

场地观绘

——谈景观的自然场地认知与表达

OBSERVATION AND REPRESENTATION: ON RECOGNITION AND EXPRESSION OF NATURAL SITES IN LANDSCAPE ARCHITECTURE

1 引言

在美术学院里，教师们有一种共识：学会观察是绘画的前提^[1]。各专业中以素描为基础的造型训练的本质都是在讨论观察方法。其中，景观设计学科入门课程的教师主要面临着两个教学难点：一是探究绘画与设计之间如何建立联系，并通过一定的教学方法引导学生对此展开探讨；二是如何从观察与表达入手，引导学生对真实的场地进行认知，从而逐步生成设计概念。

本文首先比较了20世纪90年代中期中国美术学院教授的设计素描^①与传统写实素描、自然风景写生等绘画类型在观察与表达上的共性与差异，进而对景观设计学科的场地观察与表达的要义展开探讨，并借助具体案例阐明这些原则在景观设计教学与设计实践中的应用。

2 绘画中的观察与表达

研究“观察”与“表达”的演变有助于厘清绘画与景观设计的关联。回顾自己从20世纪90年代初期绘制第一张几何石膏体素描到目前在景观设计系教学的经历，笔者认为，绘画中“观察”与“表达”的

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摘要

在景观设计专业教育中，自然场地的观察与表达意味着在场地上“怎么看”以及“怎么画”。本文首先通过比较写实素描、设计素描、自然风景写生等传统绘画形式之间的差异来探讨景观设计学科的场地观察与表达，并提出：虽然两者都涉及对客观事物与现象的观察（观）与表达（绘），但传统绘画以“模仿”客观物象的表面形式为目的，景观设计则更强调了解并呈现客观真实场地的变化过程以及其中隐藏的复杂关联，即“再现”场地的本质。

景观设计学科对场地的观察与表达可归纳为三个要点：亲临场地、调动身体运动，以及再现事物的变化过程与事物之间的关联。本文列举了两个案例——一个通过场地尺度的设计教学阐释了基于真实场地的观察如何逐步形成抽象的设计形式，另一个则通过分析从场地到区域与全球尺度的设计实践，探讨了对场地关联的跨尺度思考如何指导具体的景观设计实践——以期为中国当前的景观设计教育与实践提供借鉴。

关键词

景观设计；场地；观察；感知；运动；表达；再现

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ABSTRACT

In the education of Landscape Architecture, the way we view and depict a natural site is defined by the way we observe and express it. This paper starts with a comparison between the perspective and approach of traditional painting types (the realistic sketch, design sketch, and landscape painting) and those in Landscape Architecture. All of them involve observation (viewing) and expression (drawing) of natural beings and phenomena, where traditional paintings are in the pursuit of honest depiction of the forms or shapes. While in Landscape Architecture it emphasizes understanding and representing the evolutions and the complicated intrinsic relations of the authentic sites — in other words, to represent the nature of reality.

To be on-site, the use of body movement, and the evolutions and correlations of natural beings are the three most important principles to the observation and representation in Landscape Architecture. Combining with two cases in teaching and practice, this paper elaborates how to develop abstract forms and design concepts from the observation of authentic sites and how the trans-scaled reflection on the correlations about the sites can inspire a site-scaled design, providing references for the education and practice of Landscape Architecture in China.

KEYWORDS

Landscape Architecture; Site; Observation; Perception; Movement; Expression; Representation

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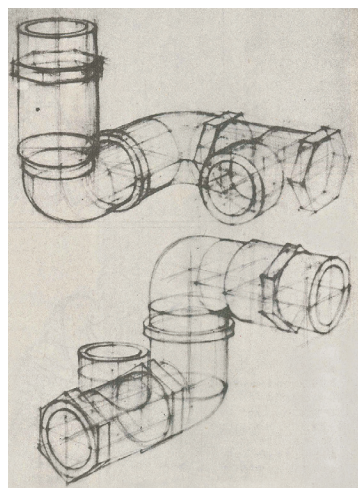
① 尽管本文以笔者熟悉的美术院校的设计教育为例，但是类似的教学模式在中国高校的建设和风景园林专业基础设计教育中亦有相当长的历史，许多院校至今仍在沿用这一模式。

① The design sketch mentioned in this paper mainly refers to that taught in academies of fine arts, with which the author is the most familiar. However, it has also been adopted for long in the fundamental studios of Architecture and Landscape Architecture majors in many other colleges and universities in China until now.



演变可体现在三种绘画类型中，即传统写实素描（以画石膏像明暗素描为起始）、设计素描（保留造型过程的结构素描），以及东西方自然风景写生。

传统写实素描关注物体的“可见部分”，即表面形体及其各部分比例等，如石膏头像的“三庭五眼”，强调通过整体比较和分析求得可见的“形”，并用光影加以表现（图1）。设计素描除了关注看得见的“形”外，更注重探究看不见的物体内部结构，在实际绘图中则表现为运用平行线、剖切线等辅助线来表达形体结构（图2）。这种画法源于“自然形式是由内部性质决定外部发展的，外部是内部的结果”^[2]



1. 传统写实素描
 2. 设计素描
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1. Traditional realistic sketch
 2. Design sketch

2 © 王中义、钱江

1 Introduction

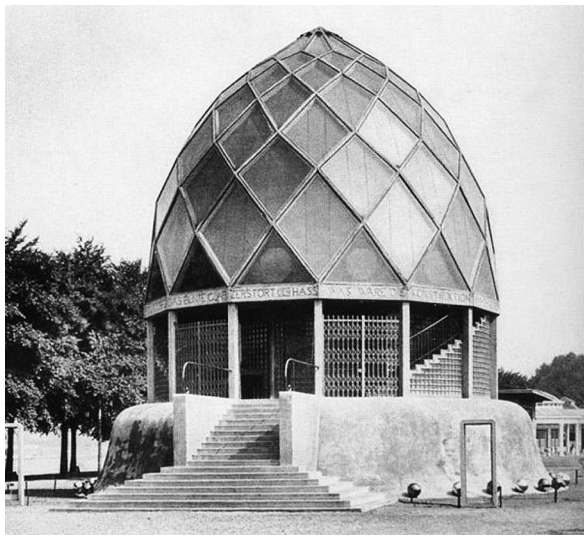
It is a shared knowledge among teachers in academies of fine arts that how a painter observes determines how he or she paints^[1]. Related disciplines all have explored how to teach students observation approaches through pencil sketch training to learn how to depict objects in their foundation years. In the fundamental studios of Landscape Architecture, teachers especially have two primary tasks: 1) to explore the relationship between painting and design, and encourage and inspire students to think about it with proper teaching methods; and 2) to equip them with the capability to transform their understanding of an authentic site into design ideas through observation and representation.

Starting with a comparison between the approaches of observation and expression of different painting types — the design sketch taught in academies of fine arts in the mid-1990s^①, the traditional realistic sketch, and the landscape painting — this paper discusses the principles of observation and expression in Landscape Architecture, and then combines them with two cases to demonstrate their application in the education and design practice of Landscape Architecture specifically.

2 Observation and Expression in Painting

Insights into the evolution of observation and expression help clarify the relationship between painting and landscape design. According to the author's own experiences from learning how to draw light and shade sketches in the early 1990s to teaching at a Landscape Architecture department today, such an evolution can be articulated from three folds, namely the traditional realistic sketch (that begins with the light and shade sketch training), design sketch (also called “structure sketch” based on the process of depicting objects), and landscape painting in both eastern and western styles.

Traditional realistic sketch focuses on depicting the visible parts of objects, i.e., the external forms and the proportion of components, which are acquired through a holistic measurement and profiling and depicted by drawing with light and shadow. For example, students are trained to study and draw the geometrical features of a head sculpture (Fig. 1). Design sketch goes further from depicting visible external shapes to invisible internal structures by using paralleling lines, section lines, and other auxiliary lines (Fig. 2). Such a method lies in the concept that natural beings' external forms are defined by their nature^[2]. That is saying, one purpose of the observation of natural beings' structure is to learn and abstract forms



3. 由布鲁诺·陶特设计的德国科隆“玻璃宫”
4. 由克劳德·洛兰绘制的《风景——摩西和燃烧的灌木丛》，绘于1664年，现藏于柏林国立美术馆。
3. The "Glass Pavilion" in Cologne, Germany by Bruno Taut
4. *Landschaft mit Moses und dem brennenden Dornbusch* (1664), collected in Staatliche Museen zu Berlin.

的观点，因此，在某种程度上，观察结构正是为了从自然中提炼形式。例如，在《从素描走向设计》一书中，作者以布鲁诺·陶特设计的德国科隆“玻璃宫”形似菠萝的拱形面顶（图3）为例，说明这种以菱形为结构单位的外观体现了自然界生态成长的有机性质。其尽管已经不具备自然形态原来的功能性质，更不是自然形态本身，但无疑是从自然中提炼出来的。^[2]

从传统写实素描的“重外部形式”到设计素描的“重内部结构与过程”，素描绘画始终坚持一个基本原则，即尊重客观对象，力求“模拟、模仿”，强调整体比较和分析^[3]。自然风景写生的观察与表达方法则有所不同。

就观察与表达方法而言，自然风景写生主要分为两个流派：以西方风景画为代表的写实（静观）派，以及以中国山水画为代表的写意（游观）派。写实风景画忠实于对自然场地中客观对象的观察，力求尽可能还原在单一地点、单一时刻观察到的内容，这种表达与写实素描一样，可以称之为“模仿”（图4）。因此对这两类作品的评价也是以“惟妙惟肖”“逼真”为佳，如古希腊画家宙克西斯和帕拉蒂斯分别绘制葡萄与幕帘来比试谁的画作更能以假乱真^[4]。

写意风景画则倡导先在自然山水中不断游走、饱览山水特征，再闭门创作，其表达结果是物像与观察者本人主观感知的“化合”。这种方法以北宋著名画家郭熙提出的“三远法”为代表：“山有三远：自山下而仰山巅，谓之高远；自山前而窥山后，谓之深远；自近山而望远山，谓之平远。”^[5]“高远”“深远”“平远”即为三种不同的观山视角。在其代表作《早春图》中，郭熙在同一幅画面中同时呈现了这三种视角下的山景（图5）。这种基于多视点、多角度的观察是其与

from them. For example, the book *From Sketch to Design* exemplifies the arch of the “Glass Pavilion” in Cologne, Germany designed by Bruno Taut (Fig. 3), which is composed of prismatic units as a manifestation of organic natural growth. Despite of the loss of the original functions and shapes, it is still an abstraction from the nature.^[2]

Be it the traditional realistic sketch that highlights the “tracing of external forms” or the design sketch that focuses on “discomposing internal structures and processes,” they both follow the same principle: to honestly draw an object as much as possible through a holistic measurement and profiling^[3]. Landscape painting, alternatively, accentuates different methods in observation and expression of objects.

There have long been two main genres in landscape painting in terms of approaches of observation and expression: realism (by in-position viewing and represented by western landscape paintings) and freehand (by moving viewing and represented by Chinese landscape paintings). The realism expresses what the painters observe at a particular moment and a particular site as detailed as possible, which is still an act of honest drawing, just like the traditional realistic sketch (Fig. 4), and praises verisimilitude, illustrated by the competition on painting skills between ancient Greek painters Zeuxis and Parrhasius by painting grapes and curtains in an extremely realistic way^[4].

In contrast, the freehand embraces the expression of the painters’ observation and perception of natural landscapes by integrating their memories and personal interpretation

5. 郭熙的画作《早春图》，现藏于台北故宫博物院。
5. *Early Spring* painted by Guo Xi, collected in Taipei Palace Museum.

前三种绘画的观察方法最大的不同；但其创作结果仅仅是不同场景的拼贴与并置，仍然停留在表达外在形式的层面。

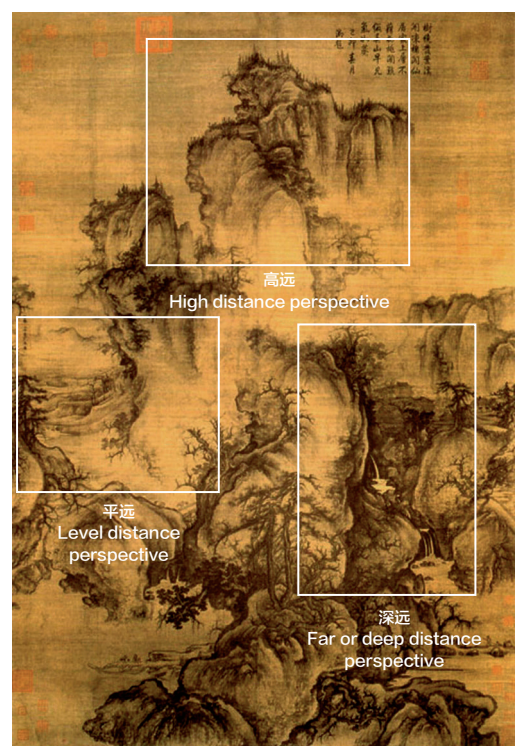
3 景观设计学科的观察与表达

上述绘画类型观察与表达的内容都是纯粹的客观事物或自然现象。而“景观”是一种现象学语境下拥有丰富内涵的媒介^[6]，因此，景观设计学科的观察与表达“并不是简单的摹写和复现客观事物”，还应将其背后“更多的东西”^[7]——景观的内涵——呈现出来。这些信息与关联往往不是肉眼可见的，必须借助一定的方法予以探究和追溯。下文将从三个方面来探讨景观设计学科的观察与表达。

3.1 亲临场地

首先，观察者必须亲临场地。在当前的信息技术时代，尽管设计师可以在不到场的情况下便获得各种场地信息，如场地高程、卫星影像、植被分布状态等，但是对于景观设计学科来说，个人经历和文化背景的差异会导致不同设计师对相同场地形成不同的认知和解读，因此亲临场地的意义仍是不可替代的。

具体而言，这一要求源于景观的三个特征——空间性、时间性和物质性。美国宾夕法尼亚大学景观系前系主任詹姆斯·科纳在其论文《再现与景观：景观媒介中的绘画与营造》里具体讨论了这三种特征。“空间性”强调景观不是单一地点和视角下的自然风景，对景观



into drawings. A good example is the Three-Distance Theory, first employed by Guo Xi, a great painter in Song Dynasty. Guo believed that a natural scene can be viewed and depicted in three perspectives of distances, namely High Distance Perspective (viewing by looking up), Far / Deep Distance Perspective (viewing by looking beyond), and Level Distance Perspective (viewing by looking afar).^[15] In his masterpiece, *Early Spring*, Guo integrated the three perspectives in one frame (Fig. 5). The multiplicity of perspectives makes abstract landscape painting itself strikingly different from the former three, whose expression form, however, was considered still a depiction of external shapes with methods of collage and re-arrangement of different scenes.

3 The Observation and Expression in Landscape Architecture

What are depicted in the above painting types are absolutely natural objects and phenomena. However, landscapes, as a kind of medium with rich connotation in the phenomenology context^[6], are considered and expressed quite differently in Landscape Architecture: Instead of simply replicating natural shapes or forms, landscape observation and expression aims at exploring and visualizing the meaning of invisible connections in the sites^[7], which requires proper methods and approaches. The paper will elaborate on the observation and expression in Landscape Architecture from three perspectives.

3.1 To be On-Site

For landscape observation, to be on-site is necessitated. Nowadays, thanks to the advance of information technology, designers have access to acquiring site information, including elevation data, satellite images, and vegetation maps, without field visits. However, in Landscape Architecture, site visit is irreplaceable because designers' individual experience and cultural background result in a variety of perception and reading of a same authentic site.

The on-site observation of a landscape is determined by its spatiality, temporality, and materiality, which are articulated specifically by James Corner, the former chair of Department of Landscape Architecture, University of Pennsylvania, in his paper *Representation and Landscape: Drawing and Making in the Landscape Medium*. Spatiality refers to that the understanding of a landscape should go beyond a static scenery of a particular location from a particular perspective; the site should be perceived and experienced at different levels and from different perspectives. Temporality requires designers to

的观察即是从不同的地点和角度对场地进行感知和体验；“时间性”指景观会随着时间推移而演变，因此需要在不同时间与事件背景下对场地进行解读；“物质性”意味着人们必须通过亲身接触与感知真实的场地，才能更好地理解组成景观的物质材料的丰富性与复杂性^[6]。这意味着在教室或实验室里借助科学仪器获取的数据，并不能充分反映场地上各种元素的物质材料特征。^[8]

在场地中，除了观看，观察者在行走、攀爬的过程中还可以借助听觉、嗅觉、触觉等感官来感知和体验场地的物质材料特征，如感受植物的芳香、土壤的气息、阳光的“味道”等。这些感受将嵌入观察者的肢体与肌肤，留下长久的记忆，并且——正如美国著名人文地理学家段义孚所说——能够“唤起观察者强烈的情感体验”^[9]。因此，亲临场地的观察不仅是视觉意义上的，还需要调动其他感官维度。

3.2 基于身体运动的观察

其次，景观的观察要求调动身体的运动进行体验与感知。在传统素描与设计素描中，观察的对象是独立于观察者之外的另一个物体，因此观察者与观察对象之间除了视觉上的“观看”，并没有太多其他感知联系。而在景观设计学科中，“亲临场地的观察”意味着观察的主体（人）被观察对象（自然场地）所笼罩，这使得对景观的观察具有如下两个特征：

3.2.1 观察的连续性与序列性

对自然场地的观察需要通过身体的运动，激发观察的连续性与序列性。这种观察不是在静止状态下从单一地点观察一幅幅固定角度的静止画面，而是在运动中感知连续的动态空间片段。这种连续性、序列性的观察曾被国内外学者广泛讨论，如著名建筑历史理论家、宾夕法尼亚大学教授戴维·莱瑟巴罗在演讲“蜿蜒的法则”中指出，“多样变换”作为18~19世纪欧洲传统如画式园林的审美范畴之一，对现代建筑的空间设计影响深远，其是指多个景象的集合依次展现在观察者眼前，“就像戏剧舞台上表演的一个个片段，一幕幕剧情”^[10]。对这种“多样变换”的美感的体验，实际上正是来自观察者在园林中的序列型的连续运动；著名园林史学家约翰·迪克逊·亨特提出的人在园林中的三种运动方式——“队列行进、散步及漫游”^[11]，也是在探讨人在运动中的观察与感知。由于园林是对自然景观进行模拟、再造的产

view the landscapes at different moments and in varied contexts. The materiality means that the abundance and complexity of the material composition of a landscape can only be comprehended with the observers' on-site perceptions and feelings.^[6] Therefore, such on-site observation cannot be replaced with off-site information searching and data analyses.^[8]

Besides visual perception, observers can also trace and learn the unique auditory, olfactory, and tactile features of the landscape's materiality — for instance, the fragrance of the plants and the smell of soil or even the sunshine — when they are walking around or climbing up and down on the site. Such experience would then leave the observers a memory and impression of the landscape scenes and arouse their strong emotions, as what Yi-Fu Tuan, an American anthropogeographer, stated^[9]. Therefore, on-site observation is an act requiring multi-sensory approaches.

3.2 Observation through Body Movement

Second, body movements should be emphasized in on-site observation. In drawing a traditional realistic sketch or a design sketch, the only sensorial connection between the observer and the object relies on “viewing,” because the observer is outside of what he / she is watching. However, the on-site observation in Landscape Architecture means that the observer is surrounded by or part of the object (the landscape). It contributes to two-fold significance as following.

3.2.1 The Continuity and Sequence of Observation

Observation through body movement should be continuous and sequential in order to generate a dynamic sequence of landscape perceptions, which has been discussed widely in the academia. In his lecture “The Law of Meander,” David Leatherbarrow, an architectural history theorist and professor of University of Pennsylvania, underpinned that the “variety” of picturesque traditional gardens that has greatly influenced the spatial design in modern Architecture refers to the sequential appearance of a series of scenes in the gardens, just like “acts or events on stage in a dramatic performance”^[10]. It is exactly perceived when people are moving continuously and sequentially throughout a picturesque garden; the “three kinds of movements” in gardens and other designed landscapes, namely “the procession or ritual, the stroll, and the ramble,”^[11] put forward by the famous garden historian John Dixon Hunt, also elaborate how people experience the garden sceneries during continuous movements. As gardens are replications of natural landscapes, such movements also are required for the observation of natural sites. To some extent, this also finds

6. 钱贡于明万历年间绘制的《环翠堂园景图》局部。全图为一幅连续长卷，全面表现了徽州府私家园林“坐隐园”内外的109处景点。

6. A part of *Huan Cui Tang Yuan Jing Tu* painted by Qian Gong in Ming Dynasty. It is a long scroll presenting all the 109 scenic spots in Zuoyin Garden, a private garden located in the Huizhou region at that time.



物，因而对自然场地的观察也必须注重连续性与序列性。这与中国山水画创作中的“游观”法（图6）在某种程度上是相通的。

景观设计学科的观察不仅仅是发现自然场地的表象，还要探究其形成的内在逻辑，因此，观察者必须在地面上持续运动并抓住一系列连续的自然现象特征，才能分析其中隐藏的各种场地因素，及其之间的相互关联。例如，当观察到地面上有不同状态的树叶（如枯叶、新叶或被挤压进泥土中的叶片），并探究其原因时，就需要在持续的运动中对场地内与树叶有关的各种因素（如光照、树龄等）进行比较与分析，进而得出结论——或许是高处茂密的树冠影响了较矮的树木接受光照，或许是树叶在生长过程中自然凋落。显然，缺乏方向性的散点式观察无法有效帮助设计师发现这些内在关联。

3.2.2 观察的信息侦查性

景观设计学科的场地观察不仅仅是通过多种感官对场地的自然表象进行感知，还包括侦查场地信息，如坡度、坡向等自然因素，以及地方传统、社会经济发展状况等社会人文因素；除了地面上肉眼直接可见的事物与现象之外，如农作物种植模式、空气质量等需要进一步探查和搜集的信息也应包括在内。观察者不仅要如实记录上述信息，还要据此预估使用者介入场地后可能产生的反应，以形成对场地特征的评价，如什么样的坡度适宜行走，什么样的地表材质不易滑倒等。这类侦查最早来源于军事行军路线评估，观察者除了记录可见的

resonance with the “moving-viewing” approach adopted by Chinese landscape painters (Fig. 6).

In Landscape Architecture, the goal of observation and expression is to discover and present not only the forms and appearances, but also the internal relations of factors leading to natural phenomena, which often rely on tracing the clues from the continuous features on the site. For instance, to find out why there are dead, young, and mud-covered leaves on the ground, one has to move around to make a series of comparisons and analyses of all the factors that might result in such situations of leaves (e.g., light condition or tree ages). Then, the cause, either the dense canopy that blocks the sunshine for smaller trees or just a seasonal natural phenomenon, can be figured out. It is obvious that random observations can little help designers explore the internal factors and relations of natural beings.

3.2.2 Field Investigation in Observation

Landscape observation also requires field investigation to accurately and holistically profile a site by studying its environmental, societal, and cultural factors and conditions, such as slope grade and aspect, folk tradition, and the regional socio-economic context; besides, in-depth exploration is needed to collect information that cannot be acquired by “seeing” and requires a further measurement or evaluation, such as the crop farming patterns and air quality. The observers should also assess the site features by simulating users’ behaviors and activities on the site — for instance, the best slope grade range for walking comfort; the best antiskid materials on the ground surface. Such

山脉、水系等自然基底，以及桥、路等人造构筑，还要对路线中的环境、交通等各方面情况进行评估。^[12]因此，这种对场地的观察不再是仅仅像镜子一样折射、反映场地的客观面貌，还需要对各种细节信息与人的使用情况进行深入观察、收集、判断与评论。

这种信息的收集和侦查过程如同一个复杂的“化合”过程，使场地的客观物像与观察者的主观认知、兴趣与经历相互交织、相互作用，形成具有鲜明个体特征的印象记录，而不是机械的数据复制。这种差异和变化正是景观设计的艺术魅力的来源，为设计师的设计创作提供了无限可能。

3.3 以“再现”为目的的表达

景观设计学科的表达需要揭示景观的内涵，即客观事物与现象的“形”背后的“理”，包括自然场地在时间和空间上的变化过程，以及其间万物的关联。

3.3.1 从表达形式转向表达过程

传统写实素描表达的是准确的“造型”，要求能够尽可能还原客观对象的形态；设计素描的表达则开始追求展现对象的内部结构，并认为这种对内在结构的理解在某种意义上也是对外部造型的表达。而对景观设计学科而言，对自然场地的表达需要从还原事物的表象转变到展现事物的本质，才可能在后续设计中介入自然场地，表达的关键内容则是探究场地中的各种外部力量如何相互作用，及其影响和塑造事物形式的过程。

尽管设计素描和景观设计学科对场地的表达看似都强调“过程”，但其本质不同：设计素描表达的是观察者探究静态物体内部结构的过程，该过程不涉及外部作用力对物体的影响；而景观是由场地中许许多多彼此相关的力量共同塑造的动态对象，是具有生命力且可参与的。例如，詹姆斯·科纳景观设计事务所在加拿大多伦多当斯维尔公园设计竞赛方案中呈现了场地在未来20年间的变化过程，包括各阶段需要建造的内容和相应的管理措施，及其可能对动植物造成的影响等（图7）。其表达的重点不再是场地经过设计后的“最终状态”，

field investigations were first employed for military purposes, when the scouts investigated natural morphologies (e.g., mountains and rivers) and manmade structures (e.g., bridges and roads) to assess the environmental and traffic conditions of marching routes.^[12] Such investigation help observers generate both the objective knowledge and subjective understandings of the site, covering not only the natural beings but also human activities and perceptions.

These field investigation processes realize an integration of natural objects with the observers' individual perception and personal interests and experience, giving birth to unique interpretations rather than data replication — this is the charm of the artistry that landscape architecture has and the variety of possibilities that landscape architecture brings.

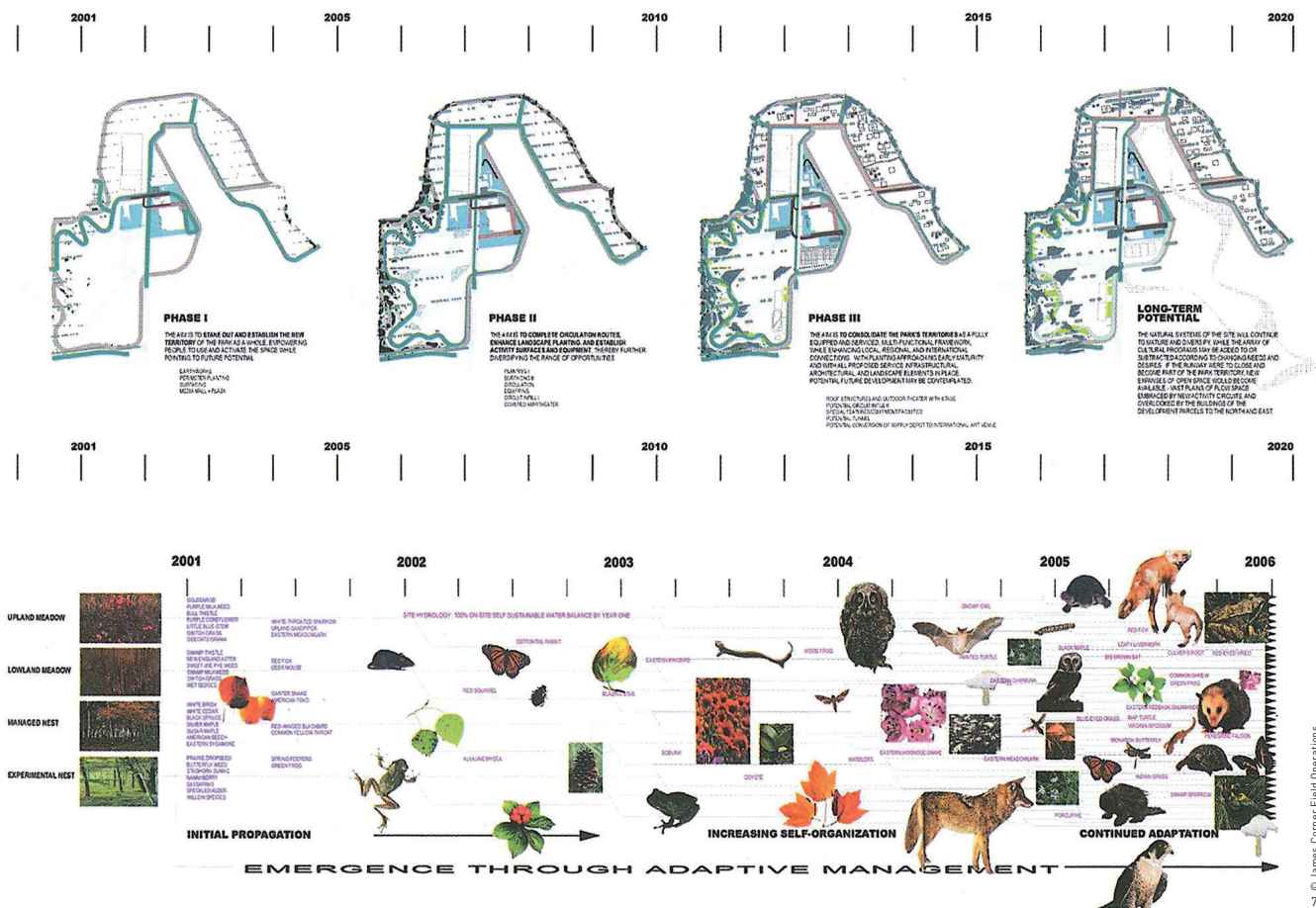
3.3 Representation as Expression

In Landscape Architecture, the expression of landscapes focuses on exploring the intrinsic logics and rules that affect and generate the “shape” of natural beings, including the temporal-spatial evolution of a site and the inter-relations among all components in the system.

3.3.1 From Form Expression towards Process Representation

Therefore, a transition of the goal of expression from the traditional realistic sketch to design sketch then to Landscape Architecture can be seen from accurately depicting the image of objects, to decomposing the internal structures for interpreting the external forms better, and then to representing the essences of natural beings on the site, which is expected to reveal the interactions among all kinds of factors on the sites and the formation processes of the observed objects and phenomena. The process representation lays a foundation for the following design practices.

Notably, the “processes” expressed in both the design sketch and landscape design differ from each other in essence. The former refers to how the observers decompose the internal structures of static objects without considering the impact of external factors. In the latter, landscape is a living and participatory entity shaped by a great number of interrelated factors. One example of this kind of process representation is the proposal of Downsview Park in Toronto, Canada by James Corner Field Operations. It visualized the changes of the site in the upcoming two decades, including the specific construction in each construction phase and the corresponding management measures, as well as the possible impacts on local animals and plants (Fig. 7). Instead of showing a beautiful defined vision about the site, the proposal attempted to manifest and



- 詹姆斯·科纳景观设计事务所在加拿大多伦多当斯维尔公园设计竞赛中提出的“生长的生态”概念
- The concept of “Emergent Ecology” proposed by James Corner Field Operations in the Downsview Park International Design Competition

而是其在各种外力（如砍伐、开垦等人为因素，以及阳光、风、降水、洪泛等自然因素）共同作用下逐步达到这一“最终状态”的过程。

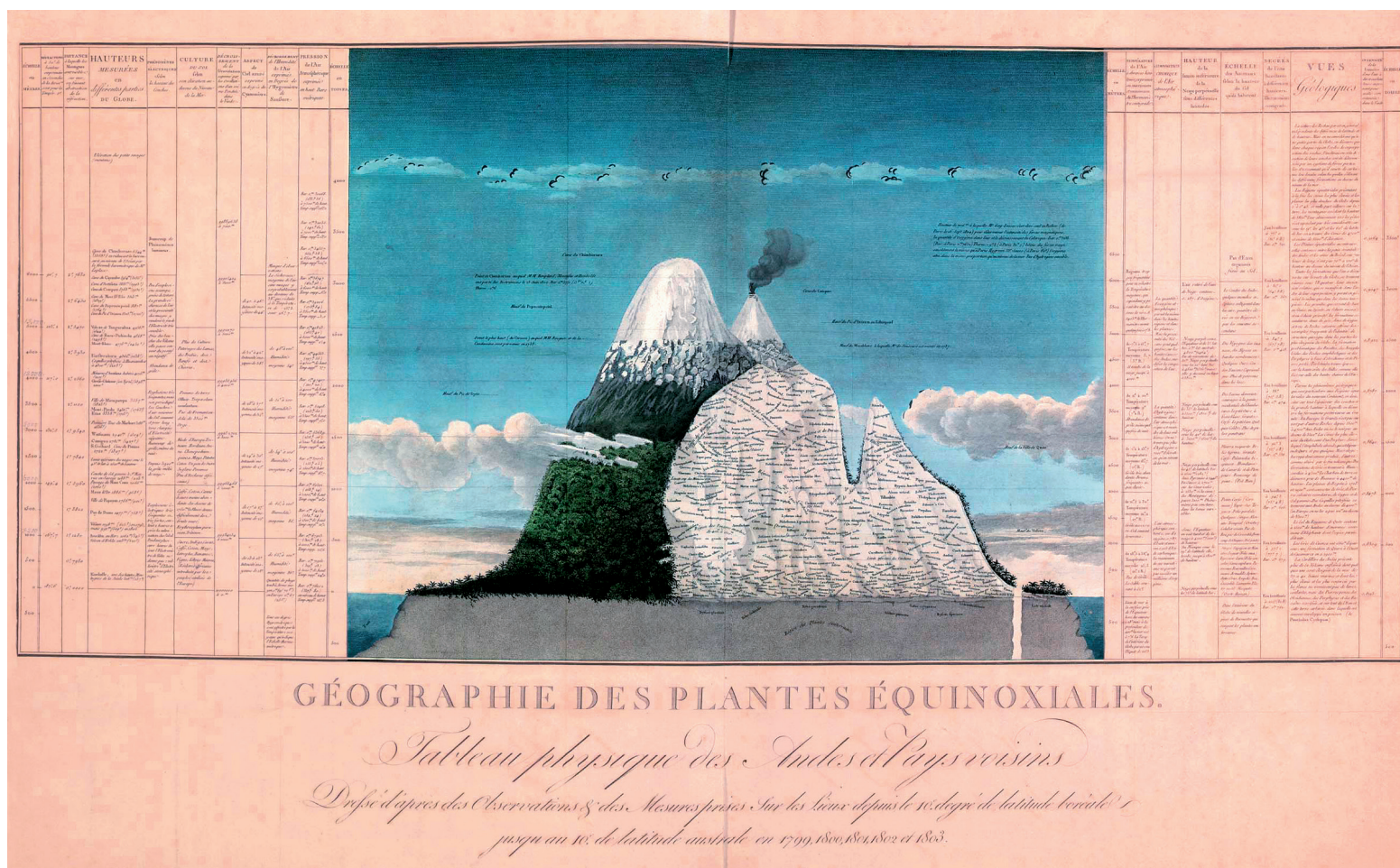
3.3.2 表达联系与关联

另一方面，场地内各种因素的相互作用也在客观事物与现象之间建立了联系。因此，对景观的表达还必须包含这些关联。正如近代气候学、植物地理学和地球物理学创始人之一的德国自然科学家亚历山大·冯·洪堡所述，“自然是一个有机的整体”，不是“僵死的拼合物”；在探索未知场地时，较之提出一系列彼此孤立的发现，洪堡对如何将它们联系起来更感兴趣，并认为个别现象“唯有通过与整体关联才变得重要”。^[13]这种关于自然内部关联性和整体性的思考在洪堡著名的《自然之图》（图8）中得到了充分体现。

interpret how the vision and designed scenarios will evolve over time under all kinds of human and natural impacts, such as deforestation and reclamation, as well as sunshine, wind, rainfall, and floods.

3.3.2 Representation of Relations

Meanwhile, the interactions among the external factors also support the connections between all the natural beings on the site, which should be part of the representation of landscapes. According to Alexander von Humboldt, a German natural scientist and the founder of the modern Climatology, Phytogeography, and Geophysics, nature is an organic unity moved and animated by inner forces, rather than ossified combinations. He was more interested in the correlations than isolated discoveries when exploring an unknown site, holding that individual phenomenon is of no significance unless being correlated to the whole.^[13] His ideas on the internal relations and the unity of nature are typically elaborated in the well-known *Naturgemälde* (Fig. 8).



8. 亚历山大·冯·洪堡绘制的《自然之图》（1806年发表）描绘了南美洲最南端的剖面，画面的两侧分别为大西洋和太平洋。

8. The *Naturgemälde* (1806) painted by Alexander von Humboldt expresses a transect of the Atlantic Ocean, the South End of South America, and the Pacific Ocean.

在这张图中，洪堡建立起了位于相同海拔高度的不同事物之间的关联性。他描绘了位于南美洲厄瓜多尔的钦博拉索峰和科多帕希火山的纵剖面，并以“海拔高度”为线索，用文字描述和各种数据将有关这一地区的多种可见或不可见的信息相串联。洪堡“在画面的左右两侧排布了几列文字栏，提供一些细节信息。只要在左边栏中选择某个海拔高度，就可在图中找到这一高度下相互关联的事物，了解此处的温度、湿度和气压，以及生活在这里的动物和植物”^[13]。

此外，洪堡还将人类的活动与生物圈和物理环境联系交织在一起：在1806年发表的《植物地理学随笔》中，他将植物的地理分布置

In this drawing, Humboldt tried to establish the connections among things at a same altitude: he depicted the transects of the Chimborazo Peak and the Cotopaxi in Ecuador, South America and correlated the visible and invisible information of the natural beings at the same altitude with descriptions and data: He displayed different types of detailed information in the lists on both sides of the drawing as references. One can first select an altitude from the list in left and find out the corresponding data and descriptions such as the temperature, humidity, air pressure, and flora and fauna.^[13]

Moreover, Humboldt examined the distribution of plants at a broader scale to correlate plant communities with the physical world and human activities. In his work *Essay on the Geography of Plants*, published in 1806, Humboldt stated that the crop, vegetable, and fruit species travelled along with humans' migration and settlement in history, increasingly expanding the distribution of plant species and changing the

9. 帕特里克·格迪斯绘制的峡谷剖面

9. The "Valley Section" by Patrick Geddes

于更宏观的视野中进行观察，并指出：数千年来，庄稼谷物和蔬菜水果跟着人类的脚步传播，人类将植物带到新的家园，也改变了地球的面貌。农业使植物与政治和经济挂钩，人类历史上的无数战争都因抢夺植物资源而爆发。^[13]通过对场地关联的跨尺度思考，洪堡将对动物与植物的研究内容拓展到了它们与各种外部因素之间的关联与相互作用，如温度、湿度等物理环境因子，以及人类的迁徙、战争等经济政治因素。

值得一提的是，1905年，苏格兰城市规划大师帕特里克·格迪斯绘制了另一张“峡谷剖面”，其包含了从高山到山脚湖泊的一系列景观类型，并将它们与当地入从事的职业联系起来（图9），以强调“人、工作和场所”的关系^[14]。与洪堡的发现相比，这张“峡谷剖面”表达的关联将人类活动考虑得更为细致、深入，但仍然是单一地方尺度上的；洪堡的思想则使场地尺度的景观与其所在区域乃至全球范围内的其他地方产生关联。

4 从场地观察到设计表达

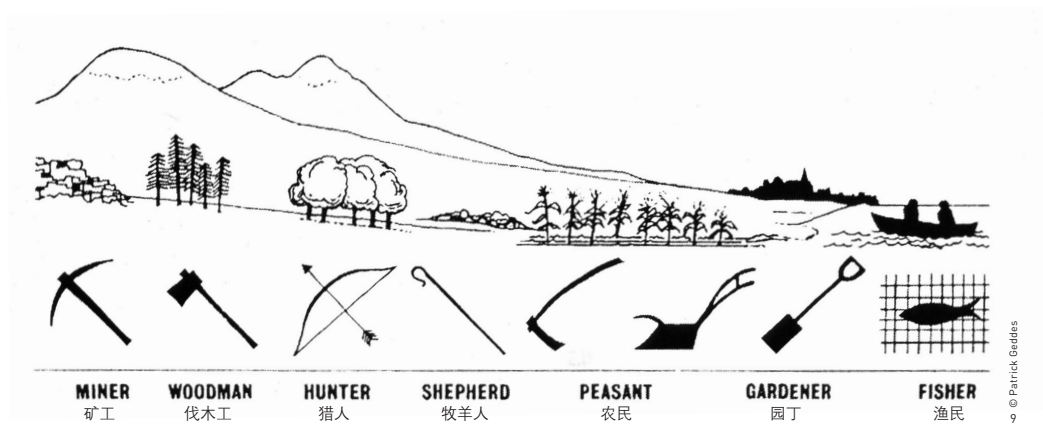
正如前文所述，对景观的观察需要观察者亲临场地并基于身体运动进行多感官维度的、充分的场地感知，且其表达注重揭示自然现象背后的本质与联系。但是，景观设计专业教师需要思考如何使学生理解这种场地观察与景观表达之间的联系以及不同事物之间的关联性，并掌握通过观察与表达提炼出设计概念的方法。笔者将以两个案例具体加以说明。

global landscape. Considering that many wars on the world were about the fighting for the limited agricultural resources and products on earth, Humboldt also correlated plant species' distribution with the political episodes and economic developments in human history.^[13] With such reflections on the trans-scaled relations of natural sites, Humboldt innovatively expanded his study scope to the correlations and interactions between flora and fauna with the conditions of their natural environment (e.g., temperature, humidity) and socio-economic contexts (e.g., human migration, wars).

Notably, another famous transection drawing, the "Valley Section" by the Scottish urban planner Patrick Geddes in 1905, presents various landscape types observed, from the peak to the lakes in the foothill and correlates them to different occupations of local residents (Fig. 9), highlighting the relationships among human, work, and places^[14]. Human activities were examined more specifically in Geddes' work, at a local scale though. While, Humboldt's findings employed a trans-scaled perspective to map such relationships by examining the landscapes in a regional or global context.

4 From Site Observation to Design Representation

As above, the author exemplifies that on-site observation based on body movement and multi-sensory perception and the landscape representation dissecting the nature and internal relations of natural beings can help Landscape Architecture students not only learn the connection and causality between on-site observation and landscape representation, as well as the correlations between all sorts of creatures, but also master the methods and skills of how to extract and develop a design concept from such a process of observation and representation. Two cases are illustrated in the following text to elaborate how observation and representation are employed and performed in the teaching and design practice of Landscape Architecture.



4.1 从具象的场地到抽象的设计语言

在中国美术学院建筑艺术学院景观设计系的专业入门课程中，笔者引导学生从观察真实场地中的自然现象出发，经过逐步分析，最终提取出可作为设计语言的再现形式，并将这一过程按以下4个步骤分别呈现在长1100mm、宽150mm的带状图片/模型之中（图10，11）。

首先，学生需要仔细观察场地地表，将自己感兴趣的某种自然现象作为探索的主题，然后拍摄一系列彩色照片拼贴成第一组带状图片。例如，学生李乐观察到一块凹凸不平的地面上凌乱分布着大小不一的石头，分析后发现这与场地内曾经存在的水流的冲刷作用有关，于是将“石头与水的互动关系”作为研究主题。

彩色照片所呈现的场地表面的材料特征是丰富而庞杂的，为了进一步突出主题，学生需要将照片转为黑白模式，并进一步裁剪、拼贴、局部灰阶调整等，以过滤一些干扰元素，制成第二组带状黑白照片。李乐在这一步中去除了照片中的树叶、泥土杂质等与主题相关性较弱的元素，以突出表达石头和水流痕迹的轮廓和肌理。

第三步是用硫酸纸和针管笔绘制的尺规线描图。这个过程不是简单地描绘黑白照片下的景观元素的轮廓，而是探索其如何与场地内的各种影响因素产生联系与关联，并以抽象的线描形式表达出

4.1 Developing Abstract Design Languages from Physical Sites

In the fundamental studio of the Department of Landscape Architecture of the School of Architecture, China Academy of Art, the author teaches students about how to observe and analyze natural phenomena on an authentic site and then abstract and represent them as design languages. The process consists of four phases as following, and students are asked to record each of them in a form of a stripe image / model at 1,100 mm × 150 mm (Fig. 10, 11).

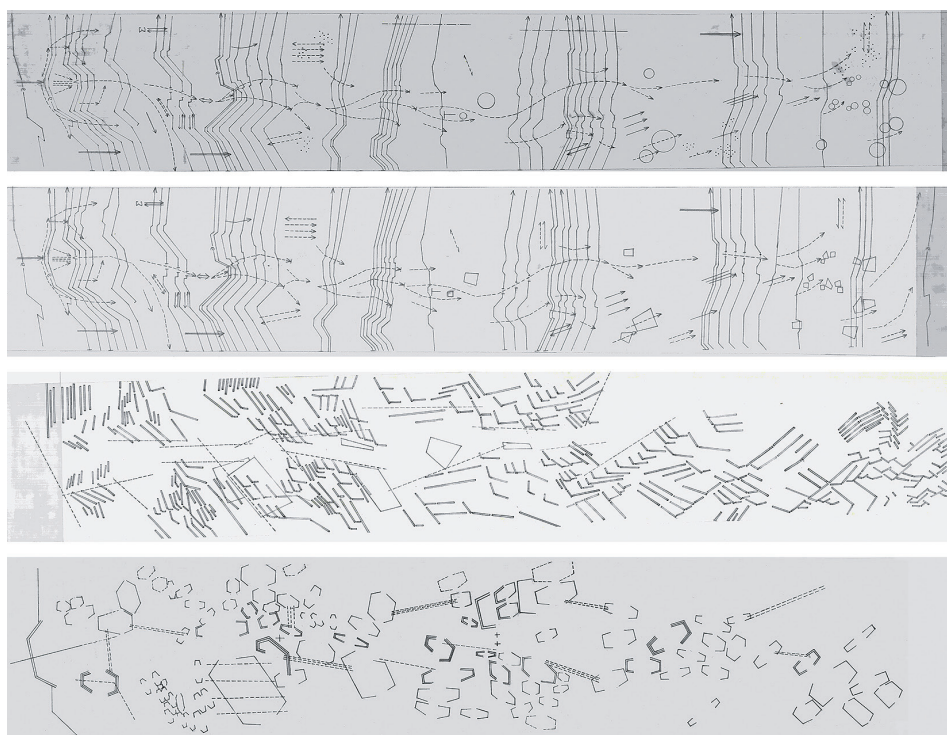
First, students need to observe the sites and take one of the observed natural phenomena as his / her study topic. Then, he or she takes a series of colored photos to form the first collage strip. For instance, student Li Le noticed that there were a number of stones in different sizes scattered on the rough ground, then discovered that it was caused by water flow scouring. Therefore, she studied the interactions between stones and water flows as her interest.

However, in colored photos, the characteristics of materials on the ground is usually too rich and complicated to easily identify the elements that should be included under the study theme. Students need to transform the photos into black-white ones: through screening, clip, re-arrangement, and grayscale adjustment, the second black-white collage strip can be created. In doing so, Li eliminated the leaves and mud on the ground so as to highlight the shapes and textures of the stones and water flow traces.

10. 自上而下依次为学生李乐制作的彩色照片拼贴图、黑白照片图、尺规线描图，以及3D模型。
11. 学生李乐通过绘制不同的尺规线描图来表现场地内石头、水流及其相关因素的不同状态。

10. The colored photo collage strip, black-white photo collage strip, geometric drawing sketch strip, and 3D model strip (from top to down) made by student Li Le.

11. Student Li Le represented the varied stones, water flows, and the related factors on the site with geometric drawing sketch strips by ruler-compass drawing.



来(图11)。如李乐的尺规线描表明,石头的不同状态是由多种因素共同造成的,如石头本身的大小、位置,以及水流冲刷的强度、方向等:洼地积水对石块几乎没有冲刷作用,雨季泄洪水则有较强的冲刷力;较大的石块不易因水流冲刷或被踩踏而发生位移,较小的石子则易被踩进泥土或被水淹没;位于道路中央的石头比路旁的更容易被踩踏,等等。至此,地形地势、雨洪径流、天气状况以及人类活动等因素对场地状态的影响逐步显现出来。石头与水流这两种景观元素则是探究影响场地的各种自然力量和人为因素的透镜和媒介。

第四步是对尺规线描表达的景观元素及其与自然、人为因素的关联作进一步抽象,提取其空间特征,并以立体形式表现为3D模型。如李乐通过折叠和切割的方式来表示场地的高程变化,并着重表达场地中石头的多种状态:例如凸起处代表大块石头,凹陷处代表部分露出水面或沉没于水面以下的石头。

在上述练习中,学生首先通过亲临场地进行观察形成个性化感知,然后聚焦于自己感兴趣的现象,对其形成机制展开探究;上述4种带状图片/模型展现了这一循序渐进的探究过程,通过再现场地内“那些之前人们并未注意到的联系和共性”^[15],在真实场地的表象与抽象的概念形式之间建立起联系,而后者将成为进一步开展场地设计的重要基础。

4.2 从地方到全球的跨尺度思考

对场地关联性的观察与再现还可从更大的区域与全球尺度来推进景观设计。于1999年开放的西班牙巴塞罗那植物园便是一个很好的案例:景观设计师贝特·菲格拉斯将巴塞罗那的地中海气候作为组织花园植物展区的线索,将澳大利亚、南非、美国加利福尼亚州、智利等具有同样气候类型的国家或地区的代表性植物整合在一起,使花园景观既能展现全球不同地区的自然植被特征,又能达成某种协调统一,从而形成独特魅力(图12, 13)。这种做法亦可避免外来植物无法适应当地气候的问题,大大节约了花园的养护成本。

值得一提的是,上述将植物、气候与区域相联系思考方式并非景观设计师的首创,洪堡于1799~1804年在美洲考察期间便发现了植物、气候与区域之间的类似关联:“他在安第斯山脉看到的苔藓,让他想起了千万里之外的德国北部森林中的另一种苔藓。在加拉加斯附

In the third step, students are asked to record and visualize the relations between the themed landscape elements with other factors on the site in a form of geometric drawing sketches with the vegetable parchments and fine point pens (Fig. 11). Li's sketches revealed that the varied conditions of stones resulted from a combined impact of stone sizes and locations, the magnitude and direction of water flows, etc. Her findings included that ponding water caused little erosion of the stones, while floodwater during rainy seasons eroded the stones heavily and can rush them away; the larger the stone was, the more difficult it was moved when being washed out or stepped; and the stones in the middle of path were more likely to be disturbed by passers-by. In this way, the impacts of terrain, runoff, weather, and human activities on the site was gradually visualized by analyzing the interactions between the stones and water flows.

Based on the geometric drawing sketches, students are asked to abstract the spatial features of the themed landscape elements and their relations with the natural factors and human interventions, and represent them in a 3D model strip. In her model, Li represented the elevation variation of the site with paper folding and cutting with a special focus on the diverse states of the stones: for example, the humps represent the larger stones and the depressions refer to those submerged by the water, partly or totally.

Starting with an on-site observation, students are encouraged to develop individual perceptions and study a natural phenomenon in their interests to explore the mechanisms and rules behind them. With collages, sketches, and models, the progressive discoveries during the exploration that manifests the relationships and similarities that were previously unsuspected^[15] correlate the specific phenomena in reality with the abstract concepts and forms, which is fundamental to the following design process.

4.2 From Local to Global

Moreover, the observation and representation of landscape relations on a site can correlate with regional- or global-scaled landscapes. The Barcelona Botanic Garden opened in 1999 is a classic example: Taking the Mediterranean Climate of Barcelona as a clue, the landscape designer Bet Figueras introduced representative plants from other countries and regions with the same climate, such as Australia, South Africa, California in the United States, and Chile, into one garden. While displaying the diversity of plants, the garden creates the unique and harmonious charm (Fig. 12, 13). These adaptive exotic plants can also save the maintenance costs.

It is worth noting that a similar correlation has been discovered by Humboldt far earlier in his expedition to the

近的山中，他仔细观察那里类似杜鹃花的灌木丛，发现其与生长在瑞士阿尔卑斯山的一种树十分相似。后来在墨西哥，他将那里的松树、柏树与橡树和加拿大的树种进行比较……”^[13]正是基于这些发现，洪堡首次提出了将植被、气候与地理环境相结合的概念——“植被带”，以及按照分布区域而非生物学特征对植物进行分类的新方法，为近代植物地理学的发展奠定了基础。而巴塞罗那植物园的案例恰好证明，这种从地方到全球的跨尺度关联思维，能够为场地尺度的景观设计提供有力支撑。

5 结语

对于景观设计学科，观察是一切知识的根本，生动的图像表达则是研究场地和设计创新的重要工具。自然场地的观察与表达的最终目的不是“模拟”，而是“再现”，即揭示事物外部形式/形态的生成逻辑，是揭示事物在不同时间、不同外力作用下的“动态的过程探究”。换言之，观察的重点是影响事物发展的各种作用力，而不是形式本身；再现的基础是对事物本质的认识和理解，而不是对事物表象的描摹。^[16]因此，亲临场地的、调运多感官维度的观察是景观设计的必要前提，而对事物本质的思考及对事物之间关联的探寻更是有助于拓展设计思维。这不仅有助于设计师更好地将自然规律融入方案的推敲过程，从而为设计实践提供更坚实的科学依据，而且，面对景观设计学科入门课程的两大教学难点——一是探究绘画与设计之间如何建立联系，并通过一定的教学方法引导学生对此展开探讨；二是如何从观察与表达入手，引导学生对真实的场地进行认知，从而逐步生成设计概念——这种观察与表达亦为我们提供了一种有力的设计实验工具。LAF

Americas from 1799 to 1804: The moss he found in the Andes reminded him of another plant species in the forests in northern Germany. The azalea-like bushes in the mountains near Caracas, Venezuela looked similar to a tree species found in the Alps in Switzerland. He also compared the pines, cypresses, and oaks in Mexico with those he observed in Canada.^[13] Inspired by such findings in vegetation, climate, and geology, Humboldt came up with the concept of “plant communities,” which leads to a new plant taxonomy method based on the global distributions of plant species, instead of biological characteristics, laying a foundation for the modern Phytogeography. The design of the Barcelona Botanic Garden perfectly exemplifies that a trans-scaled thinking and reflection can provide strong support to site-scaled landscape design practice.

5 Conclusion

In Landscape Architecture, all knowledge about the sites comes from observation and graphic representation is significant in fostering and developing design creativity. Instead of depicting “what a natural being looks like” by seeing, such a

12. 巴塞罗那植物园的总平面图（左）与地中海气候在全球的分布范围（右）
12. The master plan of Barcelona Botanic Garden (left) and the Mediterranean climate zones all over the world (right).

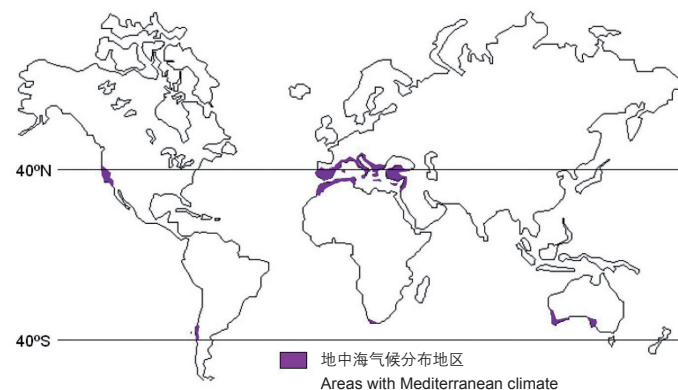


- | | | | |
|-----------------------|------------------------------------|----------------------------------|---|
| 1. 澳大利亚
Australia | 4. 加利福尼亚州
California | 7. 北非
North Africa | 10. 植物园养护中心
Botanical garden
maintenance building |
| 2. 南非
South Africa | 5. 东地中海地区
Eastern Mediterranean | 8. 加纳利群岛
Canary Islands | P 停车场
Parking |
| 3. 智利
Chile | 6. 西地中海地区
Western Mediterranean | 9. 植物学研究所
Institute of botany | |

Mediterranean Climate 地中海气候

noun.

1. A Mediterranean climate is a climate that resembles those of the lands bordering the Mediterranean Sea, a climate has sunny, hot, dry summers and rainy winters. These climates generally occur on the western coasts of continental landmasses, roughly between the latitudes of 30° and 45° north and south of the equator.
2. The theme of plant collections in Barcelona Botanic Garden.



地中海气候分布地区
Areas with Mediterranean climate

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13. 巴塞罗那植物园的实景图 (上) 与地中海气候对应的主要植物群落类型 (下)

13. The built-up landscape in Barcelona Botanic Garden (upper) and the major plant communities of Mediterranean climate (below)

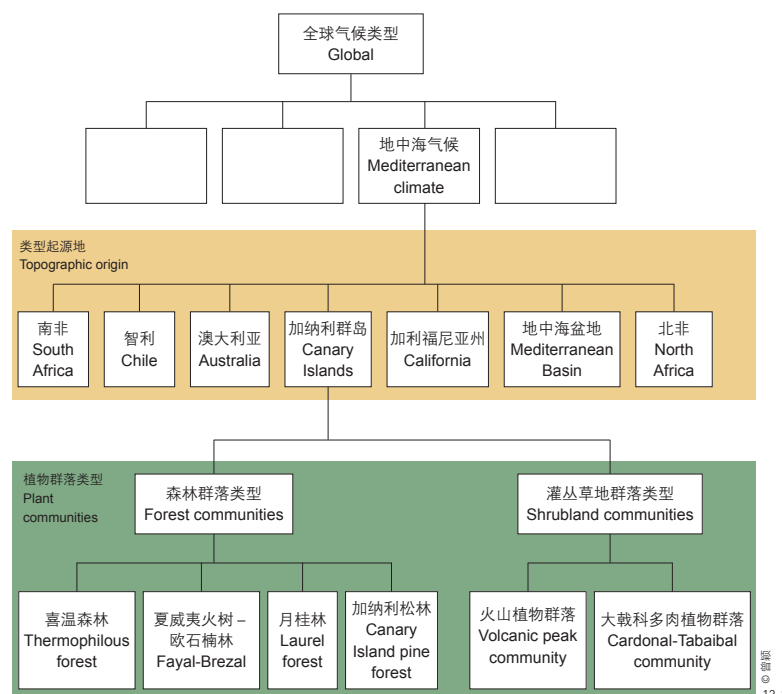


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Typology 分类

noun.

1. The classification of things according to their characteristics.
2. One way to divide plants into groups in Botanic Garden.



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13-2

process of observation and expression is to represent “why it looks like this” by knowing, through a dynamic exploration that tries to reveal the changes of natural things in different time periods and by different external factors. In other words, what landscape architects need to observe is all impact forces impacting a natural being’s evolution, rather than its form; what they need to represent is the perception and understanding of it, rather than its appearance.^[16] The author thus holds that 1) the essence of landscape observation relies on on-site visits, combined with multi-sensory perception during continuous body movements, and 2) the exploration of thing’s nature, as well as the correlations between things, helps landscape architects open design thinking and horizon, providing them with more scientific supports (including the rules and logics of natural processes and phenomena) that inform and improve landscape design practice. Meanwhile, to respond the two primary tasks in fundamental education of Landscape Architecture — 1) to explore the relationship between painting and design, and encourage and inspire students to think about it with proper teaching methods; and 2) to equip them with the capability to transform their understanding of an authentic site into design ideas through observation and expression — this observation and representation demonstrates itself as a powerful tool for experimental design. **LAF**

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