔：这使我想起了在整个“纸塑博弈”[1]中的有趣辩论方式。显然，我们需要关注我们使用的材料，并确保它们耗能较少、排废较少、毒性较低。这些当然是必须的。但是，从广义的城市应变能力上说，不同城市、项目的经济和物质背景使得很难确定哪种才是最好的材料。如果我使用低耗能材料在新奥尔良建了一栋低于海平面的房子，那我算是参与到解决更广的相关问题了吗？显然不是。那些在斯德哥尔摩的非常优秀的新项目中所使用的就是钢筋混凝土——这些被视为高耗能材料，还是从项目建设之初便非常有效地利用能源，产生的非可再生垃圾也极少，并能与公共交通建立起连接，那么在这两者中，哪一个的意义更重大呢？我要说，关注创新比非难材料使用更为重要。

关键是设计师要注意对材料的研究，并选择使用那些在其区域内最适宜的可用组件。美国景观设计师协会/或景观设计基金会可以提供

这方面的许多信息。整体而言，我认为建筑和运输导致的能源使用和CO_2排放完全使能源的使用在景观设计中陷入困境。我宁愿看到设计者专注于政策和空间战略的创新，而不是参与到“更神圣”的关于材料的辩论当中。显然，我们可以给客户提供很多常识性的意见并应用在我们的设计中——我会最优先考虑与水使用的相关事宜。我们可以在很多干旱愈演愈烈的城市中使用需水量少的植物，并在那些之前不需要灌溉的地方考虑使用滴灌系统（例如美国东南部地区）。我们可以将绿色垃圾回收计划应用于护根的措施当中，甚至倡导将建筑产生的废水和我们设计的景观相联系。几年到几十年之后，这可能是城市灌溉用水的最佳来源，如果景观灌溉能维持夏季的基本径流，这则可以改变城市的河流运作方式。

最近的研究具有广泛影响，对于景观设计师来说，可能最惊讶的新闻之一就是对较少的树木进行培育，使之更加茁壮，将会比栽种许多新的小树苗提供更多的碳储备量。根据这项研究，城市地区及其所在区域植满了早期演替的树木，如果对它们进行剪枝，将有助于使更多的个体产生最大的生物量。也许我们的“百万育树计划”是不明智的，如果城市中只种胸径很小的植物，那么则需要很多气力维护人员和设备。除了政策和基础设施的策略创新外，帮助个体树木长得更大比景观设计师所做的其他任何一件事情都能减少碳的排放量。

我对景观设计师现在可以做什么的首选意见是，我们要参与到当地政治中，从而决定公共资金的主要流向。美国景观设计师协会和景观基金会也可以通过地方和国家机构帮忙解决这一问题。但这条路上的领军者可能会是年轻一代的在政治上活跃的设计师们，西雅图就是这方面的例子。政策纷争混乱而无常，但我们所看到的是，现在比以往任何时候都更加需要景观设计这种职业。我们需要勇敢大胆地和公众分享我们的想法——每一天都需要。（刘琴博 译，田乐 校）

注释

本文经作者同意，转载自ASLA网站。

①校者注：

20世纪80年代，许多超市因塑料购物袋的相对价廉与轻便等原因，开始逐步以塑料购物袋替代纸质购物袋。于后不久便在社会中掀起了一场关于哪种购物袋更加环保的讨论。研究表明，在单只塑料袋同单只纸质袋的制造过程中，塑料袋造成的空气及水体污染、工业废弃固体排放、能耗更少；而纸质袋在原料、可循环使用次数、再生性能等方面又优于塑料袋。关于这种各有优劣的讨论的现象被称为“纸塑博弈”（Debate of “Paper vs. Plastic”）。来源：Michael Brower, Leon Warren. The Consumer's Guide to Effective Environmental Choices – Practical Advice from the Union of Concerned Scientists [M]. New York: Three Rivers Press, 1999: 132–133.

ASLA: At a recent conference on designing wildlife habitats, you said cities are always warmer than surrounding areas because of the urban heat island effect. Cities are then precursors to climate change. In fact, “cities are at the edge of climate change.” What can cities' experience with elevated heat levels teach us about best and worst ways to mitigate and adapt to climate change?

Kristina HILL (HILL hereafter): The fact is, I have yet to see any “worst” — except perhaps no preparation at all! Here, in the U.S., we live in what I call the American Media Bubble — where the media are not using climate change to sell papers, unlike their Canadian and European counterparts. Since they do not see the headlines the rest of the world is reading, the average American does not know what is at stake. And as a result, their elected officials are discouraged from taking action. But the rest of the world is starting to prepare. Our economic future, and the health, safety and welfare of many of our citizens, depends on learning from the best practices that are out there.

I will say something about the best instead. The best approach I know of can be simply described using three categories of actions: to protect, renew, and re-tool. That means, to protect the most vulnerable people and places, especially the ones that offer the greatest future diversity and flexibility; to renew our basic resources, like soil fertility, water quality and quantity, air quality, and human health; and to re-tool, altering urban systems — buildings, transit, landscapes — to use less energy (since energy use is still a proxy for CO_2 generation, unless you use only clean sources), and generate fewer wastes that can not be used by someone else, locally. I willl give some examples, since all three categories of action require spatial strategies and create significant roles for landscape architects who have the drive to change cities. Most American cities are just at the point of taking stock of the magnitude of their exposure to climate change, but European cities have acted and offer practical lessons learned.

Cities are at the edge of climate change in several ways. First, in the sense that enough people's lives and property are at stake to force them to take actions to adapt. Rotterdam is investing to try to make itself “climate proof” because its Europe's biggest cargo port city, it houses an increasingly large portion of the Dutch population, and the Dutch believe in their ability to live with the changing dynamics of water. Not only do they believe in it at home, they also see it as a major export — knowledge and ability they can share with cities all over the world, for a profit. London has built one of the world's most famous storm barriers on the Thames because the land in the center of the city is so valuable (Fig.1), and the population is so large, that they can not afford NOT to protect it. Hamburg has used a different strategy — also driven by the location of its cargo port inside the city limits. It will allow flooding, but designed a major new part of the city to be resilient to high water, with water-proof parking garages, a network of emergency pedestrian walkways 20 feet above the street, and no residential units at ground level. Even the parks in this new Harbor City district are designed to withstand battering by waves and storm surge, either by floating as the waters rise, or by incorporating lots of hard surfaces that only need to be washed off when the waters recede.

These examples fall into the “protect” category of adaptive actions. So would efforts to conserve north-facing slopes, where many of today's native plant species may persist the longest as summer heat waves and droughts become more extreme, more common, and of greater duration. North-facing slopes might be our Noah's Ark, bringing species with us into the future and buying them time to adapt — behaviorally or genetically — if they are able.

But from an ethical point of view, the most important way to protect cities is to protect the most vulnerable people who live in them: low-income children and their caregivers (often single mothers), people with illnesses, and seniors. All over the world, people with even modest wealth will be able to protect themselves. They will buy better air conditioning, pay more for electricity as fuel prices rise, stay in a hotel when floods come, get health care when they need it, maybe even relocate by buying a home in a less vulnerable location. Children born into poor families where their mothers have to both work and care for them without paid help are in a very different situation. Many people in New Orleans who lived paycheck to paycheck did not evacuate when Katrina came, not because they were stubborn or unaware but because it was the end of the month and they could not afford to stay in a motel, or did not own a car to evacuate with in the first place. Most people in the world are that poor. If we want to adapt, we need to help them adapt. Those children contain the seeds of our future creativity. Adapting cities without protecting children is not only unethical, it is unwise.

ASLA: New York City, London, and other major cities have been creating detailed climate change adaptation action plans. In your mind, what do cities need to focus on the most as they develop these plans? What about smaller communities creating plans with very limited resources?

HILL: This question offers me a chance to provide examples of both the renewal and the re-tooling actions. In the U.S., Chicago has the most detailed and strategic climate adaptation plan (Fig.2). Mayor Daly made the environment one of his priorities, and he and his staff have done their best work in this area. Even so, what they mostly have is a good sense of what the problems are — but not a lot of solutions. This is principally because the problems will emerge over time, and it is difficult in our political climate to spend lots of public money before a problem is part of everyday life. This past year was a case in point — in winter, there were unusually large snowstorms in cities like Washington, D.C., and people claimed that “global warming” was a hoax. By summer, we found ourselves on track to experience the hottest year ever across the planet as a whole. The second-hottest year was 2005. People have a hard time understanding that the real problem is not a gradual warming trend; the real problem is that we are facing an increase in climate extremes — from snowfall to heat and from floods to drought. Flooding this year in Brazil and Pakistan has affected the health and security of millions of people, most of whom are children. Cities need to recognize that it is not about planning for an average of 2~10 degrees warmer summers; it is the new extremes in rainfall, flooding, drought, and the duration of heat waves that will really challenge our infrastructure and affect our lives. Cities need to focus on these extremes, and make investments to be more resilient to them in terms of both the duration and the magnitude of these extreme circumstances.

That is what I mean by “re-tooling.” Urban systems represent enormous investments of public money, and once built, the debt accrued by building them creates a long lag time before these expensive systems can be changed significantly. Landscape architects need to wade into some of the policy and planning debates that surround these investments of public money. If we were designing a house and landscape for ourselves and everyone we care about to live in, together, 30 years from now, we would not design it based on our income and needs today. When cities build infrastructure, or develop/re-develop large areas of land, those projects are meant to have value and perform as intended for at least 30 years; many are intended to function for 50 or 70 years, perhaps longer. We need to question whether these urban places and systems are really being designed to perform as intended during an era of increasing climate extremes, because we and almost everyone we care about will live in them, all over the world. We need to demand investment strategies that link future debt to future performance. No project should be allowed to generate public debt for 30~40 years if it will not add to our future capacity to adapt; if it does not increase our resilience, it should be paid for only out of today's money, or not be built at all.

Taking out highways makes some sense, financially as well as in terms of new land use options, because maintaining an underutilized, polluting roadway ad infinitum is expensive. The effort in the South Bronx to remove the Sheridan Expressway is a good example: it could be replaced with a mix of public and market-rate housing, and parks that increase the resilience of that district to flooding while providing clean places to swim when it is hot. Other cities, from Portland to San Francisco and Milwaukee to Providence, have taken out highways. That kind of capital investment is expensive in the short term, but may save public money in the relatively near future while increasing resilience. Our ways of thinking about public infrastructure have to change pretty radically from the old “more is better” attitude if we want cities to avoid spending themselves into a dead-end, with lower quality of life and reduced economic competitiveness.

Cities need to focus on resilience as they make their debt commitments. If they are investing in projects that replace old highways with new ones, but do not add significant alternatives to driving (like public transit), they are making a mistake. Those cities will be paying for that non-adaptive project for so long, and they will not have any money to spend on adaptation. On the other hand, projects like public transit inside growing cities should be able to extend their debt over a longer period, making them more affordable, because they will expand the options of people who live in the future. They are an investment in future flexibility, and increase our adaptability to trends like rising fuel prices. That makes them an investment in resilience. Designers, public advocacy groups, elected officials, federal agencies, and bond rating agencies should use criteria like this to demand smarter decision-making with respect to climate change, and alter the type of work designers have to do in cities. No more short-term, single-purpose infrastructure (or public space or urban district plans), which are seen as more a part of infrastructure today than they have been for 150 years.

I think big cities will have to incorporate both centralized and decentralized infrastructure into their investments. Small communities, on the other hand, will likely have to choose between encouraging density or enabling more people to live off the grid in an affordable, healthy way. With greater density, we can use centralized systems to make these small cities more livable (with less driving, more walkable neighborhoods, more affordable infrastructure services). With greater energy, water and waste independence on a house by house basis, and access to cleaner transportation technologies (electric cars), small cities can provide fewer services and make themselves more resilient by keeping their costs from growing. The latter strategy is pretty optimistic that cleaner, house-based technologies will be ready and affordable, and that people will be willing to live within the limits they generate. I am not such a technological optimist, so I would advocate for the density strategy.

Youngstown, Ohio offers an example of the “renewal” category of actions for smaller cities. By that, I mean renewal of basic resources like soil fertility, water and air quality, health, and food security. As I understand the story that came through the media, the elected officials decided to acquire derelict residential properties using a spatial strategy that, when the houses were demolished, created a park system that would allow higher quality of life for future residents. The vegetation and water resources of the park system could be “grown” slowly over time, using successional strategies for the plants (with limited maintenance interventions) and using biological processes to help clean soils and water. Small communities that take the long view, using a 50-year timeframe to compare alternatives and focusing on their quality of life in a healthier environment, will be attractive places to live in a geographically-flexible future economy. If the land acquisition is planned well, and short-term uses are allowed that fit today's needs — say, local food production, or even ATV recreation if it supports a disturbance regime that helps plant succession — that same future-oriented green infrastructure can get a mayor re-elected in the short term as well.

ASLA: Climate change is expected to cause mass migrations of animal and plant species. You said it is more efficient for species escaping rising heat levels to move up in elevation as opposed to moving north. Unfortunately, for many species, there is not higher elevation. What design solutions can aid migration?

HILL: The most important planning and design strategies for biodiversity involve first protecting the land that has been conserved to date, in two ways. Number one, add buffer zones to their edges in which development is restricted or prevented. This is especially important on northern-aspect slopes, where characteristic regional species are more likely to persist in an era of increasing dryness and temperature extremes. Second, educate the public about the importance of reducing the negative impacts of what landscape ecologists call “the matrix” — which includes all the developed landscapes outside the reserves. This is a strategy the ecologists sometimes call “reducing matrix hostility”. It basically means that even developed landscapes can contribute to the overall ability of a region to support sensitive species that lived there before development occurred. When each developed parcel manages the quality and quantity of its stormwater runoff, for example, it contributes to a healthier landscape with sustained regional biodiversity. If parcels contain fertile soils and plants that support native insects, and even allow some standing dead trees in the mix, they are more likely to support “stop-over” feeding or perching by native birds. Improving air quality can make it possible for insects to locate and pollinate plants in developed landscapes. Reducing noise on roadways can benefit frogs that use sound in mating behavior in wetlands nearby. Building wildlife over- and under-passes can allow animals to migrate and disperse through heavily developed landscapes.

In addition to making sure the conserved patches are shored up with buffers and the region has reduced its “matrix hostility,” climate change creates an imperative to add corridors and stepping stones — both north-south (connecting across latitudes) and up-down (connecting across elevation gradients) — at all spatial scales (Fig.3). As the ecologist Stuart Pimm has pointed out in a recent article, it is more efficient for species to move a few thousand feet laterally to move up by hundreds of feet of elevation as a way of staying cooler than it is to move tens or hundreds of miles north to get the same benefit. But going up in elevation is like walking the plank, because it means there is less area available as the species go up — and the solution is limited by the maximum height of the hills or mountains available.

This concept is one that I developed to help students understand the special functional role that cooler slopes will probably play in a warmer climate. What we now think of as native plants will persist longest on north-facing slopes, and be lost first on the warmest slopes (Fig.4).

The biggest questions involve timing. If species characteristic of a region start to die out, will species that could survive the new seasonal conditions be able to get there, find suitable locations, and successfully

reproduce before they die out in their own regions? When will the species that are their food be available locally? When will new predators, parasites, and competitors also move in? It is a very complicated four-dimensional chess game, not a simple progression towards the north or up in elevation. That is why no one can really predict which species will survive where, and what traits will end up in the mix.

The potential new spatial strategy in all this involves conserving slopes with northern aspects, linking them to each other via waterways and ridges. I hope we will see legislation over the next 10~20 years that identifies these slopes as potential refuges for biodiversity in an era of increasing temperature spikes and drought events. But even without that, designers and planners can take this into account on their own and with their clients. Like the cove forests of Appalachia, these cooler, protected areas will be places where the species that have been characteristic of many regions may persist as climate change occurs — making them key elements of future habitat diversity and possibly trait diversity.

ASLA: You also argue that climate change will yield changes in the distribution of plants and animals, and their traits. Furthermore, some plants and animals may even benefit from climate change. How will climate change impact species distribution? What kinds of traits will enable some plants and animals to better adapt?

HILL: This is an issue that the ecologist Stuart Pimm has drawn attention to in a very thorough, readable article that appeared in the journal Current Biology in July 2009. He has done the very best job I have seen of providing examples for how complicated these dynamics might be. Pimm has provided examples of butterflies in the U.K. that have recently expanded their range because they changed host plants (the species used to be limited to only one plant); or butterflies that remain linked to one plant species, but have drastically expanded their range as a result of warmer temperatures that have helped their host plants expand geographically. He raised questions about how species will be able to take advantage of "openings" in ecosystems as certain species die out — will the resources needed by new species be in place? For instance, will the insects eaten by a particular bird already be available when the bird arrives? Will they be eaten by a new competitor when they do arrive, leaving the bird unable to find sufficient food? These changes are going to involve a lot of very specific timing issues, and will probably take decades and even centuries to "settle in" to new patterns of species distributions.

Biologists do expect some species to benefit from climate disruptions, and others to lose out. For example, one of my colleagues here at the University of Virginia, Michael Pace, has recently found that zebra mussel populations in the Hudson River seem to be declining as temperatures have risen. We have been worried about the impacts of this introduced species for decades. The problem of its population expansion could actually be halted by warming waters. On the unhappy side, many species around the world are expected to become extinct as a result of these complex changes. The loss of key tree species in the western U.S. whose seeds have been staple foods for species such as grizzly bears may be a factor that drives greater conflicts between humans and bears, as another example. The recent killing of a camper north of Yellowstone has been attributed to a grizzly whose cubs were malnourished, at the same time the whitebark pine — a key food source — has been in decline from drought and an insect pest. We may wonder why bears become more dangerous, then discover a link to stresses related to climate disruptions.

It is literally impossible to predict the interactions among predators, prey, parasites, mutualists, and competitors as the environment changes around them. We can not just look at a hardiness zone map and shift today's species northward a couple of states. It will not be that simple. When you consider the impact that pathogens have had on individual tree species, for example, the idea that climate changes will produce smooth northward transitions starts to seem ludicrous. What happens if something like Dutch Elm disease comes along as climate changes? We could end up with key species missing from the new mix of "suitable" plants for a region. Their seeds may get to the new region, but they may not be able to survive, even if the climate is right.

In terms of traits, many people do not realize that it is actually higher trait diversity — not species diversity – that drives ecosystems to higher productivity. If we have fewer species in the future but the same or a greater number of traits, the level of functional performance generated by ecosystems (purifying air and water, or providing energy through photosynthesis, for example) may not change. But we do not know enough to predict whether or how fast traits may diversify within species, or within ecosystems. So most people use the "proxy" of species diversity to represent trait diversity, and perhaps we should continue to do so until we have better ways to predict how traits may change.

ASLA: In downtown Chicago and other cities, coyotes and other wildlife have been found digging through dumpsters, in the subway, and inside supermarkets. What kind of designs can aid animals that have taken up urban living because of changes in their natural environments?

HILL: That is an interesting question, from a strategic point of view. Species that are already thriving in urban environments or begin to do so in the future may not need our help, since they are finding ways to survive by themselves in human-dominated environments. They may, however, provoke new attitudes, ethical debates, and management relationships. I think that is the really interesting part — will our cultural attitudes towards these animals change? Perhaps even our sense of what it means to be human among other species may change. What would happen if an animal that represents a threat to our children becomes able to thrive in urban areas?

Coyotes are probably expanding their urban populations not just because of lost habitat outside cities, although that may be a factor in some areas, but also because of changes in their behavioral traits. They are becoming habituated to human presence as they increasingly subsist on a diet of wasted human food and cats. Juvenile animals learn from their mothers and their peers how to find food and den sites, and what dangers to avoid. Urban coyotes appear to be learning that they do not need parks to make dens, although it is not yet clear to researchers what elements of the built environment are suitable for them. They are also learning that toddlers are not dangerous, and may be prey. Over the next few decades, we may have to learn to design deterrents and exclosures — fences or something equally effective — that keep coyotes out of areas where small children play, rather than design habitat for coyotes in cities. We may eventually even need to hunt coyotes to keep their urban populations small, and remind them that humans should be avoided. Coyotes have been an important part of stories that encode and convey the knowledge of Native American peoples, playing the role of trickster and teacher to humans. What happens to that relationship when the teacher comes to the city and really thrives there? Will urban people learn new things about their relationship to other species? It is hard to fully appreciate how much that could change our self-image as urban people, over a long period of interaction.

Crows and other Corvidae species offer a similar example. Crows thrive in cities because of the food subsidy they receive from human food wastes available in dumpsters. As their populations grow, their impact on wild food sources also seems to increase — particularly on songbirds, when crows eat the juveniles in the nest. We could design exclosures, in the form of wire or plastic mesh structures that would keep the larger-bodied crows out while allowing smaller songbirds to fly in. Installing the mesh during nesting season could be a fun public art action, as well as change the ecological performance of urban woodlands and shrubs. Crows are another smart species that are not shy of humans. YouTube videos have popped up showing crows dive-bombing urban pedestrians when they walk near a tree that has a crow's nest in it. And like coyotes, crows are a legendary teaching species, appearing in stories that tell humans how to be resourceful as they live and interact with other forms of life in North America. Crows are now associated with potential transmission of West Nile virus, and may teach us about the dangers of living with other species (or people) who are hosts for disease, and create new ethical debates about how we can make cities more resilient in the face of contagious illnesses transmitted by animal vectors. That is a longer conversation, but again, one about renewal of fundamental resources like health as ecosystems change in response to long-term trends.

ASLA: Stormwater overflow from cities also presents a major problem for natural fish habitat in surrounding areas. You cited projects in Seattle, like the SEA (Street Edge Alternatives) Street, which can help ensure fish eggs do not get flushed away during rainstorms. How can infrastructure be designed to be wildlife-friendly?

HILL: Infrastructure can be designed much better than we have done it for the last 100 years, for both people and wildlife. Once our elected leaders and their advisors make the question of whether an investment in infrastructure will add to our resilience their top priority, planners and designers should be involved in those projects by necessity alongside civil engineers. That is an additional, self-interested reason why we need to advocate for that change in priorities about the investment of public funds.

Before I give examples to answer this question, I want to point out that "infrastructure systems" include the point-of-use of resources (inside buildings, for example, where electricity is consumed) in addition to the transmission networks that convey resources from a place of abundance to a place of scarcity in relation to demand. These systems also include the landscapes that support the place of abundance, both inside and outside urban areas — headwaters and tributaries that drain to reservoirs, for instance. Our focus on the networks for conveyance — pipes, overhead powerlines, highways, and seawalls — when we conceive of infrastructure has drastically reduced our ability to imagine options for making cities and their supporting regions more resilient.

When designers are working on infrastructure projects designed to help cities adapt to new climate extremes (as well as population growth and economic trends), issues related to social justice and support for biodiversity should be easier to integrate. It is useful to remember, however, that from a functional point of view, trait diversity matters to ecosystem performance more than species diversity. It is in our direct interests as humans to conserve and promote trait diversity, in order to increase the ability of the ecosystems around us to provide us with basic services — like cleaning our air and water through biological processes. The legislative process has a long way to go before we see a federal "Endangered Traits Act," and yet that is what the issue is for ecosystem functioning.

If infrastructure projects protect vulnerable people — especially poor families — and special places, like north-facing slopes, or headwaters of stream systems, or estuary "nurseries" for fish and shellfish, that is the first performance issue. The second is that these projects should contribute to the renewal of basic resources (soil fertility, air quality, water quality, etc.) and not reduce the supply of these. Finally, the third is that they should contribute to re-tooling our ways of moving things around, so that we are more resilient to extreme environmental events and increasing fuel costs.

Transit, parks, and new shoreline structures that provide habitat while protecting property and utilities all look like better investments using the criteria I have noted above. To me, being "wildlife-friendly" is not the point — it is about supporting ecosystem resilience, with humans recognized as an integral component of those ecosystems. Empirical observations and models support the conclusion that many species will become extinct or rare because of climate disruptions and increased urbanization over the next several centuries, no matter what designers do today. The real trick is to act ethically as human beings in the midst of those larger trends, advocating to protect what we can and increase our ecosystem-level resilience over time.

The port of Antwerp has implemented a strategy that provides an interesting example for infrastructure and wildlife. Biologists and planners collaborated there to identify a "habitat backbone" system of permanent wetlands to support habitat for natterjack toads. But they added the idea that port landscapes with shifting, temporary uses can also play an important role in providing temporary habitat, as part of what landscape ecologist Richard Forman once called the "shifting mosaic" of a landscape. It is possible that many other species could be supported in and around urban areas by providing both a core habitat area (the "backbone") and temporary zones available in different seasons, or in different years (the "shifting mosaic").

The Bay Area Conservation and Development Commission in San Francisco is studying ways to respond to increases in sea level while supporting species that live in the Bay, using a mix of artificial marshes and hardened shoreline structures. The Dutch are experimenting with a strategy they call the "sand motor", in which they would place dredged sand in an artificial mini-peninsula along their coast, and allow the processes of wave action and along-shore currents to redistribute it as massive sand dunes to protect their coast. I believe that this sort of "cyborg landscape" strategy, combining artifice and natural processes, holds the most promise for supporting biodiversity while achieving human goals — not the least of which might be gaining an aesthetic that appreciates processes and change. If humans see change as beautiful, adaptation will be easier.

ASLA: Lastly, a recent article in Topos argued that landscape architects may actually be having a negative climate impact because they specify unsustainable products. Part of the problem is that in many cases sustainable product alternatives are not available. What can landscape architects and other designers do to help bring down greenhouse gas emissions now?

HILL: This reminds me in a funny way of the whole "paper vs. plastic" debate. Clearly, we need to attend to the materials we use and make sure they embody less energy, generate less waste, and are less toxic. Absolutely. But in the larger sense of urban resilience, the economic and material context of different cities and projects makes it difficult to generalize about which materials are best. If I use low-embodied-energy materials to build a house in a part of New Orleans that is below sea level, have I addressed the larger contextual problem? No. Is it more important that some really terrific new projects in Stockholm have used concrete and steel, which can be thought of as high-embodied-energy materials, or that they are very efficient in energy use once built, generate very small amounts of un-renewable waste, and are linked by public transit? I would say their innovations are more important than the question of material usage.

The key is for designers to pay attention to research about materials, and choose the best available components in their region. ASLA and/or the Landscape Architecture Foundation could do a lot to provide this information. Overall, I think the use of energy and generation of CO_2 by buildings and transportation completely swamps the use of energy in designed landscapes. I would prefer to see designers focus on policy and spatial strategy innovations, rather than get into a "holier-than-thou" debate about materials. With that said, obviously there is a lot of common-sense advice we can give to clients and implement in our designs — my highest priorities are in relation to water use. We can use plants that need less water in most urban settings where droughts are increasing, and give more thought to using drip irrigation systems in regions that did not formerly require irrigation (the southeast U.S., for example). We can take advantage of greenwaste recycling programs in mulch specifications, and even advocate for linking the graywater generated by buildings to our designed landscapes. In a few years to a few decades, that may be the best source of urban irrigation water available, and could transform the way urban streams function if landscape irrigation supports summertime base flows.

In terms of recent research that has broad implications, perhaps one of the most surprising to landscape architects would be the news that helping fewer trees to grow older and larger provides much more carbon storage than planting many new, young trees. Urban areas and their regions are full of early-successional forests that, according to this research, could contribute more if they were thinned to allow more individuals to reach a maximum biomass. Perhaps our "million tree programs" are misguided, if they involve planting lots of small-caliper trees that require gas-powered maintenance crews and equipment. Helping individual trees get bigger may do more to reduce carbon emissions than any other single thing that landscape architects do, outside of policy and infrastructure strategy innovations.

My preferred advice about what landscape architects can do now is to suggest that we get involved in local politics to shape major investments of public funds. ASLA and LAF can help with that as well, though local and state chapters. But it may also be that a younger generation of activist designers will lead the way here, as they have in cities like Seattle. Policy debates are messy and volatile, but our vision as a profession is needed now more than ever in that arena. We need to be bold, and share our ideas in public — every day. (Translated by Qinbo LIU, Proofread by Tina TIAN)

Note

With the sanction of the interviewer and interviewee, the text is copied form ASLA official website.