

**THE  
FUNDAMENTALS**  
OF LANDSCAPE  
ARCHITECTURE

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# THE FUNDAMENTALS OF LANDSCAPE ARCHITECTURE

SECOND EDITION

Tim Waterman

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B L O O M S B U R Y  
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## Introduction

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***“If there’s sky, it’s mine.”***

Kathryn Gustafson, landscape architect

## What Is Landscape Architecture?

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When asked where landscape architects work, many people might point out their back door to the garden. It would be more accurate, however, to look out the front door. The landscape is anywhere and everywhere outdoors, and landscape architects are shaping the face of the Earth across cities, towns, and countryside alike. Landscape architecture involves shaping and managing the physical world and the natural systems that we inhabit. Landscape architects do design gardens, but what is critical is that the garden, or any other outdoor space, is seen in context. All living things are interdependent, and the landscape is where they all come together. Context is social, cultural, environmental, and historical, among other considerations. Landscape architects are constantly zooming in and out from the details to the big picture to ensure that balance is maintained.

Landscape architecture combines art and science to make places. The art provides a vision for a landscape, using drawings, models, computer imaging, and text. The elements of design, such as line, shape, texture and color, are used to create these images, and the process allows the designer to both communicate with an audience and to visualize the site in order to act upon it. The science includes an understanding of natural systems, including geology, soils, plants,

topography, hydrology, climate, and ecology. It also includes knowledge of structures and how they are built, such as roads and bridges, walls, paving, and even the occasional building. Landscape architects are broad thinkers who thrive on the big picture.

Landscape architects are playing an increasingly important role in solving the great issues of our day such as dealing with climate change and providing sustainable communities. They are working on urban regeneration and master-planning projects, tackling environmental hazards, designing Olympic sites, and creating the public squares, parks, and streets we all use.

Landscape architecture is increasingly a field that requires natural leaders who can use their wide-ranging knowledge to lead large projects. It still, however, provides plenty of opportunities to make a substantial difference on a smaller scale as well. It is simply not possible to give a satisfactory short definition of landscape architecture, because of the incredible breadth of the field—but far from being a shortcoming, this is landscape architecture’s great strength. For those who crave both variety and a challenge, and are curious about everything that makes the world go round, a career in landscape architecture is ideal.



0.1

### 0.1

**Fresh Kills Lifescape, Staten Island, New York, Field Operations, 2001–2005**

Fresh Kills is an artificial topography created by half a century's worth of New York garbage. It shows the great range of landscape architecture in one project, from the need to mitigate pollution, clean groundwater, and trap escaping methane while creating a public park for people and wildlife.



### **Where do landscape architects work?**

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Landscape architects work within an incredibly diverse number of places. Anywhere humans have a hand in shaping the landscape, you may find a landscape architect at work. Some may specialize in a specific area, but many will have the opportunity to work with a wide variety of fields over the course of a career.

**Everyday places:** schoolyards, parks, streets

**Monumental places:** Olympic campuses, grand public squares, waterfront developments

**Play places:** resorts, golf courses, playgrounds, theme or amusement parks

**Natural places:** national parks, wetlands, forests, environmental reserves

**Private places:** gardens, courtyards, corporate campuses, science, or industrial parks

**Historic places:** historic monuments, heritage landscapes, historic urban areas

**Scholarly places:** universities, botanic gardens, arboreta, and contemplative places such as healing gardens, sensory gardens, cemeteries

**Productive places:** community gardens, storm water management, agricultural land

**Industrial places:** factories and industrial development, mining and mine reclamation, reservoirs and hydroelectric installations, and travel places such as highways, transportation corridors and structures, bridges

**The entire place:** new towns, urban regeneration, and housing projects

### **The Role of Landscape Architects**

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As a practice, designing with landscapes and places is as old, perhaps, as the history of human settlement. As a formally defined profession, however, landscape architecture is relatively new, dating back only about a century and a half. However, the term “landscape architecture” emerged slightly earlier. It sits within a group of interdependent professions that can be conveniently called “the architectures,” which include architecture, landscape architecture, interior architecture, urban design, and urban planning. There are also significant overlaps with civil engineering, especially in the United States.

Most projects require teams that are composed of representatives from some, or all, of the architectures. The overlapping nature of the architectures adds to the difficulty in understanding these career paths, as many practitioners are quite comfortable moving across boundaries. Urban design, for example, is not a profession unto itself but a collaborative activity in which landscape architects, architects, and urban planners may specialize. It is perhaps simplest to say that landscape architects create places for people to live, work, and enjoy, and places for plants and animals to thrive. Landscape architects also speak up for the care and preservation of our landscapes.

Landscape architecture combines social, economic, environmental, ecological, and cultural perspectives. Landscape architects study, plan, design, and manage spaces, which are both sustainable and visually pleasing. They shape the face of the Earth and also help to shape the face of the future.



0.2

## 0.2

### Cao Perrot Studios, Jardin des Hespérides, Quebec, Canada

Xavier Perrot and Andy Cao have offices in Paris and Los Angeles and have become known internationally for creating gardens of ethereal beauty with exacting precision and skill. Indeed, the exceptional rigor with which they approach their work is essential to allowing the visitor to forget the fact of design and be transported by a garden. They designed the Jardin des Hespérides for the Metis International Garden Festival of 2006. The design voice of Andy Cao can clearly be heard, as the garden uses materials, scents, and textures from his native Vietnam.







# History and Ideas

The history of humankind is written in the landscape. Every civilization, every empire, has left its mark in some significant way. People have, for millennia, felt the need to build and create, not just to provide for the basic needs of food, shelter, and companionship but to make glorious monuments that symbolize their collective ambitions. Some stunning landscapes evolve over generations not as monuments but as eloquent records of human toil and subsistence such as the Banaue Rice Terraces of the Philippines.

We have, as an ever more urban species, become disconnected in many ways from the landscape that supports us. For example, we are rarely able to make a link between the food on our plates and the landscape that produced it. This disconnection is also often clear when we look at the great built landscapes of our past. Most people, for instance, see the Pyramids at Giza as merely buildings, but in reality they were important elements of a complex functioning landscape: a necropolis. An understanding of the history of landscapes can help us to see the whole picture.

Landscapes are the result of a conversation between people and place. We shape our environments, but our environments in turn shape us. Understanding landscape history and its impact upon the way we design today is dependent upon this realization; for landscape architects, it is important to know that we don't start with a clean slate but that our work is part of this ongoing conversation in which humans are part of nature, not merely actors upon it.

1.1

## 1.1

### The Banaue Rice Terraces, the Philippines

The terraces of the mountains of Ifugao in the Philippines were built by hand by many generations of farmers. Today, it is not so much their crops but their scenic and topographic appeal to tourists that provides sustenance for the locals.

## Yesterday and Today

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**Landscape architecture, as it is practiced today, is quite distinct from its historical roots in landscape gardening, and it is on a course that is still evolving. At its most basic level, it is still about building landscapes for inhabitation and sustaining the human species. However, the great advances of knowledge and technology through the past two centuries have completely changed our relationship with the land.**

One of the greatest paradoxes of our day, perhaps, is that while we have never known more about natural systems, we have never in history done more damage to them. There is now almost no place on Earth that we have not changed or affected in some way. Even places we tend to see as virgin wilderness, such as the Amazon basin or even the ocean floors, have been progressively and radically modified by human actions; new methods of landscape analysis show records of extensive prehistoric civilizations in the Amazon, not to mention the contemporary presence of indigenous people. The ocean floors show a record of massive recent silt deposits from human agricultural processes along with displaying debris from shipwrecks to garbage. Landscape architecture is increasingly responding to the realization that we are living in a world that is very much of our own making, and if we are to save it for the future, it will require a great deal more making and significantly less destroying.

People have long left their mark on the landscape, from the earliest cave paintings at the caves of Lascaux or Chauvet in France to Stonehenge in the UK or the enigmatic Serpent Mound in Ohio, USA. While we shape landscapes, we are at the same time the product of these places. In an urbanized world, we are more and more the product of city landscapes. As with rural landscapes, no two cities are alike, and so it is with people. A forest dweller is as different from a desert nomad as a Parisian is from an Athenian.

It is in the landscape that all the interconnected forces of our existence come together. The ability to arrive at an enlightened design and strategy that recognizes the uniqueness of individual places while understanding their place in larger systems is thus a crucial skill. Landscape architecture is growing to meet this challenge—it is building upon its past to create a better future for all.

**“What we owe the future is not a new start, for we can only begin with what has happened. We owe the future the past, the long knowledge that is the potency of time to come.”**

Wendell Berry, poet and novelist





1.2

## 1.2

### Vintage aerial view of Central Park, New York City, USA

This is an aerial view of the Central Park entrance at Fifth Avenue and 59th Street in New York City, in 1886. Frederick Law Olmsted and Calvert Vaux's design for Central Park serves as a marker for the emergence of the defined profession of landscape architecture. This chapter, though, shows that landscape design is a practice that is much more ancient.

Timeline

**c10,000 BCE**  
The beginnings of agriculture and of the Neolithic age

**c7000 BCE**  
The first urban center at Çatalhöyük, Turkey

**c3000 BCE**  
Settlement at Skara Brae, Orkney, Scotland

**c2600–2500 BCE**  
The Pyramids at Giza, Egypt  
The Pyramids are part of a complex funerary landscape or necropolis (“city of the dead”). The site required stable ground that would take the weight of the buildings. The site also needed to be near a quarry. The grounds surrounding the Pyramids were designed for ceremony and majesty.

**c2250 BCE**  
The Ziggurat at Ur, Sumer, Mesopotamia  
The Ziggurat at Ur stood at the heart of a temple complex, in the heart of one of the earliest cities. It symbolized not only religious power, but it also marked the center of one of the earliest empires: that of the ancient Sumerians.

**c3100–1900 BCE**  
Stonehenge, Wiltshire, England  
For over a millennium the ceremonial site and astronomical observatory at Stonehenge was in active use and was continually modified. It is one of the most enduring symbols ever inscribed on the landscape.

**1333–1324 BCE**  
Reign of Tutankhamun

**c540 BCE**  
The founding of Persepolis, Persia  
Emperors of Persia Cyrus the Great and his son Darius the Great built Persepolis as their capital in what is now southwestern Iran. It was a center of ceremony, marked with lavish and impressive buildings.

**c500 BCE**  
Birth of Gautama Buddha

**356 BCE**  
Birth of Alexander the Great

**0 CE**  
Birth of Jesus Christ

**570 CE**  
Birth of the Prophet Muhammad

**1096**  
The First Crusade

**14th Century**  
The rise of the Aztec Empire  
The beginning of the Black Plague

**1406–1420**  
The Forbidden City, Beijing, China  
The Forbidden City was built as the capital of the empire of the Ming Dynasty of China. It sits at the center of a city grid that forms the street pattern of Beijing to this day. The Forbidden City was the Emperor’s palace, and he controlled all entry to the city.

**1455–1487**  
The Wars of the Roses

**1508–1512**  
Michelangelo paints the Sistine Chapel

**1550**  
The gardens at the Villa d’Este, Tivoli, Italy  
The Villa d’Este is a masterpiece of Renaissance Italian garden design. It is a highly romanticized image of the natural world and is notable for its very elaborate gravity-fed fountains.

**1564**  
Birth of William Shakespeare

**1620**  
Shalimar Bagh, Kashmir, India  
Elaborate fountains and cascades over three levels were constructed in the beautiful Shalimar Gardens of the Shah Jahan. The gardens were arranged in a grid pattern, much like Shah Jahan’s most famous creation: the Taj Mahal.

**1633**  
Inquisition trial of Galileo Galilei

<b>1661</b> Vaux-le-Vicomte, near Melun, France André le Nôtre designed the impeccable landscape at Vaux-le-Vicomte, a masterpiece of baroque design, which incited such jealousy in Louis XIV that he hired the same designer to create the ultimate garden for him at Versailles.	<b>1789–1799</b> The French Revolution	<b>1914–1918</b> The First World War	<b>1970</b> Copacabana Beach, Rio de Janeiro, Brazil Bold modernist patterns, including the emblematic wave motif that unifies the waterfront along Copacabana Beach, are typical of the work of Roberto Burle Marx. His exuberant landscapes captured the optimistic spirit of the age.
<b>1666</b> The Great Fire of London	<b>Late 1700s</b> The Industrial Revolution	<b>1939–1945</b> The Second World War	
<b>1740–1760</b> The Gardens at Stourhead, Wiltshire, England Built in the English landscape tradition, the Stourhead gardens were hugely influential, both in their day and today. They continue to serve as a model for park design.	<b>1804</b> Père Lachaise Cemetery, Paris, France The cemetery of Père Lachaise contains the tombs of some of the most famous French figures of two centuries. Its picturesque style set the tone for later cemeteries, such as Mount Auburn in Massachusetts.	<b>1950</b> Indian Independence	
	<b>1827</b> Invention of the lawnmower	<b>1967</b> Paley Park, New York, USA A tiny oasis in Manhattan where the sound of a wall of water washes away the noise of the city. Designed by landscape architects Zion and Breen.	<b>1975</b> End of the Vietnam War
<b>1769</b> Birth of Napoleon Bonaparte	<b>1839–1860</b> Baron Georges-Eugène Haussmann’s renovation of Paris	<b>1968</b> Assassination of Martin Luther King	<b>1989</b> Berlin Wall dismantled
<b>1776</b> The American Revolution	<b>1857</b> Central Park, New York, USA The vision of Frederick Law Olmsted, Central Park was conceived as an egalitarian public space for all the people of New York.	<b>1969</b> First man on the moon	<b>2003</b> War in Iraq
			<b>2012</b> Olympic Games in London, UK
			<b>2016</b> Olympic Games in Rio de Janeiro, Brazil

1.3

Timeline

This timeline shows some of the major events in the history of landscape architecture.



## Before the Ancient World

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**“When we dream alone it is only a dream, but when many dream together it is the beginning of a new reality.”**

Friedensreich Hundertwasser, painter and architect

### The Dawn of Civilization

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As agriculture emerged around 10,000–12,000 years ago, fixed settlements of people became more common. It is easier to imagine that people might have given names to the hills and rivers that gave shape to their existence, which provided them with more stable sustenance. Skara Brae on the windswept Orkney Islands to the north of Scotland is the most complete Stone Age settlement in Europe, built roughly 5,000 years ago.

What is startling about Skara Brae is just how recognizable it is that people were making a home, a community, a place, in more or less the same way as we do now.

Stonehenge in Wiltshire, England, and the great field of standing stones at Carnac in Brittany, France, are monumental examples of how Stone Age people left their mark on the land.

#### 1.4

##### Skara Brae in the Orkney Islands, Scotland

Skara Brae was continually occupied for approximately 600 years. The buildings were nestled into heaps of old kitchen rubbish called “middens,” which provided shelter and insulation for the buildings from the harsh North Sea climate.

1.4



← Yesterday and Today

↓ **Before the  
Ancient World**

→ The Ancient World

01





## Western Civilizations

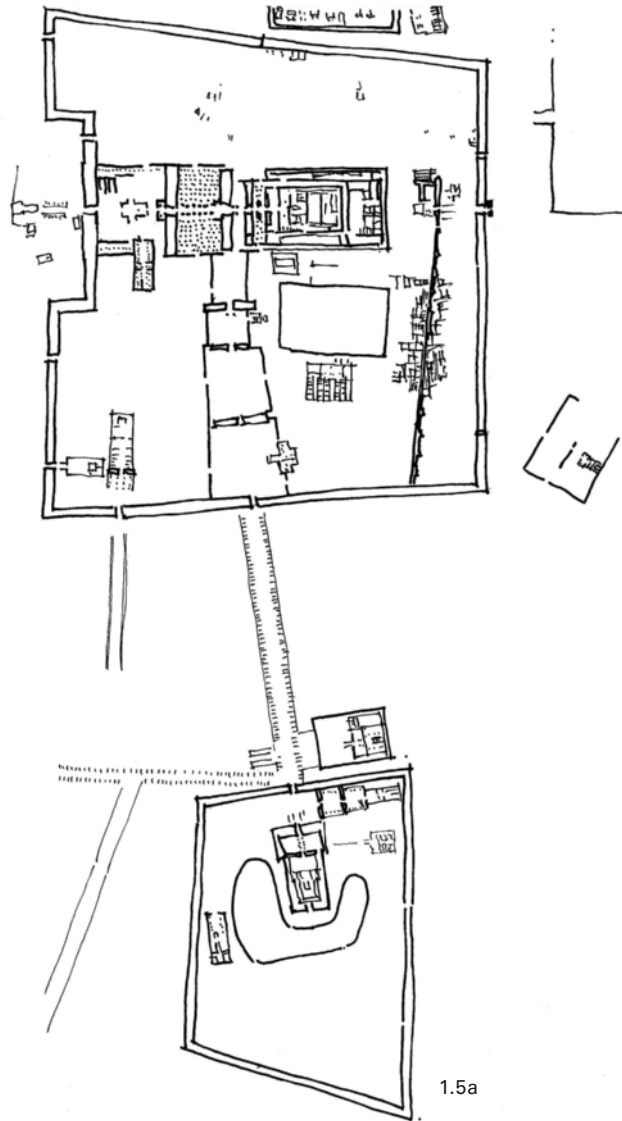
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Mesopotamia has long been considered the “cradle of civilization,” at least of western urban and agrarian civilization. Mesopotamia, the rich but vast and featureless valleys of the Tigris and Euphrates (now present-day Iraq), was farmed by the Sumerians, Akkadians, Babylonians, and Assyrians. The Sumerians built great brick ziggurats—stepped pyramids rising high out of the level plain. Some archaeologists believe that the terraces of these huge structures were planted with trees and gardens. These massive pyramids would have helped to organize the flat landscape as landmarks—markers of place and identity as well as aids to navigation.

The floodwaters of the Nile River in Africa nourished the land with silts and sediments in much the same way as the Tigris and Euphrates, and the civilization of ancient Egypt took root in these fertile plains.

The great ambitions and power of the pharaohs made it possible for the necropolis of pyramids at Giza to be built, as well as the remarkable temple at Karnak and the tombs at Luxor.

The seat of Mediterranean civilization was soon to shift north from Egypt to ancient Greece, and then to Rome, where the philosophies underpinning the western world view were first articulated.





1.5b

**1.5a–1.5b**

**The temple complex at Karnak near Luxor, Egypt**

A sphinx-lined avenue connects two of the temples at Karnak. The great complexity of the site takes it out of the realm of building architecture into landscape architecture and urbanism. The entire complex is a walled enclosure with interior spaces that include buildings and garden courtyards. The processional routes between the temples foreshadow the great avenues that were to come.







## Eastern Civilizations

---

The evolution of humans in the landscape followed much the same progress in the Far East as it did in the West. The earliest hunter-gatherers changed their circumstances through settlement, the domestication of animals, and the development of agricultural practice. The links between West and East are perhaps more profound than is commonly imagined. The prehistoric development of Eurasian languages is linked in ways which suggest that nomadic tribes had spheres of influence that overlapped across all of Europe and Asia. These tribes would have traveled with domesticated animals and lived an itinerant existence, following resources seasonally across the landscape.

Almost everywhere in the East, there are remains to be found that are strikingly similar to those in Europe. These include standing stones (menhirs), either in circles or alone, and table-like stone tombs (dolmens). For much of the history of humankind, many of the most important marks made upon the landscape were in commemoration of death. There has been much speculation over the years about the uses of these stones, and aside from their use as tomb markers, it seems most likely that the stones either had spiritual significance or they were used as observatories. One thing is certain: they served to fix a place in the landscape that signified a belonging, which marked a physical place on the planet, as well as a location within the cosmos. It is this significance that has resonance and relevance to us today; it situates the work of landscape architects within human needs and aspirations, which stretch back over millennia.

### 1.6

#### Standing stones in the Altai Mountains, Siberia

The Altai Mountains are in the center of Asia, at the meeting point of Siberia, Kazakhstan, and Mongolia. The stones protrude starkly from the vast, windswept steppe.

## The Ancient World

---

**Gods, city-states, and monarchs gave shape to the landscapes of the ancient world, which were often built on a scale that is still impressive today. A great flowering of knowledge and culture happened all over the world, more or less simultaneously, over the space of roughly 1,000 years.**

The society of ancient Greece brought us the science and philosophy that still provide the foundation of western culture, as well as great landscapes such as the Acropolis at Athens. Roman culture spread across Europe and Africa by dint of force and introduced new techniques of building. It also left behind new patterns of city development and impressive infrastructure, from roads to aqueducts.

In the East, amazing structures, such as the stupas (reliquaries) at Borobudur in Indonesia and Sanchi in India, mark the emergence of Buddhism. In present-day Iran, the ruined city of Persepolis marks the heart of the mighty Persian Empire.

The cultures in Pre-Columbian America created cities every bit as astounding as those anywhere else in the world, from the Sun Pyramid at Teotihuacan, the palace and temples of the Mayan city of Palenque, to the Incan city of Machu Picchu.

It is not just the temples and cities that defined the landscape of the ancient world. Agriculture and the infrastructure required to move food from the countryside to the city also had a profound impact on the land.

## Eastern Cultures

---

There is a great unity of intent in the realization of architecture and landscapes throughout the eastern cultures. From the form of buildings and their location within their landscape context, to the smallest sculptural or decorative details, style and form are consistent and intelligible across the continuum of scales. While world views and religions may have differed, a holistic view that encompassed building, landscape, and ways of living on Earth and existing within the cosmos seems to have been held in common.

As with almost all cultures across the world, the landscape intended for human habitation is usually defined by a boundary—often a wall. The stupas at Sanchi, built by the Emperor Asoka, were some of the earliest Buddhist structures that acted as enclosures or boundaries. They were built to hold relics and consisted of mounded earth topped with a hemispheric dome. A gateway and a path around the dome would have been part of a meditative circuit.

Whether a site was religious or secular, there was always emphasis on movement through space. This could be meditative or allegorical in the case of a religious site, or an expression of power, as was the sequence of spaces leading to the throne room at Persepolis, the capital city of ancient Persia.



1.7

1.7

### Persepolis

The site of Persepolis, the capital city of the Persian Empire, was chosen for its strategic location. This location allowed excellent physical access to much of the empire, with views out from a defensible position. The city itself was built to impress. It had a sequence of spaces designed to convey the strength of Persia and its emperor.



1.8

1.8

### Buddhist stupa at Sanchi, India

The stupas at Sanchi are grouped in one of the earliest Buddhist religious complexes known—and one of the best preserved. They were built near the modern city of Bhopal in India by the Emperor Asoka. They are sited in an enclosure on a hill so that they could see out to the plains below.

## The Mediterranean

---

At the heart of western civilization is ancient Greece, the philosophy of which provided the foundations for science, mathematics, philosophy, and politics. From Greece also came the concept of the *genius loci*—the genius or spirit of a place. At the time, this would have been a literal interpretation, a spirit or deity inhabiting a place. The same was true when the concept appeared in Rome. In the present day, it refers less to spiritual qualities and more to the essence of a landscape's character. This concept is important to the practice of observing a place to understand where best to place built elements or plants, for environmental reasons, such as exposure to sun, and for aesthetic reasons.

Public life in ancient Greece and Rome was of huge importance. There were places allocated for sporting events, theater, markets, and the exchange of ideas, and these were all central to the way cities were planned. The Agora was the Greek marketplace; it is analogous to our contemporary public squares, but it was much more at the heart of culture and politics. The Forum in Rome served much the same focus for Roman culture, so much so that nowadays, when we refer to a forum, we are speaking of a meeting of minds. Public space has not lost its significance for democracy and public life, and landscape architects are very much aware of its democratic function when they design for it today.

1.9



1.10

1.9

### The Agora in Athens, Greece

The Agora (which translates roughly as "marketplace") in Athens was central to Athenian public and democratic life, providing not only a market for goods, but also a place for generating ideas. Philosophers, such as Socrates, developed their ideas with a public audience in the Agora. Athens was not alone in possessing an agora. Wherever Greek culture blossomed, so did the agora.



1.11



1.10

**The Hippodrome at Caesarea, Israel**

Public life in the ancient world also extended to great theatrical and sporting events. The experience of chariot racing at the Hippodrome at Caesarea (in present-day Israel) would not have been so different from a visit to a racetrack today. The Hippodrome was built by Herod as part of massive building works at Caesarea. Outdoor theaters and hippodromes continue to blur the boundary between building and landscape architecture.

1.11

**The Forum at Rome, Italy**

The Roman Forum had some similarities to the Greek Agora, in that it was the center of political and civic life. It was a space of ceremonial display, of processions, elections, and even gladiatorial matches.

# The Middle Ages

The Middle Ages may be seen as a period of time in which superstitious religion, warring factions, and authoritarian power conspired to slow the pace of progress and stifle expression. In reality, these influences did much to ensure that we have a legacy of powerful buildings and evocative landscapes that developed with strong local identities.

This was not merely confined to Europe; it was also a worldwide phenomenon. Mont Saint-Michel in France, the Alhambra in Spain, the Forbidden City in Beijing, and the moss garden at Saiho-ji in Kyoto, Japan, were all in construction in the short space of 200 years between 1200 and 1400.

The concentration of power and money in the hands of religions, warlords, and monarchs led to the construction of incredible monuments, both to the glory of a higher power and to individual vanity. Defensive structures, such as walls and castles, were also built everywhere, often providing a new defining characteristic to a landscape.

1.12



1.12

A medieval walled town garden

Gardeners planting herbs in parterre from  
*Petrus de Crescentiis Des profits ruraux  
des choses*, French, fifteenth century.

## Cloisters and Physic Gardens

---

Few, if any, great gardens were built in the Middle Ages. In the West, the tradition of growing plants outside of agriculture was confined by walls or contained within the small interior spaces of buildings (such as cloisters), where herbaria or physic gardens would be built. These provided herbs for cooking, perfumes, and potpourris, but more importantly, for medicinal purposes. While plants and herbs may have been grown for their beauty, it is more likely that they were grown primarily for their usefulness. These, along with vegetable gardens, would have been the most formal gardens constructed. Walled gardens also appeared in eastern culture—in all cultures, gardens were originally conceived as spaces bounded by walls.

## Land and Feudalism

---

The control of land in the Middle Ages was highly centralized; in Europe, feudalism defined the way the landscape was subdivided and used. The bulk of the land was in the control of kings or nobles, who would use the labor of peasants to reap its benefits.

While some common land existed, it was not quite public space in the way we see it today. Common land was used for the grazing of animals and for foraging. Peasants were tied to the land so common land was therefore not symbolic of freedom and community in the way it is today.

The enclosure of lands for private ownership made a permanent change in the character of the landscape, particularly in England, whose walls and hedges have come to form a patchwork that is symbolic of the countryside and emblematic of the national temperament.

1.13

**1.13**

**The cloister at Mont Saint-Michel, Normandy, France, thirteenth century**

Both physic gardens and cloisters were enclosed spaces. In the case of medieval cloisters, they were used for meditative perambulation and would probably have provided a very welcome break from the close interiors, which monks or nuns would have found themselves confined in much of the time.

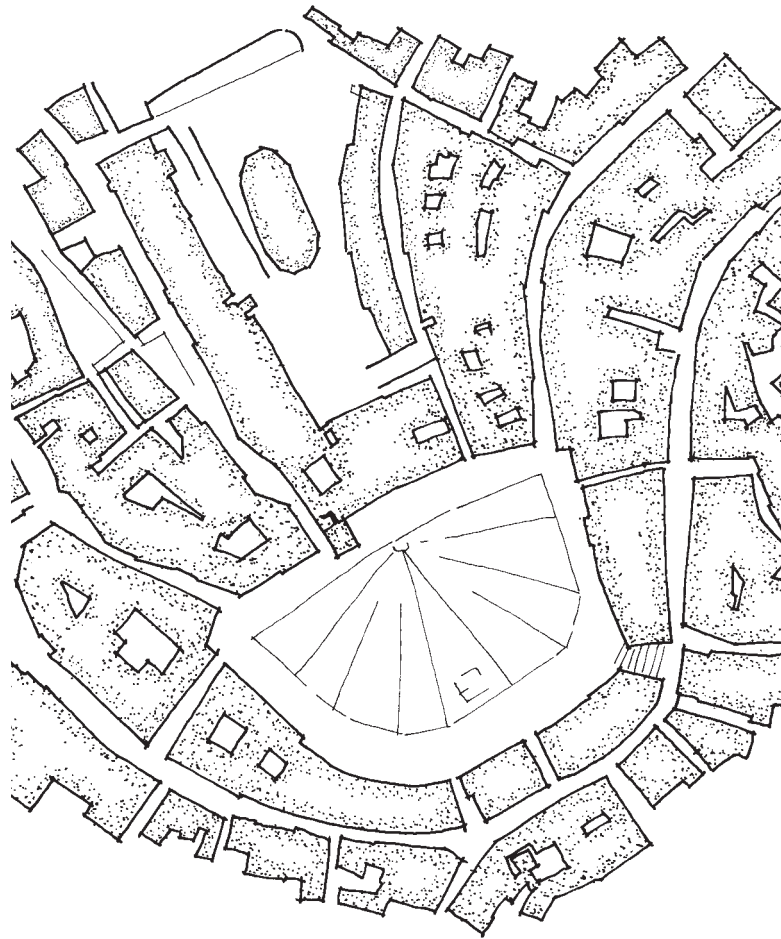


## Medieval Towns

Many forces come together simultaneously to form a town. A pleasant and productive locale, proximity to main routes or a crossroads, a river or a natural harbor are all auspicious for the founding of a town. The defining elements of settlements in the Middle Ages were markets—seats of earthly and spiritual power and fortifications. Productive land was highly contested and sought after. This led to dense settlements that occupied as little land as possible and to fortifications that protected the citizenry, and more importantly, the land.

The high density led to the narrow streets and tightly packed buildings that are characteristic of medieval towns. Necessity created environments that people find comfortable even today; these places were built at a scale that does not overwhelm the individual.

Although medieval towns, like modern towns, would have many neighborhood centers, a central focus of civic power would have developed. This public square would have been the site of festivals and markets, which would certainly also fall under the watchful eye of the church or the local gentry.



1.14a

### 1.14a–1.14b

#### Siena, Italy

A medieval city plan is observed in Siena (see image 1.14a). Streets and houses were packed tight behind defensive walls. The public square, called the *Campo* in Siena, would have provided much of the public life for the community and nearly all its pageantry. The painting, by Vincenzo Rustici in the seventeenth century (see image 1.14b), shows the public entertainments that to this day precede Siena's signature horse race, the Palio.





1.14b

## The Renaissance and Baroque

**If the Middle Ages had been characterized by the claustrophobia of superstitious religion, then the Renaissance (roughly the fourteenth to the seventeenth centuries) was quite the opposite. Humanism, the intellectual movement of the time, focused on people.**

Universities began to spring up instead of monasteries, and a quest for excellence in the arts and sciences looked to classical Greece and Rome for inspiration. Human perfection as an ideal began to be reflected in landscapes that imposed a grand geometric order upon the land.

Cities, gardens, and buildings all began to reflect the ideals of perfect proportion, order, and geometry. Later, in the seventeenth and eighteenth centuries, the baroque period would bring more romance and fantasy to the rigidity of the spaces created in the early Renaissance, appearing in a multitude of grottos and ruined follies. Isola Bella, on Lake Maggiore in Italy, was an island pleasure palace designed to appear like a giant ship sailing across the lake. Its design was inspired by the same drive for fantasy that would much later create such improbable landscapes as Disneyland.



1.15





## Awakening of Creativity

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While life for the average person was probably not much different from the picture of grinding poverty that had been their lot for much of human history, the life of the privileged became very refined, with plenty of time for indulgence and a new spirit of playfulness.

Formal gardens became places of entertainment rather than utility, and immense effort and skill were put into their creation. Water jokes were a common feature of Renaissance and baroque gardens. These were fountains that would, for example, douse a person who stepped on a certain paving stone or a seat that would provide a damp surprise. Elaborate hydraulic systems were required for these jokes and fountains, most of which were operated by gravity and not by pumps.

These periods of ostentatious materialism and display were a remarkable period for urban design as well. Places such as Bernini's Piazza del Popolo in Rome and the whole cityscape of Venice are the embodiment of baroque masterpieces.

### 1.15

#### The Royal Table at Hellbrunn, Austria

The palace at Hellbrunn, near Salzburg in Austria, has a remarkable formal garden that emphasizes theater and entertainment. Its elaborate hydraulic system powers an array of fountains as well as a water-driven mechanical theater. "Water jokes" were also popular in the Renaissance, and at Hellbrunn, the diners at the Royal Table would be surprised by becoming part of a fountain during their meal.

## France and Italy

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The landscapes of the baroque reached their heights in Italy and France. The gardens at the Château de Chenonceau, André Le Nôtre's magnificent displays of wealth and power at Vaux-le-Vicomte, and Louis XIV's Versailles are France's most notable contributions. The relationships between land, water, sky, and geometry were all extremely studied and deliberately used to create vast formal pleasure grounds. The contrast between intellectual pursuit and frivolity can often be seen in the gardens of the Renaissance.

Italy is home to a profusion of exuberant formal gardens, and though no one designer quite stands as head and shoulders above the crowd as did Le Nôtre in France, there was a strong tradition of styles and forms that found unique expressions in each and every landscape. As in France, water and geometry provided a strong framework for the gardens, but the regions of Italy around Rome, Florence, and Tuscany, where many of these gardens may be found, were blessed with more dramatic topography. Many Italian baroque gardens are composed of series of terraces stepping down, which allow for the water to be animated in fountains at each step. Ingenious and beautiful devices for transporting water were employed, and many fountains were remarkable displays, in particular the Water Organ at the Villa d'Este at Tivoli.



1.16

### 1.16

#### View of the gardens at Vaux-le-Vicomte, France

While Versailles is his most elaborate garden, Vaux-le-Vicomte is arguably André Le Nôtre's masterpiece. As a composition, it was intended to be viewed from the chateau, but it also provides an ideal formal setting for the palace.

### 1.17

#### The gardens of the Villa d'Este, Tivoli, Italy

Elaborate gravity-fed water features and extensive formal gardens may also be found at the Villa d'Este, as at Hellbrunn. The Villa d'Este is remarkable for its "water organ"—an elaborate and ingenious musical fountain, a marvel of hydraulic wizardry.





## André Le Nôtre

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André Le Nôtre (1613–1700) grew up in a family of gardeners where he gained experience in methods of garden design, plants, and planting in some of the most celebrated parks and gardens of the age. He was gifted in painting and studied architecture for several years. As an adult, he took on gardening duties for King Louis XIV. Le Nôtre's first large garden was one of the masterpieces of the baroque period at Vaux-le-Vicomte. Nicolas Fouquet, the owner of the château, was in charge of finances for the court of Louis XIV. Fouquet was imprisoned after the opulence of the garden confirmed the king's suspicions that he was lining his pockets from the government's coffers. Louis XIV was determined to outdo Fouquet's garden, hiring Le Nôtre to lay out the gardens at the Palace of Versailles. Le Nôtre created many remarkable gardens through his career, but the perfection in the geometry, views, and perspectives of Versailles and Vaux-le-Vicomte will always be his crowning glory.

## The English Landscape

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While Italy and France were clearly dominant in the creation of great gardens through the sixteenth and seventeenth centuries, the geometric style was well exercised in many other European countries, not least in the Netherlands and Spain. England, too, much under the influence of France during this period, saw the building of Hampton Court among a number of other formal gardens. Sir Christopher Wren's unrealized plan for the City of London after the Great Fire in 1666 is also a classic baroque city plan.

The rolling hills of the English landscape called for a different and more indigenous treatment. The eighteenth century saw the stirrings of interest in the natural environment and a romanticization of the countryside, including the forbidding mountains and deep forests, which had previously been seen as wastelands to be avoided.

This interest in the picturesque led to the creation of landscapes composed of exquisite views, rolling lawns, pools, and groupings of trees that mirrored the landscape paintings being created at the time. Champions for this type of landscape were architects such as William Kent (1685–1748), Charles Bridgeman (1690–1783), and most famously, “Capability” Brown (1716–1783). This revolutionary style was to have a global influence on landscape design, as the style for parks that is still predominant, and as the foundation for modern landscape architecture.



1.18





### Lancelot “Capability” Brown

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Lancelot Brown became known as Capability Brown for his habit of pointing out the “capabilities” of the landscapes to his clients for which he intended to design (this is one way of speaking about the *genius loci*). Brown was a prolific English landscape architect who lived from 1716 to 1783. Along with his contemporaries, William Kent and Charles Bridgeman, he created the English style of landscape that was, for the time, distinctively informal, creating a pastoral, picturesque setting. Among his masterpieces are the gardens at Blenheim Palace, Warwick Castle, and Croome Court.

#### 1.18

##### The grounds at Blenheim Palace, UK

This was one of Capability Brown’s most influential landscapes, and it is characteristic of the style of the English School of Landscape Design. The house, rather than being framed by a formal garden, is instead placed in a picturesque, pastoral setting with a large, placid lake and rolling lawns that come right up to the building. The park’s design was tremendously influential both in England and internationally.







**1.19****The Stroll Garden at Katsura  
Imperial Palace, Kyoto, Japan**

A Japanese stroll garden, also called a “tour garden,” was designed for walking. At Katsura, the path is a loop around a central lake, and there are possibilities for exploration off the main path. The garden must be experienced in motion and as a sequence.

## The East

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It is a challenge to place the landscapes of the East on the same timeline as those of the West, as the intellectual and philosophical influences (and their timings) upon them were different. However, the interaction between East and West, made possible by great leaps forward in technology, transportation, and navigation, created certain parallels in the landscape as images and ideas were exchanged. The Mughal gardens of India, such as Shalimar Bagh and Nishat Bagh, showed formal symmetries and geometries based upon an ideal of heavenly paradise (the word “paradise” was originally a synonym for “garden”). These gardens predated the rational symmetries of the Renaissance. In China, the Summer Palaces of Beijing were designed for short walking journeys through a microcosm of nature. Every stone and tree had symbolic significance. Japan had its “stroll gardens,” also known as “paradise gardens,” which were intended for exploration on foot, where each element was of profound importance.

## The Nineteenth Century

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**Three revolutions marked the end of the eighteenth century, fundamentally changing both the political and the physical landscape of the world and ushering in a very different world in the nineteenth century. The American Revolution (1765–1783) established the United States as an ambitious, independent, democratic power and shortly afterward (1789–1799), France shrugged off the yoke of monarchy. The end of the eighteenth century also marked the beginning of the Industrial Revolution. Europe—Britain, in particular—and the USA were the great powers of the nineteenth century. As a result, the changes in attitudes toward the landscape were influenced heavily by these regions.**

The great drive toward urbanization that continues to the present day picked up pace. The inequalities between rich and poor were made all the more stark by overcrowded, polluted, and squalid urban conditions, which were made a reality by the centralization of industry. Among other factors, this helped bring about a rise in philanthropic thought and action. One response was the creation of public parks in order to offer relief and escape from oppressive urban conditions. Many of these parks were not just for the wealthy; they also offered their charms to the masses. New York's Central Park is a shining example of this public generosity.

This period was an amazing time for cities in other ways, too. Paris, which at the beginning of the 1800s was still in essence a medieval city, was pierced through with the broad boulevards that now define it. In London, Regent Street (completed 1825) was joined with The Regent's Park in a single, united piece of urban theater.

## Europe

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A spirit of romance and fantasy, together with hard-headed technological advances, allowed for the creation of the most memorable landscapes in Europe, with most of them being urban. In Paris, Baron Georges-Eugène Haussmann (1809–1891) led a massive urban regeneration program (1852–1870) that involved driving huge boulevards through the city's congested core, bringing in light, air, and modern amenities such as sewers. Haussmann often worked with JC Alaphand (1817–1891), an engineer with a keen eye for landscape. Alaphand was a model, in fact, of the present-day landscape architect—comfortable with urbanism, with a flair for engineering and an eye for beauty.

Streets and public parks were central to public life, and the modern profession of landscape architecture began to find its voice in this environment. The Englischer Garten (English Garden) in Munich is a vast public park that predated New York's Central Park, and it survives today as a very well-used amenity for the city. Barcelona was graced with the Eixample district, and, at the turn of the century, Antoni Gaudí's (1852–1926) fantastical Park Güell was constructed.

### 1.20

#### JC Alaphand's Parc des Buttes-Chaumont, Paris, France, 1863

An early example of adaptive reuse, the Parc des Buttes-Chaumont was built in an abandoned quarry. The dramatic topography created by the stone quarry creates a park with a real air of fantasy. It was furnished in a naturalistic style, with curving pathways and rustic, romantic features.







## The British Isles

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The British Isles, sitting as it did at the helm of a substantial empire and driving a massive industrial machine, enriched and embellished its landscape in accordance with its wealth. However, the Industrial Revolution buried whole areas of the country in industrial smoke and grime, as dire and foul as some areas were fair and lovely. The railways brought explosive growth into the countryside and allowed suburbanization to occur. As in the rest of Europe, the drive to create, build, and engineer was paired with a propensity for flights of the imagination.

John Nash's (1752–1835) plan for west London was a vast architectural set piece that stretched from St James's Park in the south and up Regent Street, through Piccadilly Circus and Oxford Circus, before terminating with grand effect in The Regent's Park. It was intended not just to be the grand shopping street it is today but also to separate patrician Mayfair from the raffish and bohemian Soho. Other public projects were greatly influential. The Crystal Palace for the Great Exhibition of 1851 was set in extensive grounds, and Birkenhead Park in Liverpool was built as an amenity for rich and poor alike. The landscape gardener, architect, and Member of Parliament Joseph Paxton (1803–1865) was responsible for both of these seminal projects.



1.21a



1.21b

**1.21a–1.21b**

John Nash, Plan for West  
London, ca. 1818

A strong, clean line is cut across  
London by Nash's plan, creating  
an elegant promenade from  
St James's Park to The Regent's  
Park. It is lined with buildings  
that complement its scale.

## The United States

Phenomenal growth from the period around 1800 to the turn of the next century left much of North America utterly transformed, and in this time, America grew into a world power. Initially, the resources of a vast continent looked limitless, and roads and railways snaked out across the land to build a new type of empire. A sense of collective ownership of the landscape meant that the marks of occupation were not as clear in the USA as they were in Europe. Private gardens merged together to create seamless parklands. Americans thus came to regard their wild hinterlands as part of a continuum that began at home.

This public spirit was to find real resonance within the emerging profession of landscape architecture, particularly through the voice of one man: Frederick Law Olmsted (1822–1903). Olmsted

had traveled widely in the USA and Europe and had been an enlightened farmer in New England. On his travels, he was much impressed by Joseph Paxton's Birkenhead Park in Liverpool. He based his design for New York's Central Park on the public spirit he had witnessed in Liverpool.

Olmsted was a man of many talents, skilled at drawing many diverse influences into brilliant designs. He understood that the landscape is composed of many different layers, ranging from environment and ecology, to the social and political, and that it stretches seamlessly from the urban to the rural. He designed not just parks and gardens but also suburban neighborhoods, park systems, and even what might have amounted to the first fully integrated urban green infrastructure at Boston's Back Bay Fens (1887).

## The Twentieth Century

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**Human history has never known a more turbulent and energetic century than the last one. The machine that was the Industrial Revolution, once set in motion, launched progress full tilt at its outset, and the speed of change remained constant until its end. The gains in technology, science, and medicine were matched by destruction in horrific wars and by pollution and environmental degradation. Humanity used technology to conquer every stretch of the landscape.**

Landscape architecture came of age in this period, building upon the creative legacy of individuals such as Olmsted, in order to become a profession based in a truly holistic view of landscape. New methods for analyzing the landscape, separating information—such as soils, vegetation, and demographics—into layers, were developed by the path-breaking Scottish landscape architect, Ian McHarg (1920–2001). His seminal book, *Design with Nature* (1969), set out the principles of this approach. It was revolutionary for landscape planning and design, and led to the development of Geographic Information Systems (GIS).

The creation of vast national parks, garden cities, picturesque highways, and the need for large-scale land planning, created many opportunities for landscape architects. Working with scales much beyond the private garden began to underline divisions within the profession—between garden and landscape designers, urbanists, and landscape planners.

The predominant architectural style throughout the century was modernism, which emphasized purity of form and the importance of function, casting aside the frippery of ornament and attempting to build a new aesthetic that purported to be unencumbered by historical reference. Early modernists cherished the belief that good design could make a great positive difference to the lives of ordinary people.

### 1.22

**Thomas Church, Donnell Garden,  
California, USA, 1948**

The Donnell Garden was the very picture of modern living, with its serene biomorphic pool, which is not only a pool but also a plinth for an abstract sculpture. The California style that the Donnell Garden became emblematic of was all about living outdoors. The garden was never intended as a setting for architecture but as a living space all its own.



## Modernist Gardens



1.22

Both public and private modernist gardens were realized with the same aim for purity of form and function—the chief trait of modernist design in general. Embellishment and ornament were out, and a focus on the melding of architecture and landscape was in. A strong influence from the art world was felt as well, with abstract, curvilinear, and biomorphic forms making regular appearances in gardens and landscapes of the time.

To a certain extent, there was a tension between the universality of International Style modernism with landscape's focus on the *genius loci*, and this tension is still in evidence today.

In America, Thomas Church's (1902–1978) relaxed, outdoor living style became a model for the “good life” in California. Garrett Eckbo (1910–2000), James Rose (1913–1991), and Dan Kiley (1912–2004) were leading lights, and all of them were out of the hothouse of Harvard's school of design. Also in the New World, Luis Barragán adapted modernist forms to the Mexican landscape, using color vividly and effectively; in Brazil, Roberto Burle Marx created exuberant, painterly landscapes with native plants.

In Britain, Sylvia Crowe (1901–1997) and Brenda Colvin (1897–1981) worked at both the scale of the garden and, notably, designed for much larger-scaled landscapes—in particular for the siting and design of power stations. Scandinavia's most prominent landscape architect was C. Th. Sørensen (1893–1979), who had a massive influence on modern park design and who was the creator of the adventure playground.

## The Modern City

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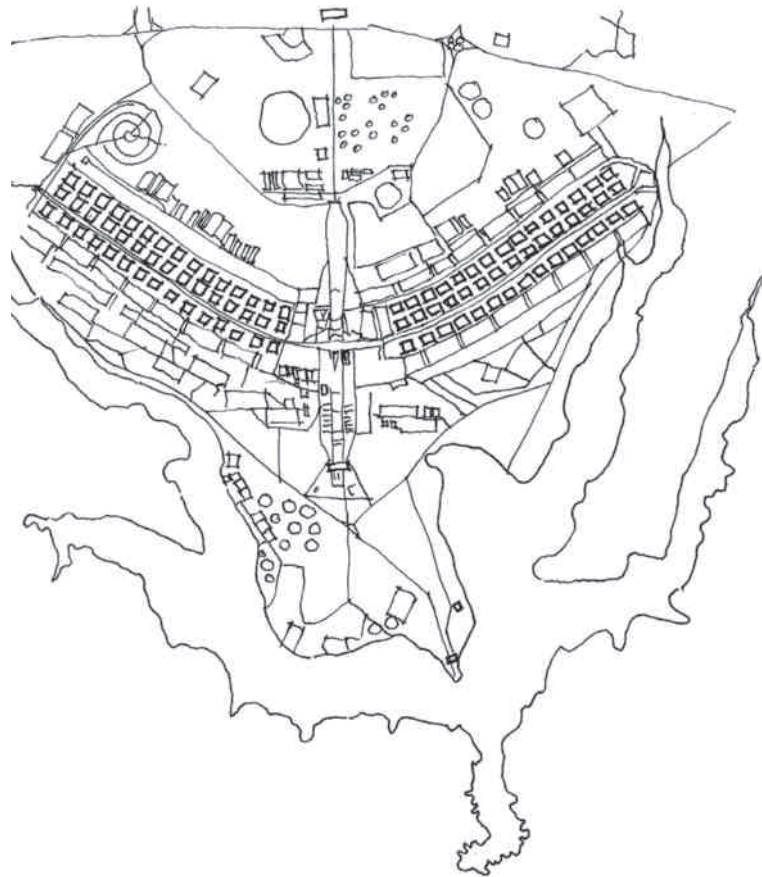
Cities were made and remade with dizzying speed throughout the twentieth century, and their expression reflected different values and political systems.

Early in the century, the garden city movement was initiated by Ebenezer Howard (1850–1928) with his book *Garden Cities of To-morrow* (1902). He sought to create commodious communities outside city centers, complete with their own transportation systems of canals, roads, and rails. Welwyn Garden City in England is an example, as is the town of Radburn, New Jersey (founded in 1929). Radburn is remarkable for its careful separation of cars and pedestrians, and by the park landscape into which the homes are integrated. Many of these concepts were revisited in another much later English garden city, Milton Keynes (founded in 1967).

Dictators and authoritarian governments sought to glorify themselves and their regimes through massive programs of demolition and building. Hitler, Stalin, Mussolini, and Mao Zedong all built forbidding and inhuman urban landscapes that sought to express the omniscience of an all-powerful state. More recently, despots such as Nicolae Ceausescu (1918–1989) in Romania and Saddam Hussein (1937–2006) in Iraq tried to accomplish much the same with their own capital cities. However, a humanist, socialist model of city building was much in evidence in this period as well.

In great cities, there has been a constant struggle between two factions. One side believes cities can be conceived and constructed as a mass, while the other camp holds the view that cities must be allowed to grow slowly and incrementally so that a community might be nurtured within a town that grows to accommodate it over time. Jane Jacobs (1916–2006) was a great proponent of the latter view, and her book, *The Death and Life of Great American Cities* (1961), has proven itself as a handbook for urban designers and planners.

1.23a



1.23b

**1.23a–1.23b****Brasília, Brazil, 1957–1961**

Brasília was built as a new capital for a forward-looking Brazil. It is located at the heart of the country, unlike Brazil's first capital, Rio de Janeiro, which was located at the coastal periphery. The plan was built with lightning speed, taking only four years to be designed and built. The city took the form of an airplane or bird in plan, and it was strictly zoned into separate functions. In a way, it was as much a sculpture as a city.



1.24



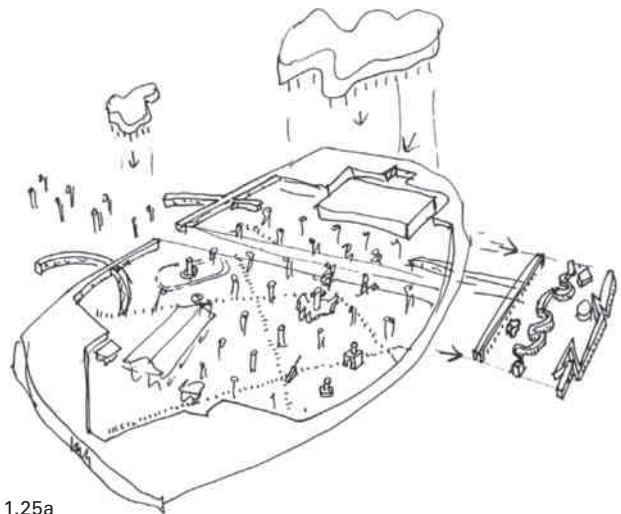
1.24

Charles Moore, Piazza d'Italia, New Orleans, USA, 1978

In postmodernism, a return to the use of ornament and to the architectural forms of the past was seen as a way to communicate identity and create place. Moore's Piazza d'Italia is a prime example of how postmodern design combined exaggerated or stereotypical elements together to create a sense of hyperrealism that flirted with kitsch.

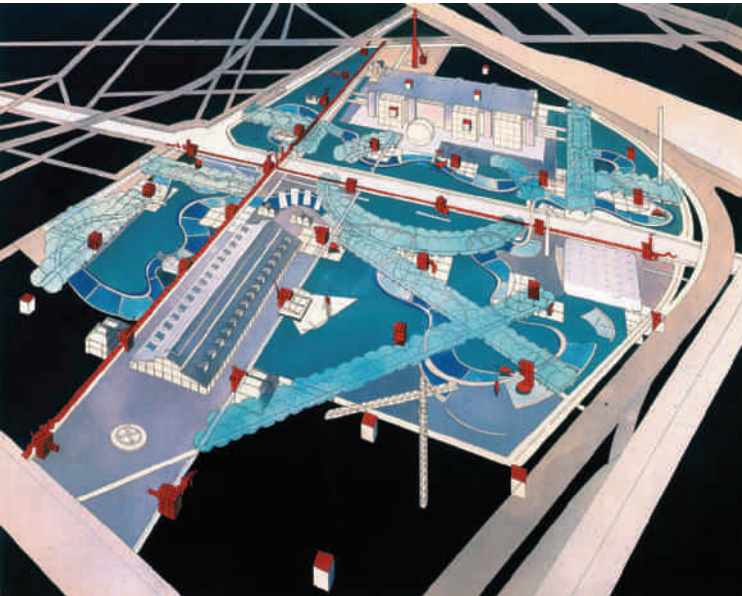
## Postmodernism

Modernism's strict purism in the first half of the twentieth century was bound to provoke a reaction, as its puritanical insistence on unembellished form was viewed as a straitjacket by some designers. Postmodernism, from as early as the 1950s, was an often chaotic return to influence, and designers liberally referenced other visual cues from virtually any historic period or style. Postmodern design was at its height in the 1980s and 1990s, a time when exuberant corporate growth was creating a desire for display rather than for the restrained architectural forms of modernism. Postmodern design was strongly tied to currents of thought in literary theory, such as deconstructionism and structuralism. The influence of these movements on all the arts was marked through this period and has yet to run its course. At present, tensions still arise between designers who support modernism and those who uphold postmodernist values.



1.25a

1.25b



**1.25a–1.25c**

**Bernard Tschumi, Parc de la Villette,  
Paris, France, 1987–1991**

The designs for the Parc de la Villette were a complex layering of theory, program, and geometry. The park combines the formal qualities of the French baroque with more contemporary ideas drawn from the practice of montage in cinema, among other concepts. Bright red “follies” are distributed around the park on a grid. The grid is then sliced through with strong diagonals and traversed by snaking pathways and plants.

1.25c



## The Twenty-First Century

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**Landscape architecture, having defined itself through the course of the twentieth century, faces a new challenge—that of coming to maturity and taking its place as the profession most suited to guiding development in a century where it will become more and more an imperative to develop in harmony with the natural functions of the planet. We can now see that present economies based upon the myth of limitless growth are untenable, and landscape architecture is one of the few professions with a broad enough view to suggest sustainable alternatives.**

Postmodernism gave designers the option to freely quote other periods and styles, thus giving landscape architecture an impressive range to respond to a larger context. This artistic and stylistic range sits comfortably with the broad scope of landscape architecture in general.

Around the turn of the millennium, sustainability moved from the periphery of the profession into the center, with many young practitioners seeing these principles to be at the heart of their work. This has been reflected in a strong philosophic movement in landscape architecture away from abstract and conceptual approaches and toward a greater sensitivity to context. Notable practitioners, such as Gilles Clément (b. 1943) in France, Adriaan Geuze (b. 1960) in the Netherlands, and James Corner (b. 1961) in the US, have brought new vigor, rigor, and excitement to the intellectual and philosophical dimensions of today's landscape architecture. The writings of Elizabeth Meyer and Anne Whiston Spirn have also had a profound impact on the profession.

Other significant changes to the profession are the shift to designing through “framework plans” rather than discrete designs. This is a move that acknowledges landscape's dynamic nature more effectively. Another move is the shift away from individual charismatic design leaders toward the creation of interdisciplinary collaborative teams. This enables holistic thinking much more effectively, which greatly aids the sustainability of projects.

### 1.26a–1.26b

West 8, Schouwburgplein, Rotterdam,  
the Netherlands, 1996

Construction of the Schouwburgplein in Rotterdam was severely limited by the existence of a parking garage directly below the site. Lightweight decking was used to provide visual texture and interest to the project. The expanse of decking forms a stage for human activity. To add to the kinetic activity and interest of the site, a set of four mechanical lights randomly move like swans' necks above the square. These echo the forms of the cranes on Rotterdam's waterfront.



1.26a



1.26b



**Case Study:****University of North Carolina, Chapel Hill  
—Hoerr Schaudt Landscape Architects**

As with so many projects, Hoerr Schaudt's Historic Landscape Preservation Plan for the University of North Carolina, Chapel Hill illustrates that landscape architects rarely start with a clean slate. Any landscape holds a memory of the interactions between people and their environment that have shaped the place. Memories contained within a landscape have significance at a variety of levels—from the individual and sentimental to the myths of nations and cultures. University landscapes have a particular significance in the United States, where learning and critical and independent thinking are fundamental to the most cherished tenets of democracy. Thus, more than merely a serene and cultured setting for the highest of human endeavors, universities are symbolic of a whole society's highest hopes. As the needs of an institution change, however, the design must change. This is tricky work.

Peter Schaudt, FASLA, FAAR, partner at Hoerr Schaudt, says, "The primary quality landscape architects need is to be open-minded to different aspects of social, cultural, sociological, and scientific innovation. The great thing about landscape architecture is that it encompasses all of life. It's a huge profession and that's why there are so many different avenues of study and ways to approach it: through biology, physics, horticulture, geology, geography, history of cities, topography, and urbanism." This philosophy helps the practice balance the memory of the past with the needs of the future within a landscape setting.



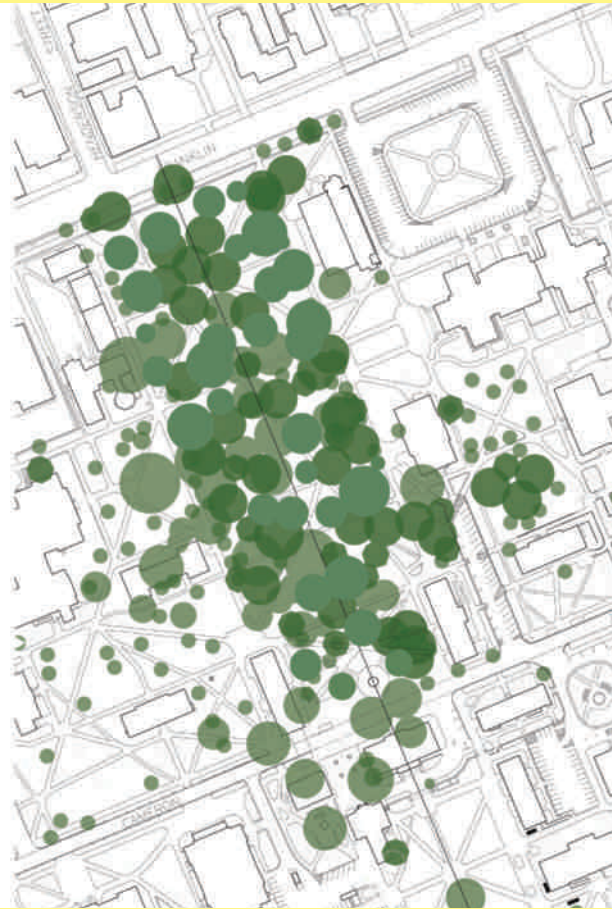
1.27a



1.27b



1.27c



## History

Hoerr Schaudt Landscape Architects evolved from two firms with legacies deeply embedded in Chicago's built landscape. Douglas Hoerr and Peter Schaudt founded independent firms in the 1990s, and for seventeen years each developed distinctive portfolios as leaders in Chicago's green movement and award-winning design firms. Excited by the possibility of growth and an increased focus in design, these successful practices united as Hoerr Schaudt in 2008. The result is a practice that engages in projects that are extremely varied and diverse in their type, scale, and style. Roughly half of the firm's projects are residential, ranging from intimate urban courtyards to country estates, and the other half are a mix of university and corporate campuses, botanic gardens, mixed-use developments, and civic projects. The diversity of the firm's projects is also partly the result of rich collaborations with architects whereby the firm acts as a consulting firm to architects. Landscape-led projects are generally increasing as the profession gains visibility.

### 1.27a–1.27d

#### Historic Landscape Preservation Plan, The University of North Carolina, Chapel Hill, USA

UNC's history stretches back to 1795, and much of this history is still reflected in the campus's natural features. The landscape is what connects the campus and gives it both unity and distinction. Hoerr Schaudt's plan focuses on five discrete sites, each of which exemplifies a particular era and style. Pictured are drawings for McCorkle Place, a fine example of the picturesque tradition in landscape architecture.

1.27d









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# Site and Context

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When a word or phrase is taken out of context, it can become meaningless, or worse, its meaning can become distorted, even to the point of saying the opposite of what was originally intended. This is why journalists are often heard to say, “context is everything.”

Context is no less important in the landscape. The landscape provides context for everything that is built and for the activities of our daily lives. Anything that is built in the landscape needs to take into account its surroundings and its situation to be successful and sustainable—and this work is at the core of the practice of landscape architecture.



2.1

## 2.1

### Grant Associates, “Supertrees” at the Gardens by the Bay, Singapore

Singapore’s heroic scale and sleek, high-tech context demanded landscape features at the Gardens by the Bay that would match its glitter and ambition. Grant Associates landscape architects, with Atelier One (structures) and Atelier Ten (environment), created eighteen massive and graceful towers called “Supertrees” festooned with thousands of species of climbers, epiphytes, and ferns and featuring stunning lighting displays by night. Each ranges in height from 25 to 50 meters (82 to 164 feet).

## Landscape: Site and Context

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**Everything in the landscape is part of an interwoven set of processes and forces that make up the fabric of our world. In order to understand the landscape and its workings, it is necessary to learn to look at all aspects contextually, to think and act holistically. It is common to refer to the exterior or urban environment as a fabric, and this metaphor is born of the realization that if any one element in the landscape is altered, everything else is affected as well—much in the same way that tugging on a single thread can unravel a scarf. On the other hand, a bit of a pull on a single thread is often all that’s required to tighten up and finish a fabric.**

Landscape architecture is a holistic field. When there are so many elements to work with, we come up against the limits of human ability. With a combination of confidence, humility, and the best of intentions, the landscape architect seeks to put everything in order, in context, so that all the various human and natural functions that are required of a landscape are accommodated. Landscape architecture requires the ability to observe and to listen, to work collaboratively, and to lead other professions to do the same.

### 2.2a–2.2c

THUPDI and Tsinghua University, Beijing, Quarry Garden in Shanghai Botanic Garden, China

Some sites present formidable challenges. This remarkable garden in Shanghai occupies an abandoned quarry, once a dangerous, inaccessible, and environmentally degraded place. Now, visitors are treated to a precipitous descent into the former quarry, where they may witness the reemergence of healthy ecology while traversing a curving bridge that floats on the deep water that has pooled in the excavation.



2.2a



2.2b



## What Is a Site?

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Many people will have rarely heard the term “site” by itself, but rather accompanied by another modifying term such as “building site” or “website.” In both cases, the term refers to an area (physical, in the case of building, and virtual on the Web) that has been marked out with the intention that action will occur there, that there will be a human use for that spot. It takes very little to mark a site. A simple staff, thrust into the ground, changes in its function from a walking stick to a landmark. It becomes the marker of a claim on that space of earth and all that is visible from it. The landscape around it swims into focus. It now has human meaning and is the context for a site. The first step has been made in creating a place.

2.2c



## Site Inventory and Analysis

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When a landscape architect is given a job to do, it almost always involves a specific site, and since there is no such thing as a completely blank site where anything is possible, the first thing to do is to come to grips with the character and qualities of the place.

Site inventory is just as it sounds. It is a list or a collection—an account of everything that exists on a site. This establishes the context in which the designer will work. The inventory includes all the aspects that define a place. It is important to know the history of a site—from the formation of the land, to its human inhabitation and use. A list is made of the vegetation to be found on the site. Social and economic elements are examined such as whether the site is in a poor area or a wealthy suburb. Geology, soils, and the flow of water across a site are important. Prevailing winds are noted, and exposure to sun is charted. It is usually necessary to spend a great deal of time actually on the site in order to compile an inventory. All this comes together into a profile of the site that the designer can then begin to approach and question. Finally, the designer's first impressions and emotional, subjective response to the site must be carefully balanced with the facts.

Site analysis is the process of finding the implications to the characteristics that are listed in the inventory.

If a site is on a slope facing away from the sun and in temperate environments, it is likely to be inhospitable, especially in winter. This can have profound implications on whether or not it is appropriate to build on a given site. If a site is liable to flooding, it is folly to build basements, for example.

Analysis is often greatly aided by map-overlay and other related geospatial analysis techniques. These allow the designer to compare and contrast the different elements of the site inventory. Layering site information in the manner developed by Ian McHarg, which is greatly aided by Geographic Information Systems (GIS) and other computer imaging, is vital to contemporary practice.

### 2.3

#### Site inventory

Layers of analysis are shown on this plan, with bodies of water shown in gray, the topography shown in olive green lines, and the direction of glacial flow in the last ice age shown in dashed blue lines. A picture of the landscape and its formation is built up layer by layer.







## Recording the Site

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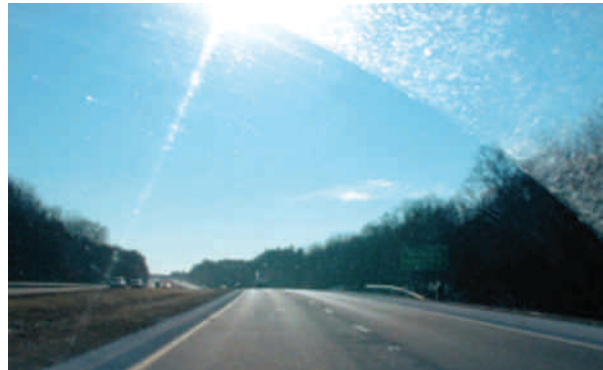
The twentieth-century American landscape architect AE Bye worked primarily on-site. He spent days simply watching the moods of a landscape, seeking to understand its daily and seasonal rhythms. His zen-like methods produced the gardens for the Soros Estate on Long Island in New York, where carefully sculpted mounds capture snow on their shady sides—patterns that Bye intended. Most busy landscape architects do not have the luxury to spend quite so much time on each site nowadays and, thus, tend to rely much more on technology.

Digital imagery provides much of the site documentation that landscape architects rely upon to create their designs. Photography at the ground level is of primary importance, allowing an understanding of the human experience of the landscape at the scale of the pedestrian. Aerial photography, shot from aircraft or satellite, reveals detail that might be unseen at ground level. LiDAR and other sophisticated remote sensing techniques can show detail invisible to the eye, such as contours beneath a forest canopy. Video, as well, may offer much. Landscapes are constantly in motion, and video allows us to document the site in real time and in a way that is most like the human experience of a place.

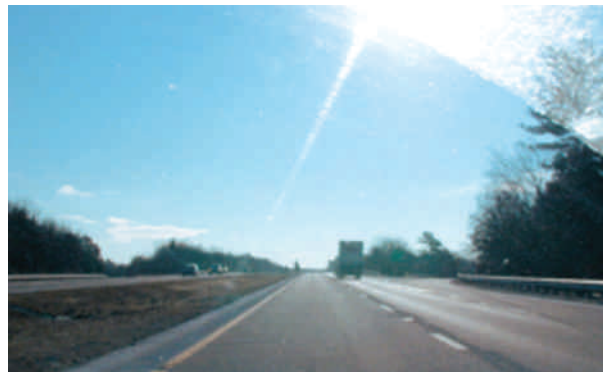
One of the most important tools for recording the site is the hand sketch. It is a true subjective representation of what people actually see, and it is an essential aid to observation.



2.4a



2.4b



2.4c



2.4d

## Mapping the Site

Mapping is a key element of both site inventory and the analysis and design process. In combination with sketches, photographs, and video, mapping helps us to complete the picture of a site. A sketch of a river, for example, might not be of any assistance in ascertaining in which direction it flows. A specific mapping of the flow of water through an area, using arrows to show the direction of flow, can convey a great deal of information about a site. Further, the river sketch can be marked on the map, along with the direction the artist was looking while making the sketch. Mapping and recording then combine to build a clear picture of the site that others can understand, even if they have never visited the place themselves.

Mapping shows not only what exists and what came before but also what possibilities exist. It offers a way of testing different possibilities for design. Physical site characteristics are first and foremost in the landscape architect's mind throughout the process of design, and the remainder of this chapter explores the basic categories that are encountered on any site. These variables will be mapped, recorded, and considered to form the foundation for the design process.

### 2.4a–2.4h

#### Recording the site on video

These images helped StoSS Landscape Urbanism develop its master plan for highway corridors in New Bedford, Massachusetts, USA. Video is not just useful for high-speed sequences like this but also to capture the ever-shifting sights and sounds of a site, including the movement of people, the lapping of water, and the changes in light.

2.4e



2.4f

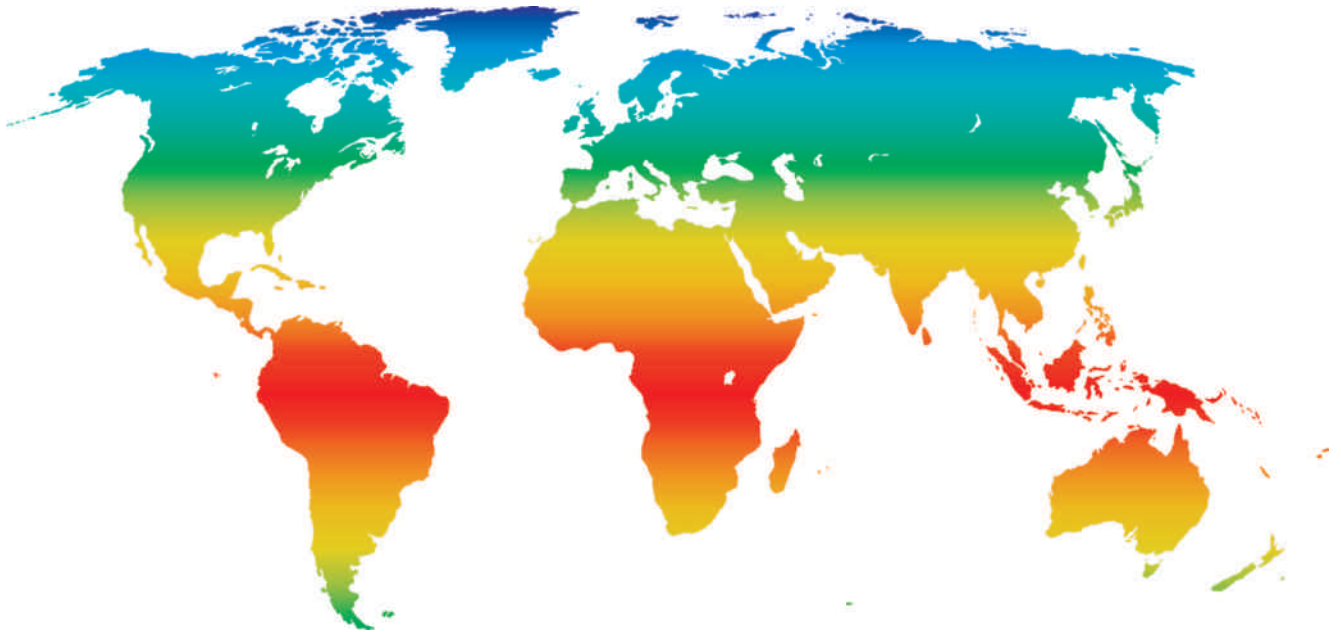


2.4g



2.4h





2.5a

## Climate

**Weather is the atmospheric condition outside your window right now and what might be forecast for the rest of the week. Climate is composed of the larger weather trends or averages that affect an area on a more general basis, whether an area is hot and dry, or mild and damp, for example. The largest trends in climate are determined remotely. Climate patterns stem from the earth's proximity to the sun's heat in its elliptical orbit and the angle of the inclination of its axis. On the surface of the globe, the temperature differential between the poles and the equator, again a result of the sun's energy, causes thermal air and water currents that spread the sun's heat around the planet. These currents are strong determining factors for weather patterns.**

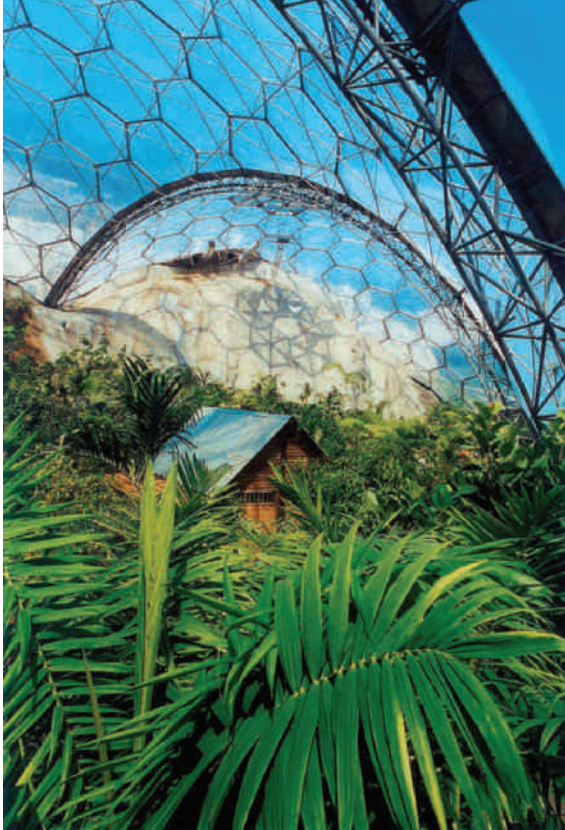
Local climate patterns are determined by a great range of variables. Temperatures become cooler the higher the elevation is above sea level. Clouds can pile up against a mountain range along a coast, and water evaporated from the ocean will be wrung out of them. A great expanse of desert will superheat in the daytime under cloudless, moistureless skies, but temperatures will plunge at night without the insulation that clouds provide.

### 2.5a

Climate regions

This map of the world very broadly shows the gradations of the climate regions, from polar to temperate to tropical.





2.5b

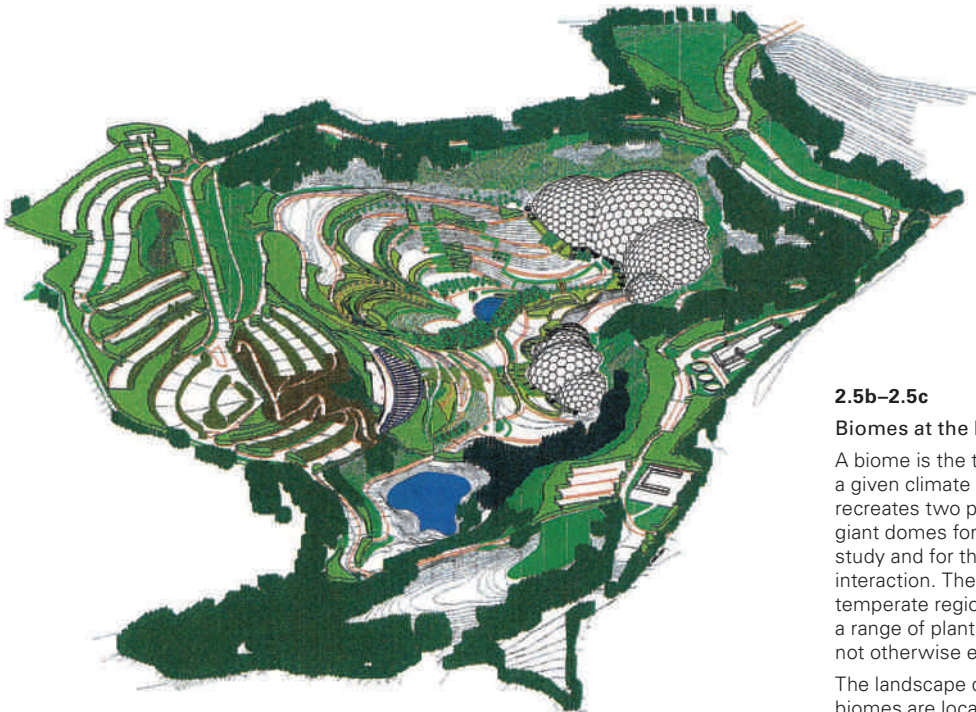
←	Landscape: Site and Context
↓	<b>Climate</b>
→	Land

02

## Climates and Regions

There are five very broadly defined climatic regions of the globe. These are: cold, cool-temperate, warm-humid, and hot-dry regions. Each of these has distinct types of vegetation and topography. The kinds of human activities that take place in these four regions are all very different as well. The most variable conditions are in the cool-temperate region, where there is a marked difference in the seasons.

2.5c



### 2.5b–2.5c

#### Biomes at the Eden Project, Cornwall, UK

A biome is the total ecology associated with a given climate region. The Eden Project recreates two primary biomes of Earth under giant domes for the benefit of comparative study and for the simple pleasure of interaction. The humid tropics and the warm temperate regions are represented, allowing a range of plants to survive, which would not otherwise endure Britain's winters.

The landscape design of the site in which the biomes are located was created by LUC.





2.6a

2.6b



2.6c

## The Seasons

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In cool-temperate regions, the seasons animate landscapes throughout the year. The rhythms and patterns of daily life change slowly from one season to the next, giving life a pleasing texture and variety.

Spring is the season for awakening from winter, planting, and watching new growth occur. The first flowers of spring are a welcome sight, and people eagerly anticipate these harbingers of better weather and fresh food. In summer, days are long and productive, while in autumn, the days begin to cool and shorten. In some places, the leaves of deciduous trees provide colorful displays. Finally, winter, with its short days and cold weather, keeps us indoors and dreaming of spring, or may draw us outside into landscapes designed for winter sports.

The seasons make planting choices exciting, with something new to look forward to in each season. Some plants give full measure in every season. For example, *Cornus florida*—the flowering dogwood—provides elegant flowers in spring; refined leaves and colorful berries through summer; striking leaf color in autumn; and a sculptural shape to the trunks and attractive bark on trees during winter.

### 2.6a–2.6c

#### University Square, Tromsø, Norway

In the extreme north, seasonal changes in vegetation may not be as pronounced, but landscapes may still register changing conditions dramatically. At University Square in Tromsø, designed by Bjarne Aasen, a placid fountain sits at the center of an elegant spiral. Early in the year, the water reflects back the freshness of spring. As the winter sets in, the small variations in topography are thrown into high relief by snow, shadow, and the long light. The long Arctic winter requires that landscapes are responsive at nighttime, and lighting can transform a space.



## Microclimates

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The patterns in which we use everyday spaces, such as urban squares and gardens, are shaped largely by microclimates. Again, climate in this sense refers to an average of conditions on a given site, but in this case to a very specific location. In the northern hemisphere, for example, the northern face of an east–west wall will be cold and shaded, while the south face will be a warm, sunny pocket. This is important for planting choices and affects the way people use a space. In winter, a square with little shade might be an attraction on sunny days. However, it would be a pitilessly exposed place in summer, which would attract few people.

Design can do little to change climate, but microclimates may be manipulated very effectively on the smallest of sites. Extremes can be moderated by the provision of windbreaks or by channeling cooling breezes. Water in any form can have a cooling effect in an urban space. Plants also have a strong influence on microclimates, providing shade, moisture, and protection from wind. Every place has a different mix, and the manipulation of microclimates makes for stimulating design work.

## Climate Change

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Climate change is one of the most profound problems imaginable, and its effects are making themselves felt in weather patterns, in crop yields, and in the relative comfort of outdoor spaces. The current trend is toward an average warming of global temperatures that is melting polar ice and increasing the intensity of storms around the world. We can only make educated guesses about the long-term effects of climate change, and predictions range from the merely uncomfortable to the dire and catastrophic.

Landscape architects have an important part to play in adapting to climate change, as it is a crisis taking place in the landscape. Climate change will have local impacts on water systems, weather, temperatures, and animal and plant species. All of this will require the expertise of a holistic, problem-solving profession, and landscape architecture quite neatly fits the bill. Landscape architects are also prominent among activists to change government policies regarding climate change everywhere.



2.7

### 2.7

**A microclimate at the Isabella Plantation in Richmond Park, London, UK**

Sheltered from winds by dense plantings, shaded, and cooled by a pond, this shamelessly pretty spot in Richmond Park is a favorite for lovers and picnickers.



2.8a



2.8b

### 2.8a–2.8b

#### Arup, Dongtan Eco-City, Shanghai, China

This unbuilt design for the eco-city of Dongtan was a completely planned community on an island in the estuary of the Yangtze River. Its design included sustainable solutions to energy, transportation, and food production. New developments of this sort could provide a model for how we might adapt existing communities to combat climate change. Landscape architects play a very central role in adapting and retrofitting the existing built environment in response to climate change.



## Land

**The importance of land can be measured by the amount of fighting we do over it. From the simple disputes of neighbors to all-out war, the control over land and the drawing and redrawing of boundaries has been a hallmark of the exercise of power throughout history. This is not merely because the possession of land is symbolic but because of everything land has to offer. Land is a resource that provides us with food, habitat, building materials, and fuel. It provides both work and recreation—those activities that give meaning to our lives.**

A number of important intangibles are provided by the land as well—a sense of belonging, identity, beauty, and even love. Such things may sound sentimental, but they are basic to humanity, and it is a truism to say that emotions often gain the upper hand on reason. Indeed, philosophers and scientists of cognition now understand that emotion is an important component of human meaning and understanding. Greed, unfortunately, often overwhelms all, and as a result, a privileged few have squandered resources that are our collective wealth in the pursuit of a very one-dimensional type of profit. It is up to professions such as landscape architecture to point the way back to the values based in the land that represent real prosperity, in all its dimensions.

Landscape architects are stewards of the land. They learn to “read” the land’s forms and expressions and work to improve our use of the land’s surface and its resources.

### 2.9

#### Soil layers

Water has eroded the land beneath these trees to allow us to see the strata below. All soils show layers, and they are part of the key to classifying soils.

### 2.9





## Stone and Soil

The earth’s crust is formed of rock of various types—extruded, exploded, heated, squeezed, or laid down in layers of sediment. This rock is part of a dynamic planetary system that is constantly being worn down at the same time it is being replaced, always striving for equilibrium but never quite achieving it. The action of wind, water, ice, and plants upon the rock breaks it up and wears it away into particles of various sizes that form the mineral base for the earth’s incredibly thin, but incredibly precious, layer of soil.



Good, fertile soil is formed as plants gain a foothold in these mineral particles and begin to build up the levels of organic matter within the soil. Grassland soils can be among the most fertile, with generations of plants layered over each other and held in place by the strong roots and fine structure of the grasses. Grazing animals contribute their dung to the mix, and the result is deep and productive topsoil high in organic matter. However, the creation of healthy topsoil takes time. The Dust Bowl on the North American plains in the 1930s, where millions of tons of soil simply blew away due to poor land management and drought, provides a vivid image of just how fragile this system can be and how quickly it can all disappear.

Soils are classified by their texture, which refers to mix of particle sizes in a soil. Broadly, the three basic soil particles are (from large to small): sand, silt, and clay. Sand is very granular and free draining, whereas clay has very fine particles that pack closely together, leaving little room for air or water to pass through. Clay soils can be very slow to absorb water. Most soils are a mix of particle sizes, and the different percentages of mineral and organic constituents are also used to classify soils.





## Land and Law

A significant portion of the law profession is occupied with the business of land law. Likewise, governments around the world are constantly under pressure to redefine land areas and land uses to satisfy the needs of, perhaps most often, major corporations (especially the agricultural giants) but also of various nonprofit or pressure groups that for one reason or another have a stake in the land. There is a constant tug-of-war between those concerned with the protection and conservation of land and resources, and those who seek to exploit them. Both ends are necessary, and landscape architects are often called in to help guide this process as expert witnesses and mediators who are often sympathetic to both parties. Land law and land-use planning often go hand in hand, as each is concerned with the definition of boundaries and the definition of what activities will occur within them.

2.10

### 2.10

#### The landscape of Cappadocia in Turkey

The land we live upon shapes how we live, what we eat, our view of the world at large, and our whole identities. In the region of Cappadocia in Turkey, a geologic mix of sedimentary and volcanic rocks resulted in a bizarre and jagged landscape. Generations of Cappadocians carved their homes into the soft volcanic stone of the “fairy chimneys.” Whole troglodyte communities are carved into the rock.

## Land Use

Land use is the human activity that takes place on a site. Often, this use is exploitative, where people are extracting resources, for example, forestry, mining, or agriculture. Land may be used for industry, for commerce, for transportation, or for dwelling, among many other possibilities. Some land uses have a very light touch on the planet—the use of a bird preserve for bird watching, for example. Others have devastating impact, such as the deforestation of the Amazon basin rainforests for the production of beef and soya beans. Land-use planning tries to balance the needs of people with the needs of the planet, ensuring that a wide variety of plants can grow in healthy soil to support a wide selection of wildlife. Every place on Earth has something to give to the overall health of the planet. There is no such thing as wasteland. We place economic value on the extraction of resources from the land, but there is no accounting mechanism to subtract value when we’ve used something up. When an oil field is drained or when a forest becomes a desert, the value is lost forever. This may sound dire, but many landscape architects are employed just to make sure that we don’t make these kinds of mistakes. It is a profession for people who want to change the world for the better, one patch of ground and one land use at a time.





2.11a

## Water

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**Water is constantly in motion, and the effects of this motion are visible in almost every part of our existence on the planet. Water is also fundamental to shaping the face of the Earth through erosion and the nature and character of our landscapes. Oceans, seas, lakes, rivers, and streams all powerfully shape the visual and environmental qualities of a landscape. Equally, the amount of rainfall an area receives will have a profound effect on the type and quantity of vegetation to be found there.**

Water has unique qualities, allowing it to appear as a clear liquid, fog, steam, or ice. In combination with the Earth's atmosphere and climates, it may be seen as rain, sleet, hail, mist, fog, snow, icicles, icebergs, glaciers, and our dwindling but still awe-inspiring polar ice caps.

Lastly, and most obviously, water is essential to all life on the planet. It is an indispensable but limited resource that requires the care and maintenance of landscape architects and all.



2.11b

### 2.11a–2.11b

#### North Wharf Promenade, Auckland, New Zealand

Landscape architects excel at designing for coastal environments. This large-scale design for Auckland's industrial waterfront, by Taylor Cullity Lethlean + WA, brings people directly into contact with the water while creating exciting spaces for recreation and relaxation.

## Water Systems

The constant motion of water creates the climate and weather systems that shape the landscape and thus the nature of life on Earth. Water falls from the sky as precipitation (rain, snow, etc.). If it falls on land, it is absorbed by plants and soil, or it runs off the land's surface, forming streams that become rivers, which flow to the sea. Water also evaporates from plants, soil, and the surface of water into the air, where it can once again fall as rain.

There are other types of important water systems that are of more immediate concern to landscape architects. These include systems for removing storm water from streets and pavements and systems of water transportation, such as rivers and canals. At the smallest scale, which can often still be very grand, these systems include fountains, ponds, and pools in landscape and garden design.

Water is also a resource for more than merely supporting life. It can make life more pleasurable in the form of water-based recreation and water sports. It can cool the air in a city square or a garden on a hot summer day. It can provide us with beauty and scenery, along with sights and sounds that reduce stress, increase happiness, and enrich our lives.



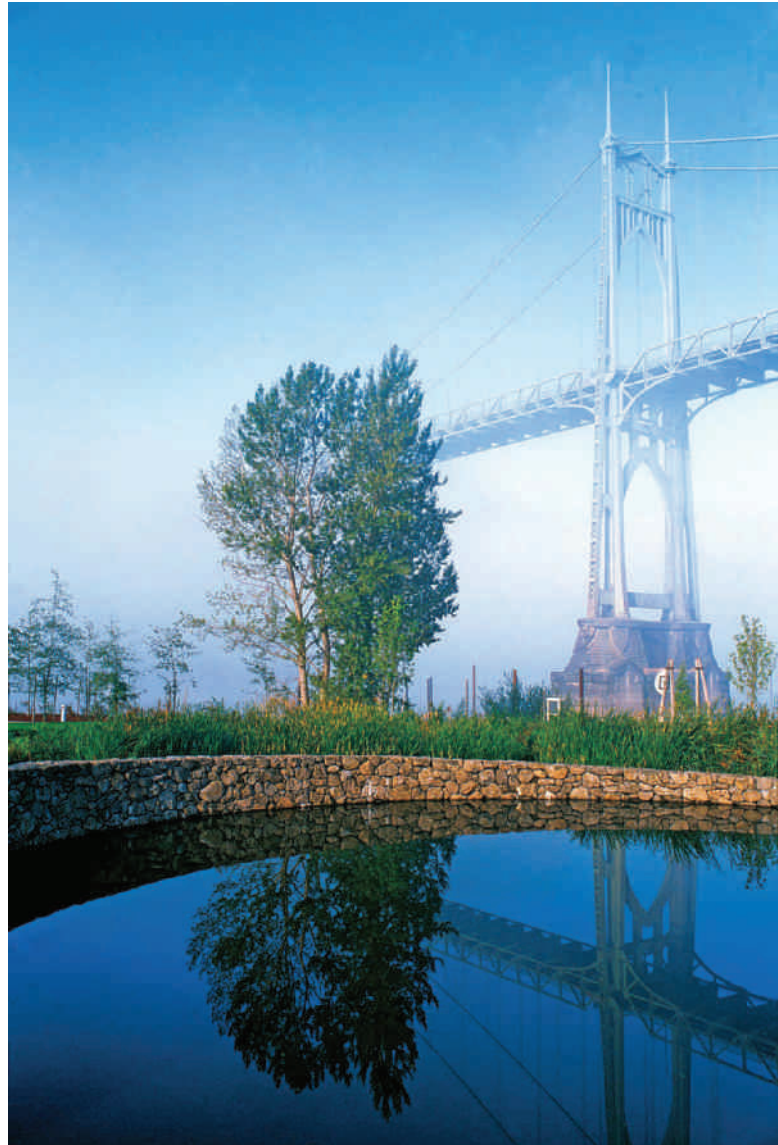
## Sustainable Water Systems

Sustainable drainage refers to the safe and effective management of rainwater and surface water, collectively known as “storm water.” This is currently known in the UK, Europe, and Australasia as Water Sensitive Urban Design (WSUD) and Sustainable Drainage Systems (SuDS) and in the USA as Low-Impact Development (LID), though there is a growing movement to standardize the terminology internationally to simply WSUD.

While “drainage” might sound unpleasant, it is actually a process that requires understanding of many related natural systems, which is exciting not just for the beautiful and useful landscapes that can result, but for the promise it has to improve the environment for people and animals.

Many of our most serious floods are the result of surface water from torrential rain. These floods are made more serious by the large impermeable areas required by modern life—parking for cars, roads, and rooftops, to name a few. Water runs off quickly from these areas, creating big problems downstream, which are magnified if there are only harder, paved areas along the way. It’s a domino effect.

Sustainable drainage uses a variety of techniques, such as green roofs and various types of planted areas, to hold water and to slow it down in times of heavy rain or runoff. Plants have the added benefit of cleaning pollution out of storm water along the way. WSUD/LID systems will increasingly replace conventional sewers, work that will increasingly require the skills of landscape architects.



2.12a



# Water Management

Landscape architects manage water across all scales, from large-scale planning of watersheds (whole regions that drain into a river or body of water—the Amazon river basin in Brazil, for example), to water transportation corridors, localized treatment and management of storm water, and the immense variety of coastal landscapes.

Water management has a number of goals: to keep water safe from pollution, to keep people and property safe from flooding and other types of water damage, and to protect and restore scenic areas and habitat. Some very important recent work has

involved the restoration of wetlands to provide vital habitat for wildlife, insects, and plants. Such wetlands can also greatly decrease the danger of floods, as they can absorb water much more effectively than city streets or private gardens. Water is also an important design element. Like plants, water has qualities that change over time and in different light and weather conditions. It is capable of producing a wide variety of effects, from a contemplative, placid pond to the exciting spectacle of a great cascade. It appeals to all the senses, to all people of all ages.

2.12b



2.12a–2.12b

**Water Pollution Control Laboratory,  
Portland, Oregon, USA**

The city of Portland, Oregon, has been at the forefront of using sustainable storm water management in a great variety of applications and types of areas. Murase Associates, a landscape architecture firm renowned for its imaginative and progressive work with water, created the Water Pollution Control Laboratory for the City of Portland as an experimental installation in treating large volumes of storm water. The laboratory is a landscape that is both useful and functional. Instead of being hidden away in a sewer, the water is made part of a visible celebration.

## Plants

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**Anyone who has ever planted a seed will have appreciated the moment when the young shoot bursts forth from the soil, stretching itself out and unfurling leaf after leaf. We still know so little about how a seed knows how to become a productive plant that the process might as well be magic. It certainly feels like it.**

Plants are a fundamental unit of life on earth, and they support themselves and all animal life through the process of growth, maturation, reproduction, death, and decay. It is an endlessly productive cycle.

An understanding of plants has been fundamental to human survival. Hunter-gatherers would have had extensive knowledge of plants, knowing the difference between those that would nourish and those whose consumption spelled death. We can only imagine the first act of planting that led to the creation of agriculture roughly 12,000 years ago. In reality, it was more likely a collective accumulation of plant knowledge over generations that led to organized planting, tending, and harvesting.

The birth of agriculture was also the birth of landscape design—a shaping of the Earth and its forces to better accommodate the human species. Plants have always been, and always will be, basic to this process.

## Plants in Nature

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Both on land and in the oceans, plants form a thin layer over the whole surface of the Earth. They are essential to the food chain, using chlorophyll to capture and convert the sun's energy into nutrients. During this process, plants take up carbon dioxide and release oxygen into the atmosphere. This food and fresh air are essential to our existence.

The life cycle of plants is also important to the continuity of all life. When dead and decaying plants decompose, the soil is better able to retain moisture as well as provide nourishment for the next generation of plants. Plants also circulate moisture in the atmosphere, which helps to moderate climate. This is also part of the hydrologic cycle, whereby water that falls to the ground as rain or snow is returned to the sky to start the whole process again.

For much of human history, we have taken more from these processes than we have returned, and we have reached a stage in both our evolution and the planet's where we must begin collectively to restore the natural equilibrium that has become disrupted nearly to the point of catastrophe.



2.13

### 2.13

#### A montane fell plant community in the Lake District, UK

Sedums and other alpine plants cling to the naked rock on the fells above Windermere in Britain's Lake District. Here, lichens aid processes of erosion to build soil from stone; when enough has accumulated, small tenacious plants may take hold. Given time, enough soil would form to support a forest.



## Plant Identification

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As with the earliest hunter-gatherers, it is still a crucial skill to be able to distinguish one plant from another for the simple reason of being able to differentiate between food and poison. For landscape architects, though, it is important as part of the process of identifying which plants are suitable and advantageous for a given location or site and, ultimately, for speaking knowledgeably to plant suppliers about their stock.

Plants have both common names and Latin names. The common dandelion, for example, is known by different common names in almost every country in which it is found. It will be universally recognizable, though, by its Latin name, *Taraxacum*. The universal naming of plants goes back only a few centuries, but it has been invaluable to ensure that people the world over have a common language.

## Plants in Cultivation

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Plants give us pleasure, stimulating all the senses. Plants provide us with delicious food, attractive flowers and foliage, and delightful scents. This is certainly reason enough for agricultural planting, but why have we come to arrange plants in the landscape in anything other than easy-to-harvest rows?

Plants give us comfort in ways beyond their basic qualities. Trees provide shade, keep strong winds at bay, clean polluted air, moderate temperatures, and frame views. Plants can also be used to hold soil in place against the action of erosion, to absorb excess surface water during storms, or to draw contaminants out of polluted soil, among so many other positive attributes. Plants can also be used structurally in a variety of ways to make space, creating enclosure and screening, or marking boundaries, for example.

Plants fall into a few basic categories: trees, shrubs, vines, herbaceous, and ground covers. Each of these categories then subdivides endlessly. Trees, for example, divide into evergreen and deciduous, which are then further broken down by leaf type, flower type, fruit type, color, texture, bark, and where they will or won't grow. This provides an inexhaustible variety of ways to combine plants to make compositions. With the fact that plants change through the seasons and grow larger from year to year, it adds up to the most interesting and dynamic palette of design materials imaginable.

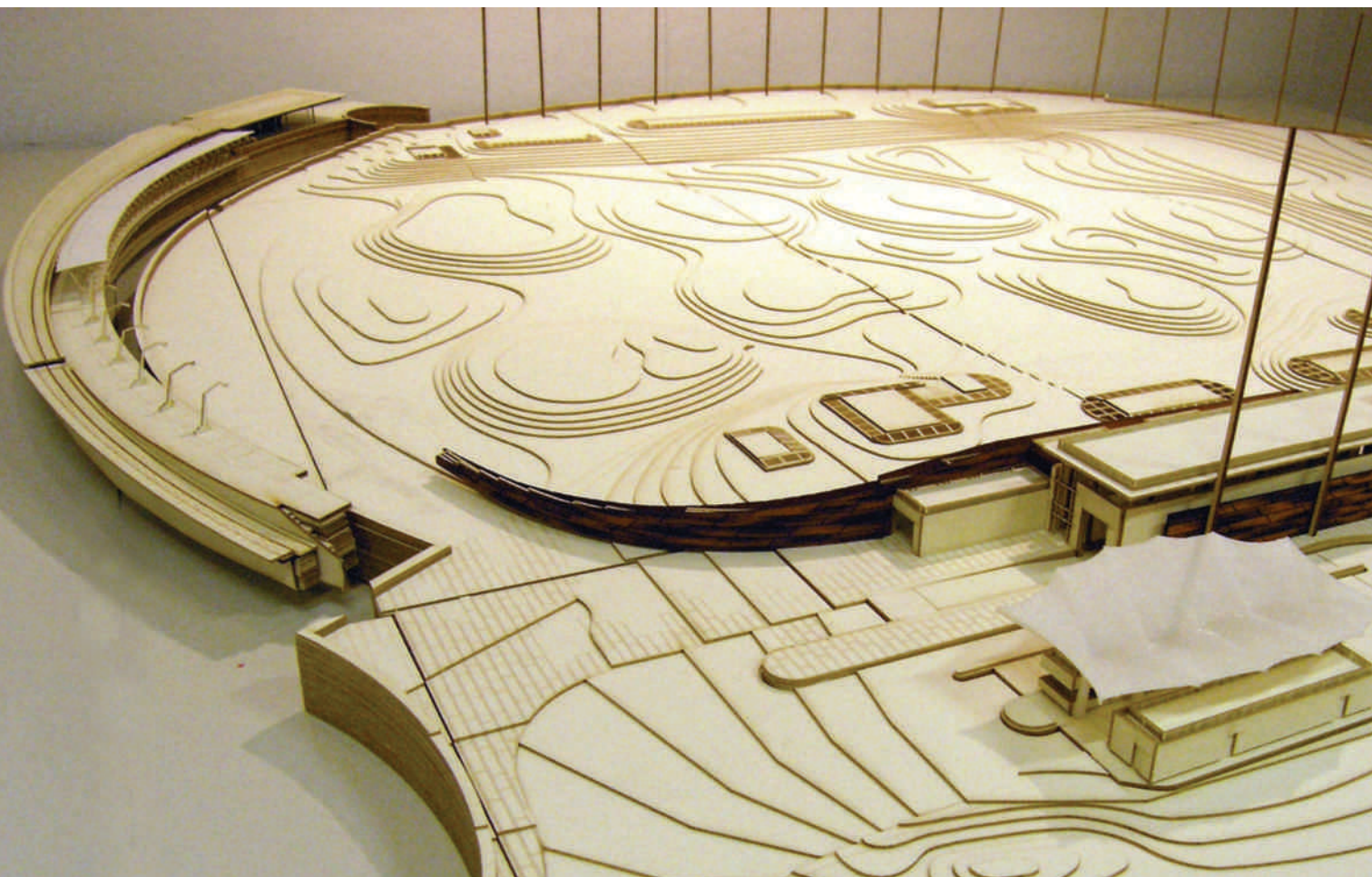
2.14

## 2.14

### Plant identification and classification

Plants are categorized into groups that have similar characteristics, which gives them a family name, or genus. Within their genus they are distinguished by difference, which assigns them a species. Botanists and horticulturists often use botanical drawings to aid in making these distinctions. *Taraxacum officinale*—the common dandelion—is pictured here in a botanical illustration.





2.15

## 2.15

Ken Smith Landscape Architect, Moshulo Golf Center and Croton Water Treatment Plant, New York, USA

Storm water management and cleansing were addressed in an extensive system with a complex topography for the site by Ken Smith Landscape Architect. Here, a contour model made of laminated card allows a clear understanding of subtle topographic variations, which slow the flow of storm water across the site to allow it to be cleansed by vegetation then used for irrigation. This project, a green roof for the Croton Water Filtration Plant, doubles as a golf driving range.



## Topography

**The word topography is from the ancient Greek for the “writing of place.” It refers to the rise and fall of land and the natural and artificial features created by soil, rocks, and buildings. In a more traditional sense, it also refers to the shape of the land created by the type of vegetation on it. For example, grassland would have a different topography from that of a forest.**

In a slightly narrower sense, topography simply means the shape of the land underlying plants and buildings and how it is described on maps, using contour lines. All senses of the word are correct, and all are useful to landscape architecture.

Topography is the result of natural forces acting upon the land, such as when wind forms sand into giant dunes, like those in the Sahara Desert, or when water carves through soil and rock, as can be seen at the Grand Canyon. Gentler examples of topography can often be just as breathtaking, especially when combined with an artfully designed landscape. Even a small hill can provide a commanding view.

In the urban landscape, it is often topography that is most important in defining a city. Imagine San Francisco without its steep streets, Paris without Montmartre (or the Eiffel Tower—itself a topographic feature), Hong Kong without its skyline framed against the Peak, or Tokyo without Mount Fuji.

Landscape architects do not merely work within the context of topography; they also actively shape it.

## Models

A topographic or contour model, whether physical or digital, is an indispensable tool with which to understand a site. The simplest type of topographic model is made of layers of board, such as cardboard or cork, and is made by cutting the boards using contours as a pattern and then gluing each contour level together successively. Built up layer by layer, a topographic model is an accurate scale representation of the slopes to be found on a given site.

It is much easier to understand a site from a model than it is from a map or a plan; a model can easily be understood by someone with no training in reading maps and contours. For the designer, it is a valuable tool to explore drainage patterns, views into and out of a site, wind, weather, and microclimates, among many other considerations.

## Contours

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Contours are lines used to accurately represent the rise and fall of the land that appear on maps and plans. They represent a line at a constant level elevation (height) traced upon the surface of the land.

As an accurate two-dimensional representation of a three-dimensional surface, contours make it possible to translate information from the map or plan back into a three-dimensional model of a site.

To a skilled map reader, contours can convey much more information than merely the shape of the land. Drainage patterns, which impact on topography through the act of erosion, can be “read” and can indicate whether a landscape is arid or wet. It is often even possible to make educated guesses about the type of soils or geology in an area simply based upon the patterns of erosion shown by contours.

Landscape architects use contours to create grading plans for a site. These are plans that indicate how the surface of the land is to be shaped (either by heavy machinery or by hand) so that a landscape design may be realized or ground may be cleared and prepared for buildings.

## Site Surveys

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Built projects begin with the requirement for a contour plan of the site. In order to create a contour plan, it is necessary to obtain an accurate topographic survey of the surface of a site, its surroundings, and its boundaries. Surveying uses a variety of different tools and techniques. The theodolite on its tripod is perhaps the most familiar of the instruments involved. It is typically accompanied by a person in a safety vest taking measurements of slopes and angles through the process of triangulation. Computers, lasers, and even robots have made modern surveys much faster and often more accurate. A Global Positioning System (GPS), which uses satellites to fix positions on the Earth’s surface, is just one example of the new technology employed in site surveying.

The site survey takes measurements of heights at specific locations (called “spot elevations”) and of slopes, fixing them into context. Once a sufficient number of spot elevations is taken, it is then possible to create a contour plan of the area.

### **2.16a–2.16c**

#### **Shell Petroleum Headquarters, Rueil-Malmaison, France**

Kathryn Gustafson’s design for the Shell Headquarters evocatively uses topography both to hide and to frame the building. Waves of turf roll between limestone walls, suggesting both water and the scallop shell of the corporation’s logo. Such a landscape is much more complex to design and plan than it would appear, and it requires much design exploration using topographic drawings and, in particular, models.

2.16a



2.16b



2.16c





2.17

2.17

#### Yosemite wilderness

The sublime wilderness of California's Yosemite Valley was preserved as a natural treasure largely through the words and deeds of the eminent naturalist John Muir in the late nineteenth and early twentieth centuries. Since that time, landscapes such as this have become increasingly emblematic of national and cultural identity.

## Landscape Character

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**Newsstands the world over are packed full of glossy magazines that obsess about human personality, personal appearance, and behavior. If the same bulk of material were produced about the landscape, then we would all have a much better understanding of the world around us. Landscape character is the set of attributes, both tangible and intangible, that define an area in much the same way as looks, personality, and behavior define a person.**

Like people, all landscapes are defined by the sum of their attributes, for better or for worse. Geology, soils, topography, and water features, such as rivers and lakes, are all elements of landscape character. To these elements, we can add plants, which can be the most defining elements of a landscape. A forest is a very different place from a prairie. The way animals have used the landscape may change the land's character. Beaver dams, for example, can change a landscape overnight. Animals grazing can also have very visible impacts. However, the human animal often has the most profound influence, with built forms making a strong impact on the landscape, and intensive land uses—such as mining or forestry—can utterly erase or radically restructure a landscape.

Finally, one of the most important elements of landscape character is the most difficult to define. How we feel about a given place is fundamental to our understanding of it. Is it cozy or vast? Is it beautiful or peaceful? Or is it bizarre or unsettling? Does it feel like home?

## Wilderness and Nature

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There are very few true wildernesses left. Just about every inch of the planet is managed in some way or another by humans. This has been the case, though, for longer than one might imagine. Native Americans, for example, burned and cleared the North American prairies for thousands of years. The bison haven't roamed in true wilderness for millennia. They have, in fact, benefited from the maintenance and extension of their habitat, as have those indigenous people who lived off the bison.

This is not to say that all of nature has been tamed to the whims of people, or that the essence of what it is to be wild has been compromised in any way. Landscape architects work directly at the interface between people and the environment, seeking to strike a balance between the two.

Natural parks and nature reserves are consistent sources of work for landscape architects, from the scale of the local pond to great expanses of tundra. Good management and planning for these areas is vital to preserve the health of the planet and its biodiversity. It is also vital to the human psyche.

We benefit enormously from both direct interaction with the natural world and the knowledge that wildness and natural majesty are within reach if we desire them.

Every natural landscape has a unique character, from the Serengeti to Patagonia to the Everglades, but it is still immensely useful to draw parallels between places to understand their immense complexity in context.

## The Built Environment

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The term “built environment” can be useful to differentiate inhabited landscapes from “wild” landscapes. The built environment includes everything from agricultural landscapes to transportation infrastructure. Most often, though, the term is used in reference to human urban settlements—cities, towns, and villages—in particular the relationship between built form and open space in the exterior environment. If there is a pitfall to this term, it is that it allows some professionals to forget that there is always an interplay between the built and the natural; thus, the term “built environment” is not a synonym for “landscape.”

In the case of urban environments, landscape character is the fusion of multiple influences. Social, cultural, economic, and historic elements are expressed with a spatial language that draws upon local topography, vegetation, materials, and climate. Landscape architects are skilled at reading all these variables in the urban landscape and making design decisions that are in harmony with the way people have lived in a place for generations. Understanding landscape character is at the heart of making places and at the heart of landscape architecture.



**2.18a–2.18d**

**Housing as a built environment**

One type of built environment, that of housing, can take a wide variety of forms depending upon variables such as climate, culture, and tradition. The following images show an American suburb in the San Fernando Valley, California; a traditional *hutong* in Shanghai; and roofscapes in Hastings, England, and Tokyo, Japan.

2.18a



2.18b





2.18c



2.18d

**2.19a–2.19d****Landscape types**

Diverse landscape types across the globe dictate radically different modes of human existence due to climate, flora, and fauna. These characteristics shape languages and cultures. The pristine views presented here are wildflowers in the Rocky Mountains, USA; a desert oasis in The Yemen; jungle and karst landscape in Gunung Mulu National Park, Sarawak, Malaysia; and a taiga landscape in Park Ergaki, Russia.

**2.19a****2.19b**





2.19c



2.19d



Case Study:  
Shanghai Houtan Park, Turenscape  
Beijing, China

**“Respect for the history of the site  
is the basic ethic of a designer,  
particularly a landscape architect.”**

Kongjian Yu, FASLA, President and  
Principal Designer, Turenscape

**2.20a–2.20d**

**Houtan Park, Shanghai, China**

Water is omnipresent in Houtan Park, whether as open stretches or as lushly vegetated wetlands. The former industrial site has been rehabilitated into a superb resource for rest and recreation, while also revealing natural processes to the park’s visitors.

It is rare that landscape architects are given landscapes that are already beautiful and functional to work with. Thus working with site and context is often a matter not of restoration but of reinvention. Turenscape’s Houtan Park in Shanghai was originally a riparian wetland, then it was cultivated into agricultural land, and from the late nineteenth century it was occupied by heavy industries. It became a brownfield site characterized by unhealthy conditions: water and soil pollution, vulnerability to floods, and an abundance of invasive plant species. The design is intended to reveal the memories of the site and tell the stories of the past, but it also demonstrates a solution to water pollution.

Kongjian Yu, charismatic founder of Turenscape, considers the designed landscape as an ecological infrastructure that provides multiple services. It demonstrates an alternative ecological solution to urban water issues, and this alternative solution is replicable, therefore a “prophecy” showing hope for the future. The site’s context is truly multilayered—physical, social, cultural, and even representative of the context of hopes and dreams for the future.

2.20a



2.20b

For Kongjian Yu, a site's history and potential are always present throughout the design process. He says: "I speak of 'memory and prophecy' in a similar sense to Colin Rowe in his book *Collage City* of 1978: buildings, cities, landscapes are theaters of memory and theaters of prophecy. Rowe wrote, '[I]f without prophecy there is no hope, then, without memory there can be no communication.' And this is particularly true of landscape architecture."

Yu feels that any inch of land has its own history and many layers of stories: natural, cultural, public, and personal. Any piece of land has been "designed," with or without architects. Respect for the history of the site is the basic ethic of a designer, particularly a landscape architect. The goal of designing the landscape is first of all to reveal the *genius loci* of the place, which makes the designed landscape meaningful and gives the place its identity. He believes that as a landscape architect, he is not just telling the stories of the past but also has the opportunity to showcase new ideas and technologies that can solve the problems that the world in general and the site in particular are facing.

Yu's work at Houtan Park in Shanghai addresses three key areas of contemporary landscape practice: agriculture, wetlands and water management, and postindustrial brownfield land. The project highlights his approach.

Yu states: "Our hope for the future is in ecological and sustainable solutions to our seemingly hopeless environmental situation in China. At present, 75% of the surface water is polluted, over 60% of ground water in the metropolitan area is polluted, 50% of wetland has disappeared, and 10% of fertile land has been lost to urban growth."

2.20c



2.20d







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# Inhabiting the Landscape

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What is it that inhabits a landscape? People, of course, make a home in it—a permanent investment, filling it with the habits, movements, and associations of everyday life. We share it too. Plants, animals, insects—all the biota that comprise ecosystems—they are all part of the interdependent mix of processes and forces that support and shape our lives. Buildings, institutions, and infrastructure all have a profound impact on space. Our social, cultural, political, and economic lives are also played out in landscape.

This chapter looks at the ways in which we come into conversation with all these intersecting concerns in order to create designs for places. These places might be highly ceremonial or totally informal, sculptural, and photogenic, or indistinguishable from wild nature, public or private, entertaining or relaxing, or, indeed, a mixture of each.



3.1

## 3.1

### Olin, Bryant Park, New York, USA

Warm spring sun brings park visitors out in droves. The everyday life of a park is a lively dance of people, weather, and cycles of work and play.



3.2

## Site Planning and Development

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**Many celebrated contemporary buildings are intended to stand out and make a statement, and their design can appear to be based largely in conceptual abstractions or bear only superficial relation to the site. Sleekly dune-shaped buildings in the desert, for example, have been multiplying rapidly in wealthy areas of the Middle East. There are strong arguments against such practice in architecture, but the emphasis on context over concept in landscape is crucial. This is not to say that creating eye-catching signature landscapes is inadvisable but rather that the signature is often already partly written.**

The landscape architect needs to be attuned to the *genius loci*, bringing the best out of places by understanding the intricate interrelationship between people, patterns of everyday life, buildings, and landscapes. Some landscapes are at their most successful when they effortlessly and almost invisibly make people's lives richer. This low-key but incredibly vital approach is apparent in almost every stage of the design process, and it can take courage to make something that is good but not flashy. Architects often begin with grand explorations of form, but landscape architects must intently observe the site, understanding its capabilities and holding them up against all its possible uses. In landscape architecture, it is almost always true that form follows function. This simple formula sounds so easy to resolve, but the landscape presents almost limitless functional possibilities, and the complexity of the intersection of uses is landscape architecture's great challenge.

### 3.2

**Ken Smith Landscape Architect,  
Santa Fe Railyard Park, Santa  
Fe, New Mexico, USA**

Santa Fe Railyard Park, created by Ken Smith with architect Frederick Schwartz and artist Mary Miss, balances an expression of the site's cultural history with its contemporary social and recreational uses.

**“The world is moving into a phase when landscape design may well be recognized as the most comprehensive of the arts.”**

Geoffrey and Susan Jellicoe, landscape architects

## Program Development

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Program development occurs alongside and is supported by site analysis. Program is generally understood as the set of uses, functions, and activities that will be required of a site, whether these are natural functions, such as storm water drainage and water filtration, or human activities such as play or picnicking. It is a dynamic interrelationship of actions and elements and the site's performance that sets the parameters for design. Understanding the site is the basis for this. The client, which may be an individual, a community, or an organization, sets forth its needs and requirements. The landscape architect then assesses whether these needs may be accommodated by the site. He or she also considers whether there are other uses to which the site might be put that might be beneficial. With this balance in place, the landscape architect may then communicate clear goals and objectives for the site design.

With objectives in place, the designer may then begin to test the relationships between uses and the site. Schematic drawings are a useful tool for this, and this is usually known as the “schematic design phase.” The schematic phase is where the bulk of conceptual development occurs. At this point in the program development, it is usually useful to study projects by other designers to see how they have responded to similar issues. This is known as “comparative analysis” or “precedent study.” Program development generally leads to the production of a conceptual or sketch plan, which may then be presented to the client for approval.

To put it as simply as possible, program development is the act of fitting possible activities and requirements to a site, and deciding how these uses work together in the available space, while leaving a little flexibility for unanticipated future uses.



### Site Selection

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On almost any project, landscape architects need to be involved from the very beginning. Landscape architects provide the big picture—and there is little use in waiting for it until the end of a project. For every site, there are ideal uses, and for every use there is an ideal site. If a client has a project to propose, a landscape architect has all the skills to help find the perfect spot. Say, for example, that the client is a university that has outgrown its old facilities and needs to move to a new campus. Naturally, this is a use that would require a considerable amount of space. A wide variety of building types and uses would need to be accommodated, from science laboratories to libraries, commons buildings, and dormitories. The site would need to have excellent public transport, as students cannot be expected to own cars. A university would also need to demonstrate that its building is as enlightened as its thinking, making sustainability a primary concern.

To accomplish these goals, a landscape architect uses a combination of tools. An ideal schematic might be created. This is a drawing that shows all the possible activities and uses that the client has set forth, and how they might be arranged to complement each other perfectly. The commons bar, for example, ought to be close to the dormitories, but not so close as to cause disruption to those who do not wish to partake in any festivities. Remote sensing is an important part of the site-selection process, and this includes the use of maps, aerial photographs, satellite imagery, and Geographic Information Systems (GIS). Finally, there is no substitute for a physical visit to the actual site.



3.3a



3.3b



3.3c

↓ **Site Planning  
and Development**

→ The View of  
the Landscape



3.3d



3.3e

**3.3a–3.3f**

**Field Operations, Fresh Kills program development**

Showing all the possible uses for a vast site, such as that at Fresh Kills, requires extensive visualization and planning. This series of photomontages helped Field Operations populate the site with activity.



3.3f



## Development and Design

Design is not a linear process. We have seen so far that site inventory and analysis overlap with program development, for example, and the process of development always points up additional research that must be undertaken.

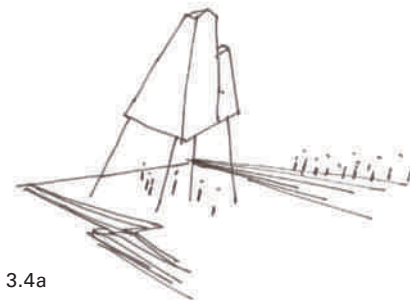
The process circles back on itself. From program development all the way to construction, the same loops occur. Design is a process of testing, in the same way that a scientist might make repeated experiments to achieve an answer to a question. There is no single correct answer to any site's problems and opportunities. There are only workable solutions that have been arrived at by a combination of trial and error and the designer's own unique voice.

For the landscape architect, the process of testing and retesting means making use of a variety of materials and techniques for visualizing the site and its issues. In order to test a design solution, the designer must be able to imagine how the site would look and function after an intervention—"design move" is the term commonly used for this. Every design move has consequences that help to build knowledge and add to the success of the eventual design. Drawing and modeling are the primary tools employed.

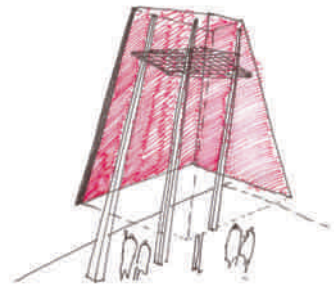
### 3.4a–3.4d

Martha Schwartz Partners, Fengming Mountain Park, Chongqing, China

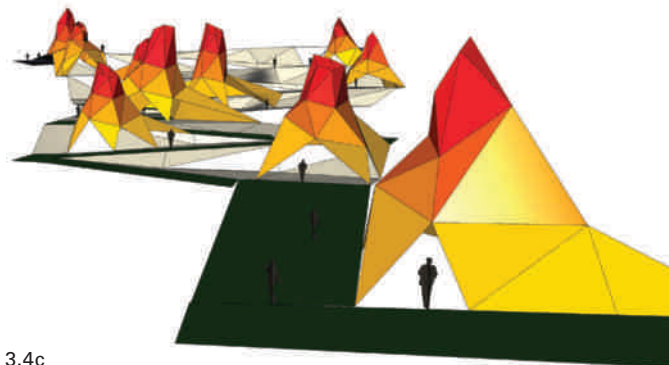
These drawings show the process of developing form for a site based upon inspiration from the surrounding landscape. The misty mountains around Chongqing provide an initial sketch, the forms of which then evolve through various iterations into four-legged pavilions that punctuate the park, creating a memorable scene. It is useful to note that the resulting designs have evolved greatly from the initial sketch, and while the inspiration is still apparent, the designs are not rigidly literal about recreating the mountainous forms.



3.4a



3.4b



3.4c



3.4d



## The Design Process

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Despite the fact that the design process is reiterative and cyclical, it is still possible to define stages. One must imagine that the designer will move between each of these stages as needed. The process is never linear, and the designer who waits for a stage to be “complete” before proceeding might never move ahead. This set of activities from inception to design to completion and maturation applies to all the architectures, as well as to engineering.

**Commission**—When a job is commissioned, the client issues the brief for the project, defining the goals, expected activities and requirements, and the services to be provided.

**Research**—The site survey and inventory process compiles data for the site, including maps, images, historical records, and other documents. Precedent studies are also included.

**Analysis**—The qualities of the site and the requirements of the brief are examined to determine opportunities. Analysis and program development aid overall synthesis of ideas and approaches.

**Synthesis**—Designs are realized through schematics, sketching, modeling, and testing. This requires a great deal of communication with the client and, often, community consultation. The inspirational stage in which the design gels is contained within synthesis—and inspiration burns up a lot of perspiration as fuel.

**Construction**—The final design is detailed in construction documents so that it may be built. The landscape architect usually supervises the construction process. Detail development can instigate fresh site analysis or can strongly change the direction of a design.

**Operation**—Monitoring a design’s success is important for any practice—much is to be learned at this stage. Visits are made to the site after completion; any faults are rectified and necessary adjustments are made. Sometimes, landscape architects remain on contract for maintenance for many years after a design’s completion.

## The View of the Landscape

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**To many, the view of the landscape and the landscape itself are synonymous. A “landscape” might be either the landscape itself or a picture of it. However, landscape architects know it to be so much more, appealing to all the senses and composed of a great variety of elements, both seen and unseen.**

Sight, though, is the primary sense we use to encounter our environment and to make judgments about it; the view of the landscape, therefore, is of primary importance to the designer. The view of the landscape is more than just a pretty picture. Views in the landscape are dynamic, in motion, and they help us to orient ourselves, as well as inform us of the type of space we are in and how it is to be used.

## View

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The landscape architect must consider views from three different angles: views from the site, views within the site, and views of the site. Each of these is important to how an individual comprehends the site, and all must be taken into account for the design to be successful.

Views themselves may have many functions. Views may be framed, by trees or by a window, for example. They may serve as a backdrop, a setting against which action takes place. Views may serve as a setting for architecture, or in turn may be enhanced by architecture. Buildings in an urban setting play a particularly important part in framing or directing views. Landmarks can also anchor a view in the way that the Space Needle defines and locates Seattle, Washington’s famous skyline.

Views may form the basis of a site for meditation or relaxation, but they may also be used to draw people into motion, to provide them with a visual goal that impels them to explore. While exploring, they might also discover that views have a way of unfolding, of being concealed and revealed when the viewer is in motion.

## “Landscape and image are inseparable.”

James Corner, landscape architect

### 3.5a–3.5b

Hans Dieter Schaal, The Garden at the Villa Leibfried, Germany

Placed in the overgrown vegetation of the grounds of the Villa Leibfried, which was destroyed in the Second World War, Schaal’s deeply considered design barely touches the ground at all. It introduces lightweight wooden structures into the garden to provide destinations and to frame views. In one case, an apparent overlook turns out to be an illusion, framing a view only in the visitor’s imagination.



3.5a



3.5b

## Vista

A vista is a view that is framed or confined. A picture window, for example, is used to best effect when it very carefully centers a view, editing out extraneous detail such as poles and power lines.

City vistas are captured in the same way. One of London's most exciting vistas is through an archway at Piccadilly Circus, in which a long view captures the Victoria Tower of the Houses of Parliament and the Duke of York's Column at Waterloo Place. Under the arch, an entrance to the Underground displays the ubiquitous bar and circle logo, and red double-decker buses lumber by behind. It is a vista that captures the essence of London in a glimpse, and it is far from accidental. It is a work of urban landscape design, enhanced by architecture and animated by the hustle and bustle of a great city.



## Axis and Symmetry

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An axis might be referred to as the “spine” of a site, and it is usually a broad path or roadway, often flanked by buildings. It may be straight, curved, or sinuous, but it never branches, always holding a hard line. It is a powerful, primary, unifying feature in the landscape to which all else is subservient, though it may be crossed or paralleled by other axes. Baroque gardens, such as Versailles, use this feature to organize a landscape in which most elements are symmetrical—mirror images reflected across the spine. The symbolism involved in these powerful, symmetrical gardens is about the dominion of humans over nature.

Symmetry can be inflexible, though, and its rigid formality has a dehumanizing quality to it. There is no need for an axis to be accompanied by symmetry. The Broad Walk, the primary axis at The Regent’s Park in London, hugs the side of the park, which is a flattened, ovoid shape, and it is crossed by a strong secondary axis, but is also joined by numerous meandering paths and diagonals. It provides a long promenade that organizes the park, but it doesn’t prevent people from rambling at will and feeling free to relax (see plan of The Regent’s Park on page 40).



3.6

## The Cinematic Landscape

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The first half of the twentieth century, especially the 1930s and 1940s, might be seen as the golden age of road building. The motorcar had added new glamour to the romance of the open road, and cinema was the perfect new medium with which to express this love affair. Landscape architects, especially in the United States, were employed to design and sculpt roads that would provide pleasurable and scenic drives. Film became a metaphor for how the views might unfold and be modulated over the course of a road, and the car window mimicked the frame of the camera as it captured the moving vista. What a shame, then, that speed and flow, rather than pleasure and romance, are all too often the only criteria for road building today.

Any other mode of ground transportation, however, from walking to rail travel, can also provide the same effect. Views can, by turns, be concealed and revealed, unfolding or unrolling, creating anticipation, surprise, and a setting for a thrilling arrival. The landscape is dynamic, cinematic, and panoramic. And all in vivid color.

### 3.6

#### The Blue Ridge Parkway, Appalachian Mountains, Eastern USA

Proof that the romance with the car was not at odds with a romance with the landscape, Stanley W. Abbott's designs for Blue Ridge Parkway created a cinematic sequence of exquisite unfolding views for the motorist. Sometimes, it is the road itself that is the focus of the view, as this remarkable viaduct shows. The Blue Ridge Parkway runs from the Great Smoky Mountains in North Carolina to the Shenandoah National Park in Virginia.

## Landscape Planting

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**While it is no longer necessary for each individual landscape architect to exhibit a mastery of horticulture, plants still form the most visible and structural elements of the environment, and every firm must be able to provide expertise in working with plants. Unlike buildings, which begin to age and decay from the moment they are finished, plants in the landscape grow, improve, and mature. Within the shorter timescale of the seasons, they provide a display that is ever changing and exciting, from the first flush of spring to the bare branches of winter.**

Landscape architecture often suffers from the misconception that it is a profession employed to “shrub it up,” as though the landscape is the parsley garnish to architecture’s perfectly formed omelet. Worse, landscape architects are sometimes asked to cover up faults or screen out horrors that could have been better designed from the beginning. It is vital that landscape architects are employed on projects early to avoid such disasters. This unfortunate situation may have caused many landscape architects to try to disassociate themselves from planting design, rather than to take pride in the enormous range for design that plants offer. Further, astute architects have discovered that making buildings sustainable usually requires a keen understanding of landscape, siting, and planting, which reinforces the need for collaboration and communication early on.

Plants are important not just for their visual amenity but also for the other services and benefits they provide. Vegetation may be used for erosion control, to manage and filter surface water, and for climate control, to name a few examples.

## Composition

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A common term for the range of plants used in a design is the “plant palette.” This is an appropriate term. In the same way that a painter might choose colors and textures of paint to apply to a canvas, the landscape architect has a rich selection of plants to choose from that will be appropriate to any site. Designers with practice in planting will often develop a selection of plants that they know well and which they can rely on to perform time and time again in a given area. This can be as much a signature for the designer as a practical way of working from day to day.

The designer will test planting designs on the planting plan by sketching them, either as a perspective drawing or by drawing a more technical section through the plan. Trees, being the largest and most structural of plants, generally form the backbone of any planting plan, with shrubs providing structure at a more intimate scale. Other plant types include ground covers, vines, and herbaceous plants.

Plant compositions can follow many different styles. Plantings may be done in sweeps, with random spacing, or with rigid geometric spacing in a grid, or as an *allée*, among many other possibilities. It is also possible to specify maintenance methods that may have a profound effect on the form of plants, such as shearing shrubs into hedges or topiary, or pleaching or pollarding trees.

### 3.7a–3.7b

#### Gardens of the Great Basin, Chicago Botanic Garden, Glencoe, Illinois, USA

The firm of Oehme, van Sweden and Associates is notable for its robust, painterly approach to landscape planting. The Gardens of the Great Basin is a garden based around a circuit of experiences, including paths, bridges, and vistas. The plant choices are typical to American Midwestern gardens.





3.7a



3.7b

### Do I need to know about plants to be a landscape architect?

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Landscape architects sometimes come under attack because they are not perceived to be good horticulturists. This is unfair in a few interconnected ways.

1. It assumes that the work of landscape architects is primarily concerned with plants. This whole book should serve as an argument against that assumption. Landscape architects specialize in a wide variety of areas, and some working as strategists or planners may rarely, if ever, become involved with planting design.
2. Often, the above assumption is accompanied with another, that design with plants is solely concerned with picturesque or gardenesque effects. Landscape architects wield plants in the same way that building architects deploy walls and ceilings. They provide the structure of a building project.
3. It is unfair because a great many landscape architects are very highly skilled with plants and take immense pride and satisfaction in their horticultural work.

4. Finally, even a landscape architect who is highly skilled with plants might only specialize in a particular type of planting or plant management, such as bog planting or arboriculture, or he or she might know a particular type of plant, such as trees or shrubs.

Landscape architects commonly work closely with planting designers and horticulturists. Sometimes, it is important to know one's own limitations and to know when to seek expert advice; and sometimes, seeking specialist help with plants is an absolute necessity—landscape architects working internationally will always need local assistance. All of this goes to underscore the fact that landscape architects must be skilled in collaboration and communication.

## The Seasons

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In many areas of the globe, there is little change from season to season. Equatorial regions and polar regions offer variations on a single theme—hot, hotter, and hottest, or cold, colder, and frigid. This is not to say that a wide range of plants does not exist for either area, but there is less dramatic change from month to month.

The most noticeable change that the seasons bring in temperate climates is visual—the vivid, sometimes electric, greens brought by new growth in the spring rains; the parched browns and yellows of summer; the fiery shades of autumn; and the stark contrasts of winter. The coincidence in the change of climatic conditions and plant conditions can often be fortuitous in other ways. In winter, when every drop of sunlight is precious, the trees are bare to let as much of the light filter through as possible, while in the summer, the trees are lush with leaves to provide shade from the heat of the sun.

Planting design has time on its side, with the long-term change and maturation of planted landscapes providing pleasure and variety over many years, and with four seasons a year to ensure that there is constant interest. All the variables involved in plant design may sound overwhelming, but the rewards of learning manifest themselves in time as well.

### Plant Characteristics for Design

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**Form**—the shape and “habit” of a plant, such as weeping trees

**Size**—the mature height and width of a plant

**Texture**—leaves and branches can be fine, medium, or coarse

**Color**—the color of leaves, fruit, bark, and flowers must all be taken into account

### Plant Suitability for Site

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**Soil**—specific plants will generally have a preference for a particular type of soil

**Moisture**—some plants will tolerate drought, while others have a limitless thirst

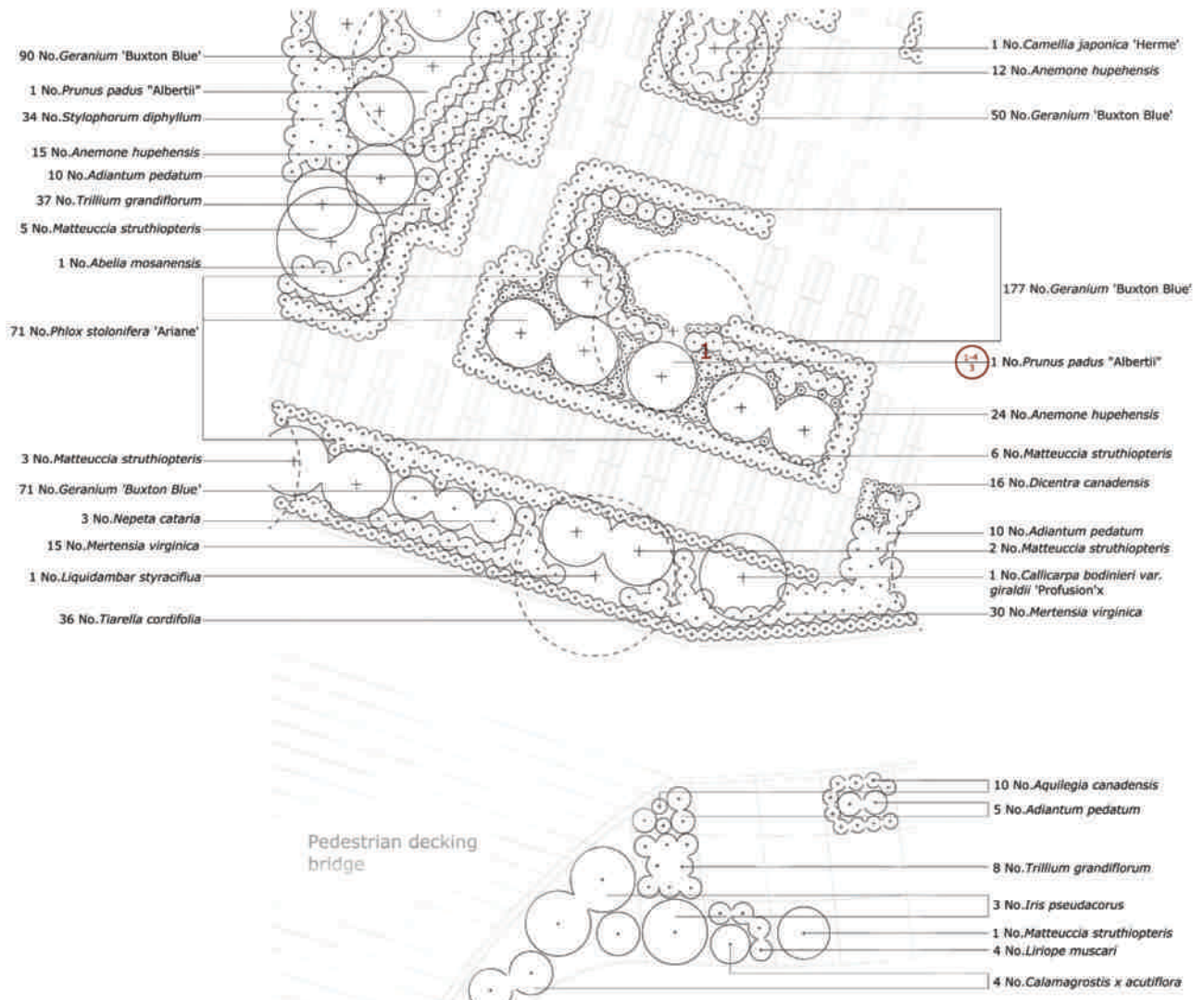
**Climate**—wind and extremes of temperature will dictate the extent of a plant palette

**Microclimate**—specific site characteristics, such as sun and shade, will also affect plant choice

### Plant Services

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Plants don’t merely provide beauty. They are also crucial for human survival, health, and comfort. Among the many services that plants provide are cleaning and filtering air and water; providing shade for people, animals, other plants, and buildings; improving ecology and biodiversity; providing habitat, and, of course, plants feed us.

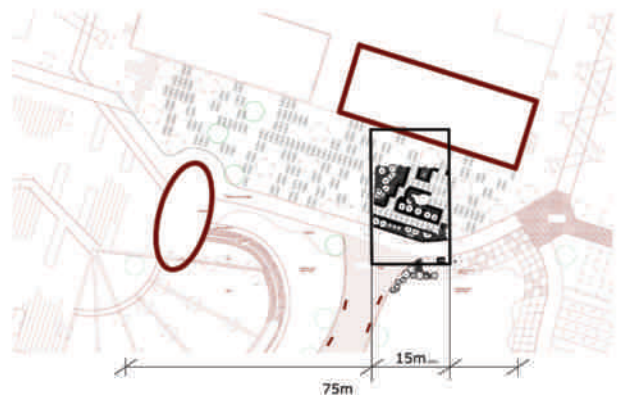


3.8

### 3.8

#### Planting Plan, Elephant and Castle Urban Forest, UK

The planting plan is a construction document that provides detailed information for the contractor on specific plants, their location, quantity, size, and method of planting. This drawing is from a student project by Duan Juan Li.





## Flow: Circulation and Access

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**It is not merely the seasons that animate landscapes. Picture books glorifying gardens or architecture will often show them as completely static, frozen in time, and will curiously exclude people from the image. There are more than a few images in this book that are guilty of the same omission. Landscapes are animated by wind, by light, by birds and bees, and by the weather. One of the most fascinating elements that animates the landscape is us. People are always in motion, using a great variety of methods of transport. Landscapes are built to accommodate people in motion, and even when people are at rest, they tend to watch everyone else move around. People watching may be the most universal pastime of all.**

Balancing the needs (and speeds) of people in motion is a big job. Landscape architects work with town planners, engineers, and transportation planners, among other professions, to accomplish all the fine-tuning that is required to make circulation work. The flow of circulation is often likened to the flow of water, and, indeed, it can often seem just such an inexorable force. Thundering traffic on a busy arterial road can be every bit as intimidating as white-water rapids in full flow. Traffic flows often converge and quicken in the same way that water does. The little tributaries of side streets trickle out into the fatter flows of the main roads. Containing these flows, channeling them, allowing them to pool and eddy, is a major task of the landscape architect.

3.9





## Flow and Motion

Moving through a designed space is more than just experiencing it. It is putting it to work in the same way that a machine can be put to work. Space is in many ways inert until it is put into motion by occupation, or occupied with motion. Space is also shaped by the circulation on a site, either by what the designer anticipates will occur, or the existing patterns of circulation that the designer must accommodate. New York's Central Park, for example, is set into the existing grid of streets, requiring the park to be crossed by a major street at regularly spaced intervals. These streets are sunken below the park level, with paths crossing on bridges above. The paths themselves are separated into a hierarchy, with broad, gently sinuous paths taking faster, more direct pedestrian and bicycle traffic, while a filigree of smaller paths meander through glades and over hills for strollers in search of a more leisurely experience. Many sites will have similar levels of complexity even if they are at a much smaller scale.

**"A lot of my works deal with a passage, which is about time. I don't see anything that I do as a static object in space. It has to exist as a journey in time."**

Maya Lin, artist and architect

### 3.9

#### Tramway, Barcelona, Spain

Several cities in Europe, such as Barcelona in Spain and Strasbourg and Saint-Étienne in France, now provide fast, silent tram services that skim over lawns overshadowed with trees. This is a highly visible and inspiring example of landscape working closely together with transport infrastructure.

## Pedestrians

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Pedestrians have the richest experience of the landscape. Walking speeds allow the individual to take in the maximum amount of detail in the landscape. Walking trajectories constantly reveal and modulate the landscape experience. There are different modes of walking that change the nature of the experience as well. Strolling is a different experience from striding, and then there is the jerky and discontinuous motion of the walker who moves between points of interest—the window-shopper or the bird-watcher, for example. Walking for pleasure and walking with a specific destination in mind are also very different. Most pedestrian experience is on a very mundane day-to-day basis and may be a simple triangulation between work, home, and the shops. These familiar routes are populated with small landmarks that might be unnoticed—a favorite spot to perch and rest, for example, or an old advertisement fading into the bricks. The many textures of a place, and of the lived experience of it, should all fall within consideration.

## Cars

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Cars present, perhaps, the biggest single challenge in landscape architecture. They are lethal, poisonous, and bulky, but they provide us with convenience (or at least the illusion of it). They are also important markers of class, status, power, and prowess. Cars have torn up the fabric of historic cities and created deserts of paved space in communities designed with cars in mind. An immense amount of effort and expense is put into designing urban environments around the needs of people in cars and to preserve the safety of those on the street. It is one of the great paradoxes of our age that we go to so much trouble and expense to redesign our landscapes to accommodate the car, but we have failed over the course of a hundred years or more to redesign the car in any but superficial ways.

There is an endless tug-of-war between the needs of cars and the needs of people. Traffic engineers are often largely concerned with flows and speed, and of keeping people out of the way. Landscape architects are concerned with making places for people and for preserving the ecological integrity of the environment. Fortunately, our message seems to be coming across, aided in no small part by the dwindling supply of fuel and the ever more visible degradation of the environment. Some car-related issues appear again and again. Everyone will be familiar with the difficulty of finding parking, the desire for which continues to eat away at public open space. The extent to which pedestrians should be separated from traffic continues to be debated, with one camp erecting barriers and fences, and another tearing them down and relying on everyone's sense of responsibility.





3.10

**3.10**

**Hamilton Baillie Associates,  
Winchester City Centre, UK**

Hamilton Baillie is a keen proponent of the principles of "shared space"; street markings are minimized or eliminated to create mutual awareness and responsibility among all road users. The approach has been particularly successful in many cases, with significant reductions in road speeds and accidents. The project for Winchester City Centre incorporates some of these principles.

## Public Transportation and Other Modes of Transport

Our planet's resources are not limitless, and therefore we can be assured that traveling communally on public transportation is likely to be the wave of the future. Freight, as well, has been distributed by trucks, but we will probably need to return to a reliance on bulk transport by rail and water in the future. We will also need to rely upon our local resources more.

A good transportation structure is central to communities, and the transport should not only be effective, safe, and reliable, but the routes should also be pleasurable and scenic. The view of the city from a train always seems to comprise the most dejected set of back walls and dereliction, yet trains almost always connect city center to city center, a luxury that air travel will never manage. Modern trams are clean, sleek, and quiet; although expensive to install, they are much more orderly and effective than buses—the convenience and environmental improvements pay off for generations. Many other transportation solutions exist. Some have been tried and found wanting, such as the original monorail, but its contemporary equivalent, the high-speed "maglev," or "magnetically levitating train," shows promise. People movers and driverless cars have also been tried successfully. It is also difficult to underestimate the value of the humble bicycle and its endlessly renewable energy source.



3.11

### 3.11

Olin, Robert F. Wagner Jr. Park,  
New York, New York, USA

Laurie Olin's design for this New York site provides a welcoming and friendly enclosure with stunning views. The rectangular lawn, reminiscent of a billiard table, is enclosed by a low bench that makes a perfect place for people to perch and gaze at the Statue of Liberty in the distance.

## Structures and Habitation

**A simple boundary—a wall, a fence, or an enclosure—is enough for us to understand that a space has been defined for human use or inhabitation. A land divided into fields is clearly inhabited, as is a garden, which might be bounded by a fence or hedge. Public squares are surrounded on all sides by buildings that directly engage the space. Certain types of enclosures are appropriate to certain types of spaces. A grand fountain on a spacious rectangle of marble paving slabs, completed with ornate lamp standards and a grid of trees, would simply fail to be a public square if it were in the middle of a field, surrounded by a strand of barbed wire. This sounds ridiculous, but it does so because we are so conditioned to certain types of spaces that this understanding is often quite intuitive.**

The relationship between structures and space has an important effect on the activities that may occur there. The best way for a designer to understand how public spaces work is to observe them firsthand; watch how people behave, how they enjoy a space, and how they use the street furniture. Landscape architects design the outdoor spaces where people live, work, and play, and where community comes together. It is vital to remember to take the time to relax by walking in the park or nursing a glass of wine in a street café. Just tell people you're hard at work, observing.

## Buildings and Landscape

Buildings and landscape come together as three-dimensional geometric form. We talk about the spaces created within the landscape in geometric terms. There is also a vital geometric difference between urban design in landscape architecture and town planning. Urban planning is concerned with areas, whereas landscape architecture is concerned with volumes. The space of a plaza can be termed a volume, but on a map or plan it appears as an area. Volumes are also modulated as we move through space, with views opening out, or with a shifting sense of enclosure due to changing street widths. The volume of a space, defined by its enclosure, can communicate a great deal about its intentions. Tiananmen Square in Beijing, built by Mao Zedong, is the largest public square in the world, covering 40 hectares (approximately 99 acres). It is not a place for community to come together but rather for the display of power and for military parades. The Grand Place in Brussels is also a showcase of power, with the ornate and gilded buildings of the city's medieval guilds arrayed around it. However, the scale of the space is comfortable and convivial; on summer evenings, groups of friends sit stretched out or cross-legged directly on the cool paving slabs and share drinks, talking well into the night.

The volumes of space are defined by planes, and we refer to these as the "ground plane," the "overhead plane" and "vertical plane," and finally the "verticals." This is easiest to picture in an interior space such as a hall with columns. The floor is the ground plane, the ceiling the overhead plane, the walls the vertical plane, and the columns the verticals. Substitute earth and sky for floor and ceiling, and the concept transfers nicely to the outdoors.





3.12a



3.12b

## Defining Space

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The physical, geometric spaces we inhabit would be dull indeed if they were simply collections of shapes. Culture, which expresses itself in locality, and which in turn is expressed by place, colors our spaces and our built forms with identity and character. In the city, this is often built up over great spans of time, and a new building requires careful integration into a fabric that has been woven slowly. Building architects are currently obsessed with creating unique buildings that stand out, but if the architects of the past had not realized that their buildings were part of an overall urban texture, then we would have visual chaos in our cities, with every building shouting to be heard. It is important to see buildings as part of a landscape context, rather than as ends unto themselves.

Beauty is intuitive. There are no universal rules for proportion or measure; there are only conventions that are dictated by the physical limits of building materials, the scale of the human body, and local expression that is often closely tied to climate and culture, visual rhythm, spacing, and the relationship between building masses and open space, which are all decided upon in design. They may be integrated within existing context, psychologically comfortable, or be able to accommodate and fit the human body.

### 3.12a–3.12b

#### Olin, Bryant Park, New York, USA

The classic formalism of Bryant Park would be threateningly overshadowed by some of the newer tall buildings that are adjacent were it not for the grid of trees that provides a strong overhead plane for the site. The trees also provide shade from the heat of a summer's day.

## Community Planning

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**Individual people can be prickly or difficult to fathom, or they can be generous and welcoming. What is true of individuals is true many times over for communities, which are, after all, groups of individuals. Government officials love to talk about “making communities inclusive,” but communities are really actually exclusive. They need to be defined by what and who they exclude in order to have a common language among the individuals. What those officials might more properly mean is that communities should not be faced with such daily adversity that they are forced onto the defensive, where they might be hostile to those who are different.**

First and foremost to creating strong communities is eliminating poverty and inequality. Landscape architects come into the picture by helping to erase the markers of poverty and inequality in the built environment. People are not made evil and hateful by their environments, but it does not help when everything that can be seen is a reminder of the unalleviated poverty and neglect they face. Good community design and planning can be a powerful statement of optimism and hope, and with the support of good social planning and economic improvement, it can provide a better quality of life for all. Often, gentrification will drive whole communities from their neighborhoods. Again, the proper approach is to improve the lives of those people and their environment, not merely to shift the problem elsewhere.

Some communities are already beautiful and function well. Planning for these communities can be just as much a challenge, as any change might be seen to compromise the well-being that has been achieved. Every place, though, needs change over time, as patterns and modes of living change. All communities deserve good design. All communities, in fact, should have a right to good design.

**“Everyone has the right to walk from one end of the city to the other in secure and beautiful spaces. Everybody has the right to go by public transport. Everybody has the right to an unhampered view down their street, not full of railings, signs, and rubbish.”**

Richard Rogers, architect



3.13a



3.13b



3.13c

### 3.13a–3.13c

#### Union Street Urban Orchard, London, UK

The Union Street Urban Orchard by Wayward Plants was a temporary project established as a “meanwhile use” on a vacant site on London’s South Bank. At its heart was the idea of a plant exchange, but in the end it was so much more, bringing local community together as well as a community of idealistic designers and plant enthusiasts in a truly celebratory environment.

## Designing for Communities

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Technology is now uniting us with easy communication available via mobile phones and social networking websites. At the same time, it is separating us from each other, as we are often so busy communicating with each other electronically and listening to our iPods that we might as well live in bubbles. Communities still exist in physical space as well as in virtual space, and there are certain physical characteristics that are necessary for any neighborhood, which must be considered in the design.

As communities interact in public, physical access is hugely important. Communities should be walkable (or wheelchair accessible). Amenities and necessities such as shops, parks, cafés, pubs, swimming pools, and community gardens should all be within a short walk from home. A good network of footpaths through houses, with views of the street, ensures that there are plenty of people around and plenty of eyes on the street to keep everyone safe. Public outdoor spaces, such as parks, gardens, sporting grounds, squares, and promenades, should be available for all, but in proportion. Too many facilities can be impossible to maintain, and an abundance of neglected parks is anything but an asset. A park in decline is a marker of threat and decay, and an invitation to crime.

Good community design can do a great deal to enhance quality of life and to fight isolation and crime.



### **3.14**

#### **Bo01 City of Tomorrow, Malmö, Sweden**

In northern climates, a spot of sun will bring everyone outdoors. The waterfront boardwalk at Malmö provides an opportunity for people to stroll, to relax, or to meet. Public spaces where people may feel comfortable meeting and interacting are essential to community health and cohesion.



## Sustainable Community



3.14

“Sustainability” is a useful term that has been much abused by politicians and advertisers seeking to align themselves with a feel-good green message but often without delivering the goods. It is not a new concept, though. It used to be called good, thoughtful, problem-solving design that is built to last, which gives more than it takes at every stage. Good design and sustainable design are one and the same thing. When we talk about sustainable communities, then the same commonsense rationale can be applied. A sustainable community is one in which people feel safe and welcome and know their neighbors. It is built well, easy to get to, doesn’t squander resources, and has good shops, jobs, and educational and recreational opportunities.

Creating sustainable communities is about creating a better society with equal distribution of wealth, health, and hope. Combined Heat and Power (CHP) is a good example of one of the physical ways that design can contribute directly to more sustainable communities. CHP operates on the principle that the generation of electricity also generates heat, both of which can be used locally by communities. Big power stations (even renewable energy installations) only benefit big companies, as much electricity is lost in transmission. CHP and other types of local microgeneration allow communities direct control over some of their most basic necessities, while lowering costs for all. A small power station will heat homes and power them on a local grid. It is an elegant example of how working together and sharing, a concept at the heart of a community, can be assisted by enlightened engineers and designers. And it seems so very much like common sense, but it takes vision, planning, and a lot of hard work.



Case Study:

Januburu Six Seasons, Broome,  
Australia—UDLA

**“Landscape architects are often  
that softer influence in these  
remote settlements.”**

Greg Grabasch, landscape architect

Communities and cultures grow from places and in places, and working with their inhabitants to improve the landscapes in which they live requires an earnest dialogue with both people and the environment in which they live.

Greg Grabasch believes that there is an interrelationship between the health of a community and the health of a landscape. “Country,” in Australia, is similar to the concept of landscape. Grabasch is principal of UDLA ([www.udla.com.au](http://www.udla.com.au)), a team of 20 landscape architects. In the past ten years, UDLA’s focus has been on remote community development, often with high indigenous populations, a stressed housing market, and a limited local capacity to improve local conditions. Based in the Perth area in Western Australia, UDLA works both in urban environments and in some of Australia’s most remote frontier, where the “wild west” is still truly wild and where mining has created boomtowns—echoes of the American frontier.

Grabasch says: “A Ngarluma Aboriginal Elder stands on a dune with his back to the ocean and looks out across Australia’s vast Spinifex landscape and smiles, ‘It is good to sing country again.’ When Aboriginal people have an opportunity to ‘yarn on country’ there is a renewal of a bond, possibly a spiritual connection, or a sense that only comes when one is communing with an old friend. The more opportunity our design team have to accompany traditional people ‘on country,’ the more we are aware of this symbiotic connection.”



3.15a

**3.15a–3.15c**

**Januburu Six Seasons, Broome, Western Australia**

The Januburu Six Seasons residential development and the Yawuru Cultural Management Plan, both in Broome, have provided Traditional Peoples with a responsive “plan for country”—an empowering resource that provides direction collected from years of knowledge. These settlement designs and management plans help inform people who visit, live, work, and play on Traditional Country.



3.15b



3.15c

Grabasch feels that this shared understanding between the landscape and the Australian Aboriginal could be understood as having formed over eons—time spent where a “mob” has chosen to move with the rhythms of their country. From this viewpoint, there is a two-way benefit or a shared interrelationship where the health of the Australian landscape becomes linked with the health of its traditional custodians. Aboriginal sensitivity to landscape tends to redefine the polarized view of human versus “nature” or the customary colonial instinct that leads to a “taming of the wilderness.” Now, two hundred years on from colonization, the prospect for Australian Indigenous peoples to sensitively manage country has been eroded, fragmented, and broken.

Similarly with Australia’s spreading urbanity, the health of any community is often evident through the health of its surroundings and the prospect for people having a say in changing an unmanaged poor environmental condition into a proffered one. Underpinning this, UDLA facilitates a design process where citizens are engaged with the provision of amenity, a two-way, knowledge-sharing experience leading to healthier outcomes that can mutually benefit people and place.

There are challenges to building sensitively and beautifully in frontier towns:

Grabasch states that in remote Australia, regional settlements take on a pragmatic lifestyle where spaces are viewed as utilitarian, structured for efficient use, perhaps initially out of necessity. Many remote towns have acquired a rugged built form, with masculine engineered spaces that although highly practical for large vehicle use, often lack attention to the design of social places, human amenity for people to engage with and inspire respect of place.

Grabasch’s team has experienced that landscape architects are often that softer influence in these remote settlements, the “great generalists” who are able to draw from a wide artistic and scientific palette to positively influence those spaces between people, their built environment, and landscape ecology.







# Representation

A representation is an image that stands for or symbolizes an idea, concept, or elements of the physical world. When we speak of representation in architecture, we speak of the process of showing and looking at a site, showing and testing design ideas, and communicating an idea to an audience and a builder. There are many different materials and techniques for representation, and each one of them offers a different way of imagining a site and the design options for it. Drawing materials can allow the designer to “feel” elements of the site, as they can stand in for textures, emotions, or moods.

Despite the fact that computers can now be employed in all stages of design, there is still no substitute for a broad command of all types of materials and methods for representation and a dedicated space in which to experiment and explore. Every different way of drawing provides a different way of thinking. The broader the range of tools, the more expansive the imagination; and the imagination is what drives the art of design.



4.1

4.1

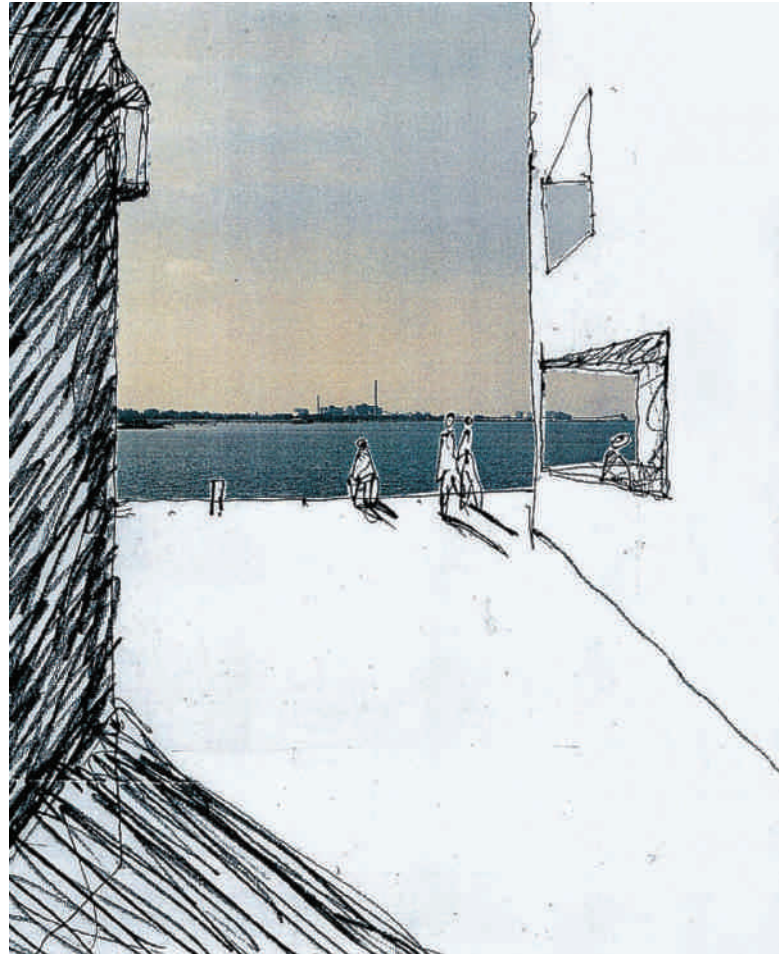
Green Walk, Loughborough  
Junction, London, UK

This photomontage by student Henry  
Botham shows a community enjoying  
a new streetscape in south London.

## The Sketch

**A sketch is a drawing that can be executed quickly to capture the essence of a place or an idea. It is a quick way to work through and test ideas, or to communicate on the fly. A great number of breakthrough drawings have been made in designers' sketchbooks, or even on cocktail napkins over drinks. Sketches often capture the moment of inspiration.**

Sketches provide a sort of visual shorthand, often reducing a key element down to a single line or figure. Cartoons are a type of sketch that do just this, and often with an incredible economy of gesture. A circle containing an upwardly curving line surmounted by two dots is a smiling face, but more, it symbolizes a positive attitude, a benign state of mind, and has even been the marker for a subculture. A great deal of information and meaning can be packed into the simplest of images.



4.2

### 4.2

Sketch for the Bo01 housing scheme in, Malmö, Sweden

The simplest of sketches can elegantly convey much about the intended character of a place. A composition of building, ground, and water, enlivened with human inhabitants, is rendered with purity and clarity.

## Observational Sketches

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An observational sketch is a drawing of a view that the artist or designer wishes to represent or to record. The simplest way to capture a view today is probably to point a digital camera at it and snap the shutter. The camera, though, while it can select and frame, does not edit an image to show what is important to the human eye. Pointing a camera is a way of looking but not necessarily of seeing, and the designer must always be carefully watching. Observational sketches are a healthy activity in many ways. They get people outdoors. They offer an excuse to simply sit and watch. Most importantly, they are healthy for design because they give the designer a tool to observe the site over time, and to understand how it is used and appreciated. They are a method of recording the site and for making judgments about it. The sketch is then a log of the moment and the observations that aid the designer's memory, which then helps to communicate ideas to others.

## Conceptual Sketches

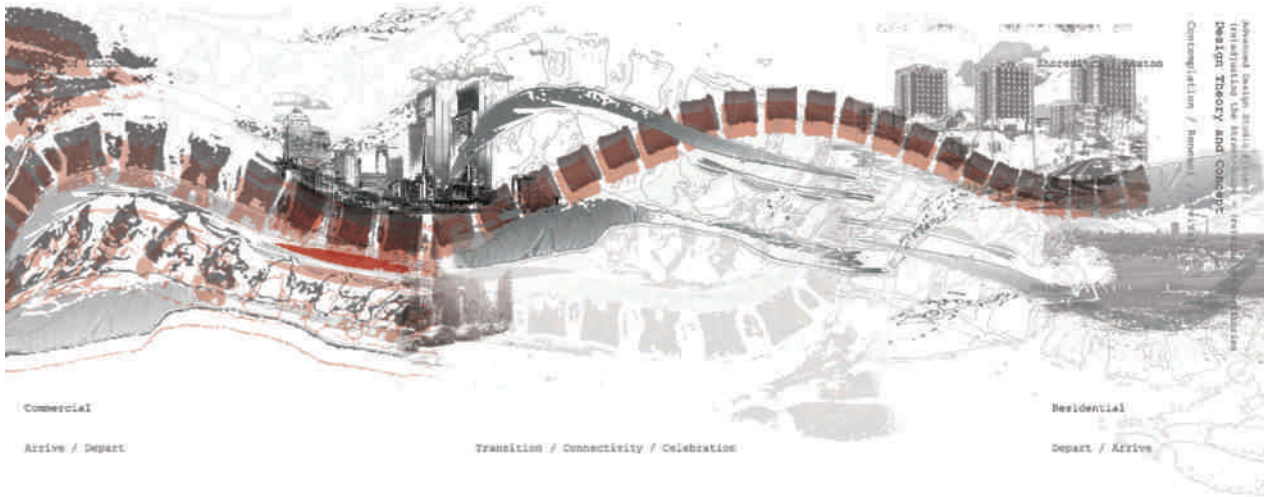
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A conceptual sketch is an economic means of communicating or exploring an idea. A conceptual sketch usually takes the form of a diagram or a schematic. A bubble diagram is a standard example, and these are used frequently in landscape architecture, often to show the relationships between various uses on different parts of a site. Conceptual sketches are also a useful method for showing the connections between spaces, uses, and flows. A conceptual sketch generally will avoid too much specificity in what it shows, as a flexible understanding of relationships is more helpful to design in the early stages. Conceptual sketches will often end up forming the backbone of a finished design, and they are often extremely useful in conveying the meaning of a design to a client or the public.

**"Drawing is the root of everything."**

Vincent van Gogh, artist





4.3

## Analytical Sketches

Analytical sketches are often made on-site during site inventory and analysis. Like conceptual sketches, they are useful for showing the relationship between spaces, uses, and flows, but they may be developed to a much greater degree of specificity. Natural characteristics of the site may be taken into account, such as the direction of prevailing winds, the presence of important natural assets, such as particularly attractive trees, or, perhaps, an area inhabited by an endangered species. Physical and human characteristics of the site can be mapped against the natural in order to provide a comprehensive picture of the site's relationships and its character. Analytical sketches are helpful at any stage in the design process, as they are a primary tool in exploring the dynamic interplay of elements that may be found on any site.

### 4.3

#### Concept sketch, streetscape design, London, UK

A simple sketch with bold imagery allows the designer to clearly articulate a design idea to both herself and to a client. Using a consistent and coherent concept through the design helps a client gain a better grasp of what might be a very complex set of spatial and temporal considerations.

### 4.4

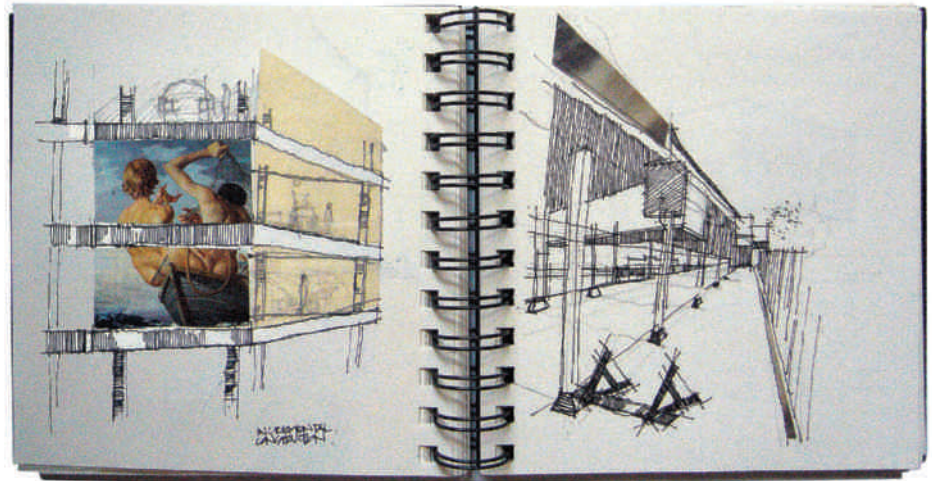
#### Pages from a sketchbook

All types of sketches, notes, and text find their way into a designer's sketchbook. Here, drawings and collage show parts of the landscape architect Ed Wall's exploration of a site.

### 4.5

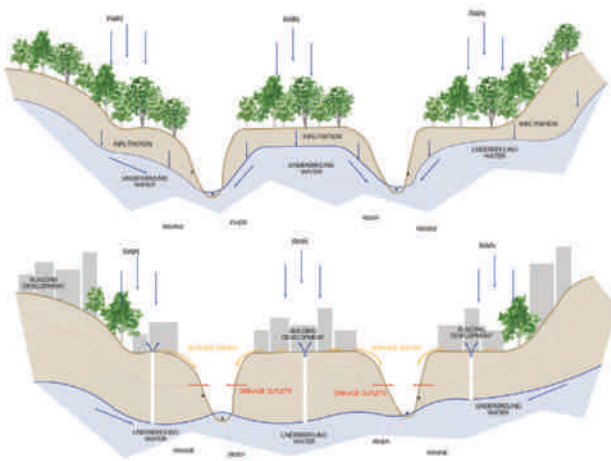
#### Analysis of surface water in Guatemala City ravines

This analysis by student Lucia Basterrechea shows how drawings are a crucial part of the analysis process. Here, different characteristics are explored through sectional drawings.



4.4

## The Sketchbook



4.5

The sketchbook is more than a tool for design. It might more properly be viewed as an extension of the designer's body, brain, and imagination. The designer, through training, becomes conversant in using words and images simultaneously and flexibly in the design process, and the sketchbook is often where this work takes place. The sketchbook is generally small, light, and portable, traveling everywhere and offering clean, blank pages hungry to be filled. The sketchbook is particularly useful for documenting the process of design and showing the trajectory of the designer's ideas. It is a personal space that can be filled with messy, questing drawings, half-answered questions, and sudden revelations. It accepts a great variety of techniques for drawing, and just about anything that can be done to a sheet of paper can happen in a sketchbook.

# Orthographic Projection

Orthographic projection is measured drawing, producing a “true” representation of a site or object that is to scale. It is also called “technical drawing.” Orthographic projection generally means creating a two-dimensional representation of a three-dimensional site or object. Builders, following instructions from a designer, will consult these accurate drawings so that they know exactly where and how to build each element of a project. The man in the hard hat with the plans in his hands? He’s holding an orthographic projection.

A plan is a two-dimensional measured horizontal drawing. It places the viewer in an imaginary position above the site or object looking straight down at it without any distortion. A section is a vertical slice through the site or object, just like a slice of bread. It shows the exact height and width of every object it encounters. It appears on the plan as a simple line where the two planes intersect. Plans and sections are the two primary types of orthographic projections.

Scale		
The following scales are merely indicative and are intended only to give a feeling for the range of scales and the size of site to which they would be applied. These scales apply to drawings of presentation or map size. Metric scales are presented with their closest imperial scale. Please note these are approximate conversions.		
Metric scale	Application	Imperial scale
1:1	Actual size	
1:20 to 1:50	Detail design for high precision	1" = 4' – quarter inch scale
1:100	Gardens and smaller design areas	1" = 8' – eighth inch scale
1:200	Gardens and smaller design areas	1" = 16' – sixteenth inch scale
1:500 to 1:1,000	City parks, large projects, master planning	1" = 40' to 1" = 80'
1:1,000 to 1:10,000	Neighborhood, urban, and rural planning	1" = 80' to 1" = 800'
1:20,000	City, urban, and rural planning	1" = 1,600'
1:250,000	County	1" = 4 miles
1:1,000,000	European country, American state	1" = 16 miles
1:5,000,000	Europe	1" = 80 miles
1:50,000,000	World	1" = 800 miles

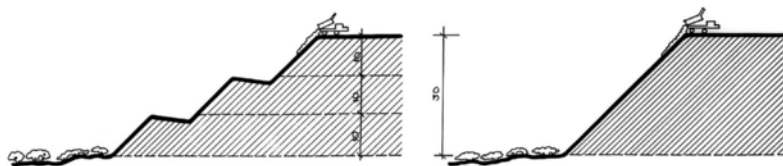


## Scale

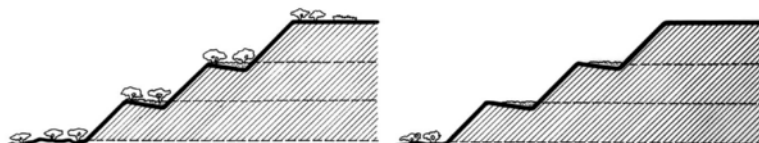
Scale is the medium through which it is possible to create orthographic projections. It is generally expressed as a fraction or a ratio. It is used to produce a drawing at a specific fraction of the full-size dimensions of an object. A scale drawing at life size would be at a scale of 1:1 or 1/1, whereas a drawing at half-life size would be at a ratio of 1:2 or 1/2. In order to fit a large site onto a standard-sized piece of paper, landscape architects often use much more “zoomed-out” scales such as 1:200 or 1:1,000. A site at the scale of 1:1,000 would be 1,000 times smaller than life size, and this scale might be used for a project covering a significant area such as a large housing development. Maps zoom out even further. The city of Florence can be well covered at the scale of 1:12,500, but all of Italy might need a scale of 1:1,000,000. Approximate conversions to scales used in the United States are provided in the box.

## Plans

A plan represents the site as it is measured on the surface of the ground, registering the horizontal distances between objects. It is a two-dimensional measured technical drawing. Plans are excellent tools for communicating a design, but are usually very poor tools for the work of design itself. Because they place the viewer in an unnatural position, looking straight down on the site from an imaginary height, they lead to a tendency to simply make patterns on the ground, rather than creating three-dimensional spaces for people. Because of this top-down view, they create an illusion of power that reduces the humans in a design scheme to mere pawns in a board game. However, plans are essential to ensure that design proposals explored in other types of drawings are correctly proportioned, fitting on the site in the manner intended.



4.6



4.6

### Section drawings

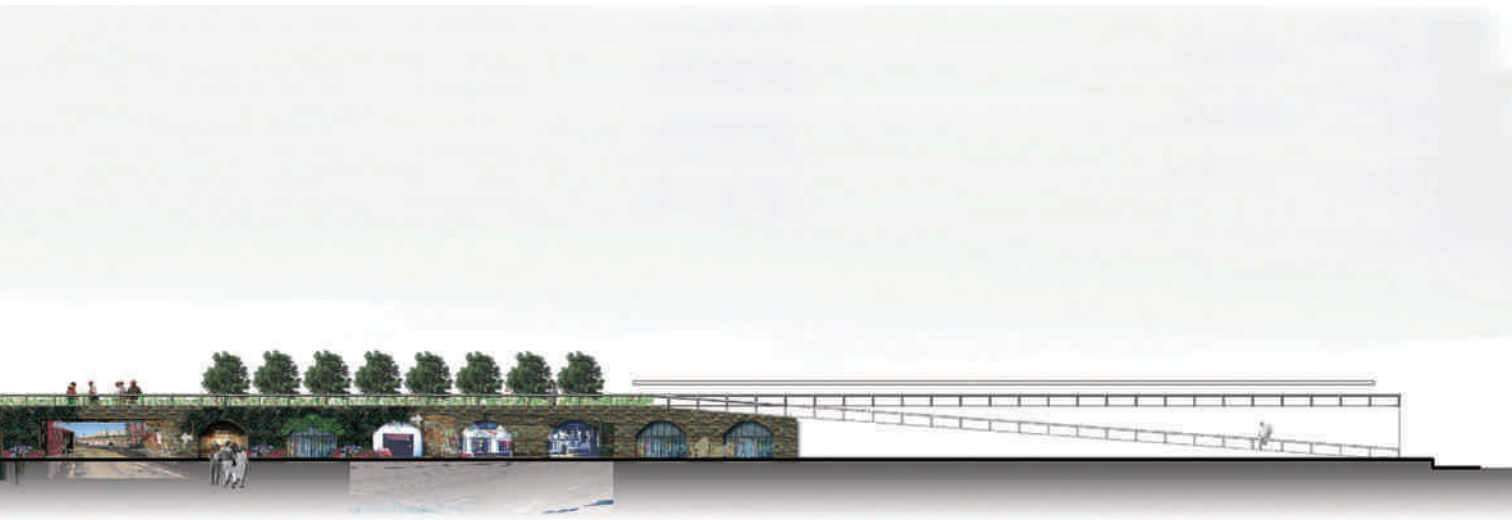
This section shows a complex relationship between ground, water, and infrastructure. The vehicles in the image help establish scale.



## Sections

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A section shows the heights and widths of objects encountered on a vertical slice through the objects appearing on a plan. It is a two-dimensional, measured technical drawing showing the distances between these elements. Beginning with a simple line on the plan, a section is then projected upward. A section shows only those elements that appear precisely on that line. A section does not show any depth or perspective. Sections are useful to verify that elements shown on a plan are in appropriate human scale, especially when people are included in the drawing. It can be particularly helpful to show a series of sections through a site in parallel, particularly where there is interesting or varied topography. The series builds up a picture of the site in sequence, which can be very informative. A good landscape architectural section drawing will show elements not merely above ground but also below.



## Section Elevations

4.7

Section elevations, often simply called “elevations,” begin with exactly the same principles as a section drawing—with a line on the plan that is projected upward. A section elevation, however, will show not only those elements that fall directly on the line but everything appearing behind those elements looking in one direction. The apparent sizes of these objects do not shrink into the distance, as they would in a perspective drawing. They are pictured in exact scale regardless of their distance from the section line. Section elevations can provide a very complete image of a project, and they are very useful for testing designs.

### 4.7

#### Section elevations

These section elevations by Lucy White help convey the experience of an elevated promenade that reinhabits an unused railway viaduct.



## Perspective

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**Perspective drawings are realistic, three-dimensional drawings that can do much to convey the feel, character, and look of a site. Where orthographic projections are quantitative and measured drawings, perspectives are qualitative and unmeasured, allowing for much more emotional content and interpretation. Perspective drawings are constructed with imaginary lines that converge in the background in what is called a “vanishing point.” These lines give the picture depth and, often, a horizon.**

Perspectives are extremely useful as a design tool, as they allow the designer to very quickly set a scene and evaluate human scale and impact. They are also very useful as a tool for selling a design. The general public is not always skilled at reading maps and plans but will easily be able to comprehend information conveyed in a perspective drawing. The main drawback to perspective drawings is that they present a very static image, doing little to reflect the experience of moving through a site. As most sites are encountered by people in motion, this is a considerable liability.

4.8





#### 4.8

##### Hand-drawn perspective

A simple line drawing allows the designer to both test an idea and to communicate it. This drawing is by Gabriel Hydrick.

#### 4.9

##### Computer-rendered perspective

Photorealistic visualizations can be a valuable aid for the designer seeking to sell a proposal to a client. This image is by Rich Bensman.

4.9

## 3D Images

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**While perspective images are three dimensional, it is rare that they are presented as scale or measured drawings. Axonometric projections are a relatively straightforward and convenient method of showing a site in three dimensions, as well as in accurate measure. Plans and sections have two axes: the x and y axes. Axonometric projections add in a third—the z axis.**

To create the projection, a plan image is rotated through a set number of degrees corresponding to the z axis, and the verticals are projected up from the plan to create a three-dimensional drawing that is precise. Axonometric projections are often called “bird’s-eye views.” Like plan drawings, they place the viewer in an unnatural elevated position, which provides a feeling of power. As with plans, this can have negative consequences for the human qualities of a design. Axonometrics are still extremely useful, however, when used judiciously in combination with other types of representations.

## Axonometric Drawings

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While all measured bird’s-eye views in the architectures are called axonometric drawings, the term “axonometric” drawing also specifically refers to a drawing created with a 45-degree angle between the x and z axes, which effectively tilts buildings up onto their bottom corners. It creates a slightly dizzy and uncomfortable angle for viewing. This effect can be moderated by rotating the plan, which results in a planometric or plan oblique view.

## Isometric Drawings

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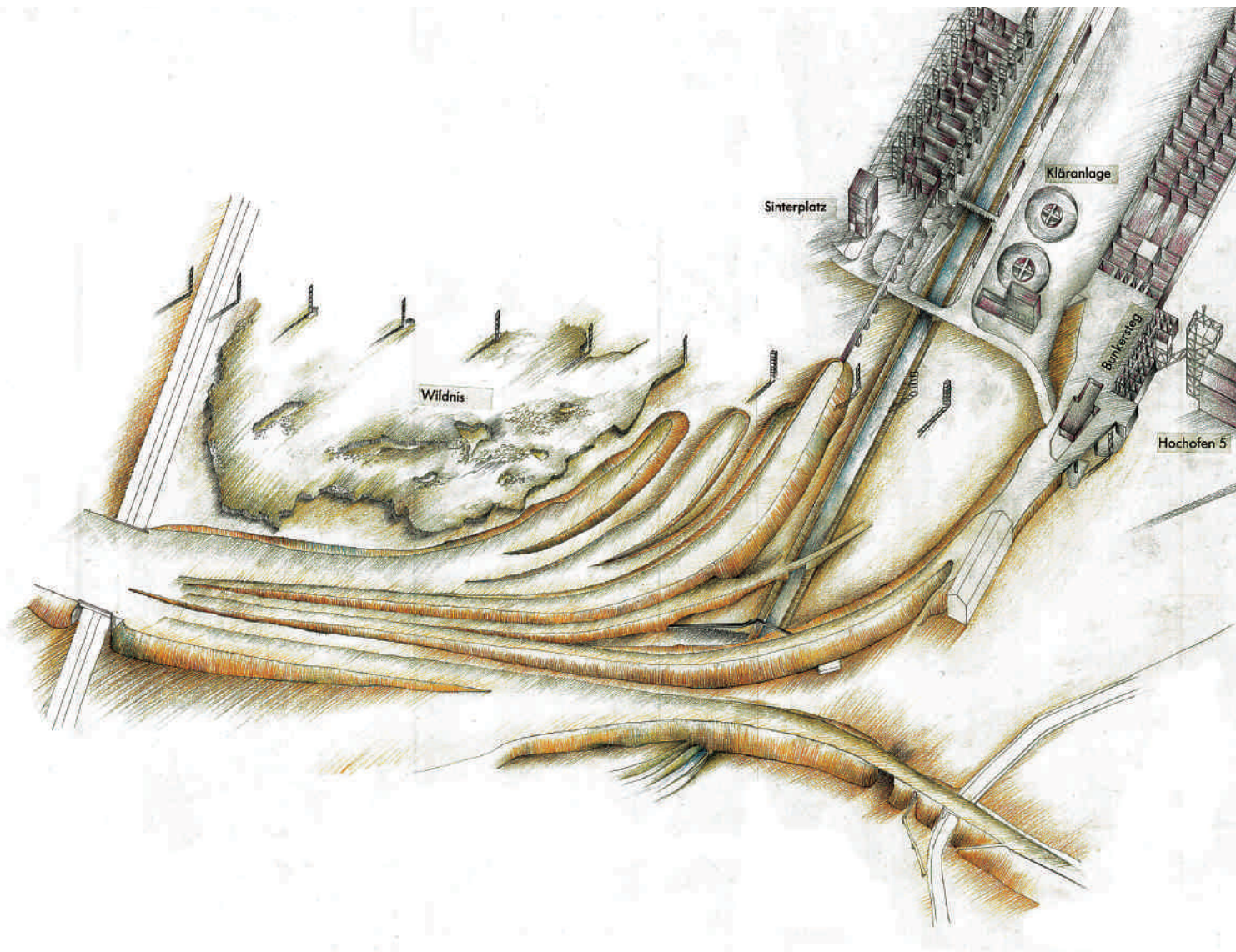
Isometric drawings are created with a 30-degree angle between the x and z axes, tilting buildings up a bit more gently. Isometrics are very commonly used for communicating the site accurately and comfortably.

### 4.10

#### Axonometric drawing

This drawing for the Landschaftspark Duisburg-Nord allows the entire, complex, three-dimensional project to be comprehended in little more than a glance.



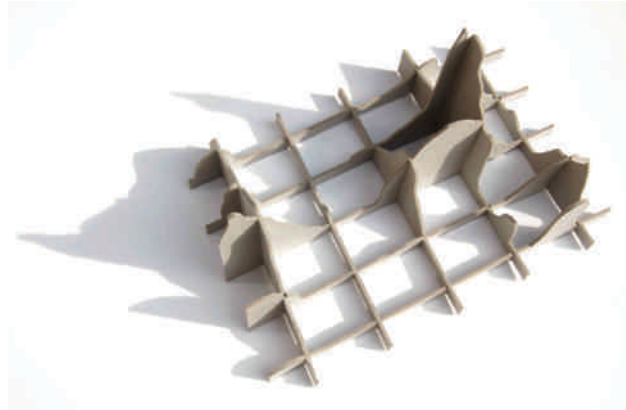


4.10

## Models

**Models are a vital part of the design process, as they allow the designer to test ideas as actual built forms without the expense and difficulty of building life-size prototypes. Models are useful at every stage of the design process, from initial site inventory and analysis to the presentation of the final design. In the early stages, contour models can be very useful as the landscape architect seeks to come to grips with the movement of water across the site, views, microclimates, and a host of other considerations. Often, the initial model becomes a base for further explorations, with elements added and removed as requirements, thoughts, or moods change. Models may be carefully measured to scale, or they may be rough approximations to test general ideas.**

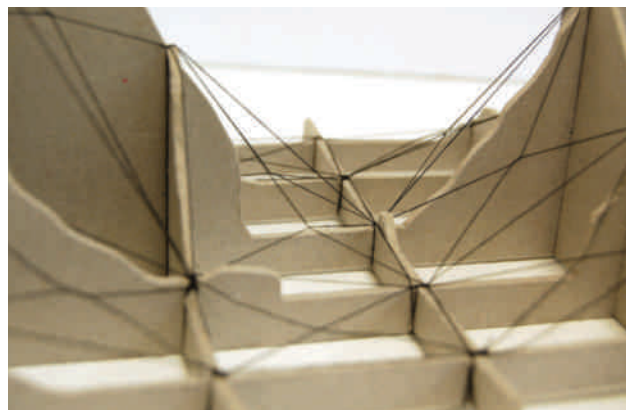
Models are constructed of a wide variety of materials. Topographic models are commonly constructed of wood, card, or sheets of cork (attractive, but expensive). Wires are twisted into tree forms, buildings carved out of foam, or surface textures created with dustings of sand or shavings. The materials used for modeling are often used as reminders of what they represent, helping the designer to imagine the experience of the site. As models are usually created indoors, it is important to avoid using toxic materials or adhesives, especially because these cause pollution and illness in every stage of their manufacture and use. There is always a cleaner and cheaper alternative, and students are particularly resourceful in using reclaimed or recycled materials.



4.11a



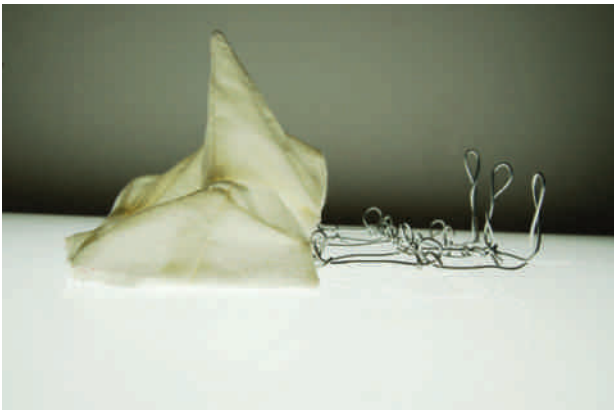
4.11b



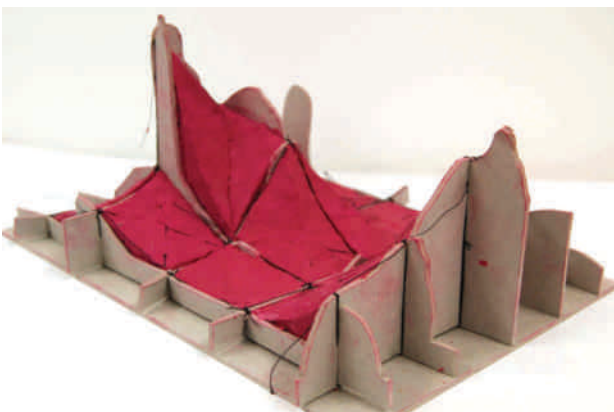
4.11c



4.11d



4.11e



4.11f

## Conceptual Models

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Conceptual models, like conceptual sketches, are used to explore ideas or relationships that are either encountered on the site or are proposed in the design. They are ways of considering the dynamics of site and program, and in generating forms and systems to be employed in a site design. Conceptual models often represent abstract ideas with materials that remind the designer of them—blue threads to represent the flow of water, perhaps, or fluffy cotton to show an area that is meant to be comfortable or happy. This practice helps the designer use intuitive processes as a lens onto the site. Designers, after all, are paid to daydream. The more real the models are to their designers, the more effectively their imaginations can take them to a design that fits the site.

### 4.11a–4.11f

#### Conceptual models

These models by Isabel Griffiths in clay, wire, card, and fabric test ideas for form and dynamics in the design process. They allow the designer to explore material qualities, light and shadow, scale and relationships.



### Sketch Models

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There is a limit to how much information drawings alone can provide, and it is often necessary to test an idea that has been developed in drawings as a prototype. Sketch models allow for ideas to be tested in a three-dimensional physical form but without too much commitment to them. Sketch models are usually messy and can often be downright ugly, but what is important is that they are a way to try things out. A sketch model that is beautifully executed and constructed can erroneously convince its creator that a concept is fully developed. Many a project has been stillborn in this way.

Sketch models are often used and reused, with elements added and torn away again, and the surface of the ground dug into and worked. Sketch models are very physical and can be deeply satisfying to create.



#### 4.12

##### Model of the Schouwburgplein, Rotterdam, the Netherlands

West 8's presentation model for this celebrated design shows contemporary sensibilities and materials, restraint, and elegance.



4.12

## Presentation Models

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When at last a design is complete, and the time has come to present it to the client or the public for approval, a powerful communication and sales tool is required. This is the presentation model. Presentation models have an exceptionally high degree of finish, and they are time consuming and often dizzyingly expensive to produce. They are scale models that provide not just an accurate representation of the design proposals but also seek to imbue designs with additional glamour. Presentation models, in landscape architecture in particular, are tricky to produce. Where a model of a building might seek to provide a scrupulously exact image of the finished product, a landscape presentation model finished in such a way runs the risk of looking like the setting for a miniature model train. It can be particularly challenging to choose materials to represent landscape that is sleek, sexy, and contemporary.

## Computer-Aided Design (CAD)

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**Computer-Aided Design (CAD) has become a standard tool for designers in the space of the past few decades. It has added greatly to the range of available materials and methods for visualization, while sometimes reducing the amount of time required to produce drawings. People often think of CAD as being composed of a few programs for creating highly technical engineering drawings, but in reality it is a vast range of programs that vary in complexity. As such, it includes not just the programs for engineering drawings but also programs for manipulating photographs, creating collages, creating diagrams, and moving images. Outputs have kept pace with programs, and we now have better equipment for visual display, with better, faster printers, including those that print three-dimensional prototypes.**

While these programs and outputs are all incredibly useful, they are not ends unto themselves; they are simply parts of a designer's range of tools, which will always include working with physical materials and drawings and, of course, the faithful sketchbook.

### 4.13

#### Photomontage

This image by Daphne Kao self-consciously overlaps elements so the techniques employed in making the drawing are evident.

## Orthographic Projection

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Landscape architects create plans, sections, and finished construction drawings using one of a handful of software applications created to assist with drafting. One of the original programs was AutoCAD. It is still a widely used program, along with Vectorworks. All these programs also include support for creating three-dimensional models. The advantage to these programs is their high degree of accuracy, which helps ensure that projects are built as they are envisioned. While setting up a drawing is initially laborious, once a base drawing has been created, changes can be made quickly. This provides a great advantage over a hand-drawn plan, which must be completely redrawn for every change that occurs.

Significant innovation can occur with CAD applications, such as the use of aircraft design software in the realization of Frank Gehry's Guggenheim Museum in Bilbao, Spain. Another innovation that is now central to practice is the introduction of BIM—Building Information Modeling. With BIM, all drawings for a project are held centrally and may be worked on simultaneously by all members of a project team. This cuts out much waste, from the printing of documents to the time spent waiting for a project partner to finish with drawings before one's own work may resume. Contractors may now work from digital models rather than from printed plans. The efficiencies continue beyond the design phase as well, as the BIM model may be used to coordinate and monitor maintenance for the full life of a project.

These programs are not intended to produce loose, natural-looking drawings in drafting applications, and finished presentation drawings are often retouched by hand or in other programs for manipulating graphics.





4.13

## Photomontage

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Photomontage and collage are techniques for bringing disparate elements together into an often photorealistic image. A number of computer programs exist to assist this process, including Adobe Photoshop and the open source program, Gimp. Photomontage creates bright and appealing perspective drawings, but it is also useful for retouching plans and sections created in drafting programs.

Computer photomontages can allow for both very realistic images to be created or for more loose and intuitive drawings, including sketches and conceptual drawings.

## 3D Imaging

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While drafting programs are capable of creating three-dimensional computer models, additional programs are available for a range of purposes and types of drawings. Three-dimensional models can be created relatively quickly in applications such as SketchUp. More sophisticated graphics can be created in programs such as Rhino or 3ds Max. Outputs might vary from simple, blocky drawings that simply show topography and building masses to highly realistic models in which every leaf and window is pictured. In all of these programs, it is possible to create fly-throughs (or, perhaps more usefully, walk-throughs) showing the experience of spaces in the design in sequence, in just the way a person would experience the real design. Virtual reality also has the potential to function as an effective tool for architectural modeling.

## Storyboards

**Making a motion picture or an animated sequence is a tremendously complicated and expensive procedure, and film directors or animators use a type of sketching technique to visualize the content of their film before the cameras roll. This is a process known as “storyboarding,” and it is very similar to the process of drawing a comic strip. A set of actions is shown incrementally, often in frames, rather than in the fluid movement that motion pictures provide.**

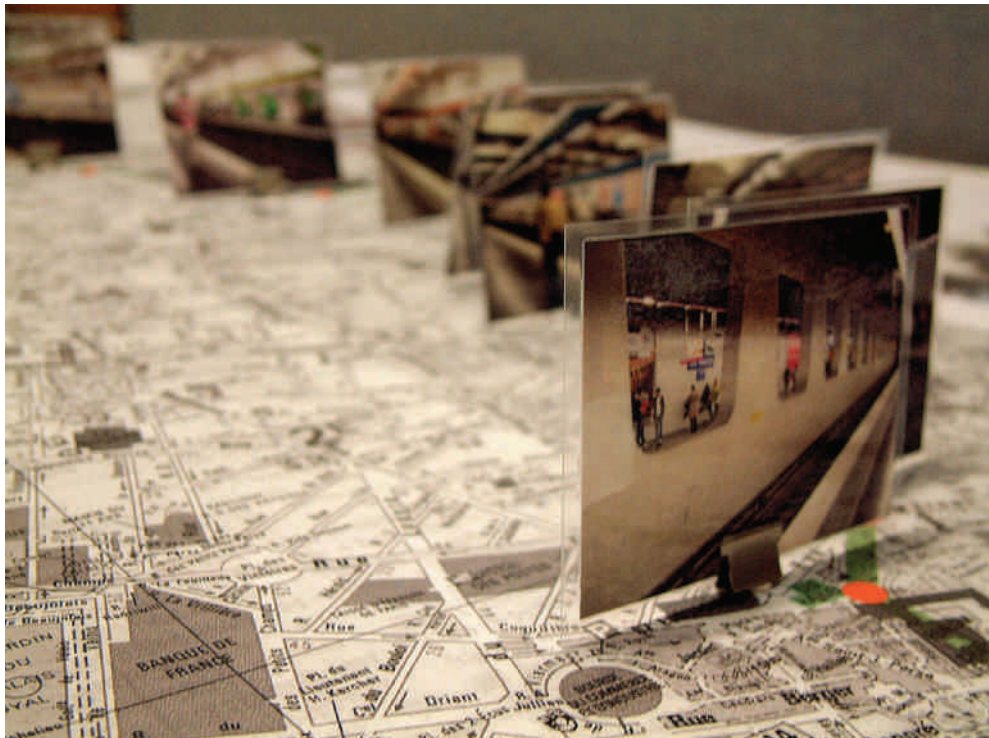
Because landscape architects design for fluid experiences and motion every bit as much as film-makers do, storyboarding can be an immensely useful way to imagine the way their design for a site will be used. It is also useful for communicating this experience to others. Storyboards are, perhaps, underused in landscape architecture, but they can be immensely instructive, particularly when showing the peripatetic experience—the walking experience—and when visualizing complex sequences of urban spaces.

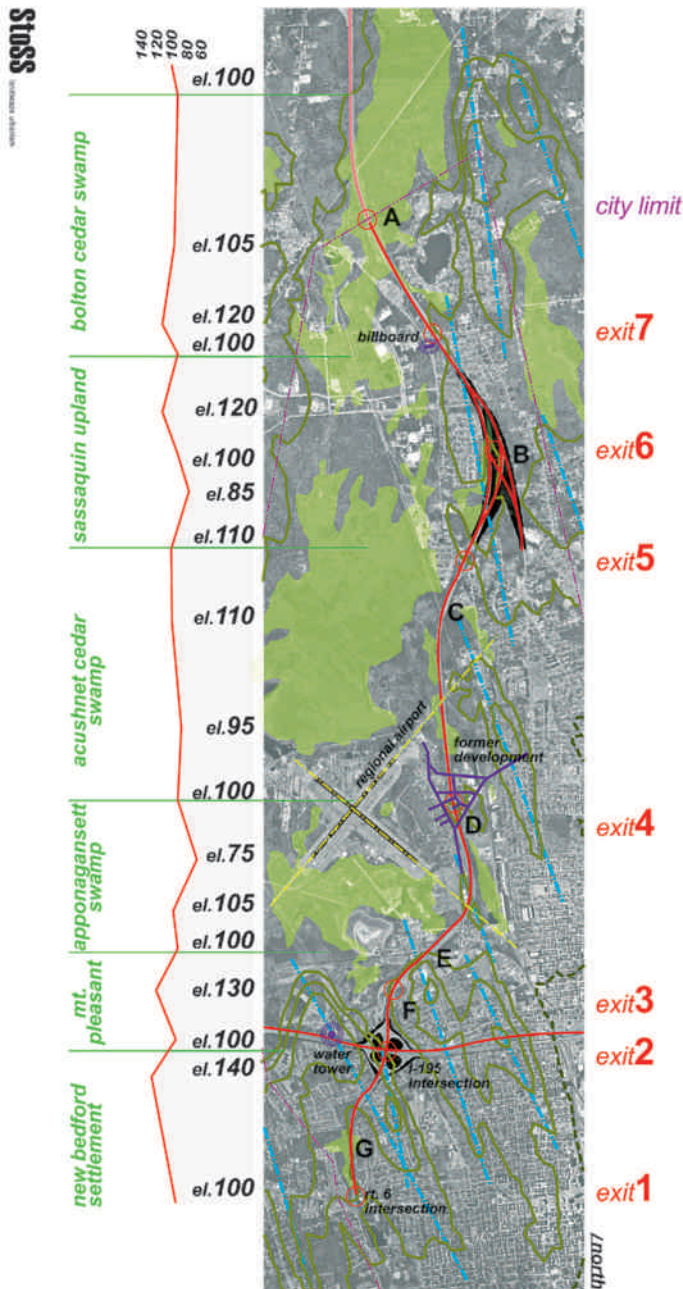
4.14

### 4.14

A journey on the Paris Metro, France

Here, an underground trip is documented, showing a sequence of subterranean experiences directly related to a street map of the surface.





City of New Bedford Master Plan 012301  
**corridor analysis @ Rt. 140**



4.15

#### 4.15

##### Highway corridor analysis

The StoSS New Bedford master plan includes storyboarding as a technique for analysis. Photographs relate to a plan and graph, which allows a very complex story to be told with great economy of means.



## The Moving Image

Video technology and computer applications are making it much easier and cheaper to produce professional moving images. Design firms, especially landscape architectural firms, are profiting greatly from this access. Video is a superb communication tool that holds an audience transfixed. Advertisers are well aware of their persuasive power when their audience is gazing into a flickering light source. Selling the final design is only a small part of the power of the moving image for the landscape architect. The scope of the image, its ability to capture motion and changing moods and moments, creates a useful tool for examining the landscape. The motion and nuance of these images are a good representation of the ephemeral qualities of the landscape.

As with any medium, it has limitations, and in the case of the moving image it is the ability of these images to mesmerize that is a failing. The hypnotic effect of moving images can also work on the designer and obscure the original intentions: the video becomes an end unto itself rather than a tool.

Animation in landscape architectural representation presents the possibility of creating a moving photomontage, a landscape that is populated with the products of the designer's imagination. There is an almost limitless combination of possibilities, including mixing live action with animation. Animated diagrams are also very useful tools for illustrating complex dynamic processes.



4.16a

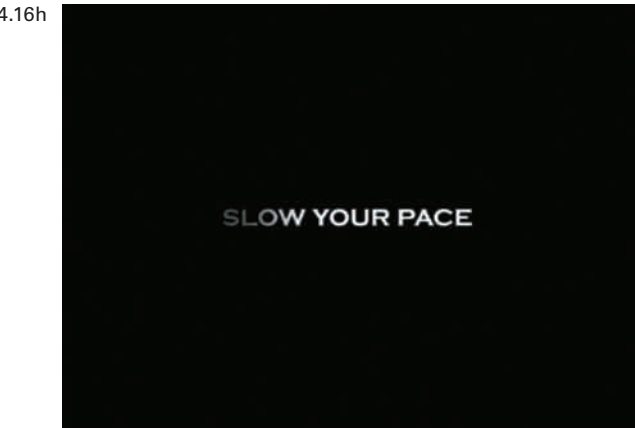


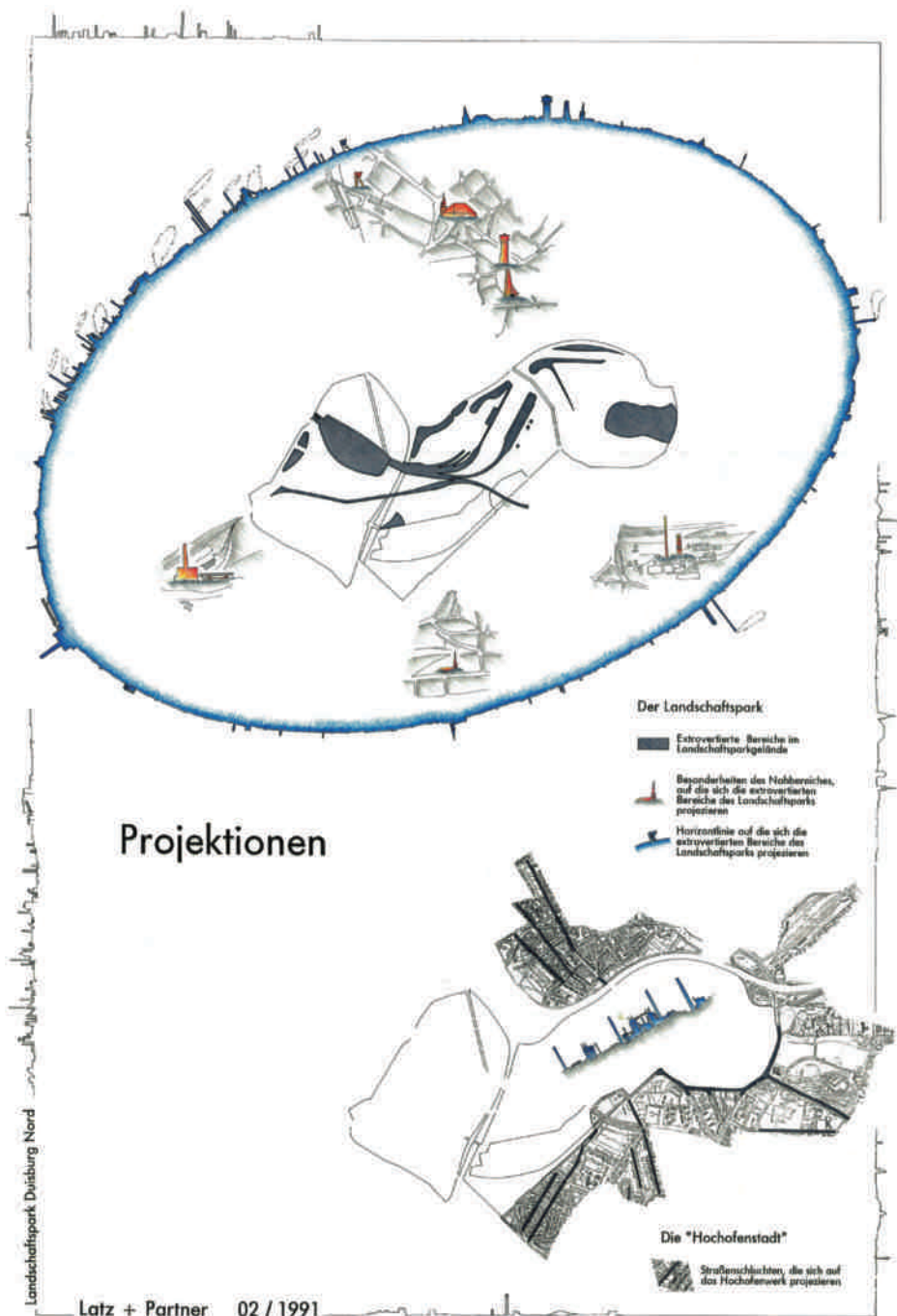
4.16b

### 4.16a–4.16h

#### Tindal Square, Chelmsford, in movement

This student project from the Writtle School of Design allows a complex analysis of motion, activity, and occupation of public space at different times of day and on different days of the week. The technique could certainly also be extended to include seasons.





4.17

4.17

Presentation board,  
Landschaftspark Duisburg-Nord

Compelling imagery and  
masterful page layout are  
helpful in promoting a project  
at the presentation stage.



## Presentation

**Landscape architects must have skill in presenting complex issues and their solutions in a simple, straightforward way. They often deal with audiences with a wide variety of skills and levels of understanding, and often, presentation materials must be made to work for all these audiences. Presentations involve a combination of the printed word, the spoken word, and images. A very standard format might include a couple of large, board-mounted, printed boards, arranged on easels; a computer slide presentation; and a site model. Presentations may be made at many stages throughout the design process, first when a firm is bidding for a job and showing their skills and experience, and then as designs are developed, communicating with the clients, and in public consultation. Later in the design process, finished design proposals may be presented to clients and the general public, which may be presented and published in a variety of ways in a variety of media.**

Books and pamphlets play an important part in design presentation as well, and landscape architects often gain substantial skills as graphic designers as they create completed studies and proposals in book form. It is often easy to forget, in the world of design, where we are beguiled with images, that writing is one of the most important forms of representation we employ.

Landscape architectural education generally includes many opportunities to hone presentation skills and to gain confidence.

### 4.18

Presentation board,  
“Philadelphia’s Catalysts”

This competition poster allows a complicated message to be communicated on a single sheet, without the benefit of the designer’s presence to explain the content in person. A board produced as an aid to a verbal presentation would generally be much less reliant on text.

4.18



## The Portfolio

**The design portfolio is a very specific type of presentation, intended to convey the skills and experience of an individual designer to a specific audience. All students of landscape architecture leave their university studies with a portfolio of work that supports them in selling their services for employment. Designers keep their portfolios refreshed and up to date throughout the course of their careers.**

Documenting new work, archiving imagery, and photographing models are an ongoing part of any student's or professional's life. The portfolio is a designed presentation that generally has a printed format. It can also be produced in a digital or web format, sometimes solely so. The samples of work included in a portfolio are intended to display the range of a designer's capabilities, showing drawings in various media and using various computer applications. Often, the portfolio must speak for itself in the absence of the designer, and thus, it is important to have carefully written text to tie the images together. Text is particularly useful for showing a designer's work process—how a design solution was achieved—as it is important for a prospective employer to see and evaluate where the designer's skills will best be used.

The drawing skills, media, text, and imagery that are included in the portfolio are far more than just a job application or curriculum vitae. They literally paint a picture of a person's ability. The portfolio is an image of the designer's identity and, as such, a source of pride.



4.19



#### 4.19

##### A page from a student portfolio

Using text and images with clarity is of paramount importance in preparing a successful portfolio. This uncluttered page communicates the designer's (Luke Whitaker's) proficiency with imagery and his ability to communicate form as well as function—in this case without any text other than a heading.









# The Anatomy of a Project

Seeing a project through from inception to completion is a multidimensioned process involving a large number of professionals and stakeholders. It can seem mystifyingly complex, particularly because landscape design straddles areas where traditionally there has been a perceived divide: art and science, and subjectivity and objectivity. Clarity is achieved when a landscape design project is seen as a sequence from beginning to end. This chapter takes the opportunity to present a single project as a case study. Ten Eyck Landscape Architects' master plan and subsequent designs for the campus of the Arizona State University Polytechnic in Mesa, Arizona, USA, provide a revealing overview of how a design team is assembled, how ideas and analysis blossom into a design, and how the final design is realized.

5.1

5.1

**Sonoran Arroyo Mall, ASU  
Polytechnic Campus, USA**

The campus design by Ten Eyck Landscape Architects cools and softens the desert setting with plantings that express and value the natural climate and environment.

## The Arizona State University Polytechnic Campus

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**Mesa, Arizona, is an independent city that is on the eastern side of the conurbation that includes Phoenix, Scottsdale, and Tempe. These cities are located in the southwestern United States in the Salt River Valley of Arizona. The Salt River Valley, sometimes known as the “Valley of the Sun,” occupies the northern reaches of the Sonoran Desert, which extends far into Mexico to the south. The desert is a place of striking beauty, studded with cacti and, after the rains, filled with wildflowers. Animal and insect life abounds.**

**“It’s a new campus and new kind of architecture that is also consistent and it works. It doesn’t feel institutional, it’s kind of rough and tumble like the desert.”**

2012 ASLA Professional Awards Jury

Because of irrigation for agriculture, the Salt River is dry at times, though it can also flood during heavy rains. Still, rainfall is rarely a calamity in this desert, which receives only 18 centimeters (7 inches) of rainfall per year. It is a cause for celebration. Good landscape design can do much to aid in this. During a rain event, precious water streams through normally dry channels called “arroyos.” A typical urban landscape of streets, parking, and drains does little to reflect this natural wonder. Oily puddles on an asphalt street are anything but celebratory—they may even be emblematic of failure to value the qualities of a place. The ASU Polytechnic Campus puts the beauty of the desert arroyo to work in a high-performance native landscape that cleanses water and reveals natural processes.

Before Ten Eyck Landscape Architecture’s intervention on the campus, the Polytechnic had struggled to attract students. Its efforts at recruitment were hampered by a physical environment that graphically reflected the fact that it had previously been a heavily paved air force base. ASU wished to take a cue from the Ivy League and create a campus environment that would both reflect its ambitions and provide a gracious and picturesque setting for teaching, learning, and research. It has succeeded in this, but it has also surpassed the traditional Ivy League campus by building a landscape that is up to the minute in its sustainable technology—technology that, of necessity, puts landscape at its core.

### 5.2

#### A high-tech landscape

Sustainable technologies, in landscape terms, are a matter of beauty as well as function. Here, glorious desert flowers are an integral part of a storm water management system.



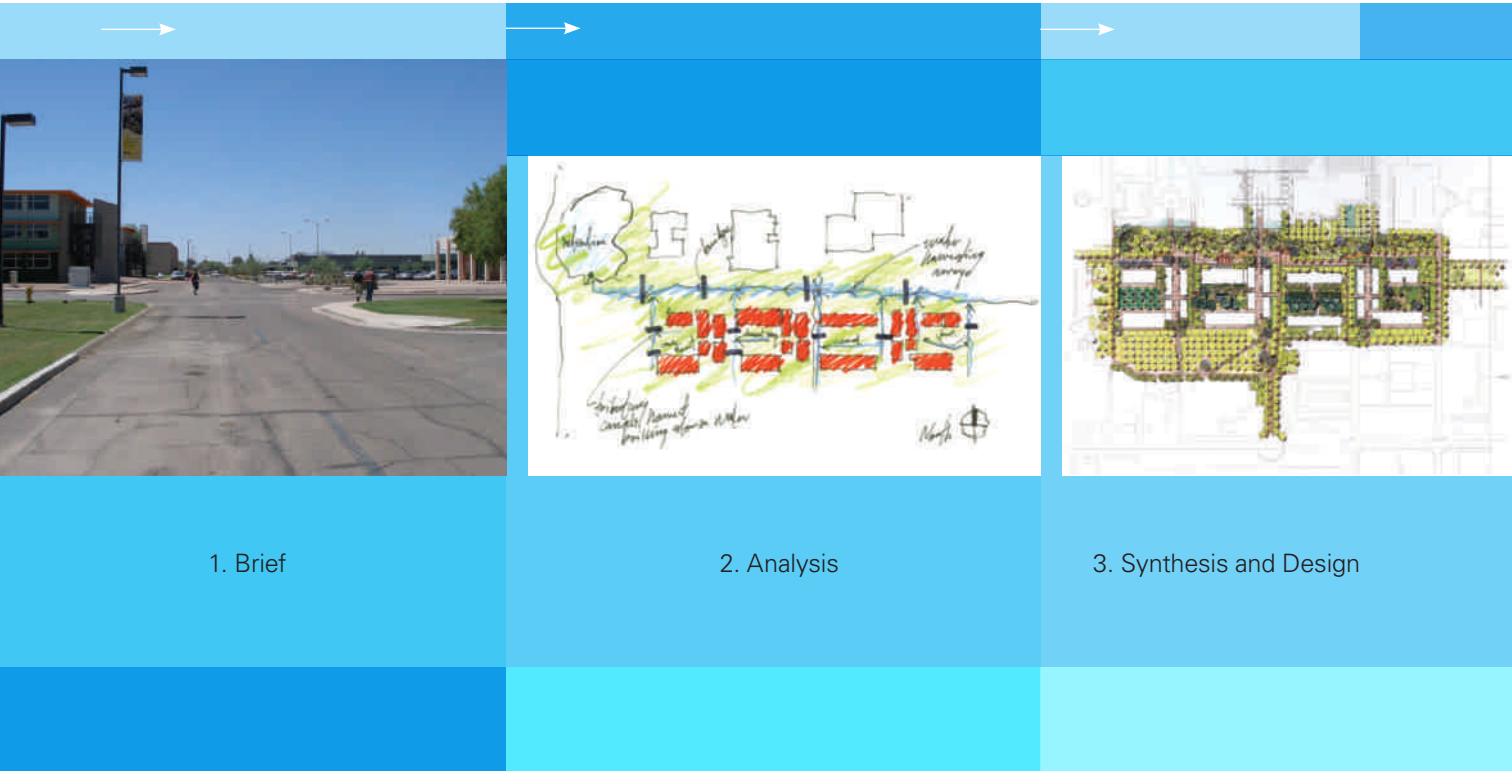


# Timeline

Projects in landscape architecture progress through stages, from the very first contact with the client and awareness of the site, through to the realization, construction, and maturation of the finished design. It's important to remember, though, that the design process, unlike a timeline, is often completely nonlinear.

The phrase “back to the drawing board” refers to the continual process of testing and retesting that is characteristic of the architectures. With an understanding of this tension, the rest of this chapter will follow this timeline, explaining each stage in further detail.

5.3

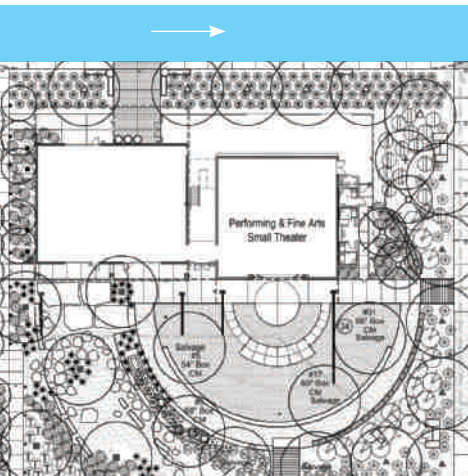




### 5.3

#### Project timeline

This chapter follows the ASU Polytechnic project from inception to completion and maturation.



4. Detail Development



5. Construction



6. Maturation



## Brief

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**The brief is the initial description of the project that defines the parameters within which the designer(s) will work. The brief is presented initially to invite bids for work from design practices, and then it forms the basis for the work once a suitable practice has been selected. It outlines the history of a site and the client's aspirations for it. It includes discussion of any constraints to design as well as any opportunities that are foreseen. The project budget and timescale are established, along with a description of the composition of the project team. In the early project stages, designers will often critique and help to rewrite the brief based upon their creative understanding of the project's problems and opportunities.**

At the ASU Polytechnic Campus the client was the Arizona State University. Its brief sought to provide a new identity for the campus, which suffered from a vast stretch of hard surfaces that were the legacy of the site's former use as an air force base. It sought to overcome the oppressive qualities of the space and to transform it into an environment that supported learning at the same time that it provided imagery and scenery that would be attractive to prospective students. America's most venerable institutions are all set in memorable landscapes that convey an air of serenity and learning, and ASU understood that it needed to do the same if it were to boost enrollment and market the university effectively.

What the landscape architect brought to the brief was a deep understanding of desert ecosystems and a sensitivity to working with water in desert environments. Thus it can be seen that the client knew what was necessary to promote its institution, but the landscape architect brought the skills and the imagination to create the total environment.

### 5.4

Orchard Canal Irrigation Court, ASU  
Polytechnic Campus, USA

Great campus landscapes are "imageable." Their spaces are at once comfortable to occupy, create a studious environment, convey a gracious image of the institution, and provide compelling imagery for marketing to prospective students. Further, they are the stuff of memory, providing both pleasant nostalgia and prompting generous donations from alumni.

This elegant courtyard references both traditional irrigation methods in the Salt River Valley as well as the celebrated Patio de los Naranjos in Cordoba, Spain.







## Contributors and Their Roles

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5.5

Because of the broad interdisciplinary range of landscape architecture, landscape architects are often ideal communicators, working at the heart of project teams to ensure a holistic view is taken throughout. It is essential to maintain good communication and working relations between members of the team to ensure that all play their parts at the correct time and in the most productive manner. A project the size of the ASU Polytechnic Campus project involves a large and varied team, who must all possess good management and communication skills. The greatest success results from assembling the full team from the project's inception so that all members contribute their expertise throughout the process. In this way, problems may be foreseen before they arise, and all participants know their input is valued.

### 5.5

#### ASU Campus, USA

Many people with different skills contributed to the development of the site to create a campus that is inviting for students.



### The Client

Arizona State University was the client for the project. It wrote the original brief and provided oversight for the project throughout.

### Stakeholders

A stakeholder is anyone who stands to gain from, or has a benevolent interest in, a given project. Students, faculty, and staff are clearly key players in every respect. The local community is always an important stakeholder. It is also helpful to regard plant and animal communities as not just factors but as stakeholders.

### Landscape Architects

Ten Eyck Landscape Architects, Inc., created the master plan and the landscape plans. The Project Principal was Christine E. Ten Eyck, FASLA; Project Manager, Roger Socha, ASLA; Project Landscape Architect, Judeen Terrey, ASLA; and Project Designers, Mike Chapman, Jeramy Beals, Matt Conn, Alyssa Priebe, and Trish Bigler.

### Architects

Lake|Flato and RSP Architects worked closely with Ten Eyck Landscape Architects and with Ron McCoy, ASU’s architect to realize the project and to ensure that buildings were in tune with the landscape. The American Institute of Architects selected the buildings in its Top Ten Green Projects for 2012.

### Engineers

A number of different types of engineers, including structural, mechanical, and electrical engineers, were employed in various phases of the projects, from landscape and buildings to lighting. The civil engineer was Wood Patel and Associates, and the structural engineer was Paragon.

### Surveyors

Surveyors are employed to take important measurements throughout the project. They measure the site and any buildings, levels, and topography. Surveyors may also be employed to measure costs and the timescale for the project.

### Artists

Public art is often an important element of public landscape. Wherever possible, artwork should be integral to the site, with artists involved in the project team.

### Accounting and Legal

Accounting and legal services are fundamental to ensuring a project stays on track from inception to construction.

### Irrigation Designers

Sensitively and intelligently managed irrigation, along with sustainable storm water management, can save water. Aqua Engineering was the irrigation designer for the project, providing a carefully targeted drip irrigation system.

### Contractors

All the planning and designing must eventually become a built thing, and the contractors take the plans and make them a built reality. Skilled, experienced, and conscientious contractors are essential. DPR, Inc., was the general contractor for this project.

## Analysis

Designing for the landscape begins with taking stock of what is present on a site, observing it closely, making inventories of its qualities and features, and understanding its context, all those features covered in Chapter 2 of this book. Research is an important part of this process as well, to verify observation and to understand not just the physical and observable qualities of a site, but to uncover its history and its nuances. Analysis is not a discrete phase that is “over” once the design begins. The process of design always identifies gaps in knowledge. Designers thus find they are continually returning to research and analysis.

In addition to the environmental research and analysis undertaken for the ASU Polytechnic Campus, work was also undertaken to identify and accommodate the specific needs of the students and faculty, and this is a specialized institution with an emphasis on science and technology. The existence, for example, of a degree program in agribusiness meant that opportunities to use the landscape to interpret and educate on land use and technology were apparent. To take advantage of these opportunities, it was important to understand both the area’s history of agricultural practice as well as the direction of research and technology in the discipline.



5.6a

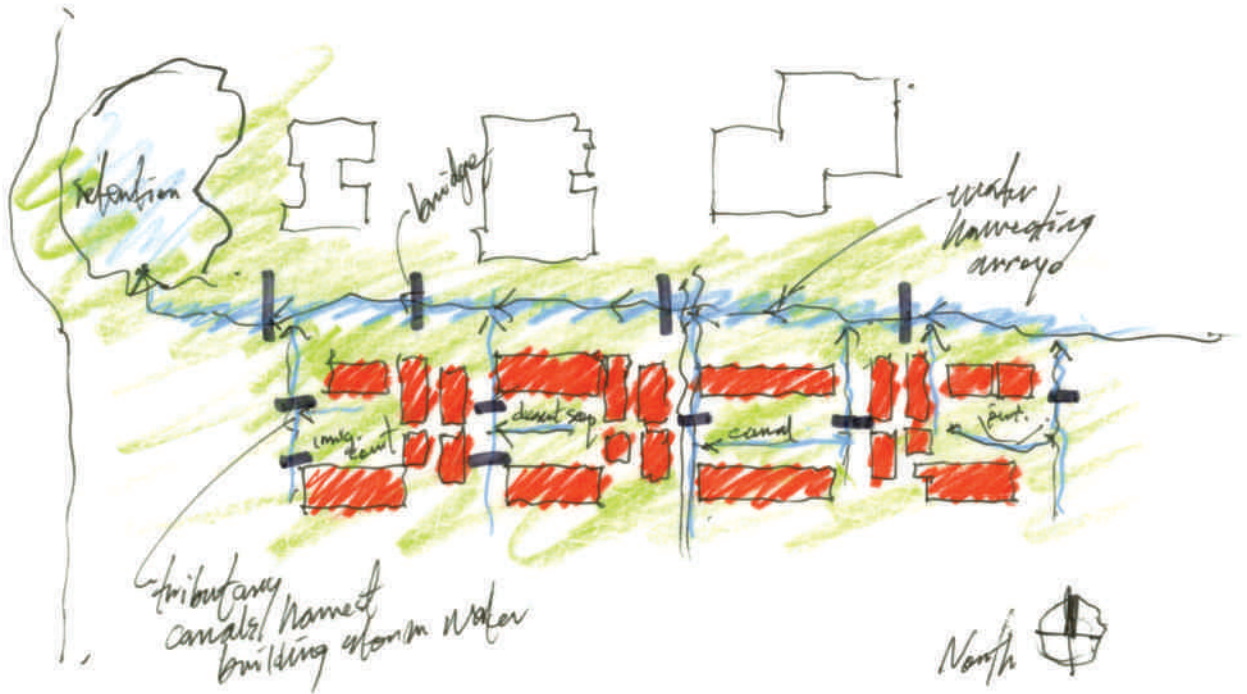


5.6b

### 5.6a–5.6b

#### The campus as it was

Though not entirely barren, the campus before its redesign reflected its military airfield past, with wide roads and expanses of rain-impervious asphalt and concrete. This paved area was prone to flooding during rain events, and the discontinuous surfaces imparted a sense of the provisional or temporary.



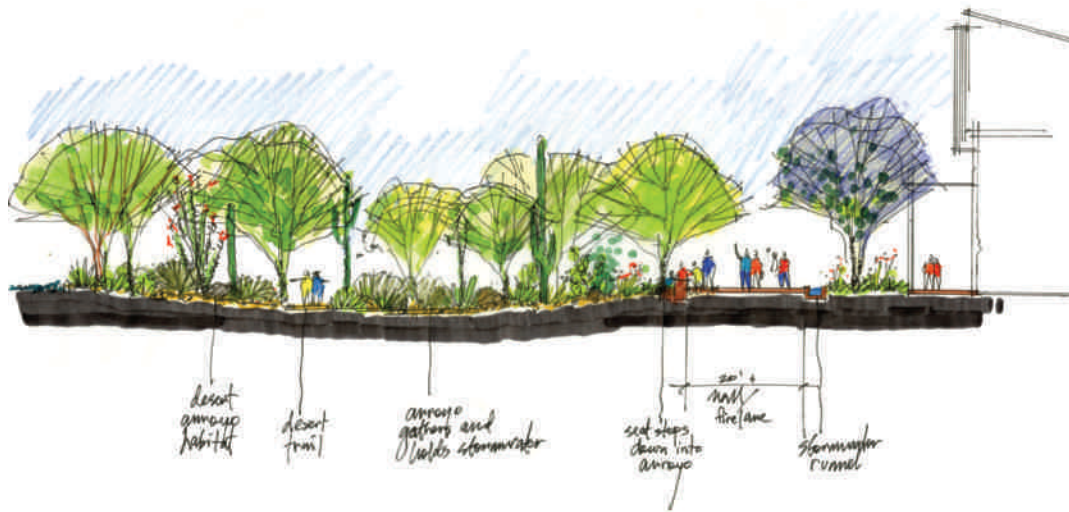
5.7

## 5.7

### Water diagram

The design for ASU Polytechnic Campus was organized around an idea generated in a single drawing. Often, it is assumed that a project's concept must be an abstract inspiration, but in fact a very pragmatic idea can be the engine that drives a design. This quick sketch by Christy Ten Eyck shows how a grid of canals, inspired by traditional agricultural methods in the Salt River Valley, is coupled with naturalistic arroyos to move water through the site. The whole system drains into a retention basin, where storm water may be held. In the retention basin, water may slowly infiltrate into the water table instead of rushing into conventional drainage systems, where it would cause problems downstream.



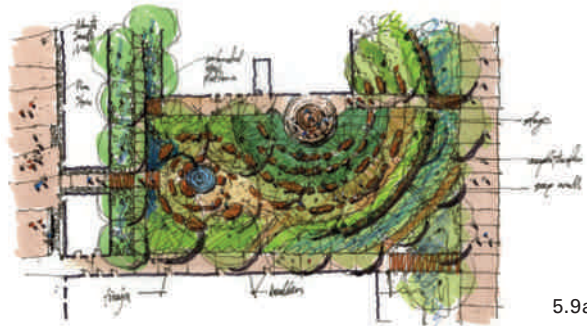


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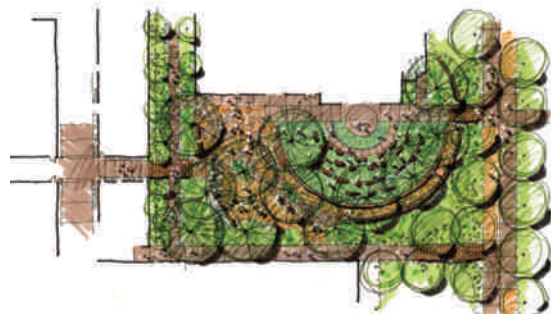
## Synthesis and Design

In design, synthesis is the process of bringing analysis and ideas together to create design solutions for the problems and opportunities identified in the brief. The design process supports this synthesis by allowing numerous possibilities to be tested. This can be an extremely wide-ranging process involving model making, drawing, consultation with clients and stakeholders, and a great deal of collaborative work and discussion.

Constantly shifting the scale of design and inquiry is also important, as understanding the interrelationships of various spaces acquires resolution through this process.



5.9a



5.9b



5.10

## 5.8

### Arroyo section

As the design develops along the framework of the concept for working with water, it becomes possible to envision the scale and function of the individual spaces. This intermediate sketch section shows the relationship between buildings, paths, and the drainage arroyos. An understanding of scale of plantings, buildings, and the sense of enclosure is developing. The character of plantings is now also possible to indicate. It is possible to see from this early sketch just how important the plantings will be to provide the structure and texture of the overall design.

## 5.9a–5.9b

### Design development sketches, Performance Court

These two sketches show the development of the design for the Performance Court. The first is an earlier sketch, which establishes the relationship between the uses in the building interiors, the relationship of the court with the overall water strategy, and the character of the plantings. The second more detailed and fixed sketch shows the design at a late stage where there is now a commitment to forms, materials, and relationships. Often, the late stage of design is subtractive, in which superfluous details or extravagances are pared away. In the second drawing, for example, it is possible to see that the water feature proposed in the earlier drawing has now disappeared.

## 5.10

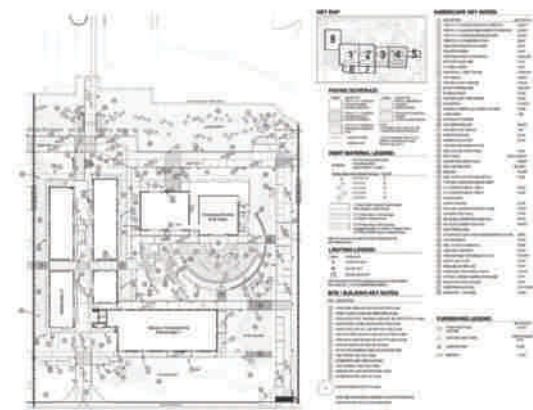
### ASU Polytechnic Campus plan

When at last all the complex details are worked out, the whole project may be presented as a plan. At this scale, the logic of the master plan is readily apparent. A grid pattern allows effective access and good interconnections between buildings, while allowing for a strong central axis that provides a grand formal gesture appropriate to an institution of higher education. Trees are also shown planted in a grid, giving further order to the site, while the underplantings are more relaxed. Courtyards provide distinctive spaces tailored to individual buildings and programs.

Detail Development

After the draft plans for the ASU Polytechnic Campus had been approved by the client, Ten Eyck Landscape Architects and the rest of the design team kicked into high gear to finalize the designs and to produce the measured drawings from which the scheme would be constructed.

Detail drawings include a wide range of considerations, including paving, planting, street furniture, lighting and grading, and drainage. Sets of drawings were created for each discrete space within the scheme, and these drawings were then issued to the contractors so that construction could begin.



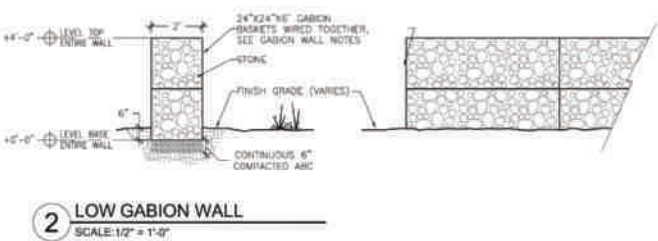
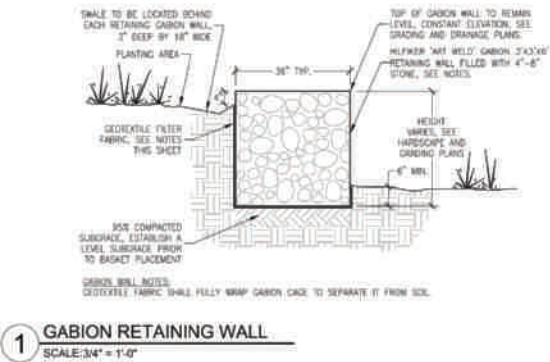
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5.11

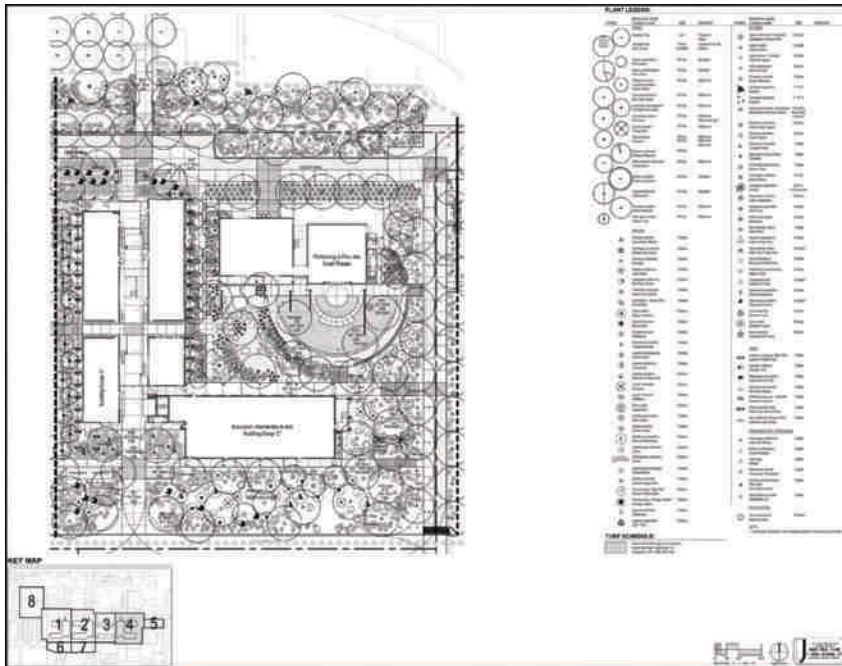
Desert Mall hardscape plan

This sheet shows specifications for hardscape and placement of lighting in the Performance Court. Different hatching and textures are used to show materials, from decomposed granite paving to loose river stones. Placement of boulders as features is also shown. All of the numbered elements refer to specific details or places where a cross-reference to the architectural plan is necessary.

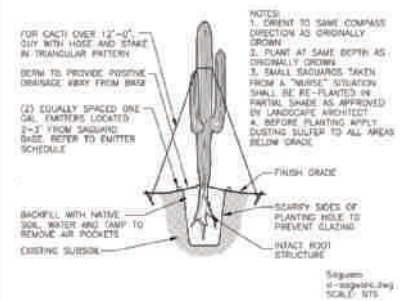
5.12







5.13



5.14

**5.12****Gabion wall detail from hardscape plan**

Construction details require both plan and section drawings for full clarity. In this detail, instructions are provided for the contractor to show the nature of the foundation, placement of a geotextile fabric between the wall and the soil, and associated planting areas. A gabion wall is a simple wall built of a wire basket containing stones.

**5.13****Desert Mall planting plan**

On the planting plan, the type and position of each plant is indicated for the landscape contractor. Each plant is shown with a different symbol, which is keyed out on the accompanied plant legend. For ease of plant selection in the nursery, plants are identified by both their botanic Latin and common names, along with the size of plant. Further, the plants are grouped on the legend as they would be in the nursery—by trees, shrubs, perennials, and vines. Turfgrass planting is also specified on the planting plan.

**5.14****Planting detail**

This sectional detail shows how a saguaro cactus is to be planted. Specifications are provided for the preparation of the planting hole, the condition of the plant, its orientation upon planting, placement of irrigation, and soil preparation. Special conditions for any given plant are also specified on the details; for example, a saguaro must be planted no deeper than its original position, and it must be planted to face the same cardinal direction in which it was grown.



5.15



5.16

**5.15**  
**Construction of the arroyos**

The functioning arroyos that tie together the whole design require a minimum of infrastructure. The short lengths of culvert required for water to be carried under the bridges represent a tiny fraction of the length of pipes required to convey storm water using conventional methods. The work of burying extensive concrete infrastructure is largely replaced with the benevolent work of soil preparation and planting.

**5.16**  
**Construction of walls**

Chunks of concrete left over from the expanses of paving that used to exacerbate flooding on campus are reused to create retaining walls. These walls also double as seating. Here, the wall foundations are being built of materials that ordinarily would be removed from the site to a landfill. Thus what might have been a problem—both on-site and off-site—has been recast as an opportunity. Fortunately for the client this most sustainable option was also the most inexpensive.



## Construction

After the hard graft involved in producing the detail drawings, it is immensely gratifying to the landscape architect to witness the breaking of ground on the site. The construction process is also fraught with anxiety, though, as the landscape architect must supervise the work throughout the construction process, ensuring that materials and finishes are as specified and that workmanship is of a consistently high standard. The finished quality of the construction often reflects on the landscape architect as much as it does on the contractor, and therefore it is crucial to ensure the job is well done.

Throughout the process of construction, the landscape architect remains in contact with the design team and the contractors, signing off the work at every stage of completion.

5.17

### 5.17

#### Construction of walls

The curving retaining wall of the Performance Court nears completion.





## Maturation

**From the time a building is constructed it begins to age and deteriorate. One of the great joys of landscape architecture is that the landscape architect does not witness a single moment of perfection. A process, rather, is set in motion. The site, now built and planted, slowly fills out, grows, and takes on life and occupation.**

Needless to say, much can go wrong in this process, and often inadequate maintenance is to blame, but if a work of landscape architecture is properly cared for and maintained, it will grow and mature as a community asset for many times the lifetime of the designer. Some of the great works of the past, such as Central Park and the Avenue des Champs-Élysées, have continued to develop and add value for their entire existences and should do so for centuries to come.

The campus designs have added significant value, in all senses of the word, to ASU Polytechnic, providing a setting more conducive to teaching and learning, and helping to safeguard the university's viability and reputation.



5.18

### 5.18

#### Steel pergola with new plantings

Robust materials, appropriate plantings, and a good match of program to site are the keys to ensuring that a site's design has longevity.

### 5.19

#### Vines maturing on the pergola

In the couple of years since the completion of the first phase of landscape works at ASU Polytechnic, the vines along this pergola have begun to cover the structure. It will only be a short time before they provide cooling shade along the walkway's length, adding significantly to the comfort and pleasure of the site's occupants.

### 5.20

#### Mesquite tree in the Performance Court

In a relatively short period of time, even simple plantings, in this case a mesquite tree in a gentle sweep of lawn, begin to feel very established—as though they've always been there. The highly durable reused concrete walls and gabion walls contribute a rough-and-tumble informality.



## 5.21

### Water

The cool and calm radiated by this tranquil scene are as psychological and aesthetic as they are atmospheric and physical.



5.19



5.20



5.21







# Professional Profiles

This chapter allows a number of talented landscape practitioners to explain their philosophies and approaches to their work in their own words. The professional practices profiled here show the great variety of projects, possibilities, and attitudes within landscape architecture. They show both the great scope of the field and the numerous possibilities for specialization within the profession. There are few clearly defined career paths in landscape architecture, which can be both a blessing and a curse. The most significant of these are briefly outlined in this chapter.

Landscape architects will often, in the course of an average work week, spend time working as a landscape manager, project manager, designer, landscape planner, and urban designer, among many other possibilities. This can create an immensely rich, varied, and interesting working life. Landscape architecture has tremendous potential to envision and craft a better future for people and the planet, and skilled, creative and open-minded people are needed to help secure it.



6.1

## 6.1

Thomas Balsley Associates,  
Intercontinental Hotel at Times  
Square, New York, USA

Sculptural and structural planting,  
and saturated colors, exude both  
luxury and exuberance.

## Careers

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**The great variety of images that this book presents in some ways is slightly misleading about careers in landscape architecture. Largely, the pictures present designs that are very visually appealing and that show highly visible design work. This is certainly an important part of the work of landscape architecture, and it is crucial to the profession's public profile.**

There is also a great deal of work that is largely invisible, though no less worthy. Some of this is the work that happens in the office on a day-to-day basis, managing schedules, costs, contractors, and lots of time spent dealing with inquiries and emails. Far from being boring, this is actually important variety. Designers would burn up like meteors if they had to operate at full creative output levels day in and day out.

The scope of landscape architecture varies greatly from country to country, and it is a large profession. The following descriptions are a very rough breakdown of the types of specializations that are typical in contemporary professional practice.

## Design and Vision

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Packaging up the big picture—a vision—for a project is central to the work of many landscape architects. Strong visual and verbal communication skills are essential to convey the essence of a proposal to a client, but they are also an indispensable aid to the design process. Design involves using word and image to think imaginatively through all the many variables that may be found on or around a site to reach a design conclusion. This is important for the individual designer, but the ability to think and represent ideas on the fly is crucial for a landscape architect working as part of a team.

## Planning the Landscape

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Landscape planning is the art of balancing existing and desired land uses for an area, and also suggesting alternative uses. Specialization is desirable in professions such as traffic management and building, but landscape planners must be skilled generalists, bringing strong knowledge of many areas together to make holistic solutions. To a specialist, land use might seem very straightforward and possible to represent with blocks of color drawn on a plan. To a landscape planner any site, no matter how small or large, peels apart layer after interdependent layer. Landscape planners are typically concerned with natural and built environments over large areas, such as park systems, transportation networks, agricultural areas, or geographic regions.

## Management and Conservation

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Management and conservation ensure that landscapes maintain optimum ecological health, supporting the maximum possible biodiversity. They assume that a landscape is an environmental, social, cultural, and economic resource. As such, landscapes need conservation to maintain their vitality and productivity in all these areas. This is never a passive process, so landscape architects help develop policies and actions to accomplish it. Management, as with all facets of landscape architecture, is a fundamentally interdisciplinary undertaking, involving a wide range of professions, including architects, archaeologists, hydrologists, surveyors, and botanists, for example.

## Historic Conservation

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The grounds of stately homes and celebrated gardens might immediately spring to mind where historic landscape conservation is concerned, but this is only a small part of the picture. The great variety of cultural landscapes that have been granted UNESCO World Heritage status gives some indication of the scope of historic conservation. A cursory glance at the list of World Heritage sites turns up the wet tropics of Queensland, the walled city of Baku, the valley of the Loire River in France, and the ancient city of Machu Picchu. As with landscape planning, management, and conservation, the work involved in historic landscape conservation is fundamentally interdisciplinary, involving collaboration with a range of professionals.

## The Science of Landscape

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The scientific processes that shape the landscape are often an area of overlap between landscape architecture and environmental science. There is also a significant sharing of subject matter with botany, geology, ecology, soil science, and wildlife management, among a wide range of scientific disciplines. Examples of the work that involves greater knowledge of science are ecological surveys, wildlife studies, planting studies, pollution mitigation (such as phytoremediation—cleaning pollution with plants), and land reclamation.

## Cities and Towns

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The work of landscape architecture is largely within an urban context. Urban environments, such as public squares, housing, streets, and parks, make up the bulk of the work for many landscape practices. Landscape architects also establish urban strategy in documents such as master plans, design frameworks, and design codes. It is increasingly common for landscape architects to specialize in urban design, which is work that involves the collaboration primarily of architects, landscape architects, and planners. Urban landscape architecture requires a willingness to work closely with other professions as well as a good understanding of all the forces that shape cities, from economics to politics to sociology.

## Gardens and Parks

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Gardens and parks have historically formed the core of the services of landscape architects, though this is perhaps less the case currently. Landscape architects who are interested in garden design can certainly still find work in that area. A strong knowledge of plants is required, and of plant associations, soils, climate, and topography. The green spaces in which people gather, play, and relax, whether public or private, are crucial not just for human health and well-being, but also serve as important habitats for other species. We are becoming increasingly aware of the importance of urban green spaces in assisting with cleansing air and water, and for helping to moderate urban temperatures in the heat of summer.



Interview: Phil Askew, CMLl,  
London Legacy Development Corporation

**“Landscape architects need to see the big picture.”**

Phil Askew, landscape architect

It is long since the hubbub over the 2012 London Olympic and Paralympic Games has died down, but works continued, much more quietly, in the aftermath of the Games as a “legacy” to ensure that the park continues to fully serve the surrounding communities and London at large.

Phil Askew is Project Sponsor Parklands and Public Realm at The London Legacy Development Corporation. He is the sole landscape architect leading an extensive interdisciplinary team undertaking one of the largest landscape projects in Europe.

**Q:** If there is a single message you would like to communicate about the future of landscape architecture, what would it be?

**Phil Askew:** The development of the landscape architecture profession is at a really important point. It needs to embrace this with the ambition to grow. We know that the “landscape” which we all occupy is a complex system that is critical to our existence on many levels. Landscape architects need to step up to this scale and complexity.

**Q:** You have been working in the midst of a vast web of organizations to ensure that the legacy is much more than simply the memory of a momentous event. Is it hard to remind people that something of value must remain and grow?

**Phil Askew:** “Legacy” is still the key word and as such there is no dilution of the original ambition. One thing that I think is really important is this: the parklands were designed with a clear and detailed brief and there is a danger that, over time, the principles that underpin the park are forgotten or diluted. Good ongoing management and maintenance in the context of an intentionally dynamic landscape will help check this.

Pairing design and delivery effectively is the key challenge. It’s an intense process that involves brief writing, appointing design teams, managing the design process, procuring a contractor, gaining planning permission, and then delivering the scheme on time and on budget! Perhaps one of the main challenges is maintaining a high-quality outcome in terms of design and construction when there are many demands, often conflicting.

**Q:** You believe that landscape architects should lead and manage projects—that the scope of their knowledge means that they know a little of everyone else’s work. What do landscape architects bring to a leadership role?

**Phil Askew:** It’s clear that natural systems are complex and have a huge impact upon us all, and within this context landscape architecture has a duty to play a role. Landscape plays a great part in how places function, how climate change is managed, how people’s health is improved and that’s just the beginning. Landscape architects have many of the skills necessary to pull projects together and lead for two reasons—an understanding of natural systems and how they interact, and the ability to see the big picture.



6.2a



6.2b



6.2c



6.2d



6.2e



6.2f

## Q: What are the qualities of a successful landscape architect?

**Phil Askew:** How does it all work? That's what landscape architects really need to understand. When so many other professions are specializing, landscape architects need to see the big picture and the mechanisms and interconnectivity. Of course, they also need to be great at the core materiality of landscape architecture and be able to manage the strategic through to the detailed scales. Landscape architects should not put themselves in a box that says, "only I can do this"! Really effective landscape architects work well with others. I believe that passion, communication, and leadership are absolutely fundamental. The Olympic Park was born of a passionate and committed client with a clear idea from Hargreaves Associates and LDA Design—its delivery involving collaboration and working with many others including engineers, soil scientists, ecologists, and horticulturists.

## 6.2a–6.2f

### Development of the Tumbling Bay Playground and Timber Lodge Community Centre and Café

Many of the spaces designed to hold hordes of visitors now serve the local community. These images show the development of the Tumbling Bay Playground and Timber Lodge Community Centre and Café, designed by Land Use Consultants and Erect Architecture. The playground occupies the former site, near the Velodrome, of the giant tensile structure that housed the basketball arena. It may be seen in the early images, but rapidly the demolition scene gives way to construction, and the playground emerges.

Interview: Thomas Balsley, FASLA,  
Thomas Balsley Associates



6.3

Thomas Balsley Associates ([www.tbany.com](http://www.tbany.com)) operates primarily in urban space and has a strong civic focus. The practice works at a great range of scales, from master plans and plazas to garden design, sculpture, and urban furniture.

Thomas Balsley is principal at TBA, and his reputation has been built by creating public spaces that enhance and enrich the lives of the individuals and communities who inhabit them. In New York, where Mr. Balsley has designed more than 100 public parks and plazas, Balsley Park is named in his honor.

**"The battle to save our environment will be fought in the cities of the world."**

Thomas Balsley, landscape architect

**6.3**

**Hunter's Point South Waterfront  
Park, Queens, New York, USA**

The proximity to water and the remarkable views of Manhattan are framed by a space that emphasizes the memory of its industrial past while providing very contemporary ecological function. The site is an important cultural and recreational resource for Queens.



**Q:** How does your design balance natural processes and forces with community and civic processes?

**Thomas Balsley:** It is critical that anyone working in the public domain have a deep understanding and respect for both of these forces. They can often be seen and treated as opposing forces without that balanced approach. It is very easy for the landscape architectural profession to lean heavily toward the natural forces. After all, many have been historically attracted to our profession for the “landscape” appeal.

I received my formal training in the late sixties when the cities were burning. It was during that period that I saw the need for the profession to focus its energy and perspective toward initiatives that would save and revitalize the cities, and stem the flow of sprawl and its environmental destruction. It has taken a long time, but I see a shift in our attention to the urban condition and recognition that cities will play the lead sustainability role in saving our environment. For example, we now discuss urban parks in term of our urban infrastructure as opposed to leftover spaces from destructive urban-planning exercises. Now, we must approach the design of urban open space through the lens of social, economic, and cultural, as well as environmental sustainability.

**Q:** Could you name a key challenge of working in the urban scene at the landscape scale?

**Thomas Balsley:** What seems like nice green space in the city is in fact the by-product of extensive community outreach and discourse, bureaucratic and political forces, and a design approach that builds consensus with strong design strategies. One must combine design and expertise with tactics.

**Q:** Sustainable urbanism requires much more than just a bit of “shrubbing up.” In what ways will landscape architecture practice change in the future, or, perhaps, how does it need to change?

**Thomas Balsley:** If we are vigilant and strengthen our “architectural” muscle, we can be the leaders in the new frontiers of landscape urbanism and landscape infrastructure. The schools must attract students who are as interested in these urbanist philosophies as in the more historical “landscape” appeal. The battle to save our environment will be fought in the cities of the world. We must rise to that challenge and not shrink from it to the “green roof syndrome.”

**Q:** What are the qualities of a successful landscape architect?

**Thomas Balsley:** The successful landscape architect of the future will have to be conversant enough in many disciplines in order to lead the design and engineering world to a bold sustainable future. Though I had some cursory exposure to urban planning and civil engineering in school, I have had to immerse myself in transportation planning, environmental and utility engineering, etc., to lead the collaborative process and gain the respect for that leadership role landscape architects should play.

Interview: Raymond Jungles,  
FASLA, Raymond Jungles, Inc.

**“As landscape architects, we are ultimately students of nature.”**

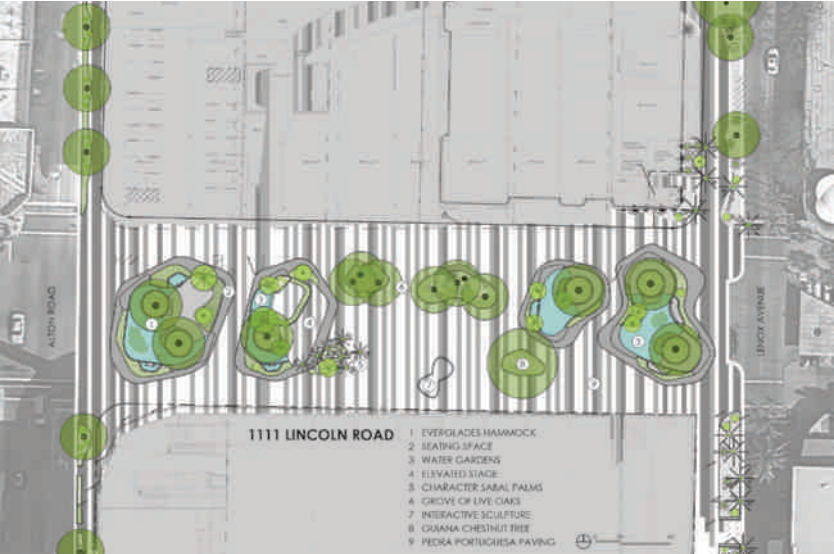
Raymond Jungles, landscape architect

**6.4a–6.4d**

1111 Lincoln Road, Miami, Florida, USA

Raymond Jungles’s design for 1111 Lincoln Road shows just how much planting can be incorporated into a busy civic space. What was formerly a roadway now provides a variety of vantage points and multifunctional areas. It is roadway as greenway: an “urban glade.”

6.4a



6.4b



6.4c



6.4d



Raymond Jungles's practice ([www.raymondjungles.com](http://www.raymondjungles.com)) is renowned for its exuberantly planted and crisply detailed landscapes, which range from private residential gardens to striking cultural sites to luxurious spaces for leisure and entertainment.

Jungles lectures widely about landscape and garden design, promoting an interdisciplinary and ecological approach that is also unafraid of showmanship and dazzle. He creates landscapes that make the richest possible setting for human life. They are spaces for contemplation, meditation, gracious living, and beauty.

**Q:** Plants, particularly gorgeous, exuberant tropical plants, play a central role in your designs. How do plants set landscape practice apart?

**Raymond Jungles:** As landscape architects, we are ultimately students of nature. All humans, whether they know it or not, have an innate love of nature. Most of them have been removed from it by their lifestyles and living in urban areas. We are tasked with bringing nature back, and people respond well to it. Our gardens are spaces created for humans. They are plant-centric even though great care is taken in the articulation of hardscape, grading, and drainage. I enjoy studying plants and selecting appropriate plants for spaces based upon the desired effect. I love plants and their ability to enrich spaces and provide habitat.

**Q:** The landscape architect is often employed to create spaces that reflect a very personal vision of the client, or that are intended to express wealth and status. This is a very old function of the garden, which is an image of paradise. How does your work seek to elevate the human spirit? Is this idea at the center of landscape architecture?

**Raymond Jungles:** I believe that the clientele willing to engage a landscape architect to build their version of paradise on Earth is a small percentage of potential clients. In a truly market-driven economy, those who can afford to hire landscape architects can afford to hire who they want to work with. The best marketing tool for our firm is word of mouth and a happy client. A job well done—that is our business model. Our focus is on creating the best garden we possibly can, which will generate the business we need to sustain ourselves.

**Q:** Your gardens are plant-driven spaces where it is not possible to approach design in a formulaic way. They are three-dimensional spaces filled with bold textures, and animated with the passing of time. Is this how you would describe your design work?

**Raymond Jungles:** Our gardens might be considered minimalist in the articulation of the hardscape and details, but they are botanically rich. Our preferences are always to use native indigenous species and materials. We do not design by formula but by principles. This is evident in our body of work.

**Q:** What are the qualities of a successful landscape architect?

**Raymond Jungles:** At the center of landscape architecture is the creation of spaces for human enlightenment, enjoyment, and education.



Interview: **Thierry Kandjee,**  
**Paysagiste, Taktyk**

**“My role as a designer is shifting from conducting nature to curating change.”**

Thierry Kandjee, landscape architect

Taktyk ([www.taktyk.net](http://www.taktyk.net)), co-founded by Thierry Kandjee (Brussels) and Sébastien Penfornis (Paris) takes an intellectual and exploratory approach to landscape and urbanism—a tactical and strategic model, as the business name suggests. This does not limit their scale to that of urban and regional strategy, however, as their work includes intimately scaled space and ephemeral interventions as well.

Thierry Kandjee is a landscape architect, lecturer, editor, and state adviser based in Brussels. He is keenly interested in the social, cultural, and political construction of landscape. Taktyk was awarded the Topos Landscape Award for 2012.

**Q:** How would you define the practice of contemporary landscape architecture?

**Thierry Kandjee:** I became a landscape architect through a fascination for plant and biological systems, and an interest in the science of the living environment, but simultaneously by approaching plants through the aesthetic pleasure gained from their appearance. Similar to design activity when seen as the construction of adaptation strategies, my own practice followed different patterns. Literally, crossing borders has informed my practice—crossing from biology to gardening, street theater to photography, landscape to urbanism. Essentially, however, my fascination with landscape has been based in the understanding and construction of living and productive systems.

I see landscape as being “systems of flow” that humans may attempt to guide, spaces being influenced by forces with which people may try to negotiate towards their better inhabitation of the planet. Thus my research enquiry looks at the way I practice, from observation of the landscape to anticipation of the transformations that I can orchestrate within it. I am interested in examining the role of the landscape architect in this expanded field, using an approach of making landscape from garden scale to city scale, and regional scale.

**Q:** You see Taktyk’s role in urban design and public space as that of a curator rather than a conductor, an enlightened position that has great significance for the future of landscape practice.

**Thierry Kandjee:** While working on the Brussels project for the public space structure of the region, I realized that my role as a designer is shifting from conducting nature to curating change. Working as an enabler, I am designing a context for design, questioning spatial politics with the ambition of creating critical platforms for the public domain.

Without being necessarily conscious of it, the platform we created in Brussels exceeded conventional modes of practice through being a space for reflection and action, while allowing me to identify a local community of peer-practitioners. As such, the public role of the practice emerges as one of creating contexts in which others may contribute, adapt, and expand strategies for public spaces and assume the role of an enabler.

**Q:** Taktyk takes a critical stance that you feel is important to landscape. Is there a danger of creating “nostalgic” landscapes that don’t serve the interests of sustainability and the environment?

**Thierry Kandjee:** Despite an ever-growing interest for the landscape paradigm in architecture, urbanism, and art, the practice of the landscape architect remains mostly hidden and lacks criticality. Design of our contemporary landscape needs to be more visible and meaningful and affirm its position in a moment when landscape is too often used to promote inequity and nostalgia. Simply said, landscape architecture practice has the capacity through creative and sensitive propositions to improve at any scale the everyday inhabitation of our planet.

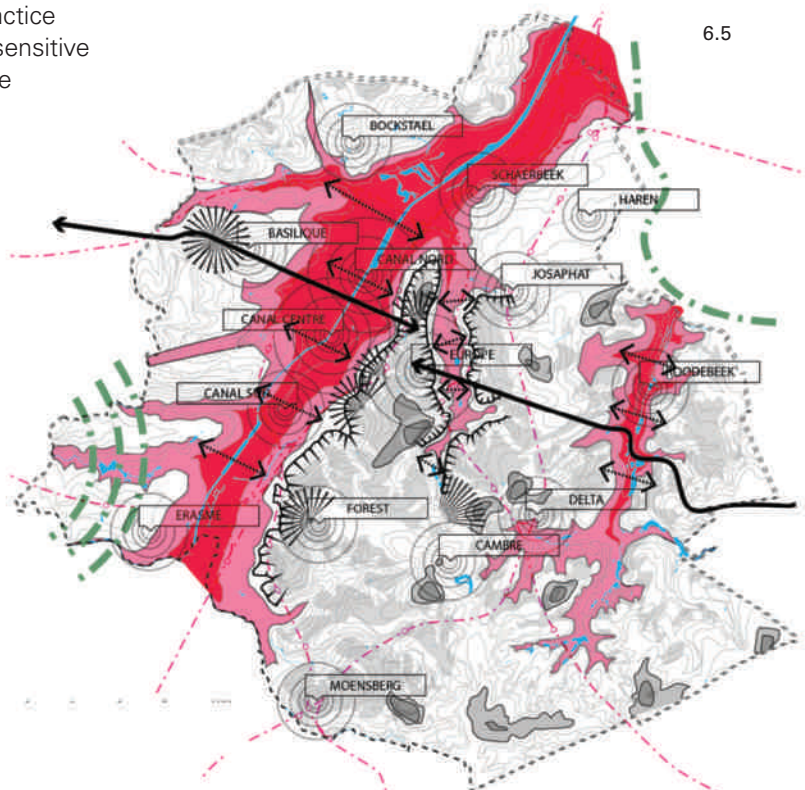
**Q:** What are the qualities of a successful landscape architect?

**Thierry Kandjee:** In the course of my career, I became increasingly interested in other forms of practice that are not only concerned with a compositional integrity; the designers who develop a clear strategic and social stance in their landscape propositions have an impact on the ground.

## 6.5

### Brussels, strategic plan, 2011–2012

Taktyk’s strategic plan for Brussels works to provide a clear spatial framework for public space. Brussels suffers from the lack of an overall spatial vision. Instead, there is a fragmented view, that of the surrounding municipalities. Thierry Kandjee sees his practice in three different roles in the creation of the strategy: the gardener (in a tending, nurturing mode), the conductor/orchestrator, and the enabler.



## Conclusion

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It seems in many ways that we are entering a future that is ever more uncertain, and the concerns that keep people awake at night are dreadful to contemplate and global in their reach. Climate change, coming crises in food and energy, and economic uncertainty highlight that we are reaching the limit of this fragile world's abundant, but finite, capacity to absorb our human impact. The antidote to anxiety is action, and the broad scope of the field of landscape architecture affords many opportunities for meaningful, positive action. We will see, more and more, a worldwide shift in politics and philosophy toward understanding and nurturing the landscape, and the profession of landscape architecture will grow in size and importance as this occurs.

I hope that this book has given a taste of the great range of opportunities within landscape architecture. I recommend that the reader with specific interests and questions should take advantage of the books, contacts, and resources listed in the next few pages.

If you have picked up this book because you are looking for a career that allows you a certain restless variety, working among peers who won't laugh at you because you "want to save the world," or even that you just want to leave the world a bit more beautiful in places, then I hope you may have found your calling among the projects, ideas, and images here.

### 6.6

Thomas Balsley Associates and Lee Weintraub  
Landscape Architecture, Gantry Plaza  
State Park, Queens, New York, USA

This once-derelict waterfront at Queens now celebrates its industrial past while providing for today's park users. The design seeks to balance the needs of new residential development and an existing blue-collar community.

6.6







## Glossary

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**Architectures, the** *n.* A convenient term for all the professions and disciplines concerned with the three-dimensional design of buildings and/or landscapes. This includes, and is not limited to, building architecture, interior architecture, landscape architecture, landscape planning, urban design, and urban planning.

**Axis** *n.* A central spine along which a site or building design is organized. Elements to either side of the axis may or may not be symmetrical.

**Axonometric** *n.* A three-dimensional measured drawing with a bird's-eye point of view. The term may be used to indicate any measured bird's-eye drawing or a specific projection with a 45-degree angle between the x and z axes.

**Baroque** *n.* A style of urban and park design that has extended well beyond its origins in the Renaissance. It is characterized by radiating streets or paths organized around focal points and vistas.

**BIM** *abbrev for* Building Information Modeling. A centralized process for site design, management, and architecture in which construction documents are developed as shared knowledge resources using specialized software.

**Biomorphic** *adj.* Organically shaped. Generally refers to globular forms such as the "kidney" shape so popular in the 1950s.

**Brief** *n.* An initial description of a project problem that defines the parameters within which the designer will work.

**Built environment** *n.* The landscape where it has specifically been shaped by human design or influence.

**CAD** *abbrev. for* Computer-Aided Design. Various software programs used as an aid to visualization, presentation, or construction drawings.

**Circulation** *n.* The movement of people and vehicles through and around a site.

**Climate change** *n.* An overall change in average weather patterns, which require human and environmental adaptation through design and behavioral change. A majority of scientists believe that the current trend will have catastrophic results unless action is taken to avert it.

**Commission** *n.* The authority given to perform design work. *v.* To give a design job to a chosen firm.

**Community** *n.* 1. A group of people with interests in common. 2. An inhabited area populated with people who have interests in common, at least in part because of geographic proximity to each other (propinquity).

**Composition** *n.* The arrangement of design elements in relation to each other, resulting in a pleasing unity.

**Concept** *n.* An idea. A notion that serves to underpin or to communicate a design proposal.

**Contour** *n.* An imaginary line traced upon the surface of the land at a single elevation that may be represented on a plan. Groupings of contours on a plan are used to indicate topography (see Topography).

**Cultural landscape** *n.* A landscape that has developed in a distinctive way over time due to human occupation and influence.

**Density** *n.* A measure of the intensity of a site's occupation, both in terms of human population and buildings. The city of Hong Kong has very high density, both of buildings and people. The Sahara Desert has extremely low density.

**Ecology** *n.* The study of relations between organisms and the environment, of natural systems.

**Elevation** *n.* The distance of a specific point on the land above or below either sea level, or a fixed reference point. For elevation drawing, see Section-elevation.

**Environment** *n.* 1. A setting or milieu for something or someone. 2. The overall systems of land, water, vegetation, wildlife, etc., that comprise the setting for life on earth.

**Exploded axonometric** *n.* A measured three-dimensional bird's-eye view that separates individual elements into discrete layers.

**Figure/ground** *n.* A plan used for analysis that shows the relationship between built form and surrounding space. Generally, buildings are shown as black masses, or "figures," on white "ground." If the figure/ground drawing is showing public open space, then the ground may extend into public buildings.

**Genius loci** *n.* Translates as "the genius of the place." The unique qualities of a place that should be taken into account and valued in a design for it.

**GIS** *abbrev. for* Geographic Information System. A computer system that allows for complex mapping, analysis, layering, and comparison of geographic data.

**GPS** *abbrev. for* Global Positioning System. A computer system designed to assist terrestrial navigation and cartography. It employs satellite technology in combination with receivers to calculate position on the Earth's surface.

**Historic conservation** *n.* The work of designing for and protecting landscapes of historic and/or archaeological significance.

**Isometric** *n.* A three-dimensional measured drawing with a bird's-eye point of view. A specific projection with a 30-degree angle between the x and z axes.

**Landscape character** *n.* The sum of all an area's attributes that result in its unique appearance and environment. Landscapes may have attributes in common, which allow them to be compared and contrasted with other similar landscapes.



## Glossary

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**Land use** *n.* The activity that takes place in a given area. Typical uses might include “industry,” “housing,” or “playing field.” Rarely, however, is any landscape used for one activity alone.

**Massing** *n.* The three-dimensional relationship between the bulk of buildings in a grouping and landscape elements such as trees and walls, and between buildings, landscape elements, and their immediate landscape.

**Master plan** *n.* A plan or strategy for a complex development or environment, and the supporting documents that detail how the plan will be costed, built, administered, and managed.

**Microclimate** *n.* Average weather conditions in a small and specific area, such as the corner of a garden or the slope of a hill.

**Orthographic projection** *n.* Technical drawing. A measured scale drawing producing a “true” representation of a site or object.

**Perspective** *n.* Realistic, three-dimensional drawings constructed with imaginary lines that converge in the background in what is called a “vanishing point.” These lines give the picture depth, and often a horizon.

**Photomontage** *n.* A technique, akin to collage, for bringing disparate elements together into an often photorealistic image.

**Plan** *n.* A two-dimensional measured horizontal drawing that places the viewer in an imaginary position above the site or object looking straight down at it without any distortion.

**Plant palette** *n.* 1. A selection of plants customarily used by a designer. 2. The full range of plants that is possible or appropriate to grow in a specific area.

**Portfolio** *n.* A presentation, either digital or printed, intended to convey the skills and experience of an individual designer to a specific audience. Samples of work are included that are intended to display the range of a designer’s capabilities, showing drawings in various media and skills with various computer applications.

**Program** *n.* A complex dynamic interrelationship of elements, uses, activities, and human and environmental processes that set the parameters for a site’s design. Program balances the needs and requirements of both the site and the client.

**Public realm** *n.* Any landscape area or building interior that is free for the use of all people at all times. Usually used in an urban context.

**Public space** *n.* Any landscape area or building interior that is free for the use of all people at all times.

**Representation** 1. *n.* An image that stands for or symbolizes an idea, concept, or elements of the physical world. 2. *n.* The creation of such an image.

**Scale** *n.* The medium through which it is possible to create orthographic projections at a specific fraction of the full-size dimensions of a site or object. Scale is generally expressed as a fraction or a ratio.

**Section** *n.* A two-dimensional measured drawing showing the heights and widths of objects, and the distances between them, encountered on a vertical slice through the objects appearing on a plan.

**Section elevation** *n.* A section drawing showing not merely the object and relationships captured on the slice through the plan but also everything appearing behind those elements looking in one direction.

**Site** *n.* An area that has been marked out for human use or action.

**Site analysis** *n.* The process of finding the implications of the characteristics that are listed in the site inventory.

**Site inventory** *n.* A list or an accounting of everything that exists on a site, establishing the context for analysis and design.

**Site survey** *n.* 1. An accurate record of a site's surface and its boundaries. 2. Site inventory.

**Storyboard** *n.* A technique, originating in film and animation, for showing a sequence of actions and/or experiences as a series of cartoon drawings.

**Sustainability** *n.* The doctrine of ensuring that the design, construction, and occupation of a site are completely in balance with its total context, including the environment and sociological, cultural, and economic considerations. Self-sufficiency, both individual and community, is usually at the heart of sustainability.

**Synthesis** *n.* The process of bringing analysis and concepts together to create design solutions for the problems that are posed by the brief.

**Topography** *n.* 1. The rise and fall of land and the natural and artificial features created by soil, rocks, and buildings, and, in a more traditional sense also refers to the shape of the land created by the type of vegetation on the land. 2. The shape of the land and how it is described on maps or plans with contour lines.

**Urban design** *n.* The inter- and multidisciplinary processes of shaping spaces of human settlement.

**Urbanism** *n.* 1. Urban design. 2. The study of all the various processes and forces that shape urban spaces and activities.

**Volume** *n.* Individual landscape spaces, like vessels, have volume. This volume is defined and contained by the planes of space—the ground plane, the overhead plane, and the vertical plane (or, simply, the verticals).

**Watershed** *n.* A whole region that drains into a river or body of water.

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## Professional Journals

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The breadth of the field of landscape architecture means that there are thousands of journals that are pertinent to different areas. The list below is a selection of some of the best from across the range of landscape architectural practice.

**a+u Architecture and Urbanism** (Japan)

[www.japan-architect.co.jp](http://www.japan-architect.co.jp)

**Anthos** (Switzerland) [www.anthos.ch](http://www.anthos.ch)

**Ark** (Finland) [www.ark.fi](http://www.ark.fi)

**Arkitektur** (Sweden) [www.arkitektur.se](http://www.arkitektur.se)

**aU** (Brazil) [www.au.pini.com.br](http://www.au.pini.com.br)

**Arquitetura & Urbanismo** (Brazil)

[www.piniweb.com.br](http://www.piniweb.com.br)

**Blauwe Kamer** (Netherlands) [www.blauwekamer.nl](http://www.blauwekamer.nl)

**Chinese Landscape Architecture** [www.jchla.com](http://www.jchla.com)

**Formes** (Canada) [www.formes.ca](http://www.formes.ca)

**Garden Design Magazine** [www.gardendesign.com](http://www.gardendesign.com)

**Garten + Landschaft** (Germany)

[www.garten-landschaft.de](http://www.garten-landschaft.de)

**Harvard Design Magazine**

[www.gsd.harvard.edu/research/publications/hdm](http://www.gsd.harvard.edu/research/publications/hdm)

**Journal of Landscape Architecture**

(India) [www.lajournal.in](http://www.lajournal.in)

**Journal of Urban Design**

[www.tandf.co.uk/journals/carfax/13574809.html](http://www.tandf.co.uk/journals/carfax/13574809.html)

**Journal of Urbanism**

[www.tandf.co.uk/journals/titles/17549175.asp](http://www.tandf.co.uk/journals/titles/17549175.asp)

**Kerb: The Journal of Landscape**

**Architecture** [www.kerbjournal.com](http://www.kerbjournal.com)

**LAD Journal** (Russia)

**LAM—Landscape Architecture Magazine**

[www.landscapearchitecturemagazine.org](http://www.landscapearchitecturemagazine.org)

**Landscape Architecture Australia**

[www.aila.org.au/landscapeaustralia](http://www.aila.org.au/landscapeaustralia)

**Landscape Architecture New Zealand**

[architecturenow.co.nz/magazines/  
landscape-architecture-new-zealand](http://architecturenow.co.nz/magazines/landscape-architecture-new-zealand)

**Landscape Journal**

[www.wisc.edu/wisconsinpress/journals/journals/lj.html](http://www.wisc.edu/wisconsinpress/journals/journals/lj.html)

**Landscape Management**

[www.landscapemanagement.net](http://www.landscapemanagement.net)

**Landscape Research**

[www.tandf.co.uk/journals/carfax/01426397.html](http://www.tandf.co.uk/journals/carfax/01426397.html)

**Landscape: The Journal of the Landscape**

**Institute** [www.landscapethejournal.org](http://www.landscapethejournal.org)

**Landscapes/Paysages** (Canada)

[www.csla-aapc.ca/landscapes-paysages-0](http://www.csla-aapc.ca/landscapes-paysages-0)

**Landskab** (Denmark) <http://www.arkfo.dk>

**Metropolis** [www.metropolismag.com](http://www.metropolismag.com)

**Paisea** (Spain) [www.paisea.com](http://www.paisea.com)

**Places Journal** [www.places-journal.org](http://www.places-journal.org)

**Project Russia** (Russia) [www.prorus.ru](http://www.prorus.ru)

**Quaderns** (Catalonia) [www.coac.net/quaderns](http://www.coac.net/quaderns)

**Scapegoat Architecture/Landscape/Political**

**Economy** [www.scapegoatjournal.org](http://www.scapegoatjournal.org)

**Site/Lines**

[www.foundationforlandscapestudies.org/sitelines](http://www.foundationforlandscapestudies.org/sitelines)

**Tasarim** (Turkey) [www.tasarimgroup.com.tr](http://www.tasarimgroup.com.tr)

**Terrain.org A Journal of Built and Natural**

**Environments** [www.terrain.org](http://www.terrain.org)

**Topos: The International Review of Landscape**

**Architecture and Urban Design** [www.topos.de](http://www.topos.de)

**Urban Design Journal**

[www.udg.org.uk/publications/journal](http://www.udg.org.uk/publications/journal)

**World Landscape Architecture**

[worldlandscapearchitect.com](http://worldlandscapearchitect.com)

## Contacts and Useful Resources

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### General Information

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These websites provide excellent basic or general information to those who are interested in learning more about landscape architecture. Each site also provides excellent links to other resources.

I Want to Be a Landscape Architect

[www.iwanttobealandscapearchitect.com](http://www.iwanttobealandscapearchitect.com)

Land8Lounge [www.land8lounge.com](http://www.land8lounge.com)

Landscape Architects Network [www.landarchs.com](http://www.landarchs.com)

Project for Public Spaces [www.pps.org](http://www.pps.org)

The Cultural Landscape Foundation [www.tclf.org](http://www.tclf.org)

World Landscape Architecture

[www.worldlandscapearchitect.com](http://www.worldlandscapearchitect.com)

### European Organizations

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Europe is well served by networks and associations, both for professionals and students.

CEU Council for European Urbanism [www.ceunet.org](http://www.ceunet.org)

ECLAS European Council of Landscape Architecture Schools [www.eclas.org](http://www.eclas.org)

ELASA European Landscape Architecture Student Association [www.elasa.org](http://www.elasa.org)

IFLA Europe (International Federation of Landscape Architects) [www.europe.iflaonline.org](http://www.europe.iflaonline.org)

Landscape Europe [www.landscape-europe.net](http://www.landscape-europe.net)

Le:Notre Thematic Network in Landscape Architecture [www.le-notre.org](http://www.le-notre.org)

Uniscape European Network of Universities for the Implementation of the European Landscape Convention [www.uniscape.eu](http://www.uniscape.eu)

### International Organizations

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There are many international organizations that are directly or indirectly concerned with the landscape, and these are a small selection of some of the more significant.

CELA Council of Educators in Landscape Architecture [www.thecela.org](http://www.thecela.org)

EDRA Environmental Design Research Association [www.edra.org](http://www.edra.org)

IALE International Association for Landscape Ecology [www.landscape-ecology.org](http://www.landscape-ecology.org)

ICOMOS International Council on Monuments and Sites [www.icomos.org](http://www.icomos.org)

IFLA International Federation of Landscape Architects [www.iflaonline.org](http://www.iflaonline.org)

ISOCARP International Society of City and Regional Planners [www.isocarp.org](http://www.isocarp.org)

IUCN International Union for the Conservation of Nature [www.unep.org](http://www.unep.org)

UNEP United Nations Environment Program [www.unep.org](http://www.unep.org)

UN Habitat United Nations Human Settlement Program [www.unhabitat.org](http://www.unhabitat.org)

## Professional Organizations by Country

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For information about studying landscape architecture or practicing in various countries, the best point of contact is the national professional organization.

Some organizations with websites are listed here. Other countries may be found listed at the International Federation of Landscape Architects website: [www.iflaonline.org](http://www.iflaonline.org).

### **Australia**

AILA Australian Institute of Landscape Architects  
[www.aila.org.au](http://www.aila.org.au)

### **Canada**

CSLA-AAPC The Canadian Society of Landscape Architects—L'Association des architectes paysagistes du Canada  
[www.csla-aapc.ca](http://www.csla-aapc.ca)

### **China**

CHSLA Chinese Society of Landscape Architecture  
[www.chsla.org.cn](http://www.chsla.org.cn)

### **France**

FFP Fédération Française du Paysage  
[www.f-f-p.org](http://www.f-f-p.org)

### **Germany**

BDLA Bund Deutscher Landschaftsarchitekten  
Bundesgeschaeftsstelle  
[www.bdl.de](http://www.bdl.de)

### **Hong Kong**

The HKILA Hong Kong Institute of Landscape Architects  
[www.hkila.com](http://www.hkila.com)

### **India**

ISOLA Indian Society of Landscape Architects  
[www.isola.org.in](http://www.isola.org.in)

### **Korea**

KILA Korean Institute of Landscape Architecture  
[www.kila.or.kr](http://www.kila.or.kr)

### **Malaysia**

ILAM Institute of Landscape Architects Malaysia  
[www.ilamalaysia.org](http://www.ilamalaysia.org)

### **The Netherlands**

NVTL Nederlandse Vereniging voor Tuin en Landschapsarchitectuur  
[www.nvtl.nl](http://www.nvtl.nl)

### **Turkey**

TCLA Turkish Chamber of Landscape Architects  
[www.peyzajmimoda.org.tr](http://www.peyzajmimoda.org.tr)

### **United Kingdom**

LI The Landscape Institute  
[www.landscapeinstitute.org](http://www.landscapeinstitute.org)

### **United States of America**

ASLA American Society of Landscape Architects  
[www.asla.org](http://www.asla.org)



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