

An aerial photograph of an industrial site, likely a water treatment plant. A large, rusted metal structure with a grid-like pattern of panels dominates the right side of the frame. In the center and left, a group of people is gathered on a paved area. The background shows various pipes and industrial equipment. The overall scene is a mix of industrial architecture and human activity.

Tim Waterman

THE FUNDAMENTALS
OF LANDSCAPE
ARCHITECTURE



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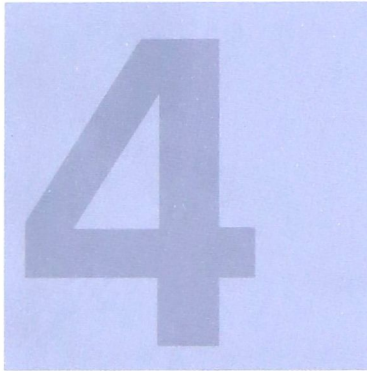
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**THE FUNDAMENTALS OF
LANDSCAPE
ARCHITECTURE**



TIM WATERMAN

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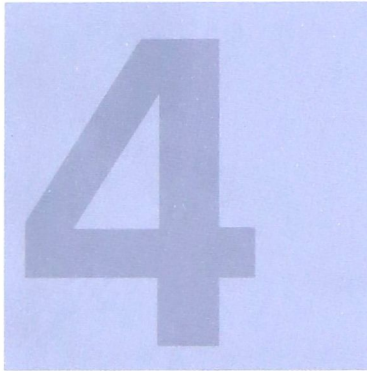
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INHABITING THE LANDSCAPE

When we live in a place, make a home in it, a permanent investment, we are said to inhabit it. A good place is one in which we feel comfortable, that fits us like a pair of worn jeans. Landscape architects don't merely make photogenic or sculptural spaces. They make landscapes that are designed for living in, and often the resulting designs are hardly noticeable. Like that pair of jeans, they might not even be noticed unless they're mentioned.



Images

Photographs, diagrams and illustrations from an array of professional practices bring the text to life.

Chapter introductions

Provide a brief outline of the key concepts and ideas that the chapter will explore.

Captions

Supply contextual information about the images and help connect the visuals with those key concepts discussed in the body copy.

ORTHOGRAPHIC PROJECTION

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THE SCIENCE OF 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

Scale is the medium through which it is possible to create orthographic projections. It is generally expressed as a fraction or 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.

SCALE

The following scales are merely illustrative, 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 sites would produce drawings of presentation or map size.

1:1	Actual size
1:10	Bus shelter
1:100	Garden
1:500	City park
1:1,000	Neighbourhood
1:20,000	City
1:200,000	County
1:1,000,000	Country
1:5,000,000	Europe
1:50,000,000	World

In order to fit a large site on to 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 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.

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

Section drawings

These simple sections show terraces being built. The bump truck in the image helps establish scale.



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.

SECTIONS

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 the elements. Beginning with a simple line on the plan, a section is then projected upwards. 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 undulating 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

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 upwards. 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 plotted in exact scale regardless of their distance from the section line. Section elevations can provide a very complete image of a project, and are very useful for testing designs.

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Box outs

Contain more detailed and contextual information about those landscape architects or practices that are referred to in the body copy.

Colour coding

Denotes the chapter.

Navigation

Chapter navigation helps you determine which chapter unit you are in and what the preceding and following sections are.

Diagrams

Help to explain landscape architectural theory and concepts in more detail.

‘If there’s sky, it’s mine.’

*Kathryn Gustafson,
Landscape architect*

WHAT IS LANDSCAPE ARCHITECTURE?

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, amongst 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 colour, are used to create these images, and the process allows the designer to both communicate with an audience and to visualise 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 a 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 utilise 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 around, a career in landscape architecture is ideal.

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?

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 specialise 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 preserves

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

Contemplative places – 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

Travel places – highways, transportation corridors and structures, bridges

The entire place – new towns, urban regeneration and housing projects

**Courtyard in the LG Chemical
Research Centre, Seoul, Korea**

This courtyard by Mikiyoung Kim
derives its contemplative beauty
from the great precision of its design.
A simple, elegant relationship
between bamboo, moss, stone and
water create a highly sculptural
composition.



THE ROLE OF LANDSCAPE ARCHITECTS

As a profession, 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 exactly a profession unto itself, but a specialisation of landscape architects, architects and urban planners. 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 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.

1

HISTORY AND IDEAS

The history of humankind is written in the landscape. Every civilisation, 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 symbolise their collective ambitions.

We have, as a species, become disconnected from the landscape that supports us in many ways. 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 parts of a complex functioning landscape. An understanding of the history of landscapes can help us to see the whole picture.





The ancient city wall in Xi'an, China

Contemporary buildings overshadow the ancient city wall, which in turn overshadows a modern streetscape where building façades are a mix of old and new.

YESTERDAY AND TODAY

‘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

Landscape architecture, as it is practised 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 last 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. Landscape architecture is increasingly responding to the realisation 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 less destroying.

The beginnings of agriculture and of the Neolithic age

c10,000 BCE

Settlement at Skara Brae, Orkney, Scotland

c7000 BCE

c3000 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 symbolised not only religious power, but it also marked the centre of one of the earliest empires: that of the ancient Sumerians.

c2600 – 2500

c2250 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.



The first urban centre at Çatalhöyük, Turkey