刊首语





我们的一项复杂设计于不久前建成,项目的基址是 几个已经废弃的或正在开采中的采石场。我们对其生态 环境进行了修复,并将它们转换为园林博览会中独特的 花园。项目的设计过程非常艰难,原因之一在于这些采 石场的地貌破碎复杂且在不停地变化,而在我们拿到的 地形图上,这些采石坑的边缘及碎石残崖都只是一些乱 线。现实中复杂的采石场三维空间被压缩在二维平面的 测绘图上,根本无法反映地表的真实状况。而没有地表 准确的信息,任何思考、研究、设计和施工便没有依托。 为了获得采石场全面的空间数据,我们通过无人机航拍 扫描与相应的软件处理,得到了整个采石区域非常精准 的三维空间模型,并且根据需要可随时安排无人机飞行 扫描,实时更新。如此,无论采石场如何变化,我们都 可以得到最新的数据,全方位地观察与分析现场,这为 我们详实地研究现场提供了极大的帮助,更让我们有条 件从一开始就从空间上而不是从平面上来思考和着手设 计,并且这一方法一直延续到施工图阶段。如果没有这 个空间模型,纸上的设计无法呈现,现场的建造更不能 落地。经过这次设计经历,我深深体会到新技术和手段 给设计带来的便利以及不同以往的设计可能,相信很多 风景园林师有过和我一样的感受。

含有空间坐标及高程的测绘图纸是风景园林规划设 计与研究工作的基础。在上大学的时候,我们曾用一个 学期学习如何使用经纬仪和小平板进行大地测量,并绘 制出校园一个区域的现状图。近40年过去了,科学技 术发生了翻天覆地的变化,测量仪器和测绘手段也发生 了巨大的变革。然而在今天的校园里,我却时常能见到 成组的学生仍然在用这种方法测绘校园。每当这时,我 都会产生极大的疑问,在如今的信息化和数字化时代, 学生们还需要像我们当年一样,花费大量的时间学习这 种传统的测绘技术吗?是教师们的知识领域跟不上时代 的变化,还是教学体系的调整速度过慢,跟不上科技进 步的步伐?

今天,以移动互联网、社交网络、云计算、大数据 为特征的新一代信息技术正在深刻地改变着各行各业, 也改变着我们身处的社会和每个人的生活。科技的发展 已经为很多传统的行业带来了新的发展路线和发展动 力,带来了无限可能。探讨新一代信息技术在风景园林 中的应用已经成为行业研究和实践的热点。

在近几年的规划设计教学中,我每次都能看见研究 生甚至本科生在场地的研究中运用一些大数据分析的方 法,探讨城市功能分布和公众使用之间的关系,从而为 自己的规划或者设计设想提供客观的依据。在风景园林 研究和实践中,大数据已经很大程度上代替了问卷调查, 成为应用广泛的一种数据收集手段和分析研究方法,大 数据也带来了新的技术路线和思维方式。

目前,在建筑行业中,建筑信息模型(BIM)的实施应用已越来越广泛和深入,相信最终会促成建筑设计、 建造和管理的一体化和信息化。虽然风景园林行业有其 自身的特殊性,并不能完全借用建筑信息化的方式,但 是在智能化的时代的风景园林行业中,风景园林信息模 型(LIM)的发展也一定是大势所趋。

未来,地表环境的管理会越来越趋向数字化和信息 化,信息技术的运用必然会更广泛地深入到风景园林的 方方面面。新技术不仅为风景园林师的工作带来新的可 能,优化风景园林师的工作方式,也会激发风景园林师 的创造性思维,推动新的设计思想、研究方法和理论体 系的产生。无论在教学、研究和实践中,我们都应该回 应日新月异的技术进步,以寻求解决愈发复杂和综合问 题的更加有效的途径。



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PREFACE

Response to the New Technology

A complex design of us was built recently, the site of the project is several quarries that have been abandoned or are under mining. We restored the ecological environment and converted them into unique gardens in the Garden Expo. The design process of the project was very difficult, one of the reasons is that the landform onsite is complex and constantly changing. But on the topographic maps we obtained, the edges of these quarries and cliffs were presented with just a few chaotic lines. The complex three-dimensional space of the quarry in reality is compressed onto a two-dimensional plane, thus it is impossible to reflect the true state of the land surface. No idea, research, design and construction could work without the accurate information of the landform. In order to acquire the comprehensive spatial data from the quarry, we scanned the quarry area through the drone aerial photography and performed with corresponding software processing, then a quite accurate three-dimensional model of the entire quarry area was obtained. And the drone flight scan could be redo at any time as needed in order to updated in real time. So, we can get the latest data no matter how the quarry landform changes, to conduct an all-round observation and analyzation. This has greatly helped us to study the site in detail, and access us with the conditions to think and start design from the spatial base rather than the plane base, and this method was used throughout the whole process until the construction stage. If there is no such space model, not only the design on paper cannot be realized but also the construction onsite could not be grounded. Through this design experience I deeply understand the convenience and wild possibilities brought by new technologies. I believe that many landscape architects have had the same feelings as so.

Landscape mapping with spatial coordinates and elevation on it is the working base for landscape planning and design. When I was in college, a semester's course was assigned to learn how to use theodolite to go geodetic surveys and draw a map of the campus area. Nearly 40 years have passed, the science and technology have undergone earth-shaking changes, and the measuring instruments and mapping methods have also undergone tremendous transitions. However, groups of students still using this method to map campus today. Whenever this happens, I would have great doubts that in today's information and digital era, do students still need to spend plenty of time learning this traditional mapping technology as we did in the past? Is the teacher's field of knowledge unable to keep up with the changes of the times, or is the adjustment speed of the teaching system too slow to keep up with the pace of scientific and technological progress? Today, a new era of information technology featuring mobile internet, social networking, cloud computing, and big data is profoundly transforming all walks of people's life, and it also transforms the society in which we live. The development of science and technology has brought new routes and driving force for the development of many traditional industries, along with infinite possibilities. Exploring the application of new information technology in landscape architecture has become a hot spot in researches and practices of the discipline.

In the teaching of planning and design in recent years, I can see graduate students and even undergraduates using some big data analysis methods in site investigation to explore the relationship between urban function distribution and public use, thereby providing an objective basis for their own planning or design ideas. In the research and practice of landscape architecture, big data method has largely replaced the questionnaire survey and has become a widely used data collection method and analytical research method, bringing new technical route and thinking mode.

At present, in the discipline of architecture, the implementation and application of Building Information Modeling (BIM) has become more and more extensive and in-depth, which I believe would eventually lead to the integration and informatization of architectural design, construction and management. Although the landscape discipline has its own particularities, and it is not possible to fully borrow the means of building informationization. But in the era of intelligence, the development of Landscape Information Modeling (LIM) must also be the general trend.

In the future, the management of the land surface environment will become more and more digital and informatized, and the use of information technology will inevitably integrated into all aspects of the industry. New technologies not only bring new possibilities to the work of landscape architects and optimize the way we work, it will also stimulate the creative thinking and promote the creation of new design ideas, research methods and theoretical systems. We should respond to the ever-changing technological advances, whether in teaching, research, and practice, to find a more effective way to solve the increasingly complex and comprehensive problems.

> Translator: WANG Xiyue Chief Editor: Prof. Dr-Ing. WANG Xiangrong April 25th, 2019