

# Introduction

**FRANK GEHRY:** 'ARCHITECTURE SHOULD SPEAK OF ITS TIME AND PLACE, BUT YEARN FOR TIMELESSNESS.'

First created as protection from the elements, architecture has evolved throughout history to meet the diverse needs of its many users. From the earliest dwellings to recent steel and glass towers, the built environment has constantly demonstrated human endeavour and achievement, with the greatest architecture balancing form, function, structure and aesthetics.

Buildings were first erected to provide shelter, but soon more complex structures were built for religious rituals, and these constitute some of the first surviving structures. The earliest monumental buildings that we know of were created by the ancient civilizations of Mesopotamia and Egypt: brick-built ziggurats (temples) in Mesopotamia and stone mastabas (tombs) in Egypt. Among other things, the Mesopotamians pioneered urban planning and perceived 'the craft of building' as a divine gift bestowed by the gods.

Architecture continued to flourish, and in c.30–15 BCE, the Roman architect and engineer Vitruvius wrote *De Architectura*, which is considered to be the first book on architectural theory and remained the main influence on Western architects for over a thousand years.

Human needs continue to inspire some of the most innovative architectural solutions, and this book explores many of the remarkable ideas that have materialized over the last 4,000 years. With a unique cross-referencing system, it charts the history of architecture and investigates some of the most significant works, styles, materials and elements of architecture across the world.

## Styles

**FRANK LLOYD WRIGHT:** 'THE MOTHER ART IS ARCHITECTURE. WITHOUT AN ARCHITECTURE OF OUR OWN WE HAVE NO SOUL OF OUR OWN CIVILIZATION.'

During certain time periods, particular styles of architecture evolve, characterized by identifiable features and shaped by a range of factors, including technology, materials and the imagination of architects. As cultures

change, they merge or learn from each other, as in the case of the ancient Greek and Roman civilizations, or conversely they deliberately contradict previous ideas, for instance the Postmodernist reaction against Modernism. Some styles use completely new approaches and methods, while others, such as Neoclassicism and the Gothic Revival, revisit previous styles. Every revival, however, differs from the original, reflecting the needs and technologies of its own period. Some styles only develop in certain locations, such as Khmer architecture or the Chicago School. Many evolve in the wake of key architectural innovations, and some emerge from travel and consequent cultural interchange, such as Moorish architecture. Some styles are named long after they occurred, such as the Renaissance; some are named as they are created, such as Brutalism. Overall, even though they often overlap, these styles help to clarify the history of architecture. This section of the book explores many of the most important styles as chronologically as possible.

## The Buildings

**ALVAR AALTO:** 'THE ULTIMATE GOAL OF THE ARCHITECT ... IS TO CREATE A PARADISE. EVERY HOUSE, EVERY PRODUCT OF ARCHITECTURE ... SHOULD BE A FRUIT OF OUR ENDEAVOUR TO BUILD AN EARTHLY PARADISE FOR PEOPLE.'

Evolving out of the human need for shelter and security, of the desire to worship and of available resources and skills, architecture is a cross between an art and a science.

As various cultures developed, knowledge and practices were gained, and traditions founded, disseminated and built upon, and architecture was established. In this section of the book, 50 of the most significant works of architecture across time and place are featured, including some of the most respected and many that introduced key ideas, materials, forms or technologies for the first time. The earliest architects achieved results through trial and error, and as time passed, theories and practicalities, failures and successes informed subsequent architects, and architecture developed in diverse and enterprising ways. Each work featured in this section explores an important building or structure in architecture's history that often incorporated cutting-edge materials and methods, while consideration is also given to architects' skills, aims and innovations.

## Elements

**ZAHA HADID:** 'I DON'T THINK THAT ARCHITECTURE IS ONLY ABOUT SHELTER, IS ONLY ABOUT A VERY SIMPLE ENCLOSURE. IT SHOULD BE ABLE TO EXCITE YOU, TO CALM YOU, TO MAKE YOU THINK.'

Fundamental to architecture are the elements, or component parts. These include such things as balconies, arches, towers, staircases, arcades, courtyards and columns. Some elements are unusual, or only used in certain types of building, such as naves or minarets, while others are almost universal, for instance doors and windows. All are subject to considerations such as fashion, local preferences, accessible materials, religious specifications, climatic conditions, current regulations and technologies, plus the individual ideas of their architect. Some elements are similar, but with different interpretations, for instance the domes of Santa Maria del Fiore in Florence, Saint Basil's in Moscow and the Taj Mahal in Agra, or the spires of Cologne Cathedral, the Chrysler Building in New York City and the Sagrada Família in Barcelona. These illustrate how every architectural element is a complex combination of design, origins, influences, inventions and practicalities.

## Materials

**LUDWIG MIES VAN DER ROHE:** 'ARCHITECTURE BEGINS WHEN YOU PLACE TWO BRICKS CAREFULLY TOGETHER.'

From mud to marble, brick to bamboo, stone to steel and concrete to carbon fibre, materials used in architecture have become broader as human requirements change and technology and engineering have progressed. Architectural possibilities that are enabled by using various materials are explained in this section, including both essential components such as stone or wood, and those that are predominantly used in parts of buildings and structures, such as glass and tiles. Some materials have been used continually for thousands of years, some are no longer used and others have been invented recently. Examples of where and how these materials have been used are explored in this section, while useful cross-references give further examples.